AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:23-cv-01048	2/10/2023	Central District of California

PLAINTIFF	DEFENDANT
ENTROPIC COMMUNICATIONS, LLC	COMCAST CORPORATION, ET AL.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	7,295,518	11/13/2007	Entropic Communications, LLC
2	7,594,249	9/22/2009	Entropic Communications, LLC
3	7,889,759	2/15/2011	Entropic Communications, LLC
4	8,085,802	12/27/2011	Entropic Communications, LLC
5	(see attached page)		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 – Patents (Continued)

	Patent No.	Date of Patent	Holder of Patent
5.	9,838,213	12/05/2017	Entropic Communications, LLC
6.	10,432,422	10/01/2019	Entropic Communications, LLC
7.	8,631,450	01/14/2014	Entropic Communications, LLC
8.	8,621,539	12/31/2013	Entropic Communications, LLC
9.	8,320,566	11/27/2012	Entropic Communications, LLC
10.	10,257,566	04/09/2019	Entropic Communications, LLC
11.	8,228,910	07/24/2012	Entropic Communications, LLC
12.	8,363,681	01/29/2013	Entropic Communications, LLC

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:23-cv-01047	2/10/2023	Central District of California

PLAINTIFF	DEFENDANT
ENTROPIC COMMUNICATIONS, LLC	COX COMMUNICATIONS, INC., ET AL.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	7,295,518	11/13/2007	Entropic Communications, LLC
2	7,594,249	9/22/2009	Entropic Communications, LLC
3	7,889,759	2/15/2011	Entropic Communications, LLC
4	8,085,802	12/27/2011	Entropic Communications, LLC
5	(see attached page)		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 – Patents (Continued)

	Patent No.	Date of Patent	Holder of Patent
5.	9,838,213	12/05/2017	Entropic Communications, LLC
6.	10,432,422	10/01/2019	Entropic Communications, LLC
7.	8,631,450	01/14/2014	Entropic Communications, LLC
8.	8,621,539	12/31/2013	Entropic Communications, LLC
9.	8,320,566	11/27/2012	Entropic Communications, LLC
10.	10,257,566	04/09/2019	Entropic Communications, LLC
11.	8,228,910	07/24/2012	Entropic Communications, LLC
12.	8,363,681	01/29/2013	Entropic Communications, LLC

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:23-cv-01043	2/10/2023	Central District of California

PLAINTIFF	DEFENDANT
ENTROPIC COMMUNICATIONS, LLC	DISH NETWORK CORPORATION, ET AL.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	7,295,518	11/13/2007	Entropic Communications, LLC
2	7,594,249	9/22/2009	Entropic Communications, LLC
3	7,889,759	2/15/2011	Entropic Communications, LLC
4	8,085,802	12/27/2011	Entropic Communications, LLC
5	(see attached page)		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 – Patents (Continued)

	Patent No.	Date of Patent	Holder of Patent
5.	9,838,213	12/05/2017	Entropic Communications, LLC
6.	10,432,422	10/01/2019	Entropic Communications, LLC
7.	8,631,450	01/14/2014	Entropic Communications, LLC
8.	8,621,539	12/31/2013	Entropic Communications, LLC
9.	8,320,566	11/27/2012	Entropic Communications, LLC
10.	10,257,566	04/09/2019	Entropic Communications, LLC
11.	8,228,910	07/24/2012	Entropic Communications, LLC
12.	8,363,681	01/29/2013	Entropic Communications, LLC

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/231,349	09/19/2005	Brett Bernath	

CONFIRMATION NO. 4520

23446
MCANDREWS HELD & MALLOY, LTD
500 WEST MADISON STREET
SUITE 3400
CHICAGO, IL 60661

POA ACCEPTANCE LETTER

OC000000126319134

Date Mailed: 06/16/2021

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/14/2021.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/nrhayden/

PTO/AIA/80 (07-17)
Approved for use through 03/31/2021. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it displays a valid OMB control number

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

[X] Practitioners associated with Customer Number: 23,446

OR

[ ] Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number

Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

[X] The address associated with Customer Number: 23,446

OR

[ ]

Firm or individual name		
Address		
City	State	Zip
Country		
Telephone	Email	

Assignee name and address: ENTROPIC COMMUNICATIONS, LLC
1345 AVENUE OF THE AMERICAS, 46TH FLOOR
NEW YORK, NY 10105

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of the practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee.

Signature /Andrea L. Gothing/	Date 2021-05-04
Name Andrea L. Gothing	Telephone 415-830-0613
Title Licensing Officer and Authorized Signatory, Entropic Communications, LLC	

This collection of information is required by 37 CFR 1.31, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public, which is to update (and by the USPTO to process) the file of a patent or reexamination proceeding. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 18 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt	
EFS ID:	42984154
Application Number:	11231349
International Application Number:	
Confirmation Number:	4520
Title of Invention:	BROADBAND LOCAL AREA NETWORK
First Named Inventor/Applicant Name:	Brett Bernath
Customer Number:	23446
Filer:	Ronald H. Spuhler/Deborah Wilson
Filer Authorized By:	Ronald H. Spuhler
Attorney Docket Number:	
Receipt Date:	14-JUN-2021
Filing Date:	19-SEP-2005
Time Stamp:	22:11:49
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Assignee showing of ownership per 37 CFR 3.73	29239US01_373c_Statement.pdf	123839 8faa9c07ebd08b4fab9ffbc9b1814fd4aee0b5a2	no	3

Warnings:

Information:					
2	Power of Attorney	Entropic-POA_General_Assignee_EntropicCommunications_ALG.pdf	487892 51444e06ae84b241bfc127dc47c5d6c646944dd7	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	611731	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/AIA/96 (08-12)
Approved for use through 01/31/2013. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: ENTROPIC COMMUNICATIONS, LLC

Application No./Patent No.: 11/231,349 Filed/Issue Date: 2005-09-19

Titled: BROADBAND LOCAL AREA NETWORK

ENTROPIC COMMUNICATIONS, LLC, a limited liability company

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☑ The assignee of the entire right, title, and interest.

2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):

☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (*e.g.*, bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

B. ☑ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Anton Monk, Brett Bernath, Itzhak Gurantz, Ladd El Wardani, Ron Porat, Yusuf Ozturk, Ron Lee, Wee-Peng Goh, I To: ENTROPIC COMMUNICATOINS, INC.

The document was recorded in the United States Patent and Trademark Office at
Reel 018175, Frame 0650, or for which a copy thereof is attached.

2. From: EXCALIBUR ACQUISITION CORPORATION, ENTROPIC COMMUNICATIONS, INC. To: ENTROPIC COMMUNICATIONS, INC.

The document was recorded in the United States Patent and Trademark Office at
Reel 035706, Frame 0267, or for which a copy thereof is attached.

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/AIA/96 (08-12)
Approved for use through 01/31/2013. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: ENTROPIC COMMUNICATIONS, INC., EXCALIBUR SUBSIDIARY, LLC To: ENTROPIC COMMUNICATIONS, LLC

The document was recorded in the United States Patent and Trademark Office at
Reel 035717, Frame 0628, or for which a copy thereof is attached.

4. From: ENTROPIC COMMUNICATONS LLC To: MAXLINEAR COMMUNICATIONS LLC

The document was recorded in the United States Patent and Trademark Office at
Reel 055776, Frame 0482, or for which a copy thereof is attached.

5. From: MAXLINEAR COMMUNICATIONS LLC To: ENTROPIC COMMUNICATIONS, LLC

The document was recorded in the United States Patent and Trademark Office at
Reel 055899, Frame 0291, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☑ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Ronald H. Spuhler/	2021-06-14
Signature	Date
Ronald H. Spuhler	52245
Printed or Typed Name	Title or Registration Number

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/231,349	09/19/2005	Brett Bernath	E040004USU1

CONFIRMATION NO. 4520

77330
ENTROPIC COMMUNICATIONS, INC.
6350 SEQUENCE DRIVE
SAN DIEGO, CA 92121

POWER OF ATTORNEY NOTICE

OC000000076519300

Date Mailed: 07/28/2015

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/25/2015.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/mrfoster/

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/231,349	09/19/2005	Brett Bernath	

CONFIRMATION NO. 4520

23446
MCANDREWS HELD & MALLOY, LTD
500 WEST MADISON STREET
SUITE 3400
CHICAGO, IL 60661

POA ACCEPTANCE LETTER

OC000000076519333

Date Mailed: 07/28/2015

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/25/2015.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/mrfoster/

PTO/SB/80 (11-08)
Approved for use through 11/30/2011. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(b).

I hereby appoint:

☑ Practitioners associated with the Customer Number: 23446

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(b) to:

☑ The address associated with Customer Number: 23446

OR

☐ Firm or Individual Name			
Address			
City		State	Zip
Country			
Telephone		Email	

Assignee Name and Address:

Entropic Communications, LLC.
2051 Palomar Airport Road, Suite 100
Carlsbad, CA 92011

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	6/17/15
Name	Adam Spice	Telephone	
Title	Chief Finanical Officer		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt	
EFS ID:	23023553
Application Number:	11231349
International Application Number:	
Confirmation Number:	4520
Title of Invention:	BROADBAND LOCAL AREA NETWORK
First Named Inventor/Applicant Name:	Brett Bernath
Customer Number:	77330
Filer:	Christopher C. Winslade/Deb Wilson
Filer Authorized By:	Christopher C. Winslade
Attorney Docket Number:	E040004USU1
Receipt Date:	25-JUL-2015
Filing Date:	19-SEP-2005
Time Stamp:	11:59:56
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Assignee showing of ownership per 37 CFR 3.73	29239US01_373b_Statement_sb96.pdf	431685 2177ff7ea7acad9c78c5add5d40ef80954011682	no	2
Warnings:					
Information:					

2	Power of Attorney	Entropic_POA_PreAIA.pdf	340881 8107f4c6d5473b527f97e45769199b81a37aad1b	no	2

Warnings:	
Information:	
Total Files Size (in bytes):	772566

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/96 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Anton Monk, Brett Bernath, Itzhak Gurantz, Ladd El Wardani, Ron Porat, Yusuf Ozturk, Ron Lee, \

Application No./Patent No.: 8,631,450 Filed/Issue Date: 01/14/2014

Titled: BROADBAND LOCAL AREA NETWORKE

Entropic Communications, LLC , a corporation

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.

states that it is:

1. ☒ the assignee of the entire right, title, and interest in;

2. ☐ an assignee of less than the entire right, title, and interest in (The extent (by percentage) of its ownership interest is _____ %); or

3. ☐ the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made)

the patent application/patent identified above, by virtue of either:

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy therefore is attached.

OR

B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Anton Monk, Brett Bernath, Itzhak Gurantz, La To: ENTROPIC COMMUNICATIONS, INC.

The document was recorded in the United States Patent and Trademark Office at
Reel 018175 , Frame 0650 , or for which a copy thereof is attached.

2. From: EXCALIBUR ACQUISITION CORPORATION a To: ENTROPIC COMMUNICATIONS, INC.

The document was recorded in the United States Patent and Trademark Office at
Reel 035706 , Frame 0267 , or for which a copy thereof is attached.

3. From: ENTROPIC COMMUNICATIONS, INC. and EX To: ENTROPIC COMMUNICATIONS, LLC

The document was recorded in the United States Patent and Trademark Office at
Reel 035717 , Frame 0628 , or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☒ As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (*i.e.*, a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Christopher C. Winslade/ 07/25/2015

Signature Date

Christopher C. Winslade, Reg. No. 36308 Attorney for Applicant

Printed or Typed Name Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/231,349	01/14/2014	8631450	E040004USU1	4520

77330 7590 12/24/2013

ENTROPIC COMMUNICATIONS, INC.
6290 SEQUENCE DRIVE
SAN DIEGO, CA 92121

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 1222 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Brett Bernath, San Diego, CA;
Anton Monk, San Diego, CA;
Itzhak Gurantz, San Diego, CA;
Ladd El Wardani, La Jolla, CA;
Ron Porat, San Diego, CA;
Yusuf Ozturk, San Diego, CA;
Ron Lee, San Diego, CA;
Wee-Peng Goh, Murrieta, CA;
Magnus Berggren, San Diego, CA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

77882 7590 09/11/2013
Sheppard Mullin Richter & Hampton LLP
12275 El Camino Real, Suite 200
San Diego, CA 92130

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission via EFS-Web
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

Tara Sallee	(Depositor's name)
/Tara Sallee/	(Signature)
December 11, 2013	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/231,349	09/19/2005	Brett Bernath	E040004USU1	4520

TITLE OF INVENTION: BROADBAND LOCAL AREA NETWORK

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1780	$0	$0	$1780	12/11/2013

EXAMINER	ART UNIT	CLASS-SUBCLASS
SAINT CYR, JEAN D	2425	725-078000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
☑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Bruce Greenhaus
2 Richard Bachand
3 Sheppard Mullin Richter & Hampton LLP

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: Entropic Communications, Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY): San Diego, CA

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☑ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:
☑ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
☐ A check is enclosed.
☑ Payment by Deposit Account Number 504613.
☑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 504613 (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

NOTE: Absent a valid certification of Micro Entity Status (see form PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

❑ Applicant asserting small entity status. See 37 CFR 1.27

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

❑ Applicant changing to regular undiscounted fee status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature /Richard Andre Bachand/ Date December 11, 2013

Typed or printed name Richard A. Bachand Registration No. 25,107

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PTO/SB/122 (11-08)
Approved for use through 11/30/2011. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

CHANGE OF CORRESPONDENCE ADDRESS
Application

Address to:
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Application Number	11/231,349
Filing Date	9/19/2005
First Named Inventor	Brett Bernath
Art Unit	2425
Examiner Name	SAINT CYR, JEAN D
Attorney Docket Number	E040004USU1

Please change the Correspondence Address for the above-identified patent application to:

☑ The address associated with Customer Number: 77330

OR

☐ Firm or Individual Name

Address

City	State	Zip

Country

Telephone	Email

This form cannot be used to change the data associated with a Customer Number. To change the data associated with an existing Customer Number use "Request for Customer Number Data Change" (PTO/SB/124).

I am the:

☐ Applicant/Inventor

☐ Assignee of record of the entire interest.
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96).

☑ Attorney or agent of record. Registration Number 25,107.

☐ Registered practitioner named in the application transmittal letter in an application without an executed oath or declaration. See 37 CFR 1.33(a)(1). Registration Number_____.

Signature	/Richard Andre Bachand/
Typed or Printed Name	Richard A. Bachand
Date December 11, 2013	Telephone (858) 768-3835

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☑ *Total of 2 forms are submitted.

This collection of information is required by 37 CFR 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974** (**P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/SB/47 (03-09)
Approved for use through 05/31/2015. OMB 0651-0016
U.S. Patent and Trademark Office; U. S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

"FEE ADDRESS" INDICATION FORM

Address to:
Mail Stop M Correspondence
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

- OR -

Fax to:
571-273-6500

INSTRUCTIONS: The issue fee must have been paid for application(s) listed on this form. In addition, only an address represented by a Customer Number can be established as the fee address for maintenance fee purposes (hereafter, fee address). A fee address should be established when correspondence related to maintenance fees should be mailed to a different address than the correspondence address for the application. **When to check the first box below**: If you have a Customer Number to represent the fee address. **When to check the second box below**: If you have no Customer Number representing the desired fee address, in which case a completed Request for Customer Number (PTO/SB/125) must be attached to this form. For more information on Customer Numbers, see the Manual of Patent Examining Procedure (MPEP) § 403.

For the following listed application(s), please recognize as the "Fee Address" under the provisions of 37 CFR 1.363 the address associated with:

☑ Customer Number: 77330

OR

☐ The attached Request for Customer Number (PTO/SB/125) form.

PATENT NUMBER (if known)	APPLICATION NUMBER
	11/231,349

Completed by (check one):

☐ Applicant/Inventor

/Richard Andre Bachand/
Signature

☑ Attorney or Agent of record 25,107 (Reg. No.)

Richard A. Bachand
Typed or printed name

☐ Assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

(858) 768-3835
Requester's telephone number

☐ Assignee recorded at Reel _____ Frame_____

December 11, 2013
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more that one signature is required, see below*.

☑ *** Total of 2 forms are submitted.**

This collection of information is required by 37 CFR 1.363. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1. 11 and 1.14. This collection is estimated to take 5 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313- 1450. DO NOT SEND COMPLETED FORMS TO THIS ADDRESS.
SEND TO: Mail Stop M Correspondence, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974** (**P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	11231349
Filing Date:	19-Sep-2005
Title of Invention:	BROADBAND LOCAL AREA NETWORK
First Named Inventor/Applicant Name:	Brett Bernath
Filer:	Richard A. Bachand/Tara Sallee
Attorney Docket Number:	E040004USU1

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl Issue Fee	1501	1	1780	1780
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**1780**

Electronic Acknowledgement Receipt	
EFS ID:	17633088
Application Number:	11231349
International Application Number:	
Confirmation Number:	4520
Title of Invention:	BROADBAND LOCAL AREA NETWORK
First Named Inventor/Applicant Name:	Brett Bernath
Customer Number:	77882
Filer:	Richard A. Bachand/Tara Sallee
Filer Authorized By:	Richard A. Bachand
Attorney Docket Number:	E040004USU1
Receipt Date:	11-DEC-2013
Filing Date:	19-SEP-2005
Time Stamp:	17:40:35
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$1780
RAM confirmation Number	5689
Deposit Account	504613
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	2013-12-11_Issue_Fee_Payment_E040004USU1-signed.pdf	111337 f918aaa55a89905097b1294e74d87240f065104b	no	2
Warnings:					
Information:					
2	Change of Address	2013-12-11_Change_of_Correspondence_E040004USU1-signed.pdf	270987 bf365a3e8eca9c80d3532cb94dd036213b93f44e	no	2
Warnings:					
Information:					
3	Miscellaneous Incoming Letter	2013-12-11_Fee_Address_Form_E040004USU1-signed.pdf	221243 cd517fe26869b81deb92b802f8fc4947c5bfde6e	no	2
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	29895 611b992a179b5e569b7b28a17b7e3b1570aa79f9	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	633462		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

77882 7590 09/11/2013

Sheppard Mullin Richter & Hampton LLP
12275 El Camino Real, Suite 200
San Diego, CA 92130

EXAMINER
SAINT CYR, JEAN D

ART UNIT	PAPER NUMBER
2425	

DATE MAILED: 09/11/2013

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/231,349	09/19/2005	Brett Bernath	E040004USU1	4520

TITLE OF INVENTION: BROADBAND LOCAL AREA NETWORK

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1780	$0	$0	$1780	12/11/2013

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

77882 7590 09/11/2013
Sheppard Mullin Richter & Hampton LLP
12275 El Camino Real, Suite 200
San Diego, CA 92130

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/231,349	09/19/2005	Brett Bernath	E040004USU1	4520

TITLE OF INVENTION: BROADBAND LOCAL AREA NETWORK

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1780	$0	$0	$1780	12/11/2013

EXAMINER	ART UNIT	CLASS-SUBCLASS
SAINT CYR, JEAN D	2425	725-078000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:
- ❑ Issue Fee
- ❑ Publication Fee (No small entity discount permitted)
- ❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ❑ A check is enclosed.
- ❑ Payment by credit card. Form PTO-2038 is attached.
- ❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29	NOTE: Absent a valid certification of Micro Entity Status (see form PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
❑ Applicant asserting small entity status. See 37 CFR 1.27	NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
❑ Applicant changing to regular undiscounted fee status.	NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/231,349	09/19/2005	Brett Bernath	E040004USU1	4520

77882 7590 09/11/2013

Sheppard Mullin Richter & Hampton LLP
12275 El Camino Real, Suite 200
San Diego, CA 92130

EXAMINER	
SAINT CYR, JEAN D	

ART UNIT	PAPER NUMBER
2425	

DATE MAILED: 09/11/2013

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 651 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 651 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 11/231,349	Applicant(s) BERNATH ET AL.	
	Examiner JEAN D. SAINT CYR	Art Unit 2425	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *08/22/2013*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *1, 4-18; 21; 22; 24-43*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov .
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
5. ☐ Examiner's Amendment/Comment
6. ☒ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

Detailed Action

Allowable Subject Matter

Claims 1, 4-18, 21-22, 24-43 are allowed over prior art of record. The following is an examiner's statement of reasons for allowance:

The art of record did not teach or suggest the claim taken as a whole and particular the limitation pertaining to:

" wherein one of the first and second BCN modems is a network controller providing information allowing the admission of other BCN modems to the CCN based on an authorization; wherein one of the other BCN modems transmits an admission request signal to the network controller using an admission area, wherein if a collision occurs in the admission request, the network controller resolves the collision and enables the colliding BCN modem to access the admission area at a different time, and if no collision occurs, the admission is achieved in response to the admission request signal; wherein the network controller transmits a probe signal to a plurality of slave BCN modems through a channel path, the plurality of slave BCN modems determine a set of transmission characteristics of the channel path, each of the plurality of slave BCN modems determines a bit-loaded modulation scheme of the channel path in response to the set of transmission characteristics and informs the bit-loaded modulation scheme to the network controller, the network controller determines a common bit-loaded modulation scheme based on the bit-loaded modulation scheme and broadcasts the

common bit-loaded modulation scheme to the plurality of slave BCN modems; and wherein the BCN provides both best effort capabilities in which short term requests are made and time allocation grants to transmit packets received by a BCN modem, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate" as recited in combination with other features of independent claim 1.

And "wherein the NC is providing information allowing the admission of other BCN modems to the CCN based on an authorization; wherein one of the other BCN modems transmits an admission request signal to the network controller using an admission area, wherein if a collision occurs in the admission request, the network controller resolves the collision and enables the colliding BCN modem to access the admission area at a different time, and if no collision occurs, the admission is achieved in response to the admission request signal; and wherein the network controller transmits a probe signal to a plurality of slave BCN modems through a channel path, the plurality of slave BCN modems determine a set of transmission characteristics of the channel path, each of the plurality of slave BCN modems determines a bit-loaded modulation scheme of the channel path in response to the set of transmission characteristics and informs the bit-loaded modulation scheme to the network controller, the network controller determines a common bit-loaded modulation scheme based on the bit-loaded modulation scheme and broadcasts the common bit-loaded modulation

scheme to the plurality of slave BCN modems" as recited in combination with other features of independent claim 10.

And "provide information allowing the admission of other BCN modems to the CCN based on an authorization; wherein one of the other BCN modems transmits an admission request signal to the controller using an admission area, wherein if a collision occurs in the admission request, the controller resolves the collision and enables the colliding BCN modem to access the admission area at a different time, and if no collision occurs, the admission is achieved in response to the admission request signal; wherein the controller transmits a probe signal to a plurality of slave BCN modems through a channel path, the plurality of slave BCN modems determine a set of transmission characteristics of the channel path, each of the plurality of slave BCN modems determines a bit- loaded modulation scheme of the channel path in response to the set of transmission characteristics and informs the bit-loaded modulation scheme to the controller, the controller determines a common bit-loaded modulation scheme based on the bit-loaded modulation scheme and broadcasts the common bit-loaded modulation scheme to the plurality of slave BCN modems" as recited in combination with other features of independent claim 32.

And "wherein each of the plurality of receiving nodes receives the probe signal through a corresponding channel path, determines transmission characteristics of the corresponding channel path, determines a bit-loading modulation scheme for the

corresponding channel path based on the transmission characteristics, and transmits a response signal to the transmitting node informing the transmitting node of the bit-loading modulation scheme for the corresponding channel path; the transmitting node comparing the plurality of bit-loading modulation schemes to determine a common bit-loading modulation scheme; and the transmitting node transmitting a broadcast signal relaying the common bit-loading modulation scheme to the plurality of receiving nodes" as recited in combination with other features of independent claim 34.

And "wherein the first controller is configured to transmit a probe signal to the plurality of controllers, receive a plurality of response signals comprising a plurality of bit-loading modulation schemes from the plurality of controllers, wherein each of the plurality of controllers is configured to receive the probe signal through a corresponding channel path, determine transmission characteristics of the corresponding channel path, determine a bit-loading modulation scheme for the corresponding channel path based on the transmission characteristics, and transmit a response signal to the first controller informing the first controller of the bit-loading modulation scheme for the corresponding channel path, compare the plurality of bit-loading modulation schemes to determine a common bit-loading modulation scheme, and transmit a broadcast signal relaying the common bit-loading modulation scheme to the plurality of controllers" as recited in combination with other features of independent claim 39.

The dependent claims 4-9, 11-18, 21-22, 24-31; 33, 35-38, 40-43 are allowed because they further limit independent/parents claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Padwekar et al (20060221819) disclose System and method for performing distributed policing.

Dinwiddie et al (6481013) disclose Entertainment and computer coaxial network and method of distributing signals there through.

Emerson et al (20030091067) disclose Computing system and method to select data packet.

Kilger et al (20090217325) disclose HOME NETWORK SYSTEM AND METHOD.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean Duclos Saintcyr whose phone number is 571-270-3224. The examiner can normally reach on M-F 7:30-5:00 PM EST.If attempts to reach the examiner by telephone are not successful, his supervisor, Brian Pendleton, can be reach on 571-272-7527. The fax number for the organization where the application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see htpp://pair-direct.uspto.gov. Should you have questions on access to the private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197(toll free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, dial 800-786-9199(IN USA OR CANADA) or 571-272-1000.

/Jean Duclos Saintcyr /

/Brian T Pendleton/

Supervisory Patent Examiner, Art Unit 2425

Notice of References Cited	Application/Control No. 11/231,349	Applicant(s)/Patent Under Reexamination BERNATH ET AL.	
	Examiner JEAN D. SAINT CYR	Art Unit 2425	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2002/0149706	10-2002	Rosen, John B.	348/794
*	B	US-2009/0217325	08-2009	Kliger et al.	725/78
*	C	US-6,481,013	11-2002	Dinwiddie et al.	725/80
*	D	US-2003/0091067	05-2003	Emerson et al.	370/473
*	E	US-6,052,380	04-2000	Bell, Russell W.	370/445
*	F	US-2006/0221819	10-2006	Padwekar, Ketan A.	370/229
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	Art Unit
	JAMES LEIJA	2423

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
725	78, 80, 109	7/28/2009	JL
709		2/25/2009	JL
370		2/25/2009	JL
Updated	search	05/16/2013	JDS
Updated	search	08/29/2013	JDS

SEARCH NOTES		
Search Notes	Date	Examiner
EAST	7/28/2009	JL
Spoke with Joe Ustaris - CL 725	7/28/2009	JL
Andrew Koenig -CL 725	7/28/2009	JL
update east	1/12/2010	JL
update east	11/11/2010	JL
update east	5/31/2011	JL
update east	12/12/2011	JL
inventor search	09/04/2008	JL
update east	7/9/2012	JL
Updated search	05/16/2013	JDS
Updated search	08/29/2013	JDS

INTERFERENCE SEARCH

US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
Search	above	05/16/2013	JDS
Search	above	08/29/2013	JDS

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	**Art Unit**
	JEAN D SAINT CYR	2425

CPC		
Symbol	**Type**	**Version**

CPC Combination Sets				
Symbol	**Type**	**Set**	**Ranking**	**Version**

/JEAN D SAINT CYR/ Examiner.Art Unit 2425	08/29/2013	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	38	
/BRIAN PENDLETON/ Supervisory Patent Examiner.Art Unit 2425	09/04/2013	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	Claim 1.	Fig.3

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	**Art Unit**
	JEAN D SAINT CYR	2425

US ORIGINAL CLASSIFICATION		INTERNATIONAL CLASSIFICATION												
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED							
725	78	H	0	4	N	7 / 18 (2006.01.01)								
CROSS REFERENCE(S)		H	0	4	N	7 / 173 (2011.01.01)								
		H	0	4	N	7 / 173 (2011.01.01)								
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)	H	0	4	N	7 / 16 (2011.01.01)								
725	119 129 147													

/JEAN D SAINT CYR/ Examiner.Art Unit 2425 (Assistant Examiner)	08/29/2013 (Date)	**Total Claims Allowed:** 38	
/BRIAN PENDLETON/ Supervisory Patent Examiner.Art Unit 2425 (Primary Examiner)	09/04/2013 (Date)	O.G. Print Claim(s) Claim 1.	O.G. Print Figure Fig.3

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	**Art Unit**
	JEAN D SAINT CYR	2425

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	15	17	28	33										
-	2	16	18	29	34										
-	3	-	19	30	35										
2	4	-	20	31	36										
3	5	17	21	32	37										
4	6	18	22	33	38										
5	7	-	23	34	39										
6	8	19	24	35	40										
7	9	20	25	36	41										
8	10	21	26	37	42										
9	11	22	27	38	43										
10	12	23	28												
11	13	24	29												
12	14	25	30												
13	15	26	31												
14	16	27	32												

/JEAN D SAINT CYR/ Examiner.Art Unit 2425	08/29/2013	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	38	
/BRIAN PENDLETON/ Supervisory Patent Examiner.Art Unit 2425	09/04/2013	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	Claim 1.	Fig.3

U.S. Patent and Trademark Office Part of Paper No. 20130829

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	**Art Unit**
	JEAN D SAINT CYR	2425

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	08/29/2013	02/25/2009	07/28/2009	01/12/2010	11/11/2010	05/31/2011	12/12/2011	07/09/2012	05/16/2013
1	1	=	✓	✓	✓	✓	✓	✓	✓	=
-	2	-	✓	✓	-	-	-	-	-	-
-	3	-	✓	✓	✓	-	-	-	-	-
2	4	=	✓	✓	✓	✓	✓	✓	✓	=
3	5	=	✓	✓	✓	✓	✓	✓	✓	=
4	6	=	✓	✓	✓	✓	✓	✓	✓	=
5	7	=	✓	✓	✓	✓	✓	✓	✓	=
6	8	=	✓	✓	✓	✓	✓	✓	✓	=
7	9	=	✓	✓	✓	✓	✓	✓	✓	=
8	10	=	✓	✓	✓	✓	✓	✓	✓	=
9	11	=	✓	✓	✓	✓	✓	✓	✓	=
10	12	=	✓	✓	✓	✓	✓	✓	✓	=
11	13	=	✓	✓	✓	✓	✓	✓	✓	=
12	14	=	✓	✓	✓	✓	✓	✓	✓	=
13	15	=	✓	✓	✓	✓	✓	✓	✓	=
14	16	=	✓	✓	✓	✓	✓	✓	✓	=
15	17	=	✓	✓	✓	✓	✓	✓	✓	=
16	18	=	✓	✓	✓	✓	✓	✓	✓	=
-	19	-	✓	✓	✓	-	-	-	-	-
-	20	-	✓	✓	✓	-	-	-	-	-
17	21	=	✓	✓	✓	✓	✓	✓	✓	=
18	22	=	✓	✓	✓	✓	✓	✓	✓	=
-	23	-	✓	✓	✓	-	-	-	-	-
19	24	=	✓	✓	✓	✓	✓	✓	✓	=
20	25	=	✓	✓	✓	✓	✓	✓	✓	=
21	26	=	✓	✓	✓	✓	✓	✓	✓	=
22	27	=	✓	✓	✓	✓	✓	✓	✓	=
23	28	=	✓	✓	✓	✓	✓	✓	✓	=
24	29	=	✓	✓	✓	✓	✓	✓	✓	=
25	30	=	✓	✓	✓	✓	✓	✓	✓	=
26	31	=	✓	✓	✓	✓	✓	✓	✓	=
27	32	=	✓	✓	✓	✓	✓	✓	✓	=
28	33	=						✓	✓	=
29	34	=								=
30	35	=								=
31	36	=								=

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	**Art Unit**
	JEAN D SAINT CYR	2425

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	08/29/2013	02/25/2009	07/28/2009	01/12/2010	11/11/2010	05/31/2011	12/12/2011	07/09/2012	05/16/2013
32	37	=								=
33	38	=								=
34	39	=								=
35	40	=								=
36	41	=								=
37	42	=								=
38	43	=								=
		=								
		=								
		=								
		=								
		=								

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2	"8085802".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/08/29 13:48
L2	3	"20020136203"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/08/29 13:51
L3	62	"725"/$.ccls. and (broadband near4 coaxial near3 network)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/08/29 13:54
L4	7	3 and (network near4 controller)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/08/29 13:54
L5	0	(broadband near4 coaxial near3 network)same (admission near4 request$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/08/29 13:58
L6	3	(broadband near4 coaxial near3 network)and (admission near4 request$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/08/29 13:58
L7	6	(broadband near4 coaxial near3 network)same (network near4 controller)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/08/29 14:00
L8	92	(network near4 controller)same (admission near4 request$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/08/29 14:01
L9	18	8 and (broadband)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/08/29 14:02
S1	0	11/231349	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/04/23 19:44
S2	50	725/78.ccls. and (broadband near3 network)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/05/16 10:31
S3	10	S2 and (controller near4 network)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/16 10:32

S4	2145	"725"/$.ccls. and (broadband near3 network)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/05/16 10:42
S5	297	S4 and (controller near4 network)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/16 10:42
S6	8	S5 and (mdem near4 admission admit$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/16 10:43
S7	8	S5 and (modem near4 admission admit$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/16 10:43
S8	853	(controller near4 network)same(broadband near3 network)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/05/16 10:49
S9	9	S8 and (mdem near4 admission admit$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/16 10:50
S10	9	S8 and (modem near4 admission admit$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/16 10:50
S11	120	("5014262" | "5463777" | "5604729" | "5701416" | "5790548" | "5854903").PN. OR ("5970064").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/16 10:59
S12	3	(admission near4 request near4 modem)	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/16 11:10
S13	1	"725"/$.ccls. and (common near4 bit near4 modulation)	US-PGPUB; USPAT; USOCR	OR	ON	2013/05/16 11:12
S14	3	10/889975	US-PGPUB; USPAT; USOCR	OR	ON	2013/05/16 11:20
S15	0	(modem near4 admission admit$4)same(common near4 bit near4 modulation)	US-PGPUB; USPAT; USOCR	OR	ON	2013/05/16 11:23
S16	1	(modem near4 admission admit$4)and(common near4 bit near4 modulation)	US-PGPUB; USPAT; USOCR	OR	ON	2013/05/16 11:23
S17	7	(modem near4 admission admit$4)same(common near4 bit)	US-PGPUB; USPAT; USOCR	OR	ON	2013/05/16 11:33
S18	2	"20060221819"	US-PGPUB; USPAT; USOCR	OR	ON	2013/05/16 13:16
S19	2	"20030091067"	US-PGPUB; USPAT; USOCR	OR	ON	2013/05/16 13:18
S20	1	"6481013".pn.	US-PGPUB; USPAT; USOCR	OR	ON	2013/05/16 13:19
S21	2	"20090217325"	US-PGPUB; USPAT; USOCR	OR	ON	2013/05/16 13:24

8/29/2013 2:43:28 PM

C:\ Users\ jsaintcyr\ Documents\ EAST\ Workspaces\ 11231349.wsp

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99**)		
	Application Number	11231349
	Filing Date	2005-09-19
	First Named Inventor	Brett Bernath
	Art Unit	2425
	Examiner Name	SAINT CYR, JEAN D
	Attorney Docket Number	E040004USU1

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
/J.S./	1	6481013	B1	2002-11-12	Dinwiddie et al.	
/J.S./	2	6052380		2000-04-18	Bell	
/J.S./	3	8085802	B1	2011-12-27	Monk et al.	
If you wish to add additional U.S. Patent citation information please click the Add button.						Add

U.S.PATENT APPLICATION PUBLICATIONS						Remove
Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
/J.S./	1	20020149705	A1	2002-10-17	Allen et al.	
/J.S./	2	20090217325	A1	2009-08-27	Kliger et al.	
/J.S./	3	20030091067	A1	2003-05-15	Emerson et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11231349
	Filing Date	2005-09-19
	First Named Inventor	Brett Bernath
	Art Unit	2425
	Examiner Name	SAINT CYR, JEAN D
	Attorney Docket Number	E040004USU1

/J.S./	4	20060221819	A1	2006-10-05	Padwekar	
/J.S./	5	20020136203	A1	2002-09-26	Liva et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		☐

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature	/Jean Saint Cyr/	Date Considered	08/29/2013

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11231349
	Filing Date	2005-09-19
	First Named Inventor	Brett Bernath
	Art Unit	2425
	Examiner Name	SAINT CYR, JEAN D
	Attorney Docket Number	E040004USU1

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Richard Andre Bachand/	Date (YYYY-MM-DD)	2013-08-22
Name/Print	Richard A. Bachand	Registration Number	25,107

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

/Jean Saint Cyr/ 08/29/2013

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	11231349
	Filing Date	2005-09-19
	First Named Inventor	Brett Bernath
	Art Unit	2425
	Examiner Name	SAINT CYR, JEAN D
	Attorney Docket Number	E040004USU1

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6481013	B1	2002-11-12	Dinwiddie et al.	
	2	6052380		2000-04-18	Bell	
	3	8085802	B1	2011-12-27	Monk et al.	
If you wish to add additional U.S. Patent citation information please click the Add button.						Add

U.S.PATENT APPLICATION PUBLICATIONS						Remove
Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20020149705	A1	2002-10-17	Allen et al.	
	2	20090217325	A1	2009-08-27	Kliger et al.	
	3	20030091067	A1	2003-05-15	Emerson et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11231349
	Filing Date	2005-09-19
	First Named Inventor	Brett Bernath
	Art Unit	2425
	Examiner Name	SAINT CYR, JEAN D
	Attorney Docket Number	E040004USU1

	4	20060221819	A1	2006-10-05	Padwekar	
	5	20020136203	A1	2002-09-26	Liva et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		☐

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11231349
	Filing Date	2005-09-19
	First Named Inventor	Brett Bernath
	Art Unit	2425
	Examiner Name	SAINT CYR, JEAN D
	Attorney Docket Number	E040004USU1

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Richard Andre Bachand/	Date (YYYY-MM-DD)	2013-08-22
Name/Print	Richard A. Bachand	Registration Number	25,107

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	11/231,349	Filing Date	2005-09-19	Docket Number (if applicable)	E040004USU1	Art Unit	2425
First Named Inventor	Brett Bernath			Examiner Name	SAINT CYR, JEAN D		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

☐ Other _____

☒ Enclosed

☐ Amendment/Reply

☒ Information Disclosure Statement (IDS)

☐ Affidavit(s)/ Declaration(s)

☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 504613

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Signature of Registered U.S. Patent Practitioner			
Signature	/Richard Andre Bachand/	Date (YYYY-MM-DD)	2013-08-22
Name	Richard A. Bachand	Registration Number	25107

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal					
Application Number:	11231349				
Filing Date:	19-Sep-2005				
Title of Invention:	BROADBAND LOCAL AREA NETWORK				
First Named Inventor/Applicant Name:	Brett Bernath				
Filer:	Richard A. Bachand/Tara Sallee				
Attorney Docket Number:	E040004USU1				
Filed as Large Entity					
Utility under 35 USC 111(a) Filing Fees					
Description		**Fee Code**	**Quantity**	**Amount**	**Sub-Total in USD($)**
Basic Filing:					
Pages:					
Claims:					
Miscellaneous-Filing:					
Petition:					
Patent-Appeals-and-Interference:					
Post-Allowance-and-Post-Issuance:					
Extension-of-Time:					

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
RCE - 2nd and Subsequent Request	1820	1	1700	1700
		Total in USD ($)		**1880**

Electronic Acknowledgement Receipt	
EFS ID:	16663280
Application Number:	11231349
International Application Number:	
Confirmation Number:	4520
Title of Invention:	BROADBAND LOCAL AREA NETWORK
First Named Inventor/Applicant Name:	Brett Bernath
Customer Number:	77882
Filer:	Richard A. Bachand/Tara Sallee
Filer Authorized By:	Richard A. Bachand
Attorney Docket Number:	E040004USU1
Receipt Date:	22-AUG-2013
Filing Date:	19-SEP-2005
Time Stamp:	17:18:00
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$1880
RAM confirmation Number	4372
Deposit Account	504613
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	2013-08-22_IDS_E040004USU1.pdf	614732 be33d6a812182223776d62249231e3e185d0ae82	no	4
Warnings:					
Information:					
2	Request for Continued Examination (RCE)	2013-08-22_RCE_E040004USU1.pdf	697769 541a40a38e0ba6c74e5ff578ea0ac84faa0b7fca	no	3
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	31871 098b03a0b75dd512cb4865870c936abeb6cc3016	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1344372		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/231,349	09/19/2005	Brett Bernath	E040004USU1

CONFIRMATION NO. 4520

77561
Duane Morris LLP (Entropic)
IP Department
30 South 17th Street
Philadelphia, PA 19103-4196

POWER OF ATTORNEY NOTICE

OC00000061375092

Date Mailed: 05/23/2013

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 05/17/2013.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/hchristian/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/231,349	09/19/2005	Brett Bernath	E040004USU1

CONFIRMATION NO. 4520

77862
SONNENSCHEIN NATH & ROSENTHAL LLP
PO BOX 061080
WACKER DRIVE STATION, SEARS TOWER
CHICAGO, IL 60606

POA ACCEPTANCE LETTER

OC00000006137513 4

Date Mailed: 05/23/2013

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 05/17/2013.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/hchristian/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

77862 7590 05/22/2013
SONNENSCHEIN NATH & ROSENTHAL LLP
PO BOX 061080
WACKER DRIVE STATION, SEARS TOWER
CHICAGO, IL 60606

EXAMINER
SAINT CYR, JEAN D

ART UNIT	PAPER NUMBER
2425	

DATE MAILED: 05/22/2013

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/231,349	09/19/2005	Brett Bernath	E040004USU1	4520

TITLE OF INVENTION: BROADBAND LOCAL AREA NETWORK

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1780	$0	$0	$1780	08/22/2013

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

77862 7590 05/22/2013
SONNENSCHEIN NATH & ROSENTHAL LLP
PO BOX 061080
WACKER DRIVE STATION, SEARS TOWER
CHICAGO, IL 60606

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/231,349	09/19/2005	Brett Bernath	E040004USU1	4520

TITLE OF INVENTION: BROADBAND LOCAL AREA NETWORK

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1780	$0	$0	$1780	08/22/2013

EXAMINER	ART UNIT	CLASS-SUBCLASS
SAINT CYR, JEAN D	2425	725-078000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:
- ❑ Issue Fee
- ❑ Publication Fee (No small entity discount permitted)
- ❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ❑ A check is enclosed.
- ❑ Payment by credit card. Form PTO-2038 is attached.
- ❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29	NOTE: Absent a valid certification of Micro Entity Status (see form PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
❑ Applicant asserting small entity status. See 37 CFR 1.27	NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
❑ Applicant changing to regular undiscounted fee status.	NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/231,349	09/19/2005	Brett Bernath	E040004USU1	4520

77862 7590 05/22/2013

SONNENSCHEIN NATH & ROSENTHAL LLP
PO BOX 061080
WACKER DRIVE STATION, SEARS TOWER
CHICAGO, IL 60606

EXAMINER	
SAINT CYR, JEAN D	

ART UNIT	PAPER NUMBER
2425	

DATE MAILED: 05/22/2013

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 651 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 651 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 11/231,349	Applicant(s) BERNATH ET AL.	
	Examiner JEAN D. SAINT CYR	Art Unit 2425	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *05/13/2013*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *1,4-18,21,22 and 24-43*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov .
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

   Interim copies:

   a) ☐ All b) ☐ Some c) ☐ None of the: Interim copies of the priority documents have been received.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
5. ☐ Examiner's Amendment/Comment
6. ☒ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

Detailed Action

Allowable Subject Matter

Claims 1, 4-18, 21-22, 24-43 are allowed over prior art of record. The following is an examiner's statement of reasons for allowance:

The art of record did not teach or suggest the claim taken as a whole and particular the limitation pertaining to:

For claim 1: " wherein one of the first and second BCN modems is a network controller providing information allowing the admission of other BCN modems to the CCN based on an authorization; wherein one of the other BCN modems transmits an admission request signal to the network controller using an admission area, wherein if a collision occurs in the admission request, the network controller resolves the collision and enables the colliding BCN modem to access the admission area at a different time, and if no collision occurs, the admission is achieved in response to the admission request signal; wherein the network controller transmits a probe signal to a plurality of slave BCN modems through a channel path, the plurality of slave BCN modems determine a set of transmission characteristics of the channel path, each of the plurality of slave BCN modems determines a bit-loaded modulation scheme of the channel path in response to the set of transmission characteristics and informs the bit-loaded modulation scheme to the network controller, the network controller determines a common bit-loaded modulation scheme based on the bit-loaded modulation scheme

and broadcasts the common bit-loaded modulation scheme to the plurality of slave BCN modems; and wherein the BCN provides both best effort capabilities in which short term requests are made and time allocation grants to transmit packets received by a BCN modem, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate".

For claim 10 : "wherein the NC is providing information allowing the admission of other BCN modems to the CCN based on an authorization; wherein one of the other BCN modems transmits an admission request signal to the network controller using an admission area, wherein if a collision occurs in the admission request, the network controller resolves the collision and enables the colliding BCN modem to access the admission area at a different time, and if no collision occurs, the admission is achieved in response to the admission request signal; and wherein the network controller transmits a probe signal to a plurality of slave BCN modems through a channel path, the plurality of slave BCN modems determine a set of transmission characteristics of the channel path, each of the plurality of slave BCN modems determines a bit-loaded modulation scheme of the channel path in response to the set of transmission characteristics and informs the bit-loaded modulation scheme to the network controller, the network controller determines a common bit-loaded modulation scheme based on the bit-loaded modulation scheme and broadcasts the common bit-loaded modulation scheme to the plurality of slave BCN modems".

For claim 32: “provide information allowing the admission of other BCN modems to the CCN based on an authorization;

wherein one of the other BCN modems transmits an admission request signal to the controller using an admission area, wherein if a collision occurs in the admission request, the controller resolves the collision and enables the colliding BCN modem to access the admission area at a different time, and if no collision occurs, the admission is achieved in response to the admission request signal;

wherein the controller transmits a probe signal to a plurality of slave BCN modems through a channel path, the plurality of slave BCN modems determine a set of transmission characteristics of the channel path, each of the plurality of slave BCN modems determines a bit- loaded modulation scheme of the channel path in response to the set of transmission characteristics and informs the bit-loaded modulation scheme to the controller, the controller determines a common bit-loaded modulation scheme based on the bit-loaded modulation scheme and broadcasts the common bit-loaded modulation scheme to the plurality of slave BCN modems”.

For claim 34: “wherein each of the plurality of receiving nodes receives the probe signal through a corresponding channel path, determines transmission characteristics of the corresponding channel path, determines a bit-loading modulation scheme for the corresponding channel path based on the transmission characteristics, and transmits a response signal to the transmitting node informing the transmitting node of the bit-loading modulation scheme for the corresponding channel path; the transmitting node

comparing the plurality of bit-loading modulation schemes to determine a common bit-loading modulation scheme; and the transmitting node transmitting a broadcast signal relaying the common bit-loading modulation scheme to the plurality of receiving nodes".

For claim 39 : "wherein the first controller is configured to transmit a probe signal to the plurality of controllers, receive a plurality of response signals comprising a plurality of bit-loading modulation schemes from the plurality of controllers, wherein each of the plurality of controllers is configured to receive the probe signal through a corresponding channel path, determine transmission characteristics of the corresponding channel path, determine a bit-loading modulation scheme for the corresponding channel path based on the transmission characteristics, and transmit a response signal to the first controller informing the first controller of the bit-loading modulation scheme for the corresponding channel path, compare the plurality of bit-loading modulation schemes to determine a common bit-loading modulation scheme, and transmit a broadcast signal relaying the common bit-loading modulation scheme to the plurality of controllers".

But Dinwiddie in view of Bell further in view of Emerson and any of cited references did not teach or suggest, alone or in combination the feature of:

" wherein one of the first and second BCN modems is a network controller providing information allowing the admission of other BCN modems to the CCN based on an

authorization; wherein one of the other BCN modems transmits an admission request signal to the network controller using an admission area, wherein if a collision occurs in the admission request, the network controller resolves the collision and enables the colliding BCN modem to access the admission area at a different time, and if no collision occurs, the admission is achieved in response to the admission request signal; wherein the network controller transmits a probe signal to a plurality of slave BCN modems through a channel path, the plurality of slave BCN modems determine a set of transmission characteristics of the channel path, each of the plurality of slave BCN modems determines a bit-loaded modulation scheme of the channel path in response to the set of transmission characteristics and informs the bit-loaded modulation scheme to the network controller, the network controller determines a common bit-loaded modulation scheme based on the bit-loaded modulation scheme and broadcasts the common bit-loaded modulation scheme to the plurality of slave BCN modems; and wherein the BCN provides both best effort capabilities in which short term requests are made and time allocation grants to transmit packets received by a BCN modem, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate" as recited in combination with other features of independent claim 1.

And "wherein the NC is providing information allowing the admission of other BCN modems to the CCN based on an authorization; wherein one of the other BCN modems transmits an admission request signal to the network controller using an

admission area, wherein if a collision occurs in the admission request, the network controller resolves the collision and enables the colliding BCN modem to access the admission area at a different time, and if no collision occurs, the admission is achieved in response to the admission request signal; and wherein the network controller transmits a probe signal to a plurality of slave BCN modems through a channel path, the plurality of slave BCN modems determine a set of transmission characteristics of the channel path, each of the plurality of slave BCN modems determines a bit-loaded modulation scheme of the channel path in response to the set of transmission characteristics and informs the bit-loaded modulation scheme to the network controller, the network controller determines a common bit-loaded modulation scheme based on the bit-loaded modulation scheme and broadcasts the common bit-loaded modulation scheme to the plurality of slave BCN modems" as recited in combination with other features of independent claim 10.

And "provide information allowing the admission of other BCN modems to the CCN based on an authorization;
wherein one of the other BCN modems transmits an admission request signal to the controller using an admission area, wherein if a collision occurs in the admission request, the controller resolves the collision and enables the colliding BCN modem to access the admission area at a different time, and if no collision occurs, the admission is achieved in response to the admission request signal;
wherein the controller transmits a probe signal to a plurality of slave BCN modems

through a channel path, the plurality of slave BCN modems determine a set of transmission characteristics of the channel path, each of the plurality of slave BCN modems determines a bit- loaded modulation scheme of the channel path in response to the set of transmission characteristics and informs the bit-loaded modulation scheme to the controller, the controller determines a common bit-loaded modulation scheme based on the bit-loaded modulation scheme and broadcasts the common bit-loaded modulation scheme to the plurality of slave BCN modems" as recited in combination with other features of independent claim 32.

And "wherein each of the plurality of receiving nodes receives the probe signal through a corresponding channel path, determines transmission characteristics of the corresponding channel path, determines a bit-loading modulation scheme for the corresponding channel path based on the transmission characteristics, and transmits a response signal to the transmitting node informing the transmitting node of the bit-loading modulation scheme for the corresponding channel path; the transmitting node comparing the plurality of bit-loading modulation schemes to determine a common bit-loading modulation scheme; and the transmitting node transmitting a broadcast signal relaying the common bit-loading modulation scheme to the plurality of receiving nodes" as recited in combination with other features of independent claim 34.

And "wherein the first controller is configured to transmit a probe signal to the plurality of controllers, receive a plurality of response signals comprising a plurality of

bit-loading modulation schemes from the plurality of controllers, wherein each of the plurality of controllers is configured to receive the probe signal through a corresponding channel path, determine transmission characteristics of the corresponding channel path, determine a bit-loading modulation scheme for the corresponding channel path based on the transmission characteristics, and transmit a response signal to the first controller informing the first controller of the bit-loading modulation scheme for the corresponding channel path, compare the plurality of bit-loading modulation schemes to determine a common bit-loading modulation scheme, and transmit a broadcast signal relaying the common bit-loading modulation scheme to the plurality of controllers" as recited in combination with other features of independent claim 39.

The dependent claims 4-9, 11-18, 21-22, 24-31; 33, 35-38, 40-43 are allowed because they further limit independent/parents claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Padwekar et al (20060221819) disclose System and method for performing distributed policing.

Dinwiddie et al (6481013) disclose Entertainment and computer coaxial network and method of distributing signals there through.

Emerson et al (20030091067) disclose Computing system and method to select data packet.

Kilger et al (20090217325) disclose HOME NETWORK SYSTEM AND METHOD.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean Duclos Saintcyr whose phone number is 571-270-3224. The examiner can normally reach on M-F 7:30-5:00 PM EST.If attempts to reach the examiner by telephone are not successful, his supervisor, Brian Pendleton, can be reach on 571-272-7527. The fax number for the organization where the application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see htpp://pair-direct.uspto.gov. Should you have questions on access to the private PAIR system,

contact the Electronic Business Center (EBC) at 866-217-9197(toll free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, dial 800-786-9199(IN USA OR CANADA) or 571-272-1000.

/Jean Duclos Saintcyr /

/Brian T Pendleton/

Supervisory Patent Examiner, Art Unit 2425

Notice of References Cited	Application/Control No. 11/231,349	Applicant(s)/Patent Under Reexamination BERNATH ET AL.	
	Examiner JEAN D. SAINT CYR	Art Unit 2425	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2002/0149705	10-2002	Allen et al.	348/734
*	B	US-2009/0217325	08-2009	Kliger et al.	725/78
*	C	US-6,481,013	11-2002	Dinwiddie et al.	725/80
*	D	US-2003/0091067	05-2003	Emerson et al.	370/473
*	E	US-6,052,380	04-2000	Bell, Russell W.	370/445
*	F	US-2006/0221819	10-2006	Padwekar, Ketan A.	370/229
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	Art Unit
	JAMES LEIJA	2423

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
725	78, 80, 109	7/28/2009	JL
709		2/25/2009	JL
370		2/25/2009	JL
Updated	search	05/16/2013	JDS

SEARCH NOTES		
Search Notes	Date	Examiner
EAST	7/28/2009	JL
Spoke with Joe Ustaris - CL 725	7/28/2009	JL
Andrew Koenig -CL 725	7/28/2009	JL
update east	1/12/2010	JL
update east	11/11/2010	JL
update east	5/31/2011	JL
update east	12/12/2011	JL
inventor search	09/04/2008	JL
update east	7/9/2012	JL
Updated search	05/16/2013	JDS

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

INTERFERENCE SEARCH			
US Class/ CPC Symbol	**US Subclass / CPC Group**	**Date**	**Examiner**
Search	above	05/16/2013	JDS

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	**Art Unit**
	JAMES LEIJA	2423

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	08/19/2008	02/25/2009	07/28/2009	01/12/2010	11/11/2010	05/31/2011	12/12/2011	07/09/2012	05/16/2013
1	1	✓	✓	✓	✓	✓	✓	✓	✓	=
-	2	✓	✓	✓	-	-	-	-	-	-
-	3	✓	✓	✓	✓	-	-	-	-	-
2	4	✓	✓	✓	✓	✓	✓	✓	✓	=
3	5	✓	✓	✓	✓	✓	✓	✓	✓	=
4	6	✓	✓	✓	✓	✓	✓	✓	✓	=
5	7	✓	✓	✓	✓	✓	✓	✓	✓	=
6	8	✓	✓	✓	✓	✓	✓	✓	✓	=
7	9	✓	✓	✓	✓	✓	✓	✓	✓	=
8	10	✓	✓	✓	✓	✓	✓	✓	✓	=
9	11	✓	✓	✓	✓	✓	✓	✓	✓	=
10	12	✓	✓	✓	✓	✓	✓	✓	✓	=
11	13	✓	✓	✓	✓	✓	✓	✓	✓	=
12	14	✓	✓	✓	✓	✓	✓	✓	✓	=
13	15	✓	✓	✓	✓	✓	✓	✓	✓	=
14	16	✓	✓	✓	✓	✓	✓	✓	✓	=
15	17	✓	✓	✓	✓	✓	✓	✓	✓	=
16	18	✓	✓	✓	✓	✓	✓	✓	✓	=
-	19	✓	✓	✓	✓	-	-	-	-	-
-	20	✓	✓	✓	✓	-	-	-	-	-
17	21	✓	✓	✓	✓	✓	✓	✓	✓	=
18	22	✓	✓	✓	✓	✓	✓	✓	✓	=
-	23	✓	✓	✓	✓	-	-	-	-	-
19	24	✓	✓	✓	✓	✓	✓	✓	✓	=
20	25	✓	✓	✓	✓	✓	✓	✓	✓	=
21	26	✓	✓	✓	✓	✓	✓	✓	✓	=
22	27	✓	✓	✓	✓	✓	✓	✓	✓	=
23	28	✓	✓	✓	✓	✓	✓	✓	✓	=
24	29	✓	✓	✓	✓	✓	✓	✓	✓	=
25	30	✓	✓	✓	✓	✓	✓	✓	✓	=
26	31	✓	✓	✓	✓	✓	✓	✓	✓	=
27	32		✓	✓	✓	✓	✓	✓	✓	=
28	33							✓	✓	=
29	34									=
30	35									=
31	36									=

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	**Art Unit**
	JAMES LEIJA	2423

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	08/19/2008	02/25/2009	07/28/2009	01/12/2010	11/11/2010	05/31/2011	12/12/2011	07/09/2012	05/16/2013
32	37									=
33	38									=
34	39									=
35	40									=
36	41									=
37	42									=
38	43									=

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2	"20060221819"	US-PGPUB; USPAT; USOCR	OR	ON	2013/05/16 13:16
L2	2	"20030091067"	US-PGPUB; USPAT; USOCR	OR	ON	2013/05/16 13:18
L3	1	"6481013".pn.	US-PGPUB; USPAT; USOCR	OR	ON	2013/05/16 13:19
L4	2	"20090217325"	US-PGPUB; USPAT; USOCR	OR	ON	2013/05/16 13:24
S1	0	11/231349	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/04/23 19:44
S2	50	725/78.ccls. and (broadband near3 network)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/05/16 10:31
S3	10	S2 and (controller near4 network)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/16 10:32
S4	2145	"725"/$.ccls. and (broadband near3 network)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/05/16 10:42
S5	297	S4 and (controller near4 network)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/16 10:42
S6	8	S5 and (mdem near4 admission admit$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/16 10:43
S7	8	S5 and (modem near4 admission admit$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/16 10:43
S8	853	(controller near4 network)same(broadband near3 network)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/05/16 10:49
S9	9	S8 and (mdem near4 admission admit$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/16 10:50
S10	9	S8 and (modem near4 admission admit$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/16 10:50

S11	120	("5014262" | "5463777" | "5604729" | "5701416" | "5790548" | "5854903").PN. OR ("5970064").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/16 10:59
S12	3	(admission near4 request near4 modem)	US-PGPUB; USPAT; USOCR	OR	OFF	2013/05/16 11:10
S13	1	"725"/$.ccls. and (common near4 bit near4 modulation)	US-PGPUB; USPAT; USOCR	OR	ON	2013/05/16 11:12
S14	3	10/889975	US-PGPUB; USPAT; USOCR	OR	ON	2013/05/16 11:20
S15	0	(modem near4 admission admit$4)same(common near4 bit near4 modulation)	US-PGPUB; USPAT; USOCR	OR	ON	2013/05/16 11:23
S16	1	(modem near4 admission admit$4)and(common near4 bit near4 modulation)	US-PGPUB; USPAT; USOCR	OR	ON	2013/05/16 11:23
S17	7	(modem near4 admission admit$4)same(common near4 bit)	US-PGPUB; USPAT; USOCR	OR	ON	2013/05/16 11:33

5/16/2013 2:00:44 PM
C:\Users\jsaintcyr\Documents\EAST\Workspaces\11231349.wsp

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	**Art Unit**
	JEAN D SAINT CYR	2425

CPC		
Symbol	**Type**	**Version**

CPC Combination Sets				
Symbol	**Type**	**Set**	**Ranking**	**Version**

US ORIGINAL CLASSIFICATION		INTERNATIONAL CLASSIFICATION									
CLASS	**SUBCLASS**	**CLAIMED**					**NON-CLAIMED**				
725	78	H	0	4	N	7 / 18 (2006.01.01)					
CROSS REFERENCE(S)		H	0	4	N	7 / 173 (2011.01.01)					
		H	0	4	N	7 / 173 (2011.01.01)					
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**										
725	119 129 147										

/JEAN D SAINT CYR/ Examiner.Art Unit 2425	05/16/2013	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	38	
/BRIAN PENDLETON/ Supervisory Patent Examiner.Art Unit 2425	05/20/2013	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	Claim 1.	Fig.3

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	**Art Unit**
	JEAN D SAINT CYR	2425

/JEAN D SAINT CYR/ Examiner.Art Unit 2425	05/16/2013	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	38	
/BRIAN PENDLETON/ Supervisory Patent Examiner.Art Unit 2425	05/20/2013	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	Claim 1.	Fig.3

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	**Art Unit**
	JEAN D SAINT CYR	2425

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	15	17	28	33										
-	2	16	18	29	34										
-	3	-	19	30	35										
2	4	-	20	31	36										
3	5	17	21	32	37										
4	6	18	22	33	38										
5	7	-	23	34	39										
6	8	19	24	35	40										
7	9	20	25	36	41										
8	10	21	26	37	42										
9	11	22	27	38	43										
10	12	23	28												
11	13	24	29												
12	14	25	30												
13	15	26	31												
14	16	27	32												

/JEAN D SAINT CYR/ Examiner.Art Unit 2425	05/16/2013	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	38	
/BRIAN PENDLETON/ Supervisory Patent Examiner.Art Unit 2425	05/20/2013	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	Claim 1.	Fig.3

Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination	
	11/231,349	BERNATH ET AL.	

Document Code - DISQ	Internal Document – DO NOT MAIL

TERMINAL DISCLAIMER	☒ APPROVED	☐ DISAPPROVED
Date Filed : 05/17/13	This patent is subject to a Terminal Disclaimer	

Approved/Disapproved by:

Angie Walker

U.S. Patent and Trademark Office

PTO/SB/80 (11-03)
Approved for use through 11/30/2011. OMB 0651-0035
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(b).

I hereby appoint:

☑ Practitioners associated with the Customer Number: 77862

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(b) to:

☑ The address associated with Customer Number: 77862

OR

☐ Firm or Individual Name			
Address			
City		State	Zip
Country			
Telephone		Email	

Assignee Name and Address:

Entropic Communications, Inc.
6290 Sequence Drive
San Diego, CA 92121

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee.

Signature		Date	5-12-08
Name	Bruce W. Greenhaus Esq.	Telephone	
Title	V.P., Chief Patent Counsel		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/96 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Entropic Communications, Inc.

Application No./Patent No.: 11/231,349 Filed/Issue Date: September 19, 2005

Titled: BROADBAND LOCAL AREA NETWORK

Entropic Communications, Inc. , a Corporation

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.

states that it is:

1. [X] the assignee of the entire right, title, and interest in;

2. [ ] an assignee of less than the entire right, title, and interest in (The extent (by percentage) of its ownership interest is _____ %); or

3. [ ] the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made) the patent application/patent identified above, by virtue of either:

A. [X] An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 018175, Frame 0650, or for which a copy thereof is attached.

OR

B. [ ] A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows.

1. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____ or for which a copy thereof is attached.

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____ or for which a copy thereof is attached.

[ ] Additional documents in the chain of title are listed on a supplemental sheet(s).

[ ] As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

_____ May 17, 2013

Signature Date

Bruce W. Greenhaus V.P., Chief Patent Counsel

Printed or Typed Name Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt	
EFS ID:	15804922
Application Number:	11231349
International Application Number:	
Confirmation Number:	4520
Title of Invention:	Broadband local area network
First Named Inventor/Applicant Name:	Brett Bernath
Customer Number:	77561
Filer:	Daniel N. Yannuzzi/Linda Spirra
Filer Authorized By:	Daniel N. Yannuzzi
Attorney Docket Number:	E040004USU1
Receipt Date:	17-MAY-2013
Filing Date:	19-SEP-2005
Time Stamp:	13:39:46
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		171712-POA-373.pdf	201121 426fd6a567b574e63c1e95892163b89ae8597704	yes	2

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Power of Attorney	1	1
	Assignee showing of ownership per 37 CFR 3.73.	2	2

Warnings:	
The page size in the PDF is too large. The pages should be 8.5 x 11 or A4. If this PDF is submitted, the pages will be resized upon entry into the Image File Wrapper and may affect subsequent processing	
Information:	
Total Files Size (in bytes):	201121

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/25 (08-11)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT	Docket Number (Optional) 05JM-171712 (E040004USU1)

In re Application of: Brett Bernath

Application No.: 11/231,349

Filed: September 19, 2005

For: BROADBAND LOCAL AREA NETWORK

The owner*, Entropic Communications, Inc., of 100 percent interest in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of **prior patent** No. 7,889,759 as the term of said **prior patent** is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the **prior patent** are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the **prior patent**, "as the term of said **prior patent** is presently shortened by any terminal disclaimer," in the event that said **prior patent** later:

expires for failure to pay a maintenance fee;
is held unenforceable;
is found invalid by a court of competent jurisdiction;
is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
has all claims canceled by a reexamination certificate;
is reissued; or
is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

Check either box 1 or 2 below, if appropriate.

1. ☐ For submissions on behalf of a business/organization (e.g., corporation, partnership, university, government agency, etc.), the undersigned is empowered to act on behalf of the business/organization.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

2. ☑ The undersigned is an attorney or agent of record. Reg. No. 36,727

/Daniel N. Yannuzzi/ — Signature
May 17, 2013 — Date

Daniel N. Yannuzzi — Typed or printed name

(858) 720-8900 — Telephone Number

☑ Terminal disclaimer fee under 37 CFR 1.20(d) included.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner). Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

This collection of information is required by 37 CFR 1.321. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt	
EFS ID:	15810466
Application Number:	11231349
International Application Number:	
Confirmation Number:	4520
Title of Invention:	Broadband local area network
First Named Inventor/Applicant Name:	Brett Bernath
Customer Number:	77561
Filer:	Daniel N. Yannuzzi/Linda Spirra
Filer Authorized By:	Daniel N. Yannuzzi
Attorney Docket Number:	E040004USU1
Receipt Date:	17-MAY-2013
Filing Date:	19-SEP-2005
Time Stamp:	18:01:24
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Terminal Disclaimer Filed	171712-TD.pdf	206304 506fc97e58be6699582bd39f4536b5974a85d0e4	no	1

Warnings:
Information:

Total Files Size (in bytes):	206304

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination	
	11/231,349	BERNATH ET AL.	

Document Code - DISQ	Internal Document – DO NOT MAIL

TERMINAL DISCLAIMER	☐ APPROVED	☒ DISAPPROVED
Date Filed : 05/14/13	**This patent is subject to a Terminal Disclaimer**	

Approved/Disapproved by:

The person who signed the Td does not have POA, and thus not attny of record, NOR listed under PA submitted earlier in case, see FP 14.29.01 and 14.30.

Also resubmit Td with these papers, NO FEES are required.

Angie Walker

U.S. Patent and Trademark Office

PTO/SB/26 (08-11)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT	Docket Number (Optional) 05JM-171712 (E040004USU1)

In re Application of: Brett Bernath

Application No.: 11/231,349

Filed: September 19, 2005

For: BROADBAND LOCAL AREA NETWORK

The owner*, Entropic Communications, Inc., of 100 percent interest in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of **prior patent** No. 7,889,759 as the term of said **prior patent** is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the **prior patent** are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the **prior patent**, "as the term of said **prior patent** is presently shortened by any terminal disclaimer," in the event that said **prior patent** later:

expires for failure to pay a maintenance fee;
is held unenforceable;
is found invalid by a court of competent jurisdiction;
is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
has all claims canceled by a reexamination certificate;
is reissued; or
is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

Check either box 1 or 2 below, if appropriate.

1. ☐ For submissions on behalf of a business/organization (e.g., corporation, partnership, university, government agency, etc.), the undersigned is empowered to act on behalf of the business/organization.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

2. ☑ The undersigned is an attorney or agent of record. Reg. No. 36,727

/Daniel N. Yannuzzi/ — Signature
May 14, 2013 — Date

Daniel N. Yannuzzi — Typed or printed name

(858) 720-8900 — Telephone Number

☑ Terminal disclaimer fee under 37 CFR 1.20(d) included.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).
Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

This collection of information is required by 37 CFR 1.321. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974** (**P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal					
Application Number:	11231349				
Filing Date:	19-Sep-2005				
Title of Invention:	Broadband local area network				
First Named Inventor/Applicant Name:	Brett Bernath				
Filer:	Daniel N. Yannuzzi/Cynthia Stroesser				
Attorney Docket Number:	E040004USU1				
Filed as Small Entity					
Utility under 35 USC 111(a) Filing Fees					
Description		**Fee Code**	**Quantity**	**Amount**	**Sub-Total in USD($)**
Basic Filing:					
Pages:					
Claims:					
Miscellaneous-Filing:					
Petition:					
Patent-Appeals-and-Interference:					
Post-Allowance-and-Post-Issuance:					
Extension-of-Time:					

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Statutory or Terminal Disclaimer	1814	1	160	160
		Total in USD ($)		**160**

Electronic Acknowledgement Receipt	
EFS ID:	15770684
Application Number:	11231349
International Application Number:	
Confirmation Number:	4520
Title of Invention:	Broadband local area network
First Named Inventor/Applicant Name:	Brett Bernath
Customer Number:	77561
Filer:	Daniel N. Yannuzzi/Cynthia Stroesser
Filer Authorized By:	Daniel N. Yannuzzi
Attorney Docket Number:	E040004USU1
Receipt Date:	14-MAY-2013
Filing Date:	19-SEP-2005
Time Stamp:	13:52:42
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$160
RAM confirmation Number	119
Deposit Account	504562
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Terminal Disclaimer Filed	171712_TD.pdf	374319 1e942303a8da69161fe88bf044a6828ae3c53126	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	29854 1cf8a72262406dd027aba4183946573c64b82f9d	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	404173		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application	:	11/231,349	Confirmation No. 4520
Applicant	:	Brett Bernath	
Filed	:	19-Sep-2005	
TC/A.U.	:	2423	
Examiner	:	James Leija	
For	:	A BROADBAND LOCAL AREA NETWORK	
Docket No.	:	05JM-171712	

REPLY UNDER 37 C.F.R. § 1.103

Mailstop: Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

INTRODUCTORY COMMENTS

Applicant respectfully submits this supplemental amendment for consideration and requests entry of the amendment.

Amendments to the claims begin on page 2 of this paper.

Remarks begin on page 12 of this paper.

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application:

1. (Currently Amended) A Broadband Coaxial Network ("BCN"), comprising:

a first BCN modem in signal communication with a coaxial cable network ("CCN"), the first BCN modem including a first controller; and

a second BCN modem in signal communication with the CCN including a second controller,

wherein each of the first and second controllers is configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem and to adjust transmission power and bit loading over the at least one respective communication link based on a result of the probe;

wherein one of the first and second BCN modems is a network controller ~~configured to coordinate~~ providing information allowing the admission of other BCN modems to the CCN ~~without disrupting data transmission in the CCN~~ based on an authorization;

wherein one of the other BCN modems transmits an admission request signal to the network controller using an admission area, wherein if a collision occurs in the admission request, the network controller resolves the collision and enables the colliding BCN modem to access the admission area at a different time, and if no collision occurs, the admission is achieved in response to the admission request signal;

wherein the network controller transmits a probe signal to a plurality of slave BCN modems through a channel path, the plurality of slave BCN modems determine a set of transmission characteristics of the channel path, each of the plurality of slave BCN modems determines a bit-loaded modulation scheme of the channel path in response to the set of transmission characteristics and informs the bit-loaded modulation scheme to the network controller, the network controller determines a common bit-loaded modulation scheme based on the bit-loaded modulation scheme and broadcasts the common bit-loaded modulation scheme to the plurality of slave BCN modems; and

wherein the BCN provides both best effort capabilities in which short term requests are made and time allocation grants to transmit packets received by a BCN modem, and reserved

communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate.

2-3. (Canceled)

4. (Previously Presented) The BCN of claim 1, wherein the second controller is configured to detect a control signal that identifies that the network controller is coupled to the CCN.

5. (Original) The BCN of claim 1, wherein the signal communication occurs between the BCN modems that are located within a building.

6. (Original) The BCN of claim 5, wherein the building is a single family home.

7. (Original) The BCN of claim 5 wherein the building is a multi-unit dwelling unit.

8. (Previously Presented) The BCN of claim 1, wherein the signal communication occurs via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency (RF) channels.

9. (Original) The BCN network of claim 1, wherein the signal communication carries encrypted data between the first BCN modem and the other BCN modem.

10. (Currently Amended) A Broadband Coaxial Network ("BCN") for communicating on an in-building coaxial cable network ("CCN"), comprising:

a first BCN modem connected to a coaxial cable network ("CCN") and included in a plurality of BCN modems in the BCN network, the first BCN modem including a controller having communication links to ones of the plurality of BCN modems and configured to manage data transmission between each of the BCN modems in the BCN network; and

another of the plurality of BCN modems connected to the CCN and capable of signal communication with the first BCN modem including a second controller having communication links to ones of the plurality of BCN modems,

wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading;

wherein the first controller establishes the first BCN modem as a network controller (NC) upon connection to the CCN, the network controller configured to coordinate the assignment of time slots during which data transmission between each of the BCN modems connected to the CCN occur, the BCN provides both best effort capabilities in which short term requests are made by at least one BCN modem and time allocation grants to transmit packets are provided by the first BCN modem, and reserved communications capabilities in which long term requests are made by at least one BCN modem and a specific allocation is granted for a certain data rate by the first BCN modem; ~~and~~

wherein the NC is ~~configured to coordinate~~ providing information allowing the admission of other BCN modems to the CCN ~~without disrupting data transmission between the plurality of BCN modems~~ based on an authorization;

wherein one of the other BCN modems transmits an admission request signal to the network controller using an admission area, wherein if a collision occurs in the admission request, the network controller resolves the collision and enables the colliding BCN modem to access the admission area at a different time, and if no collision occurs, the admission is achieved in response to the admission request signal; and

wherein the network controller transmits a probe signal to a plurality of slave BCN modems through a channel path, the plurality of slave BCN modems determine a set of transmission characteristics of the channel path, each of the plurality of slave BCN modems determines a bit-loaded modulation scheme of the channel path in response to the set of transmission characteristics and informs the bit-loaded modulation scheme to the network controller, the network controller determines a common bit-loaded modulation scheme based on the bit-loaded modulation scheme and broadcasts the common bit-loaded modulation scheme to the plurality of slave BCN modems.

11. (Previously Presented) The BCN of claim 10, wherein the first BCN modem employs adaptive communication techniques that adapt to the characteristics of a coaxial channel between the first BCN modem and the other BCN modem.

12. (Previously Presented) The BCN of claim 10, wherein the first BCN modem is directly in signal communication with the other BCN modem across the CCN.

13. (Original) The BCN of claim 12 wherein the CCN is a type of network having an architectural configuration selected from a group consisting of a star configuration and a mesh configuration and a combination of these configurations, in a TDMA, TDD access fashion, and the type of network utilizes at least one frequency channel.

14. (Previously Presented) The BCN of claim 11, wherein the adaptive communication techniques includes utilization of the adaptive communication techniques in both transmitting processing and receiving processing of data.

15. (Original) The BCN of claim 14, wherein the adaptive communication techniques utilize pre-coding for transmitting processing.

16. (Original) The BCN of claim 14, wherein the adaptive communication techniques utilize adaptive equalization for receiving processing.

17. (Original) The BCN of claim 14, wherein the adaptive communication techniques include pre-coding for transmitting processing based on known or learned channel response.

18. (Original) The BCN of claim 14, wherein additional signal processing techniques are used which are selected from a group consisting of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes.

19-20. (Canceled)

21. (Previously Presented) The BCN of claim 10, wherein the NC includes a configuration selected from the group consisting of:

a configuration that enables every BCN modem to act as a NC:

a configuration that utilizes a frequency plan;

a configuration that allows a new BCN modem admission to the BCN Network;

a configuration that allows a new BCN modem to communicate with another BCN modem to characterize the channel response between them and determine a bit loading in either direction; and

a configuration that allows each BCN modem in the network to request and be granted a transmission opportunity without a transmission conflict.

22. (Original) The BCN of claim 21, wherein the communications services provided by the BCN include BCN wide transmission priorities.

23. (Canceled)

24. (Previously Presented) The BCN of claim 10, wherein the BCN modem provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of:

Ethernet,

IEEE 1394,

Universal Serial Bus ("USB"); and

MPEG-TS.

25. (Original) The BCN of claim 11, wherein the BCN modem is embedded as a part of a device selected from the group consisting of:

a set-top box ("STB");

a Personal Computer (PC);

an IP STB;

a Media Center box;

a Media Extender box;
a DVD player;
a cable modem;
a personal video recorder ("PVR");
a TV set;
a networking device;
a switch/router;
a bridge/Gateway;
a video game console;
a wireless access point (WAP); and
a network attached storage.

26. (Previously Presented) The BCN of claim 11, wherein the BCN modem is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB.

27. (Original) The BCN of claim 25, wherein the BCN modem utilizes the PCI bus structure.

28. (Original) The BCN of claim 27, wherein the BCN modem utilizes another host device.

29. (Original) The BCN of claim 28, wherein the host device is either a bridging host device or a switching host device.

30. (Original) The BCN of claim 10, wherein an at least one TDMA frequency channel used by the BCN network is in one or more of the following frequency bands:
above 860 MHz;
between 860 MHz and 950 MHz; and
below 50 MHz.

31. (Original) The BCN of claim 10, wherein the CCN network is one of the following:
coaxial cables that have been installed for the carriage of satellite signals; and
coaxial cables for video distribution.

32. (Currently Amended) A network device, comprising:

a communication interface configured to connect to a broadband coaxial network ("BCN"); and

a controller in signal communication with the communication interface, the controller configured to:

periodically probe a communication link to another network device to determine a characteristic of the communication link;

use orthogonal frequency division multiplexing and bit-loading to adjust transmissions over each communication link based in part on the probe;

manage data transmission between each network device connected to the BCN by assigning time slots during which data transmission between each of the network devices occur;

provide both best effort capabilities in which short term requests are made by at least one BCN modem and time allocation grants to transmit packets are provided by the controller, and reserved communications capabilities in which long term requests are made by at least one BCN modem and a specific allocation is granted for a certain data rate by the controller; and

~~coordinate~~ provide information allowing the admission of other BCN modems to the CCN ~~without disrupting data transmission in the CCN~~ based on an authorization;

wherein one of the other BCN modems transmits an admission request signal to the controller using an admission area, wherein if a collision occurs in the admission request, the controller resolves the collision and enables the colliding BCN modem to access the admission area at a different time, and if no collision occurs, the admission is achieved in response to the admission request signal;

wherein the controller transmits a probe signal to a plurality of slave BCN modems through a channel path, the plurality of slave BCN modems determine a set of transmission characteristics of the channel path, each of the plurality of slave BCN modems determines a bit-loaded modulation scheme of the channel path in response to the set of transmission characteristics and informs the bit-loaded modulation scheme to the controller, the controller determines a common bit-loaded modulation scheme based on the bit-loaded modulation scheme

and broadcasts the common bit-loaded modulation scheme to the plurality of slave BCN modems;.

33. (Previously Presented) The BCN of claim 1, wherein the network controller is configured to periodically broadcast a packet of a first type to each BCN modem connected to the CCN using a lower order modulation than an order of modulation used by BCN modems to transmit packets of a second type directly between each other.

34. (Previously Presented) A broadcasting method within a Broadband Coaxial Network ("BCN"), comprising:
a transmitting node transmitting a probe signal to a plurality of receiving nodes;
the transmitting node receiving a plurality of response signals comprising a plurality of bit-loading modulation schemes from the plurality of receiving nodes, wherein each of the plurality of receiving nodes
receives the probe signal through a corresponding channel path,
determines transmission characteristics of the corresponding channel path,
determines a bit-loading modulation scheme for the corresponding channel path based on the transmission characteristics, and
transmits a response signal to the transmitting node informing the transmitting node of the bit-loading modulation scheme for the corresponding channel path;
the transmitting node comparing the plurality of bit-loading modulation schemes to determine a common bit-loading modulation scheme; and
the transmitting node transmitting a broadcast signal relaying the common bit-loading modulation scheme to the plurality of receiving nodes.

35. (Previously Presented) The broadcasting method within the BCN of claim 34, wherein the broadcast signal comprises handshake data.

36. (Previously Presented) The broadcasting method within the BCN of claim 34, wherein the broadcast signal is a communication message comprising video data, music data, or voice data.

37. (Previously Presented) The broadcasting method within the BCN of claim 34, wherein each node of the BCN determines a respective common bit-loading modulation scheme for broadcasting to the other nodes of the BCN.

38. (Previously Presented) The broadcasting method within the BCN of claim 34, further comprising the transmitting node broadcasting a signal based on the common bit-loading modulation scheme to the plurality of receiving nodes simultaneously.

39. (Previously Presented) A Broadband Coaxial Network ("BCN") comprising
a first BCN modem comprising a first controller; and
a plurality of BCN modems comprising a plurality of controllers;
wherein the first controller is configured to
transmit a probe signal to the plurality of controllers,
receive a plurality of response signals comprising a plurality of bit-loading modulation schemes from the plurality of controllers, wherein each of the plurality of controllers is configured to
receive the probe signal through a corresponding channel path,
determine transmission characteristics of the corresponding channel path,
determine a bit-loading modulation scheme for the corresponding channel path based on the transmission characteristics, and
transmit a response signal to the first controller informing the first controller of the bit-loading modulation scheme for the corresponding channel path,
compare the plurality of bit-loading modulation schemes to determine a common bit-loading modulation scheme, and
transmit a broadcast signal relaying the common bit-loading modulation scheme to the plurality of controllers.

40. (Previously Presented) The BCN of claim 39, wherein the broadcast signal comprises handshake data.

41. (Previously Presented) The BCN of claim 39, wherein the broadcast signal is a communication message comprising video data, music data, or voice data.

42. (Previously Presented) The BCN of claim 39, wherein each controller of the plurality of controllers determines a respective common bit-loading modulation scheme for broadcasting to the other controllers of the plurality of controllers and the first controller.

43. (Previously Presented) The BCN of claim 39, wherein the first controller is further configured to broadcast a signal based on the common bit-loading modulation scheme to the plurality of controllers simultaneously.

REMARKS

Applicant thanks the Examiner Saint-Cyr for calling the Applicant and for indicating the allowable subject matter. Applicant amends the independent claims 1, 10, and 32 to incorporate the substance of the Examiner's suggestion. Applicant respectfully submits the amendments to claims contain no new matter and requests entry of the amendments.

CONCLUSION

The foregoing amendments should place this application in condition for allowance. Timely issuance is respectfully requested. If any matters remain outstanding after consideration of this Amendment that the Examiner believes might be expedited by a telephone conference with Applicant's representative, the Examiner is respectfully requested to call the undersigned attorney at the number indicated below.

Any fees due in connection with the filing of this Amendment should be charged to Deposit Account No. 50-4562 referencing docket 05JM-171712. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: May 13, 2013

Respectfully submitted,

SHEPPARD, MULLIN, RICHTER & HAMPTON LLP

By: /Qi Qi/
Qi Qi
Registration No. 68,515

SHEPPARD MULLIN RICHTER & HAMPTON LLP
12275 El Camino Real, Suite 200
San Diego, California 92130
Telephone: (858) 720-8900
Facsimile: (858) 509-3691

Electronic Acknowledgement Receipt	
EFS ID:	15765478
Application Number:	11231349
International Application Number:	
Confirmation Number:	4520
Title of Invention:	Broadband local area network
First Named Inventor/Applicant Name:	Brett Bernath
Customer Number:	77561
Filer:	Daniel N. Yannuzzi/Cynthia Stroesser
Filer Authorized By:	Daniel N. Yannuzzi
Attorney Docket Number:	E040004USU1
Receipt Date:	13-MAY-2013
Filing Date:	19-SEP-2005
Time Stamp:	20:55:51
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		171712_SuppAmend.pdf	64171 c11cabd2cbb01117473de3d084c747d8dff01570	yes	13

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Supplemental Response or Supplemental Amendment	1	1
	Claims	2	11
	Applicant Arguments/Remarks Made in an Amendment	12	13
Warnings:			
Information:			
	Total Files Size (in bytes):	64171	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 11/231,349	Filing Date 09/19/2005	☐ To be Mailed

ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 05/13/2013

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 38	Minus	** 38	= 0	X $80 =	0
Independent (37 CFR 1.16(h))	* 5	Minus	***5	= 0	X $420 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/MARY PEOPLES/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	11/231,349	Filing Date	2005-09-19	Docket Number (if applicable)	05JM-171712	Art Unit	2423
First Named Inventor	Brett Bernath			Examiner Name	James Leija		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☒ Amendment/Reply
- ☐ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

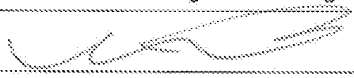
The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.
☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 504562

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature
☐ Applicant Signature

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Signature of Registered U.S. Patent Practitioner			
Signature		Date (YYYY-MM-DD)	2012-10-18
Name	Qi Qi	Registration Number	58515

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application	:	11/231,349	Confirmation No. 4520
Applicant	:	Brett Bernath	
Filed	:	19-Sep-2005	
TC/A.U.	:	2423	
Examiner	:	James Leija	
For	:	A BROADBAND LOCAL AREA NETWORK	
Docket No.	:	05JM-171712	

AMENDMENTS AND REPLY UNDER 37 C.F.R. § 1.114

Mailstop: RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

INTRODUCTORY COMMENTS

This is in response to the final office action, dated July 18, 2012. Applicant submits the following Request for Continued Examination (RCE) and response. After careful consideration of the grounds for rejections, Applicant respectfully requests that the Examiner reconsider the rejections in view of the discussion submitted.

Amendment to the claims begins on page 2 of this paper.

Remarks begin on page 10 of this paper.

AMENDMENT TO THE CLAIMS

1. (Currently Amended) A Broadband Coaxial Network ("BCN"), comprising:

a first BCN modem in signal communication with a coaxial cable network ("CCN"), the first BCN modem including a first controller; and

a second BCN modem in signal communication with the CCN including a second controller,

wherein each of the first and second controllers [[are]] is configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem and to adjust transmission power and bit loading over the at least one respective communication link based on a result of the probe;

wherein one of the first and second controllers is a network controller configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN; and

wherein the BCN provides both best effort capabilities in which short term requests are made and time allocation grants to transmit packets received by a BCN modem, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate.

2-3. (Canceled)

4. (Previously Presented) The BCN of claim 1, wherein the second controller is configured to detect a control signal that identifies that the network controller is coupled to the CCN.

5. (Original) The BCN of claim 1, wherein the signal communication occurs between the BCN modems that are located within a building.

6. (Original) The BCN of claim 5, wherein the building is a single family home.

7. (Original) The BCN of claim 5 wherein the building is a multi-unit dwelling unit.

8. (Previously Presented) The BCN of claim 1, wherein the signal communication occurs via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency (RF) channels.

9. (Original) The BCN network of claim 1, wherein the signal communication carries encrypted data between the first BCN modem and the other BCN modem.

10. (Previously Presented) A Broadband Coaxial Network ("BCN") for communicating on an in-building coaxial cable network ("CCN"), comprising:

a first BCN modem connected to a coaxial cable network ("CCN") and included in a plurality of BCN modems in the BCN network, the first BCN modem including a controller having communication links to ones of the plurality of BCN modems and configured to manage data transmission between each of the BCN modems in the BCN network; and

another of the plurality of BCN modems connected to the CCN and capable of signal communication with the first BCN modem including a second controller having communication links to ones of the plurality of BCN modems,

wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading;

wherein the first controller establishes the first BCN modem as a network controller (NC) upon connection to the CCN, the network controller configured to coordinate the assignment of time slots during which data transmission between each of the BCN modems connected to the CCN occur, the BCN provides both best effort capabilities in which short term requests are made by at least one BCN modem and time allocation grants to transmit packets are provided by the first BCN modem, and reserved communications capabilities in which long term requests are made by at least one BCN modem and a specific allocation is granted for a certain data rate by the first BCN modem; and

wherein the NC is configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission between the plurality of BCN modems.

11. (Previously Presented) The BCN of claim 10, wherein the first BCN modem employs adaptive communication techniques that adapt to the characteristics of a coaxial channel between the first BCN modem and the other BCN modem.

12. (Previously Presented) The BCN of claim 10, wherein the first BCN modem is directly in signal communication with the other BCN modem across the CCN.

13. (Original) The BCN of claim 12 wherein the CCN is a type of network having an architectural configuration selected from a group consisting of a star configuration and a mesh configuration and a combination of these configurations, in a TDMA, TDD access fashion, and the type of network utilizes at least one frequency channel.

14. (Previously Presented) The BCN of claim 11, wherein the adaptive communication techniques includes utilization of the adaptive communication techniques in both transmitting processing and receiving processing of data.

15. (Original) The BCN of claim 14, wherein the adaptive communication techniques utilize pre-coding for transmitting processing.

16. (Original) The BCN of claim 14, wherein the adaptive communication techniques utilize adaptive equalization for receiving processing.

17. (Original) The BCN of claim 14, wherein the adaptive communication techniques include pre-coding for transmitting processing based on known or learned channel response.

18. (Original) The BCN of claim 14, wherein additional signal processing techniques are used which are selected from a group consisting of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes.

19-20. (Canceled)

21. (Previously Presented) The BCN of claim 10, wherein the NC includes a configuration selected from the group consisting of:

a configuration that enables every BCN modem to act as a NC;

a configuration that utilizes a frequency plan;

a configuration that allows a new BCN modem admission to the BCN Network;

a configuration that allows a new BCN modem to communicate with another BCN modem to characterize the channel response between them and determine a bit loading in either direction; and

a configuration that allows each BCN modem in the network to request and be granted a transmission opportunity without a transmission conflict.

22. (Original) The BCN of claim 21, wherein the communications services provided by the BCN include BCN wide transmission priorities.

23. (Canceled)

24. (Previously Presented) The BCN of claim 10, wherein the BCN modem provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of:

Ethernet,

IEEE 1394,

Universal Serial Bus ("USB"); and

MPEG-TS.

25. (Original) The BCN of claim 11, wherein the BCN modem is embedded as a part of a device selected from the group consisting of:

a set-top box ("STB");

a Personal Computer (PC);

an IP STB;

a Media Center box;

a Media Extender box;

a DVD player;

a cable modem;

a personal video recorder ("PVR");

a TV set;

a networking device;

a switch/router;

a bridge/Gateway;

a video game console;

a wireless access point (WAP); and

a network attached storage.

26. (Previously Presented) The BCN of claim 11, wherein the BCN modem is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB.

27. (Original) The BCN of claim 25, wherein the BCN modem utilizes the PCI bus structure.

28. (Original) The BCN of claim 27, wherein the BCN modem utilizes another host device.

29. (Original) The BCN of claim 28, wherein the host device is either a bridging host device or a switching host device.

30. (Original) The BCN of claim 10, wherein an at least one TDMA frequency channel used by the BCN network is in one or more of the following frequency bands:
above 860 MHz;
between 860 MHz and 950 MHz; and
below 50 MHz.

31. (Original) The BCN of claim 10, wherein the CCN network is one of the following:
coaxial cables that have been installed for the carriage of satellite signals; and
coaxial cables for video distribution.

32. (Previously Presented) A network device, comprising:

a communication interface configured to connect to a broadband coaxial network ("BCN"); and

a controller in signal communication with the communication interface, the controller configured to:

periodically probe a communication link to another network device to determine a characteristic of the communication link;

use orthogonal frequency division multiplexing and bit-loading to adjust transmissions over each communication link based in part on the probe;

manage data transmission between each network device connected to the BCN by assigning time slots during which data transmission between each of the network devices occur;

provide both best effort capabilities in which short term requests are made by at least one BCN modem and time allocation grants to transmit packets are provided by the controller, and reserved communications capabilities in which long term requests are made by at least one BCN modem and a specific allocation is granted for a certain data rate by the controller; and

coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN.

33. (Previously Presented) The BCN of claim 1, wherein the network controller is configured to periodically broadcast a packet of a first type to each BCN modem connected to the CCN using a lower order modulation than an order of modulation used by BCN modems to transmit packets of a second type directly between each other.

34. (New) A broadcasting method within a Broadband Coaxial Network ("BCN"), comprising:

a transmitting node transmitting a probe signal to a plurality of receiving nodes;

the transmitting node receiving a plurality of response signals comprising a plurality of bit-loading modulation schemes from the plurality of receiving nodes, wherein each of the plurality of receiving nodes

receives the probe signal through a corresponding channel path,

determines transmission characteristics of the corresponding channel path,

determines a bit-loading modulation scheme for the corresponding channel path based on the transmission characteristics, and

transmits a response signal to the transmitting node informing the transmitting node of the bit-loading modulation scheme for the corresponding channel path;

the transmitting node comparing the plurality of bit-loading modulation schemes to determine a common bit-loading modulation scheme; and

the transmitting node transmitting a broadcast signal relaying the common bit-loading modulation scheme to the plurality of receiving nodes.

35. (New) The broadcasting method within the BCN of claim 34, wherein the broadcast signal comprises handshake data.

36. (New) The broadcasting method within the BCN of claim 34, wherein the broadcast signal is a communication message comprising video data, music data, or voice data.

37. (New) The broadcasting method within the BCN of claim 34, wherein each node of the BCN determines a respective common bit-loading modulation scheme for broadcasting to the other nodes of the BCN.

38. (New) The broadcasting method within the BCN of claim 34, further comprising the transmitting node broadcasting a signal based on the common bit-loading modulation scheme to the plurality of receiving nodes simultaneously.

39. (New) A Broadband Coaxial Network ("BCN") comprising

a first BCN modem comprising a first controller; and

a plurality of BCN modems comprising a plurality of controllers;

wherein the first controller is configured to

transmit a probe signal to the plurality of controllers,

receive a plurality of response signals comprising a plurality of bit-loading modulation schemes from the plurality of controllers, wherein each of the plurality of controllers is configured to

receive the probe signal through a corresponding channel path,

determine transmission characteristics of the corresponding channel path,

determine a bit-loading modulation scheme for the corresponding channel path based on the transmission characteristics, and

transmit a response signal to the first controller informing the first controller of the bit-loading modulation scheme for the corresponding channel path,

compare the plurality of bit-loading modulation schemes to determine a common bit-loading modulation scheme, and

transmit a broadcast signal relaying the common bit-loading modulation scheme to the plurality of controllers.

40. (New) The BCN of claim 39, wherein the broadcast signal comprises handshake data.

41. (New) The BCN of claim 39, wherein the broadcast signal is a communication message comprising video data, music data, or voice data.

42. (New) The BCN of claim 39, wherein each controller of the plurality of controllers determines a respective common bit-loading modulation scheme for broadcasting to the other controllers of the plurality of controllers and the first controller.

43. (New) The BCN of claim 39, wherein the first controller is further configured to broadcast a signal based on the common bit-loading modulation scheme to the plurality of controllers simultaneously.

REMARKS

Claims 1 is amended. Claims 34-43 are new. No new matter is added. As a result, claims 1, 4-18, 21-22, and 24-43 are pending in this application.

Newly Added Claims

Applicant has added new claims 34-43. Support for these claims may be found at least in paragraphs 104-109 and 117-119, and Figures 9, 12, 13A-13C, and 19 of the specification. Applicant respectfully requests entry of the newly added claims.

Priority

Independent claims 1, 10, and 32 are indicated as not being supported by the disclosure of the prior-filed provisional applications: Application No. 60/633091, Application No. 60/632797, Application No. 60/633002, and Application No. 60/632856. Applicant respectfully submits that at least one of the prior-filed applications provides adequate support or enablement in the manner provided by the first paragraph of 35 U.S.C. § 112.

Independent claims 1, 10, and 32 recite, in part, "a network controller configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN." Support for this limitation exists, at least, in paragraphs 50-52 and 64 of the prior-filed provisional application Application No. 60/632797.

Paragraphs 50-52 describe admission of a BCN modem. Paragraph 50 explains that "one of the BCN modems is assigned as the Network Controller ("NC") and provides all the necessary information allowing other BCN modems to be admitted to the network, adapt to the network characteristics, synchronize to the network timing and framing, make transmission requests and be able to communicate with some or all of the other BCN modems in the network." Accordingly, one of ordinary skill in the art would understand that one BCN modem is assigned as the NC to coordinate admission of other BCN modems, as claimed in claims 1, 10, and 32.

The specification also describes that this is done without disrupting data transmission in the network. For example, paragraph 51 further describes that "[t]he NC provides network timing synchronization including the timing of admission area for slave BCN modems." This timing of admission is communicated to the BCN modem requesting to be admitted to the

network in the form of a beacon. Paragraph 51 provides such description. For example, before being admitted to a network, a BCN modem "locate[s] the network timing by receiving a beacon identifying network timing and essential network control information including network admission area, and other information identifying the time location and characteristics of other important and valid information such as future beacon locations, future channel assignment information." Accordingly, one of ordinary skill in the art would recognize that this is done to avoid disruption of data transmission in a network, as claimed in claims 1, 10, and 32.

Additionally, the specification describes that the NC controls timing of communication in a network and manages the network including admission of a BCN modem. For example, paragraph 64 describes the responsibilities of a NC BCN modem. The NC BCN modem manages the other clients' BCN access to the network, coordinates assignment of time slots for all BCN modems within a network, and provides synchronization and timing to the other BCN modems in the network. Moreover, paragraph 52 explains that the steps of a network admission process are under the direction of the NC BCN modem. One of the steps of a network admission process is "the optimization of the transmission characteristics between the BCN modem and any of the other BCN modems already in the network." The NC BCN modem assigns timeslots to the BCN modem to make requests for transmission opportunities to enable the communication between the slave BCN modem and each of the other nodes in the network. One of ordinary skill in the art would understand that the NC BCN modem manages both data transmission in a network and admission of a new BCN modem to the network.

From the disclosure of the above-mentioned paragraphs, it is clear that a NC BCN modem manages both data transmission among existing BCN modems of a network and admission of a BCN modem into the network such that admission of a new BCN modem does not disrupt the data transmission in the network. One of ordinary skill in the art would understand that admission of a new BCN modem to a network is coordinated by the NC BCN modem and does not disrupt data transmission in the network. Accordingly, the provisional application Application No. 60/632797 provides support for the claim limitation "a network controller configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN," as recited in claims 1, 10, and 32.

In view of the above, Applicant respectfully submits that claims 1, 10, and 32 as well as their dependents, claims 4-9, 11-18, 21-22, 24-31, and 33, can claim priority to the priority date, December 2, 2004, of the provisional application Application No. 60/632797.

Claim Rejections - 35 U.S.C. § 103

Claims 1, 4-9, and 33

Claims 1, 4, 5, and 6

Claims 1, 4, 5, and 6 are rejected as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Bell (USPN 6,052,380), Emerson et al (US 2003/0091067), and Padwekar (US 2006/0221819). Applicant respectfully traverses the rejections as follows.

Claim 1 recites, in part, "coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN." None of Dinwiddie, Bell, Emerson, and Padwekar discloses, teaches, or suggests the cited claim limitation.

The Office Action acknowledges that Dinwiddie fails to teach or suggest the above-noted claim limitation. (*See* the Office Action, pages 8). As noted in the previous submissions, both Bell and Emerson fail to cure the noted deficiency of Dinwiddie as they are silent with respect to the noted claim limitation.

The Office Action alleges that Padwekar cures this deficiency. (*See* the Office Action, pages 8). However, Padwekar fails to cure the noted deficiency because Padwekar is not prior art under 35 U.S.C. § 103. Padwekar was filed on March 30, 2005, which was later than December 2, 2004, the filing date of the provisional application Application No. 60/632797, to which the present application claims priority.

Accordingly, Applicant respectfully requests withdrawal of the rejections of claim 1 and its dependents, claims 4, 5, and 6, as being unpatentable over Dinwiddie further in view of Bell, Emerson, and Padwekar under 35 U.S.C. § 103(a).

Claim 7

Claim 7 is rejected as being unpatentable over Dinwiddie in view of Bell, Emerson, and Padwekar, and further in view of El Wardani et al. (U.S. Pub. No. 2003/0031191) ("El Wardani"). Applicant respectfully traverses the rejection as follows.

Claim 7 depends from claim 1. As stated above, Dinwiddie, Bell, Emerson and Padwekar fail to teach or suggest the claim limitation "coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN," as recited in claim 1. As noted in the previous submissions, El Wardani fails to cure the deficiencies of Dinwiddie, Bell, Emerson, and Padwekar with respect to this claim limitation. Accordingly, Applicant respectfully requests withdrawal of the rejection of claim 7 as being unpatentable over Dinwiddie, Bell, Emerson, El Wardani, and Padwekar under 35 U.S.C. § 103(a).

Claim 8

Claim 8 is rejected as being unpatentable over Dinwiddie in view of Bell, Emerson, and Padwekar, and further in view of Gurantz et al. (U.S. Pub. No. 2002/0166124) ("Gurantz"). Applicant respectfully traverses the rejection as follows.

Claim 8 depends from claim 1. As stated above, Dinwiddie, Bell, Emerson and Padwekar fail to teach or suggest the claim limitation "coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN," as recited in claim 1. As noted in the previous submissions, Gurantz fails to cure the deficiencies of Dinwiddie, Bell, Emerson, and Padwekar with respect to this claim limitation. Accordingly, Applicant respectfully requests withdrawal of the rejection of claim 8 as being unpatentable over Dinwiddie, Bell, Emerson, Gurantz, and Padwekar under 35 U.S.C. § 103(a).

Claim 9

Claim 9 is rejected as being unpatentable over Dinwiddie in view of Bell, Emerson, and Padwekar, and further in view of Droge et al. (U.S. Pub. No. 2002/00004898) ("Droge"). Applicant respectfully traverses the rejection as follows.

Claim 9 depends from claim 1. As stated above, Dinwiddie, Bell, Emerson, and Padwekar fail to teach or suggest the claim limitation "coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN," as recited in claim 1. As noted in the previous submissions, Droge fails to cure the deficiencies of Dinwiddie, Bell, Emerson, and Padwekar with respect to this claim limitation. Accordingly, Applicant respectfully requests withdrawal of the rejection of claim 9 as being unpatentable over Dinwiddie, Bell, Emerson, Droge, and Padwekar under 35 U.S.C. § 103(a).

Claim 33

Claim 33 is rejected as being unpatentable over Dinwiddie in view of Bell, Emerson, and Padwekar, and further in view of Gurney et al. (U.S. Pub. No. 2005/0175123) ("Gurney"). Applicant respectfully traverses the rejection as follows.

Claim 33 depends from claim 1. As stated above, Dinwiddie, Bell, Emerson, and Padwekar fail to teach or suggest the claim limitation "coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN," as recited in claim 1. As noted in the previous submissions, Gurney fails to cure the deficiencies of Dinwiddie, Bell, Emerson, and Padwekar with respect to this claim limitation. Accordingly, Applicant respectfully requests withdrawal of the rejection of claim 33 as being unpatentable over Dinwiddie, Bell, Emerson, Gurney, and Padwekar under 35 U.S.C. § 103(a).

Claims 10-18, 21-22, and 24-31

Claims 10-12, 14, 15, 17, and 31

Claims 10-12, 14, 15, 17, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of and Bell (USPN 6,052,380), and Silverman (USPN 6,307,862), and Emerson et al (US 2003/0091067) and Padwekar (US 2006/0221819). Applicant respectfully traverses the rejections as follows.

Claim 10 recites, in part, "coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN." As noted in the previous submissions, Silverman fails to cure the deficiencies of Dinwiddie, Bell, Emerson, and Padwekar with respect to this claim limitation. Accordingly, for the reasons provided above with respect to claim 1, Applicant respectfully requests withdrawal of the rejections of claim 10 and its dependents, claims 11--12, 14, 15, 17, and 31, as being unpatentable over Dinwiddie, Bell, Emerson, Silverman, and Padwekar under 35 U.S.C. § 103(a).

Claims 13, 18, and 26

Claims 13, 18, and 26 are rejected as being unpatentable over Dinwiddie in view of Bell, Emerson, Silverman and Padwekar, and further in view of Gurantz. Applicant respectfully traverses the rejections as follows.

Claims 13, 18, and 26 depend from claim 10. As stated above, Dinwiddie, Bell, Silverman, Emerson and Padwekar fail to teach or suggest the claim limitation "coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN," as recited in claim 10. As noted in the previous submissions, Gurantz fails to cure the deficiencies of Dinwiddie, Bell, Silverman, Emerson, and Padwekar with respect to this claim limitation. Accordingly, Applicant respectfully requests withdrawal of the rejections of claims 13, 18, and 26 as being unpatentable over Dinwiddie, Bell, Emerson, Silverman, Gurantz, and Padwekar under 35 U.S.C. § 103(a).

Claims 16, 25, and 27-30

Claims 16, 25, and 27-30 are rejected as being unpatentable over Dinwiddie in view of Bell, Emerson, Silverman, and Padwekar, and further in view of El Wardani. Applicant respectfully traverses the rejections as follows.

Claims 16, 25, and 27-30 depend from claim 10. As stated above, Dinwiddie, Bell, Silverman, Emerson and Padwekar fail to teach or suggest the claim limitation "coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN," as recited in claim 10. As noted in the previous submissions, El Wardani fails to cure the deficiencies of Dinwiddie, Bell, Silverman, Emerson and Padwekar with respect to this claim limitation. Accordingly, Applicant respectfully requests withdrawal of the rejections of claims 16, 25, and 27-30 as being unpatentable over Dinwiddie, Bell, Emerson, Silverman, El Wardani and Padwekar under 35 U.S.C. § 103(a).

Claims 21, 22, and 24

Claims 21, 22, and 24 are rejected as being unpatentable over Dinwiddie in view of Bell, Emerson, Silverman, and Padwekar, and further in view of Gorman (U.S. Patent No. 6,137,793). Applicant respectfully traverses the rejections as follows.

Claims 21, 22, and 24 depend from claim 10. As stated above, Dinwiddie, Bell, Silverman, Emerson, and Padwekar fail to teach or suggest the claim limitation "coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN," as recited in claim 10. As noted in the previous submissions, Gorman fails to cure the deficiencies of Dinwiddie, Bell, Silverman, Emerson and Padwekar with respect to this claim

limitation. Accordingly, Applicant respectfully requests withdrawal of the rejections of claims 21, 22, and 24 as being unpatentable over Dinwiddie, Bell, Emerson, Silverman, Gorman, and Padwekar under 35 U.S.C. § 103(a).

Claim 32

Claim 32 is under 35 U.S.C. 103(a) as being unpatentable over Bell in view of Dinwiddie, Silverman, and Padwekar. Applicant respectfully traverses the rejection as follows.

Claim 32 recites, in part, "coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN." For the reasons provided above with respect to claims 1 and 10, Applicant respectfully requests withdrawal of the rejection of claim 32 as being unpatentable over Bell in view of Dinwiddie, Silverman, and Padwekar under 35 U.S.C. § 103(a).

CONCLUSION

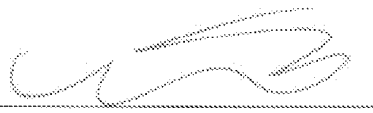
The foregoing amendments should place this application in condition for allowance. Timely issuance is respectfully requested. If any matters remain outstanding after consideration of this Amendment that the Examiner believes might be expedited by a telephone conference with Applicant's representative, the Examiner is respectfully requested to call the undersigned attorney at the number indicated below.

Any fees due in connection with the filing of this Amendment should be charged to Deposit Account No. 50-4562 referencing docket 05JM-171712. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: October 18, 2012

Respectfully submitted,

SHEPPARD, MULLIN, RICHTER & HAMPTON LLP

By: 

Qi Qi
Registration No. 68,515

SHEPPARD MULLIN RICHTER & HAMPTON LLP
12275 El Camino Real, Suite 200
San Diego, California 92130
Telephone: (858) 720-8900
Facsimile: (858) 509-3691

Electronic Patent Application Fee Transmittal	
Application Number:	11231349
Filing Date:	19-Sep-2005
Title of Invention:	Broadband local area network
First Named Inventor/Applicant Name:	Brett Bernath
Filer:	Daniel N. Yannuzzi/Linda Spirra
Attorney Docket Number:	E040004USU1
Filed as Small Entity	

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Claims in excess of 20	2202	6	31	186
Independent claims in excess of 3	2201	2	125	250
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
Request for continued examination	2801	1	465	465
		Total in USD ($)		**901**

Electronic Acknowledgement Receipt	
EFS ID:	14018586
Application Number:	11231349
International Application Number:	
Confirmation Number:	4520
Title of Invention:	Broadband local area network
First Named Inventor/Applicant Name:	Brett Bernath
Customer Number:	77561
Filer:	Daniel N. Yannuzzi/Linda Spirra
Filer Authorized By:	Daniel N. Yannuzzi
Attorney Docket Number:	E040004USU1
Receipt Date:	18-OCT-2012
Filing Date:	19-SEP-2005
Time Stamp:	14:53:34
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$901
RAM confirmation Number	1399
Deposit Account	504562
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1		171712-AmendmntRCE.pdf	2762763 67c2f0460f0a64148c9a2983d7c203234b1d75c6	yes	20

Multipart Description/PDF files in .zip description		
Document Description	**Start**	**End**
Miscellaneous Incoming Letter	1	1
Request for Continued Examination (RCE)	2	3
Amendment After Final	4	20

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	33306 3e04844077d2a0e36f2b511d6783179aba9aa7b6	no	2

Warnings:

Information:

Total Files Size (in bytes):	2796069

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Doc Code: TRAN.LET

Document Description: Transmittal Letter

PTO/SB/21 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number	11/231,349
Filing Date	September 19, 2005
First Named Inventor	Brett Bernath
Art Unit	2423
Examiner Name	James Laija
Attorney Docket Number	05JM-171712

ENCLOSURES *(Check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☑ Amendment/Reply
  - ☑ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Reply to Missing Parts/ Incomplete Application
  - ☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) _____
  - ☐ Landscape Table on CD
- ☐ After Allowance Communication to TC
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- ☐ Proprietary Information
- ☐ Status Letter
- ☑ Other Enclosure(s) (please identify below):
  Request for Continued Examination

Remarks

Total Claims: 38; Claims previously paid for: 32; Extra: 6 x $31 = $186
Total Independent Claims: 5; Claims previously paid for: 3; Extra: 2 x $125 = $250

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	SHEPPARD MULLIN RICHTER & HAMPTON LLP		
Signature			
Printed name	Qi Qi		
Date	October 18, 2012	Reg. No.	58,515

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature			
Typed or printed name		Date	

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/231,349	09/19/2005	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☒		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 10/18/2012

	(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 38	Minus	** 32	= 6	X $31 =	186	OR	X $ =	
Independent (37 CFR 1.16(h))	* 5	Minus	***3	= 2	X $125 =	250	OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE	436	OR	TOTAL ADD'L FEE	

AMENDMENT

	(Column 1)		(Column 2)	(Column 3)					
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/PARTHENIA D. MERRILL/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/231,349	09/19/2005	Brett Bernath	E040004USU1	4520

77561 7590 07/18/2012

Duane Morris LLP (Entropic)
IP Department
30 South 17th Street
Philadelphia, PA 19103-4196

EXAMINER	
LEIJA, JAMES	
ART UNIT	**PAPER NUMBER**
2423	
MAIL DATE	**DELIVERY MODE**
07/18/2012	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	11/231,349	BERNATH ET AL.	
	Examiner	Art Unit	
	JAMES LEIJA	2423	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 March 2012*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1,4-18,21,22 and 24-33* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1, 4-18, 21, 22 and 24-33* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 09/07/2011 have been fully considered but they are not persuasive.

Regarding independent claims 1, 10 and 32

The applicant has presented arguments directed to the prior art of record, for not suggesting, disclosing nor teaching the limitation "wherein one of the first and second controllers is a network controller configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN;" The applicant states "Firstly, there is a significant difference between coordinating the admission of a BCN modem… and adding a new policer to a group of policers that is already performing distributed policing for a traffic class. Evidence of this difference can be seen in form the fact that the disruption that is referenced is quite different. That is, Claim 1 recites "without disrupting data transmission in the CCN". In contrast, Padwekar discloses "without disrupting the operation of the other policers." As can be seen from several places in Padwekar, the operation of the policers is to "perform policing by measuring the incoming traffic in that class and then comparing that measure with policing parameters selected by the network administrator."

The examiner respectfully disagrees.

Padwekar on page 4 paragraph [0037] lines 9-14 states that "other policers" do not need to be reset with the addition of a new policer. Thus, while a reset would have disrupted data transmission in a network, Padwekar teaches that by not resetting the "other policers" data transmission in the network is not disrupted, which meets the limitation "a network controller

configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN;"

The applicant further argues, "Accordingly, the limitations recited in Claim 1 are not taught, and furthermore, it would not be reasonable for one to combine the teachings of Padwekar and other cited references in order to perform the functions that are recited in Claim 1. That is, it would be completely unreasonable to expect that one of ordinary skill in the art, without the use of impermissible hindsight, would consider taking the teaching of Padwekar and combining that with the teaching of Dinwiddie, Bell and Emerson to arrive at the present invention, and even to do so would not result in the invention as recited in Claim 1."

The examiner respectfully disagrees.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

The applicant further argues, that paragraph [0050], provides disclosure for "…when a new BCN wishes to join a CCN network"

The examiner respectfully disagrees.

The limitation recites "... coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN." The limitation specifies a combination of two features (1) "…coordinate the admission of other BCN modems…" and (2) to "coordinate the admission… without disrupting data transmission in the CCN." Thus, the applicants' specification only addresses the first feature.

Priority

The later-filed application must be an application for a patent for an invention which is also disclosed in the prior application (the parent or original nonprovisional application or provisional application). The disclosure of the invention in the parent application and in the later-filed application must be sufficient to comply with the requirements of the first paragraph of 35 U.S.C. 112. See *Transco Products, Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994).

The disclosure of the prior-filed applications, Application No.60/633091, Application No.60/632797, Application No.60/633002, Application No.60/632856 fails to provide adequate support or enablement in the manner provided by the first paragraph of 35 U.S.C. 112 for one or more claims of this application.

The independent claims recite "... coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN." The examiner has not found support in the prior-filed applications for this new limitation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Bell (USPN 6,052,380), and Emerson et al (US 2003/0091067), and Padwekar (US 2006/0221819).

As per claim 1 Dinwiddie teaches a Broadband Coaxial Network ("BCN'), comprising:

a first BCN modem (Dinwiddie fig 1A element 102) in signal communication with a coaxial cable network ("CCN"), (Dinwiddie fig 1a and 1b illustrate a wired network), (Dinwiddie column 4 lines 40-45, column 5 lines 34-36 describe the wired network connected using by coaxial cable), (Dinwiddie column 9 lines 1-3 describes communication between a modem and network)

a second BCN modem (Dinwiddie fig 1A and 1B elements 104, 106, 107 and 108) in signal communication with the CCN (Dinwiddie fig 1A and 1B illustrate elements 106, 107 and 108 connected to the network)

Dinwiddie is silent on the first BCD modem including a first controller; and the another BCN modem including a second controller, and wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller

directly to at least one other BCN modem and to adjust transmission power over the at least one respective communication link based on a result of the probe

Bell teaches the first BCD modem including a first controller; and the another BCN modem including a second controller, (Bell column 5 lines 41-53, and fig 3 illustrates multiple nodes, each node has that have controller)

wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem and to adjust transmission power and bit loading over the at least one respective communication link based on a result of the probe. (Bell column 12 lines 4-30, column 4 lines 30 -39, wherein DMT initialization reads on adjusting transmission power and bit-loading based on a result of the probe.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network of Dinwiddie by the first BCD modem including a first controller; and the another BCN modem including a second controller, wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem as taught by Bell in order determine the location of portable devices.

Dinwiddie teaches wherein the BCN provides to transmit packets received by a BCN modem, and (Dinwiddie col. 9 lines 1-23 describe video distribution throughout the home network)

Dinwiddie is silent on both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate.

Emerson teaches both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and (Emerson page 1 [0012] describes asynchronous data traffic which reads on best effort capabilities)

reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate. (Emerson page 2 [0020] describes isochronous traffic as having reserved timeslots which reads on reserved communications capabilities for "certain data rate")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN of Dinwiddie by both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate as taught by Emerson in order to provide on the fly data segmentation.

Dinwiddie is silent on wherein one of the first and second controllers is a network controller configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN; and

Padwekar teaches wherein one of the first and second controllers is a network controller (Padwekar page 4 [0036], fig 1 and 2 illustrate network devices with each having a Policer. One of which is designated as a synchronizer policer meets the limitation of a network controller)

configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN; and

(Padwekar pages 3-4 [0029, 0037] describe a new policer joining a group of policers, without disrupting the operation of the other policers. The operation of the other policers include communicating over the network. And the Synchronizer policer has to send data to the new policer before the new policer can begin operating meets the limitation of "a network controller … to coordinate the admission… without disrupting data transmission)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the first and second controllers of Dinwiddie by wherein one of the first and second controllers is a network controller configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN; as taught by Padwekar in order to maintain synchronization between the network device.

As per claim 4 Dinwiddie in view of Bell, Emerson and Padwekar teach the BCN of claim 1,

Dinwiddie is silent on wherein the second controller is configure to detect a control signal that identifies a network controller is coupled to the CCN

Bell teaches wherein the second controller is configure to detect a control signal that identifies a network controller is coupled to the CCN (Bell column 11 lines 7-45 describe determining the master node by detecting each node timer value.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN of Dinwiddie by wherein the second controller is configure to detect a control signal that identifies a network controller is coupled to the CCN as taught by Bell in order to initialize a channel equalization process that allows each node to know the transmission characteristics of each path between each node.

As per claim 5 Dinwiddie in view of Bell, Emerson and Padwekar teach the BCN of claim 1, wherein the signal communication occurs between the BCN modems that are located within a building. (Dinwiddie column 4 lines 15-18)

As per claim 6 Dinwiddie in view of Bell, Emerson and Padwekar teach the BCN of claim 5, wherein the building is a single family home. (Dinwiddie column 4 lines 19-20)

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Bell (USPN 6,052,380), and Emerson et al (US 2003/0091067), and Padwekar (US 2006/0221819), and El Wardani et al. (Pub. No.: US 2003/0031191).

As per claim 7 Dinwiddie in view of Bell, Emerson and Padwekar teach the BCN of claim 5

Dinwiddie teaches the building as a dwelling unit (Dinwiddie column 4 lines 18-19)

But Dinwiddie is silent on the building being a multi-unit dwelling unit.

El Wardani teaches a building being a multi-unit dwelling unit. (El Wardani page 1 [0004] lines 1-3)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the building of Dinwiddie by being a multi dwelling unit as taught by El Wardani in order to provide to multiple users in a building.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Bell (USPN 6,052,380), and Emerson et al (US 2003/0091067), and Padwekar (US 2006/0221819), and Gurantz et al (Pub No.: US 2002/0166124).

As per claim 8 Dinwiddie in view of Bell, Emerson and Padwekar teach the BCN of claim 1.

Dinwiddie teaches signal communication (Dinwiddie column 2 lines 36-38)

But Dinwiddie is silent on communication via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency(R_F) channels.

Gurantz teaches communication via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency(R_F) channels. (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used along with modulation as a communication scheme.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication of Dinwiddie by communicating using TDD and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transceiver.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Bell (USPN 6,052,380), and Emerson et al (US 2003/0091067), and Padwekar (US 2006/0221819), and Droge (Pub No.: US 2002/0004898).

As per claim 9 Dinwiddie in view of Bell, Emerson and Padwekar teach the BCN network of claim 1,

Dinwiddie teaches communication between the first and the other modem. (Dinwiddie column 11 lines 11-13)

Dinwiddie is silent on the signal communication carries encrypted data between the first BCN modem and the other BCN modem.

Droge teaches the signal communication carries encrypted data between the first BCN modem and the other BCN modem. (Droge Fig 2 elements 16 and 24, illustrates two modems in communication over a network, [0050] describes encrypting the data that's communicated.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication of Dinwiddie by encrypting the data as taught by Droge in order to provide secure transmitting and receiving.

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Bell (USPN 6,052,380), and Emerson et al (US 2003/0091067), and Padwekar (US 2006/0221819), and Gurney et al. (US 2005/0175123).

As per claim 33 Dinwiddie in view of Bell, Emerson and Padwekar teach the BCN of claim 1,

Dinwiddie and Bell teach wherein the network controller is configured to periodically broadcast a packet of a first type to each BCN modem connected to the CCN, and (Bell col. 12 lines 4-20 describe master node using of a handoff frame(i.e. a packet of a first type) to each node.) BCN modems to transmit packets of a second type directly between each other. (Bell col. 6 line 64 - col. 7 line 13, fig 1 illustrates 112 and 114 as transmitting data on network 102, meets the limitation of transmit packets… directly between each other.)

Dinwiddie and Bell are silent on periodically broadcast a packet of a first type using a lower order modulation than an order of modulation used by BCN modems to transmit packets of a second type

Gurney teaches periodically broadcast a packet of a first type using a lower order modulation than an order of modulation used by BCN modems to transmit packets of a second type (Gurney pages 1-2 [0015, 0023] describe a sync word packet utilizing a lower order modulation then a data packet utilizing a higher order modulation.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network controller of Dinwiddie and Bell by periodically broadcast a packet of a first type using a lower order modulation than an order of modulation

used by BCN modems to transmit packets of a second type as taught by Gurney in order to reduce falsing and miss rates, which contribute to decreased data throughput and unreliability of communication in digital receivers.

Claims 10-12, 14, 15, 17, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of and Bell (USPN 6,052,380), and Silverman (USPN 6,307,862), and Emerson et al (US 2003/0091067) and Padwekar (US 2006/0221819).

As per claim 10 Dinwiddie teaches a Broadband Coaxial Network ("BCN") for communicating on an in- building coaxial cable network ("CCN"), comprising:

a first BCN modem (Dinwiddie fig 1A element 102) connected to a coaxial cable network ("CCN") (Dinwiddie fig 1a and 1b illustrate a wired network), (Dinwiddie column 4 lines 40-45, column 5 lines 34-36 describe the wired network connected using by coaxial cable), and included in a plurality of BCN modems in the BCN network, (Dinwiddie fig 1a and fig 1b illustrates a network with multiple modem elements 102, 106, 107, 104 and 108)

Dinwiddie teaches the first BCN modem having communication links to ones of the plurality of BCN modems and (Dinwiddie column 4 lines 40-42 and 45-48) configured to manage data transmission between each of the BCN modems in the BCN network; and (Dinwiddie column 15 lines 22-29 and 48-54 and column 16 lines 9-10 and 20-23)

Dinwiddie teaches another of the plurality of BCN modems connected to the CCN and (Dinwiddie fig 1a and fig 1b illustrates a network with multiple modem elements 104, 106, 107 and 108) capable of signal communication with the first BCN modem (Dinwiddie column 11 lines 11-13) having communication links to ones of the plurality of BCN modems, (Dinwiddie column 4 lines 40-42 and 45-48)

Dinwiddie is silent on including a controller and a second controller

Bell teaches including a controller and a second controller, (Bell column 6 lines 64-65 describe each computer 112 and 114 as having a network adapter, where fig 4 illustrates that the network adapters of each computer have a controller 212)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the modems of Dinwiddie by including a controller and a second controller as taught by Bell in order provide improved reliability, robustness, bandwidth and noise resistance of the ADSL layer

Dinwiddie is silent on wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading

Bell teaches wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading; and (Bell column 12 lines 4-30, column 9 lines 36 -52, wherein DMT initialization reads on OFDM bit-loading.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the modems of Dinwiddie by wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through

orthogonal frequency division multiplexing (OFDM) and bit-loading as taught by Bell in order provide improved reliability, robustness, bandwidth and noise resistance of the ADSL layer.

Dinwiddie teaches wherein the first controller establishes the first BCN modem as a network controller(NC) upon connection to the CCN, (Dinwiddie column 11 lines 14-25 describe the PC 45 has a host) the network controller configured to manage data transmission between each of the BCN modems connected to the CCN. (Dinwiddie column 15 lines 22-29 and 48-54 and column 16 lines 9-10 and 20-23)

Dinwiddie is silent on to coordinate the assignment of time slots

Silverman teach the network controller configured to coordinate the assignment of time slots during which data transmission occur (Silverman abstract lines 15-18, col. 3 lines 12-28, col.3 lines 66 to col. 4 lines 9, and col. 4 lines 48-53)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network controller of Dinwiddie by to coordinate the assignment of time slots as taught by Silverman in order to provide two-way communication using coaxial cable in a home LAN.

Dinwiddie teaches the BCN provides to transmit packets are received by a BCN modem, and (Dinwiddie col. 9 lines 1-23 describe video distribution throughout the home network)

Dinwiddie is silent on both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate by the first BCN modem.

Emerson teaches both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and (Emerson page 1 [0012] describes asynchronous data traffic which reads on best effort capabilities)

reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate by the first BCN modem. (Emerson page 2 [0020] describes isochronous traffic as having reserved timeslots which reads on reserved communications capabilities for "certain data rate")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN of Dinwiddie by both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate as taught by Emerson in order to provide on the fly data segmentation.

Dinwiddie is silent on wherein the NC is configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission between the plurality of BCN modems.

Padwekar teaches wherein the NC (Padwekar page 4 [0036], fig 1 and 2 illustrate network devices, each having a Policer. One of which is designated as a synchronizer policer meets the limitation of a network controller) is configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission between the plurality of BCN modems. (Padwekar pages 3-4 [0029, 0037] describe a new policer joining a group of policers, without disrupting the operation of the other policers. The operation of the other policers include communicating over the network. And the Synchronizer policer has to send data to the new policer before the new policer can begin operating meets the limitation of "the NC … to coordinate the admission… without disrupting data transmission)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the first and second controllers of Dinwiddie by wherein the NC is configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission between the plurality of BCN modems as taught by Padwekar in order to maintain synchronization between the network device.

As per claim 11 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 10, wherein the first BCN modem (Dinwiddie fig 5A) employs adaptive communication techniques that adapt to the characteristics of a coaxial channel between the first BCN modem and the other BCN modem. (Dinwiddie fig 5A elements 122 and 110, column 9 lines 36-40 describes a BALUM which converts the a signal to conform to the characteristics of the coaxial cable)

As per claim 12 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 10, wherein the first BCN modem is directly in signal communication with the other BCN modem across the CCN. (Dinwiddie Fig 1 column 15 lines 25-34)

As per claim 14 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 11, wherein adaptive communication techniques includes utilization of the adaptive communication techniques in both transmitting processing and receiving processing of data. (Dinwiddie fig 5A elements 122 column 9 lines 34-40 describes receiving processed data from a modulator which reads on receiving processing of data and processing that data in the BALUM and filter then transmitting the processed data.)

As per claim 15 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 14, wherein the adaptive communication utilizes pre-coding for transmitting processing. (Dinwiddie column 9 lines 27-34 describe coding the data before transmitting the

data.), (Dinwiddie column 9 lines 35-40 describe the BALUM and filter transmitting the processed data.)

As per claim 17 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 14, wherein the adaptive communication techniques include pre-coding for (Dinwiddie column 9 lines 27-34 describe coding the data before transmitting the data.) transmitting processing based on known or learned channel response.(Dinwiddie column 9 lines 35-40 describe the BALUM and filter transmitting the processed data.), (Dinwiddie columns 9 lines 56-58 describe the coding as modulation which is a processing, as well as describing the modulation as based on a selected channel which reads on a known channel response)

As per claim 31 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 10, wherein the CCN network is one of the following:

coaxial cables that have been installed for the carriage of satellite signals; and coaxial cables for video distribution.(Dinwiddie column 5 lines 50-55)

Claims 13, 18, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of and Bell (USPN 6,052,380) and Silverman (USPN 6,307,862), and Emerson et al (US 2003/0091067), and Padwekar (US 2006/0221819), and Gurantz et al (Pub No.: US 2002/0166124)

As per claim 13 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 12 wherein the CCN is a type of network having a architectural configuration selected from a group consisting of

Dinwiddie teaches a star configuration and (Dinwiddie fig 12 illustrates the distribution unit of the network in a star configuration) a mesh configuration and a combinations of these configurations, using the star configuration in an accessible fashion. (Dinwiddie column 12 lines 64-67 describes the use of signal paths for communication which reads on an accessible fashion)

Dinwiddie is silent on a TDMA and Time Division Duplex (TDD) access fashion, and the type of network utilizes at least one frequency channel

Gurantz teaches a TDMA and Time Division Duplex (TDD) access fashion, and (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used along with modulation as communication scheme.) the type of network utilizes at least one frequency channel. (Gurantz page 4 [0039] lines 1-3 the use of TDD in the network, using a frequency.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the access fashion of Dinwiddie by communicating using TDD and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transceiver.

As per claim 18 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 14.

Dinwiddie teaches signal processing techniques are used (Dinwiddie column 9 lines 25-35 describe the use of RF modulation)

Dinwiddie is silent on using additional signal processing techniques selected from a group of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes.

Gurantz teaches using additional signal processing techniques selected from a group of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes. (Gurantz page 4 [0046]-[0047] describe the use of DMT and OFDM which reads on the use of additional processing techniques being OFDM)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the signal processing of Dinwiddie by processing using OFDM as taught by Gurantz in order to overcome the effects of inter-symbol interference.

As per claim 26 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 11, wherein the BCN modem

Dinwiddie is silent on is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB

Gurantz teaches is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB. (Gurantz page 3 [0035], [0036] describe the use of a DS-SS receiver which reads on a satellite STB.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN modem of Dinwiddie by is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB as taught by Gurantz in order to allow user to have choice of content source.

Claims 16, 25 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of and Bell (USPN 6,052,380) and Silverman (USPN 6,307,862), and Emerson et al (US 2003/0091067), and Padwekar (US 2006/0221819), and El Wardani et al. (Pub. No.: US 2003/0031191).

As per claim 16 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 14.

Dinwiddie teach adaptive communication techniques. (Dinwiddie fig 5A elements 122 and 110, column 9 lines 36-40 describes a BALUM which converts the a signal to conform to the characteristics of the coaxial cable)

Dinwiddie is silent on utilizing adaptive equalization processing.

El Wardani teaches utilizing adaptive equalization processing. (Wardani page 4 [0054])

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the adaptive communication techniques of Dinwiddie by utilizing an adaptive equalizer as taught by El Wardani in order to improve the signal quality.

As per claim 25 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 11, wherein the BCN modem is embedded as a part of a device selected from the group consisting of:

a set-top box ("STB"); a Personal Computer (PC); an IP STB; a Media Center box; a Media Extender box; a DVD player; a cable modem; a personal video recorder ("PVR"); a TV set; a networking device; a switch/router;

a bridge/Gateway; (El Wardani fig 1 element 200 [0031] lines 5-8)

a video game console; a wireless access point (WAP); and a network attached storage.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify BCN of Dinwiddie by embedding the device within a bridge as taught by El Wardani in order to provide a mechanism to communicate signals between two systems.

As per claim 27 Dinwiddie in view of Bell, Silverman, Emerson, Padwekar and El Wardani teach the BCN of claim 25, wherein the BCN modem utilizes the PCI bus structure. (El Wardani page 3 [0040] lines 12-15 describes the use of an Ethernet interface which inherently utilizes the PCI bus structure)

As per claim 28 Dinwiddie in view of Bell, Silverman, Emerson, Padwekar and El Wardani teach the BCN of claim 27, wherein the BCN modem utilizes another host device. (El Wardani fig 4 page 3 [0038] describes the use of the modem in another device)

As per claim 29 Dinwiddie in view of Bell, Silverman, Emerson, Padwekar and El Wardani teach the BCN of claim 28, wherein the host device is either a bridging host device or a switching host device. (El Wardani fig 4 page 3 [0038] describes the use of the modem in a bridging device.)

As per claim 30 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 10.

Dinwiddie is silent on a TDMA frequency channel in the BCN network using one or more frequency bands: above 860 MHz; between 860 MHz and 950 MHz; and below 50 MHz. above

El Wardani teaches a TDMA frequency channel in the BCN network using one or more frequency bands: using one or more frequency bands: above 860 MHz; (El Wardani fig 8 page 3 [0045], [0046] lines 1-4) between 860 MHz and 950 MHz; and (El Wardani fig 8 page 3 [0046] lines 5-7) below 50 MHz. (El Wardani fig 8 page 3 [0048])

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify BCN network of Dinwiddie by on a TDMA frequency channel in the BCN network using one or more frequency bands: above 860 MHz; between 860 MHz and 950 MHz; and below 50 MHz. above as taught by El Wardani in order to allow the network band to reside at any frequency on the cable.

Claims 21, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable Dinwiddie et al. (USPN 6,481,013) and further in view of and Bell (USPN 6,052,380) and Silverman (USPN 6,307,862), and Emerson et al (US 2003/0091067), and Padwekar (US 2006/0221819), and Gorman et al. (USPN 6,137,793)

As per claim 21 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 10, wherein the NC includes

Dinwiddie is silent on a configuration selected from the group consisting of: a configuration that utilizes a frequency plan

Gorman teaches a configuration selected from the group consisting of: a configuration that utilizes a frequency plan; (Gorman column 12 lines 58-60 fig 1 illustrates the use of a cable TV network, which reads on a frequency plan.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the NC of Dinwiddie by a configuration selected from the group consisting of: a configuration that utilizes a frequency plan as taught by Gorman in order to provide multimedia services.

As per claim 22 Dinwiddie in view of Bell, Silverman, Emerson, Padwekar and Gorman teach the BCN of claim 21, wherein the communications services provided by the BCN include BCN wide transmission priorities. (Gorman column 13 lines 22-27)

As per claim 24 Dinwiddie in view of Bell, Silverman, Emerson, Padwekar and Gorman teach the BCN of claim 10,

Dinwiddie is silent on wherein the BCN modem provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of: Ethernet

Gorman teaches wherein the BCN modem provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of: Ethernet, (Gorman column 6 lines 53-57 describe ATM adaptation , column 7 lines 1-3 describe the use of Ethernet services) IEEE 1394, Universal Serial Bus ("USB"); and MPEG-TS.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN modem of Dinwiddie by provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of: Ethernet as taught by Gorman in order to integrate multimedia services.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bell (USPN 6,053,380) and further in view of Dinwiddie et al. (USPN 6,481,013) and Silverman (USPN 6,307,862) and Padwekar (US 2006/0221819).

As per claim 32 Bell teaches a network device, comprising:

a communication interface (Bell fig 2 illustrates a network adapter aka network interface card) configured to connect to a broadband coaxial network ("B CN"); and (Bell Fig 1 column 6 lines 49-53 describe the network cabling as coaxial)

a controller in signal communication with the communication interface, (Bell column 5 lines 42- 50)

the controller configured to:

periodically probe a communication link to another network device to determine a characteristic of the communication link; (Bell column 12 lines 4-47 and column 13 lines 23-28)

use orthogonal frequency division multiplexing and bit-loading to adjust transmissions over each communication link based in part on the probe; and (Bell column 8 lines 53-62 describe the use of DMT which reads on OFDM bit-loading.)

Bell is silent on manage data transmission between each network device connected to the BCN, by assigning time slots during which data transmission between each of the network devices occur

Dinwiddie teaches to manage data transmission between each network device connected to the BCN (Dinwiddie column 15 lines 22-29 and 48-54 and column 16 lines 9-10 and 20-23)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network device of Dinwiddie by manage data transmission between each network device connected to the BCN as taught by Dinwiddie in order to provide a central control station for all the components attached to the network.

Silverman teach by assigning time slots during which data transmission between each of the network devices occur (Silverman abstract lines 15-18, col. 3 lines 12-28, col.3 lines 66 to col. 4 lines 9, and col. 4 lines 48-53)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the controller of Bell and Dinwiddie by assigning time slots during which data transmission between each of the network devices occur as taught by Silverman in order to provide two-way communication using coaxial cable in a home LAN.

Bell is silent on both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate.

Emerson teaches both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are provided by the controller, and (Emerson page 1 [0012] describes determining asynchronous data traffic to time slots which reads on best effort capabilities)

reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate by the controller (Emerson page 2 [0020] describes determining isochronous traffic as having reserved timeslots which reads on reserved communications capabilities for "certain data rate")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the controller of Bell by provide both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate as taught by Emerson in order to provide on the fly data segmentation.

Bell is silent on coordinate the admission of other BCN modems to the CCN without disrupting data transmission between the plurality of BCN modems.

Padwekar teaches coordinate the admission of other BCN modems to the CCN without disrupting data transmission between the plurality of BCN modems. (Padwekar pages 3-4 [0029, 0037] describe a new policer joining a group of policers, without disrupting the operation of the other policers. The operation of the other policers include communicating over the network. And the Synchronizer policer has to send data to the new policer before the new policer can begin operating meets the limitation of "coordinate the admission… without disrupting data transmission)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network device of Bell by coordinate the admission of other BCN modems to the CCN without disrupting data transmission between the plurality of BCN modems as taught by Padwekar in order to maintain synchronization between the network device.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES LEIJA whose telephone number is (571)270-5249. The examiner can normally be reached on M-F 730 am to 5pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, VIVEK SRIVASTAVA can be reached on (571) 272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/James Leija/
Examiner, Art Unit 2423

/VIVEK SRIVASTAVA/
Supervisory Patent Examiner, Art Unit 2423

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	Art Unit
	JAMES LEIJA	2423

SEARCHED			
Class	Subclass	Date	Examiner
725	78, 80, 109	7/28/2009	JL
709		2/25/2009	JL
370		2/25/2009	JL

SEARCH NOTES		
Search Notes	Date	Examiner
EAST	7/28/2009	JL
Spoke with Joe Ustaris - CL 725	7/28/2009	JL
Andrew Koenig -CL 725	7/28/2009	JL
update east	1/12/2010	JL
update east	11/11/2010	JL
update east	5/31/2011	JL
update east	12/12/2011	JL
inventor search	09/04/2008	JL
update east	7/9/2012	JL

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2319	(qpsk qam) with order$2 with high$2	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/09 15:29
L2	741	(qpsk qam) with order$2 with low$3	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/09 15:29
L3	50	(L1 same packet$4) and (L2 same packet$4)	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/09 15:29
L4	139251	control$4 with packet$4	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/09 15:32
L5	276541	data$4 with packet$4	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/09 15:32
L6	5151	(qpsk qam) with order$2	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/09 15:32
L7	88	L4 same L6	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/09 15:32
L8	264	L5 same L6	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/09 15:32
L9	51	L7 and L8	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/09 15:32
L10	29735	("725").CLAS.	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/09 15:47
L11	834	((coordinat$4 manag$8 admin administrat$6) with join$4) same (group$4 network$4) same igmp	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/09 15:47
L12	172	L11 and L10	US-PGPUB; USPAT; USOCR	OR	OFF	2012/07/09 15:47

EAST Search History (Interference)

<This search history is empty>

7/9/2012 4:05:11 PM
C:\Users\jleija\Documents\EAST\Workspaces\Workspaces pt I\11231349\11231349c.wsp

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	**Art Unit**
	JAMES LEIJA	2423

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	08/19/2008	02/25/2009	07/28/2009	01/12/2010	11/11/2010	05/31/2011	12/12/2011	07/09/2012	
	1	✓	✓	✓	✓	✓	✓	✓	✓	
	2	✓	✓	✓	-	-	-	-	-	
	3	✓	✓	✓	✓	-	-	-	-	
	4	✓	✓	✓	✓	✓	✓	✓	✓	
	5	✓	✓	✓	✓	✓	✓	✓	✓	
	6	✓	✓	✓	✓	✓	✓	✓	✓	
	7	✓	✓	✓	✓	✓	✓	✓	✓	
	8	✓	✓	✓	✓	✓	✓	✓	✓	
	9	✓	✓	✓	✓	✓	✓	✓	✓	
	10	✓	✓	✓	✓	✓	✓	✓	✓	
	11	✓	✓	✓	✓	✓	✓	✓	✓	
	12	✓	✓	✓	✓	✓	✓	✓	✓	
	13	✓	✓	✓	✓	✓	✓	✓	✓	
	14	✓	✓	✓	✓	✓	✓	✓	✓	
	15	✓	✓	✓	✓	✓	✓	✓	✓	
	16	✓	✓	✓	✓	✓	✓	✓	✓	
	17	✓	✓	✓	✓	✓	✓	✓	✓	
	18	✓	✓	✓	✓	✓	✓	✓	✓	
	19	✓	✓	✓	✓	-	-	-	-	
	20	✓	✓	✓	✓	-	-	-	-	
	21	✓	✓	✓	✓	✓	✓	✓	✓	
	22	✓	✓	✓	✓	✓	✓	✓	✓	
	23	✓	✓	✓	✓	-	-	-	-	
	24	✓	✓	✓	✓	✓	✓	✓	✓	
	25	✓	✓	✓	✓	✓	✓	✓	✓	
	26	✓	✓	✓	✓	✓	✓	✓	✓	
	27	✓	✓	✓	✓	✓	✓	✓	✓	
	28	✓	✓	✓	✓	✓	✓	✓	✓	
	29	✓	✓	✓	✓	✓	✓	✓	✓	
	30	✓	✓	✓	✓	✓	✓	✓	✓	
	31	✓	✓	✓	✓	✓	✓	✓	✓	
	32		✓	✓	✓	✓	✓	✓	✓	
	33							✓	✓	

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:
Brett Bernath et al.

Serial No.: 11/231,349

Filed: 19-Sep-2005

For: A BROADBAND LOCAL AREA NETWORK

Group Art Unit: 2423

Confirmation No. 4520

AMENDMENT

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attention: **James Leija**
Examiner

Dear Sir:

Responsive to the Non-Final Office Action dated **December 20, 2011**, please amend the above-identified application as follows:

Amendments to the Claims begin on page 2 of this paper.

Remarks/Arguments begin on page 8 of this paper.

I hereby certify that this correspondence is being electronically deposited with the Commissioner for Patents through the USPTO electronic filing system, on:

March 20, 2012
(Date of Deposit)

Tim Ellis
(Name of Person Making Deposit)

/Tim Ellis/
(Signature)

AMENDMENT TO THE CLAIMS

This listing and version of the claims replace all prior listing and versions of the claims.

Listing of Claims

What is claimed is:

1. (Previously Presented) A Broadband Coaxial Network ("BCN"), comprising:

a first BCN modem in signal communication with a coaxial cable network ("CCN"), the first BCN modem including a first controller; and

a second BCN modem in signal communication with the CCN including a second controller,

wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem and to adjust transmission power and bit loading over the at least one respective communication link based on a result of the probe;

wherein one of the first and second controllers is a network controller configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN; and

wherein the BCN provides both best effort capabilities in which short term requests are made and time allocation grants to transmit packets received by a BCN modem, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate.

2. (Canceled)

3. (Canceled)

4. (Previously Presented) The BCN of claim 1, wherein the second controller is configured to detect a control signal that identifies that the network controller is coupled to the CCN.

5. (Original) The BCN of claim 1, wherein the signal communication occurs between the BCN modems that are located within a building.

6. (Original) The BCN of claim 5, wherein the building is a single family home.

7. (Original) The BCN of claim 5 wherein the building is a multi-unit dwelling unit.

8. (Previously presented) The BCN of claim 1, wherein the signal communication occurs via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency (RF) channels.

9. (Original) The BCN network of claim 1, wherein the signal communication carries encrypted data between the first BCN modem and the other BCN modem.

10. (Previously Presented) A Broadband Coaxial Network ("BCN") for communicating on an in-building coaxial cable network ("CCN"), comprising:

a first BCN modem connected to a coaxial cable network ("CCN") and included in a plurality of BCN modems in the BCN network, the first BCN modem including a controller having communication links to ones of the plurality of BCN modems and configured to manage data transmission between each of the BCN modems in the BCN network; and

another of the plurality of BCN modems connected to the CCN and capable of signal communication with the first BCN modem including a second controller having communication links to ones of the plurality of BCN modems,

wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading;

wherein the first controller establishes the first BCN modem as a network controller (NC) upon connection to the CCN, the network controller configured to coordinate the assignment of time slots during which data transmission between each of the BCN modems connected to the CCN occur, the BCN provides both best effort capabilities in which short term requests are made by at least one BCN modem and time allocation grants to transmit packets are provided by the first BCN modem, and reserved communications capabilities in which long term requests are

made by at least one BCN modem and a specific allocation is granted for a certain data rate by the first BCN modem; and

wherein the NC is configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission between the plurality of BCN modems.

11. (Previously presented) The BCN of claim 10, wherein the first BCN modem employs adaptive communication techniques that adapt to the characteristics of a coaxial channel between the first BCN modem and the other BCN modem.

12. (Previously presented) The BCN of claim 10, wherein the first BCN modem is directly in signal communication with the other BCN modem across the CCN.

13. (Original) The BCN of claim 12 wherein the CCN is a type of network having an architectural configuration selected from a group consisting of a star configuration and a mesh configuration and a combination of these configurations, in a TDMA, TDD access fashion, and the type of network utilizes at least one frequency channel.

14. (Previously presented) The BCN of claim 11, wherein the adaptive communication techniques includes utilization of the adaptive communication techniques in both transmitting processing and receiving processing of data.

15. (Original) The BCN of claim 14, wherein the adaptive communication techniques utilize pre-coding for transmitting processing.

16. (Original) The BCN of claim 14, wherein the adaptive communication techniques utilize adaptive equalization for receiving processing.

17. (Original) The BCN of claim 14, wherein the adaptive communication techniques include pre-coding for transmitting processing based on known or learned channel response.

18. (Original) The BCN of claim 14, wherein additional signal processing techniques are used which are selected from a group consisting of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes.

19. (Canceled)

20. (Canceled)

21. (Previously presented) The BCN of claim 10, wherein the NC includes a configuration selected from the group consisting of:

a configuration that enables every BCN modem to act as a NC:

a configuration that utilizes a frequency plan;

a configuration that allows a new BCN modem admission to the BCN Network;

a configuration that allows a new BCN modem to communicate with another BCN modem to characterize the channel response between them and determine a bit loading in either direction; and

a configuration that allows each BCN modem in the network to request and be granted a transmission opportunity without a transmission conflict.

22. (Original) The BCN of claim 21, wherein the communications services provided by the BCN include BCN wide transmission priorities.

23. (Canceled)

24. (Previously presented) The BCN of claim 10, wherein the BCN modem provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of:

Ethernet,

IEEE 1394,

Universal Serial Bus ("USB"); and

MPEG-TS.

25. (Original) The BCN of claim 11, wherein the BCN modem is embedded as a part of a device selected from the group consisting of:

a set-top box ("STB");

a Personal Computer (PC);

an IP STB;

a Media Center box;

a Media Extender box;

a DVD player;

a cable modem;

a personal video recorder ("PVR");

a TV set;

a networking device;

a switch/router;

a bridge/Gateway;

a video game console;

a wireless access point (WAP); and

a network attached storage.

26. (Previously presented) The BCN of claim 11, wherein the BCN modem is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB.

27. (Original) The BCN of claim 25, wherein the BCN modem utilizes the PCI bus structure.

28. (Original) The BCN of claim 27, wherein the BCN modem utilizes another host device.

29. (Original) The BCN of claim 28, wherein the host device is either a bridging host device or a switching host device.

30. (Original) The BCN of claim 10, wherein an at least one TDMA frequency channel used by the BCN network is in one or more of the following frequency bands:

above 860 MHz;
between 860 MHz and 950 MHz; and
below 50 MHz.

31. (Original) The BCN of claim 10, wherein the CCN network is one of the following:
coaxial cables that have been installed for the carriage of satellite signals; and
coaxial cables for video distribution.

32. (Previously Presented) A network device, comprising:
a communication interface configured to connect to a broadband coaxial network ("BCN"); and
a controller in signal communication with the communication interface, the controller configured to:
periodically probe a communication link to another network device to determine a characteristic of the communication link;
use orthogonal frequency division multiplexing and bit-loading to adjust transmissions over each communication link based in part on the probe;
manage data transmission between each network device connected to the BCN by assigning time slots during which data transmission between each of the network devices occur;
provide both best effort capabilities in which short term requests are made by at least one BCN modem and time allocation grants to transmit packets are provided by the controller, and reserved communications capabilities in which long term requests are made by at least one BCN modem and a specific allocation is granted for a certain data rate by the controller; and
coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN.

33. (Previously Presented) The BCN of claim 1, wherein the network controller is configured to periodically broadcast a packet of a first type to each BCN modem connected to the CCN using a lower order modulation than an order of modulation used by BCN modems to transmit packets of a second type directly between each other.

REMARKS

Claims 1, 4-18, 21, 22, and 24-33 are currently pending.

No Claims have been amended.

No Claims have been cancelled.

Applicants respectfully request reconsideration as applicants believe that all claims are now in condition for allowance as noted below.

Rejections Under 35 U.S.C. § 103(a)

The Examiner has rejected Claims 1, 4, 5, and 6 under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Bell (USPN 6,052,380), and Emerson et al (US 2003/0091067), and Padwekar (US 2006/0221819). For at least the reasons presented here, Applicants respectfully contend that Claims 1, 4, 5, and 6 are patentable over all cited references.

In the most recent office action, the Examiner has newly cited Padwekar as providing the element that is lacking from the other cited references. The Examiner particular points to paragraphs paragraph [0036] and figures 1 and 2 as disclosing a first and second controller that functions as a network controller. The Examiner also points to paragraphs [0029] and [0037] as supporting the Examiner's contention that Padwekar discloses a controller that is "configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN".

Applicants note that in the originally filed application, at paragraph [050], a Network Controller ("NC") is disclosed as providing "all necessary information allowing other BCN modems to be admitted to the network, adapt to the network characteristics, synchronize to the

network timing and framing, make transmission requests and be able to communicate with some or all of the other BCN modems in the network." Additional disclosure regarding the functions of the NC are provided as well. These include the process that ensues when a new BCN wishes to join a CCN network.

While Padwekar discloses "a new policer joining a group of policers without disrupting the operation of the other policers" as noted in Paragraph [0039] of Padwekar, this is substantially different from the recited limitation which recites a NC that is "configured to **coordinate the admission** of other BCN modems to the CCN without disrupting **data transmission in the CCN**" for at least the following reasons. Firstly, there is a significant difference between **coordinating the admission of a BCN modem** as recited in Claim 1 and **adding a new policer to a group of policers that is already performing distributed policing for a traffic class**. Evidence of this difference can be seen in from the fact that the disruption that is referenced is quite different. That is, Claim 1 recites "without disrupting **data transmission** in the CCN". In contrast, Padwekar discloses "without disrupting the **operation of the other policers**." As can be seen from several places in Padwekar, the operation of the policers is to "perform policing by measuring the incoming traffic in that class and then comparing that measure with policing parameters selected by the network administrator." (Padwekar, paragraph [0003]).

While these phrases initially sound alike, upon close inspection, it can be seen that they are actually quite different. Returning to the differences between admitting an new BCN modem and adding a new policer, it should be clear that a new policer could be added by allowing a device that is already admitted to the network perform the policing function.

Accordingly, the limitations recited in Claim 1 are not taught, and furthermore, it would **not be reasonable** for one to combine the teachings of Padwekar and other cited references in order to perform the functions that are recited in Claim 1. That is, it would be completely unreasonable to expect that one of ordinary skill in the art, without the use of impermissible hindsight, would consider taking the teaching of Padwekar and combining that with the teaching of Dinwiddie, Bell and Emerson to arrive at the present invention, and **even to do so would not result in the invention** as recited in Claim 1.

Accordingly, Applicants respectfully request that the Examiner reconsider and allowance of Claim 1 for at least the above reasons. Furthermore, for the same reasons, Applicants respectfully request reconsideration and allowance of Claims 4-6.

Claim 7 depends from claim 1. Dinwiddie, Bell, Emerson and Padwekar fail to teach or suggest a BCN network that includes a network controller configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN. As noted in previous submissions, El Wardani fails to cure the deficiencies of Dinwiddie, Bell, Emerson and Padwekar with respect to these claimed features.

Accordingly, claim 7 is allowable over Dinwiddie, Bell, Emerson, El Wardani and Padwekar at least by virtue of its dependence from claim 1. Reconsideration and allowance of claim 7 is therefore requested.

Claim 8 depends from claim 1 and stands rejected over Dinwiddie in view of Bell, Emerson, Gurantz and Padwekar. As noted in previous submissions, Gurantz fails to cure the deficiencies of Dinwiddie, Bell, Emerson and Padwekar with respect to these claimed features

noted with regard to Claim 1. Accordingly, Applicants contend that Claim 8 is allowable. Applicants respectfully request reconsideration and allowance of Claim 8.

Claim 9 depends from claim 1 and stands rejected over Dinwiddie in view of Bell, Emerson, Droge and Padwekar. Droge fails to disclose the lacking element of a BCN network that includes a network controller configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN. Accordingly, for the reasons provided above with respect to Claim 1, Applicants respectfully request reconsideration and allowance of Claim 9.

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Bell (USPN 6,052,380), and Emerson et al (US 2003/0091067), and Padwekar (US 2006/0221819), and Gurney et al. (US 2005/0175123).

The Examiner has rejected Claims 10-12,14,15,17, and 31 under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of and Bell (USPN 6,052,380), and Silverman (USPN 6,307,862), and Emerson et al (US 2003/0091067) and Padwekar (US 2006/0221819).

Claim 10 was previously amended to recite "<u>wherein the NC is configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission between the plurality of BCN modems</u>." Silverman fails to cure the deficiencies of Dinwiddie, Bell, Emerson and Padwekar with respect to these claimed features. Accordingly, for the reasons

provided above with respect to Claim 1, Applicants respectfully request reconsideration and allowance of Claim 10.

Claims 11–12, 14, 15, 17, and 31 depend from claim 10 and are allowable at least by virtue of their dependence. Reconsideration and allowance of claims 10–12, 14, 15, 17, and 31 are respectfully requested.

Claims 13, 18, and 26 depend from claim 10 and stand rejected over Dinwiddie, Bell, Silverman, Emerson, Gurantz and Padwekar. Claims 13, 18, and 26 are allowable over Dinwiddie, Bell, Silverman, Emerson, Gurantz and Padwekar for the reasons set forth above with respect to claims 10 and 8. Reconsideration and allowance of claims 13, 18, and 26 are requested.

Claims 16, 25, and 27-30 depend from claim 10 and stand rejected over Dinwiddie, Bell, Silverman, Emerson, El Wardani and Padwekar. Claims 16, 25, and 27-30 are allowable over Dinwiddie, Bell, Silverman, Emerson, El Wardani and Padwekar as set forth above with respect to claims 10 and 7.

Claims 21, 22, and 24, which depend from claim 10, stand rejected over Dinwiddie, Bell, Silverman, Emerson, Padwekar and Gorman. As set forth above with respect to claim 10, Dinwiddie, Bell, Silverman, Emerson and Padwekar do not teach or suggest a BCN including a NC is configured to coordinate the admission of other BCN modems to the CCN without

disrupting data transmission between the plurality of BCN modems. As noted in previous submissions, Gorman fails to teach or suggest these claimed features.

Accordingly, claims 21, 22, and 24 are allowable over Dinwiddie, Bell, Silverman, Emerson, Gorman and Padwekar. Reconsideration and allowance of claims 21, 22, and 24 are requested.

Claim 32 stands rejected as allegedly being unpatentable over Dinwiddie in view of Bell Silverman and Padwekar. Claim 32 was previously been amended to recite, "coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN." Claim 32 is allowable over Dinwiddie, Bell, Silverman and Padwekar for at least the same reasons set forth above with respect to claims 1 and 10. Reconsideration and allowance of claim 32 are requested.

Claim 33 depends from claim 1 recites "wherein the network controller is configured to periodically broadcast a packet of a first type to each BCN modem connected to the CCN using a lower order modulation than an order of modulation used by BCN modems to transmit packets of a second type directly between each other." By virtue of its dependence on Claim 1, Applicants contend that Claim 32 is allowable over Dinwiddie, Bell, Silverman and Padwekar for at least the same reasons set forth above with respect to claims 1 Reconsideration and allowance of claim 33 is therefore, requested.

CONCLUSION

Applicants believe that all claims pending in the application are allowable. Applicants therefore respectfully request that a timely Notice of Allowance be issued in this case.

This is a response to the Office Action mailed on December 20, 2011, and as such, is submitted timely.

If there are any other fees due in connection with the filing of the response, please charge the fees to our Deposit Account No. 50-4613. If a fee is required for an additional extension of time under 37 CFR 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned.

Respectfully submitted,

Dated: March 20, 2012

/Bruce W. Greenhaus/
Bruce W. Greenhaus
Reg. No.: 37,339
Attorney for Applicant

Entropic Communications, Inc.
6290 Sequence Drive
San Diego, California 92121
Telephone: (619) 980-2612
e-mail address: PatentTeam@entropic.com

Electronic Acknowledgement Receipt	
EFS ID:	12351326
Application Number:	11231349
International Application Number:	
Confirmation Number:	4520
Title of Invention:	Broadband local area network
First Named Inventor/Applicant Name:	Brett Bernath
Customer Number:	77561
Filer:	Bruce Wayne Greenhaus/Tim Ellis
Filer Authorized By:	Bruce Wayne Greenhaus
Attorney Docket Number:	E040004USU1
Receipt Date:	20-MAR-2012
Filing Date:	19-SEP-2005
Time Stamp:	18:20:57
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		E040004USU1_Amendment-to-Non-Final-OA_3-20-2012.pdf	106521 36d810818ac99ab09a6054f099653e95e4d23834	yes	14

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	7
	Applicant Arguments/Remarks Made in an Amendment	8	13
	Amendment/Req. Reconsideration-After Non-Final Reject	14	14
Warnings:			
Information:			
	Total Files Size (in bytes):	106521	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/231,349	09/19/2005	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT **03/20/2012**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 28	Minus	** 32	= 0	X $ =		OR	X $60=	0
Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $ =		OR	X $250=	0
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	**0**

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/LORRAINE E. WALDEN/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/231,349	09/19/2005	Brett Bernath	E040004USU1	4520

77561 7590 12/20/2011

Duane Morris LLP (Entropic)
IP Department
30 South 17th Street
Philadelphia, PA 19103-4196

EXAMINER	
LEIJA, JAMES	
ART UNIT	**PAPER NUMBER**
2423	
MAIL DATE	**DELIVERY MODE**
12/20/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	11/231,349	BERNATH ET AL.	
	Examiner	Art Unit	
	JAMES LEIJA	2423	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 September 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1,4-18,21,22 and 24-33* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1,4-18,21,22 and 24-33* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *09/19/2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 09/07/2011 have been fully considered but they are not persuasive.

Regarding independent claims 1, 10 and 32

The applicant has presented arguments directed to the prior art of record; the examiner is now relying on Padwekar. By the examiner changing the grounds (from the prior art of record to rely on Padwekar), the applicant's arguments (directed to the prior art of record) are moot.

Regarding dependent claims 4-9, 11-18, 21, 22, 24-31

The applicant has not submitted arguments directed toward the limitations of the dependent claims.

Regarding dependent claim 33.

Claim 33 is a new claim, with new limitations.

Priority

The later-filed application must be an application for a patent for an invention which is also disclosed in the prior application (the parent or original nonprovisional application or provisional application). The disclosure of the invention in the parent application and in the later-filed application must be sufficient to comply with the

requirements of the first paragraph of 35 U.S.C. 112. See *Transco Products, Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994).

The disclosure of the prior-filed applications, Application No.60/633091, Application No.60/632797, Application No.60/633002, Application No.60/632856 fails to provide adequate support or enablement in the manner provided by the first paragraph of 35 U.S.C. 112 for one or more claims of this application.

The independent claims recite ".. coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN." The examiner has not found support in the prior-filed applications for this new limitation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Bell (USPN 6,052,380), and Emerson et al (US 2003/0091067), and Padwekar (US 2006/0221819).

As per claim 1 Dinwiddie teaches a Broadband Coaxial Network ("BCN'), comprising:

a first BCN modem (Dinwiddie fig 1A element 102) in signal communication with a coaxial cable network ("CCN"), (Dinwiddie fig 1a and 1b illustrate a wired network), (Dinwiddie column 4 lines 40-45, column 5 lines 34-36 describe the wired network connected using by coaxial cable), (Dinwiddie column 9 lines 1-3 describes communication between a modem and network)

a second BCN modem (Dinwiddie fig 1A and 1B elements 104, 106, 107 and 108) in signal communication with the CCN (Dinwiddie fig 1A and 1B illustrate elements 106, 107 and 108 connected to the network)

Dinwiddie is silent on the first BCD modem including a first controller; and the another BCN modem including a second controller, and wherein each of the first and

second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem and to adjust transmission power over the at least one respective communication link based on a result of the probe

Bell teaches the first BCD modem including a first controller; and the another BCN modem including a second controller, (Bell column 5 lines 41-53, and fig 3 illustrates multiple nodes, each node has that have controller)

wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem and to adjust transmission power and bit loading over the at least one respective communication link based on a result of the probe. (Bell column 12 lines 4-30, column 4 lines 30 -39, wherein DMT initialization reads on adjusting transmission power and bit-loading based on a result of the probe.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network of Dinwiddie by the first BCD modem including a first controller; and the another BCN modem including a second controller, wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem as taught by Bell in order determine the location of portable devices.

Dinwiddie teaches wherein the BCN provides to transmit packets received by a BCN modem, and (Dinwiddie col. 9 lines 1-23 describe video distribution throughout the home network)

Dinwiddie is silent on both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate.

Emerson teaches both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and (Emerson page 1 [0012] describes asynchronous data traffic which reads on best effort capabilities)

reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate. (Emerson page 2 [0020] describes isochronous traffic as having reserved timeslots which reads on reserved communications capabilities for "certain data rate")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN of Dinwiddie by both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate as taught by Emerson in order to provide on the fly data segmentation.

Dinwiddie is silent on wherein one of the first and second controllers is a network controller configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN; and

Padwekar teaches wherein one of the first and second controllers is a network controller (Padwekar page 4 [0036], fig 1 and 2 illustrate network devices with each having a Policer. One of which is designated as a synchronizer policer meets the limitation of a network controller)

configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN; and (Padwekar pages 3-4 [0029, 0037] describe a new policer joining a group of policers, without disrupting the operation of the other policers. The operation of the other policers include communicating over the network. And the Synchronizer policer has to send data to the new policer before the new policer can begin operating meets the limitation of “a network controller … to coordinate the admission… without disrupting data transmission)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the first and second controllers of Dinwiddie by wherein one of the first and second controllers is a network controller configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN; as taught by Padwekar in order to maintain synchronization between the network device.

As per claim 4 Dinwiddie in view of Bell, Emerson and Padwekar teach the BCN of claim 1,

Dinwiddie is silent on wherein the second controller is configure to detect a control signal that identifies a network controller is coupled to the CCN

Bell teaches wherein the second controller is configure to detect a control signal that identifies a network controller is coupled to the CCN (Bell column 11 lines 7-45 describe determining the master node by detecting each node timer value.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN of Dinwiddie by wherein the second controller is configure to detect a control signal that identifies a network controller is coupled to the CCN as taught by Bell in order to initialize a channel equalization process that allows each node to know the transmission characteristics of each path between each node.

As per claim 5 Dinwiddie in view of Bell, Emerson and Padwekar teach the BCN of claim 1, wherein the signal communication occurs between the BCN modems that are located within a building. (Dinwiddie column 4 lines 15-18)

As per claim 6 Dinwiddie in view of Bell, Emerson and Padwekar teach the BCN of claim 5, wherein the building is a single family home. (Dinwiddie column 4 lines 19-20)

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Bell (USPN 6,052,380), and Emerson et al (US 2003/0091067), and Padwekar (US 2006/0221819), and El Wardani et al. (Pub. No.: US 2003/0031191).

As per claim 7 Dinwiddie in view of Bell, Emerson and Padwekar teach the BCN of claim 5

Dinwiddie teaches the building as a dwelling unit (Dinwiddie column 4 lines 18-19)

But Dinwiddie is silent on the building being a multi-unit dwelling unit.

El Wardani teaches a building being a multi-unit dwelling unit. (El Wardani page 1 [0004] lines 1-3)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the building of Dinwiddie by being a multi dwelling unit as taught by El Wardani in order to provide to multiple users in a building.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Bell (USPN 6,052,380), and Emerson et al (US 2003/0091067), and Padwekar (US 2006/0221819), and Gurantz et al (Pub No.: US 2002/0166124).

As per claim 8 Dinwiddie in view of Bell, Emerson and Padwekar teach the BCN of claim 1.

Dinwiddie teaches signal communication (Dinwiddie column 2 lines 36-38)

But Dinwiddie is silent on communication via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency(R_F) channels.

Gurantz teaches communication via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency(R_F) channels. (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used along with modulation as a communication scheme.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication of Dinwiddie by communicating using TDD and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transceiver.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Bell (USPN 6,052,380), and Emerson et al (US 2003/0091067), and Padwekar (US 2006/0221819), and Droge (Pub No.: US 2002/0004898).

As per claim 9 Dinwiddie in view of Bell, Emerson and Padwekar teach the BCN network of claim 1,

Dinwiddie teaches communication between the first and the other modem. (Dinwiddie column 11 lines 11-13)

Dinwiddie is silent on the signal communication carries encrypted data between the first BCN modem and the other BCN modem.

Droge teaches the signal communication carries encrypted data between the first BCN modem and the other BCN modem. (Droge Fig 2 elements 16 and 24, illustrates two modems in communication over a network, [0050] describes encrypting the data that's communicated.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication of Dinwiddie by encrypting the data as taught by Droge in order to provide secure transmitting and receiving.

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Bell (USPN 6,052,380), and Emerson et al (US 2003/0091067), and Padwekar (US 2006/0221819), and Gurney et al. (US 2005/0175123).

As per claim 33 Dinwiddie in view of Bell, Emerson and Padwekar teach the BCN of claim 1,

Dinwiddie and Bell teach wherein the network controller is configured to periodically broadcast a packet of a first type to each BCN modem connected to the CCN, and (Bell col. 12 lines 4-20 describe master node using of a handoff frame(i.e. a packet of a first type) to each node.) BCN modems to transmit packets of a second type directly between each other. (Bell col. 6 line 64 - col. 7 line 13, fig 1 illustrates 112 and 114 as transmitting data on network 102, meets the limitation of transmit packets… directly between each other.)

Dinwiddie and Bell are silent on periodically broadcast a packet of a first type using a lower order modulation than an order of modulation used by BCN modems to transmit packets of a second type

Gurney teaches periodically broadcast a packet of a first type using a lower order modulation than an order of modulation used by BCN modems to transmit packets of a second type (Gurney pages 1-2 [0015, 0023] describe a sync word packet utilizing a lower order modulation then a data packet utilizing a higher order modulation.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network controller of Dinwiddie and Bell by periodically broadcast a packet of a first type using a lower order modulation than an order of modulation used by BCN modems to transmit packets of a second type as taught by Gurney in order to reduce falsing and miss rates, which contribute to decreased data throughput and unreliability of communication in digital receivers.

Claims 10-12, 14, 15, 17, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of and Bell (USPN 6,052,380), and Silverman (USPN 6,307,862), and Emerson et al (US 2003/0091067) and Padwekar (US 2006/0221819).

As per claim 10 Dinwiddie teaches a Broadband Coaxial Network ("BCN") for communicating on an in- building coaxial cable network ("CCN"), comprising:

a first BCN modem (Dinwiddie fig 1A element 102) connected to a coaxial cable network ("CCN") (Dinwiddie fig 1a and 1b illustrate a wired network), (Dinwiddie column 4 lines 40-45, column 5 lines 34-36 describe the wired network connected using by coaxial cable), and included in a plurality of BCN modems in the BCN network, (Dinwiddie fig 1a and fig 1b illustrates a network with multiple modem elements 102, 106, 107, 104 and 108)

Dinwiddie teaches the first BCN modem having communication links to ones of the plurality of BCN modems and (Dinwiddie column 4 lines 40-42 and 45-48) configured to manage data transmission between each of the BCN modems in the BCN network; and (Dinwiddie column 15 lines 22-29 and 48-54 and column 16 lines 9-10 and 20-23)

Dinwiddie teaches another of the plurality of BCN modems connected to the CCN and (Dinwiddie fig 1a and fig 1b illustrates a network with multiple modem elements 104, 106, 107 and 108) capable of signal communication with the first BCN

modem (Dinwiddie column 11 lines 11-13) having communication links to ones of the plurality of BCN modems, (Dinwiddie column 4 lines 40-42 and 45-48)

Dinwiddie is silent on including a controller and a second controller

Bell teaches including a controller and a second controller, (Bell column 6 lines 64-65 describe each computer 112 and 114 as having a network adapter, where fig 4 illustrates that the network adapters of each computer have a controller 212)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the modems of Dinwiddie by including a controller and a second controller as taught by Bell in order provide improved reliability, robustness, bandwidth and noise resistance of the ADSL layer

Dinwiddie is silent on wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading

Bell teaches wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading; and (Bell column 12 lines 4-30, column 9 lines 36 -52, wherein DMT initialization reads on OFDM bit-loading.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the modems of Dinwiddie by wherein each of the

controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading as taught by Bell in order provide improved reliability, robustness, bandwidth and noise resistance of the ADSL layer.

Dinwiddie teaches wherein the first controller establishes the first BCN modem as a network controller(NC) upon connection to the CCN, (Dinwiddie column 11 lines 14-25 describe the PC 45 has a host) the network controller configured to manage data transmission between each of the BCN modems connected to the CCN. (Dinwiddie column 15 lines 22-29 and 48-54 and column 16 lines 9-10 and 20-23)

Dinwiddie is silent on to coordinate the assignment of time slots

Silverman teach the network controller configured to coordinate the assignment of time slots during which data transmission occur (Silverman abstract lines 15-18, col. 3 lines 12-28, col.3 lines 66 to col. 4 lines 9, and col. 4 lines 48-53)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network controller of Dinwiddie by to coordinate the assignment of time slots as taught by Silverman in order to provide two-way communication using coaxial cable in a home LAN.

Dinwiddie teaches the BCN provides to transmit packets are received by a BCN modem, and (Dinwiddie col. 9 lines 1-23 describe video distribution throughout the home network)

Dinwiddie is silent on both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate by the first BCN modem.

Emerson teaches both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and (Emerson page 1 [0012] describes asynchronous data traffic which reads on best effort capabilities)

reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate by the first BCN modem. (Emerson page 2 [0020] describes isochronous traffic as having reserved timeslots which reads on reserved communications capabilities for "certain data rate")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN of Dinwiddie by both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate as taught by Emerson in order to provide on the fly data segmentation.

Dinwiddie is silent on wherein the NC is configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission between the plurality of BCN modems.

Padwekar teaches wherein the NC (Padwekar page 4 [0036], fig 1 and 2 illustrate network devices, each having a Policer. One of which is designated as a synchronizer policer meets the limitation of a network controller) is configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission between the plurality of BCN modems. (Padwekar pages 3-4 [0029, 0037] describe a new policer joining a group of policers, without disrupting the operation of the other policers. The operation of the other policers include communicating over the network. And the Synchronizer policer has to send data to the new policer before the new policer can begin operating meets the limitation of “the NC … to coordinate the admission… without disrupting data transmission)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the first and second controllers of Dinwiddie by wherein the NC is configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission between the plurality of BCN modems as taught by Padwekar in order to maintain synchronization between the network device.

As per claim 11 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 10, wherein the first BCN modem (Dinwiddie fig 5A) employs adaptive communication techniques that adapt to the characteristics of a coaxial channel between the first BCN modem and the other BCN modem. (Dinwiddie fig 5A elements 122 and 110, column 9 lines 36-40 describes a BALUM which converts the a signal to conform to the characteristics of the coaxial cable)

As per claim 12 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 10, wherein the first BCN modem is directly in signal communication with the other BCN modem across the CCN. (Dinwiddie Fig 1 column 15 lines 25-34)

As per claim 14 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 11, wherein adaptive communication techniques includes utilization of the adaptive communication techniques in both transmitting processing and receiving processing of data. (Dinwiddie fig 5A elements 122 column 9 lines 34-40 describes receiving processed data from a modulator which reads on receiving processing of data and processing that data in the BALUM and filter then transmitting the processed data.)

As per claim 15 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 14, wherein the adaptive communication utilizes pre-coding for

transmitting processing. (Dinwiddie column 9 lines 27-34 describe coding the data before transmitting the data.), (Dinwiddie column 9 lines 35-40 describe the BALUM and filter transmitting the processed data.)

As per claim 17 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 14, wherein the adaptive communication techniques include pre-coding for (Dinwiddie column 9 lines 27-34 describe coding the data before transmitting the data.) transmitting processing based on known or learned channel response.(Dinwiddie column 9 lines 35-40 describe the BALUM and filter transmitting the processed data.), (Dinwiddie columns 9 lines 56-58 describe the coding as modulation which is a processing, as well as describing the modulation as based on a selected channel which reads on a known channel response)

As per claim 31 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 10, wherein the CCN network is one of the following:

coaxial cables that have been installed for the carriage of satellite signals; and coaxial cables for video distribution.(Dinwiddie column 5 lines 50-55)

Claims 13, 18, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of and Bell (USPN 6,052,380) and Silverman (USPN 6,307,862), and Emerson et al (US 2003/0091067), and Padwekar (US 2006/0221819), and Gurantz et al (Pub No.: US 2002/0166124)

As per claim 13 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 12 wherein the CCN is a type of network having a architectural configuration selected from a group consisting of

Dinwiddie teaches a star configuration and (Dinwiddie fig 12 illustrates the distribution unit of the network in a star configuration) a mesh configuration and a combinations of these configurations, using the star configuration in an accessible fashion. (Dinwiddie column 12 lines 64-67 describes the use of signal paths for communication which reads on an accessible fashion)

Dinwiddie is silent on a TDMA and Time Division Duplex (TDD) access fashion, and the type of network utilizes at least one frequency channel

Gurantz teaches a TDMA and Time Division Duplex (TDD) access fashion, and (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used along with modulation as communication scheme.) the type of network utilizes at least one frequency channel. (Gurantz page 4 [0039] lines 1-3 the use of TDD in the network, using a frequency.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the access fashion of Dinwiddie by communicating using TDD and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transceiver.

As per claim 18 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 14.

Dinwiddie teaches signal processing techniques are used (Dinwiddie column 9 lines 25-35 describe the use of RF modulation)

Dinwiddie is silent on using additional signal processing techniques selected from a group of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes.

Gurantz teaches using additional signal processing techniques selected from a group of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes. (Gurantz page 4 [0046]-[0047] describe the use of DMT and OFDM which reads on the use of additional processing techniques being OFDM)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the signal processing of Dinwiddie by processing using OFDM as taught by Gurantz in order to overcome the effects of inter-symbol interference.

As per claim 26 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 11, wherein the BCN modem

Dinwiddie is silent on is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB

Gurantz teaches is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB. (Gurantz page 3 [0035], [0036] describe the use of a DS-SS receiver which reads on a satellite STB.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN modem of Dinwiddie by is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB as taught by Gurantz in order to allow user to have choice of content source.

Claims 16, 25 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of and Bell (USPN 6,052,380) and Silverman (USPN 6,307,862), and Emerson et al (US 2003/0091067), and Padwekar (US 2006/0221819), and El Wardani et al. (Pub. No.: US 2003/0031191).

As per claim 16 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 14.

Dinwiddie teach adaptive communication techniques. (Dinwiddie fig 5A elements 122 and 110, column 9 lines 36-40 describes a BALUM which converts the a signal to conform to the characteristics of the coaxial cable)

Dinwiddie is silent on utilizing adaptive equalization processing.

El Wardani teaches utilizing adaptive equalization processing. (Wardani page 4 [0054])

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the adaptive communication techniques of Dinwiddie by utilizing an adaptive equalizer as taught by El Wardani in order to improve the signal quality.

As per claim 25 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 11, wherein the BCN modem is embedded as a part of a device selected from the group consisting of:

a set-top box ("STB"); a Personal Computer (PC); an IP STB; a Media Center box; a Media Extender box; a DVD player; a cable modem; a personal video recorder ("PVR"); a TV set; a networking device; a switch/router;

a bridge/Gateway; (El Wardani fig 1 element 200 [0031] lines 5-8)

a video game console; a wireless access point (WAP); and a network attached storage.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify BCN of Dinwiddie by embedding the device within a bridge as taught by El Wardani in order to provide a mechanism to communicate signals between two systems.

As per claim 27 Dinwiddie in view of Bell, Silverman, Emerson, Padwekar and El Wardani teach the BCN of claim 25, wherein the BCN modem utilizes the PCI bus structure. (El Wardani page 3 [0040] lines 12-15 describes the use of an Ethernet interface which inherently utilizes the PCI bus structure)

As per claim 28 Dinwiddie in view of Bell, Silverman, Emerson, Padwekar and El Wardani teach the BCN of claim 27, wherein the BCN modem utilizes another host device. (El Wardani fig 4 page 3 [0038] describes the use of the modem in another device)

As per claim 29 Dinwiddie in view of Bell, Silverman, Emerson, Padwekar and El Wardani teach the BCN of claim 28, wherein the host device is either a bridging host device or a switching host device. (El Wardani fig 4 page 3 [0038] describes the use of the modem in a bridging device.)

As per claim 30 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 10.

Dinwiddie is silent on a TDMA frequency channel in the BCN network using one or more frequency bands: above 860 MHz; between 860 MHz and 950 MHz; and below 50 MHz. above

El Wardani teaches a TDMA frequency channel in the BCN network using one or more frequency bands: using one or more frequency bands: above 860 MHz; (El

Wardani fig 8 page 3 [0045], [0046] lines 1-4) between 860 MHz and 950 MHz; and (El Wardani fig 8 page 3 [0046] lines 5-7) below 50 MHz. (El Wardani fig 8 page 3 [0048])

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify BCN network of Dinwiddie by on a TDMA frequency channel in the BCN network using one or more frequency bands: above 860 MHz; between 860 MHz and 950 MHz; and below 50 MHz. above as taught by El Wardani in order to allow the network band to reside at any frequency on the cable.

Claims 21, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable Dinwiddie et al. (USPN 6,481,013) and further in view of and Bell (USPN 6,052,380) and Silverman (USPN 6,307,862), and Emerson et al (US 2003/0091067), and Padwekar (US 2006/0221819), and Gorman et al. (USPN 6,137,793)

As per claim 21 Dinwiddie in view of Bell, Silverman, Emerson and Padwekar teach the BCN of claim 10, wherein the NC includes

Dinwiddie is silent on a configuration selected from the group consisting of: a configuration that utilizes a frequency plan

Gorman teaches a configuration selected from the group consisting of: a configuration that utilizes a frequency plan; (Gorman column 12 lines 58-60 fig 1 illustrates the use of a cable TV network, which reads on a frequency plan.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the NC of Dinwiddie by a configuration selected from the group consisting of: a configuration that utilizes a frequency plan as taught by Gorman in order to provide multimedia services.

As per claim 22 Dinwiddie in view of Bell, Silverman, Emerson, Padwekar and Gorman teach the BCN of claim 21, wherein the communications services provided by the BCN include BCN wide transmission priorities. (Gorman column 13 lines 22-27)

As per claim 24 Dinwiddie in view of Bell, Silverman, Emerson, Padwekar and Gorman teach the BCN of claim 10,

Dinwiddie is silent on wherein the BCN modem provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of: Ethernet

Gorman teaches wherein the BCN modem provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of: Ethernet, (Gorman column 6 lines 53-57 describe ATM adaptation , column 7 lines 1-3 describe the use of Ethernet services) IEEE 1394, Universal Serial Bus ("USB"); and MPEG-TS.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN modem of Dinwiddie by provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of: Ethernet as taught by Gorman in order to integrate multimedia services.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bell (USPN 6,053,380) and further in view of Dinwiddie et al. (USPN 6,481,013) and Silverman (USPN 6,307,862) and Padwekar (US 2006/0221819).

As per claim 32 Bell teaches a network device, comprising:

a communication interface (Bell fig 2 illustrates a network adapter aka network interface card) configured to connect to a broadband coaxial network ("B CN"); and (Bell Fig 1 column 6 lines 49-53 describe the network cabling as coaxial)

a controller in signal communication with the communication interface, (Bell column 5 lines 42- 50)

the controller configured to:

periodically probe a communication link to another network device to determine a characteristic of the communication link; (Bell column 12 lines 4-47 and column 13 lines 23-28)

use orthogonal frequency division multiplexing and bit-loading to adjust transmissions over each communication link based in part on the probe; and (Bell column 8 lines 53-62 describe the use of DMT which reads on OFDM bit-loading.)

Bell is silent on manage data transmission between each network device connected to the BCN, by assigning time slots during which data transmission between each of the network devices occur

Dinwiddie teaches to manage data transmission between each network device connected to the BCN (Dinwiddie column 15 lines 22-29 and 48-54 and column 16 lines 9-10 and 20-23)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network device of Dinwiddie by manage data transmission between each network device connected to the BCN as taught by Dinwiddie in order to provide a central control station for all the components attached to the network.

Silverman teach by assigning time slots during which data transmission between each of the network devices occur (Silverman abstract lines 15-18, col. 3 lines 12-28, col.3 lines 66 to col. 4 lines 9, and col. 4 lines 48-53)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the controller of Bell and Dinwiddie by assigning time slots during which data transmission between each of the network devices occur as taught by Silverman in order to provide two-way communication using coaxial cable in a home LAN.

Bell is silent on both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate.

Emerson teaches both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are provided by the controller, and (Emerson page 1 [0012] describes determining asynchronous data traffic to time slots which reads on best effort capabilities)

reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate by the controller (Emerson page 2 [0020] describes determining isochronous traffic as having reserved timeslots which reads on reserved communications capabilities for "certain data rate")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the controller of Bell by provide both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate as taught by Emerson in order to provide on the fly data segmentation.

Bell is silent on coordinate the admission of other BCN modems to the CCN without disrupting data transmission between the plurality of BCN modems.

Padwekar teaches coordinate the admission of other BCN modems to the CCN without disrupting data transmission between the plurality of BCN modems. (Padwekar pages 3-4 [0029, 0037] describe a new policer joining a group of policers, without disrupting the operation of the other policers. The operation of the other policers include communicating over the network. And the Synchronizer policer has to send data to the new policer before the new policer can begin operating meets the limitation of "coordinate the admission… without disrupting data transmission)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network device of Bell by coordinate the admission of other BCN modems to the CCN without disrupting data transmission between the plurality of BCN modems as taught by Padwekar in order to maintain synchronization between the network device.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES LEIJA whose telephone number is (571)270-5249. The examiner can normally be reached on M-F 730 am to 5pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ANDREW Y. KOENIG can be reached on (571) 272-7296. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/FARZANA HOSSAIN/
Primary Examiner, Art Unit 2424

/J. L./
Examiner, Art Unit 2423

Notice of References Cited	Application/Control No. 11/231,349	Applicant(s)/Patent Under Reexamination BERNATH ET AL.	
	Examiner JAMES LEIJA	Art Unit 2423	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2005/0175123 A1	08-2005	Gurney et al.	375/324
*	B	US-2006/0221819 A1	10-2006	Padwekar, Ketan A.	370/229
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	**Art Unit**
	JAMES LEIJA	2423

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	08/19/2008	02/25/2009	07/28/2009	01/12/2010	11/11/2010	05/31/2011	12/12/2011		
	1	✓	✓	✓	✓	✓	✓	✓		
	2	✓	✓	✓	-	-	-	-		
	3	✓	✓	✓	✓	-	-	-		
	4	✓	✓	✓	✓	✓	✓	✓		
	5	✓	✓	✓	✓	✓	✓	✓		
	6	✓	✓	✓	✓	✓	✓	✓		
	7	✓	✓	✓	✓	✓	✓	✓		
	8	✓	✓	✓	✓	✓	✓	✓		
	9	✓	✓	✓	✓	✓	✓	✓		
	10	✓	✓	✓	✓	✓	✓	✓		
	11	✓	✓	✓	✓	✓	✓	✓		
	12	✓	✓	✓	✓	✓	✓	✓		
	13	✓	✓	✓	✓	✓	✓	✓		
	14	✓	✓	✓	✓	✓	✓	✓		
	15	✓	✓	✓	✓	✓	✓	✓		
	16	✓	✓	✓	✓	✓	✓	✓		
	17	✓	✓	✓	✓	✓	✓	✓		
	18	✓	✓	✓	✓	✓	✓	✓		
	19	✓	✓	✓	✓	-	-	-		
	20	✓	✓	✓	✓	-	-	-		
	21	✓	✓	✓	✓	✓	✓	✓		
	22	✓	✓	✓	✓	✓	✓	✓		
	23	✓	✓	✓	✓	-	-	-		
	24	✓	✓	✓	✓	✓	✓	✓		
	25	✓	✓	✓	✓	✓	✓	✓		
	26	✓	✓	✓	✓	✓	✓	✓		
	27	✓	✓	✓	✓	✓	✓	✓		
	28	✓	✓	✓	✓	✓	✓	✓		
	29	✓	✓	✓	✓	✓	✓	✓		
	30	✓	✓	✓	✓	✓	✓	✓		
	31	✓	✓	✓	✓	✓	✓	✓		
	32		✓	✓	✓	✓	✓	✓		
	33							✓		

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	Art Unit
	JAMES LEIJA	2423

SEARCHED			
Class	Subclass	Date	Examiner
725	78, 80, 109	7/28/2009	JL
709		2/25/2009	JL
370		2/25/2009	JL

SEARCH NOTES		
Search Notes	Date	Examiner
EAST	7/28/2009	JL
Spoke with Joe Ustaris - CL 725	7/28/2009	JL
Andrew Koenig -CL 725	7/28/2009	JL
update east	1/12/2010	JL
update east	11/11/2010	JL
update east	5/31/2011	JL
update east	12/12/2011	JL
inventor search	09/04/2008	JL

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S129	859	(join$4 igmp) same (network$2 adj control$3)	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 11:16
S130	2466	disrupt$6 with (network$4 with (transmission$4 communicat$4))	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 11:17
S131	2842	join$4 with disrupt $6	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 11:19
S132	3	S129 and S131	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 11:19
S133	5	(join$4 with disrupt $6) and igmp	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 11:27
S134	367	(join$4) with (network$4 group $4) same (disrupt $7)	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 12:12
S135	367	((join$4) with (network$4 group $4)) same (disrupt $7)	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 12:12
S140	2166	qpsk same qam same order$2	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 15:09
S141	79197	packet$4 with type $4	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 15:09
S142	404	S140 and S141	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 15:09
S143	18	S140 same S141	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 15:11
S144	9213	(qpsk qam) same order$2	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 15:20

S145	19	S140 and (S141 same S144)	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 15:20
S146	1	S145 not S143	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 15:21
S147	38	(S141 same S144)	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 15:25
S148	19	S147 not S145	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 15:25
S149	129623	control$4 with packet$4	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 16:34
S150	255813	data$4 with packet $4	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 16:35
S151	87891	S149 same S150	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 16:35
S152	198	S151 same S144	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 16:35
S153	1136	packet$4 same ((qpsk qam) same order$2)	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 16:46
S154	250	S149 same S144	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 16:46
S155	718	S150 same S144	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 16:46
S156	198	S154 and S155	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 16:47
S158	197	S154 and S155 and channel$4	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 16:48
S160	22	S154 and S155 and (channel$4 with equaliz$8)	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 16:48
S161	4783	(qpsk qam) with order$2	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 16:50

S162	81	S149 same S161	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 16:50
S163	253	S150 same S161	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 16:51
S164	46	S162 and S163	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 16:51
S165	2165	(qpsk qam) with order$2 with high $2	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 17:02
S166	674	(qpsk qam) with order$2 with low$3	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 17:02
S167	497	S165 and S166	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 17:02
S168	295	S165 and S166 and packet$4	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 17:03
S169	46	(S165 same packet $4) and (S166 same packet$4)	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/12 17:08

12/12/2011 6:09:20 PM
C:\Documents and Settings\jleija\My Documents\EAST\Workspaces\Workspaces pt I \11231349\11231349c.wsp

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	11231349	Filing Date	2005-09-19	Docket Number (if applicable)	E040004USU1/E5982.025	Art Unit	2423
First Named Inventor	Brett Bernath			Examiner Name	J. Leija		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

☐ Other _____

☒ Enclosed

☒ Amendment/Reply

☐ Information Disclosure Statement (IDS)

☐ Affidavit(s)/ Declaration(s)

☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 041679

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Signature of Registered U.S. Patent Practitioner			
Signature	/Jarrad M. Gunther, Reg. No. 63903/	Date (YYYY-MM-DD)	2011-09-07
Name	Jarrad M. Gunther	Registration Number	63903

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PATENT

Attorney Docket No. E040004USU1
(E5982-00025)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 11/231,349	Confirmation No.: 4520
In re application of: Brett Bernath et al.	Technology Center/Art Unit: 2423
Filed: September 19, 2005	Examiner: Leija, James
Docket No.: E040004USU1 (E5982-0025)	Customer No.: **77561**
Title: A BROADBAND LOCAL AREA NETWORK	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE WITH RCE UNDER 37 C.F.R. 1.114

Sir:

Responsive to the Final Office Action dated **June 7, 2011**, please amend the above-identified application as follows:

Amendments to the Claims begin on page 2 of this paper.

Remarks/Arguments begin on page 9 of this paper.

A **Request for Continued Examination** is submitted herewith.

AMENDMENT TO THE CLAIMS

This listing and version of the claims replace all prior listing and versions of the claims.

Listing of Claims

What is claimed is:

1. (Currently amended) A Broadband Coaxial Network ("BCN"), comprising:

a first BCN modem in signal communication with a coaxial cable network ("CCN"), the first BCN modem including a first controller; and

~~another~~ a second BCN modem in signal communication with the CCN including a second controller,

wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem and to adjust transmission power and bit loading over the at least one respective communication link based on a result of the probe;

wherein one of the first and second controllers is a network controller configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN; and

wherein the BCN provides both best effort capabilities in which short term requests are made and time allocation grants to transmit packets received by a BCN modem, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate.

2. (Canceled)

3. (Canceled)

4. (Currently amended) The [[method]] BCN of claim 1, wherein the second controller is configured to detect a control signal that identifies that [[a]] the network controller is coupled to the CCN.

5. (Original) The BCN of claim 1, wherein the signal communication occurs between the BCN modems that are located within a building.

6. (Original) The BCN of claim 5, wherein the building is a single family home.

7. (Original) The BCN of claim 5 wherein the building is a multi-unit dwelling unit.

8. (Previously presented) The BCN of claim 1, wherein the signal communication occurs via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency (RF) channels.

9. (Original) The BCN network of claim 1, wherein the signal communication carries encrypted data between the first BCN modem and the other BCN modem.

10. (Currently amended) A Broadband Coaxial Network ("BCN") for communicating on an in-building coaxial cable network ("CCN"), comprising:

a first BCN modem connected to a coaxial cable network ("CCN") and included in a plurality of BCN modems in the BCN network, the first BCN modem including a controller having communication links to ones of the plurality of BCN modems and configured to manage data transmission between each of the BCN modems in the BCN network; and

another of the plurality of BCN modems connected to the CCN and capable of signal communication with the first BCN modem including a second controller having communication links to ones of the plurality of BCN modems,

wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading; [[and]]

wherein the first controller establishes the first BCN modem as a network controller (NC) upon connection to the CCN, the network controller configured to coordinate the assignment of time slots during which data transmission between each of the BCN modems connected to the

CCN occur, ~~and wherein~~ the BCN provides both best effort capabilities in which short term requests are made by at least one BCN modem and time allocation grants to transmit packets are provided by the first BCN modem, and reserved communications capabilities in which long term requests are made by at least one BCN modem and a specific allocation is granted for a certain data rate by the first BCN modem; and

wherein the NC is configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission between the plurality of BCN modems.

11. (Previously presented) The BCN of claim 10, wherein the first BCN modem employs adaptive communication techniques that adapt to the characteristics of a coaxial channel between the first BCN modem and the other BCN modem.

12. (Previously presented) The BCN of claim 10, wherein the first BCN modem is directly in signal communication with the other BCN modem across the CCN.

13. (Original) The BCN of claim 12 wherein the CCN is a type of network having an architectural configuration selected from a group consisting of a star configuration and a mesh configuration and a combination of these configurations, in a TDMA, TDD access fashion, and the type of network utilizes at least one frequency channel.

14. (Previously presented) The BCN of claim 11, wherein the adaptive communication techniques includes utilization of the adaptive communication techniques in both transmitting processing and receiving processing of data.

15. (Original) The BCN of claim 14, wherein the adaptive communication techniques utilize pre-coding for transmitting processing.

16. (Original) The BCN of claim 14, wherein the adaptive communication techniques utilize adaptive equalization for receiving processing.

17. (Original) The BCN of claim 14, wherein the adaptive communication techniques include pre-coding for transmitting processing based on known or learned channel response.

18. (Original) The BCN of claim 14, wherein additional signal processing techniques are used which are selected from a group consisting of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes.

19. (Canceled)

20. (Canceled)

21. (Previously presented) The BCN of claim 10, wherein the NC includes a configuration selected from the group consisting of:

a configuration that enables every BCN modem to act as a NC:

a configuration that utilizes a frequency plan;

a configuration that allows a new BCN modem admission to the BCN Network;

a configuration that allows a new BCN modem to communicate with another BCN modem to characterize the channel response between them and determine a bit loading in either direction; and

a configuration that allows each BCN modem in the network to request and be granted a transmission opportunity without a transmission conflict.

22. (Original) The BCN of claim 21, wherein the communications services provided by the BCN include BCN wide transmission priorities.

23. (Canceled)

24. (Previously presented) The BCN of claim 10, wherein the BCN modem provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of:

Ethernet,

IEEE 1394,

Universal Serial Bus ("USB"); and

MPEG-TS.

25. (Original) The BCN of claim 11, wherein the BCN modem is embedded as a part of a device selected from the group consisting of:

a set-top box ("STB");

a Personal Computer (PC);

an IP STB;

a Media Center box;

a Media Extender box;

a DVD player;

a cable modem;

a personal video recorder ("PVR");

a TV set;

a networking device;

a switch/router;

a bridge/Gateway;

a video game console;

a wireless access point (WAP); and

a network attached storage.

26. (Previously presented) The BCN of claim 11, wherein the BCN modem is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB.

27. (Original) The BCN of claim 25, wherein the BCN modem utilizes the PCI bus structure.

28. (Original) The BCN of claim 27, wherein the BCN modem utilizes another host device.

29. (Original) The BCN of claim 28, wherein the host device is either a bridging host device or a switching host device.

30. (Original) The BCN of claim 10, wherein an at least one TDMA frequency channel used by the BCN network is in one or more of the following frequency bands:

above 860 MHz;

between 860 MHz and 950 MHz; and

below 50 MHz.

31. (Original) The BCN of claim 10, wherein the CCN network is one of the following:

coaxial cables that have been installed for the carriage of satellite signals; and

coaxial cables for video distribution.

32. (Currently amended) A network device, comprising:

a communication interface configured to connect to a broadband coaxial network ("BCN"); and

a controller in signal communication with the communication interface, the controller configured to:

periodically probe a communication link to another network device to determine a characteristic of the communication link;

use orthogonal frequency division multiplexing and bit-loading to adjust transmissions over each communication link based in part on the probe;

manage data transmission between each network device connected to the BCN by assigning time slots during which data transmission between each of the network devices occur;

provide both best effort capabilities in which short term requests are made by at least one BCN modem and time allocation grants to transmit packets are provided by the controller, and reserved communications capabilities in which long term requests are made by at least one BCN modem and a specific allocation is granted for a certain data rate by the controller; and

coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN.

33. (New) The BCN of claim 1, wherein the network controller is configured to periodically broadcast a packet of a first type to each BCN modem connected to the CCN using a lower order modulation than an order of modulation used by BCN modems to transmit packets of a second type directly between each other.

REMARKS

Claims 1, 4, 5, and 6 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,481,013 issued to Dinwiddie et al. ("Dinwiddie") in view of U.S. Patent No. 6,052,380 issued to Bell ("Bell") and U.S. Patent Application Publication No. 2003/0091067 in the name of Emerson et al. ("Emerson"). Claim 7 has been rejected as allegedly being unpatentable over Dinwiddie in view of Bell, Emerson, and U.S. Patent Application Publication No. 2003/0031191 in the name of El Wardani et al. ("El Wardani"), and claim 8 has been rejected as allegedly being unpatentable over Dinwiddie in view of Bell, Emerson, and U.S. Patent Application Publication No. 2002/0166124 in the name of Gurantz et al. ("Gurantz"). Claim 9 stands rejected as allegedly being unpatentable over Dinwiddie in view of Bell, Emerson, and U.S. Patent Application Publication No. 2002/0004898 in the name of Droge ("Droge").

The Action rejects claims 10–12, 14, 15, 17, and 31 as allegedly being unpatentable over Dinwiddie in view of Bell, U.S. Patent No. 6,307,862 issued to Silverman ("Silverman"), and Emerson.

Claims 13, 18, and 26 have been rejected as allegedly being unpatentable over Dinwiddie in view of Bell, Silverman, Emerson, and Gurantz. Claims 16, 25, and 27–30 stand rejected as allegedly being unpatentable over Dinwiddie in view of Bell, Silverman, Emerson, and El Wardani. Claims 21, 22, and 24 have been rejected as allegedly being unpatentable over Dinwiddie in view of Bell, Silverman, Emerson, and U.S. Patent No. 6,137,793 issued to Gorman et al. ("Gorman").

Claim 32 stands rejected as allegedly being unpatentable over Bell in further view of Dinwiddie and Silverman.

Rejections Under 35 U.S.C. § 103(a)

Claim 1 has been amended to recite, "wherein one of the first and second controllers is a network controller configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN." Support for the amendment may be found throughout the specification as originally filed. See, for example, paragraphs [50–52] and [66–68]. Dependent claim 4 has been amended to maintain proper antecedent basis in view of the amendment to claim 1. No new matter has been added. Dinwiddie, Bell, and Emerson fail to teach or suggest a BCN in which controllers directly communicate with one another and a network controller, which is one of the controllers, is configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN.

Dinwiddie discloses an apparatus for distributing radio frequency (RF) modulated broadcast television signals from a broadcast signal source to networked appliances. See Abstract. The networked appliances 44-48 in Dinwiddie communicate with one another by transmitting upstream signals to a distribution unit 22 which are then routed as downstream signals to the network appliances. Col. 4, lines 38-48; col. 7, lines 60-64; and col. 18, lines 40-44. Accordingly, Dinwiddie does not teach or suggest that of each of the BCN modems includes a controller that may directly communicate with another BCN modem connected to the CCN as set forth in claim 1.

Moreover, Dinwiddie is silent as to how new nodes are added to the network and therefore does not teach or suggest a BCN network that includes a network controller configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN as set forth in claim 1. Bell fails to cure the deficiencies of Dinwiddie with respect to these claimed features.

Bell discloses a network adapter utilizing an Ethernet protocol to provide a home network. Bell's network includes the ability to add new nodes to an existing network using a synchronization process. Col. 10, lines 23–39. The synchronization process is initiated by the new node, which notifies other nodes in the network of its presence to initiate the synchronization sequence. See Column 10, lines 40–58 (requiring the new node to transmit a specific signal pattern on a predetermined frequency).

However, the synchronization sequence disclosed in Bell disrupts the communication of the other nodes in the network. Specifically, Bell explicitly teaches that all network transmissions cease each time a new node is added. See col. 10, Lines 47–53.

Emerson also fails to teach or suggest a BCN as set forth in claim 1. Emerson discloses a method for segmenting data into packets. See Paragraph [0008]. Specifically, Emerson discloses data segmentation that occurs "on the fly" by hardware to reduce the power and gate-count. However, Emerson does not teach or suggest a network controller. Consequently, Emerson also fails to teach or suggest that a network controller coordinates the admission of new nodes without disrupting data transmission in the BCN.

One skilled in the art would not have been motivated by Dinwiddie, Bell, and Emerson to create a BCN as set forth in claim 1 since the references do not teach or suggest a network controller configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN. In contrast, one skilled in the art would have created a network in which a node trying to be added to the network sends a jamming signal to each of the other nodes in the network that causes each of the nodes to cease transmission until all point-to-point links have been initialized as taught by Bell.

In view of the above, claim 1 is allowable over Dinwiddie, Bell, and Emerson. Claims 4, 5, and 6 depend from claim 1 and are allowable at least by virtue of their dependence. Reconsideration and allowance of claims 4, 5, and 6 are requested.

Claim 7, which depends from claim 1, stands rejected over Dinwiddie in view of Bell, Emerson, and El Wardani. As set forth above, Dinwiddie, Bell, and Emerson fail to teach or suggest a BCN network that includes a network controller configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN. El Wardani fails to cure the deficiencies of Dinwiddie, Bell, and Emerson with respect to these claimed features.

El Wardani is directed to a signal bridge between a CATV and DBS wiring system to create a data network. Page 1, paragraph [0008]. However, El Wardani does not teach or suggest a BCN network that includes a network controller configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN as set forth in claim 1.

Accordingly, claim 7 is allowable over Dinwiddie, Bell, Emerson, and El Wardani at least by virtue of its dependence from claim 1. Reconsideration and allowance of claim 7 are requested.

Claim 8, which depends from claim 1, stands rejected over Dinwiddie in view of Bell, Emerson, and Gurantz. As set forth above, Dinwiddie, Bell, and Emerson fail to teach or suggest a BCN network that includes a network controller configured to coordinate the admission of

other BCN modems to the CCN without disrupting data transmission in the CCN. Gurantz fails to cure the deficiencies of Dinwiddie, Bell, and Emerson with respect to these claimed features.

Gurantz discloses a frequency selective network interface that is configured to reflect network signals to provide a path for terminal devices to transmit to and receive from other terminal devices. Paragraph [0022]. However, Gurantz does not teach or suggest a BCN network that includes a network controller configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN as set forth in claim 1.

Accordingly, claim 8 is allowable over Dinwiddie, Bell, Emerson, and Gurantz at least by virtue of its dependence from claim 1. Reconsideration and allowance of claim 8 are requested.

Claim 9, which depends from claim 1, stands rejected over Dinwiddie in view of Bell, Emerson, and Droge. As set forth above, Dinwiddie, Bell, and Emerson fail to teach or suggest a BCN network that includes a network controller configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN. Droge fails to cure the deficiencies of Dinwiddie, Bell, and Emerson with respect to these claimed features.

Droge fails to cure the deficiencies of Dinwiddie and Gurantz. Droge discloses a system and method for highly secure data communication by encrypting data prior to the transmission of data from one computer to another computer. See paragraph [0035]. However, Droge does not teach or suggest a BCN network that includes a network controller configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN as set forth in claim 1.

Claim 10 stands rejected as allegedly being unpatentable over Dinwiddie in view of Bell, Silverman, and Emerson. Claim 10 has been amended to recite "wherein the NC is configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission between the plurality of BCN modems." Support for this amendment can be found throughout the specification, including paragraphs [50–52] and [66–68]. No new matter has been added.

As set forth above, Dinwiddie, Bell, and Emerson fail to teach or suggest a BCN network that includes a network controller configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN. Silverman fails to cure the deficiencies of Dinwiddie, Bell, and Emerson with respect to these claimed features.

Silverman discuses a method for transmitting television channels and LAN channels over a coaxial cable. See Abstract. However, Silverman is silent with respect to how peripheral devices are added to the network. Silverman also fails to teach or suggest a network controller that is configured to coordinate the admission of BCN network nodes to a CCN. Accordingly, claim 10 is allowable over Dinwiddie in view of Bell, Emerson, and Silverman. Reconsideration and allowance of claim 10 are requested.

Claims 11–12, 14, 15, 17, and 31 depend from claim 10 and are allowable at least by virtue of their dependence. Reconsideration and allowance of claims 10–12, 14, 15, 17, and 31 are respectfully requested.

Claims 13, 18, and 26 depend from claim 10 and stand rejected over Dinwiddie, Bell, Silverman, Emerson, and Gurantz. Claims 13, 18, and 26 are allowable over Dinwiddie, Bell, Silverman, Emerson, and Gurantz for the reasons set forth above with respect to claims 10 and 8. Reconsideration and allowance of claims 13, 18, and 26 are requested.

Claims 16, 25, and 27-30 depend from claim 10 and stand rejected over Dinwiddie, Bell, Silverman, Emerson, and El Wardani. Claims 16, 25, and 27-30 are allowable over Dinwiddie, Bell, Silverman, Emerson, and El Wardani as set forth above with respect to claims 10 and 7.

Claims 21, 22, and 24, which depend from claim 10, stand rejected over Dinwiddie, Bell, Silverman, Emerson, and Gorman. As set forth above with respect to claim 10, Dinwiddie, Bell, Silverman, and Emerson do not teach or suggest a BCN including a NC is configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission between the plurality of BCN modems. Gorman fails to teach or suggest these claimed features.

Gorman discloses a two-way hybrid fiber-coax cable network capable of bi-directionally transmitting data packets. See Abstract. Much like Dinwiddie, Gorman discloses a headend communication controller through which all communication in the network must pass. Col. 13, lines 22-36. However, Gorman does not teach or suggest a BCN including a NC is configured to coordinate the admission of other BCN modems to the CCN without disrupting data transmission between the plurality of BCN modems.

Accordingly, claims 21, 22, and 24 are allowable over Dinwiddie, Bell, Silverman, Emerson, and Gorman. Reconsideration and allowance of claims 21, 22, and 24 are requested.

Claim 32 stands rejected as allegedly being unpatentable over Dinwiddie in view of Bell and Silverman. Claim 32 has been amended to recite, "coordinate the admission of other BCN modems to the CCN without disrupting data transmission in the CCN." Support for this

amendment can be found throughout the specification, including paragraphs [50–52] and [66–68]. No new matter has been added.

Claim 32 is allowable over Dinwiddie, Bell, and Silverman for at least the same reasons set forth above with respect to claims 1 and 10. Reconsideration and allowance of claim 32 are requested.

New claim 33 depends from claim 1 recites "wherein the network controller is configured to periodically broadcast a packet of a first type to each BCN modem connected to the CCN using a lower order modulation than an order of modulation used by BCN modems to transmit packets of a second type directly between each other." Support for the amendment may be found throughout the application as originally filed. See, for example, paragraphs 52-56. No new matter has been added.

In addition to being allowable by virtue of its dependence, new claim 33 recites features not taught or suggested by any of the cited references. Specifically, none of the references teach or suggest that a network controller is configured to periodically broadcast a packet of a first type to each BCN modem connected to the CCN using a lower order modulation than an order of modulation used by BCN modems to transmit packets of a second type directly between each other. Allowance of claim 33 is requested.

CONCLUSION

In view of the foregoing remarks, the application is in condition for allowance. Reconsideration application and allowance of the application are respectfully requested.

The Director is hereby authorized to charge any additional fees or credit any excess payment that may be associated with this communication to deposit account **04-1679.**

Respectfully submitted,

Dated: SEPTEMBER 7, 2011

Jarrad M. Gunther
Reg. No.: 63,903
Attorney for Applicant

DUANE MORRIS LLP
30 South 17th Street
Philadelphia, Pennsylvania 19103
(215) 979-1250 (Telephone)
(215) 979-1020 (Fax)
(215) 979-1837 (Direct)

Electronic Patent Application Fee Transmittal	
Application Number:	11231349
Filing Date:	19-Sep-2005
Title of Invention:	Broadband local area network
First Named Inventor/Applicant Name:	Brett Bernath
Filer:	Jarrad Michaelis Gunther/Janet Jiulianti
Attorney Docket Number:	E040004USU1
Filed as Large Entity	

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Request for continued examination	1801	1	810	810
		Total in USD ($)		**810**

Electronic Acknowledgement Receipt	
EFS ID:	10892458
Application Number:	11231349
International Application Number:	
Confirmation Number:	4520
Title of Invention:	Broadband local area network
First Named Inventor/Applicant Name:	Brett Bernath
Customer Number:	77561
Filer:	Jarrad Michaelis Gunther/Janet Jiulianti
Filer Authorized By:	Jarrad Michaelis Gunther
Attorney Docket Number:	E040004USU1
Receipt Date:	07-SEP-2011
Filing Date:	19-SEP-2005
Time Stamp:	14:39:40
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$810
RAM confirmation Number	944
Deposit Account	041679
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1	Request for Continued Examination (RCE)	rce.pdf	697898 84a2ec5945a4c4b48837cef11c711d46ba305aea	no	3
Warnings:					
Information:					
2		asfiledamend7sept11.pdf	1331684 ec778aca8bc1d570c6864efa7815340a8191334f	yes	17
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Amendment Submitted/Entered with Filing of CPA/RCE		1	1	
	Claims		2	8	
	Applicant Arguments/Remarks Made in an Amendment		9	17	
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30122 61014dfce6cf4e88cba61cfec147e06900eccc70	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	2059704		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/231,349	09/19/2005	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	09/07/2011	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 28	Minus	** 32	= 0	X $ =		OR	X $52=	0
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $ =		OR	X $220=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/VIKKI GRAY/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/231,349	09/19/2005	Brett Bernath	E040004USU1	4520

77561 7590 06/07/2011

Duane Morris LLP (Entropic)
IP Department
30 South 17th Street
Philadelphia, PA 19103-4196

EXAMINER	
LEIJA, JAMES	
ART UNIT	PAPER NUMBER
2423	
MAIL DATE	DELIVERY MODE
06/07/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	11/231,349	BERNATH ET AL.	
	Examiner	Art Unit	
	JAMES LEIJA	2423	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03/18/2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-18,21,22 and 24-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-18,21,22 and 24-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 03/18/2011 have been fully considered but they are not persuasive.

The applicant provides arguments directed towards the independent claims of claims 1, 4-18, 21, 22, 24-32. Applicant argues that Emerson does not teach or suggest

"... reserved communications capabilities in which **long term requests are made** and a specific allocation is granted for a certain data rate."

The examiner respectfully disagrees. Emerson discloses on page 1 [0012] lines 1-2, 11-15 describe the determination of the maximum available time-slots, in which there are an infinite number of time-slots available. This reads on "reserved communications **capabilities in which long term requests are made**".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Bell (USPN 6,052,380), and Emerson et al (US 2003/0091067).

As per claim 1 Dinwiddie teaches a Broadband Coaxial Network ("BCN'), comprising:

a first BCN modem (Dinwiddie fig 1A element 102) in signal communication with a coaxial cable network ("CCN"), (Dinwiddie fig 1a and 1b illustrate a wired network), (Dinwiddie column 4 lines 40-45, column 5 lines 34-36 describe the wired network connected using by coaxial cable), (Dinwiddie column 9 lines 1-3 describes communication between a modem and network)

another BCN modem (Dinwiddie fig 1A and 1B elements 104, 106, 107 and 108) in signal communication with the CCN (Dinwiddie fig 1A and 1B illustrate elements 106, 107 and 108 connected to the network)

Dinwiddie is silent on the first BCD modem including a first controller; and the another BCN modem including a second controller, and wherein each of the first and second controllers are configured to probe at least one respective communication link

connecting that controller directly to at least one other BCN modem and to adjust transmission power over the at least one respective communication link based on a result of the probe

Bell teaches the first BCD modem including a first controller; and the another BCN modem including a second controller, (Bell column 5 lines 41-53, and fig 3 illustrates multiple nodes, each node has that have controller)

wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem and to adjust transmission power and bit loading over the at least one respective communication link based on a result of the probe. (Bell column 12 lines 4-30, column 4 lines 30 -39, wherein DMT initialization reads on adjusting transmission power and bit-loading based on a result of the probe.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network of Dinwiddie by the first BCD modem including a first controller; and the another BCN modem including a second controller, wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem as taught by Bell in order determine the location of portable devices.

Dinwiddie teaches wherein the BCN provides to transmit packets received by a BCN modem, and (Dinwiddie col. 9 lines 1-23 describe video distribution throughout the home network)

Dinwiddie is silent on both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate.

Emerson teaches both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and (Emerson page 1 [0012] describes asynchronous data traffic which reads on best effort capabilities)

reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate. (Emerson page 2 [0020] describes isochronous traffic as having reserved timeslots which reads on reserved communications capabilities for "certain data rate")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN of Dinwiddie by both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate as taught by Emerson in order to provide on the fly data segmentation.

As per claim 4 Dinwiddie in view of Bell and Emerson teach the BCN of claim 1,

Dinwiddie is silent on wherein the second controller is configure to detect a control signal that identifies a network controller is coupled to the CCN

Bell teaches wherein the second controller is configure to detect a control signal that identifies a network controller is coupled to the CCN (Bell column 11 lines 7-45 describe determining the master node by detecting each node timer value.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN of Dinwiddie by wherein the second controller is configure to detect a control signal that identifies a network controller is coupled to the CCN as taught by Bell in order to initialize a channel equalization process that allows each node to know the transmission characteristics of each path between each node.

As per claim 5 Dinwiddie in view of Bell and Emerson teach the BCN of claim 1, wherein the signal communication occurs between the BCN modems that are located within a building. (Dinwiddie column 4 lines 15-18)

As per claim 6 Dinwiddie in view of Bell and Emerson teach the BCN of claim 5, wherein the building is a single family home. (Dinwiddie column 4 lines 19-20)

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Bell (USPN 6,052,380), and Emerson et al (US 2003/0091067), and El Wardani et al. (Pub. No.: US 2003/0031191).

As per claim 7 Dinwiddie in view of Bell and Emerson teach the BCN of claim 5

Dinwiddie teaches the building as a dwelling unit (Dinwiddie column 4 lines 18-19)

But Dinwiddie is silent on the building being a multi-unit dwelling unit.

El Wardani teaches a building being a multi-unit dwelling unit. (El Wardani page 1 [0004] lines 1-3)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the building of Dinwiddie by being a multi dwelling unit as taught by El Wardani in order to provide to multiple users in a building.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Bell (USPN 6,052,380), and Emerson et al (US 2003/0091067), and Gurantz et al (Pub No.: US 2002/0166124)

As per claim 8 Dinwiddie in view of Bell and Emerson teach the BCN of claim 1.

Dinwiddie teaches signal communication (Dinwiddie column 2 lines 36-38)

But Dinwiddie is silent on communication via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency(R_F) channels.

Gurantz teaches communication via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency(R_F) channels. (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used along with modulation as a communication scheme.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication of Dinwiddie by communicating using TDD and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transceiver.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Bell (USPN 6,052,380), and Emerson et al (US 2003/0091067), and Droge (Pub No.: US 2002/0004898).

As per claim 9 Dinwiddie in view of Bell and Emerson teach the BCN network of claim 1,

Dinwiddie teaches communication between the first and the other modem. (Dinwiddie column 11 lines 11-13)

Dinwiddie is silent on the signal communication carries encrypted data between the first BCN modem and the other BCN modem.

Droge teaches the signal communication carries encrypted data between the first BCN modem and the other BCN modem. (Droge Fig 2 elements 16 and 24, illustrates two modems in communication over a network, [0050] describes encrypting the data that's communicated.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication of Dinwiddie by encrypting the data as taught by Droge in order to provide secure transmitting and receiving.

Claims 10-12, 14, 15, 17, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of and Bell (USPN 6,052,380), and Silverman (USPN 6,307,862), and Emerson et al (US 2003/0091067).

As per claim 10 Dinwiddie teaches a Broadband Coaxial Network ("BCN") for communicating on an in- building coaxial cable network ("CCN"), comprising:

a first BCN modem (Dinwiddie fig 1A element 102) connected to a coaxial cable network ("CCN") (Dinwiddie fig 1a and 1b illustrate a wired network), (Dinwiddie column 4 lines 40-45, column 5 lines 34-36 describe the wired network connected using by coaxial cable), and included in a plurality of BCN modems in the BCN network, (Dinwiddie fig 1a and fig 1b illustrates a network with multiple modem elements 102, 106, 107, 104 and 108)

Dinwiddie teaches the first BCN modem having communication links to ones of the plurality of BCN modems and (Dinwiddie column 4 lines 40-42 and 45-48) configured to manage data transmission between each of the BCN modems in the BCN network; and (Dinwiddie column 15 lines 22-29 and 48-54 and column 16 lines 9-10 and 20-23)

Dinwiddie teaches another of the plurality of BCN modems connected to the CCN and (Dinwiddie fig 1a and fig 1b illustrates a network with multiple modem elements 104, 106, 107 and 108) capable of signal communication with the first BCN modem

(Dinwiddie column 11 lines 11-13) having communication links to ones of the plurality of BCN modems, (Dinwiddie column 4 lines 40-42 and 45-48)

Dinwiddie is silent on including a controller and a second controller

Bell teaches including a controller and a second controller, (Bell column 6 lines 64-65 describe each computer 112 and 114 as having a network adapter, where fig 4 illustrates that the network adapters of each computer have a controller 212)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the modems of Dinwiddie by including a controller and a second controller as taught by Bell in order provide improved reliability, robustness, bandwidth and noise resistance of the ADSL layer

Dinwiddie is silent on wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading

Bell teaches wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading; and (Bell column 12 lines 4-30, column 9 lines 36 -52, wherein DMT initialization reads on OFDM bit-loading.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the modems of Dinwiddie by wherein each of the controllers is configured to periodically probe each of their communication links to other

BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading as taught by Bell in order provide improved reliability, robustness, bandwidth and noise resistance of the ADSL layer.

Dinwiddie teaches wherein the first controller establishes the first BCN modem as a network controller(NC) upon connection to the CCN, (Dinwiddie column 11 lines 14-25 describe the PC 45 has a host) the network controller configured to manage data transmission between each of the BCN modems connected to the CCN. (Dinwiddie column 15 lines 22-29 and 48-54 and column 16 lines 9-10 and 20-23)

Dinwiddie is silent on to coordinate the assignment of time slots

Silverman teach the network controller configured to coordinate the assignment of time slots during which data transmission occur (Silverman abstract lines 15-18, col. 3 lines 12-28, col.3 lines 66 to col. 4 lines 9, and col. 4 lines 48-53)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network controller of Dinwiddie by to coordinate the assignment of time slots as taught by Silverman in order to provide two-way communication using coaxial cable in a home LAN.

Dinwiddie teaches wherein the BCN provides to transmit packets are received by a BCN modem, and (Dinwiddie col. 9 lines 1-23 describe video distribution throughout the home network)

Dinwiddie is silent on both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate.

Emerson teaches both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and (Emerson page 1 [0012] describes asynchronous data traffic which reads on best effort capabilities)

reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate. (Emerson page 2 [0020] describes isochronous traffic as having reserved timeslots which reads on reserved communications capabilities for "certain data rate")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN of Dinwiddie by both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate as taught by Emerson in order to provide on the fly data segmentation.

As per claim 11 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 10, wherein the first BCN modem (Dinwiddie fig 5A) employs adaptive communication techniques that adapt to the characteristics of a coaxial channel between the first BCN modem and the other BCN modem. (Dinwiddie fig 5A elements 122 and 110, column 9 lines 36-40 describes a BALUM which converts the a signal to conform to the characteristics of the coaxial cable)

As per claim 12 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 10, wherein the first BCN modem is directly in signal communication with the other BCN modem across the CCN. (Dinwiddie Fig 1 column 15 lines 25-34)

As per claim 14 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 11, wherein adaptive communication techniques includes utilization of the adaptive communication techniques in both transmitting processing and receiving processing of data. (Dinwiddie fig 5A elements 122 column 9 lines 34-40 describes receiving processed data from a modulator which reads on receiving processing of data and processing that data in the BALUM and filter then transmitting the processed data.)

As per claim 15 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 14, wherein the adaptive communication utilizes pre-coding for transmitting processing. (Dinwiddie column 9 lines 27-34 describe coding the data before transmitting the data.), (Dinwiddie column 9 lines 35-40 describe the BALUM and filter transmitting the processed data.)

As per claim 17 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 14, wherein the adaptive communication techniques include pre-coding for (Dinwiddie column 9 lines 27-34 describe coding the data before transmitting the data.) transmitting processing based on known or learned channel response.(Dinwiddie column 9 lines 35-40 describe the BALUM and filter transmitting the processed data.), (Dinwiddie columns 9 lines 56-58 describe the coding as modulation which is a processing, as well as describing the modulation as based on a selected channel which reads on a known channel response)

As per claim 31 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 10, wherein the CCN network is one of the following:

coaxial cables that have been installed for the carriage of satellite signals; and coaxial cables for video distribution.(Dinwiddie column 5 lines 50-55)

Claims 13, 18, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of and Bell (USPN 6,052,380) and Silverman (USPN 6,307,862), and Emerson et al (US 2003/0091067), and Gurantz et al (Pub No.: US 2002/0166124)

As per claim 13 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 12 wherein the CCN is a type of network having a architectural configuration selected from a group consisting of

Dinwiddie teaches a star configuration and (Dinwiddie fig 12 illustrates the distribution unit of the network in a star configuration) a mesh configuration and a combinations of these configurations, using the star configuration in an accessible fashion. (Dinwiddie column 12 lines 64-67 describes the use of signal paths for communication which reads on an accessible fashion)

Dinwiddie is silent on a TDMA and Time Division Duplex (TDD) access fashion, and the type of network utilizes at least one frequency channel

Gurantz teaches a TDMA and Time Division Duplex (TDD) access fashion, and (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used along with modulation as communication scheme.) the type of network utilizes at least one frequency channel. (Gurantz page 4 [0039] lines 1-3 the use of TDD in the network, using a frequency.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the access fashion of Dinwiddie by

communicating using TDD and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transceiver.

As per claim 18 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 14.

Dinwiddie teaches signal processing techniques are used (Dinwiddie column 9 lines 25-35 describe the use of RF modulation)

Dinwiddie is silent on using additional signal processing techniques selected from a group of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes.

Gurantz teaches using additional signal processing techniques selected from a group of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes. (Gurantz page 4 [0046]-[0047] describe the use of DMT and OFDM which reads on the use of additional processing techniques being OFDM)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the signal processing of Dinwiddie by processing using OFDM as taught by Gurantz in order to overcome the effects of inter-symbol interference.

As per claim 26 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 11, wherein the BCN modem

Dinwiddie is silent on is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB

Gurantz teaches is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB. (Gurantz page 3 [0035], [0036] describe the use of a DS-SS receiver which reads on a satellite STB.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN modem of Dinwiddie by is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB as taught by Gurantz in order to allow user to have choice of content source.

Claims 16, 25 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of and Bell (USPN 6,052,380) and Silverman (USPN 6,307,862), and Emerson et al (US 2003/0091067), and El Wardani et al. (Pub. No.: US 2003/0031191).

As per claim 16 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 14.

Dinwiddie teach adaptive communication techniques. (Dinwiddie fig 5A elements 122 and 110, column 9 lines 36-40 describes a BALUM which converts the a signal to conform to the characteristics of the coaxial cable)

Dinwiddie is silent on utilizing adaptive equalization processing.

El Wardani teaches utilizing adaptive equalization processing. (Wardani page 4 [0054])

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the adaptive communication techniques of

Dinwiddie by utilizing an adaptive equalizer as taught by El Wardani in order to improve the signal quality.

As per claim 25 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 11, wherein the BCN modem is embedded as a part of a device selected from the group consisting of:

a set-top box ("STB"); a Personal Computer (PC); an IP STB; a Media Center box; a Media Extender box; a DVD player; a cable modem; a personal video recorder ("PVR"); a TV set; a networking device; a switch/router;

a bridge/Gateway; (El Wardani fig 1 element 200 [0031] lines 5-8)

a video game console; a wireless access point (WAP); and a network attached storage.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify BCN of Dinwiddie by embedding the device within a bridge as taught by El Wardani in order to provide a mechanism to communicate signals between two systems.

As per claim 27 Dinwiddie in view of Bell and Silverman and Emerson and El Wardani teach the BCN of claim 25, wherein the BCN modem utilizes the PCI bus structure. (El Wardani page 3 [0040] lines 12-15 describes the use of an Ethernet interface which inherently utilizes the PCI bus structure)

As per claim 28 Dinwiddie in view of Bell and Silverman and Emerson and El Wardani teach the BCN of claim 27, wherein the BCN modem utilizes another host device. (El Wardani fig 4 page 3 [0038] describes the use of the modem in another device)

As per claim 29 Dinwiddie in view of Bell and Silverman and Emerson and El Wardani teach the BCN of claim 28, wherein the host device is either a bridging host device or a switching host device. (El Wardani fig 4 page 3 [0038] describes the use of the modem in a bridging device.)

As per claim 30 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 10.

Dinwiddie is silent on a TDMA frequency channel in the BCN network using one or more frequency bands: above 860 MHz; between 860 MHz and 950 MHz; and below 50 MHz. above

El Wardani teaches a TDMA frequency channel in the BCN network using one or more frequency bands: using one or more frequency bands: above 860 MHz; (El Wardani fig 8 page 3 [0045], [0046] lines 1-4) between 860 MHz and 950 MHz; and (El Wardani fig 8 page 3 [0046] lines 5-7) below 50 MHz. (El Wardani fig 8 page 3 [0048])

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify BCN network of Dinwiddie by on a TDMA frequency channel in the BCN network using one or more frequency bands: above 860

MHz; between 860 MHz and 950 MHz; and below 50 MHz. above as taught by El

Wardani in order to allow the network band to reside at any frequency on the cable.

Claims 21, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable Dinwiddie et al. (USPN 6,481,013) and further in view of and Bell (USPN 6,052,380) and Silverman (USPN 6,307,862), and Emerson et al (US 2003/0091067), and Gorman et al. (USPN 6,137,793)

As per claim 21 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 10, wherein the NC includes

Dinwiddie is silent on a configuration selected from the group consisting of: a configuration that utilizes a frequency plan

Gorman teaches a configuration selected from the group consisting of: a configuration that utilizes a frequency plan; (Gorman column 12 lines 58-60 fig 1 illustrates the use of a cable TV network, which reads on a frequency plan.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the NC of Dinwiddie by a configuration selected from the group consisting of: a configuration that utilizes a frequency plan as taught by Gorman in order to provide multimedia services.

As per claim 22 Dinwiddie in view of Bell and Silverman and Emerson and Gorman teach the BCN of claim 21, wherein the communications services provided by the BCN include BCN wide transmission priorities. (Gorman column 13 lines 22-27)

As per claim 24 Dinwiddie in view of Bell and Silverman and Emerson and Gorman teach the BCN of claim 10,

Dinwiddie is silent on wherein the BCN modem provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of: Ethernet

Gorman teaches wherein the BCN modem provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of: Ethernet, (Gorman column 6 lines 53-57 describe ATM adaptation , column 7 lines 1-3 describe the use of Ethernet services) IEEE 1394, Universal Serial Bus ("USB"); and MPEG-TS.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN modem of Dinwiddie by provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of: Ethernet as taught by Gorman in order to integrate multimedia services.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bell (USPN 6,053,380) and further in view of Dinwiddie et al. (USPN 6,481,013) and Silverman (USPN 6,307,862).

As per claim 32 Bell teaches a network device, comprising:

a communication interface (Bell fig 2 illustrates a network adapter aka network interface card) configured to connect to a broadband coaxial network ("B CN"); and (Bell Fig 1 column 6 lines 49-53 describe the network cabling as coaxial)

a controller in signal communication with the communication interface, (Bell column 5 lines 42- 50)

the controller configured to:

periodically probe a communication link to another network device to determine a characteristic of the communication link; (Bell column 12 lines 4-47 and column 13 lines 23-28)

use orthogonal frequency division multiplexing and bit-loading to adjust transmissions over each communication link based in part on the probe; and (Bell column 8 lines 53-62 describe the use of DMT which reads on OFDM bit-loading.)

Bell is silent on manage data transmission between each network device connected to the BCN, by assigning time slots during which data transmission between each of the network devices occur

Dinwiddie teaches to manage data transmission between each network device connected to the BCN (Dinwiddie column 15 lines 22-29 and 48-54 and column 16 lines 9-10 and 20-23)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network device of Dinwiddie by manage data transmission between each network device connected to the BCN as taught by Dinwiddie in order to provide a central control station for all the components attached to the network.

Silverman teach by assigning time slots during which data transmission between each of the network devices occur (Silverman abstract lines 15-18, col. 3 lines 12-28, col.3 lines 66 to col. 4 lines 9, and col. 4 lines 48-53)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the controller of Bell and Dinwiddie by assigning time slots during which data transmission between each of the network devices occur as taught by Silverman in order to provide two-way communication using coaxial cable in a home LAN.

Bell is silent on both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate.

Emerson teaches both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are provided by the controller, and (Emerson page 1 [0012] describes determining asynchronous data traffic to time slots which reads on best effort capabilities)

reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate by the controller (Emerson page 2 [0020] describes determining isochronous traffic as having reserved timeslots which reads on reserved communications capabilities for "certain data rate")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the controller of Bell by provide both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate as taught by Emerson in order to provide on the fly data segmentation.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES LEIJA whose telephone number is (571)270-5249. The examiner can normally be reached on M-F 730 am to 5pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ANDREW Y. KOENIG can be reached on (571) 272-7296. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. L./
Examiner, Art Unit 2423

/Andrew Y Koenig/
Supervisory Patent Examiner, Art Unit 2423

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	Art Unit
	JAMES LEIJA	2423

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	08/19/2008	02/25/2009	07/28/2009	01/12/2010	11/11/2010	05/31/2011			
	1	✓	✓	✓	✓	✓	✓			
	2	✓	✓	✓	-	-	-			
	3	✓	✓	✓	✓	-	-			
	4	✓	✓	✓	✓	✓	✓			
	5	✓	✓	✓	✓	✓	✓			
	6	✓	✓	✓	✓	✓	✓			
	7	✓	✓	✓	✓	✓	✓			
	8	✓	✓	✓	✓	✓	✓			
	9	✓	✓	✓	✓	✓	✓			
	10	✓	✓	✓	✓	✓	✓			
	11	✓	✓	✓	✓	✓	✓			
	12	✓	✓	✓	✓	✓	✓			
	13	✓	✓	✓	✓	✓	✓			
	14	✓	✓	✓	✓	✓	✓			
	15	✓	✓	✓	✓	✓	✓			
	16	✓	✓	✓	✓	✓	✓			
	17	✓	✓	✓	✓	✓	✓			
	18	✓	✓	✓	✓	✓	✓			
	19	✓	✓	✓	✓	-	-			
	20	✓	✓	✓	✓	-	-			
	21	✓	✓	✓	✓	✓	✓			
	22	✓	✓	✓	✓	✓	✓			
	23	✓	✓	✓	✓	-	-			
	24	✓	✓	✓	✓	✓	✓			
	25	✓	✓	✓	✓	✓	✓			
	26	✓	✓	✓	✓	✓	✓			
	27	✓	✓	✓	✓	✓	✓			
	28	✓	✓	✓	✓	✓	✓			
	29	✓	✓	✓	✓	✓	✓			
	30	✓	✓	✓	✓	✓	✓			
	31	✓	✓	✓	✓	✓	✓			
	32		✓	✓	✓	✓	✓			

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	Art Unit
	JAMES LEIJA	2423

SEARCHED			
Class	Subclass	Date	Examiner
725	78, 80, 109	7/28/2009	JL
709		2/25/2009	JL
370		2/25/2009	JL

SEARCH NOTES		
Search Notes	Date	Examiner
EAST	7/28/2009	JL
Spoke with Joe Ustaris - CL 725	7/28/2009	JL
Andrew Koenig -CL 725	7/28/2009	JL
update east	1/12/2010	JL
update east	11/11/2010	JL
update east	5/31/2011	JL

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	712	(short near3 request $4) and (long near3 request$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/05/29 13:52
L2	5069	(best near3 effort $4) and reserve$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/05/29 13:52
L3	29	L1 and L2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2011/05/29 13:52
L4	3116	isochronous same asynchronous	US-PGPUB; USPAT	OR	OFF	2011/05/29 13:52
L5	468231	coaxial$4 co?axial$4	US-PGPUB; USPAT	OR	OFF	2011/05/29 13:52
L6	423533	ieee$5	US-PGPUB; USPAT	OR	OFF	2011/05/29 13:52
L7	205	L4 and L5 and L6	US-PGPUB; USPAT	OR	OFF	2011/05/29 13:52
L8	14	(L4 same request$4) and L5 and L6 and (hom$4 hous$4) and L4	US-PGPUB; USPAT	OR	OFF	2011/05/29 13:52
L9	3116	isochronous same asynchronous	US-PGPUB; USPAT	OR	OFF	2011/05/29 13:52
L10	38	L9 same (timeslot$4 time?slot$4)	US-PGPUB; USPAT	OR	OFF	2011/05/29 13:52
L11	468231	coaxial$4 co?axial$4	US-PGPUB; USPAT	OR	OFF	2011/05/29 13:52
L12	147	(timeslot$4 time?slot $4) with asynchronous	US-PGPUB; USPAT	OR	OFF	2011/05/29 13:52
L13	8	L12 and L11	US-PGPUB; USPAT	OR	OFF	2011/05/29 13:52

L14	14	L12 and L9	US-PGPUB; USPAT	OR	OFF	2011/05/29 13:52

EAST Search History (Interference)

< This search history is empty>

5/29/2011 1:53:14 PM
C:\Documents and Settings\jleija\My Documents\EAST\Workspaces\11231349\11231349c.wsp

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:
Brett Bernath et al.

Serial No.: 11/231,349

Filed: September 19, 2005

For: A BROADBAND LOCAL AREA NETWORK

Group Art Unit: 2423

Confirmation No. 4520

AMENDMENT

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attention: **James Leija**
Examiner

Dear Sir:

In response to the Final Office Action of November 19, 2010, please note the following remarks and comments:

Amendments to the Claims begin on page 2 of this paper.

Remarks/Comments begin on page 8 of this paper.

I hereby certify that this correspondence is being electronically deposited with the Commissioner for Patents through the USPTO electronic filing system, on:

March 18, 2011
(Date of Deposit)
Tim Ellis
(Name of Person Making Deposit)
/Tim Ellis/
(Signature)

AMENDMENTS TO THE CLAIMS:

What is claimed is:

1. (Currently amended) A Broadband Coaxial Network ("BCN"), comprising:

a first BCN modem in signal communication with a coaxial cable network ("CCN"), the first BCN modem including a first controller; and

another BCN modem in signal communication with the CCN including a second controller,

wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem and to adjust transmission power and bit loading over the at least one respective communication link based on a result of the probe; and

wherein the BCN provides both best effort capabilities in which short term requests are made and time allocation grants to transmit packets ~~are~~ received by a BCN modem, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate.

2. (Previously Cancelled)

3. (Previously Cancelled)

4. (Previously Amended) The BCN of claim 1, wherein the second controller is configured to detect a control signal that identifies that a network controller is coupled to the CCN.

5. (Original) The BCN of claim 1, wherein the signal communication occurs between the BCN modems that are located within a building.

6. (Original) The BCN of claim 5, wherein the building is a single family home.

7. (Original) The BCN of claim 5 wherein the building is a multi-unit dwelling unit.

8. (Previously Presented) The BCN of claim 1, wherein the signal communication occurs via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency (RF) channels.

9. (Original) The BCN network of claim 1, wherein the signal communication carries encrypted data between the first BCN modem and the other BCN modem.

10. (Previously Amended) A Broadband Coaxial Network ("BCN") for communicating on an in-building coaxial cable network ("CCN"), comprising:

a first BCN modem connected to a coaxial cable network ("CCN") and included in a plurality of BCN modems in the BCN network, the first BCN modem including a controller having communication links to ones of the plurality of BCN modems and configured to manage data transmission between each of the BCN modems in the BCN network; and

another of the plurality of BCN modems connected to the CCN and capable of signal communication with the first BCN modem including a second controller having communication links to ones of the plurality of BCN modems,

wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading; and

wherein the first controller establishes the first BCN modem as a network controller (NC) upon connection to the CCN, the network controller configured to coordinate the assignment of time slots during which data transmission between each of the BCN modems connected to the CCN occur and wherein the BCN provides both best effort capabilities in which short term requests are made by at least one BCN modem and time allocation grants to transmit packets are provided by the first BCN modem, and reserved communications capabilities in which long term requests are made at least one BCN modem and a specific allocation is granted for a certain data rate by the first BCN modem.

11. (Previously Amended) The BCN of claim 10, wherein the first BCN modem employs adaptive communication techniques that adapt to the characteristics of a coaxial channel between the first BCN modem and the other BCN modem.

12. (Previously Presented) The BCN of claim 10, wherein the first BCN modem is directly in signal communication with the other BCN modem across the CCN.

13. (Original) The BCN of claim 12 wherein the CCN is a type of network having an architectural configuration selected from a group consisting of a star configuration and a mesh configuration and a combination of these configurations, in a TDMA, TDD access fashion, and the type of network utilizes at least one frequency channel.

14. (Previously Presented) The BCN of claim 11, wherein the adaptive communication techniques includes utilization of the adaptive communication techniques in both transmitting processing and receiving processing of data.

15. (Original) The BCN of claim 14, wherein the adaptive communication techniques utilize pre-coding for transmitting processing.

16. (Original) The BCN of claim 14, wherein the adaptive communication techniques utilize adaptive equalization for receiving processing.

17. (Original) The BCN of claim 14, wherein the adaptive communication techniques include pre-coding for transmitting processing based on known or learned channel response.

18. (Original) The BCN of claim 14, wherein additional signal processing techniques are used which are selected from a group consisting of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes.

19. (Previously Cancelled)

20. (Previously Cancelled)

21. (Previously Amended) The BCN of claim ~~20~~ 10, wherein the NC includes a configuration selected from the group consisting of:

a configuration that enables every BCN modem to act as a NC:

a configuration that utilizes a frequency plan;

a configuration that allows a new BCN modem admission to the BCN Network;

a configuration that allows a new BCN modem to communicate with another BCN modem to characterize the channel response between them and determine a bit loading in either direction; and

a configuration that allows each BCN modem in the network to request and be granted a transmission opportunity without a transmission conflict.

22. (Original) The BCN of claim 21, wherein the communications services provided by the BCN include BCN wide transmission priorities.

23. (Previously Cancelled)

24. (Previously Amended) The BCN of claim 10 ~~19~~, wherein the BCN modem provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of:

Ethernet,

IEEE 1394,

Universal Serial Bus ("USB"); and

MPEG-TS.

25. (Original) The BCN of claim 11, wherein the BCN modem is embedded as a part of a device selected from the group consisting of:

a set-top box ("STB");

a Personal Computer (PC);

an IP STB;

a Media Center box;

a Media Extender box;

a DVD player;
a cable modem;
a personal video recorder ("PVR");
a TV set;
a networking device;
a switch/router;
a bridge/Gateway;
a video game console;
a wireless access point (WAP); and
a network attached storage.

26. (Previously Presented) The BCN of claim 11, wherein the BCN modem is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB.

27. (Original) The BCN of claim 25, wherein the BCN modem utilizes the PCI bus structure.

28. (Original) The BCN of claim 27, wherein the BCN modem utilizes another host device.

29. (Original) The BCN of claim 28, wherein the host device is either a bridging host device or a switching host device.

30. (Original) The BCN of claim 10, wherein an at least one TDMA frequency channel used by the BCN network is in one or more of the following frequency bands:

above 860 MHz;

between 860 MHz and 950 MHz; and

below 50 MHz.

31. (Original) The BCN of claim 10, wherein the CCN network is one of the following:

coaxial cables that have been installed for the carriage of satellite signals; and

coaxial cables for video distribution.

32. (Previously Amended) A network device, comprising:

a communication interface configured to connect to a broadband coaxial network ("BCN"); and

a controller in signal communication with the communication interface, the controller configured to:

periodically probe a communication link to another network device to determine a characteristic of the communication link;

use orthogonal frequency division multiplexing and bit-loading to adjust transmissions over each communication link based in part on the probe;

manage data transmission between each network device connected to the BCN by assigning time slots during which data transmission between each of the network devices occur

provide both best effort capabilities in which short term requests are made by at least one BCN modem and time allocation grants to transmit packets are provided by the controller, and reserved communications capabilities in which long term requests are made by least one BCN modem and a specific allocation is granted for a certain data rate by the controller.

REMARKS/ARGUMENTS

Claims 1, 4-18, 21, 22, and 24-32 were pending in the application. Claims 1, 4-18, 21, 22, and 24-32 were rejected. Claim 1 has been amended. Accordingly, Claims 1, 4-18, 21, 22 and 24-32 are currently pending. Applicants respectfully request reconsideration and allowance of all pending claims.

Discussion of Rejections Under 35 U.S.C. §103(a)

The Examiner rejected claims 1, 4, 5, and 6 as unpatentable over Dinwiddie et al. (USPN 6,481, 013) in further view of Bell (USPN 6,052,380) and Emerson et. al (US 2003/0091067).

With regard to Claim 1, the Examiner contends that Claim 1 is obvious in light of Dinwiddie in view of Bell and Emerson. Applicants respectfully traverse the rejection for at least the following reasons. The Examiner contends that Emerson teaches the best effort capabilities in which short terms requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation granted for a certain data rate. The Examiner points to paragraph [0012] of Emerson as disclosing the bests effort capability. However, Emerson merely discloses data segmentation "on the fly". In particular, Emerson discloses a methodology by which segmentation can be performed **in hardware**, thus reducing the power and gate-count (see Emerson paragraph [0010]). Emerson provides for time division multiplexing of packets of isochronous data with packets of asynchronous data **"on the fly"**. While time slots are reserved, they are only reserved for the packets that are being processed. That is, if a packet requires 4 time slots, those 4 time slots are reserved. The reservation for the next set of time slots associated with the next packet would have to be reserved once that next packet is ready for transmission. In contrast, the present invention as recited in Claim 1 provides for "long term requests" such as reservations for a flow of data that might include all of the packets required to transmit a high definition movie, for example. It should be clear that such capability would be outside the scope of what is disclosed by Emerson, since such long term capability (i.e., reservation communications capability) would require software to manage the processing of this type of long term flow (i.e., a high-definition movie flow).

Accordingly, Applicants contend that Emerson fails to teach or suggest a BCN that provides both best effort capabilities in which short term requests are made and time allocation grants to transmit packets received by a BCN modem, and reserved communications capabilities in which **long term requests** are made and a specific allocation is granted for a certain data rate.

In light of the above comments, Applicants respectfully traverse the Examiner's rejection of Claim 1 and Claims 4-6 which depend from Claim 1.

The Examiner rejected claim 7 as unpatentable over Dinwiddie et al. (USPN 6,481, 013) in further view of Bell (USPN 6,052,380) and Emerson et al. (US 2003/0091067), and EI Wardani et al. (Pub. No.: US 2003/0031191). Claim 7 depends from Claim 5, which in turn depends from Claim 1. Accordingly, Applicants respectfully traverse the Examiner's rejection of Claim 7 for the reasons noted above with regard to Claim 1.

The Examiner rejected claim 8 as unpatentable over Dinwiddie et al. (USPN 6,481, 013) in further view of Bell (USPN 6,052,380) and Emerson et al. (US 2003/0091067), and Gurantz et al (Pub No.: US 2002/0166124). Claim 8 depends from Claim 1, and as such, Applicants respectfully traverse the Examiner rejection of Claim 8 for the reasons stated above with regard to Claim 1.

The Examiner rejected claim 9 as unpatentable over Dinwiddie et al. (USPN 6,481, 013) in further view of Bell (USPN 6,052,380) and Emerson et al. (US 2003/0091067), and Droge (Pub No.: US 2002/0004898). Claim 9 depends from Claim 1, and as such, Applicants respectfully traverse the Examiner rejection of Claim 9 for the reasons stated above with regard to Claim 1.

The Examiner rejected claims 10-12, 14, 15, 17, and 31 as unpatentable over Dinwiddie et al. (USPN 6,481, 013) in further view of Bell (USPN 6,052,380), Silverman (USPN 6,307, 862) and Emerson et al. (US 2003/0091067).

With regard to Claim 10, similar comments and remarks to those provided with respect to Claim 1 pertain to Claim 10. Accordingly, Applicants respectfully traverse the Examiner's rejection of Claim 10 and Claims 11, 12, 14, 15, 17, and 31 which depend from Claim 10 for the same reasons noted above with respect to Claim 1.

The Examiner rejected claims 13, 18, and 26 as unpatentable over Dinwiddie et al. (USPN 6,481, 013) in further view of Bell (USPN 6,052,380) and Silverman (USPN 6,307,862), and Emerson et al (US 2003/0091067), and Gurantz et al (Pub No.: US

2002/0166124). Each of these claims depends indirectly from Claim 10. As such, Applicants respectfully traverse the Examiner's rejection of Claims 13, 18, and 26 for the reasons stated with regard to Claim 10.

The Examiner rejected claims 16, 25, and 27-30 as unpatentable over Dinwiddie et al. (USPN 6,481, 013) in further view of Bell (USPN 6,052,380) and Silverman (USPN 6,307,862), and Emerson et al (US 2003/0091067), and EI Wardani et al. (Pub. No.: US 2003/0031191). Each of these claims depends (either directly or indirectly) from Claim 10. As such, Applicants respectfully traverse the Examiner's rejection of Claims 16, 25, and 27-30 for the reasons stated with regard to Claim 10.

The Examiner rejected claims 21, 22, and 24 as unpatentable over Dinwiddie et al. (USPN 6,481, 013) in further view of Bell (USPN 6,052,380) and Silverman (USPN 6,307,862), and Emerson et al (US 2003/0091067), and Gorman et al. (USPN 6,137,793). Each of these claims depends (either directly or indirectly) from Claim 10. As such, Applicants respectfully traverse the Examiner's rejection of Claims 21, 22, and 24 for the reasons stated with regard to Claim 10.

The Examiner rejected claim 32 as unpatentable over Bell (USPN 6,053,380) and further in view of Dinwiddie et al. (USPN 6,481,013) and Silverman (USPN 6,307,862), and Emerson et al. (US 2003/0091067).

With regard to Claim 32, similar comments and remarks to those provided with respect to Claim 1 pertain to Claim 32. Accordingly, respectfully traverses the Examiner's rejection of Claim 32 for the reasons stated above with respect to Claim 1.

CONCLUSION

Applicants believe that all claims pending in the application are now allowable. Applicants therefore respectfully request that a timely Notice of Allowance be issued in this case. Alternatively, Applicants respectfully request that this amendment be entered as it places the application in better condition for appeal.

This is a response to the Office Action mailed on November 19, 2010, and as such, Applicant requests one month (30-day) extension of time.

If there are any other fees due in connection with the filing of the response, please charge the fees to our Deposit Account No. 50-4613. If a fee is required for an extension of time under 37 CFR 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned.

Respectfully submitted,

Dated: March 18, 2011

By: /Bruce W. Greenhaus/
Bruce W. Greenhaus
Attorney for Applicants
Registration No. 37,339

Entropic Communications, Inc.
6290 Sequence Drive
San Diego, California 92121
Telephone: (619) 980-2612
e-mail address: PatentTeam@entropic.com

Electronic Patent Application Fee Transmittal

Application Number:	11231349
Filing Date:	19-Sep-2005
Title of Invention:	Broadband local area network
First Named Inventor/Applicant Name:	Brett Bernath
Filer:	Bruce Wayne Greenhaus/Tim Ellis
Attorney Docket Number:	E040004USU1

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 1 month with $0 paid	1251	1	130	130

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**130**

Electronic Acknowledgement Receipt	
EFS ID:	9691898
Application Number:	11231349
International Application Number:	
Confirmation Number:	4520
Title of Invention:	Broadband local area network
First Named Inventor/Applicant Name:	Brett Bernath
Customer Number:	77561
Filer:	Bruce Wayne Greenhaus/Tim Ellis
Filer Authorized By:	Bruce Wayne Greenhaus
Attorney Docket Number:	E040004USU1
Receipt Date:	18-MAR-2011
Filing Date:	19-SEP-2005
Time Stamp:	16:24:33
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$130
RAM confirmation Number	2894
Deposit Account	504613
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Extension of Time	E040004USU1_One-Month-Extension_3-18-2011.pdf	315932 53df4dceed23134690b39a647c1a3215745dff17	no	2
Warnings:					
Information:					
2		E040004USU1_Amendment-to-Non-Final-OA_3-18-2011.pdf	122883 fda692ef9f7270a436565352c7ec38cf90e17e64	yes	11

Multipart Description/PDF files in .zip description

Document Description	Start	End
Amendment/Req. Reconsideration-After Non-Final Reject	1	1
Claims	2	7
Applicant Arguments/Remarks Made in an Amendment	8	10
Amendment/Req. Reconsideration-After Non-Final Reject	11	11

Warnings:					
Information:					
3	Fee Worksheet (PTO-875)	fee-info.pdf	29671 54cded74d247fc5e746e994a023e047d9ac5de83	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	468486		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/22 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARMENT OF COMMERCE
Under the paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) **FY 2009** ***(Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)***	Docket Number (Optional) E040004USU1
Application Number 11/231,349	Filed 19-Sep-2005
For A broadband local area network	
Art Unit 2423	Examiner James Leija

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

	Fee	Small Entity Fee	
☑ One month (37 CFR 1.17(a)(1))	$130	$65	$ 130.00
☐ Two months (37 CFR 1.17(a)(2))	$490	$245	$
☐ Three months (37 CFR 1.17(a)(3))	$1110	$555	$
☐ Four months (37 CFR 1.17(a)(4))	$1730	$865	$
☐ Five months (37 CFR 1.17(a)(5))	$2350	$1175	$

☐ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☑ The Director has already been authorized to charge fees in this application to a Deposit Account.

☑ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 50-4613.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☑ attorney or agent of record. Registration Number 37339

☐ attorney or agent under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 _____

/Bruce W. Greenhaus/	March 18, 2011
Signature	Date
Bruce W. Greenhaus	(619) 980-2612
Typed or printed name	Telephone Number

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☑ Total of One forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/231,349	09/19/2005	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 03/18/2011	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 27	Minus	** 32	= 0	X $ =		OR	X $52=	0
Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $ =		OR	X $220=	0
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

AMENDMENT	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/MELINDA OLIVER/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/231,349	09/19/2005	Brett Bernath	E040004USU1	4520

77561 7590 11/19/2010

Duane Morris LLP (Entropic)
IP Department
30 South 17th Street
Philadelphia, PA 19103-4196

EXAMINER	
LEIJA, JAMES	
ART UNIT	**PAPER NUMBER**
2423	
MAIL DATE	**DELIVERY MODE**
11/19/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	11/231,349	BERNATH ET AL.	
	Examiner	Art Unit	
	JAMES LEIJA	2423	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 May 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-18,21,22 and 24-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-18, 21, 22 and 24-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/21/2010 has been entered.

Response to Arguments

Applicant's arguments with respect to claims 1, 4-18, 21, 22, 24-32 and 32 have been considered but are moot in view of the new ground(s) of rejection.

The applicant has presented arguments directed to the prior art of record; the examiner is now relying on Emerson. By the examiner changing the grounds (from the prior art of record to rely on Emerson), the applicant's arguments (directed to the prior art of record) are moot.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Bell (USPN 6,052,380), and Emerson et al (US 2003/0091067).

As per claim 1 Dinwiddie teaches a Broadband Coaxial Network ("BCN'), comprising:

a first BCN modem (Dinwiddie fig 1A element 102) in signal communication with a coaxial cable network ("CCN"), (Dinwiddie fig 1a and 1b illustrate a wired network), (Dinwiddie column 4 lines 40-45, column 5 lines 34-36 describe the wired network connected using by coaxial cable), (Dinwiddie column 9 lines 1-3 describes communication between a modem and network)

another BCN modem (Dinwiddie fig 1A and 1B elements 104, 106, 107 and 108) in signal communication with the CCN (Dinwiddie fig 1A and 1B illustrate elements 106, 107 and 108 connected to the network)

Dinwiddie is silent on the first BCD modem including a first controller; and the another BCN modem including a second controller, and wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem and to adjust transmission power over the at least one respective communication link based on a result of the probe

Bell teaches the first BCD modem including a first controller; and the another BCN modem including a second controller, (Bell column 5 lines 41-53, and fig 3 illustrates multiple nodes, each node has that have controller)

wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem and to adjust transmission power and bit loading over the at least one respective communication link based on a result of the probe. (Bell column 12 lines 4-30, column 4 lines 30 -39, wherein DMT initialization reads on adjusting transmission power and bit-loading based on a result of the probe.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network of Dinwiddie by the first BCD modem including a first controller; and the another BCN modem including a second controller, wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem as taught by Bell in order determine the location of portable devices.

Dinwiddie teaches wherein the BCN provides to transmit packets are received by a BCN modem, and (Dinwiddie col. 9 lines 1-23 describe video distribution throughout the home network)

Dinwiddie is silent on both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate.

Emerson teaches both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and (Emerson page 1 [0012] describes asynchronous data traffic which reads on best effort capabilities)

reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate. (Emerson page 2 [0020] describes isochronous traffic as having reserved timeslots which reads on reserved communications capabilities for "certain data rate")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN of Dinwiddie by both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate as taught by Emerson in order to provide on the fly data segmentation.

As per claim 4 Dinwiddie in view of Bell and Emerson teach the BCN of claim 1,

Dinwiddie is silent on wherein the second controller is configure to detect a control signal that identifies a network controller is coupled to the CCN

Bell teaches wherein the second controller is configure to detect a control signal that identifies a network controller is coupled to the CCN (Bell column 11 lines 7-45 describe determining the master node by detecting each node timer value.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN of Dinwiddie by wherein the second controller is configure to detect a control signal that identifies a network controller is coupled to the CCN as taught by Bell in order to initialize a channel equalization process that allows each node to know the transmission characteristics of each path between each node.

As per claim 5 Dinwiddie in view of Bell and Emerson teach the BCN of claim 1, wherein the signal communication occurs between the BCN modems that are located within a building. (Dinwiddie column 4 lines 15-18)

As per claim 6 Dinwiddie in view of Bell and Emerson teach the BCN of claim 5, wherein the building is a single family home. (Dinwiddie column 4 lines 19-20)

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Bell (USPN 6,052,380), and Emerson et al (US 2003/0091067), and El Wardani et al. (Pub. No.: US 2003/0031191).

As per claim 7 Dinwiddie in view of Bell and Emerson teach the BCN of claim 5

Dinwiddie teaches the building as a dwelling unit (Dinwiddie column 4 lines 18-19)

But Dinwiddie is silent on the building being a multi-unit dwelling unit.

El Wardani teaches a building being a multi-unit dwelling unit. (El Wardani page 1 [0004] lines 1-3)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the building of Dinwiddie by being a multi dwelling unit as taught by El Wardani in order to provide to multiple users in a building.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Bell (USPN 6,052,380), and Emerson et al (US 2003/0091067), and Gurantz et al (Pub No.: US 2002/0166124)

As per claim 8 Dinwiddie in view of Bell and Emerson teach the BCN of claim 1.

Dinwiddie teaches signal communication (Dinwiddie column 2 lines 36-38)

But Dinwiddie is silent on communication via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency(R_F) channels.

Gurantz teaches communication via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency(R_F) channels. (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used along with modulation as a communication scheme.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication of Dinwiddie by communicating using TDD and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transceiver.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Bell (USPN 6,052,380), and Emerson et al (US 2003/0091067), and Droge (Pub No.: US 2002/0004898).

As per claim 9 Dinwiddie in view of Bell and Emerson teach the BCN network of claim 1,

Dinwiddie teaches communication between the first and the other modem. (Dinwiddie column 11 lines 11-13)

Dinwiddie is silent on the signal communication carries encrypted data between the first BCN modem and the other BCN modem.

Droge teaches the signal communication carries encrypted data between the first BCN modem and the other BCN modem. (Droge Fig 2 elements 16 and 24, illustrates two modems in communication over a network, [0050] describes encrypting the data that's communicated.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication of Dinwiddie by encrypting the data as taught by Droge in order to provide secure transmitting and receiving.

Claims 10-12, 14, 15, 17, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of and Bell (USPN 6,052,380), and Silverman (USPN 6,307,862), and Emerson et al (US 2003/0091067).

As per claim 10 Dinwiddie teaches a Broadband Coaxial Network ("BCN") for communicating on an in- building coaxial cable network ("CCN"), comprising:

a first BCN modem (Dinwiddie fig 1A element 102) connected to a coaxial cable network ("CCN") (Dinwiddie fig 1a and 1b illustrate a wired network), (Dinwiddie column 4 lines 40-45, column 5 lines 34-36 describe the wired network connected using by coaxial cable), and included in a plurality of BCN modems in the BCN network, (Dinwiddie fig 1a and fig 1b illustrates a network with multiple modem elements 102, 106, 107, 104 and 108)

Dinwiddie teaches the first BCN modem having communication links to ones of the plurality of BCN modems and (Dinwiddie column 4 lines 40-42 and 45-48) configured to manage data transmission between each of the BCN modems in the BCN network; and (Dinwiddie column 15 lines 22-29 and 48-54 and column 16 lines 9-10 and 20-23)

Dinwiddie teaches another of the plurality of BCN modems connected to the CCN and (Dinwiddie fig 1a and fig 1b illustrates a network with multiple modem elements 104, 106, 107 and 108) capable of signal communication with the first BCN

modem (Dinwiddie column 11 lines 11-13) having communication links to ones of the plurality of BCN modems, (Dinwiddie column 4 lines 40-42 and 45-48)

Dinwiddie is silent on including a controller and a second controller

Bell teaches including a controller and a second controller, (Bell column 6 lines 64-65 describe each computer 112 and 114 as having a network adapter, where fig 4 illustrates that the network adapters of each computer have a controller 212)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the modems of Dinwiddie by including a controller and a second controller as taught by Bell in order provide improved reliability, robustness, bandwidth and noise resistance of the ADSL layer

Dinwiddie is silent on wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading

Bell teaches wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading; and (Bell column 12 lines 4-30, column 9 lines 36 -52, wherein DMT initialization reads on OFDM bit-loading.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the modems of Dinwiddie by wherein each of the

controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading as taught by Bell in order provide improved reliability, robustness, bandwidth and noise resistance of the ADSL layer.

Dinwiddie teaches wherein the first controller establishes the first BCN modem as a network controller(NC) upon connection to the CCN, (Dinwiddie column 11 lines 14-25 describe the PC 45 has a host) the network controller configured to manage data transmission between each of the BCN modems connected to the CCN. (Dinwiddie column 15 lines 22-29 and 48-54 and column 16 lines 9-10 and 20-23)

Dinwiddie is silent on to coordinate the assignment of time slots

Silverman teach the network controller configured to coordinate the assignment of time slots during which data transmission occur (Silverman abstract lines 15-18, col. 3 lines 12-28, col.3 lines 66 to col. 4 lines 9, and col. 4 lines 48-53)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network controller of Dinwiddie by to coordinate the assignment of time slots as taught by Silverman in order to provide two-way communication using coaxial cable in a home LAN.

Dinwiddie teaches wherein the BCN provides to transmit packets are received by a BCN modem, and (Dinwiddie col. 9 lines 1-23 describe video distribution throughout the home network)

Dinwiddie is silent on both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate.

Emerson teaches both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and (Emerson page 1 [0012] describes asynchronous data traffic which reads on best effort capabilities)

reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate. (Emerson page 2 [0020] describes isochronous traffic as having reserved timeslots which reads on reserved communications capabilities for "certain data rate")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN of Dinwiddie by both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate as taught by Emerson in order to provide on the fly data segmentation.

As per claim 11 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 10, wherein the first BCN modem (Dinwiddie fig 5A) employs adaptive communication techniques that adapt to the characteristics of a coaxial channel between the first BCN modem and the other BCN modem. (Dinwiddie fig 5A elements 122 and 110, column 9 lines 36-40 describes a BALUM which converts the a signal to conform to the characteristics of the coaxial cable)

As per claim 12 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 10, wherein the first BCN modem is directly in signal communication with the other BCN modem across the CCN. (Dinwiddie Fig 1 column 15 lines 25-34)

As per claim 14 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 11, wherein adaptive communication techniques includes utilization of the adaptive communication techniques in both transmitting processing and receiving processing of data. (Dinwiddie fig 5A elements 122 column 9 lines 34-40 describes receiving processed data from a modulator which reads on receiving processing of data and processing that data in the BALUM and filter then transmitting the processed data.)

As per claim 15 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 14, wherein the adaptive communication utilizes pre-coding for transmitting processing. (Dinwiddie column 9 lines 27-34 describe coding the data

before transmitting the data.), (Dinwiddie column 9 lines 35-40 describe the BALUM and filter transmitting the processed data.)

As per claim 17 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 14, wherein the adaptive communication techniques include pre-coding for (Dinwiddie column 9 lines 27-34 describe coding the data before transmitting the data.) transmitting processing based on known or learned channel response.(Dinwiddie column 9 lines 35-40 describe the BALUM and filter transmitting the processed data.), (Dinwiddie columns 9 lines 56-58 describe the coding as modulation which is a processing, as well as describing the modulation as based on a selected channel which reads on a known channel response)

As per claim 31 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 10, wherein the CCN network is one of the following:

coaxial cables that have been installed for the carriage of satellite signals; and coaxial cables for video distribution.(Dinwiddie column 5 lines 50-55)

Claims 13, 18, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of and Bell (USPN 6,052,380) and Silverman (USPN 6,307,862), and Emerson et al (US 2003/0091067), and Gurantz et al (Pub No.: US 2002/0166124)

As per claim 13 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 12 wherein the CCN is a type of network having a architectural configuration selected from a group consisting of

Dinwiddie teaches a star configuration and (Dinwiddie fig 12 illustrates the distribution unit of the network in a star configuration) a mesh configuration and a combinations of these configurations, using the star configuration in an accessible fashion. (Dinwiddie column 12 lines 64-67 describes the use of signal paths for communication which reads on an accessible fashion)

Dinwiddie is silent on a TDMA and Time Division Duplex (TDD) access fashion, and the type of network utilizes at least one frequency channel

Gurantz teaches a TDMA and Time Division Duplex (TDD) access fashion, and (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used along with modulation as communication scheme.) the type of network utilizes at least one frequency channel. (Gurantz page 4 [0039] lines 1-3 the use of TDD in the network, using a frequency.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the access fashion of Dinwiddie by

communicating using TDD and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transceiver.

As per claim 18 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 14.

Dinwiddie teaches signal processing techniques are used (Dinwiddie column 9 lines 25-35 describe the use of RF modulation)

Dinwiddie is silent on using additional signal processing techniques selected from a group of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes.

Gurantz teaches using additional signal processing techniques selected from a group of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes. (Gurantz page 4 [0046]-[0047] describe the use of DMT and OFDM which reads on the use of additional processing techniques being OFDM)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the signal processing of Dinwiddie by processing using OFDM as taught by Gurantz in order to overcome the effects of inter-symbol interference.

As per claim 26 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 11, wherein the BCN modem

Dinwiddie is silent on is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB

Gurantz teaches is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB. (Gurantz page 3 [0035], [0036] describe the use of a DS-SS receiver which reads on a satellite STB.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN modem of Dinwiddie by is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB as taught by Gurantz in order to allow user to have choice of content source.

Claims 16, 25 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of and Bell (USPN 6,052,380) and Silverman (USPN 6,307,862), and Emerson et al (US 2003/0091067), and El Wardani et al. (Pub. No.: US 2003/0031191).

As per claim 16 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 14.

Dinwiddie teach adaptive communication techniques. (Dinwiddie fig 5A elements 122 and 110, column 9 lines 36-40 describes a BALUM which converts the a signal to conform to the characteristics of the coaxial cable)

Dinwiddie is silent on utilizing adaptive equalization processing.

El Wardani teaches utilizing adaptive equalization processing. (Wardani page 4 [0054])

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the adaptive communication techniques of Dinwiddie by utilizing an adaptive equalizer as taught by El Wardani in order to improve the signal quality.

As per claim 25 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 11, wherein the BCN modem is embedded as a part of a device selected from the group consisting of:

a set-top box ("STB"); a Personal Computer (PC); an IP STB; a Media Center box; a Media Extender box; a DVD player; a cable modem; a personal video recorder ("PVR"); a TV set; a networking device; a switch/router;

a bridge/Gateway; (El Wardani fig 1 element 200 [0031] lines 5-8)

a video game console; a wireless access point (WAP); and a network attached storage.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify BCN of Dinwiddie by embedding the device within a bridge as taught by El Wardani in order to provide a mechanism to communicate signals between two systems.

As per claim 27 Dinwiddie in view of Bell and Silverman and Emerson and El Wardani teach the BCN of claim 25, wherein the BCN modem utilizes the PCI bus

structure. (El Wardani page 3 [0040] lines 12-15 describes the use of an Ethernet interface which inherently utilizes the PCI bus structure)

As per claim 28 Dinwiddie in view of Bell and Silverman and Emerson and El Wardani teach the BCN of claim 27, wherein the BCN modem utilizes another host device. (El Wardani fig 4 page 3 [0038] describes the use of the modem in another device)

As per claim 29 Dinwiddie in view of Bell and Silverman and Emerson and El Wardani teach the BCN of claim 28, wherein the host device is either a bridging host device or a switching host device. (El Wardani fig 4 page 3 [0038] describes the use of the modem in a bridging device.)

As per claim 30 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 10.

Dinwiddie is silent on a TDMA frequency channel in the BCN network using one or more frequency bands: above 860 MHz; between 860 MHz and 950 MHz; and below 50 MHz. above

El Wardani teaches a TDMA frequency channel in the BCN network using one or more frequency bands: using one or more frequency bands: above 860 MHz; (El Wardani fig 8 page 3 [0045], [0046] lines 1-4) between 860 MHz and 950 MHz; and (El Wardani fig 8 page 3 [0046] lines 5-7) below 50 MHz. (El Wardani fig 8 page 3 [0048])

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify BCN network of Dinwiddie by on a TDMA frequency channel in the BCN network using one or more frequency bands: above 860 MHz; between 860 MHz and 950 MHz; and below 50 MHz. above as taught by El Wardani in order to allow the network band to reside at any frequency on the cable.

Claims 21, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable Dinwiddie et al. (USPN 6,481,013) and further in view of and Bell (USPN 6,052,380) and Silverman (USPN 6,307,862), and Emerson et al (US 2003/0091067), and Gorman et al. (USPN 6,137,793)

As per claim 21 Dinwiddie in view of Bell and Silverman and Emerson teach the BCN of claim 10, wherein the NC includes

Dinwiddie is silent on a configuration selected from the group consisting of: a configuration that utilizes a frequency plan

Gorman teaches a configuration selected from the group consisting of: a configuration that utilizes a frequency plan; (Gorman column 12 lines 58-60 fig 1 illustrates the use of a cable TV network, which reads on a frequency plan.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the NC of Dinwiddie by a configuration selected from the group consisting of: a configuration that utilizes a frequency plan as taught by Gorman in order to provide multimedia services.

As per claim 22 Dinwiddie in view of Bell and Silverman and Emerson and Gorman teach the BCN of claim 21, wherein the communications services provided by the BCN include BCN wide transmission priorities. (Gorman column 13 lines 22-27)

As per claim 24 Dinwiddie in view of Bell and Silverman and Emerson and Gorman teach the BCN of claim 10,

Dinwiddie is silent on wherein the BCN modem provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of: Ethernet

Gorman teaches wherein the BCN modem provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of: Ethernet, (Gorman column 6 lines 53-57 describe ATM adaptation , column 7 lines 1-3 describe the use of Ethernet services) IEEE 1394, Universal Serial Bus ("USB"); and MPEG-TS.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN modem of Dinwiddie by provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of: Ethernet as taught by Gorman in order to integrate multimedia services.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bell (USPN 6,053,380) and further in view of Dinwiddie et al. (USPN 6,481,013) and Silverman (USPN 6,307,862).

As per claim 32 Bell teaches a network device, comprising:

a communication interface (Bell fig 2 illustrates a network adapter aka network interface card) configured to connect to a broadband coaxial network ("B CN"); and (Bell Fig 1 column 6 lines 49-53 describe the network cabling as coaxial)

a controller in signal communication with the communication interface, (Bell column 5 lines 42- 50)

the controller configured to:

periodically probe a communication link to another network device to determine a characteristic of the communication link; (Bell column 12 lines 4-47 and column 13 lines 23-28)

use orthogonal frequency division multiplexing and bit-loading to adjust transmissions over each communication link based in part on the probe; and (Bell column 8 lines 53-62 describe the use of DMT which reads on OFDM bit-loading.)

Bell is silent on manage data transmission between each network device connected to the BCN, by assigning time slots during which data transmission between each of the network devices occur

Dinwiddie teaches to manage data transmission between each network device connected to the BCN (Dinwiddie column 15 lines 22-29 and 48-54 and column 16 lines 9-10 and 20-23)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network device of Dinwiddie by manage data transmission between each network device connected to the BCN as taught by Dinwiddie in order to provide a central control station for all the components attached to the network.

Silverman teach by assigning time slots during which data transmission between each of the network devices occur (Silverman abstract lines 15-18, col. 3 lines 12-28, col.3 lines 66 to col. 4 lines 9, and col. 4 lines 48-53)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the controller of Bell and Dinwiddie by assigning time slots during which data transmission between each of the network devices occur as taught by Silverman in order to provide two-way communication using coaxial cable in a home LAN.

Bell is silent on both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate.

Emerson teaches both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are provided by the controller, and (Emerson page 1 [0012] describes determining asynchronous data traffic to time slots which reads on best effort capabilities)

reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate by the controller (Emerson page 2 [0020] describes determining isochronous traffic as having reserved timeslots which reads on reserved communications capabilities for "certain data rate")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the controller of Bell by provide both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate as taught by Emerson in order to provide on the fly data segmentation.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bloks et al (USPN 5,689,507) disclose on column 4 line 5-29, column 8 lines 30-60, column 9 lines 8-17 the application of asynchronous and isochronous traffic over a home network.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES LEIJA whose telephone number is (571)270-5249. The examiner can normally be reached on M-F 730 am to 5pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ANDREW Y. KOENIG can be reached on (571) 272-7296. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Son P Huynh/
Primary Examiner, Art Unit 2424
/J. L./
Examiner, Art Unit 2423

Notice of References Cited	Application/Control No. 11/231,349	Applicant(s)/Patent Under Reexamination BERNATH ET AL.	
	Examiner JAMES LEIJA	Art Unit 2423	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-5,689,507 A	11-1997	Bloks et al.	370/389
*	B	US-2003/0091067 A1	05-2003	Emerson et al.	370/473
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	Art Unit
	JAMES LEIJA	2423

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	08/19/2008	02/25/2009	07/28/2009	01/12/2010	11/11/2010				
	1	✓	✓	✓	✓	✓				
	2	✓	✓	✓	-	-				
	3	✓	✓	✓	✓	-				
	4	✓	✓	✓	✓	✓				
	5	✓	✓	✓	✓	✓				
	6	✓	✓	✓	✓	✓				
	7	✓	✓	✓	✓	✓				
	8	✓	✓	✓	✓	✓				
	9	✓	✓	✓	✓	✓				
	10	✓	✓	✓	✓	✓				
	11	✓	✓	✓	✓	✓				
	12	✓	✓	✓	✓	✓				
	13	✓	✓	✓	✓	✓				
	14	✓	✓	✓	✓	✓				
	15	✓	✓	✓	✓	✓				
	16	✓	✓	✓	✓	✓				
	17	✓	✓	✓	✓	✓				
	18	✓	✓	✓	✓	✓				
	19	✓	✓	✓	✓	-				
	20	✓	✓	✓	✓	-				
	21	✓	✓	✓	✓	✓				
	22	✓	✓	✓	✓	✓				
	23	✓	✓	✓	✓	-				
	24	✓	✓	✓	✓	✓				
	25	✓	✓	✓	✓	✓				
	26	✓	✓	✓	✓	✓				
	27	✓	✓	✓	✓	✓				
	28	✓	✓	✓	✓	✓				
	29	✓	✓	✓	✓	✓				
	30	✓	✓	✓	✓	✓				
	31	✓	✓	✓	✓	✓				
	32		✓	✓	✓	✓				

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S66	476	S60 not S65	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/12 14:02
S67	2	"5278833".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/11/09 14:53
S68	676	(short near3 request $4) and (long near3 request$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/11/09 15:34
S69	4730	(best near3 effort$4) and reserve$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/11/09 15:34
S70	29	S68 and S69	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/11/09 15:34
S71	2	"20090210548"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2010/11/09 18:15
S76	3015	isochronous same asynchronous	US-PGPUB; USPAT	OR	OFF	2010/11/10 21:27
S77	451392	coaxial$4 co?axial$4	US-PGPUB; USPAT	OR	OFF	2010/11/10 21:28
S78	396048	ieee$5	US-PGPUB; USPAT	OR	OFF	2010/11/10 21:28
S79	203	S76 and S77 and S78	US-PGPUB; USPAT	OR	OFF	2010/11/10 21:28
S80	130	S76 and S77 and S78 and (hom$4 hous$4)	US-PGPUB; USPAT	OR	OFF	2010/11/10 21:28

S81	14	(S76 same request$4) and S77 and S78 and (hom$4 hous$4)	US-PGPUB; USPAT	OR	OFF	2010/11/10 21:30
S82	14	(S76 same request$4) and S77 and S78 and (hom$4 hous$4) and S76	US-PGPUB; USPAT	OR	OFF	2010/11/10 21:30
S83	44	(asynchronous same request$4) and S77 and S78 and (hom$4 hous$4) and S76	US-PGPUB; USPAT	OR	OFF	2010/11/10 21:31
S84	3019	isochronous same asynchronous	US-PGPUB; USPAT	OR	OFF	2010/11/11 12:48
S85	451747	coaxial$4 co?axial$4	US-PGPUB; USPAT	OR	OFF	2010/11/11 12:48
S86	396360	ieee$5	US-PGPUB; USPAT	OR	OFF	2010/11/11 12:48
S87	1	(asynchronous same request$4) and S85 and S86 and (hom$4 hous$4) and S84 and timeslot$4	US-PGPUB; USPAT	OR	OFF	2010/11/11 12:48
S88	2	(asynchronous same request$4) and S85 and S86 and (hom$4 hous$4) and S84 and (timeslot$4 time?slot $4)	US-PGPUB; USPAT	OR	OFF	2010/11/11 12:49
S89	38	S84 same (timeslot$4 time?slot$4)	US-PGPUB; USPAT	OR	OFF	2010/11/11 12:50
S90	5	S85 and S89	US-PGPUB; USPAT	OR	OFF	2010/11/11 12:50
S91	140	(timeslot$4 time?slot $4) with asynchronous	US-PGPUB; USPAT	OR	OFF	2010/11/11 12:53
S92	455061	S91 adn S85	US-PGPUB; USPAT	OR	OFF	2010/11/11 12:53
S93	8	S91 and S85	US-PGPUB; USPAT	OR	OFF	2010/11/11 12:53
S94	14	S91 and S84	US-PGPUB; USPAT	OR	OFF	2010/11/11 13:17

EAST Search History (Interference)

<This search history is empty>

11/11/2010 4:38:08 PM
C:\Documents and Settings\jleija\My Documents\EAST\Workspaces\11231349\11231349c.wsp

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	Art Unit
	JAMES LEIJA	2423

SEARCHED			
Class	Subclass	Date	Examiner
725	78, 80, 109	7/28/2009	JL
709		2/25/2009	JL
370		2/25/2009	JL

SEARCH NOTES		
Search Notes	Date	Examiner
EAST	7/28/2009	JL
Spoke with Joe Ustaris - CL 725	7/28/2009	JL
Andrew Koenig -CL 725	7/28/2009	JL
update east	1/12/2010	JL
update east	11/11/2010	JL

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	11/231,349	Filing Date	2005-09-19	Docket Number (if applicable)	E040004USU1	Art Unit	2423
First Named Inventor	Brett Bernath			Examiner Name	James Leija		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☒ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

☒ Other Please consider and enter amendment filed on April 21, 2010

☐ Enclosed

☐ Amendment/Reply

☐ Information Disclosure Statement (IDS)

☐ Affidavit(s)/ Declaration(s)

☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 504613

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Signature of Registered U.S. Patent Practitioner			
Signature	/Bruce W. Greenhaus/	Date (YYYY-MM-DD)	2010-05-20
Name	Bruce W. Greenhaus	Registration Number	37339

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/SB/22 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARMENT OF COMMERCE
Under the paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) **FY 2009** ***(Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)***	Docket Number (Optional) E040004USU1
Application Number 11/231,349	Filed 19-Sep-2005
For A Broadband Local Area Network	
Art Unit 2423	Examiner James Leija

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

	Fee	Small Entity Fee	
☑ One month (37 CFR 1.17(a)(1))	$130	$65	$ 130.00
☐ Two months (37 CFR 1.17(a)(2))	$490	$245	$
☐ Three months (37 CFR 1.17(a)(3))	$1110	$555	$
☐ Four months (37 CFR 1.17(a)(4))	$1730	$865	$
☐ Five months (37 CFR 1.17(a)(5))	$2350	$1175	$

☐ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☑ The Director has already been authorized to charge fees in this application to a Deposit Account.

☑ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 504613.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☑ attorney or agent of record. Registration Number 37,339

☐ attorney or agent under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 _____

/Bruce W. Greenhaus/	May 20, 2010
Signature	Date
Bruce W. Greenhaus	(619) 980-2612
Typed or printed name	Telephone Number

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☑ Total of Two forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	11231349
Filing Date:	19-Sep-2005
Title of Invention:	Broadband local area network
First Named Inventor/Applicant Name:	Brett Bernath
Filer:	Bruce Wayne Greenhaus/Tim Ellis
Attorney Docket Number:	E040004USU1

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 1 month with $0 paid	1251	1	130	130

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Request for continued examination	1801	1	810	810
		Total in USD ($)		**940**

Electronic Acknowledgement Receipt	
EFS ID:	7653914
Application Number:	11231349
International Application Number:	
Confirmation Number:	4520
Title of Invention:	Broadband local area network
First Named Inventor/Applicant Name:	Brett Bernath
Customer Number:	77561
Filer:	Bruce Wayne Greenhaus/Tim Ellis
Filer Authorized By:	Bruce Wayne Greenhaus
Attorney Docket Number:	E040004USU1
Receipt Date:	20-MAY-2010
Filing Date:	19-SEP-2005
Time Stamp:	15:39:51
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$940
RAM confirmation Number	2092
Deposit Account	504613
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	E040004USU1_RCE_5-20-2010.pdf	797485 333140366f71c3e4349d7743cd6d81fadaefb1ab	no	3
Warnings:					
Information:					
2	Extension of Time	E040004USU1_Extension_of_Time_5-20-2010.pdf	313006 d59d38aa090a600946bcdaa1bcab8d484df0dfca	no	2
Warnings:					
Information:					
3	Fee Worksheet (PTO-875)	fee-info.pdf	31848 0030cdec3741eb6ab77c8faf8a0db1cdb4d32044	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1142339		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

enter per RCE filed 5-20-10 PM

PATENT

Docket No. E040004USU1 **Serial No.** 11/231,349

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:
Brett Bernath et al.

Serial No.: 11/231,349

Filed: September 19, 2005

For: A BROADBAND LOCAL AREA NETWORK

Group Art Unit: 2423

Confirmation No. 4520

AMENDMENT

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attention: **James Leija**
Examiner

Dear Sir:

In response to the Final Office Action of January 21, 2010, please note the following remarks and comments:

Amendments to the Claims begin on page 2 of this paper.

Remarks/Comments begin on page 8 of this paper.

I hereby certify that this correspondence is being electronically deposited with the Commissioner for Patents through the USPTO electronic filing system, on:

April 21, 2010
(Date of Deposit)
Tim Ellis
(Name of Person Making Deposit)
/Tim Ellis/
(Signature)

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/231,349	09/19/2005	Brett Bernath	E040004USU1	4520

77561 7590 04/30/2010

Duane Morris LLP (Entropic)
IP Department
30 South 17th Street
Philadelphia, PA 19103-4196

EXAMINER	
LEIJA, JAMES	
ART UNIT	**PAPER NUMBER**
2423	
MAIL DATE	**DELIVERY MODE**
04/30/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 11/231,349	**Applicant(s)** BERNATH ET AL.	
	Examiner JAMES LEIJA	**Art Unit** 2423	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 21 April 2010 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☒ The period for reply expires *3* months from the mailing date of the final rejection.
   b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

   Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☒ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: *The proposed amendment to independent claims 1, 20 and 32 introduce new limitations reciting details of the best effort and reserve communications which inroduce new limitations not previously considered and would require further search and consideration*. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☒ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: _____.
   Claim(s) objected to: _____.
   Claim(s) rejected: *1 and 3-32*.
   Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☐ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: _____.
12. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
13. ☐ Other: _____.

/Andrew Y Koenig/
Supervisory Patent Examiner, Art Unit 2423

DO NOT ENTER: /J.L./

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:
Brett Bernath et al.

Serial No.: 11/231,349

Filed: September 19, 2005

For: A BROADBAND LOCAL AREA NETWORK

Group Art Unit: 2423

Confirmation No. 4520

AMENDMENT

DO NOT ENTER: /J.L./

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attention: **James Leija**
Examiner

Dear Sir:

In response to the Final Office Action of January 21, 2010, please note the following remarks and comments:

Amendments to the Claims begin on page 2 of this paper.

Remarks/Comments begin on page 8 of this paper.

I hereby certify that this correspondence is being electronically deposited with the Commissioner for Patents through the USPTO electronic filing system, on:

April 21, 2010
(Date of Deposit)
Tim Ellis
(Name of Person Making Deposit)
/Tim Ellis/
(Signature)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:
Brett Bernath et al.

Serial No.: 11/231,349

Filed: September 19, 2005

For: A BROADBAND LOCAL AREA NETWORK

Group Art Unit: 2423

Confirmation No. 4520

AMENDMENT

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attention: **James Leija**
Examiner

Dear Sir:

In response to the Final Office Action of January 21, 2010, please note the following remarks and comments:

Amendments to the Claims begin on page 2 of this paper.

Remarks/Comments begin on page 8 of this paper.

I hereby certify that this correspondence is being electronically deposited with the Commissioner for Patents through the USPTO electronic filing system, on:

April 21, 2010
(Date of Deposit)
Tim Ellis
(Name of Person Making Deposit)
/Tim Ellis/
(Signature)

AMENDMENTS TO THE CLAIMS:

What is claimed is:

1. (Currently amended) A Broadband Coaxial Network ("BCN"), comprising:

a first BCN modem in signal communication with a coaxial cable network ("CCN"), the first BCN modem including a first controller; and

another BCN modem in signal communication with the CCN ~~that is capable of two-way signal communication with the first BCN modem across one or more passive network devices having high isolation in the CCN, the another BCN modem~~ including a second controller,

wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem and to adjust transmission power and bit loading over the at least one respective communication link based on a result of the probe; and

wherein ~~the first controller establishes the first BCN modem as a network controller upon connection to the CCN, the network controller configured to coordinate the assignment of time slots during which data transmission between each of the BCN modems connected to the CCN occur~~ the BCN provides both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received by a BCN modem, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate.

2. (Cancelled)

3. (Cancelled)

4. (Currently Amended) The BCN of claim 1, wherein the second controller is configured to detect a control signal that identifies that a network controller is coupled to the CCN.

5. (Original) The BCN of claim 1, wherein the signal communication occurs between the BCN modems that are located within a building.

6. (Original) The BCN of claim 5, wherein the building is a single family home.

7. (Original) The BCN of claim 5 wherein the building is a multi-unit dwelling unit.

8. (Previously Presented) The BCN of claim 1, wherein the signal communication occurs via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency (RF) channels.

9. (Original) The BCN network of claim 1, wherein the signal communication carries encrypted data between the first BCN modem and the other BCN modem.

10. (Currently Amended) A Broadband Coaxial Network ("BCN") for communicating on an in-building coaxial cable network ("CCN"), comprising:

a first BCN modem connected to a coaxial cable network ("CCN") and included in a plurality of BCN modems in the BCN network, the first BCN modem including a controller having communication links to ones of the plurality of BCN modems and configured to manage data transmission between each of the BCN modems in the BCN network; and

another of the plurality of BCN modems connected to the CCN and capable of signal communication with the first BCN modem ~~across one or more passive network devices having high isolation in the CCN, the another BCN modem~~ including a second controller having communication links to ones of the plurality of BCN modems,

~~wherein the first BCN modem and the another BCN modem are configured to communicate with each other utilizing TDMA and Time Division Duplex (TDD), and~~ wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading; and

wherein the first controller establishes the first BCN modem as a network controller (NC) upon connection to the CCN, the network controller configured to coordinate the

assignment of time slots during which data transmission between each of the BCN modems connected to the CCN occur and wherein the BCN provides both best effort capabilities in which short term requests are made by at least one BCN modem and time allocation grants to transmit packets are provided by the first BCN modem, and reserved communications capabilities in which long term requests are made at least one BCN modem and a specific allocation is granted for a certain data rate by the first BCN modem.

11. (Currently Amended) The BCN of claim 10, wherein the first BCN modem employs adaptive communication techniques that ~~adapts~~ adapt to the characteristics of a coaxial channel between the first BCN modem and the other BCN modem.

12. (Previously Presented) The BCN of claim 10, wherein the first BCN modem is directly in signal communication with the other BCN modem across the CCN.

13. (Original) The BCN of claim 12 wherein the CCN is a type of network having an architectural configuration selected from a group consisting of a star configuration and a mesh configuration and a combination of these configurations, in a TDMA, TDD access fashion, and the type of network utilizes at least one frequency channel.

14. (Previously Presented) The BCN of claim 11, wherein the adaptive communication techniques includes utilization of the adaptive communication techniques in both transmitting processing and receiving processing of data.

15. (Original) The BCN of claim 14, wherein the adaptive communication techniques utilize pre-coding for transmitting processing.

16. (Original) The BCN of claim 14, wherein the adaptive communication techniques utilize adaptive equalization for receiving processing.

17. (Original) The BCN of claim 14, wherein the adaptive communication techniques include pre-coding for transmitting processing based on known or learned channel response.

18. (Original) The BCN of claim 14, wherein additional signal processing techniques are used which are selected from a group consisting of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes.

19. (Cancelled)

20. (Cancelled)

21. (Currently Amended) The BCN of claim ~~20~~ 10, wherein the NC includes a configuration selected from the group consisting of:

a configuration that enables every BCN modem to act as a NC:

a configuration that utilizes a frequency plan;

a configuration that allows a new BCN modem admission to the BCN Network;

a configuration that allows a new BCN modem to communicate with another BCN modem to characterize the channel response between them and determine a bit loading in either direction; and

a configuration that allows each BCN modem in the network to request and be granted a transmission opportunity without a transmission conflict.

22. (Original) The BCN of claim 21, wherein the communications services provided by the BCN include BCN wide transmission priorities.

23. (Cancelled)

24. (Currently Amended) The BCN of claim 10 ~~19~~, wherein the BCN modem provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of:

Ethernet,

IEEE 1394,

Universal Serial Bus ("USB"); and

MPEG-TS.

25. (Original) The BCN of claim 11, wherein the BCN modem is embedded as a part of a device selected from the group consisting of:

a set-top box ("STB");

a Personal Computer (PC);

an IP STB;

a Media Center box;

a Media Extender box;

a DVD player;

a cable modem;

a personal video recorder ("PVR");

a TV set;

a networking device;

a switch/router;

a bridge/Gateway;

a video game console;

a wireless access point (WAP); and

a network attached storage.

26. (Previously Presented) The BCN of claim 11, wherein the BCN modem is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB.

27. (Original) The BCN of claim 25, wherein the BCN modem utilizes the PCI bus structure.

28. (Original) The BCN of claim 27, wherein the BCN modem utilizes another host device.

29. (Original) The BCN of claim 28, wherein the host device is either a bridging host device or a switching host device.

30. (Original) The BCN of claim 10, wherein an at least one TDMA frequency channel used by the BCN network is in one or more of the following frequency bands:

above 860 MHz;

between 860 MHz and 950 MHz; and

below 50 MHz.

31. (Original) The BCN of claim 10, wherein the CCN network is one of the following:

coaxial cables that have been installed for the carriage of satellite signals; and

coaxial cables for video distribution.

32. (Currently Amended) A network device, comprising:

a communication interface configured to connect to a broadband coaxial network ("BCN"); and

a controller in signal communication with the communication interface, the controller configured to:

periodically probe a communication link to another network device to determine a characteristic of the communication link;

use orthogonal frequency division multiplexing and bit-loading to adjust transmissions over each communication link based in part on the probe; ~~and~~

manage data transmission between each network device connected to the BCN by assigning time slots during which data transmission between each of the network devices occur

provide both best effort capabilities in which short term requests are made by at least one BCN modem and time allocation grants to transmit packets are provided by the controller, and reserved communications capabilities in which long term requests are made by least one BCN modem and a specific allocation is granted for a certain data rate by the controller.

REMARKS/ARGUMENTS

Claims 1 and 3-32 were pending in the application. Claims 1 and 3-32 were rejected. Claims 1, 4, 10, 11, 21, 24 and 32 have been amended herein. Claims 3, 19, 20 and 23 have been cancelled. Accordingly, Claims 1, 4-18, 21, 22 and 24-32 are currently pending. Applicants respectfully request reconsideration and allowance of all pending claims.

Discussion of Rejections Under 35 U.S.C. §112

The Examiner rejected Claim 3 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In light of the fact that Applicants have cancelled Claim 3, the Examiner's rejection of Claim 3 is now moot.

Discussion of Rejections Under 35 U.S.C. §103(a)

Claims 1,3-6, and 8 were rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (USPN 6,052,380), and Silverman (USPN 6,307,862).

Applicants respectfully traverse the Examiner's rejection of Claim 1 as amended for the following reasons.

Applicants have amended Claim 1 to include the limitation that the BCN provides both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received by a BCN modem, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate. None of the references cited teach or suggest this limitation.

Accordingly, Applicants respectfully traverse the Examiner's rejection of Claim 1 and those claims that depend therefrom, including Claims 4-6 and 8. The rejection of Claim 3 is now moot in light of the Applicants cancelling of Claim 3.

Claim 7 was rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (USPN 6,052,380) and Silverman (USPN 6,307,862), and El Wardani et al. (Pub. No.: US 2003/0031191). Claim 7 depends from Claim 5, which in turn depends from Claim 1.

Accordingly, Applicants respectfully traverse the Examiner's rejection of Claim 7 for the reasons noted above with regard to Claim 1.

Claim 9 was rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (USPN 6,052,380) and Silverman (USPN 6,307,862), and Drogue (Pub No.: US 2002/0004898). Claim 9 depends from Claim 1, and as such, Applicants respectfully traverse the Examiner rejection of Claim 9 for the reasons stated above with regard to Claim 1.

Claims 10-15, 17-18 and 26 were rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (USPN 6,052,380), and Silverman (USPN 6,307,862).

Similar to Claim 1, Applicants have amended Claim 10 to include the limitation that the BCN provides both best effort capabilities in which short term requests are made and time allocation grants to transmit packets are received by a BCN modem, and reserved communications capabilities in which long term requests are made and a specific allocation is granted for a certain data rate. None of the references cited teach or suggest this limitation.

Accordingly, Applicants respectfully traverse the Examiner's rejection of Claim 10 and those claims that depend therefrom, including Claims 11-15, 17, 18 and 26.

Claims 16, 25 and 27-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (USPN 6,052,380) and Silverman (USPN 6,307,862) and El Wardani et al. (Pub. No.: US 2003/0031191). Each of these claims depend (either directly or indirectly) from Claim 10. As such, Applicants respectfully traverse the Examiner's rejection of Claims 16, 25 and 27-31 for the reasons stated with regard to Claim 10.

Claims 19-24 were rejected under 35 U.S.C. 103(a) as being unpatentable Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (USPN 6,052,380) and Silverman (USPN 6,307,862) and Gorman et al. (USPN 6,137,793.)

Claims 19, 20 and 23 were cancelled. Accordingly, the Examiner's rejection of these claims is now moot. Claim 23 depends from Claim 10. As such, Applicants respectfully traverse the Examiner's rejection of Claim 24 for the reasons provided above with regard to Claim 10.

Claim 32 was rejected under 35 U.S.C. 103(a) as being unpatentable over Bell (USPN 6,053,380) and further in view of Dinwiddie et al. (USPN 6,481,013) and Silverman (USPN 6,307,862).

Claim 32 has been amended to include providing both best effort capabilities in which short term requests are made by at least one BCN modem and time allocation grants to transmit packets are provided by the controller, and reserved communications capabilities in which long term requests are made by least one BCN modem and a specific allocation is granted for a certain data rate by the controller. As noted above with reference to the rejections of Claim 1 and 10, none of the references cited the Examiner either teach or suggest this limitation. Accordingly, Applicants respectfully traverse the Examiner's rejection of Claim 32.

CONCLUSION

Applicants believe that all claims pending in the application are now allowable. Applicants therefore respectfully request that a timely Notice of Allowance be issued in this case. Alternatively, Applicants respectfully request that this amendment be entered as it places the application in better condition for appeal.

This is a response to the Final Office Action mailed on January 21, 2010, and as such, is submitted timely.

If there are any other fees due in connection with the filing of the response, please charge the fees to our Deposit Account No. 50-4613. If a fee is required for an extension of time under 37 CFR 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned.

Respectfully submitted,

Dated: April 21, 2010

By: /Bruce W. Greenhaus/
Bruce W. Greenhaus
Attorney for Applicants
Registration No. 37,339

Entropic Communications, Inc.
6290 Sequence Drive
San Diego, California 92121
Telephone: (619) 980-2612
e-mail address: PatentTeam@entropic.com

Electronic Acknowledgement Receipt	
EFS ID:	7456978
Application Number:	11231349
International Application Number:	
Confirmation Number:	4520
Title of Invention:	Broadband local area network
First Named Inventor/Applicant Name:	Brett Bernath
Customer Number:	77561
Filer:	Bruce Wayne Greenhaus/Tim Ellis
Filer Authorized By:	Bruce Wayne Greenhaus
Attorney Docket Number:	E040004USU1
Receipt Date:	21-APR-2010
Filing Date:	19-SEP-2005
Time Stamp:	13:23:35
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		E040004USU1_Amendment-to-Final-OA_4-21-2010.pdf	122137 0ced3360638c137b0fc1a0e42d0155ac3faa4efa	yes	11

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment After Final	1	1
	Claims	2	7
	Applicant Arguments/Remarks Made in an Amendment	8	10
	Amendment After Final	11	11
Warnings:			
Information:			
	Total Files Size (in bytes):	122137	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/231,349	09/19/2005	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☐ RATE ($)	SMALL ENTITY FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 04/21/2010

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 27	Minus	** 32	=	X $ =		OR	X $ =	
Independent (37 CFR 1.16(h))	* 3	Minus	***3	=	X $ =		OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/PEGGY YARBOROUGH/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/231,349	09/19/2005	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 04/21/2010

	(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 27	Minus	** 32	=	X $ =		OR	X $ =	
Independent (37 CFR 1.16(h))	* 3	Minus	***3	=	X $ =		OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

AMENDMENT

	(Column 1)		(Column 2)	(Column 3)					
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/PEGGY YARBOROUGH/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/231,349	09/19/2005	Brett Bernath	E040004USU1	4520

77561 7590 01/21/2010

Duane Morris LLP (Entropic)
IP Department
30 South 17th Street
Philadelphia, PA 19103-4196

EXAMINER	
LEIJA, JAMES	
ART UNIT	**PAPER NUMBER**
2423	
MAIL DATE	**DELIVERY MODE**
01/21/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	11/231,349	BERNATH ET AL.	
	Examiner	Art Unit	
	JAMES LEIJA	2423	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 November 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Because claim 3 recites "the BCN of claim 2...".

It is unclear as claim 3 is dependent upon a canceled claim.

For the purposes of examination and in light of the specification claim 3 will be interpreted as "the BCN of claim 1...".

Response to Arguments

Applicant's arguments with respect to claims 1 and 32 have been considered but are moot in view of the new ground(s) of rejection.

The applicant has amended the independent claims 1, 10 and 32 to include some of the limitations of canceled 2. As described by the applicant on page 8 of the "remarks/arguments" section

"Applicant have clarified the limitation that was previously provided in claim 2 to recite in claim 1 that the network controller assigns time slots during which communication occur..."

The applicant has presented arguments directed prior art of record; the examiner is now relying on Silverman. By the examiner changing the grounds (from prior art of record to rely on Silverman), the applicant's arguments (directed to prior art of record) are moot.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3-6, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (USPN 6,052,380), and Silverman (USPN 6,307,862).

As per claim 1 Dinwiddie teaches a Broadband Coaxial Network ("BCN'), comprising:

a first BCN modem (Dinwiddie fig 1A element 102) in signal communication with a coaxial cable network ("CCN"), (Dinwiddie fig 1a and 1b illustrate a wired network), (Dinwiddie column 4 lines 40-45, column 5 lines 34-36 describe the wired network connected using by coaxial cable), (Dinwiddie column 9 lines 1-3 describes communication between a modem and network)

another BCN modem (Dinwiddie fig 1A and 1B elements 104, 106, 107 and 108) in signal communication with the CCN (Dinwiddie fig 1A and 1B illustrate elements 106, 107 and 108 connected to the network) that is capable of two-way signal communication with the first BCN modem (Dinwiddie column 11 lines 11-13) across one or more network devices in the CCN (Dinwiddie fig 1A and 1B element 22)

Dinwiddie is silent on across one or more passive network devices having high isolation in the CCN

Gurantz teaches across one or more passive network devices having high isolation in the CCN , (Gurantz page 2 [0020] lines 7-12 and 14-16 fig 2 elements 210, 270, 230, 231, 232)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication of Dinwiddie by across one or more passive network devices having high isolation in the CCN as taught by Gurantz in order provide a path for terminal devices to transmit to and receive from other terminal devices.

Dinwiddie is silent on the first BCD modem including a first controller; and the another BCN modem including a second controller,

wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem and to adjust transmission power over the at least one respective communication link based on a result of the probe

Bell teaches the first BCD modem including a first controller; and the another BCN modem including a second controller, (Bell column 5 lines 41-53, and fig 3 illustrates multiple nodes, each node has that have controller)

wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem and to adjust transmission power and bit loading over the at least one respective communication link based on a result of the probe. (Bell column 12 lines 4-30, column 4 lines 30

-39, wherein DMT initialization reads on adjusting transmission power and bit-loading based on a result of the probe.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network of Dinwiddie by the first BCD modem including a first controller; and the another BCN modem including a second controller, wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem as taught by Baranowski in order determine the location of portable devices.

Dinwiddie teaches wherein the first controller establishes the first BCN modem as a network controller upon connection to the CCN, (Dinwiddie column 11 lines 14-25 describe the PC 45 has a host)

the network controller configured to manage data transmission between each of the BCN modems connected to the CCN. (Dinwiddie column 15 lines 22-29 and 48-54 and column 16 lines 9-10 and 20-23)

Dinwiddie is silent on to coordinate the assignment of time slots

Silverman teach the network controller configured to coordinate the assignment of time slots during which data transmission occur (Silverman abstract lines 15-18, col. 3 lines 12-28, col.3 lines 66 to col. 4 lines 9, and col. 4 lines 48-53)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network controller of Dinwiddie by to coordinate the assignment of time slots as taught by Silverman in order to provide two-way communication using coaxial cable in a home LAN.

As per claim 3 Dinwiddie in view of Gurantz, Bell and Silverman teach the BCN of claim 2, wherein a control signal is generated by the first BCN modem in response to the first BCN modem being the network controller. (Dinwiddie column 11 lines 54-55)

As per claim 4 Dinwiddie in view of Gurantz, Bell and Silverman teach the BCN of claim 1,

Dinwiddie is silent on wherein the second controller is configure to detect a control signal that identifies a network controller is coupled to the CCN

Bell teaches wherein the second controller is configure to detect a control signal that identifies a network controller is coupled to the CCN (Bell column 11 lines 7-45 describe determining the master node by detecting each node timer value.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN of Dinwiddie and Baranowski by wherein the second controller is configure to detect a control signal that identifies a network controller is coupled to the CCN as taught by Bell in order to initialize a channel equalization process that allows each node to know the transmission characteristics of each path between each node.

As per claim 5 Dinwiddie in view of Gurantz, Bell and Silverman teach the BCN of claim 1, wherein the signal communication occurs between the BCN modems that are located within a building. (Dinwiddie column 4 lines 15-18)

As per claim 6 Dinwiddie in view of Gurantz, Bell and Silverman teach the BCN of claim 5, wherein the building is a single family home. (Dinwiddie column 4 lines 19-20)

As per claim 8 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 1.

Dinwiddie teaches signal communication (Dinwiddie column 2 lines 36-38)

But Dinwiddie is silent on communication via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency(R_F) channels.

Gurantz teaches communication via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency(R_F) channels. (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used along with modulation as a communication scheme.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication of Dinwiddie by communicating using TDD and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transceiver.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (USPN 6,052,380) and Silverman (USPN 6,307,862), and El Wardani et al. (Pub. No.: US 2003/0031191).

As per claim 7 Dinwiddie in view of Gurantz, Bell and Silverman teach the BCN of claim 5.

Dinwiddie teaches the building as a dwelling unit (Dinwiddie column 4 lines 18-19)

But Dinwiddie is silent on th1 building being a multi-unit dwelling unit.

Wardani teaches a building being a multi-unit dwelling unit. (Wardani page 1 [0004] lines 1-3)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the building of Dinwiddie by being a multi dwelling unit taught by Wardani in order to provide to multiple users in a building.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (USPN 6,052,380) and Silverman (USPN 6,307,862), and Drogue (Pub No.: US 2002/0004898).

As per claim 9 Dinwiddie in view of Gurantz, Bell and Silverman teach the BCN network of claim 1.

Dinwiddie teaches communication between the first and the other modem. (Dinwiddie column 11 lines 11-13)

Dinwiddie is silent on the signal communication carries encrypted data between the first BCN modem and the other BCN modem.

Drogue teaches the signal communication carries encrypted data between the first BCN modem and the other BCN modem. (Drogue Fig 2 elements 16 and 24, illustrates two modems in communication over a network, [0050] describes encrypting the data that's communicated.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication of Dinwiddie by encrypting the data as taught by Drogue in order to provide secure transmitting and receiving.

Claims 10-15, 17-18 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (USPN 6,052,380), and Silverman (USPN 6,307,862).

As per claim 10 Dinwiddie teaches a Broadband Coaxial Network ("BCN") for communicating on an in- building coaxial cable network ("CCN"), comprising:

a first BCN modem (Dinwiddie fig 1A element 102) connected to a coaxial cable network ("CCN") (Dinwiddie fig 1a and 1b illustrate a wired network), (Dinwiddie column 4 lines 40-45, column 5 lines 34-36 describe the wired network connected using by coaxial cable), and included in a plurality of BCN modems in the BCN network, (Dinwiddie fig 1a and fig 1b illustrates a network with multiple modem elements 102, 106, 107, 104 and 108)

the first BCN modem having communication links to ones of the plurality of BCN modems and (Dinwiddie column 4 lines 40-42 and 45-48) configured to manage data transmission between each of the BCN modems in the BCN network; and (Dinwiddie column 15 lines 22-29 and 48-54 and column 16 lines 9-10 and 20-23)

another of the plurality of BCN modems connected to the CCN and (Dinwiddie fig 1a and fig 1b illustrates a network with multiple modem elements 104, 106, 107 and 108)capable of signal communication with the first BCN modem (Dinwiddie column 11 lines 11-13) the another BCN modem having communication links to ones of the plurality of BCN modems, (Dinwiddie column 4 lines 40-42 and 45-48)

Dinwiddie is silent on across one or more passive network devices having high isolation in the CCN

Gurantz teaches across one or more passive network devices having high isolation in the CCN (Gurantz page 2 [0020] lines 7-12 and 14-16 fig 2 elements 210, 270, 230, 231, 232)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication of Dinwiddie by across one or more passive network devices having high isolation in the CCN as taught by Gurantz in order provide a path for terminal devices to transmit to and receive from other terminal devices.

Dinwiddie is silent on including a controller and a second controller

Bell teaches including a controller and a second controller, (Bell column 6 lines 64-65 describe each computer 112 and 114 as having a network adapter, where fig 4 illustrates that the network adapters of each computer have a controller 212)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the modems of Dinwiddie by including a controller and a second controller as taught by Bell in order provide improved reliability, robustness, bandwidth and noise resistance of the ADSL layer

Dinwiddie teaches wherein the first BCN modem and another BCN modem are configured to communicate with each other (Dinwiddie fig 1A and 1B column 11 lines 11-13)

Dinwiddie silent on utilizing TDMA and Time Division Duplex (TDD).

Gurantz teaches utilizing TDMA and Time Division Duplex (TDD). (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used as communication scheme, along with modulation)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication between two modems of Dinwiddie by communicating using TDD and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transceiver.

Dinwiddie is silent on wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading

Bell teaches wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading; and (Bell column 12 lines 4-30, column 9 lines 36 -52, wherein DMT initialization reads on OFDM bit-loading.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the modems of Dinwiddie by wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading as taught by Bell in order provide improved reliability, robustness, bandwidth and noise resistance of the ADSL layer.

Dinwiddie teaches wherein the first controller establishes the first BCN modem as a network controller upon connection to the CCN, (Dinwiddie column 11 lines 14-25 describe the PC 45 has a host)

the network controller configured to manage data transmission between each of the BCN modems connected to the CCN. (Dinwiddie column 15 lines 22-29 and 48-54 and column 16 lines 9-10 and 20-23)

Dinwiddie is silent on to coordinate the assignment of time slots

Silverman teach the network controller configured to coordinate the assignment of time slots during which data transmission occur (Silverman abstract lines 15-18, col. 3 lines 12-28, col.3 lines 66 to col. 4 lines 9, and col. 4 lines 48-53)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network controller of Dinwiddie by to coordinate the assignment of time slots as taught by Silverman in order to provide two-way communication using coaxial cable in a home LAN.

As per claim 11 Dinwiddie in view of Gurantz, Bell and Silverman teach the BCN of claim 10, wherein the first BCN modem (Dinwiddie fig 5A) employs adaptive communication techniques that adapts to the characteristics of a coaxial channel between the first BCN modem and the other BCN modem. (Dinwiddie fig 5A elements 122 and 110, column 9 lines 36-40 describes a BALUM which converts the a signal to conform to the characteristics of the coaxial cable)

As per claim 12 Dinwiddie in view of Gurantz, Bell and Silverman teach the BCN of claim 10, wherein the first BCN modem is directly in signal communication with the other BCN modem across the CCN. (Dinwiddie Fig 1 column 15 lines 25-34)

As per claim 13 Dinwiddie in view of Gurantz, Bell and Silverman teach the BCN of claim 12

wherein the CCN is a type of network having a architectural configuration selected from a group consisting of

a star configuration and (Dinwiddie fig 12 illustrates the distribution unit of the network in a star configuration) a mesh configuration and a combinations of these configurations,

Dinwiddie teaches using the star configuration in an accessible fashion. (Dinwiddie column 12 lines 64-67 describes the use of signal paths for communication which reads on an accessible fashion)

But Dinwiddie is silent on a TDMA and Time Division Duplex (TDD) access fashion.

Gurantz teaches a TDMA and Time Division Duplex (TDD) access fashion. (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used along with modulation as communication scheme.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the access fashion of Dinwiddie by communicating using TDD and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transceiver.

the type of network utilizes at least one frequency channel. (Gurantz page 4 [0039] lines 1-3 describes the use of TDD in the network, by utilizing a frequency.)

As per claim 14 Dinwiddie in view of Gurantz, Bell and Silverman teach the BCN of claim 11, wherein adaptive communication techniques includes utilization of the adaptive communication techniques in both transmitting processing and receiving processing of data. (Dinwiddie fig 5A elements 122 column 9 lines 34-40 describes receiving processed data from a modulator which reads on receiving processing of data and processing that data in the BALUM and filter then transmitting the processed data.)

As per claim 15 Dinwiddie in view of Gurantz, Bell and Silverman teach the BCN of claim 14, wherein the adaptive communication utilizes pre-coding for transmitting processing. (Dinwiddie column 9 lines 27-34 describe coding the data before transmitting the data.),

(Dinwiddie column 9 lines 35-40 describe the BALUM and filter transmitting the processed data.)

As per claim 17 Dinwiddie in view of Gurantz, Bell and Silverman teach the BCN of claim 14, wherein the adaptive communication techniques include pre-coding for (Dinwiddie column 9 lines 27-34 describe coding the data before transmitting the data.) transmitting processing based on known or learned channel response.(Dinwiddie column 9 lines 35-40 describe the BALUM and filter transmitting the processed data.), (Dinwiddie columns 9 lines 56-58 describe the coding as modulation which is a processing, as well as describing the modulation as based on a selected channel which reads on a known channel response)

As per claim 18 Dinwiddie in view of Gurantz, Bell and Silverman teach the BCN of claim 14.

Dinwiddie teaches signal processing techniques are used (Dinwiddie column 9 lines 25-35 describe the use of RF modulation)

Dinwiddie is silent on using additional signal processing techniques selected from a group of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes.

Gurantz teaches using additional signal processing techniques selected from a group of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes. (Gurantz page 4 [0046]-[0047] describe the use of DMT and OFDM which reads on the use of additional processing techniques being OFDM)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the signal processing of Dinwiddie by processing using OFDM as taught by Gurantz in order to overcome the effects of inter-symbol interference.

As per claim 26 Dinwiddie in view of Gurantz, Bell and Silverman teach the BCN of claim 11, wherein the BCN modem is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB. (Gurantz page 3 [0035], [0036] describe the use of a DS-SS receiver which reads on a satellite STB.)

Claims 16, 25 and 27-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (USPN 6,052,380) and Silverman (USPN 6,307,862) and El Wardani et al. (Pub. No.: US 2003/0031191).

As per claim 16 Dinwiddie in view of Gurantz, Bell and Silverman teach the BCN of claim 14.

Dinwiddie teaches adaptive communication techniques. (Dinwiddie fig 5A elements 122 and 110, column 9 lines 36-40 describes a BALUM which converts the a signal to conform to the characteristics of the coaxial cable)

Dinwiddie is silent on utilizing adaptive equalization processing.

Wardani teaches utilizing adaptive equalization processing. (Wardani page 4 [0054])

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the adaptive communication techniques of Dinwiddie by utilizing an adaptive equalizer as taught by Wardani in order to improve the signal quality.

As per claim 25 Dinwiddie in view of Gurantz, Bell and Silverman teach the BCN of claim 11, wherein the BCN modem is embedded as a part of a device selected from the group consisting of:

a set-top box ("STB"); a Personal Computer (PC); an IP STB; a Media Center box; a Media Extender box; a DVD player; a cable modem; a personal video recorder ("PVR"); a TV set; a networking device; a switch/router;

a bridge/Gateway; (Wardani fig 1 element 200 [0031] lines 5-8)

a video game console; a wireless access point (WAP); and a network attached storage.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify BCN of Dinwiddie by embedding the device within a bridge as taught by Wardani in order to provide a mechanism to communicate signals between two systems.

As per claim 27 Dinwiddie in view of Gurantz, Bell and Silverman and Wardani teach the BCN of claim 25, wherein the BCN modem utilizes the PCI bus structure. (Wardani page 3 [0040] lines 12-15 describes the use of an Ethernet interface which inherently utilizes the PCI bus structure)

As per claim 28 Dinwiddie in view of Gurantz, Bell and Silverman and Wardani teach the BCN of claim 27, wherein the BCN modem utilizes another host device. (Wardani fig 4 page 3 [0038] describes the use of the modem in another device)

As per claim 29 Dinwiddie in view of Gurantz, Bell and Silverman and Wardani teach the BCN of claim 28, wherein the host device is either a bridging host device or a switching host device. (Wardani fig 4 page 3 [0038] describes the use of the modem in a bridging device.)

As per claim 30 Dinwiddie in view of Gurantz, Bell and Silverman teach the BCN of claim 10.

Dinwiddie and Gurantz teach the use of a TDMA frequency channel in the BCN network

But Dinwiddie and Gurantz are silent on using one or more frequency bands:

above 860 MHz; between 860 MHz and 950 MHz; and below 50 MHz. above

Wardani teaches using one or more frequency bands: above 860 MHz; (Wardani fig 8 page 3 [0046] lines 1-4) between 860 MHz and 950 MHz; and (Wardani fig 8 page 3 [0046] lines 5-7) below 50 MHz. (Wardani fig 8 page 3 [0048])

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify frequency channel of Dinwiddie and Gurantz by being one of above 860 MHz; between 860 MHz and 950 MHz; and below 50 MHz as taught by Wardani in order to allow the network band to reside at any frequency on the cable.

As per claim 31 Dinwiddie in view of Gurantz, Bell and Silverman teach the BCN of claim 10, wherein the CCN network is one of the following:

coaxial cables that have been installed for the carriage of satellite signals; and coaxial cables for video distribution.(Dinwiddie column 5 lines 50-55)

Claims 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (USPN 6,052,380) and Silverman (USPN 6,307,862) and Gorman et al. (USPN 6,137,793.)

As per claim 19 Dinwiddie in view of Gurantz, Bell and Silverman teach the BCN of claim 14.

Dinwiddie is silent on including additional MAC and communication processing including the provision of best effort and reserved communication services, processes and protocol adaptations to adapt other communication services to operate over the BCN.

Gorman teaches an additional MAC and communication processing including (Gorman abstract lines 3-5, 11-14 describe the use of MAC and communication processing) the provision of best effort and reserved communication services, (Gorman column 6 lines 15-21)processes and protocol adaptations to adapt other communication services to operate over the BCN. (Gorman column 3 lines 48-54, describe service over a BCN, column 6 lines 63-67 describes using ATM adaptation which reads on process and protocol adaptation.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN of Dinwiddie by including MAC and communication processing including the provision of best effort and reserved communication services, processes and protocol adaptations to adapt other communication services to operate over the BCN as taught by Gorman in order to integrate multimedia services.

As per claim 20 Dinwiddie in view of Gurantz, Bell and Silverman and Gorman teach the BCN of claim 19, wherein the communication services and processes includes utilization of a Network Controller ("NC") to control the access to the BCN. (Gorman column 5 lines 21-23)

As per claim 21 Dinwiddie in view of Gurantz, Bell and Silverman and Gorman teach the BCN of claim 20, wherein the NC includes a configuration selected from the group consisting of:

a configuration that enables every BCN modem to act as a NC;

a configuration that utilizes a frequency plan; (Gorman column 12 lines 58-60 fig 1 illustrates the use of a cable TV network, which reads on a frequency plan.)

a configuration that allows a new BCN modem admission to the BCN Network; a configuration that allows a new BCN modem to communicate with another BCN modem to characterize the channel response between them and determine a bit loading in either direction; and a configuration that allows each BCN modem in the network to request and be granted a transmission opportunity without a transmission conflict.

As per claim 22 Dinwiddie in view of Gurantz, Bell and Silverman and Gorman teach the BCN of claim 21, wherein the communications services provided by the BCN include BCN wide transmission priorities. (Gorman column 13 lines 22-27)

As per claim 23 Dinwiddie in view of Gurantz, Bell and Silverman and Gorman teach the BCN of claim 22, wherein the BCN services include a configuration that provides reserved bandwidth communication services (Gorman column 6 lines 15-21)

Dinwiddie teaches wherein the first BCN modem and the another BCN modem are configured to communicate with each other. (Dinwiddie fig 1A and 1B column 11 lines 11-13 describe pc modems communicating)

But Dinwiddie is silent on utilizing TDMA and Time Division Duplex (TDD) to communicate.

Gurantz teaches utilizing TDMA and Time Division Duplex (TDD). (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used as communication scheme, along with modulation)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication between two modems of Dinwiddie by communicating using TDD and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transceiver.

As per claim 24 Dinwiddie in view of Gurantz, Bell and Silverman and Gorman teach the BCN of claim 19, wherein the BCN modem provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of:

Ethernet, (Gorman column 6 lines 53-57 describe ATM adaptation , column 7 lines 1-3 describe the use of Ethernet services) IEEE 1394, Universal Serial Bus ("USB"); ()and MPEG-TS.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bell (USPN 6,053,380) and further in view of Dinwiddie et al. (USPN 6,481,013) and Silverman (USPN 6,307,862).

As per claim 32 Bell teaches a network device, comprising:

a communication interface (Bell fig 2 illustrates a network adapter aka network interface card) configured to connect to a broadband coaxial network ("B C N"); and (Bell Fig 1 column 6 lines 49-53 describe the network cabling as coaxial)

a controller in signal communication with the communication interface, (Bell column 5 lines 42- 50)

the controller configured to:

periodically probe a communication link to another network device to determine a characteristic of the communication link; (Bell column 12 lines 4-47 and column 13 lines 23-28)

use orthogonal frequency division multiplexing and bit-loading to adjust transmissions over each communication link based in part on the probe; and (Bell column 8 lines 53-62 describe the use of DMT which reads on OFDM bit-loading.)

Bell is silent on manage data transmission between each network device connected to the BCN, by assigning time slots during which data transmission between each of the network devices occur

Dinwiddie teaches to manage data transmission between each network device connected to the BCN (Dinwiddie column 15 lines 22-29 and 48-54 and column 16 lines 9-10 and 20-23)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network device of Dinwiddie by manage data transmission between each network device connected to the BCN as taught by Dinwiddie in order to provide a central control station for all the components attached to the network.

Silverman teach by assigning time slots during which data transmission between each of the network devices occur (Silverman abstract lines 15-18, col. 3 lines 12-28, col.3 lines 66 to col. 4 lines 9, and col. 4 lines 48-53)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the controller of Bell and Dinwiddie by assigning time slots during which data transmission between each of the network devices occur as taught by Silverman in order to provide two-way communication using coaxial cable in a home LAN.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES LEIJA whose telephone number is (571)270-5249. The examiner can normally be reached on M-F 730 am to 5pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ANDREW Y. KOENIG can be reached on (571) 272-7296. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. L./
Examiner, Art Unit 2423

/Andrew Y Koenig/
Supervisory Patent Examiner, Art Unit 2423

Notice of References Cited	Application/Control No. 11/231,349	Applicant(s)/Patent Under Reexamination BERNATH ET AL.	
	Examiner JAMES LEIJA	Art Unit 2423	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,307,862 B1	10-2001	Silverman, David Phillip	370/442
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	Art Unit
	JAMES LEIJA	2423

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	08/19/2008	02/25/2009	07/28/2009	01/12/2010					
	1	✓	✓	✓	✓					
	2	✓	✓	✓	-					
	3	✓	✓	✓	✓					
	4	✓	✓	✓	✓					
	5	✓	✓	✓	✓					
	6	✓	✓	✓	✓					
	7	✓	✓	✓	✓					
	8	✓	✓	✓	✓					
	9	✓	✓	✓	✓					
	10	✓	✓	✓	✓					
	11	✓	✓	✓	✓					
	12	✓	✓	✓	✓					
	13	✓	✓	✓	✓					
	14	✓	✓	✓	✓					
	15	✓	✓	✓	✓					
	16	✓	✓	✓	✓					
	17	✓	✓	✓	✓					
	18	✓	✓	✓	✓					
	19	✓	✓	✓	✓					
	20	✓	✓	✓	✓					
	21	✓	✓	✓	✓					
	22	✓	✓	✓	✓					
	23	✓	✓	✓	✓					
	24	✓	✓	✓	✓					
	25	✓	✓	✓	✓					
	26	✓	✓	✓	✓					
	27	✓	✓	✓	✓					
	28	✓	✓	✓	✓					
	29	✓	✓	✓	✓					
	30	✓	✓	✓	✓					
	31	✓	✓	✓	✓					
	32		✓	✓	✓					

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	Art Unit
	JAMES LEIJA	2423

SEARCHED			
Class	Subclass	Date	Examiner
725	78, 80, 109	7/28/2009	JL
709		2/25/2009	JL
370		2/25/2009	JL

SEARCH NOTES		
Search Notes	Date	Examiner
EAST	7/28/2009	JL
Spoke with Joe Ustaris - CL 725	7/28/2009	JL
Andrew Koenig -CL 725	7/28/2009	JL
update east	1/12/2010	JL

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S4	846	((hous$4 hom$4) with network $3) same tdma	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 14:27
S5	7094	((time adj slot$2) time?slot$2) with tdma	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 14:27
S6	53	S4 and S5	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 14:27
S7	1	moca and S5	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 14:40
S8	1637	moca	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 14:40
S9	12	((time adj slot$2) time?slot$2) same moca	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 14:41
S10	11	tdma same moca	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 14:42
S11	151	moca and mac	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 16:39
S12	61	moca and mac and tdma	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 16:39
S13	8	moca and mac same tdma	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 16:39
S23	43	entropic.as.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 19:20
S24	9	((time adj slot$2) time?slot$2) and S23	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 19:20
S25	7094	((time adj slot$2) time?slot$2) with tdma	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 19:27
S27	77341	((hous$4 hom$4) with network $3)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 19:28

S28	804	S27 and S25	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 19:29
S30	5590615	@ad<="20041202" @rlad<="20041202" @prad<="20041202"	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 19:30
S31	691	S27 and S25 and S30	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 19:31
S32	224	S27 and S25 and (co?ax$7 coax $7)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 19:32
S33	5803	ofdm and tdma	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 19:33
S34	103	S27 and S25 and S33	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 19:33
S35	86	S27 and S25 and S30 and S33	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 19:33
S36	43	S27 and S25 and (co?ax$7 coax $7) and S30 and S33	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 19:40
S37	1	("2005/0289632").URPN.	USPAT	OR	OFF	2010/01/11 19:53
S38	1442	mac same tdma	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 19:53
S39	43	S27 and S25 and (co?ax$7 coax $7) and S30 and S38	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 19:54
S40	7	cis same tdma	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 20:04
S41	4	(interface with spectrum).ti.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 20:06
S42	56505	((time adj slot$2) time?slot$2)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 20:30
S43	9039	((time adj slot$2) time?slot$2) same tdma	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 20:30
S44	1101	S43 and S27	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 20:30
S45	307	S43 and S27 and S30 and (co?ax$7 coax$7)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/11 20:31

S47	5	moca and tdd and tdma	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/12 09:49
S48	77	moca and (tdd tdma)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/12 09:49
S49	40	((time adj slot$2) time?slot$2) and moca	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/12 10:01
S50	77419	((hous$4 hom$4) with network $3)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/12 11:06
S51	5591993	@ad<="20041202" @rlad<="20041202" @prad<="20041202"	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/12 11:06
S52	9046	((time adj slot$2) time?slot$2) same tdma	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/12 11:06
S53	0	S52 and S50 and S51 and (co?ax$7 coax$7) and assign48	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/12 11:06
S54	277	S52 and S50 and S51 and (co?ax$7 coax$7) and assign$8	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/12 11:06
S55	17097	((time adj slot$2) time?slot$2) same assign$8	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/12 11:06
S56	198	S52 and S50 and S51 and (co?ax$7 coax$7) and S55	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/12 11:06
S57	308	S52 and S50 and S51 and (co?ax$7 coax$7)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/12 11:10
S58	5591993	@ad<="20041202" @rlad<="20041202" @prad<="20041202"	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/12 13:44
S59	9046	((time adj slot$2) time?slot$2) same tdma	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/12 13:44
S60	784	S59 and (network$4) and S58 and (co?ax$7 coax$7)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/12 13:44
S61	547	S58 and S59 and ((network$4) same (co?ax$7 coax$7))	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/12 13:45
S62	3	S58 and S59 and ((mdu dwel $4) same (co?ax$7 coax$7))	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/12 13:47

S63	12	("5361091" | "5485630" | "5642155" | "5878277" | "5883677" | "5949775" | "5983068" | "5987524" | "6069899").PN. OR ("6307862").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/12 13:51
S64	77419	((hous$4 hom$4) with network $3)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/12 14:02
S65	308	S59 and S64 and S58 and (co? ax$7 coax$7)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/12 14:02
S66	476	S60 not S65	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/12 14:02
S67	13452	assign$8 with ((time adj slot$2) time?slot$2)	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/12 14:20
S68	248	S66 and (assign$8 with ((time adj slot$2) time?slot$2))	US-PGPUB; USPAT; USOCR	OR	OFF	2010/01/12 14:20

EAST Search History (Interference)

< This search history is empty>

1/12/2010 4:35:12 PM
C:\Documents and Settings\jleija\My Documents\EAST\Workspaces\11231349\11231349b.wsp

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:
Brett Bernath et al.

Serial No.: 11/231,349

Filed: September 19, 2005

For: A BROADBAND LOCAL AREA NETWORK

Group Art Unit: 2423

Confirmation No. 4520

AMENDMENT

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attention: **James Leija**
Examiner

Dear Sir:

In response to the Non-Final Office Action of August 6, 2009, please note the following remarks and comments:

Amendments to the Claims begin on page 2 of this paper.

Remarks/Comments begin on page 8 of this paper.

I hereby certify that this correspondence is being electronically deposited with the Commissioner for Patents through the USPTO electronic filing system, on:

November 9, 2009
(Date of Deposit)
Tim Ellis
(Name of Person Making Deposit)
/Tim Ellis/
(Signature)

AMENDMENTS TO THE CLAIMS:

What is claimed is:

1. (Currently amended) A Broadband Coaxial Network ("BCN"), comprising:

a first BCN modem in signal communication with a coaxial cable network ("CCN"), the first BCN modem including a first controller; and

another BCN modem in signal communication with the CCN that is capable of two-way signal communication with the first BCN modem across one or more passive network devices having high isolation in the CCN, the another BCN modem including a second controller,

wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem and to adjust transmission power and bit loading over the at least one respective communication link based on a result of the probe; and

wherein the first controller establishes the first BCN modem as a network controller upon connection to the CCN, the network controller configured to coordinate the assignment of time slots during which data transmission between each of the BCN modems connected to the CCN occur.

2. (Cancelled)

3. (Original) The BCN of claim 2, wherein a control signal is generated by the first BCN modem in response to the first BCN modem being a network controller.

4. (Previously Presented) The BCN of claim 1, wherein the second controller is configured to detect a control signal that identifies a network controller is coupled to the CCN.

5. (Original) The BCN of claim 1, wherein the signal communication occurs between the BCN modems that are located within a building.

6. (Original) The BCN of claim 5, wherein the building is a single family home.

7. (Original) The BCN of claim 5 wherein the building is a multi-unit dwelling unit.

8. (Previously Presented) The BCN of claim 1, wherein the signal communication occurs via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency (RF) channels.

9. (Original) The BCN network of claim 1, wherein the signal communication carries encrypted data between the first BCN modem and the other BCN modem.

10. (Currently Amended) A Broadband Coaxial Network ("BCN") for communicating on an in-building coaxial cable network ("CCN"), comprising:

a first BCN modem connected to a coaxial cable network ("CCN") and included in a plurality of BCN modems in the BCN network, the first BCN modem including a controller having communication links to ones of the plurality of BCN modems and configured to manage data transmission between each of the BCN modems in the BCN network; and

another of the plurality of BCN modems connected to the CCN and capable of signal communication with the first BCN modem across one or more passive network devices having high isolation in the CCN, the another BCN modem including a second controller having communication links to ones of the plurality of BCN modems,

wherein the first BCN modem and the another BCN modem are configured to communicate with each other utilizing TDMA and Time Division Duplex (TDD), and wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading; and

wherein the first controller establishes the first BCN modem as a network controller upon connection to the CCN, the network controller configured to coordinate the assignment of time slots during which data transmission between each of the BCN modems connected to the CCN occur.

11. (Original) The BCN of claim 10, wherein the first BCN modem employs adaptive communication techniques that adapts to the characteristics of a coaxial channel between the first BCN modem and the other BCN modem.

12. (Previously Presented) The BCN of claim 10, wherein the first BCN modem is directly in signal communication with the other BCN modem across the CCN.

13. (Original) The BCN of claim 12 wherein the CCN is a type of network having an architectural configuration selected from a group consisting of a star configuration and a mesh configuration and a combination of these configurations, in a TDMA, TDD access fashion, and the type of network utilizes at least one frequency channel.

14. (Previously Presented) The BCN of claim 11, wherein the adaptive communication techniques includes utilization of the adaptive communication techniques in both transmitting processing and receiving processing of data.

15. (Original) The BCN of claim 14, wherein the adaptive communication techniques utilize pre-coding for transmitting processing.

16. (Original) The BCN of claim 14, wherein the adaptive communication techniques utilize adaptive equalization for receiving processing.

17. (Original) The BCN of claim 14, wherein the adaptive communication techniques include pre-coding for transmitting processing based on known or learned channel response.

18. (Original) The BCN of claim 14, wherein additional signal processing techniques are used which are selected from a group consisting of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes.

19. (Original) The BCN of claim 14, further including additional MAC and communication processing including the provision of best effort and reserved communication

services, processes and protocol adaptations to adapt other communication services to operate over the BCN.

20. (Original) The BCN of claim 19, wherein the communication services and processes includes utilization of a Network Controller ("NC") to control the access to the BCN.

21. (Original) The BCN of claim 20, wherein the NC includes a configuration selected from the group consisting of:

a configuration that enables every BCN modem to act as a NC:

a configuration that utilizes a frequency plan;

a configuration that allows a new BCN modem admission to the BCN Network;

a configuration that allows a new BCN modem to communicate with another BCN modem to characterize the channel response between them and determine a bit loading in either direction; and

a configuration that allows each BCN modem in the network to request and be granted a transmission opportunity without a transmission conflict.

22. (Original) The BCN of claim 21, wherein the communications services provided by the BCN include BCN wide transmission priorities.

23. (Original) The BCN of claim 22, wherein the BCN services include a configuration that provides reserved bandwidth communication services.

24. (Original) The BCN of claim 19, wherein the BCN modem provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of:

Ethernet,

IEEE 1394,

Universal Serial Bus ("USB"); and

MPEG-TS.

25. (Original) The BCN of claim 11, wherein the BCN modem is embedded as a part of a device selected from the group consisting of:

a set-top box ("STB");
a Personal Computer (PC);
an IP STB;
a Media Center box;
a Media Extender box;
a DVD player;
a cable modem;
a personal video recorder ("PVR");
a TV set;
a networking device;
a switch/router;
a bridge/Gateway;
a video game console;
a wireless access point (WAP); and
a network attached storage.

26. (Previously Presented) The BCN of claim 11, wherein the BCN modem is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB.

27. (Original) The BCN of claim 25, wherein the BCN modem utilizes the PCI bus structure.

28. (Original) The BCN of claim 27, wherein the BCN modem utilizes another host device.

29. (Original) The BCN of claim 28, wherein the host device is either a bridging host device or a switching host device.

30. (Original) The BCN of claim 10, wherein an at least one TDMA frequency channel used by the BCN network is in one or more of the following frequency bands:

above 860 MHz;
between 860 MHz and 950 MHz; and
below 50 MHz.

31. (Original) The BCN of claim 10, wherein the CCN network is one of the following:
coaxial cables that have been installed for the carriage of satellite signals; and
coaxial cables for video distribution.

32. (Currently Amended) A network device, comprising:
a communication interface configured to connect to a broadband coaxial network ("BCN"); and
a controller in signal communication with the communication interface, the controller configured to:
periodically probe a communication link to another network device to determine a characteristic of the communication link;
use orthogonal frequency division multiplexing and bit-loading to adjust transmissions over each communication link based in part on the probe; and
manage data transmission between each network device connected to the BCN by assigning time slots during which data transmission between each of the network devices occur.

REMARKS/ARGUMENTS

Claims 1-32 were pending in the application. Claims 1-32 were rejected. Claims 1, 10 and 32 have been amended herein. Claim 2 has been cancelled. Accordingly, Claims 1 and 3-32 are currently pending. Applicants respectfully request reconsideration and allowance of all pending claims.

Discussion of Rejections Under 35 U.S.C. §103(a)

Claims 1-6 and 8 were rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (U.S. Pat. No. 6,481,013) and further in view of Gurantz et al (Pub No. US 2002/0166124) and Bell (U.S. Pat. No. 6,052,380).

Applicants respectfully traverse the Examiner's rejection of Claim 1 as amended for the following reasons.

Applicants have amended Claim 1 to include the limitations that were previously recited in Claim 2 and accordingly have cancelled Claim 2. The Examiner rejected Claim 2, pointing to Dinwiddie at col. 11, lines 14-25, col. 15, lines 22-29 and 48-54, and col. 16, lines 9-10 and 20-23 as disclosing the establishment of a network controller that manages the data transmission. Applicants have clarified the limitation that was previously provided in Claim 2 to recite in Claim 1 that the network controller assigns time slots during which communications occur on the network. Applicants contend that none of the references cited teach or suggest the BCN in which a network controller is established that assigns time slots during which the nodes of the network are permitted to communicate over the network.

Accordingly, Applicants respectfully traverse the Examiner's rejection of Claim 1 and those claims that depend therefrom, including Claims 3-9.

The Examiner rejected Claims 10-15, 17-18 and 26 under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (USPN 6,052,380).

Applicants have amended Claim 10 similarly to that of Claim 1. Accordingly, for the reasons noted above with respect to Claim 1, Applicant's respectfully traverse the

Examiner's rejection of Claim 10 and those claims that depend therefrom, including Claims 11-31.

The Examiner rejected Claim 32 under 35 U.S.C. 103(a) as being unpatentable over Bell (USPN 6,053,380) and further in view of Dinwiddie et al. (USPN 6,481,013).

Applicants have amended Claim 32 similarly to that of Claim 1. Accordingly, for the reasons noted above with respect to Claim 1, Applicant's respectfully traverse the Examiner's rejection of Claim 32.

CONCLUSION

Applicants believe that all claims pending in the application are now allowable. Applicants therefore respectfully request that a timely Notice of Allowance be issued in this case. Alternatively, Applicants respectfully request that this amendment be entered as it places the application in better condition for appeal.

This is a response to the Non-Final Office Action mailed on August 6, 2009, and as such, is submitted together with a request for a 1 month extension of time and the fee required for such a 1 month extension of time.

If there are any other fees due in connection with the filing of the response, please charge the fees to our Deposit Account No. 50-4613. If a fee is required for an extension of time under 37 CFR 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned.

Respectfully submitted,

Dated: November 9, 2009

By: /Bruce W. Greenhaus/
Bruce W. Greenhaus
Attorney for Applicants
Registration No. 37,339

Entropic Communications, Inc.
6290 Sequence Drive
San Diego, California 92121
Telephone: (619) 980-2612
e-mail address: PatentTeam@entropic.com

Electronic Patent Application Fee Transmittal

Application Number:	11231349
Filing Date:	19-Sep-2005
Title of Invention:	Broadband local area network
First Named Inventor/Applicant Name:	Brett Bernath
Filer:	Bruce Wayne Greenhaus/Tim Ellis
Attorney Docket Number:	E040004USU1

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 1 month with $0 paid	1251	1	130	130

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**130**

Electronic Acknowledgement Receipt	
EFS ID:	6420101
Application Number:	11231349
International Application Number:	
Confirmation Number:	4520
Title of Invention:	Broadband local area network
First Named Inventor/Applicant Name:	Brett Bernath
Customer Number:	77561
Filer:	Bruce Wayne Greenhaus/Tim Ellis
Filer Authorized By:	Bruce Wayne Greenhaus
Attorney Docket Number:	E040004USU1
Receipt Date:	09-NOV-2009
Filing Date:	19-SEP-2005
Time Stamp:	17:40:12
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$130
RAM confirmation Number	4274
Deposit Account	504613
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Extension of Time	E040004USU1_Extension-of-Time_11-9-09.pdf	316036 bad89ff1242df911cccc644cc15ae8fcdbe1de04	no	2
Warnings:					
Information:					
2		E040004USU1_OA-Response_11-9-09.pdf	110989 2dc4ddaa6715dfeb7648b097cd45afc235684add	yes	10

Multipart Description/PDF files in .zip description

Document Description	Start	End
Amendment/Req. Reconsideration-After Non-Final Reject	1	1
Claims	2	7
Applicant Arguments/Remarks Made in an Amendment	8	9
Amendment/Req. Reconsideration-After Non-Final Reject	10	10

Warnings:					
Information:					
3	Fee Worksheet (PTO-875)	fee-info.pdf	29671 5926a40d5a0e009fc2bcc5c1593d83da5b8210f2	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	456696		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/22 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARMENT OF COMMERCE
Under the paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) **FY 2009** ***(Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)***	Docket Number (Optional) E040004USU1
Application Number 11/231,349	Filed September 19, 2005
For A Broadband Local Area Network	
Art Unit 2423	Examiner James Leija

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

	Fee	Small Entity Fee	
☑ One month (37 CFR 1.17(a)(1))	$130	$65	$ 130
☐ Two months (37 CFR 1.17(a)(2))	$490	$245	$
☐ Three months (37 CFR 1.17(a)(3))	$1110	$555	$
☐ Four months (37 CFR 1.17(a)(4))	$1730	$865	$
☐ Five months (37 CFR 1.17(a)(5))	$2350	$1175	$

☐ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☑ The Director has already been authorized to charge fees in this application to a Deposit Account.

☑ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 504613.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☑ attorney or agent of record. Registration Number 37339

☐ attorney or agent under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 _____

/Bruce W. Greenhaus/	November 9, 2009
Signature	Date
Bruce W. Greenhaus	(619) 980-2612
Typed or printed name	Telephone Number

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☐ Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/231,349	09/19/2005	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☒ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	300
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	300

APPLICATION AS AMENDED – PART II

AMENDMENT	11/09/2009	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 31	Minus	** 32	= 0	X $ =		OR	X $52=	0
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $ =		OR	X $220=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/TAMMY MCBETH BROWN/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/231,349	09/19/2005	Brett Bernath	E040004USU1	4520

77561 7590 08/06/2009

Duane Morris LLP (Entropic)
IP Department
30 South 17th Street
Philadelphia, PA 19103-4196

EXAMINER	
LEIJA, JAMES	
ART UNIT	**PAPER NUMBER**
2423	
MAIL DATE	**DELIVERY MODE**
08/06/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	11/231,349	BERNATH ET AL.	
	Examiner	Art Unit	
	JAMES LEIJA	2423	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 July 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 07/02/2009 have been fully considered but they are not persuasive.

Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

The applicant has presented arguments directed Baranowski of claim 1; the examiner is now relying on Bell. By the examiner changing the grounds (from Baranowski to rely on Bell), the applicant's arguments (directed to Baranowski) are moot.

Applicant's arguments with respect to claims 10-32 have been fully considered but they are not persuasive. Further applicant provides specific argument's directed towards claim 10.

Applicant alleges that Bell is used in a far different environment. And, that it would not be obvious to use the technique disclosed by Bell in a coaxial cable network, because Bell's disclosure used in a wireless environment.

Examiner respectfully disagrees. Bell discloses on column 9 line 4 to column 10 line 22 that the environment of Bell is an Ethernet based network, and column 6 lines 49-52 illustrates the environment medium as coaxial cable.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-6, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (USPN 6,052,380).

As per claim 1 Dinwiddie teaches a Broadband Coaxial Network ("BCN'), comprising:

a first BCN modem (Dinwiddie fig 1A element 102) in signal communication with a coaxial cable network ("CCN"), (Dinwiddie fig 1a and 1b illustrate a wired network), (Dinwiddie column 4 lines 40-45, column 5 lines 34-36 describe the wired network connected using by coaxial cable), (Dinwiddie column 9 lines 1-3 describes communication between a modem and network)

another BCN modem (Dinwiddie fig 1A and 1B elements 104, 106, 107 and 108) in signal communication with the CCN (Dinwiddie fig 1A and 1B illustrate elements 106, 107 and 108 connected to the network) that is capable of two-way signal communication with the first BCN modem (Dinwiddie column 11 lines 11-13) across one or more network devices in the CCN (Dinwiddie fig 1A and 1B element 22)

across one or more passive network devices having high isolation in the CCN , (Gurantz page 2 [0020] lines 7-12 and 14-16 fig 2 elements 210, 270, 230, 231, 232)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication of Dinwiddie by across one or more passive network devices having high isolation in the CCN as taught by Gurantz in order provide a path for terminal devices to transmit to and receive from other terminal devices.

Dinwiddie is silent on the first BCD modem including a first controller; and the another BCN modem including a second controller, wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem and to adjust transmission power over the at least one respective communication link based on a result of the probe

Bell teaches the first BCD modem including a first controller; and the another BCN modem including a second controller, (Bell column 5 lines 41-53, and fig 3 illustrates multiple nodes, each node has that have controller)

wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem and to adjust transmission power and bit loading over the at least one respective communication link based on a result of the probe. (Bell column 12 lines 4-30, column 4 lines 30 -39, wherein DMT initialization reads on adjusting transmission power and bit-loading based on a result of the probe.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network of Dinwiddie by the first BCD modem including a first controller; and the another BCN modem including a second controller, wherein each of the first and second controllers are configured to probe at least one respective communication link

connecting that controller directly to at least one other BCN modem as taught by Baranowski in order determine the location of portable devices.

As per claim 2 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 1,

wherein the first controller establishes the first BCN modem as a network controller upon connection to the CCN, (Dinwiddie column 11 lines 14-25 describe the PC 45 has a host)

the network controller configured to manage data transmission between each of the BCN modems connected to the CCN. (Dinwiddie column 15 lines 22-29 and 48-54 and column 16 lines 9-10 and 20-23)

As per claim 3 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 1, BCN of claim 2, wherein a control signal is generated by the first BCN modem in response to the first BCN modem being the network controller. (Dinwiddie column 11 lines 54-55)

As per claim 4 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 1,

Dinwiddie is silent on wherein the second controller is configure to detect a control signal that identifies a network controller is coupled to the CCN

Bell teaches wherein the second controller is configure to detect a control signal that identifies a network controller is coupled to the CCN (Bell column 11 lines 7-45 describe determining the master node by detecting each node timer value.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN of Dinwiddie and Baranowski by wherein the second

controller is configure to detect a control signal that identifies a network controller is coupled to the CCN as Bell by Kubler in order to initialize a channel equalization process that allows each node to know the transmission characteristics of each path between each node.

As per claim 5 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 1, wherein the signal communication occurs between the BCN modems that are located within a building. (Dinwiddie column 4 lines 15-18)

As per claim 6 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 5, wherein the building is a single family home. (Dinwiddie column 4 lines 19-20)

As per claim 8 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 1.

Dinwiddie teaches signal communication (Dinwiddie column 2 lines 36-38)

But Dinwiddie is silent on communication via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency(R_F) channels.

Gurantz teaches communication via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency(R_F) channels. (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used along with modulation as a communication scheme.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication of Dinwiddie by communicating using TDD and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transceiver.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (USPN 6,052,380) and El Wardani et al. (Pub. No.: US 2003/0031191).

As per claim 7 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 5.

Dinwiddie teaches the building as a dwelling unit (Dinwiddie column 4 lines 18-19)

But Dinwiddie is silent on th1 building being a multi-unit dwelling unit.

Wardani teaches a building being a multi-unit dwelling unit. (Wardani page 1 [0004] lines 1-3)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the building of Dinwiddie by being a multi dwelling unit taught by Wardani in order to provide to multiple users in a building.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (USPN 6,052,380) and Drogue (Pub No.: US 2002/0004898).

As per claim 9 Dinwiddie in view of Gurantz and Bell teach the BCN network of claim 1.

Dinwiddie teaches communication between the first and the other modem. (Dinwiddie column 11 lines 11-13)

Dinwiddie is silent on the signal communication carries encrypted data between the first BCN modem and the other BCN modem.

Drogue teaches the signal communication carries encrypted data between the first BCN modem and the other BCN modem. (Drogue Fig 2 elements 16 and 24, illustrates two modems in communication over a network, [0050] describes encrypting the data that's communicated.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication of Dinwiddie by encrypting the data as taught by Drogue in order to provide secure transmitting and receiving.

Claims 10-15, 17-18 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (USPN 6,052,380).

As per claim 10 Dinwiddie teaches a Broadband Coaxial Network ("BCN") for communicating on an in- building coaxial cable network ("CCN"), comprising:

a first BCN modem (Dinwiddie fig 1A element 102) connected to a coaxial cable network ("CCN") (Dinwiddie fig 1a and 1b illustrate a wired network), (Dinwiddie column 4 lines 40-45, column 5 lines 34-36 describe the wired network connected using by coaxial cable), and included in a plurality of BCN modems in the BCN network, (Dinwiddie fig 1a and fig 1b illustrates a network with multiple modem elements 102, 106, 107, 104 and 108)

the first BCN modem having communication links to ones of the plurality of BCN modems and (Dinwiddie column 4 lines 40-42 and 45-48) configured to manage data transmission between each of the BCN modems in the BCN network; and (Dinwiddie column 15 lines 22-29 and 48-54 and column 16 lines 9-10 and 20-23)

another of the plurality of BCN modems connected to the CCN and (Dinwiddie fig 1a and fig 1b illustrates a network with multiple modem elements 104, 106, 107 and 108)capable of signal communication with the first BCN modem (Dinwiddie column 11 lines 11-13) the another BCN modem having communication links to ones of the plurality of BCN modems, (Dinwiddie column 4 lines 40-42 and 45-48)

Dinwiddie is silent on across one or more passive network devices having high isolation in the CCN

Gurantz teaches across one or more passive network devices having high isolation in the CCN (Gurantz page 2 [0020] lines 7-12 and 14-16 fig 2 elements 210, 270, 230, 231, 232)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication of Dinwiddie by across one or more passive network devices having high isolation in the CCN as taught by Gurantz in order provide a path for terminal devices to transmit to and receive from other terminal devices.

Dinwiddie is silent on including a controller and a second controller

Bell teaches including a controller and a second controller, (Bell column 6 lines 64-65 describe each computer 112 and 114 as having a network adapter, where fig 4 illustrates that the network adapters of each computer have a controller 212)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the modems of Dinwiddie by including a controller and a second controller as taught by Bell in order provide improved reliability, robustness, bandwidth and noise resistance of the ADSL layer

Dinwiddie teaches wherein the first BCN modem and another BCN modem are configured to communicate with each other (Dinwiddie fig 1A and 1B column 11 lines 11-13)

Dinwiddie silent on utilizing TDMA and Time Division Duplex (TDD).

Gurantz teaches utilizing TDMA and Time Division Duplex (TDD). (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used as communication scheme, along with modulation)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication between two modems of Dinwiddie by communicating using TDD and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transceiver.

Dinwiddie is silent on wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading

Bell teaches wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading. (Bell column 12 lines 4-30, column 9 lines 36 -52, wherein DMT initialization reads on OFDM bit-loading.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the modems of Dinwiddie by wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading as taught by Bell in order provide improved reliability, robustness, bandwidth and noise resistance of the ADSL layer.

As per claim 11 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 10, wherein the first BCN modem (Dinwiddie fig 5A) employs adaptive communication techniques

that adapts to the characteristics of a coaxial channel between the first BCN modem and the other BCN modem. (Dinwiddie fig 5A elements 122 and 110, column 9 lines 36-40 describes a BALUM which converts the a signal to conform to the characteristics of the coaxial cable)

As per claim 12 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 10, wherein the first BCN modem is directly in signal communication with the other BCN modem across the CCN. (Dinwiddie Fig 1 column 15 lines 25-34)

As per claim 13 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 12

wherein the CCN is a type of network having a architectural configuration selected from a group consisting of

a star configuration and (Dinwiddie fig 12 illustrates the distribution unit of the network in a star configuration) a mesh configuration and a combinations of these configurations,

Dinwiddie teaches using the star configuration in an accessible fashion. (Dinwiddie column 12 lines 64-67 describes the use of signal paths for communication which reads on an accessible fashion)

But Dinwiddie is silent on a TDMA and Time Division Duplex (TDD) access fashion.

Gurantz teaches a TDMA and Time Division Duplex (TDD) access fashion. (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used along with modulation as communication scheme.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the access fashion of Dinwiddie by communicating using TDD

and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transceiver.

the type of network utilizes at least one frequency channel. (Gurantz page 4 [0039] lines 1-3 describes the use of TDD in the network, by utilizing a frequency.)

As per claim 14 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 11, wherein adaptive communication techniques includes utilization of the adaptive communication techniques in both transmitting processing and receiving processing of data. (Dinwiddie fig 5A elements 122 column 9 lines 34-40 describes receiving processed data from a modulator which reads on receiving processing of data and processing that data in the BALUM and filter then transmitting the processed data.)

As per claim 15 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 14, wherein the adaptive communication utilizes pre-coding for transmitting processing. (Dinwiddie column 9 lines 27-34 describe coding the data before transmitting the data.), (Dinwiddie column 9 lines 35-40 describe the BALUM and filter transmitting the processed data.)

As per claim 17 Dinwiddie in view of Gurantz teach the BCN of claim 14, wherein the adaptive communication techniques include pre-coding for (Dinwiddie column 9 lines 27-34 describe coding the data before transmitting the data.) transmitting processing based on known or learned channel response.(Dinwiddie column 9 lines 35-40 describe the BALUM and filter

transmitting the processed data.), (Dinwiddie columns 9 lines 56-58 describe the coding as modulation which is a processing, as well as describing the modulation as based on a selected channel which reads on a known channel response)

As per claim 18 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 14.

Dinwiddie teaches signal processing techniques are used (Dinwiddie column 9 lines 25-35 describe the use of RF modulation)

Dinwiddie is silent on using additional signal processing techniques selected from a group of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes.

Gurantz teaches using additional signal processing techniques selected from a group of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes. (Gurantz page 4 [0046]-[0047] describe the use of DMT and OFDM which reads on the use of additional processing techniques being OFDM)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the signal processing of Dinwiddie by processing using OFDM as taught by Gurantz in order to overcome the effects of inter-symbol interference.

As per claim 26 Dinwiddie in view of Gurantz and Bell and Wardani teach the BCN of claim 11, wherein the BCN modem is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB. (Gurantz page 3 [0035], [0036] describe the use of a DS-SS receiver which reads on a satellite STB.)

Claims 16, 25 and 27-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (USPN 6,052,380) and El Wardani et al. (Pub. No.: US 2003/0031191).

As per claim 16 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 14.

Dinwiddie teaches adaptive communication techniques. (Dinwiddie fig 5A elements 122 and 110, column 9 lines 36-40 describes a BALUM which converts the a signal to conform to the characteristics of the coaxial cable)

Dinwiddie is silent on utilizing adaptive equalization processing.

Wardani teaches utilizing adaptive equalization processing. (Wardani page 4 [0054])

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the adaptive communication techniques of Dinwiddie by utilizing an adaptive equalizer as taught by Wardani in order to improve the signal quality.

As per claim 25 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 11, wherein the BCN modem is embedded as a part of a device selected from the group consisting of:

a set-top box ("STB"); a Personal Computer (PC); an IP STB; a Media Center box; a Media Extender box; a DVD player; a cable modem; a personal video recorder ("PVR"); a TV set; a networking device; a switch/router;

a bridge/Gateway; (Wardani fig 1 element 200 [0031] lines 5-8)

a video game console; a wireless access point (WAP); and a network attached storage.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify BCN of Dinwiddie by embedding the device within a bridge as taught by Wardani in order to provide a mechanism to communicate signals between two systems.

As per claim 27 Dinwiddie in view of Gurantz and Bell and Wardani teach the BCN of claim 25, wherein the BCN modem utilizes the PCI bus structure. (Wardani page 3 [0040] lines 12-15 describes the use of an Ethernet interface which inherently utilizes the PCI bus structure)

As per claim 28 Dinwiddie in view of Gurantz and Bell and Wardani teach the BCN of claim 27, wherein the BCN modem utilizes another host device. (Wardani fig 4 page 3 [0038] describes the use of the modem in another device)

As per claim 29 Dinwiddie in view of Gurantz and Bell and Wardani teach the BCN of claim 28, wherein the host device is either a bridging host device or a switching host device. (Wardani fig 4 page 3 [0038] describes the use of the modem in a bridging device.)

As per claim 30 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 10.

Dinwiddie and Gurantz teach the use of a TDMA frequency channel in the BCN network

But Dinwiddie and Gurantz are silent on using one or more frequency bands:

above 860 MHz; between 860 MHz and 950 MHz; and below 50 MHz. above

Wardani teaches using one or more frequency bands: above 860 MHz; (Wardani fig 8 page 3 [0046] lines 1-4) between 860 MHz and 950 MHz; and (Wardani fig 8 page 3 [0046] lines 5-7) below 50 MHz. (Wardani fig 8 page 3 [0048])

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify frequency channel of Dinwiddie and Gurantz by being one of above 860 MHz; between 860 MHz and 950 MHz; and below 50 MHz as taught by Wardani in order to allow the network band to reside at any frequency on the cable.

As per claim 31 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 10, wherein the CCN network is one of the following:

coaxial cables that have been installed for the carriage of satellite signals; and coaxial cables for video distribution.(Dinwiddie column 5 lines 50-55)

Claims 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (USPN 6,052,380) and Gorman et al. (USPN 6,137,793.)

As per claim 19 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 14.

Dinwiddie is silent on including additional MAC and communication processing including the provision of best effort and reserved communication services, processes and protocol adaptations to adapt other communication services to operate over the BCN.

Gorman teaches an additional MAC and communication processing including (Gorman abstract lines 3-5, 11-14 describe the use of MAC and communication processing) the provision of best effort and reserved communication services, (Gorman column 6 lines 15-21)processes and protocol adaptations to adapt other communication services to operate over the BCN. (Gorman column 3 lines 48-54, describe service over a BCN, column 6 lines 63-67 describes using ATM adaption which reads on process and protocol adaptation.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN of Dinwiddie by including MAC and communication processing including the provision of best effort and reserved communication services, processes and protocol adaptations to adapt other communication services to operate over the BCN as taught by Gorman in order to integrate multimedia services.

As per claim 20 Dinwiddie in view of Gurantz and Bell and Gorman teach the BCN of claim 19, wherein the communication services and processes includes utilization of a Network Controller ("NC") to control the access to the BCN. (Gorman column 5 lines 21-23)

As per claim 21 Dinwiddie in view of Gurantz and Bell and Gorman teach the BCN of claim 20, wherein the NC includes a configuration selected from the group consisting of:

a configuration that enables every BCN modem to act as a NC;

a configuration that utilizes a frequency plan; (Gorman column 12 lines 58-60 fig 1 illustrates the use of a cable TV network, which reads on a frequency plan.)

a configuration that allows a new BCN modem admission to the BCN Network; a configuration that allows a new BCN modem to communicate with another BCN modem to characterize the channel response between them and determine a bit loading in either direction; and a configuration that allows each BCN modem in the network to request and be granted a transmission opportunity without a transmission conflict.

As per claim 22 Dinwiddie in view of Gurantz and Bell and Gorman teach the BCN of claim 21, wherein the communications services provided by the BCN include BCN wide transmission priorities. (Gorman column 13 lines 22-27)

As per claim 23 Dinwiddie in view of Gurantz and Bell and Gorman teach the BCN of claim 22, wherein the BCN services include a configuration that provides reserved bandwidth communication services (Gorman column 6 lines 15-21)

Dinwiddie teaches wherein the first BCN modem and the another BCN modem are configured to communicate with each other. (Dinwiddie fig 1A and 1B column 11 lines 11-13 describe pc modems communicating)

But Dinwiddie is silent on utilizing TDMA and Time Division Duplex (TDD) to communicate.

Gurantz teaches utilizing TDMA and Time Division Duplex (TDD). (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used as communication scheme, along with modulation)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication between two modems of Dinwiddie by communicating using TDD and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transceiver.

As per claim 24 Dinwiddie in view of Gurantz and Bell and Gorman teach the BCN of claim 19, wherein the BCN modem provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of:

Ethernet, (Gorman column 6 lines 53-57 describe ATM adaptation , column 7 lines 1-3 describe the use of Ethernet services) IEEE 1394, Universal Serial Bus ("USB"); ()and MPEG-TS.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bell (USPN 6,053,380) and further in view of Dinwiddie et al. (USPN 6,481,013).

As per claim 32 Bell teaches a network device, comprising:

a communication interface (Bell fig 2 illustrates a network adapter aka network interface card) configured to connect to a broadband coaxial network ("B C N"); and (Bell Fig 1 column 6 lines 49-53 describe the network cabling as coaxial)

a controller in signal communication with the communication interface, (Bell column 5 lines 42- 50)

the controller configured to: periodically probe a communication link to another network device to determine a characteristic of the communication link; (Bell column 12 lines 4-47 and column 13 lines 23-28)

use orthogonal frequency division multiplexing and bit-loading to adjust transmissions over each communication link based in part on the probe; and (Bell column 8 lines 53-62 describe the use of DMT which reads on OFDM bit-loading.)

manage data transmission between each network device connected to the BCN. (Dinwiddie column 15 lines 22-29 and 48-54 and column 16 lines 9-10 and 20-23)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network device of Dinwiddie by manage data transmission between each network device connected to the BCN as taught by Dinwiddie in order to provide a central control station for all the components attached to the network.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES LEIJA whose telephone number is (571)270-5249. The examiner can normally be reached on M-F 730 am to 5pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ANDREW Y. KOENIG can be reached on (571) 272-7296. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. L./
Examiner, Art Unit 2423

/Andrew Y Koenig/
Supervisory Patent Examiner, Art Unit 2423

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	Art Unit
	JAMES LEIJA	2423

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	08/19/2008	02/25/2009	07/28/2009						
	1	✓	✓	✓						
	2	✓	✓	✓						
	3	✓	✓	✓						
	4	✓	✓	✓						
	5	✓	✓	✓						
	6	✓	✓	✓						
	7	✓	✓	✓						
	8	✓	✓	✓						
	9	✓	✓	✓						
	10	✓	✓	✓						
	11	✓	✓	✓						
	12	✓	✓	✓						
	13	✓	✓	✓						
	14	✓	✓	✓						
	15	✓	✓	✓						
	16	✓	✓	✓						
	17	✓	✓	✓						
	18	✓	✓	✓						
	19	✓	✓	✓						
	20	✓	✓	✓						
	21	✓	✓	✓						
	22	✓	✓	✓						
	23	✓	✓	✓						
	24	✓	✓	✓						
	25	✓	✓	✓						
	26	✓	✓	✓						
	27	✓	✓	✓						
	28	✓	✓	✓						
	29	✓	✓	✓						
	30	✓	✓	✓						
	31	✓	✓	✓						
	32		✓	✓						

OK TO ENTER: /J.L./

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:
Brett Bernath et al.

Serial No.: 11/231,349

Filed: September 19, 2005

For: A BROADBAND LOCAL AREA NETWORK

Group Art Unit: 2423

Confirmation No. 4520

AMENDMENT

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attention: **James Leija**
Examiner

Dear Sir:

In response to the Final Office Action of March 3, 2009, please note the following remarks and comments:

Amendments to the Claims begin on page 2 of this paper.

Remarks/Comments begin on page 8 of this paper.

I hereby certify that this correspondence is being electronically deposited with the Commissioner for Patents through the USPTO electronic filing system, on:

July 2, 2009
(Date of Deposit)
Tim Ellis
(Name of Person Making Deposit)
/Tim Ellis/
(Signature)

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S128	18693	("725").CLAS.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/02/23 10:13
S213	186	(BERNATH near3 BRETT).in. (MONK near3 ANTON).in. (GURANTZ near3 ITZHAK).in. (WARDANI near3 LADD).in. (PORAT near3 RON).in. (OZTURK near3 YUSUF).in. (LEE near3 RON).in. (GOH near3 WEE-PENG).in. (BERGGREN near3 MAGNUS).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S214	17	(BERNATH near3 BRETT).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S215	10	(MONK near3 ANTON).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S216	26	(GURANTZ near3 ITZHAK).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S217	11	(WARDANI near3 LADD).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S218	20	(PORAT near3 RON).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S219	4	(OZTURK near3 YUSUF).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35

S220	73	(LEE near3 RON).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S221	0	(GOH near3 WEE-PENG).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S222	53	(BERGGREN near3 MAGNUS).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S223	8	(GOH near3 WEE).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S224	193	(BERNATH near3 BRETT).in. (MONK near3 ANTON).in. (GURANTZ near3 ITZHAK).in. (WARDANI near3 LADD).in. (PORAT near3 RON).in. (OZTURK near3 YUSUF).in. (LEE near3 RON).in. (GOH near3 WEE).in. (BERGGREN near3 MAGNUS).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S225	127	((BERNATH near3 BRETT).in. (MONK near3 ANTON).in. (GURANTZ near3 ITZHAK).in. (WARDANI near3 LADD).in. (PORAT near3 RON).in. (OZTURK near3 YUSUF).in. (LEE near3 RON).in. (GOH near3 WEE).in. (BERGGREN near3 MAGNUS).in.)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S226	8	((BERNATH near3 BRETT).in. (MONK near3 ANTON).in. (GURANTZ near3 ITZHAK).in. (WARDANI near3 LADD).in. (PORAT near3 RON).in. (OZTURK near3 YUSUF).in. (LEE near3 RON).in. (GOH near3 WEE).in. (BERGGREN near3 MAGNUS).in.) and (broadband near5 (modem or network))	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35

S227	8	((BERNATH near3 BRETT).in. (MONK near3 ANTON).in. (GURANTZ near3 ITZHAK).in. (WARDANI near3 LADD).in. (PORAT near3 RON).in. (OZTURK near3 YUSUF).in. (LEE near3 RON).in. (GOH near3 WEE).in. (BERGGREN near3 MAGNUS).in.) and ((broadband BCN ccn) near5 (modem or network))	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S228	8	((BERNATH near3 BRETT).in. (MONK near3 ANTON).in. (GURANTZ near3 ITZHAK).in. (WARDANI near3 LADD).in. (PORAT near3 RON).in. (OZTURK near3 YUSUF).in. (LEE near3 RON).in. (GOH near3 WEE).in. (BERGGREN near3 MAGNUS).in.) and ((broadband BCN ccn) near5 (modem or network))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S229	1	"20050114904"	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S230	3	"7295518"	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S231	1	"6886181".pn.	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S232	2	"20010052130" "6481013".pn.	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S233	426	725/80.ccls.	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S234	394	725/78.ccls.	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S235	756	725/109.ccls.	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S236	0	S233 and S234 and S235	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S237	85	S233 and S234	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S238	7	S235 and S234	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S239	87	(S233 S234 S235) and ("370".clas.)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S240	1126	("725".clas.) and ("370".clas.)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S241	1000	(("725".clas.) and ("370".clas.)) and network$4	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S242	754	(("725".clas.) and ("370".clas.)) and network$4 and cabl$3	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S243	712	(("725".clas.) and ("370".clas.)) and network$4 and cabl$3 and control$3	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S244	276	(("725".clas.) and ("370".clas.)) and network$4 adj3 devic$3	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35

S245	253	(("725".clas.) and ("370".clas.)) and mac	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S246	276	(("725".clas.) and ("370".clas.)) and (network$4 adj3 devic$3)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S247	116	(("725".clas.) and ("370".clas.)) and (network$4 adj3 devic$3) and mac	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S248	48	(("725".clas.) and ("370".clas.)) and (network$4 adj3 devic$3) and duplex	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S249	21	(("725".clas.) and ("370".clas.)) and (network$4 adj3 devic$3) and duplex and tdma	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S250	3	(("725".clas.) and ("370".clas.)) and (network$4 adj3 devic$3) and (duplex same tdma)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S254	23	modem adj5 signal adj5 coaxial	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S255	3	modem adj5 signal adj5 coaxial adj5 network	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S256	47055	modem same (time (duplex or division))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S257	9469	modem near5 (time (duplex or division))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S258	1245	modem near5 (time (duplex or division)) and coaxial	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S259	3	(LAN near3 modem) near5 (time (duplex or division)) and coaxial	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35

S260	545	modem near5 (time adj5 (duplex or division))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S261	223	modem near5 (time adj5 (duplex or division)) and coaxial	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S262	226	modem near5 (time adj5 (duplex or division)) and coax$5	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S263	3	modem near5 (use or utiliz$5) near5 (time adj5 (duplex or division)) and coax$5	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S266	5249	modem same ((best adj2 effort) $3chron$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S267	6984	modem same ((best adj2 effort) isochron$3 asynchron$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S268	6984	modem same ((best adj2 effort) isochron$3 asynchron$3) and (ad<="20041202" @rlad<="20041202" @prad<="20041202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S269	6984	(modem same ((best adj2 effort) isochron$3 asynchron$3)) and (ad<="20041202" @rlad<="20041202" @prad<="20041202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S270	6984	(modem same ((best adj2 effort) isochron$3 asynchron$3)) and (ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35

S271	5566	(modem same ((best adj2 effort) isochron$3 asynchron$3)) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S272	5566	(modem same ((best adj2 effort) isochron$3 asynchron$3)) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S273	928	(modem same ((best adj2 effort) ((isochron$3 asynchron$3) near5 communicat$5))) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S274	5566	(modem same ((best adj2 effort) ((isochron$3 asynchron$3) adj3communicat$5))) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S275	107	(modem same ((best adj2 effort) ((isochron$3 asynchron$3) adj 3communicat$5))) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S277	348	(modem same ((best adj2 effort) ((isochron$3 asynchron$3) adj communicat$5))) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S278	56	((multipl$3 same modem) same ((best adj2 effort) ((isochron$3 asynchron$3) adj communicat $5))) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S279	56	((multipl$3 same modem$3) same ((best adj2 effort) ((isochron$3 asynchron$3) adj communicat$5))) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S280	8	(((multipl$3 near5 modem$3) same (hom$3 hous$4)) and ((best adj2 effort) ((isochron$3 asynchron$3) adj communicat $5))) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35

S281	14366	(((multipl$3 near5 modem$3)) ((best adj2 effort) ((isochron$3 asynchron$3) adj communicat $5))) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S282	4	(((multipl$3 near5 modem$3)) same ((best adj2 effort) ((isochron$3 asynchron$3) adj communicat$5))) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S287	14	(((multipl$3 near5 modem$3) same (hom$3 hous$3 dwell$5 build$4)) and((best adj2 effort) ((isochron$3 asynchron$3) adj communicat$5)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S288	14	(((multipl$3 near5 modem$3) same (hom$3 hous$3 dwell$5 build$4)) and ((best adj2 effort) ((isochron$3 asynchron$3) adj communicat$5)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S291	2172	(modem with asynchronous) and (hom$3 hous$3 dwell$5 build$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S292	719	(modem with asynchronous) and (modem$3 same (hom$3 hous$3 dwell$5 build$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S293	231	(modem near5 asynchronous) and (modem$3 same (hom$3 hous$3 dwell$5 build$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S294	205	(modem near5 asynchronous) and (modem$3 same (hom$3 hous$3 dwell$5 build$4)) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S295	50	(coaxial$5) and (modem near5 asynchronous) and (modem$3 same (hom$3 hous$3 dwell$5 build$4)) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35

S297	10007	(modem same (MAC (best adj2 effort) isochron$3 asynchron$3)) and (ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S298	9122	((modem mac)same ((best adj2 effort) isochron$3 asynchron$3)) and (ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S299	387	((modem with asynchronous) and MAC) and (hom$3 hous$3 dwell$5 build$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S300	1398	((modem with asynchronous) and (MAC or media acces controll)) and (hom$3 hous$3 dwell$5 build$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S301	387	((modem with asynchronous) and (MAC or media adj acces adj controll)) and (hom$3 hous$3 dwell$5 build$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S302	387	((modem with asynchronous) and (MAC or (media adj acces adj controll))) and (hom$3 hous $3 dwell$5 build$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S303	2216	(modem same (MAC or (media adj acces adj control$4))) and (hom$3 hous$3 dwell$5 build$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S304	752	(modem same (MAC or (media adj acces adj control$4))) and (hom$3 hous$3 dwell$5 build$4) and asynchron$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S305	148	modem same (best adj2 effort)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35

S306	107	(modem same (best adj2 effort)) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S307	43	(modem same (best adj2 effort)) and MAC and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S308	43	((modem same (best adj2 effort)) and MAC) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S310	15	((modem same (best adj2 effort)) and MAC) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202") and (isochronous asynchronous)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S314	15	(modem same (best adj2 effort)) and MAC and asynchronous	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S317	1	(modem same (best adj2 effort)) and MAC and isochronous	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S318	49	modem and (best adj2 effort) and MAC and isochronous	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S319	44	modem and (best adj2 effort) and MAC and isochronous and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S320	33	modem and (best adj2 effort) and MAC and isochronous and asynchronous and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35

S326	3611	(modem with (network adj3 control$3)) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S327	2247	(modem near5 (network adj3 control$3)) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S328	442	((modem near5 (network adj3 control$3)) same (control$3 with signal)) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S329	32	((modem near5 (network adj3 control$3)) same (control$3 with signal)) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202") and build $4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S330	44	modem and (best adj2 effort) and MAC and isochronous and (@ad<="20041202" @rlad<="20041202" @prad<="20041202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S331	32	((modem near5 (network adj3 control$3)) same (control$3 with signal)) and (@ad<="20041202" @rlad<="20041202" @prad<="20041202") and build $4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S332	87	(modem same (IPsec or ip?sec)) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S333	12	"20020004898" "20020166124" "20030031191" "6137793".pn. "6481013".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S334	20128	("725").CLAS.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/07/28 23:35
S335	121273	("370").CLAS.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/07/28 23:35
S336	77357	("709").CLAS.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/07/28 23:35
S337	164	S334 and S335 and S336	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35

S338	1498	tcp/ip and LAN and rf and (low adj power)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S339	1185169	(prob$4 packet$4 calibrat$4 compensat$3 control$5 manag$5 adjust$5) same ((strength with power) (power with level) (power))	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S340	219132	(prob$4 packet$4 calibrat$4 compensat$3 control$5 manag$5 adjust$5) same ((strength with power) (power with level) (transmission with power))	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S341	10	S340 and S337	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S342	742	S340 and S338	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S343	1318	S339 and S338	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S344	1	S339 and S338 and S337	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S345	456	S339 and S338 and (S334 S335 S336)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S346	424416	((strength with power) (power with level) (transmission with power))	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S347	981	S346 and S338	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S348	4164	S346 and S338 adn S337	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S349	1	S346 and S338 and S337	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S350	335	S346 and S338 and (S334 S335 S336)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S351	965	S346 and S338 and S339	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S352	832662	(prob$4 packet$4 calibrat$4 compensat$3 control$5 manag$5 adjust$5) with ((strength with power) (power with level) (power))	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S353	1182	S352 and S338	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S354	533	S338 and (S334 S335 S336)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S355	402	S352 and S338 and (S334 S335 S336)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S356	54270	(adjust$5) same ((strength with power) (power with level) (transmission with power))	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S357	34349	(adjust$5) WITH ((strength with power) (power with level) (transmission with power))	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35

S358	342	S356 and S338	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S362	195	S356 and S338 and splitter	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S363	161	S356 and S338 and splitters	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S364	195	S356 and S338 and splitter$2	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S366	2	(network adj controller) same (manage adj transmission$3)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S368	1666	((network adj controller) same host)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S369	1773	((network adj controller) same host$3)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S370	15	((network adj controller) host) same (manage adj transmission $3)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S371	18	((network adj controller) host$3) same (manage adj transmission $3)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S372	3	(network adj (controller$2 host $3)) same (manage adj transmission$3)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S373	19	(network adj (controller$2 host $3)) same (manag$5 adj transmission$3)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S374	6254	power same ofdm	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S375	2840	power same (orthogonal adj frequency)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S376	7	(adjust$4 adj power) same (orthogonal adj frequency)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S377	9	(orthogonal adj frequency) with (bit?loading)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S378	9	((orthogonal adj frequency) with (bit?loading)) and power	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S379	120	(dmt adj modulation) same power	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S380	932	dmt same ofdm	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S381	748	(dmt same ofdm) and power	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S382	172	(dmt same ofdm) and coax$4	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S383	74	(dmt same ofdm) same3 coax$4	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S384	77	(dmt same ofdm) and (home with network$3)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S385	3	(dmt same ofdm) and (home with network$3) and probe	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35

S386	81	entropic.as.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/07/28 23:35
S387	16	(dmt same ofdm) same (home with network$3)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S388	1	("7154957").URPN.	USPAT	OR	OFF	2009/07/28 23:35
S389	7	("20030086362" | "6246716" | "6339613" | "6445773" | "6532277" | "6650697").PN. OR ("7154957").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/07/28 23:35
S390	1	((dmt same ofdm) same characteristics) and (home with network$3)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S391	384	((dmt ofdm) same characteristics) and (home with network$3)	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S392	195	((dmt ofdm) same characteristics) and (home with network$3) and coax$5	US-PGPUB; USPAT	OR	OFF	2009/07/28 23:35
S394	11	bit?load$3 same DMT same ofdm	US-PGPUB; USPAT; USOCR	OR	OFF	2009/07/28 23:35
S395	66	bit?load$3 same DMT	US-PGPUB; USPAT; USOCR	OR	OFF	2009/07/28 23:35
S396	53499	network adj control$4	US-PGPUB; USPAT; USOCR	OR	OFF	2009/07/28 23:35
S397	1151	(network adj control$4) and (home with network$3) and coax $5	US-PGPUB; USPAT; USOCR	OR	OFF	2009/07/28 23:35
S398	261	(network adj control$4) same (home with network$3) and coax $5	US-PGPUB; USPAT; USOCR	OR	OFF	2009/07/28 23:35
S399	44	coax$5 and (LAN adj control$4) and (home with network$3)	US-PGPUB; USPAT; USOCR	OR	OFF	2009/07/28 23:35
S400	1	coax$5 and (establish$4 same (LAN adj control$4)) and (home with network$3)	US-PGPUB; USPAT; USOCR	OR	OFF	2009/07/28 23:35
S401	44	coax$5 and (LAN adj control$4) and (home with network$3)	US-PGPUB; USPAT; USOCR	OR	OFF	2009/07/28 23:35
S402	1151	(network adj control$4) and (home with network$3) and coax $5	US-PGPUB; USPAT; USOCR	OR	OFF	2009/07/28 23:35
S403	24	(determin$3 same (network adj control$4)) same (home with network$3) and coax$5	US-PGPUB; USPAT; USOCR	OR	OFF	2009/07/28 23:35
S404	24	(determin$3 same ((network lan) adj control$4)) same (home with network$3) and coax$5	US-PGPUB; USPAT; USOCR	OR	OFF	2009/07/28 23:35
S405	10	(determin$3 with ((network lan) adj control$4)) same (home with network$3) and coax$5	US-PGPUB; USPAT; USOCR	OR	OFF	2009/07/28 23:35

S406	7	(determin$3 with ((network lan) adj control$4)) same (home with network$3) and coax$5 and (home adj network)	US-PGPUB; USPAT; USOCR	OR	OFF	2009/07/28 23:35
S407	266	((network lan) adj control$4) same (home with network$3) and coax$5	US-PGPUB; USPAT; USOCR	OR	OFF	2009/07/28 23:35

7/29/2009 10:56:09 AM
C:\Documents and Settings\jleija\My Documents\EAST\Workspaces\11231349.wsp

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	Art Unit
	JAMES LEIJA	2423

SEARCHED			
Class	Subclass	Date	Examiner
725	78, 80, 109	7/28/2009	JL
709		2/25/2009	JL
370		2/25/2009	JL

SEARCH NOTES		
Search Notes	Date	Examiner
EAST	7/28/2009	JL
Spoke with Joe Ustaris - CL 725	7/28/2009	JL
Andrew Koenig -CL 725	7/28/2009	JL

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/231,349	09/19/2005	Brett Bernath	E040004USU1

CONFIRMATION NO. 4520

77561
Duane Morris LLP (Entropic)
IP Department
30 South 17th Street
Philadelphia, PA 19103-4196

POA ACCEPTANCE LETTER

OC000000036845982

Date Mailed: 07/15/2009

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/07/2009.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/skiflemariam/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/231,349	09/19/2005	Brett Bernath	E040004USU1

CONFIRMATION NO. 4520

78271
The Eclipse Group LLP
10605 Balboa Blvd
Suite 300
Granada Hills, CA 91344

POWER OF ATTORNEY NOTICE

OC000000036845974

Date Mailed: 07/15/2009

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/07/2009.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/skiflemariam/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

Print Form

PTO/SB/81 (07-08)
Approved for use through 12/31/2008. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS

Application Number	11/231,349
Filing Date	19-Sep-2005
First Named Inventor	Brett Bernath
Title	A broadband local area network
Art Unit	2623
Examiner Name	James Leija
Attorney Docket Number	E040004USU1

I hereby revoke all previous powers of attorney given in the above-identified application.

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith: 77561

OR

☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

Practitioner(s) Name	Registration Number

Please recognize or change the correspondence address for the above-identified application to:

☒ The address associated with the above-mentioned Customer Number.

OR

☐ The address associated with Customer Number:

OR

☐	Firm or Individual Name				
Address					
City		State		Zip	
Country					
Telephone		Email			

I am the:

☐ Applicant/Inventor.

OR

☒ Assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) (Form PTO/SB/96) submitted herewith or filed on _____

SIGNATURE of Applicant or Assignee of Record

Signature		Date	Nov 5, 2008
Name	Bruce W. Greenhaus	Telephone	(858) 768-3679
Title and Company	VP, Chief Patent Counsel		

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☒ *Total of 2 forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/96 (10-08)
Approved for use through 11/30/2008. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Entropic Communications, Inc.

Application No./Patent No.: 11/231,349 Filed/Issue Date: 09/19/2005

Entitled: Broadband local area network.

Entropic Communications, Inc. (Name of Assignee), a Corporation (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. [✓] the assignee of the entire right, title, and interest; or
2. [ ] an assignee of less than the entire right, title and interest
(The extent (by percentage) of its ownership interest is _____ %)

in the patent application/patent identified above by virtue of either:

A. [✓] An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 018175, Frame 0650, or for which a copy therefore is attached.

OR

B. [ ] A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

3. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

[ ] Additional documents in the chain of title are listed on a supplemental sheet.

[ ] As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (*i.e.*, a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Signature	November 5, 2008 Date
Bruce W. Greenhaus Printed or Typed Name	858.768.3835 Telephone Number
VP, Chief Patent Counsel Title	

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2

Electronic Acknowledgement Receipt	
EFS ID:	5655740
Application Number:	11231349
International Application Number:	
Confirmation Number:	4520
Title of Invention:	Broadband local area network
First Named Inventor/Applicant Name:	Brett Bernath
Customer Number:	78271
Filer:	Jarrad Michaelis Gunther/Liz Orleman
Filer Authorized By:	Jarrad Michaelis Gunther
Attorney Docket Number:	E040004USU1
Receipt Date:	07-JUL-2009
Filing Date:	19-SEP-2005
Time Stamp:	14:48:53
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		e5982-00025poa.pdf	783595 6bb6981e1364e67d69cdea3eebb8067fd1e9d262	yes	2

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Power of Attorney	1	1
	Assignee showing of ownership per 37 CFR 3.73(b).	2	2
Warnings:			
Information:			
	Total Files Size (in bytes):	783595	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:
Brett Bernath et al.

Serial No.: 11/231,349

Filed: September 19, 2005

For: A BROADBAND LOCAL AREA NETWORK

Group Art Unit: 2423

Confirmation No. 4520

AMENDMENT

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attention: **James Leija**
Examiner

Dear Sir:

In response to the Final Office Action of March 3, 2009, please note the following remarks and comments:

Amendments to the Claims begin on page 2 of this paper.

Remarks/Comments begin on page 8 of this paper.

I hereby certify that this correspondence is being electronically deposited with the Commissioner for Patents through the USPTO electronic filing system, on:

July 2, 2009
(Date of Deposit)
Tim Ellis
(Name of Person Making Deposit)
/Tim Ellis/
(Signature)

AMENDMENTS TO THE CLAIMS:

What is claimed is:

1. (Currently amended) A Broadband Coaxial Network ("BCN"), comprising:

a first BCN modem in signal communication with a coaxial cable network ("CCN"), the first BCN modem including a first controller; and

another BCN modem in signal communication with the CCN that is capable of two-way signal communication with the first BCN modem across one or more passive network devices having high isolation in the CCN, the another BCN modem including a second controller,

wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem and to adjust transmission power and bit loading over the at least one respective communication link based on a result of the probe.

2. (Previously prsented) The BCN of claim 1, wherein the first controller establishes the first BCN modem as a network controller upon connection to the CCN, the network controller configured to manage data transmission between each of the BCN modems connected to the CCN.

3. (Original) The BCN of claim 2, wherein a control signal is generated by the first BCN modem in response to the first BCN modem being a network controller.

4. (Previously presented) The BCN of claim 1, wherein the second controller is configured to detect a control signal that identifies a network controller is coupled to the CCN.

5. (Original) The BCN of claim 1, wherein the signal communication occurs between the BCN modems that are located within a building.

6. (Original) The BCN of claim 5, wherein the building is a single family home.

7. (Original) The BCN of claim 5 wherein the building is a multi-unit dwelling unit.

8. (Previously presented) The BCN of claim 1, wherein the signal communication occurs via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency (RF) channels.

9. (Original) The BCN network of claim 1, wherein the signal communication carries encrypted data between the first BCN modem and the other BCN modem.

10. (Previously presented) A Broadband Coaxial Network ("BCN") for communicating on an in-building coaxial cable network ("CCN"), comprising:

a first BCN modem connected to a coaxial cable network ("CCN") and included in a plurality of BCN modems in the BCN network, the first BCN modem including a controller having communication links to ones of the plurality of BCN modems and configured to manage data transmission between each of the BCN modems in the BCN network; and

another of the plurality of BCN modems connected to the CCN and capable of signal communication with the first BCN modem across one or more passive network devices having high isolation in the CCN, the another BCN modem including a second controller having communication links to ones of the plurality of BCN modems,

wherein the first BCN modem and the another BCN modem are configured to communicate with each other utilizing TDMA and Time Division Duplex (TDD), and wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading.

11. (Original) The BCN of claim 10, wherein the first BCN modem employs adaptive communication techniques that adapts to the characteristics of a coaxial channel between the first BCN modem and the other BCN modem.

12. (Previously presented) The BCN of claim 10, wherein the first BCN modem is directly in signal communication with the other BCN modem across the CCN.

13. (Original) The BCN of claim 12 wherein the CCN is a type of network having an architectural configuration selected from a group consisting of a star configuration and a mesh configuration and a combination of these configurations, in a TDMA, TDD access fashion, and the type of network utilizes at least one frequency channel.

14. (Previously presented) The BCN of claim 11, wherein the adaptive communication techniques includes utilization of the adaptive communication techniques in both transmitting processing and receiving processing of data.

15. (Original) The BCN of claim 14, wherein the adaptive communication techniques utilize pre-coding for transmitting processing.

16. (Original) The BCN of claim 14, wherein the adaptive communication techniques utilize adaptive equalization for receiving processing.

17. (Original) The BCN of claim 14, wherein the adaptive communication techniques include pre-coding for transmitting processing based on known or learned channel response.

18. (Original) The BCN of claim 14, wherein additional signal processing techniques are used which are selected from a group consisting of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes.

19. (Original) The BCN of claim 14, further including additional MAC and communication processing including the provision of best effort and reserved communication services, processes and protocol adaptations to adapt other communication services to operate over the BCN.

20. (Original) The BCN of claim 19, wherein the communication services and processes includes utilization of a Network Controller ("NC") to control the access to the BCN.

21. (Original) The BCN of claim 20, wherein the NC includes a configuration selected from the group consisting of:

a configuration that enables every BCN modem to act as a NC:

a configuration that utilizes a frequency plan;

a configuration that allows a new BCN modem admission to the BCN Network;

a configuration that allows a new BCN modem to communicate with another BCN modem to characterize the channel response between them and determine a bit loading in either direction; and

a configuration that allows each BCN modem in the network to request and be granted a transmission opportunity without a transmission conflict.

22. (Original) The BCN of claim 21, wherein the communications services provided by the BCN include BCN wide transmission priorities.

23. (Original) The BCN of claim 22, wherein the BCN services include a configuration that provides reserved bandwidth communication services.

24. (Original) The BCN of claim 19, wherein the BCN modem provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of:

Ethernet,

IEEE 1394,

Universal Serial Bus ("USB"); and

MPEG-TS.

25. (Original) The BCN of claim 11, wherein the BCN modem is embedded as a part of a device selected from the group consisting of:

a set-top box ("STB");

a Personal Computer (PC);

an IP STB;

a Media Center box;

a Media Extender box;

a DVD player;
a cable modem;
a personal video recorder ("PVR");
a TV set;
a networking device;
a switch/router;
a bridge/Gateway;
a video game console;
a wireless access point (WAP); and
a network attached storage.

26. (Currently Amended) The BCN of claim [[25]] 11, wherein the BCN modem [[STB]] is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB.

27. (Original) The BCN of claim 25, wherein the BCN modem utilizes the PCI bus structure.

28. (Original) The BCN of claim 27, wherein the BCN modem utilizes another host device.

29. (Original) The BCN of claim 28, wherein the host device is either a bridging host device or a switching host device.

30. (Original) The BCN of claim 10, wherein an at least one TDMA frequency channel used by the BCN network is in one or more of the following frequency bands:
above 860 MHz;
between 860 MHz and 950 MHz; and
below 50 MHz.

31. (Original) The BCN of claim 10, wherein the CCN network is one of the following:
coaxial cables that have been installed for the carriage of satellite signals; and
coaxial cables for video distribution.

32. (Previously presented) A network device, comprising:

a communication interface configured to connect to a broadband coaxial network ("BCN"); and

a controller in signal communication with the communication interface, the controller configured to:

periodically probe a communication link to another network device to determine a characteristic of the communication link;

use orthogonal frequency division multiplexing and bit-loading to adjust transmissions over each communication link based in part on the probe; and

manage data transmission between each network device connected to the BCN.

REMARKS/ARGUMENTS

Claims 1-32 were pending in the application. Claims 1-32 were rejected. Claims 1 and 26 have been amended herein. Accordingly, Claims 1-32 are currently pending. Applicants respectfully request reconsideration and allowance of all pending claims. In the alternative, Applicants respectfully request that the Examiner enter the present amendment which places the application in better condition for appeal.

Discussion of Rejections Under 35 U.S.C. §103(a)

Claims 1-3, 5, 6, 8 were rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (U.S. Pat. No. 6,481,013) and further in view of Gurantz et al (Pub No. US 2002/0166124) and Baranowski (U.S. Pat. No. 7,486,648) and Kubler (Pub No US 2004/0174841).

The Examiner contends that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication of Dinwiddie by using one or more passive network devices having high isolation in the CCN as taught by Gurantz in order provide a path for terminal devices to transmit to and receive from other terminal devices. However, the Examiner acknowledges that Dinwiddie is silent on the first BCD modem including a first controller; and the "another BCN modem" including a second controller, wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem and to adjust transmission power over the at least one respective communication link based on a result of the probe. Nonetheless, the Examiner contends, Baranowski teaches the element of a first and second controller to probe at least one respective communication link between the first and second modems, this being an element missing from the combination of Dinwiddie and Gurantz.

The Examiner particularly points to the fact that Baranowski in fig 5 element 401 illustrates that each access point has a controller and modem. The Examiner further recites that this is detailed at Column 7 lines 48-54. The Examiner further supports this contention by stating that Baranowski teaches that each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at

least one other BCN modem. The Examiner points to Column 6 line 46 -column 7 line 4 and to Column 8 lines 48 - 64 of Baranowski to support this contention.

Applicants respectfully traverse the Examiner's rejection of Claim 1 for the following reasons. While Baranowski teaches a modem for communication with another wireless modem over power lines, and further teaches that the modems have a "controller", there is nothing in Baranowski that teaches or suggests that the controller is **used to probe at least one respective communication link connecting that controller directly to at least one other BCN modem**. Rather, what Baranowski teaches at column 6, lines 46 through column 6, line 48 is:

> …an alternative implementation of an access point that connects into an existing wired network that uses power-line modems and an AC power line for connectivity.

Baranowski (col. 6, line 49-59) goes on in this section to say:

> As shown in FIG. 3, personal computers (310, 312) and peripheral (320) are all networked using existing power-line networking technology in the form of power-line modems (344, 346, 348). All messages for any devices on the network (e.g., 320, 310, 312, 314 and 330) are broadcast on the power line (301), and each power-line modem (e.g., 340, 342, 344, 346, 348) ignores all messages except the ones intended for its device or a device wireless communicating with an access point (300, 302) connected to that power-line modem (340, 342). The intended recipient device of a message is defined by the internet protocol, such as TCP/IP.

Baranowski then says in Column 6, line 60 through Column 7, line 4 that:

> As in the previous figures, the **portable device (330) and personal computer (314) wirelessly communicate with access points (300) and (302) respectively**. The access points (300, 302) receive the wireless messages from the portable device (330) and personal computer (314) and broadcast them to the power-line network (301) through power-line modems (342) and (340) respectively. Any messages that are intended for the portable device (330) are

> received by power-line modem (342) and broadcast by access point (300) to the portable device (330). Any messages intended for personal computer (314) are received by power-line modem (340) and broadcast by access point (302) to the personal computer (314). (Emphasis added).

Accordingly, not only is the configuration of the architecture completely different, but nowhere in this passage (or anywhere else in Baranowski) is there a teaching or suggestion to have **controllers in modems probe the communications link** between the modems.

The requirement to establish a *prima facie* case of obviousness requires that the prior art reference, or references when combined, must provide **all of the claim limitations** and must establish that it would be **obvious for one of ordinary skill in the art to combine** the references in a way that would successfully result in the claimed invention.

In this case, the Examiner has failed to provide a reference that teaches or suggests the use of **controllers that probe the communication link** between modems in the first place, but then **even more importantly**, to use **information gathered from such probes** to adjust the power of the communications over such a link.

The Examiner also contends that Kubler teaches adjusting transmission power over at least one respective communication link based on a result of the probe, citing page 17, paragraph 0254. However, while Kubler teaches using a "HELLO" message received by a mobile device to determine whether the power with which the transmitter is sending the message was sent is set appropriately, there is no mention of use of a probe with which a controller probes the communication link.

The Examiner also cited Bell (U.S. Pat. No. 6,052,380) with regard to Claim 10. While Bell discloses characterizing a channel and using DMT modulation based upon the characterization, Bell is used in a far different environment. That is, it would not be obvious to use the technique disclosed by Bell in a coaxial cable network. That is because Bell disclosed the use in a wireless environment. In wireless, it is common for there to be substantial multipath conditions that would change and cause there to be a need for

monitoring the characteristics of each frequency channel to load each such channel appropriately.

However, in **broadband coaxial cable networks**, components typically communicate through a stable environment in which the signal that arrives in a home network from a service provider is routed through splitters to each of the components in the coaxial cable network that reside within the home. Accordingly, each component is coupled to the output of one such splitter. These splitters typically are know to have substantial isolation between the output ports, so that signals that are transmitted back to the splitter by a component of the coaxial cable network and that reside in the home will need to be amplified by an active device in order to allow the signal to make it through the splitter to other components of the network residing in the home. This creates a stable environment in which there is no need to use DMT modulation. In fact, there has been a long felt, but unresolved need for a broadband system that allows components to communicate without the need for an active device in the network to overcome the isolation of the splitters used in the coaxial cable wiring of a typical home.

The need for such service has always been provided by the use of the active device which amplifies and creates a stable environment. The introduction of the techniques disclosed by Gurantz allowed the elimination of the active device, which was not previously contemplated. However, Gurantz does not teach or suggest the problems that accompany this technique, i.e., the distortion that comes from having signals reflecting back into the network, such as creating standing waves that generate nulls in the frequency spectrum. Accordingly, it would not have been obvious to one of ordinary skill in the art to combine the currently recited architecture with the use of probes to characterize the channel and pre-coding techniques, such as bit-loading and or adjusting the power, as supported by the fact that there existed a long felt, but unresolved need. As noted by the U.S. Supreme Ct. in *KSR v. Teleflex, 550 U.S. 398, 127 S. Ct. 1727, 167 L. Ed. 2d 705 (2007)* and in *Graham v. John Deere Co., 383 U.S. 1, 5, 86 S. Ct. 684, 15 L. Ed. 2d 545 (1966)*, there are secondary considerations that need to be considered when determining obviousness, including whether there existed a long felt, but unresolved need for the solution posed by the combination that constitutes the invention at issue.

Accordingly, Applicants respectfully traverse the Examiner's rejection of Claim 1 and those claims that depend therefrom, including Claims 2-32.

Claim 4 was rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (U.S. Pat. No. 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Baranowski (U.S. Pat. No. 7,486,648) and Kubler (Pub No US 2004/0174841) and Bell (U.S. Pat. No. 6,052,380). Applicants respectfully traverse the Examiner's rejection of Claim 4 for the reasons set forth above with respect to Claim 1, from which Claim 4 depends.

Claim 7 was rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (U.S. Pat. No. 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Baranowski (U.S. Pat. No. 7,486,648) and Kubler (Pub No US 2004/0174841) and El Wardani et al. (Pub. No.: US 2003/0031191). Applicants respectfully traverse the Examiner's rejection of Claim 7 for the reasons set forth above with respect to Claim 1, from which Claim 7 depends.

Claim 9 was rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (U.S. Pat. No. 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Baranowski (U.S. Pat. No. 7,486,648) and Kubler (Pub No US 2004/0174841) and Droge (Pub No.: US 2002/0004898). Applicants respectfully traverse the Examiner's rejection of Claim 9 for the reasons set forth above with respect to Claim 1, from which Claim 9 depends.

Claims 10-15, 17-18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (U.S. Pat. No. 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (U.S. Pat. No. 6,052,380). Applicants respectfully traverse the Examiner's rejection of Claims 10-15, 17 and 18 for the following reasons. As noted above, while Bell discloses the use of DMT modulation in a wireless environment, the use of such modulation (and bit-loading in particular) is not obvious in the broadband coaxial cable network that is recited in Claim 10 and the claims that depend therefrom. Accordingly, Applicants respectfully request that the Examiner reconsider the rejections of Claims 10-15, 17 and 18. Alternatively, Applicants respectfully request that the Examiner enter the amendments made herein as they place the application in better condition for appeal.

Claims 16 and 25-31 were rejected under 35 U.S.C. 103(a) as being unpatentable over

Dinwiddie et al. (U.S. Pat. No. 6,481,013) and further in view of Gurantz et al (Pub No.: US2002/0166124) and Bell (U.S. Pat. No. 6,052,380) and El Wardani et al. (Pub. No.: US 2003/0031191). Applicants respectfully traverse the Examiner's rejection of Claims 16 and 25-32 for the reasons provided above with respect to Claim 10 from which each of these claims depends. With respect to Claim 26, the Examiner noted that Claim 26 is not positively captured within Claim 25, since Claim 26 modifies an alternative. Applicants have amended Claim 26 to depend from Claim 11 and to directly modify the BCN Modem recited in Claim 11.

Claims 19-24 were rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (U.S. Pat. No. 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (U.S. Pat. No. 6,052,380) and Gorman et al. (U.S. Pat. No. 6,137,793). Applicants respectfully traverse the Examiner's rejection of Claims 19-24 for the reasons stated above with regard to Claim 10 and in light of the fact that each of these claims depend from Claim 10.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bell (6,053,380) and further in view of Dinwiddie et al. (6,481,013). Applicants respectfully traverse the Examiner's rejection of Claim 32 for the reasons stated above with regard to Claim 1.

CONCLUSION

Applicants believe that all claims pending in the application are now allowable. Applicants therefore respectfully request that a timely Notice of Allowance be issued in this case. Alternatively, Applicants respectfully request that this amendment be entered as it places the application in better condition for appeal.

This is a response to the Final Office Action mailed on March 3, 2009, and as such, is submitted together with a request for a 1 month extension of time and the fee required for such a 1 month extension of time.

If there are any other fees due in connection with the filing of the response, please charge the fees to our Deposit Account No. 50-4613. If a fee is required for an extension of time under 37 CFR 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned.

Respectfully submitted,

Dated: July 2, 2009

By: /Bruce W. Greenhaus/
Bruce W. Greenhaus
Attorney for Applicants
Registration No. 37,339

Entropic Communications, Inc.
6290 Sequence Drive
San Diego, California 92121
Telephone: (619) 980-2612
e-mail address: patentteam@entropic.com

PTO/SB/31 (06-09)
Approved for use through 07/31/2009. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

NOTICE OF APPEAL FROM THE EXAMINER TO THE BOARD OF PATENT APPEALS AND INTERFERENCES

Docket Number (Optional): E040004USU1

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]
on _____

Signature _____

Typed or printed name _____

In re Application of: Brett Bernath et al.

Application Number	Filed
11/231,349	September 19, 2005

For: A BROADBAND LOCAL AREA NETWORK

Art Unit	Examiner
2423	James Leija

Applicant hereby **appeals** to the Board of Patent Appeals and Interferences from the last decision of the examiner.

The fee for this Notice of Appeal is (37 CFR 41.20(b)(1)) $ 540

☐ Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by half, and the resulting fee is: $ _____

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☑ The Director has already been authorized to charge fees in this application to a Deposit Account.

☑ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 50-4613 .

☑ A petition for an extension of time under 37 CFR 1.136(a) (PTO/SB/22) is enclosed.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☐ attorney or agent of record.
Registration number _____.

☑ attorney or agent acting under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34. 37,339

/Bruce W. Greenhaus/
Signature

Bruce W. Greenhaus
Typed or printed name

619-980-2612
Telephone number

July 2, 2009
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☑ *Total of 2 forms are submitted.

This collection of information is required by 37 CFR 41.31. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/SB/22 (06-09)
Approved for use through 07/31/2009. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARMENT OF COMMERCE
Under the paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) **FY 2009** ***(Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)***	Docket Number (Optional) E040004USU1
Application Number 11/231,349	Filed September 19, 2005
For A BROADBAND LOCAL AREA NETWORK	
Art Unit 2423	Examiner James Leija

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

		Fee	Small Entity Fee	
☑	One month (37 CFR 1.17(a)(1))	$130	$65	$ 130.00
☐	Two months (37 CFR 1.17(a)(2))	$490	$245	$
☐	Three months (37 CFR 1.17(a)(3))	$1110	$555	$
☐	Four months (37 CFR 1.17(a)(4))	$1730	$865	$
☐	Five months (37 CFR 1.17(a)(5))	$2350	$1175	$

☐ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☑ The Director has already been authorized to charge fees in this application to a Deposit Account.

☑ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 50-4613.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☐ attorney or agent of record. Registration Number _____

☑ attorney or agent under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 37339

/Bruce W. Greenhaus/ — Signature

July 2, 2009 — Date

Bruce W. Greenhaus — Typed or printed name

619-980-2612 — Telephone Number

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☑ Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	11231349
Filing Date:	19-Sep-2005
Title of Invention:	Broadband local area network
First Named Inventor/Applicant Name:	Brett Bernath
Filer:	Bruce Wayne Greenhaus/Tim Ellis
Attorney Docket Number:	E040004USU1

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Notice of appeal	1401	1	540	540
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 1 month with $0 paid	1251	1	130	130
Miscellaneous:				
			Total in USD ($)	**670**

Electronic Acknowledgement Receipt	
EFS ID:	5639995
Application Number:	11231349
International Application Number:	
Confirmation Number:	4520
Title of Invention:	Broadband local area network
First Named Inventor/Applicant Name:	Brett Bernath
Customer Number:	78271
Filer:	Bruce Wayne Greenhaus/Tim Ellis
Filer Authorized By:	Bruce Wayne Greenhaus
Attorney Docket Number:	E040004USU1
Receipt Date:	02-JUL-2009
Filing Date:	19-SEP-2005
Time Stamp:	18:30:27
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$670
RAM confirmation Number	4822
Deposit Account	504613
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees) Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)					
File Listing:					
Document Number	**Document Description**	**File Name**	**File Size(Bytes)/ Message Digest**	**Multi Part /.zip**	**Pages (if appl.)**
1		E040004USU1_Amendment_7-2-09.pdf	152634 bb34359c09dcdc7b8a375b24cbb6efdcc75870ab	yes	14
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Amendment After Final		1	1	
	Claims		2	7	
	Applicant Arguments/Remarks Made in an Amendment		8	13	
	Amendment After Final		14	14	
Warnings:					
Information:					
2	Notice of Appeal Filed	E040004USU1_Notice_of_Appeal_7-2-09.pdf	244797 09e91b39ff818b1ca8817115ba8abfc808911c6e	no	2
Warnings:					
Information:					
3	Extension of Time	E040004USU1_Extension_of_Time_7-2-09.pdf	315305 f97cd88890b5164c020ca319b75c33cca62e6a70	no	2
Warnings:					
Information:					
4	Fee Worksheet (PTO-875)	fee-info.pdf	31640 6500f93203d7e04ddcaac2ce61a584927976d2b0	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	744376		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/231,349	09/19/2005	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	07/02/2009	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)		OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 32	Minus	** 32	= 0	X $ =		OR	X $52=	0
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $ =		OR	X $220=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/PATSY ZIMMERMAN/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/231,349	09/19/2005	Brett Bernath	E040004USU1	4520

78271 7590 03/03/2009

The Eclipse Group LLP
10605 Balboa Blvd
Suite 300
Granada Hills, CA 91344

EXAMINER	
LEIJA, JAMES	
ART UNIT	**PAPER NUMBER**
2423	

MAIL DATE	DELIVERY MODE
03/03/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	11/231,349	BERNATH ET AL.	
	Examiner	Art Unit	
	JAMES LEIJA	2423	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 December 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-32 all have been considered but are moot in view of the new ground(s) of rejection.

Applicant has presented arguments that are directed towards the newly added limitation of the amended independent claims 1, 10 and 32. As such, the applicant arguments with respect to claims 1-32 are moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 5, 6, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Baranowski (USPN 7,486,648) and Kubler (Pub No US 2004/0174841)

As per claim 1 Dinwiddie teaches a Broadband Coaxial Network ("BCN'), comprising:

a first BCN modem (Dinwiddie fig 1A element 102) in signal communication with a coaxial cable network ("CCN"), (Dinwiddie fig 1a and 1b illustrate a wired network), (Dinwiddie column 4 lines 40-45, column 5 lines 34-36 describe the wired network connected using by coaxial cable), (Dinwiddie column 9 lines 1-3 describes communication between a modem and network)

another BCN modem (Dinwiddie fig 1A and 1B elements 104, 106, 107 and 108) in signal communication with the CCN (Dinwiddie fig 1A and 1B illustrate elements 106, 107 and 108 connected to the network) that is capable of two-way signal communication with the first BCN modem (Dinwiddie column 11 lines 11-13) across one or more network devices in the CCN (Dinwiddie fig 1A and 1B element 22)

across one or more passive network devices having high isolation in the CCN , (Gurantz page 2 [0020] lines 7-12 and 14-16 fig 2 elements 210, 270, 230, 231, 232)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication of Dinwiddie by across one or more passive network devices having high isolation in the CCN as taught by Gurantz in order provide a path for terminal devices to transmit to and receive from other terminal devices.

Dinwiddie is silent on the first BCD modem including a first controller; and the another BCN modem including a second controller, wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem and to adjust transmission power over the at least one respective communication link based on a result of the probe

Baranowski teaches the first BCD modem including a first controller; and (Baranowski fig 3 element 302 and 340 reads on the first modem including a first controller)

the another BCN modem including a second controller, (Baranowski fig 3 element 300 and 342 reads on the second modem including a second controller)

(Baranowski fig 5 element 401 illustrates that each access point has a controller and modem. Column 7 lines 48-54)

wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN

modem and (Baranowski column 6 line 46 –column 7 line 4), (Baranowski column 8 lines 48-64)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network of Dinwiddie by the first BCD modem including a first controller; and the another BCN modem including a second controller, wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem as taught by Baranowski in order determine the location of portable devices.

Kubler teaches to adjust transmission power over the at least one respective communication link based on a result of the probe.(Kubler page 17 [0254])

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the controllers of Dinwiddie and Baranowski to adjust transmission power over the at least one respective communication link based on a result of the probe as taught by Kubler in order to avoid interference with other access points.

As per claim 2 Dinwiddie in view of Gurantz and Baranowski and Kubler teach the BCN of claim 1,

wherein the first controller establishes the first BCN modem as a network controller upon connection to the CCN, (Dinwiddie column 11 lines 14-25 describe the PC 45 has a host)

the network controller configured to manage data transmission between each of the BCN modems connected to the CCN. (Dinwiddie column 15 lines 22-29 and 48-54 and column 16 lines 9-10 and 20-23)

As per claim 3 Dinwiddie in view of Gurantz teach the BCN of claim 1, BCN of claim 2, wherein a control signal is generated by the first BCN modem in response to the first BCN modem being the network controller. (Dinwiddie column 11 lines 54-55)

As per claim 5 Dinwiddie in view of Gurantz teach the BCN of claim 1, wherein the signal communication occurs between the BCN modems that are located within a building. (Dinwiddie column 4 lines 15-18)

As per claim 6 Dinwiddie in view of Gurantz teach the BCN of claim 5, wherein the building is a single family home. (Dinwiddie column 4 lines 19-20)

As per claim 8 Dinwiddie in view of Gurantz teach the BCN of claim 1.

Dinwiddie teaches signal communication (Dinwiddie column 2 lines 36-38)

But Dinwiddie is silent on communication via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency(R_F) channels.

Gurantz teaches communication via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency(R_F) channels. (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used along with modulation as a communication scheme.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication of Dinwiddie by communicating using TDD and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transciever.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Baranowski (USPN 7,486,648) and Kubler (Pub No US 2004/0174841) and Bell (USPN 6,052,380).

As per claim 4 Dinwiddie in view of Gurantz and Baranowski and Kubler teach the BCN of claim 1,

Dinwiddie is silent on wherein the second controller is configure to detect a control signal that identifies a network controller is coupled to the CCN

Bell teaches wherein the second controller is configure to detect a control signal that identifies a network controller is coupled to the CCN (Bell column 11 lines 7-45 describe determining the master node by detecting each node timer value.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN of Dinwiddie and Baranowski by wherein the second controller is configure to detect a control signal that identifies a network controller is coupled to the CCN as Bell by Kubler in order to initialize a channel equalization process that allows each node to know the transmission characteristics of each path between each node.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Baranowski (USPN 7,486,648) and Kubler (Pub No US 2004/0174841) and El Wardani et al. (Pub. No.: US 2003/0031191).

As per claim 7 Dinwiddie in view of Gurantz teach the BCN of claim 5.

Dinwiddie teaches the building as a dwelling unit (Dinwiddie column 4 lines 18-19)

But Dinwiddie is silent on th1 building being a multi-unit dwelling unit.

Wardini teaches a building being a multi-unit dwelling unit. (Wardini page 1 [0004] lines 1-3)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the building of Dinwiddie by being a multi dwelling unit taught by Wardini in order to provide to multiple users in a building.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Baranowski (USPN 7,486,648) and Kubler (Pub No US 2004/0174841) and Droge (Pub No.: US 2002/0004898).

As per claim 9 Dinwiddie in view of Gurantz teaches the BCN network of claim 1.

Dinwiddie teaches communication between the first and the other modem. (Dinwiddie column 11 lines 11-13)

Dinwiddie is silent on the signal communication carries encrypted data between the first BCN modem and the other BCN modem.

Droge teaches the signal communication carries encrypted data between the first BCN modem and the other BCN modem. (Droge Fig 2 elements 16 and 24, illustrates two modems in communication over a network, [0050] describes encrypting the data that's communicated.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication of Dinwiddie by encrypting the data as taught by Droge in order to provide secure transmitting and receiving.

Claims 10-15, 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (USPN 6,052,380).

As per claim 10 Dinwiddie teaches a Broadband Coaxial Network ("BCN") for communicating on an in- building coaxial cable network ("CCN"), comprising:

a first BCN modem (Dinwiddie fig 1A element 102) connected to a coaxial cable network ("CCN") (Dinwiddie fig 1a and 1b illustrate a wired network), (Dinwiddie column 4 lines 40-45, column 5 lines 34-36 describe the wired network connected using by coaxial cable), and included in a plurality of BCN modems in the BCN network, (Dinwiddie fig 1a and fig 1b illustrates a network with multiple modem elements 102, 106, 107, 104 and 108)

the first BCN modem having communication links to ones of the plurality of BCN modems and (Dinwiddie column 4 lines 40-42 and 45-48) configured to manage data transmission between each of the BCN modems in the BCN network; and (Dinwiddie column 15 lines 22-29 and 48-54 and column 16 lines 9-10 and 20-23)

another of the plurality of BCN modems connected to the CCN and (Dinwiddie fig 1a and fig 1b illustrates a network with multiple modem elements 104, 106, 107 and 108)capable of signal communication with the first BCN modem (Dinwiddie column 11 lines 11-13) the another BCN modem having communication links to ones of the plurality of BCN modems, (Dinwiddie column 4 lines 40-42 and 45-48)

Dinwiddie is silent on across one or more passive network devices having high isolation in the CCN

Gurants teaches across one or more passive network devices having high isolation in the CCN (Gurantz page 2 [0020] lines 7-12 and 14-16 fig 2 elements 210, 270, 230, 231, 232)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication of Dinwiddie by across one or more passive network devices having high isolation in the CCN as taught by Gurantz in order provide a path for terminal devices to transmit to and receive from other terminal devices.

Dinwiddie is silent on including a controller and a second controller

Bell teaches including a controller and a second controller, (Bell column 6 lines 64-65 describe each computer 112 and 114 as having a network adapter, where fig 4 illustrates that the network adapters of each computer have a controller 212)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the modems of Dinwiddie by including a controller and a second controller as taught by Bell in order provide improved reliability, robustness, bandwidth and noise resistance of the ADSL layer

Dinwiddie teaches wherein the first BCN modem and another BCN modem are configured to communicate with each other (Dinwiddie fig 1A and 1B column 11 lines 11-13)

Dinwiddie silent on utilizing TDMA and Time Division Duplex (TDD).

Gurantz teaches utilizing TDMA and Time Division Duplex (TDD). (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used as communication scheme, along with modulation)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication between two modems of Dinwiddie by communicating using TDD and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transciever.

Dinwiddie is silent on wherein each of the controllers is configured to periodically probe each of their communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading

Bell teaches wherein each of the controllers is configured to periodically probe each of their communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading. (Bell column 12 lines 4-30, wherein DMT initialization reads on OFDM bit-loading.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the modems of Dinwiddie by including a controller and a second controller as taught by Bell in order provide improved reliability, robustness, bandwidth and noise resistance of the ADSL layer.

As per claim 11 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 10, wherein the first BCN modem (Dinwiddie fig 5A) employs adaptive communication techniques that adapts to the characteristics of a coaxial channel between the first BCN modem and the other BCN modem. (Dinwiddie fig 5A elements 122 and 110, column 9 lines 36-40 describes a BALUM which converts the a signal to conform to the characteristics of the coaxial cable)

As per claim 12 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 10, wherein the first BCN modem is directly in signal communication with the other BCN modem across the CCN. (Dinwiddie Fig 1 column 15 lines 25-34)

As per claim 13 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 12

wherein the CCN is a type of network having a architectural configuration selected from a group consisting of

a star configuration and (Dinwiddie fig 12 illustrates the distribution unit of the network in a star configuration) a mesh configuration and a combinations of these configurations,

Dinwiddie teaches using the star configuration in an accessible fashion. (Dinwiddie column 12 lines 64-67 describes the use of signal paths for communication which reads on an accessible fashion)

But Dinwiddie is silent on a TDMA and Time Division Duplex (TDD) access fashion.

Gurantz teaches a TDMA and Time Division Duplex (TDD) access fashion. (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used along with modulation as communication scheme.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the access fashion of Dinwiddie by communicating using TDD and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transciever.

the type of network utilizes at least one frequency channel. (Gurantz page 4 [0039] lines 1-3 describes the use of TDD in the network, by utilizing a frequency.)

As per claim 14 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 11, wherein adaptive communication techniques includes utilization of the adaptive communication techniques in both transmitting processing and receiving processing of data. (Dinwiddie fig 5A elements 122 column 9 lines 34-40 describes receiving processed data from a modulator which reads on receiving processing of data and processing that data in the BALUM and filter then transmitting the processed data.)

As per claim 15 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 14, wherein the adaptive communication utilizes pre-coding for transmitting processing. (Dinwiddie column 9 lines 27-34 describe coding the data before transmitting the data.), (Dinwiddie column 9 lines 35-40 describe the BALUM and filter transmitting the processed data.)

As per claim 17 Dinwiddie in view of Gurantz teach the BCN of claim 14, wherein the adaptive communication techniques include pre-coding for (Dinwiddie column 9 lines 27-34

describe coding the data before transmitting the data.) transmitting processing based on known or learned channel response.(Dinwiddie column 9 lines 35-40 describe the BALUM and filter transmitting the processed data.), (Dinwiddie columns 9 lines 56-58 describe the coding as modulation which is a processing, as well as describing the modulation as based on a selected channel which reads on a known channel response)

As per claim 18 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 14.

Dinwiddie teaches signal processing techniques are used (Dinwiddie column 9 lines 25-35 describe the use of RF modulation)

Dinwiddie is silent on using additional signal processing techniques selected from a group of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes.

Gurantz teaches using additional signal processing techniques selected from a group of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes. (Gurantz page 4 [0046]-[0047] describe the use of DMT and OFDM which reads on the use of additional processing techniques being OFDM)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the signal processing of Dinwiddie by processing using OFDM as taught by Gurantz in order to overcome the effects of inter-symbol interference.

Claims 16, 25-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (USPN 6,052,380) and El Wardani et al. (Pub. No.: US 2003/0031191).

As per claim 16 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 14.

Dinwiddie teaches adaptive communication techniques. (Dinwiddie fig 5A elements 122 and 110, column 9 lines 36-40 describes a BALUM which converts the a signal to conform to the characteristics of the coaxial cable)

Dinwiddie is silent on utilizing adaptive equalization processing.

Wardini teaches utilizing adaptive equalization processing. (Wardini page 4 [0054])

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the adaptive communication techniques of Dinwiddie by utilizing an adaptive equalizer as taught by Wardini in order to improve the signal quality.

As per claim 25 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 11, wherein the BCN modem is embedded as a part of a device selected from the group consisting of:

a set-top box ("STB"); a Personal Computer (PC); an IP STB; a Media Center box; a Media Extender box; a DVD player; a cable modem; a personal video recorder ("PVR"); a TV set; a networking device; a switch/router;

a bridge/Gateway; (Wardini fig 1 element 200 [0031] lines 5-8)

a video game console; a wireless access point (WAP); and a network attached storage.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify BCN of Dinwiddie by embedding the device within a bridge as taught by Wardini in order to provide a mechanism to communicate signals between two systems.

As per claim 26 Dinwiddie in view of Gurantz and Bell and Wardani teach the BCN of claim 25, wherein the STB is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB.

Examiner takes the position that claim 26 is meant to further narrow claim 25. As such, claim 26 is not positively captured within claim 25 since claim 26 modifies an alternative.

As per claim 27 Dinwiddie in view of Gurantz and Bell and Wardini teach the BCN of claim 25, wherein the BCN modem utilizes the PCI bus structure. (Wardini page 3 [0040] lines 12-15 describes the use of an Ethernet interface which inherently utilizes the PCI bus structure)

As per claim 28 Dinwiddie in view of Gurantz and Bell and Wardini teach the BCN of claim 27, wherein the BCN modem utilizes another host device. (Wardini fig 4 page 3 [0038] describes the use of the modem in another device)

As per claim 29 Dinwiddie in view of Gurantz and Bell and Wardini teach the BCN of claim 28, wherein the host device is either a bridging host device or a switching host device. (Wardini fig 4 page 3 [0038] describes the use of the modem in a bridging device.)

As per claim 30 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 10.

Dinwiddie and Gurantz teach the use of a TDMA frequency channel in the BCN network

But Dinwiddie and Gurantz are silent on using one or more frequency bands:

above 860 MHz; between 860 MHz and 950 MHz; and below 50 MHz. above

Wardini teaches using one or more frequency bands: above 860 MHz; (Wardini fig 8 page 3 [0046] lines 1-4) between 860 MHz and 950 MHz; and (Wardini fig 8 page 3 [0046] lines 5-7) below 50 MHz. (Wardini fig 8 page 3 [0048])

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify frequency channel of Dinwiddie and Gurantz by being one of above 860 MHz; between 860 MHz and 950 MHz; and below 50 MHz as taught by Wardini in order to allow the network band to reside at any frequency on the cable.

As per claim 31 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 10, wherein the CCN network is one of the following:

coaxial cables that have been installed for the carriage of satellite signals; and coaxial cables for video distribution.(Dinwiddie column 5 lines 50-55)

Claims 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Bell (USPN 6,052,380) and Gorman et al. (USPN 6,137,793.)

As per claim 19 Dinwiddie in view of Gurantz and Bell teach the BCN of claim 14.

Dinwiddie is silent on including additional MAC and communication processing including the provision of best effort and reserved communication services, processes and protocol adaptations to adapt other communication services to operate over the BCN.

Gorman teaches an additional MAC and communication processing including (Gorman abstract lines 3-5, 11-14 describe the use of MAC and communication processing) the provision of best effort and reserved communication services, (Gorman column 6 lines 15-21)processes and protocol adaptations to adapt other communication services to operate over the BCN. (Gorman column 3 lines 48-54, describe service over a BCN, column 6 lines 63-67 describes using ATM adaption which reads on process and protocol adaptation.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN of Dinwiddie by including MAC and communication processing including the provision of best effort and reserved communication services, processes and protocol adaptations to adapt other communication services to operate over the BCN as taught by Gorman in order to integrate multimedia services.

As per claim 20 Dinwiddie in view of Gurantz and Bell and Gorman teach the BCN of claim 19, wherein the communication services and processes includes utilization of a Network Controller ("NC") to control the access to the BCN. (Gorman column 5 lines 21-23)

As per claim 21 Dinwiddie in view of Gurantz and Bell and Gorman teach the BCN of claim 20, wherein the NC includes a configuration selected from the group consisting of:

a configuration that enables every BCN modem to act as a NC;

a configuration that utilizes a frequency plan; (Gorman column 12 lines 58-60 fig 1 illustrates the use of a cable TV network, which reads on a frequency plan.)

a configuration that allows a new BCN modem admission to the BCN Network; a configuration that allows a new BCN modem to communicate with another BCN modem to characterize the channel response between them and determine a bit loading in either direction; and a configuration that allows each BCN modem in the network to request and be granted a transmission opportunity without a transmission conflict.

As per claim 22 Dinwiddie in view of Gurantz and Bell and Gorman teach the BCN of claim 21, wherein the communications services provided by the BCN include BCN wide transmission priorities. (Gorman column 13 lines 22-27)

As per claim 23 Dinwiddie in view of Gurantz and Bell and Gorman teach the BCN of claim 22, wherein the BCN services include a configuration that provides reserved bandwidth communication services (Gorman column 6 lines 15-21)

Dinwiddie teaches wherein the first BCN modem and the another BCN modem are configured to communicate with each other. (Dinwiddie fig 1A and 1B column 11 lines 11-13 describe pc modems communicating)

But Dinwiddie is silent on utilizing TDMA and Time Division Duplex (TDD) to communicate.

Gurantz teaches utilizing TDMA and Time Division Duplex (TDD). (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used as communication scheme, along with modulation)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication between two modems of Dinwiddie by communicating using TDD and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transciever.

As per claim 24 Dinwiddie in view of Gurantz and Bell and Gorman teach the BCN of claim 19, wherein the BCN modem provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of:

Ethernet, (Gorman column 6 lines 53-57 describe ATM adaptation , column 7 lines 1-3 describe the use of Ethernet services) IEEE 1394, Universal Serial Bus ("USB"); ()and MPEG-TS.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bell (USPN 6,053,380) and further in view of Dinwiddie et al. (USPN 6,481,013).

As per claim 32 Bell teaches a network device, comprising:

a communication interface (Bell fig 2 illustrates a network adapter aka network interface card) configured to connect to a broadband coaxial network ("B C N"); and (Bell Fig 1 column 6 lines 49-53 describe the network cabling as coaxial)

a controller in signal communication with the communication interface, (Bell column 5 lines 42- 50)

the controller configured to:

periodically probe a communication link to another network device to determine a characteristic of the communication link; (Bell column 12 lines 4-47 and column 13 lines 23-28)

use orthogonal frequency division multiplexing and bit-loading to adjust transmissions over each communication link based in part on the probe; and (Bell column 8 lines 53-62 describe the use of DMT which reads on OFDm bit-loading.)

manage data transmission between each network device connected to the BCN. (Dinwiddie column 15 lines 22-29 and 48-54 and column 16 lines 9-10 and 20-23)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network device of Dinwiddie by manage data transmission between each network device connected to the BCN as taught by Dinwiddie in order to provide a central control station for all the components attached to the network.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES LEIJA whose telephone number is (571)270-5249. The examiner can normally be reached on M-F 730 am to 5pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ANDREW Y. KOENIG can be reached on (571) 272-7296. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. L./
Examiner, Art Unit 2423

/Andrew Y Koenig/
Supervisory Patent Examiner, Art Unit 2423

Notice of References Cited	Application/Control No. 11/231,349	Applicant(s)/Patent Under Reexamination BERNATH ET AL.	
	Examiner JAMES LEIJA	Art Unit 2423	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,052,380 A	04-2000	Bell, Russell W.	370/445
*	B	US-2004/0174841 A1	09-2004	Kubler et al.	370/328
*	C	US-7,486,648 B1	02-2009	Baranowski, Robert	370/338
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	Art Unit
	JAMES LEIJA	2423

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	08/19/2008	02/25/2009							
	1	✓	✓							
	2	✓	✓							
	3	✓	✓							
	4	✓	✓							
	5	✓	✓							
	6	✓	✓							
	7	✓	✓							
	8	✓	✓							
	9	✓	✓							
	10	✓	✓							
	11	✓	✓							
	12	✓	✓							
	13	✓	✓							
	14	✓	✓							
	15	✓	✓							
	16	✓	✓							
	17	✓	✓							
	18	✓	✓							
	19	✓	✓							
	20	✓	✓							
	21	✓	✓							
	22	✓	✓							
	23	✓	✓							
	24	✓	✓							
	25	✓	✓							
	26	✓	✓							
	27	✓	✓							
	28	✓	✓							
	29	✓	✓							
	30	✓	✓							
	31	✓	✓							
	32		✓							

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	Art Unit
	JAMES LEIJA	2623

SEARCHED			
Class	Subclass	Date	Examiner
725	78, 80, 109	8/19/2008	JL
709		2/25/2009	JL
370		2/25/2009	JL

SEARCH NOTES		
Search Notes	Date	Examiner
EAST	2/25/2009	JL
Spoke with Joe Ustaris regarding class subclass and keyword search	2/25/2009	JL

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	"5479447".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/02/24 19:02
L2	10	bit?load$3 same DMT same ofdm	US-PGPUB; USPAT; USOCR	OR	OFF	2009/02/24 19:58
L3	60	bit?load$3 same DMT	US-PGPUB; USPAT; USOCR	OR	OFF	2009/02/24 20:01
L5	50499	network adj control$4	US-PGPUB; USPAT; USOCR	OR	OFF	2009/02/24 21:22
L6	1046	(network adj control$4) and (home with network $3) and coax$5	US-PGPUB; USPAT; USOCR	OR	OFF	2009/02/24 21:22
L7	240	(network adj control$4) same (home with network$3) and coax$5	US-PGPUB; USPAT; USOCR	OR	OFF	2009/02/24 21:37
L13	40	coax$5 and (LAN adj control$4) and (home with network$3)	US-PGPUB; USPAT; USOCR	OR	OFF	2009/02/24 22:01
L14	1	coax$5 and (establish $4 same (LAN adj control$4)) and (home with network$3)	US-PGPUB; USPAT; USOCR	OR	OFF	2009/02/24 22:08
L15	40	coax$5 and (LAN adj control$4) and (home with network$3)	US-PGPUB; USPAT; USOCR	OR	OFF	2009/02/24 22:12
L16	1046	(network adj control$4) and (home with network $3) and coax$5	US-PGPUB; USPAT; USOCR	OR	OFF	2009/02/24 22:14
L17	22	(determin$3 same (network adj control $4)) same (home with network$3) and coax$5	US-PGPUB; USPAT; USOCR	OR	OFF	2009/02/24 22:14
L18	22	(determin$3 same ((network lan) adj control$4)) same (home with network$3) and coax$5	US-PGPUB; USPAT; USOCR	OR	OFF	2009/02/24 22:14
L19	8	(determin$3 with ((network lan) adj control$4)) same (home with network$3) and coax$5	US-PGPUB; USPAT; USOCR	OR	OFF	2009/02/24 22:15

L20	5	(determin$3 with ((network lan) adj control$4)) same (home with network$3) and coax$5 and (home adj network)	US-PGPUB; USPAT; USOCR	OR	OFF	2009/02/24 22:15
L21	245	((network lan) adj control$4) same (home with network$3) and coax$5	US-PGPUB; USPAT; USOCR	OR	OFF	2009/02/24 22:19
S128	18693	("725").CLAS.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/02/23 10:13
S129	114748	("370").CLAS.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/02/23 10:49
S130	72211	("709").CLAS.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/02/23 10:49
S131	151	S128 and S129 and S130	US-PGPUB; USPAT	OR	OFF	2009/02/23 10:50
S132	1357	tcp/ip and LAN and rf and (low adj power)	US-PGPUB; USPAT	OR	OFF	2009/02/23 12:59
S133	1135882	(prob$4 packet$4 calibrat$4 compensat$3 control$5 manag$5 adjust$5) same ((strength with power) (power with level) (power))	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:03
S134	209171	(prob$4 packet$4 calibrat$4 compensat$3 control$5 manag$5 adjust$5) same ((strength with power) (power with level) (transmission with power))	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:04
S135	10	S134 and S131	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:04
S136	688	S134 and S132	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:07
S137	1188	S133 and S132	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:07
S138	1	S133 and S132 and S131	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:07
S139	417	S133 and S132 and (S128 S129 S130)	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:09
S140	406309	((strength with power) (power with level) (transmission with power))	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:14
S141	904	S140 and S132	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:15

S142	3980	S140 and S132 adn S131	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:15
S143	1	S140 and S132 and S131	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:15
S144	320	S140 and S132 and (S128 S129 S130)	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:15
S145	888	S140 and S132 and S133	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:16
S146	796941	(prob$4 packet$4 calibrat$4 compensat$3 control$5 manag$5 adjust$5) with ((strength with power) (power with level) (power))	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:17
S147	1064	S146 and S132	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:17
S148	490	S132 and (S128 S129 S130)	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:18
S149	371	S146 and S132 and (S128 S129 S130)	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:18
S150	51769	(adjust$5) same ((strength with power) (power with level) (transmission with power))	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:21
S151	32662	(adjust$5) WITH ((strength with power) (power with level) (transmission with power))	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:21
S152	315	S150 and S132	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:21
S153	0	S150 and S132 and high?isolation	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:40
S154	0	S150 and S132 and high adj isolation	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:40
S155	0	S150 and S132 and (high adj isolation)	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:40
S156	176	S150 and S132 and splitter	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:40
S157	146	S150 and S132 and splitters	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:40
S158	176	S150 and S132 and splitter$2	US-PGPUB; USPAT	OR	OFF	2009/02/23 13:41
S159	0	(network adj controller) same (manage adj data adj transmission$3)	US-PGPUB; USPAT	OR	OFF	2009/02/23 15:11

S160	2	(network adj controller) same (manage adj transmission$3)	US-PGPUB; USPAT	OR	OFF	2009/02/23 15:11
S161	0	((network adj controller) same host) and (host same (manage adj transmission$3))	US-PGPUB; USPAT	OR	OFF	2009/02/23 15:11
S162	1501	((network adj controller) same host)	US-PGPUB; USPAT	OR	OFF	2009/02/23 15:12
S163	1601	((network adj controller) same host $3)	US-PGPUB; USPAT	OR	OFF	2009/02/23 15:12
S164	14	((network adj controller) host) same (manage adj transmission$3)	US-PGPUB; USPAT	OR	OFF	2009/02/23 15:12
S165	17	((network adj controller) host$3) same (manage adj transmission$3)	US-PGPUB; USPAT	OR	OFF	2009/02/23 15:12
S166	3	(network adj (controller $2 host$3)) same (manage adj transmission$3)	US-PGPUB; USPAT	OR	OFF	2009/02/23 15:15
S167	19	(network adj (controller $2 host$3)) same (manag$5 adj transmission$3)	US-PGPUB; USPAT	OR	OFF	2009/02/23 15:15
S168	5595	power same ofdm	US-PGPUB; USPAT	OR	OFF	2009/02/23 15:50
S169	2477	power same (orthogonal adj frequency)	US-PGPUB; USPAT	OR	OFF	2009/02/23 15:50
S170	7	(adjust$4 adj power) same (orthogonal adj frequency)	US-PGPUB; USPAT	OR	OFF	2009/02/23 15:51
S171	9	(orthogonal adj frequency) with (bit? loading)	US-PGPUB; USPAT	OR	OFF	2009/02/24 10:27
S173	9	((orthogonal adj frequency) with (bit? loading)) and power	US-PGPUB; USPAT	OR	OFF	2009/02/24 10:28
S176	115	(dmt adj modulation) same power	US-PGPUB; USPAT	OR	OFF	2009/02/24 10:57
S177	847	dmt same ofdm	US-PGPUB; USPAT	OR	OFF	2009/02/24 11:37
S178	685	(dmt same ofdm) and power	US-PGPUB; USPAT	OR	OFF	2009/02/24 11:37

S179	160	(dmt same ofdm) and coax$4	US-PGPUB; USPAT	OR	OFF	2009/02/24 11:38
S180	66	(dmt same ofdm) same3 coax$4	US-PGPUB; USPAT	OR	OFF	2009/02/24 11:38
S183	66	(dmt same ofdm) and (home with network$3)	US-PGPUB; USPAT	OR	OFF	2009/02/24 11:39
S184	2	(dmt same ofdm) and (home with network$3) and probe	US-PGPUB; USPAT	OR	OFF	2009/02/24 11:39
S186	65	entropic.as.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/02/24 11:48
S187	12	(dmt same ofdm) same (home with network$3)	US-PGPUB; USPAT	OR	OFF	2009/02/24 17:07
S188	0	("7154957").URPN.	USPAT	OR	OFF	2009/02/24 17:33
S189	6	("20030086362" | "6246716" | "6339613" | "6445773" | "6532277" | "6650697").PN. OR ("7154957").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2009/02/24 17:33
S190	0	((dmt same ofdm) same characteristics) and (home with network $3)	US-PGPUB; USPAT	OR	OFF	2009/02/24 17:35
S191	354	((dmt ofdm) same characteristics) and (home with network$3)	US-PGPUB; USPAT	OR	OFF	2009/02/24 17:35
S192	179	((dmt ofdm) same characteristics) and (home with network$3) and coax$5	US-PGPUB; USPAT	OR	OFF	2009/02/24 17:36

2/25/2009 12:32:21 AM
C:\Documents and Settings\jleija\My Documents\EAST\Workspaces\11231349.wsp

PATENT

Attorney Docket No. E5982-00025
(E040004USU1)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 11/231,349 Confirmation No.: 4520

In re application of: Brett Bernath et al.

Filed: September 19, 2005

Technology Center/Art Unit: 2623

Examiner: Leija, James

Docket No.: E5982-0025 (E40004USU1)

Customer No.: **77561**

Title: A BROADBAND LOCAL AREA NETWORK

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO NON-FINAL OFFICE ACTION DATED SEPTEMBER 4, 2008

Sir:

Responsive to the Non-Final Office Action dated **September 4, 2008**, please amend the above-identified application as follows:

Amendments to the Claims begin on page 2 of this paper.

Remarks/Arguments begin on page 8 of this paper.

AMENDMENT TO THE CLAIMS

This listing and version of the claims replace all prior listing and versions of the claims.

Listing of Claims

What is claimed is:

1. (Currently amended) A Broadband Coaxial Network ("BCN"), comprising:

a first BCN modem in signal communication with a coaxial cable network ("CCN"), the first BCN modem including a first controller; and

another BCN modem in signal communication with the CCN that is capable of two-way signal communication with the first BCN modem across one or more passive network devices having high isolation in the CCN, the another BCN modem including a second controller,

wherein each of the first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem and to adjust transmission power over the at least one respective communication link based on a result of the probe.

2. (Currently amended) The BCN of claim 1, wherein the first ~~BCN modem further includes a~~ controller ~~coupled to the first BCN modem that~~ establishes the first BCN modem as a network controller upon connection to the CCN, the network controller configured to manage data transmission between each of the BCN modems connected to the CCN.

3. (Original) The BCN of claim 2, wherein a control signal is generated by the first BCN modem in response to the first BCN modem being a network controller.

4. (Currently amended) The BCN of claim 1, wherein the second ~~another BCN modem further includes a~~ controller is configured to ~~coupled to the other BCN modem that~~ detect[[s]] a control signal that identifies a network controller is coupled to the CCN.

5. (Original) The BCN of claim 1, wherein the signal communication occurs between the BCN modems that are located within a building.

6. (Original) The BCN of claim 5, wherein the building is a single family home.

7. (Original) The BCN of claim 5 wherein the building is a multi-unit dwelling unit.

8. (Currently amended) The BCN of claim 1, wherein the signal communication occurs via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency (RF) channels.

9. (Original) The BCN network of claim 1, wherein the signal communication carries encrypted data between the first BCN modem and the other BCN modem.

10. (Currently amended) A Broadband Coaxial Network ("BCN") for communicating on an in-building coaxial cable network ("CCN"), comprising:

a first BCN modem connected to a coaxial cable network ("CCN") and included in a plurality of BCN modems in the BCN network, the first BCN modem including a controller having communication links to ones of the plurality of BCN modems and configured to manage data transmission between each of the BCN modems in the BCN network; and

another of the plurality of BCN modems connected to the CCN and capable of signal communication with the first BCN modem across one or more passive network devices having high isolation in the CCN, the another BCN modem including a second controller having communication links to ones of the plurality of BCN modems,

wherein the first BCN modem and the another BCN modem are configured to communicate with each other utilizing TDMA and Time Division Duplex (TDD), and wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading.

11. (Original) The BCN of claim 10, wherein the first BCN modem employs adaptive communication techniques that adapts to the characteristics of a coaxial channel between the first BCN modem and the other BCN modem.

12. (Currently amended) The BCN of claim 10, wherein the first BCN modem[[s]] is directly in signal communication with the other BCN modem across the CCN.

13. (Original) The BCN of claim 12 wherein the CCN is a type of network having an architectural configuration selected from a group consisting of a star configuration and a mesh configuration and a combination of these configurations, in a TDMA, TDD access fashion, and the type of network utilizes at least one frequency channel.

14. (Currently amended) The BCN of claim [[13]] 11, wherein the adaptive communication techniques includes utilization of the adaptive communication techniques in both transmitting processing and receiving processing of data.

15. (Original) The BCN of claim 14, wherein the adaptive communication techniques utilize pre-coding for transmitting processing.

16. (Original) The BCN of claim 14, wherein the adaptive communication techniques utilize adaptive equalization for receiving processing.

17. (Original) The BCN of claim 14, wherein the adaptive communication techniques include pre-coding for transmitting processing based on known or learned channel response.

18. (Original) The BCN of claim 14, wherein additional signal processing techniques are used which are selected from a group consisting of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes.

19. (Original) The BCN of claim 14, further including additional MAC and communication processing including the provision of best effort and reserved communication services, processes and protocol adaptations to adapt other communication services to operate over the BCN.

20. (Original) The BCN of claim 19, wherein the communication services and processes includes utilization of a Network Controller ("NC") to control the access to the BCN.

21. (Original) The BCN of claim 20, wherein the NC includes a configuration selected from the group consisting of:

a configuration that enables every BCN modem to act as a NC:

a configuration that utilizes a frequency plan;

a configuration that allows a new BCN modem admission to the BCN Network;

a configuration that allows a new BCN modem to communicate with another BCN modem to characterize the channel response between them and determine a bit loading in either direction; and

a configuration that allows each BCN modem in the network to request and be granted a transmission opportunity without a transmission conflict.

22. (Original) The BCN of claim 21, wherein the communications services provided by the BCN include BCN wide transmission priorities.

23. (Original) The BCN of claim 22, wherein the BCN services include a configuration that provides reserved bandwidth communication services.

24. (Original) The BCN of claim 19, wherein the BCN modem provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of:

Ethernet,

IEEE 1394,

Universal Serial Bus ("USB"); and

MPEG-TS.

25. (Original) The BCN of claim 11, wherein the BCN modem is embedded as a part of a device selected from the group consisting of:

a set-top box ("STB");

a Personal Computer (PC);

an IP STB;

a Media Center box;

a Media Extender box;

a DVD player;

a cable modem;

a personal video recorder ("PVR");

a TV set;

a networking device;

a switch/router;

a bridge/Gateway;

a video game console;

a wireless access point (WAP); and

a network attached storage.

26. (Original) The BCN of claim 25, wherein the STB is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB.

27. (Original) The BCN of claim 25, wherein the BCN modem utilizes the PCI bus structure.

28. (Original) The BCN of claim 27, wherein the BCN modem utilizes another host device.

29. (Original) The BCN of claim 28, wherein the host device is either a bridging host device or a switching host device.

30. (Original) The BCN of claim 10, wherein an at least one TDMA frequency channel used by the BCN network is in one or more of the following frequency bands:

above 860 MHz;

between 860 MHz and 950 MHz; and

below 50 MHz.

31. (Original) The BCN of claim 10, wherein the CCN network is one of the following:
coaxial cables that have been installed for the carriage of satellite signals; and
coaxial cables for video distribution.

32. (New) A network device, comprising:
a communication interface configured to connect to a broadband coaxial network ("BCN"); and
a controller in signal communication with the communication interface, the controller configured to:
periodically probe a communication link to another network device to determine a characteristic of the communication link;
use orthogonal frequency division multiplexing and bit-loading to adjust transmissions over each communication link based in part on the probe; and
manage data transmission between each network device connected to the BCN.

REMARKS

The Office Action dated September 4, 2008 objected to claim 14 for allegedly having improper antecedent basis. Claims 1-6, 8, 10-15, and 17-18 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,481,013 issued to Dinwiddie et al. ("Dinwiddie") in view of U.S. Patent Application Publication No. 2002/0166124 in the name of Gurantz et al. ("Gurantz"). Claims 7, 16, and 25-29 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Dinwiddie in view of Gurantz and in further view of U.S. Patent Application Publication No. 2003/0031191 in the name of El Wardani et al. ("El Wardani"). Claim 9 was rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Dinwiddie in view of Gurantz and in further view of U.S. Patent Application Publication No. 2002/0004898 in the name of Droge ("Droge). Claims 19-24 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,137,793 issued to Gorman et al. ("Gorman").

Claim Objections

Claim 14 has been amended to depend from claim 11. No new matter has been added. The term "the adaptive communication techniques" has proper antecedent basis. Reconsideration and withdrawal of the objection to claim 14 is respectfully requested.

Rejections Under 35 U.S.C. § 103(a)

Claim 1 has been amended to recite "a first BCN modem in signal communication with a coaxial cable network ("CCN"), the first BCN modem including a first controller; and another BCN modem in signal communication with the CCN that is capable of two-way signal communication with the first BCN modem across one or more passive network devices having high isolation in the CCN, the BCN modem including a second controller, wherein each of the

first and second controllers are configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem and to adjust transmission power over the at least one respective communication link based on a result of the probe." (Emphasis added). Support for the amendment may be found throughout the specification as filed, and specifically at, for example, paragraphs [0047], [0067]-[068], [0088]-[0089], [0094], and [0117]. No new matter has been added.

The BCN network of claim 1 includes a first BCN modem and another BCN modem. Each of the BCN modems includes a controller configured to probe at least one respective communication link connecting that controller directly to at least one other BCN modem. The controllers are further configured to adjust transmission power over the at least one respective communication link based on a result of the probe.

The Action on pages 2-3 alleges that Dinwiddie teaches a BCN including a first BCN modem in signal communication with a coaxial cable network and another BCN modem in signal communication with the CCN. The Action admits that Dinwiddie does not teach or suggest network devices that are passive and have a high isolation and relies on Gurantz as disclosing these features.

However, neither Dinwiddie nor Gurantz teaches or suggest a first BCN modem including a controller and another BCN modem including a controller, wherein each of the controllers are configured to probe at least one respective communication link connecting the controller directly to at least one other BCN modem and to adjust transmission power over the at least one respective communication link based on a result of the probe as required by claim 1.

Dinwiddie discloses an apparatus for distributing radio frequency (RF) modulated broadcast television signals from a broadcast signal source to networked appliances. See

Abstract. The networked appliances 44-48 in Dinwiddie communicate with one another by transmitting upstream signals to a distribution unit 22 which are then routed as downstream signals to the network appliances. Col. 4, lines 38-48; col. 7, lines 60-64; and col. 18, lines 40-44. There is simply no teaching or suggestion in Dinwiddie that of each of the BCN modems includes a controller that may directly communicate with another BCN modem. Moreover, Dinwiddie fails to teach or suggest that each controller is configured to probe each of its communication links directly to other BCN modems and to adjust transmission power over the at least one respective communication link based on a result of the probe as required by claim 1.

Gurantz fails to cure the deficiencies of Dinwiddie. Gurantz discloses a frequency selective network interface that is configured to reflect network signals to provide a path for terminal devices to transmit to and receive from other terminal devices. Paragraph [0022]. However, Gurantz does not teach or suggest a BCN modem including a controller that is configured to probe each of its communication links directly to other BCN modems and to adjust transmission power over the at least one respective communication link based on a result of the probe as required by claim 1

One skilled in the art would not be motivated by Gurantz to modify Dinwiddie to create a BCN network as claimed in claim 1 as neither Dinwiddie nor Gurantz teach or suggest BCN modems having controllers that are each configured to probe at least one respective communication link connecting the controller directly to at least one other BCN modem and to adjust transmission power over the at least one respective communication link based on a result of the probe as required by claim 1.

Additionally, Dinwiddie teaches away from BCN modems directly communicating with one another as through a "star" configuration where all of the device to device communication

must first pass through the distribution unit 22. See FIG. 12 and col. 7, lines 60-64. Accordingly, claim 1 is in condition for allowance. Reconsideration and allowance of claim 1 is respectfully requested.

Claim 2 has been amended in view of the amendments to claim 1, and recites "wherein the first controller establishes the first BCN modem as a network controller upon connection to the CCN, the network controller configured to manage data transmission through the CCN." Support for the amendment may be found throughout the specification as filed, and specifically at, for example, [0050]-[0053]. No new matter has been added.

The features of claim 2 are not disclosed in either Dinwiddie or Gurantz. On page 3 the action alleges that column 11, lines 17-21 of Dinwiddie reads on the network controller. However, the passage cited by the examiner discloses a host PC 45 having a USB connection to which a device may be connected. Col. 11, lines 7-10 and lines 17-21. The host PC 45 may transfer data from the USB connection to another computer or device. Col. 11, lines 45-48. While the host PC 45 may manage the data transfer between the USB connection and the other device, there is no teaching or suggestion that host PC 45 controls any communication between other devices on the network that are not accessing the device connected to the USB port on the host PC.

Accordingly, one skilled in the art would not be motivated by Dinwiddie to create a BCN network in which one of the BCN modems includes a controller that is configured to manage data transmission between each of the BCN modems connected to the CCN. Thus, claim 2 is in condition for allowance.

Claim 4 has been amended to remove redundancies in view of the amendments to claim 1. No new matter has been added.

On page 9 the Action alleges that claim 7 is unpatentable over Dinwiddie, Gurantz, and El Wardani. As set forth above, Dinwiddie and Gurantz fail to teach or suggest a BCN as claimed in claim 1. El Wardani fails to cure the deficiencies of Dinwiddie and Gurantz. El Wardani is directed to a signal bridge between a CATV and DBS wiring system to create a data network. Page 1, paragraph [0008]. However, El Wardani fails to teach or suggest BCN modems having controllers that are each configured to probe at least one respective communication link connecting the controller directly to at least one other BCN modem and to adjust transmission power over the at least one respective communication link based on a result of the probe.

Claim 7 was rejected as allegedly being unpatentable over Dinwiddie in view of Gurantz, and in further view of Droge. Droge fails to cure the deficiencies of Dinwiddie and Gurantz. Droge discloses a system and method for highly secure data communication by encrypting data prior to the transmission of data from one computer to another computer. See paragraph [0035]. However, Droge fails to teach or suggest BCN modems having controllers that are each configured to probe at least one respective communication link connecting the controller directly to at least one other BCN modem and to adjust transmission power over the at least one respective communication link based on a result of the probe.

Claim 8 has been amended to fix a typographical error. No new matter has been added.

As set forth above, claim 1 is in condition for allowance. Claims 2-9 depend from claim 1 and are allowable for at least this reason. Reconsideration and allowance of claims 2-9 is respectfully requested.

Claim 10 has been amended to recite "a first BCN modem connected to a coaxial cable network ("CCN") and included in a plurality of BCN modems in the BCN network, the first

BCN modem including a controller having communication links to ones of the plurality of BCN modems and configured to manage data transmission between each of the BCN modems in the BCN network; and another of the plurality of BCN modems connected to the CCN and capable of signal communication with the first BCN modem across one or more passive network devices having high isolation in the CCN, the another BCN modem including a second controller having communication links to ones of the plurality of BCN modems, wherein the first BCN modem and the another BCN modem are configured to communicate with each other utilizing TDMA and Time Division Duplex (TDD), and wherein each of the controllers is configured to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading." (Emphasis added). Support for the amendment may be found throughout the specification as filed, and specifically at, for example, paragraphs [0047], [0067]-[068], [0088]-[0089], [0094], [0105], and [0117]. No new matter has been added.

Claim 10 is allowable for at least the reasons set forth above with respect to claims 1 and 2. Additionally, claim 10 requires the first controller to control data transmission in the BCN network, and the first and second controllers to periodically probe each of their communication links to other BCN modems and to adjust transmission power over each of the communication links based on the probe through orthogonal frequency division multiplexing (OFDM) and bit-loading. Accordingly, BCN modems may probe each communication link to determine the characteristics of the link and adapt to network changes using OFDM and bit-loading. Neither Dinwiddie nor Gurantz discloses such features. Accordingly, claim 10 is in condition for allowance. Reconsideration and allowance of claim 10 is respectfully requested.

Claim 12 has been amended to correct a typographical error. No new matter has been added.

Claim 16 stands rejected over Dinwiddie and Gurantz in further view of El Wardani. As set forth above with respect to claim 7, El Wardani fails to cure the deficiencies of Dinwiddie and Gurantz. Accordingly, claim 16 is in condition for allowance.

Claims 19-24 were rejected as allegedly being unpatentable over Dinwiddie and Gurantz in further view of Gorman. However, Gorman does not cure the deficiencies of Dinwiddie and Gurantz as identified above with respect to claim 10. Gorman discloses a two-way hybrid fiber-coax cable network capable of bi-directionally transmitting data packets. See Abstract. Much like Dinwiddie, Gorman discloses a headend communication controller through which all communication in the network must pass. Col. 13, lines 22-36. Gorman does not teach or suggest BCN modems including controllers configured to periodically probe each of their communication links to other BCN modems to maximize transmission and reception efficiency and quality through orthogonal frequency division multiplexing (OFDM) and bit-loading as claimed in claim 10. Accordingly, claims 19-24 are allowable at least by virtue to their dependency from claim 10.

Accordingly, claims 11-31 depend from claim 10 and are allowable for at least this reason. Reconsideration and allowance of claims 11-31 is respectfully requested.

New claim 32 discloses a network device including a communication interface and a controller in signal communication with the communication interface. The communication interface is configured to connect to a broadband coaxial network ("BCN"). The controller is configured to periodically probe a communication link to another network device to determine a characteristic of the communication link, use orthogonal frequency division multiplexing and bit-

loading to adjust transmissions over each communication link based in part on the probe, and manage data transmission between each network device connected to the BCN. Support for new claim 31 may be found throughout the specification as filed, and specifically at, for example, paragraphs [0064], [0066]-[0068], and [0087]-[0089]. No new matter has been added.

Claim 32 is allowable over the prior art for at least the reasons set forth above with respect to claim 1. Examination and allowance of claim 32 is respectfully requested.

CONCLUSION

In view of the foregoing remarks, claims 1-32 are in condition for allowance. Reconsideration of the application and allowance of claims 1-32 are respectfully requested.

The Assistant Commissioner for Patents is hereby authorized to charge any additional fees or credit any excess payment that may be associated with this communication to deposit account **04-1679.**

Dated: 11-2-08

Respectfully submitted,

Steven E. Koffs

Steven E. Koffs, Reg. No.: 37,163
Attorney for Applicants

DUANE MORRIS LLP
30 South 17th Street
Philadelphia, Pennsylvania 19103
(215) 979-1250 (Telephone)
(215) 979-1020 (Fax)
(215) 979-1250 (Direct)

Electronic Patent Application Fee Transmittal

Application Number:	11231349
Filing Date:	19-Sep-2005
Title of Invention:	Broadband local area network
First Named Inventor/Applicant Name:	Brett Bernath
Filer:	Steven E. Koffs/Amanda Orson
Attorney Docket Number:	E040004USU1

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Claims in excess of 20	1202	1	52	52
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**52**

Electronic Acknowledgement Receipt	
EFS ID:	4383192
Application Number:	11231349
International Application Number:	
Confirmation Number:	4520
Title of Invention:	Broadband local area network
First Named Inventor/Applicant Name:	Brett Bernath
Customer Number:	78271
Filer:	Steven E. Koffs/Amanda Orson
Filer Authorized By:	Steven E. Koffs
Attorney Docket Number:	E040004USU1
Receipt Date:	02-DEC-2008
Filing Date:	19-SEP-2005
Time Stamp:	18:14:00
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$52
RAM confirmation Number	3413
Deposit Account	041679
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1		E5982-00025POA.pdf	273987 712d3407a0298ba71e63228d24dbead5764caa69	yes	2
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Power of Attorney		1	1	
	Assignee showing of ownership per 37 CFR 3.73(b).		2	2	
Warnings:					
Information:					
2		E5982-00025.pdf	1453701 cfb9e9c4c7626b13a1c9b596da5d8ebe05254384	yes	15
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Amendment/Req. Reconsideration-After Non-Final Reject		1	1	
	Claims		2	7	
	Applicant Arguments/Remarks Made in an Amendment		8	15	
Warnings:					
Information:					
3	Fee Worksheet (PTO-06)	fee-info.pdf	29654 737aaf7e83853b6963ac9b1a8fc04bdad1eddde12	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1757342		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Print Form

PTO/SB/81 (07-08)
Approved for use through 12/31/2008. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS

Application Number	11/231,349
Filing Date	19-Sep-2005
First Named Inventor	Brett Bernath
Title	A broadband local area network
Art Unit	2623
Examiner Name	James Lelja
Attorney Docket Number	E040004USU1

I hereby revoke all previous powers of attorney given in the above-identified application.

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith: 77561

OR

☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

Practitioner(s) Name	Registration Number

Please recognize or change the correspondence address for the above-identified application to:

☒ The address associated with the above-mentioned Customer Number.

OR

☐ The address associated with Customer Number:

OR

☐ Firm or Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

I am the:

☐ Applicant/Inventor.

OR

☒ Assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) (Form PTO/SB/96) submitted herewith or filed on _____

SIGNATURE of Applicant or Assignee of Record

Signature		Date	Nov 5, 2008
Name	Bruce W. Greenhaus	Telephone	(858) 768-3679
Title and Company	VP, Chief Patent Counsel		

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☒ *Total of 2 forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/96 (10-08)
Approved for use through 11/30/2008. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Entropic Communications, Inc.

Application No./Patent No.: 11/231,349 Filed/Issue Date: 09/19/2005

Entitled: Broadband local area network.

Entropic Communications, Inc. (Name of Assignee), a Corporation (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. [✓] the assignee of the entire right, title, and interest; or
2. [ ] an assignee of less than the entire right, title and interest (The extent (by percentage) of its ownership interest is _____ %)

in the patent application/patent identified above by virtue of either:

A. [✓] An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 018175, Frame 0650, or for which a copy therefore is attached.

OR

B. [ ] A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____
   The document was recorded in the United States Patent and Trademark Office at
   Reel _____, Frame _____, or for which a copy thereof is attached.
2. From: _____ To: _____
   The document was recorded in the United States Patent and Trademark Office at
   Reel _____, Frame _____, or for which a copy thereof is attached.
3. From: _____ To: _____
   The document was recorded in the United States Patent and Trademark Office at
   Reel _____, Frame _____, or for which a copy thereof is attached.

[ ] Additional documents in the chain of title are listed on a supplemental sheet.

[ ] As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (*i.e.*, a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

_____ November 5, 2008
Signature Date

Bruce W. Greenhaus 858.768.3835
Printed or Typed Name Telephone Number

VP, Chief Patent Counsel
Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/231,349	09/19/2005	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	12/02/2008	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 32	Minus	** 31	= 1	X $ =		OR	X $52=	52
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $ =		OR	X $220=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	52

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/Wanda Meredith/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/231,349	09/19/2005	Brett Bernath	EC04004USU	4520

78271 7590 09/04/2008

The Eclipse Group LLP
10605 Balboa Blvd
Suite 300
Granada Hills, CA 91344

EXAMINER	
LEIJA, JAMES	
ART UNIT	PAPER NUMBER
2623	

MAIL DATE	DELIVERY MODE
09/04/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	11/231,349	BERNATH ET AL.	
	Examiner	Art Unit	
	JAMES LEIJA	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claim 14 recites the limitation "the adaptive communication techniques" in claim 14 line 1. There is insufficient antecedent basis for this limitation in the claim.

For the purposes of examination, examiner take the position that applicant meant claim 14 to be dependent of claim 11 for the purposes of readability.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-6, 8, 10-15, 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124).

As per claim 1 Dinwiddie teaches a Broadband Coaxial Network ("BCN'), comprising:

a first BCN modem (Dinwiddie fig 1A element 102) in signal communication with a coaxial cable network ("CCN"); and(Dinwiddie fig 1a and 1b illustrate a wired network), (Dinwiddie column 4 lines 40-45, column 5 lines 34-36 describe the wired network connected using by coaxial cable), (Dinwiddie column 9 lines 1-3 describes communication between a modem and network)

another BCN modem (Dinwiddie fig 1A and 1B elements 104, 106, 107 and 108) in signal communication with the CCN(Dinwiddie fig 1A and 1B illustrate elements 106, 107 and 108 connected to the network) that is capable of two-way signal communication with the first BCN modem (Dinwiddie column 11 lines 11-13) across one or more network devices in the CCN (Dinwiddie fig 1A and 1B element 22)

But Dinwiddie is silent on the network devices being passive and having a high isolation.

Gurantz teaches the network devices being passive and having a high isolation. (Gurantz page 2 [0020] lines 14-16, fig 2 illustrates network devices elements 230, 231 and 232 as passive device that have a high isolation)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network device of Dinwiddie by being passive and having a high isolation as taught by Gurantz in order to distribute downstream signals.

As per claim 2 Dinwiddie in view of Gurantz teach the BCN of claim 1, wherein the first BCN modem further includes a controller coupled to the first BCN modem that establishes the first BCN modem as a network controller upon connection to the CCN.(Dinwiddie column 11 lines 17-21 describes the use of elements 102 and 45 and as a “host” which reads on a network controller), (Dinwiddie column 11 lines 44-57 describe establishing the modem as the host), (Dinwiddie column 11 lines 7-13 describe the use of "plug and play" which reads on upon connection to the CCN)

As per claim 3 Dinwiddie in view of Gurantz teach the BCN of claim 1, BCN of claim 2, wherein a control signal is generated by the first BCN modem in response to the first BCN modem being the network controller. (Dinwiddie column 11 lines 54-55)

As per claim 4. The BCN of claim 1, wherein the another BCN modem further includes a controller coupled to the other BCN modem that detects a control signal that identifies a network controller is coupled to the CCN. (Dinwiddie column 11 lines 55-57)

As per claim 5 Dinwiddie in view of Gurantz teach the BCN of claim 1, wherein the signal communication occurs between the BCN modems that are located within a building. (Dinwiddie column 4 lines 15-18)

As per claim 6 Dinwiddie in view of Gurantz teach the BCN of claim 5, wherein the building is a single family home. (Dinwiddie column 4 lines 19-20)

As per claim 8 Dinwiddie in view of Gurantz teach the BCN of claim 1.

Dinwiddie teaches signal communication (Dinwiddie column 2 lines 36-38)

But Dinwiddie is silent on communication via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency(R_F) channels.

Gurantz teaches communication via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency(R_F) channels. (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used along with modulation as a communication scheme.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication of Dinwiddie by communicating using TDD and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transciever.

As per claim 10 Dinwiddie teaches a Broadband Coaxial Network ("BCN") for communicating on an in- building coaxial cable network ("CCN"), comprising:

a first BCN modem (Dinwiddie fig 1A element 102) connected to a coaxial cable network ("CCN"); and (Dinwiddie fig 1a and 1b illustrate a wired network), (Dinwiddie column 4 lines 40-45, column 5 lines 34-36 describe the wired network connected using by coaxial cable)

Dinwiddie teaches another BCN modem (Dinwiddie fig 1A and 1B elements 104, 106, 107 and 108) connected the CCN (Dinwiddie fig 1A and 1B illustrate elements 106, 107 and 108 connected to the network) that is capable of signal communication with the first BCN modem (Dinwiddie column 11 lines 11-13) across one or more network devices in the CCN (Dinwiddie fig 1A and 1B element 22)

But Dinwiddie is silent on the network devices being passive and having a high isolation.

Gurantz teaches the network devices being passive and having a high isolation. (Gurantz page 2 [0020] lines 14-16, fig 2 illustrates network devices elements 230, 231 and 232 as passive device that have a high isolation)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the network device of Dinwiddie by being passive and having a high isolation as taught by Gurantz in order to distribute downstream signals.

Dinwiddie teaches wherein the first BCN modem and the another BCN modem are configured to communicate with each other. (Dinwiddie fig 1A and 1B column 11 lines 11-13 describe pc modems communicating)

But Dinwiddie is silent on utilizing TDMA and Time Division Duplex (TDD) to communicate.

Gurantz teaches utilizing TDMA and Time Division Duplex (TDD). (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used as communication scheme, along with modulation)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication between two modems of Dinwiddie by communicating using

TDD and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transciever.

As per claim 11 Dinwiddie in view of Gurantz teach the BCN of claim 10, wherein the first BCN modem (Dinwiddie fig 5A) employs adaptive communication techniques that adapts to the characteristics of a coaxial channel between the first BCN modem and the other BCN modem. (Dinwiddie fig 5A elements 122 and 110, column 9 lines 36-40 describes a BALUM which converts the a signal to conform to the characteristics of the coaxial cable)

As per claim 12 Dinwiddie in view of Gurantz teach the BCN of claim 10, wherein the first BCN modems is directly in signal communication with the other BCN modem across the CCN. (Dinwiddie Fig 1 column 15 lines 25-34)

As per claim 13 Dinwiddie in view of Gurantz teach the BCN of claim 12

wherein the CCN is a type of network having a architectural configuration selected from a group consisting of

a star configuration and (Dinwiddie fig 12 illustrates the distribution unit of the network in a star configuration) a mesh configuration and a combinations of these configurations,

Dinwiddie teaches using the star configuration in an accessible fashion. (Dinwiddie column 12 lines 64-67 describes the use of signal paths for communication which reads on an accessible fashion)

But Dinwiddie is silent on a TDMA and Time Division Duplex (TDD) access fashion.

Gurantz teaches a TDMA and Time Division Duplex (TDD) access fashion. (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used along with modulation as communication scheme.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the access fashion of Dinwiddie by communicating using TDD and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transciever.

the type of network utilizes at least one frequency channel. (Gurantz page 4 [0039] lines 1-3 describes the use of TDD in the network, by utilizing a frequency.)

As per claim 14 Dinwiddie in view of Gurantz teach the BCN of claim 13, wherein adaptive communication techniques includes utilization of the adaptive communication techniques in both transmitting processing and receiving processing of data. (Dinwiddie fig 5A elements 122 column 9 lines 34-40 describes receiving processed data from a modulator which reads on receiving processing of data and processing that data in the BALUM and filter then transmitting the processed data.)

As per claim 15 Dinwiddie in view of Gurantz teach the BCN of claim 14, wherein the adaptive communication utilizes pre-coding for transmitting processing. (Dinwiddie column 9 lines 27-34 describe coding the data before transmitting the data.), (Dinwiddie column 9 lines 35-40 describe the BALUM and filter transmitting the processed data.)

As per claim 17 Dinwiddie in view of Gurantz teach the BCN of claim 14, wherein the adaptive communication techniques include pre-coding for (Dinwiddie column 9 lines 27-34 describe coding the data before transmitting the data.) transmitting processing based on known or learned channel response.(Dinwiddie column 9 lines 35-40 describe the BALUM and filter transmitting the processed data.), (Dinwiddie columns 9 lines 56-58 describe the coding as modulation which is a processing, as well as describing the modulation as based on a selected channel which reads on a known channel response)

As per claim 18 Dinwiddie in view of Gurantz teach the BCN of claim 14.

Dinwiddie teaches signal processing techniques are used (Dinwiddie column 9 lines 25-35 describe the use of RF modulation)

Dinwiddie is silent on using additional signal processing techniques selected from a group of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes.

Gurantz teaches using additional signal processing techniques selected from a group of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes. (Gurantz page 4 [0046]-[0047] describe the use of DMT and OFDM which reads on the use of additional processing techniques being OFDM)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the signal processing of Dinwiddie by processing using OFDM as taught by Gurantz in order to overcome the effects of inter-symbol interference.

Claims 7 , 16, 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and El Wardani et al. (Pub. No.: US 2003/0031191).

As per claim 7 Dinwiddie in view of Gurantz teach the BCN of claim 5.

Dinwiddie teaches the building as a dwelling unit (Dinwiddie column 4 lines 18-19)

But Dinwiddie is silent on the building being a multi-unit dwelling unit.

Wardini teaches a building being a multi-unit dwelling unit. (Wardini page 1 [0004] lines 1-3)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the building of Dinwiddie by being a multi dwelling unit taught by Wardini in order to provide to multiple users in a building.

As per claim 16 Dinwiddie in view of Gurantz teach the BCN of claim 14.

Dinwiddie teaches adaptive communication techniques. (Dinwiddie fig 5A elements 122 and 110, column 9 lines 36-40 describes a BALUM which converts the a signal to conform to the characteristics of the coaxial cable)

Dinwiddie is silent on utilizing adaptive equalization processing.

Wardini teaches utilizing adaptive equalization processing. (Wardini page 4 [0054])

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the adaptive communication techniques of Dinwiddie by utilizing an adaptive equalizer as taught by Wardini in order to improve the signal quality.

As per claim 25 Dinwiddie in view of Gurantz teach the BCN of claim 11, wherein the BCN modem is embedded as a part of a device selected from the group consisting of:

a set-top box ("STB"); a Personal Computer (PC); an IP STB; a Media Center box; a Media Extender box; a DVD player; a cable modem; a personal video recorder ("PVR"); a TV set; a networking device; a switch/router;

a bridge/Gateway; (Wardini fig 1 element 200 [0031] lines 5-8)

a video game console; a wireless access point (WAP); and a network attached storage.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify BCN of Dinwiddie by embedding the device within a bride as taught by Wardini in order to provide a mechanism to communicate signals between two systems.

As per claim 26 Dinwiddie in view of Gurantz and Wardani teach the BCN of claim 25, wherein the STB is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB.

Examiner takes the position that claim 26 is meant to further narrow claim 25. As such, claim 26 is not positively captured within claim 25 since claim 26 modifies an alternative.

As per claim 27 Dinwiddie in view of Gurantz and Wardini teach the BCN of claim 25, wherein the BCN modem utilizes the PCI bus structure. (Wardini page 3 [0040] lines 12-15 describes the use of an Ethernet interface which inherently utilizes the PCI bus structure)

As per claim 28 Dinwiddie in view of Gurantz and Wardini teach the BCN of claim 27, wherein the BCN modem utilizes another host device. (Wardini fig 4 page 3 [0038] describes the use of the modem in another devie)

As per claim 29 Dinwiddie in view of Gurantz and Wardini teach the BCN of claim 28, wherein the host device is either a bridging host device or a switching host device. (Wardini fig 4 page 3 [0038] describes the use of the modem in a bridging device.)

As per claim 30 Dinwiddie in view of Gurantz teach the BCN of claim 10.

Dinwiddie and Gurantz teach the use of a TDMA frequency channel in the BCN network

But Dinwiddie and Gurantz are silent on using one or more frequency bands:

above 860 MHz; between 860 MHz and 950 MHz; and below 50 MHz. above

Wardini teaches using one or more frequency bands: above 860 MHz; (Wardini fig 8 page 3 [0046] lines 1-4) between 860 MHz and 950 MHz; and (Wardini fig 8 page 3 [0046] lines 5-7) below 50 MHz. (Wardini fig 8 page 3 [0048])

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify frequency channel of Dinwiddie and Gurantz by being one of above 860 MHz; between 860 MHz and 950 MHz; and below 50 MHz as taught by Wardini in order to allow the network band to reside at any frequency on the cable.

As per claim 31 Dinwiddie in view of Gurantz teach the BCN of claim 10, wherein the CCN network is one of the following:

coaxial cables that have been installed for the carriage of satellite signals; and coaxial cables for video distribution.(Dinwiddie column 5 lines 50-55)

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Droge (Pub No.: US 2002/0004898).

As per claim 9 Dinwiddie in view of Gurantz teaches the BCN network of claim 1.

Dinwiddie teaches communication between the first and the other modem. (Dinwiddie column 11 lines 11-13)

Dinwiddie is silent on the signal communication carries encrypted data between the first BCN modem and the other BCN modem.

Droge teaches the signal communication carries encrypted data between the first BCN modem and the other BCN modem. (Droge Fig 2 elements 16 and 24, illustrates two modems in communication over a network, [0050] describes encrypting the data that's communicated.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication of Dinwiddie by encrypting the data as taught by Droge in order to provide secure transmitting and receiving.

Claims 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable Dinwiddie et al. (USPN 6,481,013) and further in view of Gurantz et al (Pub No.: US 2002/0166124) and Gorman et al. (USPN 6,137,793.)

As per claim 19 Dinwiddie in view of Gurantz teach the BCN of claim 14.

Dinwiddie is silent on including additional MAC and communication processing including the provision of best effort and reserved communication services, processes and protocol adaptations to adapt other communication services to operate over the BCN.

Gorman teaches an additional MAC and communication processing including (Gorman abstract lines 3-5, 11-14 describe the use of MAC and communication processing) the provision of best effort and reserved communication services, (Gorman column 6 lines 15-21)processes and protocol adaptations to adapt other communication services to operate over the BCN. (Gorman column 3 lines 48-54, describe service over a BCN, column 6 lines 63-67 describes using ATM adaption which reads on process and protocol adaptation.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the BCN of Dinwiddie by including MAC and communication processing including the provision of best effort and reserved communication services, processes and protocol adaptations to adapt other communication services to operate over the BCN as taught by Gorman in order to integrate multimedia services.

As per claim 20 Dinwiddie in view of Gurantz and Gorman teach the BCN of claim 19, wherein the communication services and processes includes utilization of a Network Controller ("NC") to control the access to the BCN. (Gorman column 5 lines 21-23)

As per claim 21 Dinwiddie in view of Gurantz and Gorman teach the BCN of claim 20, wherein the NC includes a configuration selected from the group consisting of:

a configuration that enables every BCN modem to act as a NC;

a configuration that utilizes a frequency plan; (Gorman column 12 lines 58-60 fig 1 illustrates the use of a cable TV network, which reads on a frequency plan.)

a configuration that allows a new BCN modem admission to the BCN Network; a configuration that allows a new BCN modem to communicate with another BCN modem to characterize the channel response between them and determine a bit loading in either direction; and a configuration that allows each BCN modem in the network to request and be granted a transmission opportunity without a transmission conflict.

As per claim 22 Dinwiddie in view of Gurantz and Gorman teach the BCN of claim 21, wherein the communications services provided by the BCN include BCN wide transmission priorities. (Gorman column 13 lines 22-27)

As per claim 23 Dinwiddie in view of Gurantz and Gorman teach the BCN of claim 22, wherein the BCN services include a configuration that provides reserved bandwidth communication services (Gorman column 6 lines 15-21)

Dinwiddie teaches wherein the first BCN modem and the another BCN modem are configured to communicate with each other. (Dinwiddie fig 1A and 1B column 11 lines 11-13 describe pc modems communicating)

But Dinwiddie is silent on utilizing TDMA and Time Division Duplex (TDD) to communicate.

Gurantz teaches utilizing TDMA and Time Division Duplex (TDD). (Gurantz page 3-4 [0039] describes using TDD and TDMA, which are used as communication scheme, along with modulation)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication between two modems of Dinwiddie by communicating using TDD and TDMA as taught by Gurantz in order to receive and transmit data and provide a simplified transciever.

As per claim 24 Dinwiddie in view of Gurantz and Gorman teach the BCN of claim 19, wherein the BCN modem provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of:

Ethernet, (Gorman column 6 lines 53-57 describe ATM adaptation , column 7 lines 1-3 describe the use of Ethernet services) IEEE 1394, Universal Serial Bus ("USB"); ()and MPEG-TS.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES LEIJA whose telephone number is (571)270-5249. The examiner can normally be reached on M-F 730 am to 5pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ANDREW Y. KOENIG can be reached on (571) 272-7296. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. L./
Examiner, Art Unit 2623

/Andrew Y Koenig/
Supervisory Patent Examiner, Art Unit 2623

Notice of References Cited	Application/Control No. 11/231,349	Applicant(s)/Patent Under Reexamination BERNATH ET AL.	
	Examiner JAMES LEIJA	Art Unit 2623	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,137,793 A	10-2000	Gorman et al.	370/360
*	B	US-2002/0004898 A1	01-2002	Droge, John C.	713/151
*	C	US-6,481,013 B1	11-2002	Dinwiddie et al.	725/80
*	D	US-2002/0166124 A1	11-2002	Gurantz et al.	725/78
*	E	US-2003/0031191 A1	02-2003	El Wardani et al.	370/401
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	71	(modem same (IPsec or ip?sec)) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/19 13:20
S1	162	(BERNATH near3 BRETT).in. (MONK near3 ANTON).in. (GURANTZ near3 ITZHAK).in. (WARDANI near3 LADD).in. (PORAT near3 RON).in. (OZTURK near3 YUSUF).in. (LEE near3 RON).in. (GOH near3 WEE-PENG).in. (BERGGREN near3 MAGNUS).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/07/30 20:05
S2	15	(BERNATH near3 BRETT).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/07/30 20:07
S3	6	(MONK near3 ANTON).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/07/30 20:07
S4	21	(GURANTZ near3 ITZHAK).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/07/30 20:07
S5	5	(WARDANI near3 LADD).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/07/30 20:07
S6	12	(PORAT near3 RON).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/07/30 20:07

S7	2	(OZTURK near3 YUSUF).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/07/30 20:07
S8	68	(LEE near3 RON).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/07/30 20:07
S9	0	(GOH near3 WEE-PENG).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/07/30 20:07
S10	50	(BERGGREN near3 MAGNUS).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/07/30 20:08
S11	6	(GOH near3 WEE).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/07/30 20:08
S12	168	(BERNATH near3 BRETT).in. (MONK near3 ANTON).in. (GURANTZ near3 ITZHAK).in. (WARDANI near3 LADD).in. (PORAT near3 RON).in. (OZTURK near3 YUSUF).in. (LEE near3 RON).in. (GOH near3 WEE).in. (BERGGREN near3 MAGNUS).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/07/31 09:36
S13	102	((BERNATH near3 BRETT).in. (MONK near3 ANTON).in. (GURANTZ near3 ITZHAK).in. (WARDANI near3 LADD).in. (PORAT near3 RON).in. (OZTURK near3 YUSUF).in. (LEE near3 RON).in. (GOH near3 WEE).in. (BERGGREN near3 MAGNUS).in.)	US-PGPUB; USPAT	OR	OFF	2008/07/31 09:36

S14	5	((BERNATH near3 BRETT).in. (MONK near3 ANTON).in. (GURANTZ near3 ITZHAK).in. (WARDANI near3 LADD).in. (PORAT near3 RON).in. (OZTURK near3 YUSUF).in. (LEE near3 RON).in. (GOH near3 WEE).in. (BERGGREN near3 MAGNUS).in.) and (broadband near5 (modem or network))	US-PGPUB; USPAT	OR	OFF	2008/07/31 09:40
S15	5	((BERNATH near3 BRETT).in. (MONK near3 ANTON).in. (GURANTZ near3 ITZHAK).in. (WARDANI near3 LADD).in. (PORAT near3 RON).in. (OZTURK near3 YUSUF).in. (LEE near3 RON).in. (GOH near3 WEE).in. (BERGGREN near3 MAGNUS).in.) and ((broadband BCN ccn) near5 (modem or network))	US-PGPUB; USPAT	OR	OFF	2008/07/31 09:49
S16	5	((BERNATH near3 BRETT).in. (MONK near3 ANTON).in. (GURANTZ near3 ITZHAK).in. (WARDANI near3 LADD).in. (PORAT near3 RON).in. (OZTURK near3 YUSUF).in. (LEE near3 RON).in. (GOH near3 WEE).in. (BERGGREN near3 MAGNUS).in.) and ((broadband BCN ccn) near5 (modem or network))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/07/31 12:20
S17	1	"20050114904"	US-PGPUB; USPAT	OR	OFF	2008/08/12 11:51
S18	1	"7295518"	US-PGPUB; USPAT	OR	OFF	2008/08/12 11:52
S19	1	"6886181".pn.	US-PGPUB; USPAT	OR	OFF	2008/08/12 12:03
S20	2	"20010052130" "6481013".pn.	US-PGPUB; USPAT	OR	OFF	2008/08/12 12:06
S21	399	725/80.ccls.	US-PGPUB; USPAT	OR	OFF	2008/08/12 12:47
S22	370	725/78.ccls.	US-PGPUB; USPAT	OR	OFF	2008/08/12 12:48
S23	664	725/109.ccls.	US-PGPUB; USPAT	OR	OFF	2008/08/12 12:51
S24	0	S21 and S22 and S23	US-PGPUB; USPAT	OR	OFF	2008/08/12 12:52
S25	82	S21 and S22	US-PGPUB; USPAT	OR	OFF	2008/08/12 12:52
S26	7	S23 and S22	US-PGPUB; USPAT	OR	OFF	2008/08/12 12:52
S27	69	(S21 S22 S23) and ("370".clas.)	US-PGPUB; USPAT	OR	OFF	2008/08/12 12:54

S28	969	("725".clas.) and ("370".clas.)	US-PGPUB; USPAT	OR	OFF	2008/08/12 12:56
S29	859	(("725".clas.) and ("370".clas.)) and network$4	US-PGPUB; USPAT	OR	OFF	2008/08/12 12:56
S30	660	(("725".clas.) and ("370".clas.)) and network$4 and cabl$3	US-PGPUB; USPAT	OR	OFF	2008/08/12 12:56
S31	623	(("725".clas.) and ("370".clas.)) and network$4 and cabl$3 and control$3	US-PGPUB; USPAT	OR	OFF	2008/08/12 12:56
S32	213	(("725".clas.) and ("370".clas.)) and network$4 adj3 devic$3	US-PGPUB; USPAT	OR	OFF	2008/08/12 12:57
S33	208	(("725".clas.) and ("370".clas.)) and mac	US-PGPUB; USPAT	OR	OFF	2008/08/12 13:08
S34	213	(("725".clas.) and ("370".clas.)) and (network$4 adj3 devic$3)	US-PGPUB; USPAT	OR	OFF	2008/08/12 13:08
S35	89	(("725".clas.) and ("370".clas.)) and (network$4 adj3 devic$3) and mac	US-PGPUB; USPAT	OR	OFF	2008/08/12 13:08
S36	41	(("725".clas.) and ("370".clas.)) and (network$4 adj3 devic$3) and duplex	US-PGPUB; USPAT	OR	OFF	2008/08/12 13:10
S37	19	(("725".clas.) and ("370".clas.)) and (network$4 adj3 devic$3) and duplex and tdma	US-PGPUB; USPAT	OR	OFF	2008/08/12 13:10
S38	2	(("725".clas.) and ("370".clas.)) and (network$4 adj3 devic$3) and (duplex same tdma)	US-PGPUB; USPAT	OR	OFF	2008/08/12 13:10
S39	2	"6091932".pn. "7068712".pn.	US-PGPUB; USPAT	OR	OFF	2008/08/12 13:21
S40	2	"6081519".pn. "5642155".pn.	US-PGPUB; USPAT	OR	OFF	2008/08/12 17:04
S42	5	"7154957".pn. "7295518".pn. "20020166124" "20030031191" "20050114904"	US-PGPUB; USPAT	OR	OFF	2008/08/13 10:52
S43	23	modem adj5 signal adj5 coaxial	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/13 11:00
S44	3	modem adj5 signal adj5 coaxial adj5 network	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/13 11:01
S45	43657	modem same (time (duplex or division))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/13 11:30

S46	8876	modem near5 (time (duplex or division))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/13 11:30
S47	1128	modem near5 (time (duplex or division)) and coaxial	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/13 11:30
S48	3	(LAN near3 modem) near5 (time (duplex or division)) and coaxial	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/13 11:31
S49	489	modem near5 (time adj5 (duplex or division))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/13 11:32
S50	181	modem near5 (time adj5 (duplex or division)) and coaxial	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/13 11:33
S51	184	modem near5 (time adj5 (duplex or division)) and coax$5	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/13 11:33
S52	2	modem near5 (use or utiliz$5) near5 (time adj5 (duplex or division)) and coax$5	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/13 11:34
S53	0	"09645423"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/13 18:04
S54	1	"5255267".pn.	US-PGPUB; USPAT	OR	OFF	2008/08/13 18:10
S56	4864	modem same ((best adj2 effort) $3chron$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/14 19:21

S57	6371	modem same ((best adj2 effort) isochron$3 asynchron$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/14 19:22
S59	6371	modem same ((best adj2 effort) isochron$3 asynchron$3) and (ad<="20041202" @rlad<="20041202" @prad<="20041202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 09:54
S60	6371	(modem same ((best adj2 effort) isochron$3 asynchron$3)) and (ad<="20041202" @rlad<="20041202" @prad<="20041202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 10:00
S61	6371	(modem same ((best adj2 effort) isochron$3 asynchron$3)) and (ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 10:00
S62	5338	(modem same ((best adj2 effort) isochron$3 asynchron$3)) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 10:01
S63	5338	(modem same ((best adj2 effort) isochron$3 asynchron$3)) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 10:01
S64	913	(modem same ((best adj2 effort) ((isochron$3 asynchron$3) near5 communicat$5))) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 10:03
S65	5338	(modem same ((best adj2 effort) ((isochron$3 asynchron$3) adj3communicat$5))) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 10:03
S66	104	(modem same ((best adj2 effort) ((isochron$3 asynchron$3) adj 3communicat$5))) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 10:03

S67	532	(modem same ((best adj2 effort) ((isochron$3 asynchron$3) adj3 communicat$5))) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 10:03
S68	344	(modem same ((best adj2 effort) ((isochron$3 asynchron$3) adj communicat$5))) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 10:04
S69	56	((multipl$3 same modem) same ((best adj2 effort) ((isochron$3 asynchron$3) adj communicat $5))) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 10:04
S70	56	((multipl$3 same modem$3) same ((best adj2 effort) ((isochron$3 asynchron$3) adj communicat$5))) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 10:05
S71	7	(((multipl$3 near5 modem$3) same (hom$3 hous$4)) and ((best adj2 effort) ((isochron$3 asynchron$3) adj communicat $5))) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 10:11
S72	13646	(((multipl$3 near5 modem$3)) ((best adj2 effort) ((isochron$3 asynchron$3) adj communicat $5))) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 10:14
S73	4	(((multipl$3 near5 modem$3)) same ((best adj2 effort) ((isochron$3 asynchron$3) adj communicat$5))) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 10:16
S78	13	(((multipl$3 near5 modem$3) same (hom$3 hous$3 dwell$5 build$4)) and((best adj2 effort) ((isochron$3 asynchron$3) adj communicat$5)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 10:23

S79	13	(((multipl$3 near5 modem$3) same (hom$3 hous$3 dwell$5 build$4)) and ((best adj2 effort) ((isochron$3 asynchron$3) adj communicat$5)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 10:23
S80	2	"6879574".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 10:25
S81	2	"20030235175"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 10:28
S82	1960	(modem with asynchronous) and (hom$3 hous$3 dwell$5 build$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 10:41
S83	647	(modem with asynchronous) and (modem$3 same (hom$3 hous$3 dwell$5 build$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 10:41
S84	219	(modem near5 asynchronous) and (modem$3 same (hom$3 hous$3 dwell$5 build$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 10:42
S85	202	(modem near5 asynchronous) and (modem$3 same (hom$3 hous$3 dwell$5 build$4)) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 10:50
S86	49	(coaxial$5) and (modem near5 asynchronous) and (modem$3 same (hom$3 hous$3 dwell$5 build$4)) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 10:53
S87	3	"20020131455"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 11:15

S88	8919	(modem same (MAC (best adj2 effort) isochron$3 asynchron$3)) and (ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 12:21
S89	8198	((modem mac)same ((best adj2 effort) isochron$3 asynchron$3)) and (ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 12:21
S90	342	((modem with asynchronous) and MAC) and (hom$3 hous$3 dwell$5 build$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 12:25
S91	1228	((modem with asynchronous) and (MAC or media acces controll)) and (hom$3 hous$3 dwell$5 build$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 12:26
S92	342	((modem with asynchronous) and (MAC or media adj acces adj controll)) and (hom$3 hous$3 dwell$5 build$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 12:26
S93	342	((modem with asynchronous) and (MAC or (media adj acces adj controll))) and (hom$3 hous $3 dwell$5 build$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 12:26
S94	1879	(modem same (MAC or (media adj acces adj control$4))) and (hom$3 hous$3 dwell$5 build$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 12:27
S95	648	(modem same (MAC or (media adj acces adj control$4))) and (hom$3 hous$3 dwell$5 build$4) and asynchron$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 12:28
S96	132	modem same (best adj2 effort)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 12:37

S97	104	(modem same (best adj2 effort)) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 12:37
S98	42	(modem same (best adj2 effort)) and MAC and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 12:38
S99	42	((modem same (best adj2 effort)) and MAC) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 12:38
S100	2	"7242694".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 12:40
S101	15	((modem same (best adj2 effort)) and MAC) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202") and (isochronous asynchronous)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 14:11
S105	15	(modem same (best adj2 effort)) and MAC and asynchronous	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 14:12
S108	1	(modem same (best adj2 effort)) and MAC and isochronous	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 14:13
S109	44	modem and (best adj2 effort) and MAC and isochronous	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 14:17
S110	42	modem and (best adj2 effort) and MAC and isochronous and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 14:17

S111	32	modem and (best adj2 effort) and MAC and isochronous and asynchronous and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 14:17
S112	2	"20050007990"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 14:50
S113	8	"20050007990" "6327630"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 14:51
S114	4	"20050007990" "6327630".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/15 14:51
S115	1	"20020166124"	US-PGPUB; USPAT	OR	OFF	2008/08/18 11:50
S116	1	"7154957".pn.	US-PGPUB; USPAT	OR	OFF	2008/08/18 11:55
S117	3517	(modem with (network adj3 control$3)) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/19 11:12
S118	2185	(modem near5 (network adj3 control$3)) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/19 11:12
S119	435	((modem near5 (network adj3 control$3)) same (control$3 with signal)) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/19 11:13
S120	31	((modem near5 (network adj3 control$3)) same (control$3 with signal)) and (@ad<="20031202" @rlad<="20031202" @prad<="20031202") and build $4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/19 11:13

S121	42	modem and (best adj2 effort) and MAC and isochronous and (@ad<="20041202" @rlad<="20041202" @prad<="20041202")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/19 11:32
S125	31	((modem near5 (network adj3 control$3)) same (control$3 with signal)) and (@ad<="20041202" @rlad<="20041202" @prad<="20041202") and build $4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2008/08/19 11:34

8/19/2008 2:38:05 PM
C:\Documents and Settings\jleija\My Documents\EAST\Workspaces\11231349.wsp

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	Art Unit
	JAMES LEIJA	2623

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	08/19/2008								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
	6	✓								
	7	✓								
	8	✓								
	9	✓								
	10	✓								
	11	✓								
	12	✓								
	13	✓								
	14	✓								
	15	✓								
	16	✓								
	17	✓								
	18	✓								
	19	✓								
	20	✓								
	21	✓								
	22	✓								
	23	✓								
	24	✓								
	25	✓								
	26	✓								
	27	✓								
	28	✓								
	29	✓								
	30	✓								
	31	✓								

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11231349	BERNATH ET AL.
	Examiner	Art Unit
	JAMES LEIJA	2623

SEARCHED			
Class	Subclass	Date	Examiner
725	78, 80, 109	8/19/2008	JL

SEARCH NOTES		
Search Notes	Date	Examiner
EAST	8/19/2008	JL
Spoke with Joe Ustaris regarding class subclass and keyword search	8/19/2008	JL

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

BIB DATA SHEET

CONFIRMATION NO. 4520

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
11/231,349	09/19/2005	725	2623	EC04004USU

APPLICANTS

Brett Bernath, San Diego, CA;
Anton Monk, San Diego, CA;
Itzhak Gurantz, San Diego, CA;
Ladd El Wardani, La Jolla, CA;
Ron Porat, San Diego, CA;
Yusuf Ozturk, San Diego, CA;
Ron Lee, San Diego, CA;
Wee-Peng Goh, Murrieta, CA;
Magnus Berggren, San Diego, CA;

**** CONTINUING DATA ***************************

This appln claims benefit of 60/633,091 12/02/2004
and claims benefit of 60/632,797 12/02/2004
and claims benefit of 60/633,002 12/02/2004
and claims benefit of 60/632,856 12/02/2004

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****

10/13/2005

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /JAMES LEIJA/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		CA	18	31	2

ADDRESS

The Eclipse Group LLP
10605 Balboa Blvd
Suite 300
Granada Hills, CA 91344
UNITED STATES

TITLE

Broadband local area network

FILING FEE RECEIVED		
840	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

BIB (Rev. 05/07).

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
11/231,349		2623	

Correspondence Address / Fee Address Change

The following fields have been set to Customer Number 78271 on 03/24/2008

- Correspondence Address
- Maintenance Fee Address

The address of record for Customer Number 78271 is:
The Eclipse Group LLP
10605 Balboa Blvd
Suite 300
Granada Hills,CA 91344

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
11/231,349		2623	

Correspondence Address / Fee Address Change

The following fields have been set to Customer Number 78271 on 03/17/2008

- Correspondence Address
- Maintenance Fee Address

The address of record for Customer Number 78271 is:
The Eclipse Group LLP
10605 Balboa Blvd
Suite 300
Granada Hills,CA 91344

RECEIVED
CENTRAL FAX CENTER
AUG 28 2006

ITW

FAX COVER SHEET

THE ECLIPSE GROUP

10605 Balboa Blvd., Suite 300
Granada Hills, CA 91344
Phone: (818) 488-8140
Fax: (818) 332-4205

Send to: USPTO	**From: Mariana Paula Noli**
Company: USPTO	Date: August 28 , 2006
Fax Number: (571) 273-8300	Phone No.: (818) 488-8143

- ☐ Urgent
- ☐ Reply ASAP
- ☐ Please comment
- ☐ Please review
- ☐ For your information

RECEIVED
SEP 01 2006
OFFICE OF PETITIONS

Total pages, including cover: 5

Comments:

Applicant: Entropic Communications, Inc.
Title: "Broadband Local Area Network"
Application No.: 11/231,349
Attorney Docket Number: EC04004USU

Please acknowledge receipt of the following LOSS OF ENTITLEMENT TO SMALL ENTITY STATUS UNDER 37 C.F.R. § 1.27 (g)(2):

1) Loss of Entitlement to Small Entity Status under 37 C.F.R. § 1.27(g) (2) (2 pages + copy); and
2) Credit Card Authorization in the amount of $1,635.00 (1 page).

CERTIFICATE OF TRANSMISSION

I hereby certify that this document (along with any papers referenced as being attached or enclosed) is being transmitted to the United States Patent and Trademark Office via facsimile to Fax No. (571) 273-8300, on the date set forth above.

Mariana Paula Noli

RECEIVED
SEP 20 2006
OFFICE OF PETITIONS

PATENT ASSISTANCE DIVISION

2006 AUG 29 PM 4:33

US PATENT & TRADEMARK OFFICE

The Eclipse Group Docket No. EC04004USU

RECEIVED
CENTRAL FAX CENTER
AUG 2 8 2006

DOCKET NO.:	EC04004USU
APPLICANT:	Entropic Communications, Inc.
TITLE:	Broadband Local Area Network
SERIAL NO.:	11/231,349
FILING DATE:	09/19/2005
EXAMINER:	Not Yet Assigned
GROUP ART UNIT:	2611
CONFIRMATION NO.:	4520

CERTIFICATE OF TRANSMISSION

I certify that on August 28, 2006, the attached correspondence is being transmitted via facsimile to the Commissioner for Patents at (571) 273-8300.

Mariana Paula Noli

08/30/2006 DALLEN 00000015 11231349

01 FC:1461 1635.00 OP

RECEIVED
SEP 0 1 2006
OFFICE OF PETITIONS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22213-1450

LOSS OF ENTITLEMENT TO SMALL ENTITY STATUS UNDER 37 C.F.R. § 1.27(g)(2)

RECEIVED
SEP 2 0 2006
OFFICE OF PETITIONS

Dear Commissioner:

The above-referenced patent application has been assigned to Applicant Entropic Communications, Inc. ("Entropic"), by Assignment recorded August 25, 2006, at Reel 018175, Frame 0650. Entropic's status as a small entity has changed due to its entry into a License Agreement in connection with this matter with an entity that does not qualify as a small entity. The undersigned attorney was not made aware of the License Agreement until after the filing date of this application. The above-referenced patent application is no longer entitled to small entity status.

PAGE 2/5 * RCVD AT 8/28/2006 7:54:47 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-3/18 * DNIS:2738300 * CSID:8183324205 * DURATION (mm-ss):01-28

The Eclipse Group Docket No. EC04004USU

Because this matter was erroneously submitted as an application entitled to small entity status and in order to correct this inadvertent mistake, enclosed herewith is a Credit Card Authorization in the amount of $1,635.00 to cover the difference in fees between the current fee for a non-provisional application submitted by an entity not entitled to small entity status and the fee for a non-provisional application submitted by a small entity previously paid with a Transmittal of Missing Parts submitted March 23, 2006, together with the additional fees required for the late oath or declaration surcharge, the additional claims, and a four-month extension of time. The Commissioner is hereby authorized to charge any additional fees as required or credit any overpayment to Deposit Account No. 50-2542. A duplicate copy of this notification of Loss of Entitlement to Small Entity Status is enclosed.

Correction of the entity status of said application is respectfully requested to be entered into the records of the United States Patent and Trademark Office. This change of entity status is signed by an attorney of record as required by 37 C.F.R. § 1.33(b).

RECEIVED
SEP 0 1 2006
OFFICE OF PETITIONS

Respectfully submitted,

THE ECLIPSE GROUP LLP
Attorney for Applicant

Date: 8/28/06

By Jeffrey C. Wilk
Jeffrey C. Wilk, Reg. No. 42,227

10605 Balboa Blvd., Suite 300
Granada Hills, CA 91344

(818) 488-8148 Telephone
(818) 332-4205 Facsimile
jcw@eclipsegrp.com

RECEIVED
SEP 2 0 2006
OFFICE OF PETITIONS

Enc. Credit Card Authorization

Customer No. 34408

PAGE 3/5 * RCVD AT 8/28/2006 7:54:47 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-3/18 * DNIS:2738300 * CSID:8183324205 * DURATION (mm-ss):01-28

The Eclipse Group Docket No. EC04004USU

Because this matter was erroneously submitted as an application entitled to small entity status and in order to correct this inadvertent mistake, enclosed herewith is a Credit Card Authorization in the amount of $1,635.00 to cover the difference in fees between the current fee for a non-provisional application submitted by an entity not entitled to small entity status and the fee for a non-provisional application submitted by a small entity previously paid with a Transmittal of Missing Parts submitted March 23, 2006, together with the additional fees required for the late oath or declaration surcharge, the additional claims, and a four-month extension of time. The Commissioner is hereby authorized to charge any additional fees as required or credit any overpayment to Deposit Account No. 50-2542. A duplicate copy of this notification of Loss of Entitlement to Small Entity Status is enclosed.

Correction of the entity status of said application is respectfully requested to be entered into the records of the United States Patent and Trademark Office. This change of entity status is signed by an attorney of record as required by 37 C.F.R. § 1.33(b).

RECEIVED
SEP 20 2006
OFFICE OF PETITIONS

Respectfully submitted,

THE ECLIPSE GROUP LLP
Attorney for Applicant

Date: 8/28/06

By Jeffrey C. Wilk

Jeffrey C. Wilk, Reg. No. 42,227

10605 Balboa Blvd., Suite 300
Granada Hills, CA 91344

(818) 488-8148 Telephone
(818) 332-4205 Facsimile
jcw@eclipsegrp.com

RECEIVED
SEP 01 2006
OFFICE OF PETITIONS

Enc. Credit Card Authorization

Customer No. 34408

PAGE 4/5 * RCVD AT 8/28/2006 7:54:47 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-3/18 * DNIS:2738300 * CSID:8183324205 * DURATION (mm-ss):01-28

FAX COVER SHEET

RECEIVED
CENTRAL FAX CENTER
MAR 23 2006

THE ECLIPSE GROUP

10605 Balboa Blvd., Suite 300
Granada Hills, CA 91344
Phone: (818) 488-8140
Fax: (818) 332-4205

Send to: Mail Stop Missing Parts	**From: Mariana Paula Noli**
Company: USPTO	Date: March 23, 2006
Fax Number: (571) 273-8300	Phone No.: (818) 488-8143

- ☐ Urgent
- ☐ Reply ASAP
- ☐ Please comment
- ☐ Please review
- ☐ For your information

Total pages, including cover: 19

Comments:

Applicant: Entropic Communications, Inc.
Title: "BROADBAND LOCAL AREA NETWORK"
Application No.: 11/231,349
Attorney Docket Number: EC04004USU

Please acknowledge receipt of the following RESPONSE TO NOTICE TO FILE MISSING PARTS:

1) Transmittal of Missing Parts (2 pages + copy);
2) Copy of the Notice to File Missing Parts mailed October 15, 2005 (2 pages);
3) Copy of the Declaration and POA signed by inventors Brett Bernath, Anton Monk, Itzhak Gurantz, Ladd El Wardani, Ron Porat, Yusuf Ozturk, Ron Lee, Wee-Peng Goh, Magnus Berggren (7 pages);
4) Preliminary Amendment under 37 C.F.R. 1.115 (3 pages);
5) Form PTO/SB/22 Petition for Extension of Time under 37 C.F.R. 1.136(a) (1 page + copy); and
6) Credit Card Authorization in the amount of $1,635.00 (1 page).

CERTIFICATE OF TRANSMISSION

I hereby certify that this document (along with any papers referenced as being attached or enclosed) is being transmitted to the United States Patent and Trademark Office via facsimile to Fax No. (571) 273-8300, on the date set forth above.

Mariana Paula Noli

PAGE 1/18 * RCVD AT 3/23/2006 6:05:00 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-6/32 * DNIS:2738300 * CSID:8183324205 * DURATION (mm-ss):05-42

RECEIVED
CENTRAL FAX CENTER
MAR 23 2006

Atty. Docket: EC04004USU

PATENT
SERIAL NO. 11/231,349

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of Entropic Communications, Inc.	Group Art: 2611
Inventor(s): Brett Bernath et al.	Examiner: Not Yet Assigned
Serial No.: 11/231,349	
Filed: 09/19/2005	
Title: Broadband Local Area Network	

CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence (along with any paper referred to as being attached or enclosed) is being transmitted via facsimile to the United States Patent and Trademark Office, Fax No. (571) 273-8300 on March 23, 2006.

Mariana Paula Noli

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF MISSING PARTS

Dear Commissioner:

Applicants are in receipt of the Notice to File Missing Parts, dated October 13, 2005, setting a two-month shortened statutory period within which to respond which expires December 13, 2005.

Applicants hereby request a four-month extension of time within which to reply to the Notice to File Missing Parts. A credit card authorization in the amount of $795.00 to cover the extension fee is enclosed with this response. Therefore, this response is being timely submitted.

In response to the Notice to File Missing Parts, Applicant has enclosed the following:

1. A Copy of the Notice of Missing Parts mailed on October 13, 2005 (2 pages);

2. A Copy of the Combined Declaration and POA signed by inventors Brett Bernath, Anton Monk, Itzhak Gurantz, Ladd El Wardani, Ron Porat, Yusuf Ozturk, Ron Lee, Wee-Peng Goh, Magnus Berggren (7 pages); and

3. Preliminary Amendment under 37 C.F.R. 1.115 (3 pages);

Atty. Docket: EC04004USU

PATENT
SERIAL NO. 11/231,349

4. Credit Card Authorization in the amount of $1,635.00 ($150.00 statutory basic filing fee; $65.00 late oath and declaration surcharge; $250.00 application search fee; $100.00 application examination fee; $275.00 for 11 claims over 20; and $795.00 four month extension of time.)

The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to our Deposit Account No. 502542. A copy of this sheet is enclosed.

Respectfully submitted,

THE ECLIPSE GROUP

Date: 3/23/06

By: Jeffrey C. Wilk
Jeffrey C. Wilk, Reg. No. 42,227

10605 Balboa Blvd., Suite 300
Granada Hills, CA 91344
(818) 488-8148 Telephone
(818) 332-4205 Facsimile

Customer No. 34408

Atty. Docket: EC04004USU

PATENT
SERIAL NO. 11/231,349

4. Credit Card Authorization in the amount of $1,635.00 ($150.00 statutory basic filing fee; $65.00 late oath and declaration surcharge; $250.00 application search fee; $100.00 application examination fee; $275.00 for 11 claims over 20; and $795.00 four month extension of time.)

The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to our Deposit Account No. 502542. A copy of this sheet is enclosed.

Respectfully submitted,

THE ECLIPSE GROUP

Date: 3/23/06

By: Jeffrey C. Wilk
Jeffrey C. Wilk, Reg. No. 42,227

10605 Balboa Blvd., Suite 300
Granada Hills, CA 91344
(818) 488-8148 Telephone
(818) 332-4205 Facsimile

Customer No. 34408



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
11/231,349	09/19/2005	Anton Monk	EC04004USU

CONFIRMATION NO. 4520

34408
THE ECLIPSE GROUP
10605 BALBOA BLVD., SUITE 300
GRANADA HILLS, CA 91344

FORMALITIES LETTER

Date Mailed: 10/13/2005

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is missing.
  Applicant must submit $ **150** *to complete the basic filing fee for a small entity.*
- The oath or declaration is missing. *A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.*
  Note: If a petition under 37 CFR 1.47 is being filed, an oath or declaration in compliance with 37 CFR 1.63 signed by all available joint inventors, or if no inventor is available by a party with sufficient proprietary interest, is required.

The applicant needs to satisfy supplemental fees problems indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- Additional claim fees of **$275** as a small entity, including any required multiple dependent claim fee, are required. Applicant must submit the additional claim fees or cancel the additional claims for which fees are due.
- To avoid abandonment, a surcharge (for late submission of filing fee, search fee, examination fee or oath or declaration) as set forth in 37 CFR 1.16(f) of $65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.

SUMMARY OF FEES DUE:

Total additional fee(s) required for this application is **$840** for a Small Entity

- **$150** Statutory basic filing fee.
- **$65** Surcharge.

- The application search fee has not been paid. Applicant must submit **$250** to complete the search fee.
- The application examination fee has not been paid. Applicant must submit **$100** to complete the examination fee for a small entity in compliance with 37 CFR 1.27

- Total additional claim fee(s) for this application is **$275**
  - **$275** for **11** total claims over 20.

Replies should be mailed to: Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

A copy of this notice MUST be returned with the reply.

Office of Initial Patent Examination (571) 272-4000, or 1-800-PTO-9199, or 1-800-972-6382
PART 2 - COPY TO BE RETURNED WITH RESPONSE

Atty. Docket No. EC04004USU PATENT

COMBINED DECLARATION AND POWER OF ATTORNEY

As a below-named inventor, I hereby declare that:

1. My residence, post office address, and citizenship are as stated below next to my name.

2. I believe I am the original and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention titled:

A BROADBAND LOCAL AREA NETWORK

the specification of which (check one):

☐ is attached hereto.
☒ was filed on: September 19, 2005 as
Application Serial No.: 11/231,349
☐ and was amended on: _____

3. I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims.

4. I acknowledge the duty to disclose information which is material to patentability as described in 37 C.F.R. 1.56, which is defined on the attached page.

5. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

6. I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional patent applications listed below.

Prior United States Application(s)

60/633,091	December 2, 2004	Pending
(Application Serial No.)	(Filing Date)	(Status)-(Patented, pending, abandoned)

PAGE 7/18 * RCVD AT 3/23/2006 6:05:00 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-6/32 * DNIS:2738300 * CSID:8183324205 * DURATION (mm-ss):05-42

60/632,797 (Application Serial No.)	December 2, 2004 (Filing Date)	Pending (Status)-(Patented, pending, abandoned)
60/633,002 (Application Serial No.)	December 2, 2004 (Filing Date)	Pending (Status)-(Patented, pending, abandoned)
60/632,856 (Application Serial No.)	December 2, 2004 (Filing Date)	Pending (Status)-(Patented, pending, abandoned)

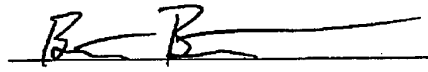
7. I hereby appoint Jennifer H. Hamilton (Reg. No. 41,814), Francisco A. Rubio-Campos (Reg. No. 45,358), Gregory B. Gulliver (Reg. No. 44,138), Jeffrey C. Wilk (Reg. No. 42,227), David P. Gloekler (Reg. No. 41,037), Kevin E. Flynn (Reg. No. 37,325), James M. Brown (Reg. No. 30,033), and other registered patent attorneys and agents of the firm The Eclipse Group, as my attorneys with full power of substitution and revocation, to prosecute this application and to transact all business in the United States Patent and Trademark Office connected therewith.

Please direct all correspondence to:

Jennifer H. Hamilton
THE ECLIPSE GROUP
10605 Balboa Blvd., Suite 300
Granada Hills, CA 91344

Please direct telephone calls to Jennifer H. Hamilton at 818.831.9431 (facsimile 818.332.4205).

Full name of first joint inventor: BRETT BERNATH

Signature of inventor: 

Date: 11/21/05

Residence and Post Office Address: 4167 Calle Marde Ballenas
San Diego, CA 92130

Citizenship: US

PAGE 8/18 * RCVD AT 3/23/2006 6:05:00 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-6/32 * DNIS:2738300 * CSID:8183324205 * DURATION (mm-ss):05-42

Full name of second joint inventor: ANTON MONK

Signature of inventor: _____

Date: _____

Residence and Post Office Address: 5706 Willowmere Lane,
San Diego, CA 92130

Citizenship: US

Full name of third joint inventor: ITZHAK GURANTZ

Signature of inventor: _____

Date: _____

Residence and Post Office Address: 5584 Shannon Ridge Lane
San Diego, CA 92130

Citizenship: US

Full name of fourth joint inventor: LADD EL WARDANI

Signature of inventor: _____

Date: _____

Residence and Post Office Address: 6416 La Jolla Scenic Dr. South
La Jolla, CA 92037

Citizenship: US

Full name of fifth joint inventor: RON PORAT

Signature of inventor: Ron Porat

Date: 3/16/06

Residence and Post Office Address: 2760 Farragut #112
San Diego, CA 92106

Citizenship: US

PAGE 9/18 * RCVD AT 3/23/2006 6:05:00 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-6/32 * DNIS:2738300 * CSID:8183324205 * DURATION (mm-ss):05-42

Full name of sixth joint inventor: YUSUF OZTURK

Signature of inventor:

Date: 20/3/2006

Residence and Post Office Address: 13092 Coyote Avenue,
San Diego, CA 92129

Citizenship: Turkey

Full name of seventh joint inventor: RON LEE

Signature of inventor: _____

Date: _____

Residence and Post Office Address: 12774 Seabreeze Farms Drive,
San Diego, CA 92130

Citizenship: US

Full name of eighth joint inventor: WEE-PENG GOH

Signature of inventor: _____

Date: _____

Residence and Post Office Address: 38347 Chestnut Circle
Murrieta, CA 92563

Citizenship: Singapore

Full name of ninth joint inventor: MAGNUS BERGGREN

Signature of inventor: _____

Date: _____

Residence and Post Office Address: 972 Reed Avenue
San Diego, CA 92109

Citizenship: Swedish

PAGE 10/18 * RCVD AT 3/23/2006 6:05:00 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-6/32 * DNIS:2738300 * CSID:8183324205 * DURATION (mm-ss):05-42

Full name of sixth joint inventor: YUSUF OZTURK

Signature of inventor: _____

Date: _____

Residence and Post Office Address: 13092 Coyote Avenue,
San Diego, CA 92129

Citizenship: Turkey

Full name of seventh joint inventor: RON LEE

Signature of inventor: [signature]

Date: 11/30/05

Residence and Post Office Address: 12774 Seabreeze Farms Drive,
San Diego, CA 92130

Citizenship: US

Full name of eighth joint inventor: WEE-PENG GOH

Signature of inventor: [signature]

Date: _____

Residence and Post Office Address: 38347 Chestnut Circle
Murrieta, CA 92563

Citizenship: Singapore

Full name of ninth joint inventor: MAGNUS BERGGREN

Signature of inventor: [signature]

Date: _____

Residence and Post Office Address: 972 Reed Avenue
San Diego, CA 92109

Citizenship: Swedish

PAGE 11/18 * RCVD AT 3/23/2006 6:05:00 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-6/32 * DNIS:2738300 * CSID:8183324205 * DURATION (mm-ss):05-42

Section 1.56 Duty to Disclose Information Material to Patentability.

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is cancelled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is cancelled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

(1) prior art cited in search reports of a foreign patent office in a counterpart application, and

(2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

(1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or

(2) It refutes, or is inconsistent with, a position the applicant takes in:

(i) Opposing an argument of unpatentability relied on by the Office, or

(ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

(1) Each inventor named in the application;

(2) Each attorney or agent who prepares or prosecutes the application; and

(3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.

(e) In any continuation-in-part application, the duty under this section includes the duty to disclose to the Office all information known to the person to be material to patentability, as defined in paragraph (b) of this section, which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

PAGE 12/18 * RCVD AT 3/23/2006 6:05:00 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-6/32 * DNIS:2738300 * CSID:8183324205 * DURATION (mm-ss):05-42

RECEIVED
CENTRAL FAX CENTER
MAR 2 3 2006

PATENT
Docket No.: EC04004USU
11/231,349

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Entropic Communications, Inc.	DOCKET NO.: EC04004USU
SERIAL NO.: 11/231,349	GROUP ART UNIT: 2611
DATE FILED: September 19, 2005	EXAMINER: Not yet assigned
	Confirmation No.: 6587

TITLE: BROADBAND LOCAL AREA NETWORK

Certificate of Transmission
I hereby certify that this correspondence (along with any paper referred to as being attached or enclosed) is being facsimile transmitted to the United States Patent and Trademark Office, Fax No. (571) 273-8300 on March 23, 2006.

Mariana Paula Noli

March 23, 2006

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRELIMINARY AMENDMENT UNDER 37 C.F.R. § 1.115

Sir:

This Preliminary Amendment is being submitted with Applicants' Response to Notice to File Missing Parts of Non-provisional Application mailed October 13, 2005. Entry of this Amendment is respectfully requested.

PATENT
Docket No.: EC04004USU
11/231,349

AMENDMENTS

To The Specification:

Please amend the specification as follows:

Please replace the list of inventors at the top of page 1 with the following:

INVENTORS
BRETT BERNATH
ANTON MONK
ITZHAK GURANTZ
LADD EL WARDANI
RON PORAT
YUSUF OZTURK
RON LEE
WEE-PENG GOH
&
MAGNUS BERGGREN

PAGE 14/18 * RCVD AT 3/23/2006 6:05:00 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-6/32 * DNIS:2738300 * CSID:8183324205 * DURATION (mm-ss):05-42

PATENT
Docket No.: EC04004USU
11/231,349

REMARKS

The enclosed amendment amend the specification by naming Brett Bernath as the first named inventor and naming Anton Monk, Itzhak Gurantz, Ladd El Wardani, Ron Porat, Yusuf Ozturk, Ron Lee, Wee-Peng Goh and Magnus Berggren as the additional inventors, in conformity with the Combined Declaration and Power of Attorney concurrently submitted herewith. This amendment does not involve any new matter or objectionable changes.

CONCLUSION

Entry of this Amendment is respectfully requested.

Respectfully submitted,
THE ECLIPSE GROUP

Date: March 23, 2006 By: Jeffrey C. Wilk

Jeffrey C. Wilk
Registration No. 42,227
Attorney for Applicant
Phone: (818) 488-8148
Fax: (714) 948-8903

The Eclipse Group
10605 Balboa Blvd., Suite 300
Granada Hills, CA 91344

Customer No. **34408**

PAGE 15/18 * RCVD AT 3/23/2006 6:05:00 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-6/32 * DNIS:2738300 * CSID:8183324205 * DURATION (mm-ss):05-42

RECEIVED
CENTRAL FAX CENTER
MAR 2 3 2006

PTO/SB/22 (12-04)
Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARMENT OF COMMERCE
Under the paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) FY 2005 (Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)	Docket Number (Optional) EC04004USU
Application Number 11/231,349	Filed 09/19/2005
For Broadband Local Area Network	
Art Unit 2611	Examiner Not Yet Assigned

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

		Fee	Small Entity Fee	
☐	One month (37 CFR 1.17(a)(1))	$120	$60	$
☐	Two months (37 CFR 1.17(a)(2))	$450	$225	$
☐	Three months (37 CFR 1.17(a)(3))	$1020	$510	$
☒	Four months (37 CFR 1.17(a)(4))	$1590	$795	$ 795.00
☐	Five months (37 CFR 1.17(a)(5))	$2160	$1080	$

☒ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check in the amount of the fee is enclosed.

☒ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 502542. I have enclosed a duplicate copy of this sheet.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☒ attorney or agent of record. Registration Number 42,227

☐ attorney or agent under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____

Jeffrey C. Wilk
Signature

March 23, 2006
Date

Jeffrey C. Wilk
Typed or printed name

(818) 488-8148
Telephone Number

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☐ Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

RECEIVED
CENTRAL FAX CENTER
MAR 2 3 2006

PTO/SB/22 (12-04)
Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARMENT OF COMMERCE
Under the paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) FY 2005 *(Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)*	Docket Number (Optional) EC04004USU
Application Number 11/231,349	Filed 09/19/2005
For Broadband Local Area Network	
Art Unit 2611	Examiner Not Yet Assigned

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

		Fee	Small Entity Fee	
☐	One month (37 CFR 1.17(a)(1))	$120	$60	$
☐	Two months (37 CFR 1.17(a)(2))	$450	$225	$
☐	Three months (37 CFR 1.17(a)(3))	$1020	$510	$
☒	Four months (37 CFR 1.17(a)(4))	$1590	$795	$ 795.00
☐	Five months (37 CFR 1.17(a)(5))	$2160	$1080	$

☒ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check in the amount of the fee is enclosed.

☒ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 502542. I have enclosed a duplicate copy of this sheet.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☒ attorney or agent of record. Registration Number 42,227

☐ attorney or agent under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____

Jeffrey C. Wilk — Signature

March 23, 2006 — Date

Jeffrey C. Wilk — Typed or printed name

(818) 488-8148 — Telephone Number

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☐ Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

FAX COVER SHEET

RECEIVED
CENTRAL FAX CENTER
MAR 2 3 2006

THE ECLIPSE GROUP

10605 Balboa Blvd., Suite 300
Granada Hills, CA 91344
Phone: (818) 488-8140
Fax: (818) 332-4205

Send to: Mail Stop Missing Parts	**From: Mariana Paula Noli**
Company: USPTO	Date: March 23, 2006
Fax Number: (571) 273-8300	Phone No.: (818) 488-8143

- ☐ Urgent
- ☐ Reply ASAP
- ☐ Please comment
- ☐ Please review
- ☐ For your information

Total pages, including cover: 19

Comments:

Applicant: Entropic Communications, Inc.
Title: "BROADBAND LOCAL AREA NETWORK"
Application No.: 11/231,349
Attorney Docket Number: EC04004USU

Please acknowledge receipt of the following RESPONSE TO NOTICE TO FILE MISSING PARTS:

1) Transmittal of Missing Parts (2 pages + copy);
2) Copy of the Notice to File Missing Parts mailed October 15, 2005 (2 pages);
3) Copy of the Declaration and POA signed by inventors Brett Bernath, Anton Monk, Itzhak Gurantz, Ladd El Wardani, Ron Porat, Yusuf Ozturk, Ron Lee, Wee-Peng Goh, Magnus Berggren (7 pages);
4) Preliminary Amendment under 37 C.F.R. 1.115 (3 pages);
5) Form PTO/SB/22 Petition for Extension of Time under 37 C.F.R. 1.136(a) (1 page + copy); and
6) Credit Card Authorization in the amount of $1,635.00 (1 page).

CERTIFICATE OF TRANSMISSION

I hereby certify that this document (along with any papers referenced as being attached or enclosed) is being transmitted to the United States Patent and Trademark Office via facsimile to Fax No. (571) 273-8300, on the date set forth above.

Mariana Paula Noli

PAGE 1/19 * RCVD AT 3/23/2006 6:24:03 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/16 * DNIS:2738300 * CSID:8183324205 * DURATION (mm-ss):06-10

Atty. Docket: EC04004USU

PATENT
SERIAL NO. 11/231,349

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RECEIVED
CENTRAL FAX CENTER
MAR 2 3 2006

In re Patent Application of Entropic Communications, Inc.	)	Group Art: 2611
Inventor(s): Brett Bernath et al.	)	Examiner: Not Yet Assigned
Serial No.: 11/231,349	)	
Filed: 09/19/2005	)	
Title: Broadband Local Area Network	)	

CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence (along with any paper referred to as being attached or enclosed) is being transmitted via facsimile to the United States Patent and Trademark Office, Fax No. (571) 273-8300 on March 23, 2006.

Mariana Paula Noli

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF MISSING PARTS

Dear Commissioner:

Applicants are in receipt of the Notice to File Missing Parts, dated October 13, 2005, setting a two-month shortened statutory period within which to respond which expires December 13, 2005.

Applicants hereby request a four-month extension of time within which to reply to the Notice to File Missing Parts. A credit card authorization in the amount of $795.00 to cover the extension fee is enclosed with this response. Therefore, this response is being timely submitted.

In response to the Notice to File Missing Parts, Applicant has enclosed the following:

1. A Copy of the Notice of Missing Parts mailed on October 13, 2005 (2 pages);

2. A Copy of the Combined Declaration and POA signed by inventors Brett Bernath, Anton Monk, Itzhak Gurantz, Ladd El Wardani, Ron Porat, Yusuf Ozturk, Ron Lee, Wee-Peng Goh, Magnus Berggren (7 pages); and

3. Preliminary Amendment under 37 C.F.R. 1.115 (3 pages);

RECEIVED
CENTRAL FAX CENTER
MAR 23 2006

Atty. Docket: EC04004USU

PATENT
SERIAL NO. 11/231,349

4. Credit Card Authorization in the amount of $1,635.00 ($150.00 statutory basic filing fee; $65.00 late oath and declaration surcharge; $250.00 application search fee; $100.00 application examination fee; $275.00 for 11 claims over 20; and $795.00 four month extension of time.)

The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to our Deposit Account No. 502542. A copy of this sheet is enclosed.

Respectfully submitted,

THE ECLIPSE GROUP

Date: 3/23/06

By: Jeffrey C. Wilk
Jeffrey C. Wilk, Reg. No. 42,227

10605 Balboa Blvd., Suite 300
Granada Hills, CA 91344
(818) 488-8148 Telephone
(818) 332-4205 Facsimile

Customer No. 34408

PAGE 3/19 * RCVD AT 3/23/2006 6:24:03 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/16 * DNIS:2738300 * CSID:8183324205 * DURATION (mm-ss):06-10

Atty. Docket: EC04004USU

PATENT
SERIAL NO. 11/231,349

4. Credit Card Authorization in the amount of $1,635.00 ($150.00 statutory basic filing fee; $65.00 late oath and declaration surcharge; $250.00 application search fee; $100.00 application examination fee; $275.00 for 11 claims over 20; and $795.00 four month extension of time.)

The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to our Deposit Account No. 502542. A copy of this sheet is enclosed.

Respectfully submitted,

THE ECLIPSE GROUP

Date: 3/23/06

By: Jeffrey C. Wilk
Jeffrey C. Wilk, Reg. No. 42,227

10605 Balboa Blvd., Suite 300
Granada Hills, CA 91344
(818) 488-8148 Telephone
(818) 332-4205 Facsimile

Customer No. 34408

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
11/231,349	09/19/2005	Anton Monk	EC04004USU

CONFIRMATION NO. 4520

FORMALITIES LETTER

34408
THE ECLIPSE GROUP
10605 BALBOA BLVD., SUITE 300
GRANADA HILLS, CA 91344

03/27/2006 EFLORES 00000026 11231349

01 FC:2011 150.00 OP
02 FC:2111 250.00 OP
03 FC:2311 100.00 OP
04 FC:2051 65.00 OP
05 FC:2202 275.00 OP

Date Mailed: 10/13/2005

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is missing.
  Applicant must submit $ **150** *to complete the basic filing fee for a small entity.*
- The oath or declaration is missing. *A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.*
  Note: If a petition under 37 CFR 1.47 is being filed, an oath or declaration in compliance with 37 CFR 1.63 signed by all available joint inventors, or if no inventor is available by a party with sufficient proprietary interest, is required.

The applicant needs to satisfy supplemental fees problems indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- Additional claim fees of **$275** as a small entity, including any required multiple dependent claim fee, are required. Applicant must submit the additional claim fees or cancel the additional claims for which fees are due.
- To avoid abandonment, a surcharge (for late submission of filing fee, search fee, examination fee or oath or declaration) as set forth in 37 CFR 1.16(f) of $65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.

SUMMARY OF FEES DUE:

Total additional fee(s) required for this application is **$840** for a Small Entity

- **$150** Statutory basic filing fee.
- **$65** Surcharge.

- The application search fee has not been paid. Applicant must submit **$250** to complete the search fee.
- The application examination fee has not been paid. Applicant must submit **$100** to complete the examination fee for a small entity in compliance with 37 CFR 1.27

- Total additional claim fee(s) for this application is **$275**
  - **$275** for **11** total claims over 20.

Replies should be mailed to: Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

A copy of this notice MUST be returned with the reply.

Office of Initial Patent Examination (571) 272-4000, or 1-800-PTO-9199, or 1-800-972-6382
PART 2 - COPY TO BE RETURNED WITH RESPONSE

Atty. Docket No. EC04004USU

PATENT

COMBINED DECLARATION AND POWER OF ATTORNEY

As a below-named inventor, I hereby declare that:

1. My residence, post office address, and citizenship are as stated below next to my name.

2. I believe I am the original and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention titled:

A BROADBAND LOCAL AREA NETWORK

the specification of which (check one):

☐ is attached hereto.
☒ was filed on: September 19, 2005 as
Application Serial No.: 11/231,349
☐ and was amended on: _____

3. I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims.

4. I acknowledge the duty to disclose information which is material to patentability as described in 37 C.F.R. 1.56, which is defined on the attached page.

5. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

6. I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional patent applications listed below.

Prior United States Application(s)

60/633,091	December 2, 2004	Pending
(Application Serial No.)	(Filing Date)	(Status)-(Patented, pending, abandoned)

PAGE 7/19 * RCVD AT 3/23/2006 6:24:03 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/16 * DNIS:2738300 * CSID:8183324205 * DURATION (mm-ss):06-10

60/632,797	December 2, 2004	Pending
(Application Serial No.)	(Filing Date)	(Status)-(Patented, pending, abandoned)
60/633,002	December 2, 2004	Pending
(Application Serial No.)	(Filing Date)	(Status)-(Patented, pending, abandoned)
60/632,856	December 2, 2004	Pending
(Application Serial No.)	(Filing Date)	(Status)-(Patented, pending, abandoned)

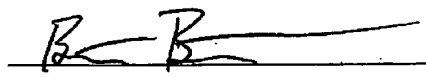
7. I hereby appoint Jennifer H. Hamilton (Reg. No. 41,814), Francisco A. Rubio-Campos (Reg. No. 45,358), Gregory B. Gulliver (Reg. No. 44,138), Jeffrey C. Wilk (Reg. No. 42,227), David P. Gloekler (Reg. No. 41,037), Kevin E. Flynn (Reg. No. 37,325), James M. Brown (Reg. No. 30,033), and other registered patent attorneys and agents of the firm The Eclipse Group, as my attorneys with full power of substitution and revocation, to prosecute this application and to transact all business in the United States Patent and Trademark Office connected therewith.

Please direct all correspondence to:

Jennifer H. Hamilton
THE ECLIPSE GROUP
10605 Balboa Blvd., Suite 300
Granada Hills, CA 91344

Please direct telephone calls to Jennifer H. Hamilton at 818.831.9431 (facsimile 818.332.4205).

Full name of first joint inventor: BRETT BERNATH

Signature of inventor: 

Date: 11/24/05

Residence and Post Office Address: 4167 Calle Marde Ballenas
San Diego, CA 92130

Citizenship: US

PAGE 8/19 * RCVD AT 3/23/2006 6:24:03 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/16 * DNIS:2738300 * CSID:8183324205 * DURATION (mm-ss):06-10

Full name of second joint inventor: ANTON MONK

Signature of inventor: A. Monk

Date: 11/28/05

Residence and Post Office Address: 5706 Willowmere Lane,
San Diego, CA 92130

Citizenship: US

Full name of third joint inventor: ITZHAK GURANTZ

Signature of inventor:

Date: 11/28/05

Residence and Post Office Address: 5584 Shannon Ridge Lane
San Diego, CA 92130

Citizenship: US

Full name of fourth joint inventor: LADD EL WARDANI

Signature of inventor: Ladd El Wardani

Date:

Residence and Post Office Address: 6416 La Jolla Scenic Dr. South
La Jolla, CA 92037

Citizenship: US

Full name of fifth joint inventor: RON PORAT

Signature of inventor:

Date:

Residence and Post Office Address: 2760 Farragut #112
San Diego, CA 92106

Citizenship: US

PAGE 9/19 * RCVD AT 3/23/2006 6:24:03 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/16 * DNIS:2738300 * CSID:8183324205 * DURATION (mm-ss):06-10

Full name of second joint inventor: ANTON MONK

Signature of inventor: _____

Date: _____

Residence and Post Office Address: 5706 Willowmere Lane,
San Diego, CA 92130

Citizenship: US

Full name of third joint inventor: ITZHAK GURANTZ

Signature of inventor: _____

Date: _____

Residence and Post Office Address: 5584 Shannon Ridge Lane
San Diego, CA 92130

Citizenship: US

Full name of fourth joint inventor: LADD EL WARDANI

Signature of inventor: _____

Date: _____

Residence and Post Office Address: 6416 La Jolla Scenic Dr. South
La Jolla, CA 92037

Citizenship: US

Full name of fifth joint inventor: RON PORAT

Signature of inventor: Ron Porat

Date: 3/16/06

Residence and Post Office Address: 2760 Farragut #112
San Diego, CA 92106

Citizenship: US

PAGE 10/19 * RCVD AT 3/23/2006 6:24:03 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/16 * DNIS:2738300 * CSID:8183324205 * DURATION (mm-ss):06-10

Full name of sixth joint inventor: YUSUF OZTURK

Signature of inventor:

Date: 20/3/2006

Residence and Post Office Address: 13092 Coyote Avenue,
San Diego, CA 92129

Citizenship: Turkey

Full name of seventh joint inventor: RON LEE

Signature of inventor: _____

Date: _____

Residence and Post Office Address: 12774 Seabreeze Farms Drive,
San Diego, CA 92130

Citizenship: US

Full name of eighth joint inventor: WEE-PENG GOH

Signature of inventor: _____

Date: _____

Residence and Post Office Address: 38347 Chestnut Circle
Murrieta, CA 92563

Citizenship: Singapore

Full name of ninth joint inventor: MAGNUS BERGGREN

Signature of inventor: _____

Date: _____

Residence and Post Office Address: 972 Reed Avenue
San Diego, CA 92109

Citizenship: Swedish

PAGE 11/19 * RCVD AT 3/23/2006 6:24:03 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/16 * DNIS:2738300 * CSID:8183324205 * DURATION (mm-ss):06-10

Full name of sixth joint inventor: YUSUF OZTURK

Signature of inventor: _____

Date: _____

Residence and Post Office Address: 13092 Coyote Avenue,
San Diego, CA 92129

Citizenship: Turkey

Full name of seventh joint inventor: RON LEE

Signature of inventor: [signature]

Date: 11/30/05

Residence and Post Office Address: 12774 Seabreeze Farms Drive,
San Diego, CA 92130

Citizenship: US

Full name of eighth joint inventor: WEE-PENG GOH

Signature of inventor: [signature]

Date: _____

Residence and Post Office Address: 38347 Chestnut Circle
Murrieta, CA 92563

Citizenship: Singapore

Full name of ninth joint inventor: MAGNUS BERGGREN

Signature of inventor: [signature]

Date: _____

Residence and Post Office Address: 972 Reed Avenue
San Diego, CA 92109

Citizenship: Swedish

PAGE 12/19 * RCVD AT 3/23/2006 6:24:03 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/16 * DNIS:2738300 * CSID:8183324205 * DURATION (mm-ss):06-10

Section 1.56 Duty to Disclose Information Material to Patentability.

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is cancelled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is cancelled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

(1) prior art cited in search reports of a foreign patent office in a counterpart application, and

(2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

(1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or

(2) It refutes, or is inconsistent with, a position the applicant takes in:

(i) Opposing an argument of unpatentability relied on by the Office, or

(ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

(1) Each inventor named in the application;

(2) Each attorney or agent who prepares or prosecutes the application; and

(3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.

(e) In any continuation-in-part application, the duty under this section includes the duty to disclose to the Office all information known to the person to be material to patentability, as defined in paragraph (b) of this section, which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

PAGE 13/19 * RCVD AT 3/23/2006 6:24:03 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/16 * DNIS:2738300 * CSID:8183324205 * DURATION (mm-ss):06-10

PATENT
Docket No.: EC04004USU
11/231,349

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Entropic Communications, Inc.	DOCKET NO.:	EC04004USU
SERIAL NO.:	11/231,349	GROUP ART UNIT:	2611
DATE FILED:	September 19, 2005	EXAMINER:	Not yet assigned
		Confirmation No.:	6587

TITLE: BROADBAND LOCAL AREA NETWORK

Certificate of Transmission
I hereby certify that this correspondence (along with any paper referred to as being attached or enclosed) is being facsimile transmitted to the United States Patent and Trademark Office, Fax No. (571) 273-8300 on March 23, 2006.

Mariana Paula Noli

March 23, 2006

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRELIMINARY AMENDMENT UNDER 37 C.F.R. § 1.115

Sir:

This Preliminary Amendment is being submitted with Applicants' Response to Notice to File Missing Parts of Non-provisional Application mailed October 13, 2005. Entry of this Amendment is respectfully requested.

PATENT
Docket No.: EC04004USU
11/231,349

AMENDMENTS

To The Specification:

Please amend the specification as follows:

Please replace the list of inventors at the top of page 1 with the following:

INVENTORS

BRETT BERNATH

ANTON MONK

ITZHAK GURANTZ

LADD EL WARDANI

RON PORAT

YUSUF OZTURK

RON LEE

WEE-PENG GOH

&

MAGNUS BERGGREN

PAGE 15/19 * RCVD AT 3/23/2006 6:24:03 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/16 * DNIS:2738300 * CSID:8183324205 * DURATION (mm-ss):06-10

PATENT
Docket No.: EC04004USU
11/231,349

REMARKS

The enclosed amendment amend the specification by naming Brett Bernath as the first named inventor and naming Anton Monk, Itzhak Gurantz, Ladd El Wardani, Ron Porat, Yusuf Ozturk, Ron Lee, Wee-Peng Goh and Magnus Berggren as the additional inventors, in conformity with the Combined Declaration and Power of Attorney concurrently submitted herewith. This amendment does not involve any new matter or objectionable changes.

CONCLUSION

Entry of this Amendment is respectfully requested.

Respectfully submitted,
THE ECLIPSE GROUP

Date: March 23, 2006 By: Jeffrey C. Wills

Jeffrey C. Wills
Registration No. 42,227
Attorney for Applicant
Phone: (818) 488-8148
Fax: (714) 948-8903

The Eclipse Group
10605 Balboa Blvd., Suite 300
Granada Hills, CA 91344

Customer No. **34408**

PAGE 16/19 * RCVD AT 3/23/2006 6:24:03 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/16 * DNIS:2738300 * CSID:8183324205 * DURATION (mm-ss):06-10

RECEIVED
CENTRAL FAX CENTER
MAR 2 3 2006

PTO/SB/22 (12-04)
Approved for use through 07/31/2006. OMB 0851-0031
U.S. Patent and Trademark Office; U.S. DEPARMENT OF COMMERCE
Under the paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) **FY 2005** *(Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)*	Docket Number (Optional) EC04004USU
Application Number 11/231,349	Filed 09/19/2005
For Broadband Local Area Network	
Art Unit 2611	Examiner Not Yet Assigned

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

		Fee	Small Entity Fee	
☐	One month (37 CFR 1.17(a)(1))	$120	$60	$
☐	Two months (37 CFR 1.17(a)(2))	$450	$225	$
☐	Three months (37 CFR 1.17(a)(3))	$1020	$510	$
☒	Four months (37 CFR 1.17(a)(4))	$1590	$795	$ 795.00
☐	Five months (37 CFR 1.17(a)(5))	$2160	$1080	$

☒ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check in the amount of the fee is enclosed.

☒ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 502542. I have enclosed a duplicate copy of this sheet.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☒ attorney or agent of record. Registration Number 42,227

☐ attorney or agent under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 _____

Jeffrey C. Wilk
Signature

March 23, 2006
Date

Jeffrey C. Wilk
Typed or printed name

(818) 488-8148
Telephone Number

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☐ Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

03/27/2006 EFLORES 00000026 11231349

06 FC:2254 795.00 OP

RECEIVED
CENTRAL FAX CENTER
MAR 2 3 2006

PTO/SB/22 (12-04)
Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARMENT OF COMMERCE
Under the paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) FY 2005 (Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)	Docket Number (Optional) EC04004USU
Application Number 11/231,349	Filed 09/19/2005
For Broadband Local Area Network	
Art Unit 2611	Examiner Not Yet Assigned

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

	Fee	Small Entity Fee	
☐ One month (37 CFR 1.17(a)(1))	$120	$60	$
☐ Two months (37 CFR 1.17(a)(2))	$450	$225	$
☐ Three months (37 CFR 1.17(a)(3))	$1020	$510	$
☒ Four months (37 CFR 1.17(a)(4))	$1590	$795	$ 795.00
☐ Five months (37 CFR 1.17(a)(5))	$2160	$1080	$

☒ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check in the amount of the fee is enclosed.

☒ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 502542. I have enclosed a duplicate copy of this sheet.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☒ attorney or agent of record. Registration Number 42,227

☐ attorney or agent under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____

Jeffrey C. Wilk
Signature

March 23, 2006
Date

Jeffrey C. Wilk
Typed or printed name

(818) 488-8148
Telephone Number

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☐ Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
11/231,349	09/19/2005	Anton Monk	EC04004USU

CONFIRMATION NO. 4520

34408
THE ECLIPSE GROUP
10605 BALBOA BLVD., SUITE 300
GRANADA HILLS, CA 91344

FORMALITIES LETTER

Date Mailed: 10/13/2005

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is missing.
  Applicant must submit $ **150** *to complete the basic filing fee for a small entity.*
- The oath or declaration is missing. *A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.*
  Note: If a petition under 37 CFR 1.47 is being filed, an oath or declaration in compliance with 37 CFR 1.63 signed by all available joint inventors, or if no inventor is available by a party with sufficient proprietary interest, is required.

The applicant needs to satisfy supplemental fees problems indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- Additional claim fees of **$275** as a small entity, including any required multiple dependent claim fee, are required. Applicant must submit the additional claim fees or cancel the additional claims for which fees are due.
- To avoid abandonment, a surcharge (for late submission of filing fee, search fee, examination fee or oath or declaration) as set forth in 37 CFR 1.16(f) of $65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.

SUMMARY OF FEES DUE:

Total additional fee(s) required for this application is **$840** for a Small Entity

- **$150** Statutory basic filing fee.
- **$65** Surcharge.

- The application search fee has not been paid. Applicant must submit **$250** to complete the search fee.
- The application examination fee has not been paid. Applicant must submit **$100** to complete the examination fee for a small entity in compliance with 37 CFR 1.27

- Total additional claim fee(s) for this application is **$275**
  - **$275** for **11** total claims over 20.

Replies should be mailed to: Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

A copy of this notice MUST be returned with the reply.

Office of Initial Patent Examination (571) 272-4000, or 1-800-PTO-9199, or 1-800-972-6382
PART 3 - OFFICE COPY

16805 U.S. PTO 091905

113013 U.S. PTO 11/231349 091905

PTO/SB/05 (04-05)
Approved for use through 07/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office. U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	EC04004USU
First Inventor	Anton Monk
Title	A Broadband Local Area Network
Express Mail Label No.	ED 687131119 US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☐ **Fee Transmittal Form** (e.g., PTO/SB/17)
   (Submit an original and a duplicate for fee processing)
2. ☑ **Applicant claims small entity status.** See 37 CFR 1.27.
3. ☑ **Specification** [*Total Pages* 61]
   Both the claims and abstract must start on a new page
   (For information on the preferred arrangement, see MPEP 608.01(a))
4. ☑ **Drawing(s)** (*35 U.S.C. 113*) [*Total Sheets* 18]
5. **Oath or Declaration** [*Total Sheets* _____]
   a. ☐ Newly executed (original or copy)
   b. ☐ A copy from a prior application (37 CFR 1.63(d))
   (for continuation/divisional with Box 18 completed)
   i. ☐ DELETION OF INVENTOR(S)
   Signed statement attached deleting inventor(s) name in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☐ **Application Data Sheet.** See 37 CFR 1.76
7. ☐ **CD-ROM or CD-R** in duplicate, large table or Computer Program *(Appendix)*
   ☐ Landscape Table on CD
8. **Nucleotide and/or Amino Acid Sequence Submission**
   (if applicable, items a. – c. are required)
   a. ☐ Computer Readable Form (CRF)
   b. Specification Sequence Listing on:
      i. ☐ CD-ROM or CD-R (2 copies); or
      ii. ☐ Paper
   c. ☐ Statements verifying identity of above copies

ADDRESS TO:

Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

ACCOMPANYING APPLICATION PARTS

9. ☐ **Assignment Papers** (cover sheet & document(s))
   Name of Assignee _____
10. ☐ **37 CFR 3.73(b) Statement** *(when there is an assignee)* ☐ **Power of Attorney**
11. ☐ **English Translation Document** *(if applicable)*
12. ☐ **Information Disclosure Statement** (PTO/SB/08 or PTO-1449)
    ☐ Copies of citations attached
13. ☐ **Preliminary Amendment**
14. ☐ **Return Receipt Postcard** (MPEP 503)
    (Should be specifically itemized)
15. ☐ **Certified Copy of Priority Document(s)**
    (if foreign priority is claimed)
16. ☑ **Nonpublication Request** under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/SB/35 or equivalent.
17. ☐ Other: _____

18. If a CONTINUING APPLICATION, *check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:*

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: .....

Prior application information: *Examiner* _____ *Art Unit:* _____

19. CORRESPONDENCE ADDRESS

☑ The address associated with Customer Number: 34408 ***OR*** ☐ Correspondence address below

Name					
Address					
City		State		Zip Code	
Country		Telephone		Email	

Signature		Date	September 19, 2005
Name (Print/Type)	Francisco A. Rubio-Campos	Registration No. (Attorney/Agent)	45,358

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

CERTIFICATE OF EXPRESS MAILING UNDER 37 C.F.R. § 1.10

I hereby certify that the attached patent application (including supporting documents) is being deposited with the United States Postal Service with "Express Mail Post Office to Addressee" Mailing Label Number ED 687131119 US addressed to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

on September 19, 2005.

Mariana Paula Noli

U.S. Express Mail No.: ED 687131119 US
Filing Date: September 19, 2005

PATENT
Docket No. EC04004USU

A BROADBAND LOCAL AREA NETWORK

INVENTORS

ANTON MONK

BRETT BERNATH

ITZHAK GURANTZ

LADD WARDANI

RON PORAT

YUSUF OZTURK

RON LEE

WEE-PENG GOH

&

MAGNUS BERGGREN

BACKGROUND OF THE INVENTION

1. Reference to Earlier-Filed Applications

[001] This application claims priority under Section 119(e) to U.S. Provisional Application Serial No. 60/633,091 titled "Physical Layer Transmitter for Use in a Broadband Local Area Network," filed December 2, 2004, U.S. Provisional Application Serial No. 60/632,797 titled "A Broadband Local Area Network," filed December 2, 2004, U.S. Provisional Application Serial No. 60/633,002 titled "Multiple Access Controller for a Broadband Coaxial Network," filed December 2, 2004, and U.S. Provisional Application Serial No. 60/632,856 titled "Interface for a Broadband Coaxial Network," filed December 2, 2004, all of which are incorporated herein, in their entirety, by this reference.

2. Field of Invention

[002] The invention relates to broadband communication networks, and in particular to local area broadband communication networks.

3. Related Art

[003] The worldwide utilization of external television ("TV") antennas for receiving broadcast TV, cable television (CATV), and satellite TV is growing at a rapid pace. These TV signals received via an external TV antenna, cable TV and satellite TV, such as a direct broadcast satellite ("DBS") system, are usually located on the exterior of a building (such as a home or an office) and enter the building at a point-of-entry ("POE"). Multiple TV receivers, audio video receivers, and/or video monitor devices may be located within the building and these multiple devices may be in signal communication with the POE via a broadband cable network that may include a plurality of cables and cable splitters. Generally, these cable splitters are passive devices and distribute downstream signals from the POE to various terminals (also known as "nodes") in the building. The nodes may be various types of customer premise equipment ("CPE") such as cable converter boxes, televisions, video monitors, cable modems, cable phones, audio video receivers, set-top boxes (STBs) and video game consoles.

[004] Within a typical building or home, there may be a mixture of coaxial cables of varying types and quality, such as RG-59, RG-6, RG-6 quad shield. Creating a less than optimal RF environment within the cable. Further, typical homes do little or no termination of cable outlets enabling the introduction of RF interference into the coaxial

cables. Another problem often encountered with a typical home or building coaxial cable configuration is the use of multiple splitters of varying quality and frequency ranges. Thus, creating a problem for known approaches to local area networking over coaxial cable. Such networking often requires a more controlled RF environment or higher quality cabling to support higher frequency ranges.

[005] Typically, a STB connects to a coaxial cable at a wall outlet terminal and receives cable TV and/or satellite TV signals. A device, such as the STB, connected to the coaxial cable may be called a node. Usually, the STB receives the cable TV and/or satellite TV signals and converts them into tuned RF TV signals that may be received by the TV receiver and/or video signals that may be received by a video monitor.

[006] In FIG. 1, an example of a known broadband cable network 100 (also known as a "cable system" and/or "cable wiring") is shown within a building 102 (also known as customer premises) such as a typical home or office. The broadband cable system 100 may be in signal communication with an optional cable service provider 104, optional broadcast TV station 106, and/or optional DBS satellite 108, via signal path 110, signal path 112 and external antenna 114, and signal path 116 and DBS antenna 118, respectively. The broadband cable system 100 also may be in signal communication with optional CPEs 120, 122 and 124, via signal paths 126, 128 and 130, respectively.

[007] In FIG. 2, another example of a known broadband cable system is shown within a building (not shown) such as a typical home. The cable system 200 may be in signal communication with a cable provider (not shown), satellite TV dish (not shown), and/or external antenna (not shown) via a signal path 202 such as a main coaxial cable from the

building to a cable connection switch (not shown) outside of the building. The cable system 200 may include a multi-tap device (not shown) that allows communication to neighboring homes, a POE to the home 204, N:1 Splitter 206, which in this system may also be considered a Root Node, sub-splitter 208, and node devices 210, 212 and 214.

[008] Within the cable system 200, the Multi-Tap (not shown) may be in signal communication with the Root Node/main splitter 206 via signal path 228. The Root Node/main splitter 206 may be the connection point from the cable provider that is located externally to the building of the cable system 200. The Root Node/main splitter 206 may be implemented as a coaxial cable splitter that may include passive devices and packages including connectors, transformer and/or filters.

[010] The N:1 splitter 206 (a 2:1 splitter in Figure 2) acts as the main splitter and may be in signal communication with N:1 sub-splitter 208 (a 2:1 splitter in Figure 2), and node device 210, via signal paths 230 and 232, respectively. The N:1 sub-splitter 208 may be in signal communication with node devices 212 and 214 via signal paths 234 and 236, respectively. The node devices may be comprised of numerous known STB coaxial units such as cable television STBs and/or satellite television STBs, as well as various video and multimedia devices typically found in the home or office. Typically, the signal paths 228, 230, 232, 234, and 236 may be implemented utilizing coaxial cables 216, 218, 220, 222 and 224, respectively.

[011] In an example operation, the cable system 200 would receive CATV, cable and/or satellite radio frequency ("RF") TV signals 226 from the Multi-Tap (not shown) via signal path 216 into the Root Node/main splitter 206. The Root Node/main splitter 206

may pass, transform and/or filter the received RF signals to a second RF signal 230 that may be passed to N:1 sub-splitter 208 via signal path 218. Sub-splitter 208 may then split the second RF signal 230 into split RF signals 234 and 236 and are passed to node devices 212 and 214 via signal paths 222 and 224, respectively. If the node device is a STB, the node device may convert the received split RF signal into a baseband signal (not shown) that may be passed to a video monitor (not shown) in signal communication with the STB. Similarly, the Root Node/Main Splitter passes a second signal 232 via signal path 220 to another node device 210.

[012] In recent years, numerous consumer electronics appliances and software applications have been developed and continue to be developed that are able to receive, store, process and transmit programming information to multiple devices in the home at the time and manner as determined by the viewer. The main drawback to the ability of users to view multimedia information stored on multiple storage devices at the home and view it (or listen to it) on any capable home appliance at the time and manner of his choosing is the lack of a viable home networking solution.. There are large numbers and types of CPEs that can be utilized and shared in such a fashion including televisions, video monitors, cable modems, cable phones, video game consoles, and audio components, as well as various storage devices. There is a growing need for different CPEs to communicate between themselves in a network type of environment within the building. As an example, users in a home may want to share other types of digital data (such as video and/or computer information) between different devices in different rooms of a building.

[013] The present invention is focused on utilizing the home coaxial cable as a medium for high speed home networking by utilizing frequencies above the ones currently used by the Cable Operators for their cable service. The home coaxial cable is a natural medium for connecting multimedia devices since it has enormous amount of available bandwidth required for the high data rates which are needed for such applications and also, all the multimedia devices and appliances are most likely to be already connected to the coaxial cable. Unfortunately, most broadband cable networks (such as the examples shown in both FIG. 1 and FIG. 2) presently utilized within most existing buildings are not configured to allow for networking between CPEs. Most broadband cable networks utilize broadband cable splitters that are designed to split an incoming signal from the POE into numerous split signals that are passed downstream to the different nodes in different rooms, or equivalently, combine signals from multiple sources (on the "output" ports) to an aggregate on the "input" port. The existing conventional wisdom is that the use of splitters in the existing broadband cable networks make these networks able to communicate only between the "point of entry" 204 and node devices 210, 212, and 214, and prevents direct networking between node devices in the network because signals returning from the node devices cannot be routed back through the splitters, i.e., cannot "jump" a splitter. The present invention describes a system that allows node devices ("CPEs") to communicate directly over the existing coaxial cable with its current architecture without the need to modify the home cable infrastructure.

[014] As an example, in a typical home the signal splitters are commonly coaxial cable splitters that have an input port and multiple output ports. Generally, the input port is

known as a common port and the output ports are known as tap ports. These types of splitters are generally passive devices and may be constructed using lumped element circuits with discrete transformers, inductors, capacitors, and resistors and/or using strip-line or microstrip circuits.

[015] Presently many CPEs utilized in modern cable and DBS systems, however, have the ability to transmit as well as receive. If a CPE is capable of transmitting an upstream signal, the transmitted upstream signal from that CPE typically flows through the signal splitters back to the POE and to the cable and/or DBS provider. In this reverse flow direction, the signal splitters function as signal combiners for upstream signals from the CPEs to the POE. Usually, most of the energy from the upstream signals is passed from the CPEs to the POE because the splitters typically have a high level of isolation between the different connected terminals resulting in significant isolation between the various CPEs.

[016] The isolation creates a difficult environment in which to network between the different CPEs because the isolation results in difficulty for transmitting two-way communication data between the different CPEs. However, CPEs are becoming increasingly more capable and a growing number of users desire to network multiple CPEs to share storage and capabilities across the network.

[017] Therefore, there is a need for a system and method to connect a variety of CPEs into a local data network, such as a local area network ("LAN"), within a building such as a home or office, while utilizing an existing coaxial cable network within the building. Additionally, there is a need for the system and method to have the capability of allowing

the user to incorporate a variety of newly developed CPEs into the local data network quickly and easily.

SUMMARY

[018] A Broadband Coaxial Network (BCN) network formed by a plurality of common coaxial network elements that may include passive splitters and coaxial network nodes where a signal is transmitted from a first BCN modem to one or more other BCN modems with the signal having multiple paths caused by reflected signals from the splitters and coaxial network elements. A Network Controller (NC) BCN modem is established by the activation of the first BCN modem or when there are multiple devices through a selection process. The other BCN modems in the network then communicate with the NC to be admitted to the network and when attempting to access the network and request transmission opportunities to any other node in the network. Each BCN modem communicates with the other BCN modems in the network and establishes the best modulation and other transmission parameters that is optimized and periodically adapted to the channel between each pair of BCN modems. Further, a bridge can be created between a first type of network and a second type of network, such as an Ethernet wiring to a coaxial network wiring.

[019] Other systems, methods, features and advantages of the invention will be or will become apparent to one with skill in the art upon examination of the following figures and detailed description. It is intended that all such additional systems, methods, features

and advantages be included within this description, be within the scope of the invention, and be protected by the accompanying claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[020] The invention can be better understood with reference to the following figures. The components in the figures are not necessarily to scale, emphasis instead being placed upon illustrating the principles of the invention. In the figures, like reference numerals designate corresponding parts throughout the different views.

[021] FIG. 1 shows a block diagram of an example implementation of a known broadband cable system within a building.

[022] FIG. 2 shows a block diagram of another example implementation of a known broadband cable system within the building shown in FIG. 1.

[023] FIG. 3 shows an example of a BCN network within a home or building and its utilization.

[024] FIG. 4 illustrates two examples of two different architectures for a satellite television system utilizing networking between devices, in this case, utilizing the Satellite cable to form a network between the devices.

[025] FIG. 5 illustrates another satellite television bridging approach that employs the BCN network of FIG. 3.

[026] FIG. 6 is a block diagram of a multiple dwelling implementation that employs another configuration and utilization of a BCN network.

[027] FIG. 7 is a block diagram of the BCN network of FIG. 3.

[028] FIG. 8 is an illustration of a functional diagram showing the communication between various nodes of a network similar to the one shown in FIG. 3.

[029] FIG. 9 is another functional diagram showing the interfaces and functional relationships between the Nodes of a network similar to the one shown in FIG. 3.

[030] FIG. 10 shows a block diagram of another example implementation and signal flows of a BCN network

[031] FIG. 11 illustrates another block diagram of another example implementation and signal flows of a BCN network.

[032] FIG. 12 shows a plot of an example bit-loading constellation versus frequency.

[033] FIG. 13A shows a plot of the bit-loading constellation versus carrier number for the channel path between node A and node B of FIG. 7.

[034] FIG. 13B shows a plot of the bit-loading constellation versus carrier number for the channel path between node A and node C shown in FIG. 7.

[035] FIG. 13C shows a plot of the bit-loading constellation versus carrier number for the resulting broadcast channel path between node A and node B and node A and node C based on the constellations shown in FIGs. 13A and 13B.

[036] FIG. 14 shows an example block diagram of an Ethernet to Coax bridge node in a BCN network.

[037] FIG. 15 is a block diagram of one implementation of a multi-port Ethernet to coax bridge/router.

[038] FIG. 16 is a block diagram of an Ethernet bridge/router with additional WAN and LAN ports including DSL/Cable Modem and wireless.

[039] FIG. 17, an illustration of various frequency plans for use of the BCN network in different home environments that may include satellite, cable, telco or other services.

[040] FIG. 18 is diagram of a plurality of BCN modem enabled and corresponding devices.

[041] FIG. 19 shows a flowchart illustrating the method performed by the BCN network shown in FIG. 7.

DETAILED DESCRIPTION

[042] In the following description of the exemplar embodiments, reference is made to the accompanying drawings that form a part hereof, and in which is shown by way of illustration specific embodiments in which the invention may be practiced. It is to be understood that other embodiments may be utilized and structural changes may be made without departing from the scope of the present invention.

[043] Turning to FIG. 3, a diagram 300 of a BCN network within a home or building 302 is shown. A cable/terrestrial network connection 304 is made at a POE 306 in home 302. The home 302 has a satellite dish 308 that may also enter at the POE 306. The satellite dish 308 and cable/terrestrial network 304 may carry data, video, and audio signals that may be encoded as analog signals and/or digital signals.

[044] A BCN network 310 within the home 302 connects with the satellite dish 308 and cable/terrestrial network 304 at POE 306. The BCN network 310 may have connections in different rooms of the home 302, for example, a family room 312, kitchen 314, office/den 316, master bedroom 318, and kids' bedroom 320. In the family room 312,

there may be electrical/electronics devices such as a home media server 320 (also denoted as DVRs such as a personal computer, REPLAYTV or TIVO) that may be connected to a television (i.e., normal television or high definition) or video monitor 322. Another type of device in the family room 312 connected to the BCN network 310 may be a wireless access point (AP) 324 that communicates with wireless devices such as WebPad 326 using a communication standard such as IEEE 802.11 (a, b, and/or g), or BlueTooth, to name but a few communication standards. In the kitchen 314, a network audio appliance 328, such as a WMA/MP3 Audio Client, may be connected to the BCN network 310. Further, a laptop personal computer 330 having wireless access ability may communicate with the wireless AP 324 located in the family room 312.

[045] The upstairs of home 302 is shown with a media center personal computer 332 connected to the BCN network 310 in the office/den 316. The master bedroom 318 may have a STB 334 that may demodulate an analog or digital signal from a cable headend or a satellite receiver connected to television or video monitor 336. In the kids' bedroom 320, another STB 338 and television or video monitor 340 is shown along with another wireless access point 342 connected to the BCN network 310.

[046] The different types of devices connected to the BCN network 310 are provided as examples of some of the different types of video, data, multimedia, and audio devices that may be typically coupled to the BCN network 310. The BCN network 310 enables two-way communication between network entities such as the media center personal computer 332 and laptop personal computer 330 via the wireless AP 324 or 342. The BCN network 310 may also provide streaming multimedia support to transport audio and

video, for example, from the media center PC 332 to the Set-top boxes 334 and/or 338 or any other device connected on the BCN home network 310.

[047] The BCN network 310 may also connect BCN modems that may be present in the different devices shown in FIG. 3 in a peer-to-peer mesh network, such that every BCN modem enabled device can communicate directly with any other BCN modem enabled device on the network. Also, in addition to the peer-to-peer communications, the system can also offer capabilities that may be point-to-multipoint optimized. The BCN modem may be a device that communicates across one or more of multiple RF channels where the communications over each RF channel by the various devices is divided by time, where each device transmits in a different time slot, typically referred to as a time division multiple access (TDMA) communication, and each device transmits or receive at a time denoted as time division duplex (TDD), thus enabling one node to transmit at a time into an assigned TDMA frequency channel.

[048] Hence, in the preferred implementation, the BCN network is a multichannel TDMA/TDD system. Even though there is nothing prohibiting a simultaneous use of multiple frequencies on the same logical network, most of the description that follows assumes that the devices that form the network are operating on a single frequency channel. Network operation over multiple frequency channels can be accomplished in several ways. One method can perform transmission opportunities allocations based on both time and frequency. In this case, a given BCN node receives its transmission opportunities on a given frequency channel at a specific time slot. Similarly, it expects to receive designated packets from other stations on a given frequency channel at a given

time slot. Another method for multiple frequency channels operations, is through the utilization of BCN modem bridges that can bridge single frequency channel networks (or multiple frequency channels networks). The extension of a single frequency channel operation to multiple frequency channels operation is relatively straight forward, so most of the present descriptions focus only on a single frequency channel operation.

[049] Due to the unique transmission characteristics of the in-home coaxial network, which may include a highly dispersive environment with very large multipath reflections and a potentially different channel response between each pair of BCN modems in either direction, the lower network layer of the BCN network 310, denoted as the Physical Layer (or PHY layer) may be implemented with a modulation pre-coding (where the modulating waveform is modified to adapt to the channel in a format that is known to the demodulator in most cases) approach such as adaptive (or also denoted as bit-loaded) orthogonal frequency division multiplexing (OFDM). OFDM is a modulation technique that splits the modulated waveform into multiple RF sub-channels, each of which is modulated by a portion of the data stream and is sent over a different subcarrier frequency. With the precoded OFDM technique, the system will modulate each of the subcarriers according to the signal-to-noise ratio of each of the subcarriers. Other precoding methods besides adaptive OFDM may be used in the BCN network 310 with single broadband carrier systems such as Tomlinson pre-coding or others.

[050] In a typical application, each frequency channel of operation may constitute a separate network of communicating devices. It is also possible to include a network of multiple frequencies, but the operation of such a network requires rapid frequency

changes by BCN modems on a packet-by-packet basis. In a single frequency of operation, one of the BCN modems is assigned as the Network Controller ("NC") and provides all the necessary information allowing other BCN modems to be admitted to the network, adapt to the network characteristics, synchronize to the network timing and framing, make transmission requests and be able to communicate with some or all of the other BCN modems in the network.. In the current approach, the first BCN modem in the BCN network 310 becomes the NC and the other BCN modems may be referred to as slave BCN modems.

[051] The NC provides network timing synchronization including the timing of admission area for slave BCN modems. When a BCN modem is activated, it attempts to locate the network timing by receiving a beacon identifying network timing and essential network control information including network admission area, and other information identifying the time location and characteristics of other important and valid information such as future beacon locations, future channel assignment information, etc. Any BCN modem that wishes to be admitted to the network, then transmits an admission request signal to the NC using the identified admission area. If collision occurs in the admission area between slave BCN modems, then an appropriate back-off algorithm may be used to resolve the collision and enable the colliding slave BCN modems to access the admission area at different times. Otherwise admission to the BCN network 310 may be achieved.

[052] Once a new BCN modem establishes its identity and its communications with the NC, it may start a network admission process that may include several steps, including the optimization of its communications with the NC based on the channel response

characteristics between the BCN modem and the NC in either communications direction, the optimization of the transmission characteristics between the BCN modem and any of the other BCN modems already in the network, any calibration requirements to ensure adequate communications, etc. Once admitted to the BCN network 310, the slave BCN modem can communicate efficiently with every other node in the network. The NC BCN modem assigns timeslots to the BCN modem to make requests for transmission opportunities to enable the communication between the slave BCN modem and each of the other nodes in the BCN network 310. Once the slave BCN modem contacts another node, the data path or link between the slave BCN modems and the other nodes may be optimized. By the end of the admission process, the slave BCN modem knows how to transmit efficiently to every other node in the BCN network 310 and subsets of nodes.

[053] In order to manage the BCN network, control and optimize its operation and enable efficient data transmission in the network, several types of data packets may be used to transmit information. The three most prevalent packet types, for example, are, robust packets, probe packets and data transfer packets. The robust packet's main characteristics are that it can be received by any BCN modem in the network even before channels are optimized. The robust packets contain significant redundancy and are transmitted using lower order modulation. The robust packet type is used mainly to broadcast information to all nodes in the BCN network 310 and to enable communications between them before the network is optimized, or to communicate most important control and timing information. One of the robust packets may be called a beacon that may be sent at anytime, no matter the quality of the link, to provide the basic

timing and control information that may be required for robust network operation. The robust packets may also transfer original contention and admission information. Another type of robust packet may be used for influencing hardware, i.e., a global reset of all BCN modems in the BCN network 310.

[054] The probe packet type may be used for at least three functions in a BCN network 310. The first use for the probe packet is link optimization. An echo profile probe is sent to determine how far apart the BCN modems (i.e., nodes) are in the BCN network 310. The determined distance between nodes is used to calculate the cyclic prefix that is used in messages to accommodate for the echo and multipath profile of the specific link.

[055] Another probe function may be for hardware calibration. The probe may be used for calibrating the I/Q amplitude and phase Quadrature balance of the up and down conversion process. The I/Q balance of the upconverter and/or downconverter may be off from the optimal 90 degrees and I/Q amplitude balance may require calibration. One can accommodate a less stringent I/Q hardware requirements by using probe packets for adaptive calibrations. The probe packet may also be used by requesting a timeslot to be allocated by a NC that may be used by a BCN modem to send packets to itself or other nodes in order to calibrate parameters and circuits, such as power level, filters, in addition to the I/Q transmission signal.

[056] The third type of packet is the data transport packet. The data transport packet is used to transfer data between nodes in the BCN network 310. These packets are denoted as a MAC packet unit (MPU) and are generally adaptively optimized for each transmission link in order to achieve the optimal network throughput.

[057] From a communications services point of view, the BCN network provides both best effort and reserved communications capabilities. It can also support asynchronous and isochronous communications services. In the best effort services, any packet received by a BCN modem for communications over the network requires the BCN modem to make a request to the NC and receive a time allocation grant to transmit the packet. The BCN modem can make requests for data transmission opportunities for more than one packet but the key characteristics of this operation mode is that transmission requests and grants are made based on a packet or multiple packet transmission requirements basis and is of a temporary nature; i.e., no long term data transmission allocations commitments are provided to a BCN modem.

[058] In the reserved mode, certain long-term data transmission requests and grants are made. In this case, the requests and grants can take several forms. A common method may be implemented where a BCN modem node makes a request and is granted a specific allocation for a certain data rate; for example, a BCN modem node may request 10 Mbps channel for a definite or indefinite duration. In this case, the NC controller (or the network, if the allocation is done in a different manner) may allocate certain packet transmission opportunities for this node that will amount to the allocated data rate based on the requested data rate. This allocation may provide for significant time duration until the requested duration expires, no data being transmitted for a predetermined duration, higher priority traffic obtaining the required allocation, or any other network policy that may be implemented according to the nature of the allocations and priorities.

[059] Another method for a reserved channel allocation may include a base allocation (that may be of any size) and additional allocations that may be based on a flow control method that allows the NC to monitor a transmit buffer at the transmitting node (or other traffic requirement indication) and provide variable transmit opportunities according to the transmit buffer load or other indicators. In this case, the fixed reserved allocation can support the effective "average" data rate, while the additional allocations are able to accommodate temporary data rate "peaks." That allows a more efficient utilization of the channel, compared to a case where the reserved allocation is required to accommodate the peak data rate of a given link. Also, even though such reserved bandwidth is allocated on a "long term" basis, it may be readjusted very quickly to accommodate potential changes in the traffic profile.

[060] The NC BCN modem (or the network, in cases where the allocations are performed in a different manner) may also provide asynchronous and isochronous functionality. Its characteristics are similar to those of the best effort and reserved channel communications capability and at times, the terms are used interchangeably. However, with asynchronous and isochronous functionality, the focus is on the timeliness of the services. Asynchronous functionality is similar to the best effort capability discussed above, but the focus is on the indeterminate nature of the timing of delivery. Since this service is in response mostly to a packet delivery that is of random nature, the BCN network does not provide a tight timing control on the latency of packet delivery through the BCN network. Priorities may also be assigned to packets within the BCN network 310 to ensure a priority delivery to certain packets based on IEEE 802.1p

priority tags. Packets of higher priority may have preference traversing the network as established by a NC policy. Yet another example of asynchronous functionality may be flow-controlled reservation of timeslots and/or bandwidth for BCN modems. Flow-controlled reservation may include every node being able to communicate the status of its transmission buffer status to the NC BCN modem. The NC BCN modem may give opportunities to transmit even if the other nodes have not requested opportunities for transmission. An isochronous service is similar to the reserved service but the focus is on a tight control on the delivery time and time variation through the network. Certain communications services, such as MPEG Transport Stream (MPEG-TS) may have tight jitter requirements. In order for the BCN network to support such services, its own communications services needs to be able to limit the delay and delay jitter through the BCN network. This can be done through the assignment of a tightly controlled reserved bandwidth allocation.

[061] As discussed in the above sections, the BCN network may offer both asynchronous best effort communications services and isochronous, reserved data transport services. An adaptation layer between other communications services and the BCN network allows it to provide a wide range of communications services over the BCN network and may be implemented in the protocol above a MAC layer for transport. The adaptation layer provides the specific protocol interface to the outside network and adapts it to BCN network transport. It provides all the necessary functions to adapt the specific protocol to be transported over the BCN network. This adaptation may include the same protocol on both sides of the network or may include protocol conversion

functionality where one node that may be adapted to one protocol is able to communicate with another node that may be adapted to another protocol. A simple example may include a device with an Ethernet interface to a BCN node communicating with a device with a USB interface to a BCN node. The adaptation layer may transport other protocols, such as Ethernet, MPEG Transport Streams, IEEE 1394, and universal serial bus (USB), data over the BCN network. For example, a native MPEG packet from a MPEG transport stream is 188 bytes long and is transmitted with a defined clocking system, so the packets arrive in a predicted fashion. The 188-byte MPEG2 TS packet or multiple MPEG2 TS packets are placed (or encapsulated) in a BCN packet for transmission between BCN modems. Because a MPEG2 TS packet is always 188 bytes, and its timing of arrival is very well predicted, the bandwidth required in the BCN network 310 may be reserved to match the predicted arrival time and thus, such a packet can be transported over the BCN network very efficiently. Additional data, such as timestamps, may be added to the encapsulated packets without an impact on that data in order to assure a proper timing transfer resulting in an extremely low jitter. Also, the MPEG2-TS adaptation layer can provide Program ID filtering to select just the desired programs for delivery over the BCN network.

[062] Another possible adaptation layer is for Ethernet packets. In this case, the adaptation layer may utilize the BCN network asynchronous protocol to transport Ethernet packets over the BCN network. This adaptation layer may also include the utilization of IEEE 802.1p priorities to provide a preferential transport to higher priority packets.

[063] A third adaptation layer may include IEEE 1394 transport through the BCN network. In this case, the adaptation layer may utilize both the isochronous, reserved allocations of the BCN network protocol to transport the 1394 isochronous packets and the asynchronous service to transport the asynchronous 1394 packets. Also, it can transport the whole 1394 transport through the isochronous, reserved allocations. In a similar fashion, a USB adaptation layer can transport USB packets through the network.

[064] One of the key features of the BCN network is its ability to co-exist with other services over the existing coaxial cable. Such services may include both analog and digital Cable TV services, satellite services and/or terrestrial TV services. In order to minimize the potential for interference by the BCN transmission on the existing services, the BCN modems in the BCN network 310 may use power control in order to manage the interference generated by and to each of the BCN modems by other BCN modems and other devices on the network. Nodes or BCN modems that are close to each other may be subject to a lower attenuation and thus require less power to communicate at a given data rate than nodes that are further apart. The nodes have the ability to adjust transmit power as communication needs dictate in order to achieve the required throughput with potentially lower transmit power. Thus, the interference created by transmitting nodes is minimized in the BCN network 310 without much impact on the total network throughput.

[065] Other power control strategies are also possible. If the network is subject to a significant ingress or other interference from devices in the BCN network, transmitting to an interfered-with node at maximum power may overcome the interference. In this case,

the network may deem it is necessary to slightly increase the probability of interfering with other devices in the network in order to enable more effective communications with interfered-with nodes. Other nodes that may not suffer the interference may be communicated with only at the nominal or controlled power level.

[066] The BCN network is dynamic and allows the occasional additions and removals of nodes without disruptions of network communications. Each node in the network contains a BCN modem. One of the BCN modems usually assumes the role of a Network Controller ("NC") (which may also be referred to as the Network Coordinator). The NC can be associated with a specific BCN modem (for example, it can be associated with a network gateway or a router) or is dynamically assigned according to certain network rules. In a typical application, the NC BCN modem is established when the first BCN modem is activated in the cable network. In the current implementation, if the NC BCN modem dies or becomes unavailable, a successor takes it place. The successor may be the second BCN modem activated in the cable network and may monitor a signal from the NC BCN modem. If the signal is not received for a predetermined amount of time, then the successor becomes an NC for the BCN network 310. If both the first and second BCN modems are unavailable, then either a third designated node (if one exists) may take over or a hunt for an NC occurs between the slave BCN modems based on a defined strategy or in a random fashion with the appropriate back-off strategy to resolve conflicts. In other implementations, the slave BCN modem to take over as an NC may be based on random numbers selection, back-off timers, or similar approaches that vary slave BCN

modems determining that an NC is unavailable. This feature may be referred to as NC mobility.

[067] The NC BCN modem is responsible for managing the BCN network 310. The NC BCN modem manages the other clients' BCN access to the BCN network 310 and coordinates assignment of time slots for all BCN modems within a BCN network 310. Additionally, the NC BCN provides synchronization and timing to the other BCN modems in the BCN network 310.

[068] In another implementation, each new BCN modem wishing to join the network listens to the network on a selected frequency channel to see whether there is an NC node on the channel. If there is, the new BCN modem receives the Beacon messages from the NC BCN. The Beacon messages are very robust and can be received even in a very poor channel environment. The Beacon also has information about the admission time slot for the new node and other network control information. If the new BCN modem is authorized to join the network, the transmit admission request in the admission slot announces its presence to the NC. If more than one new BCN modem is trying to access the admission time slot, the request may be unsuccessful and a backup algorithm (a well-known technique) is used for resolution. Once admitted to the network, the new BCN modem continues through the admission process, under the direction of the NC, and communicates with each of the other BCN modems, characterizing each of the possible communication paths to the other BCN modems. Once the paths to the other BCN modems are characterized, then the BCN modem optimizes the communication on each link to maximize transmission/reception efficiency and quality. Further, each BCN

modem (including the NC) may periodically probe all the links to the other BCN modems and continually makes adjustments to maintain the efficiency and quality. Thus, each path or channel between all BCN modems is individually characterized and optimized, both on admission and periodically thereafter. Also, if a severe communication interruption occurs, the affected node may repeat a process similar to the admission process.

[069] The BCN network may also span across several channel frequencies, where a single NC may control several frequencies, or each frequency may have its own NC. In the first case, the NC may control the access to multiple channel frequencies by controlling not only the time slot allocations of BCN modems in the network but also their operating frequencies. An example of this network may include a NC that controls more than one frequency channel and may assign communications resources to all the BCN modems in the frequencies under its control. Such network may include the assignment of other BCN modems to a given frequency for certain duration or assign communications resources such as transmission slots and frequencies on a packet-by-packet basis. All other descriptions above are relevant to such an operation as well.

[070] Turning to FIG. 4, a satellite television bridging approach that employs the BCN network of FIG. 3 is illustrated in cut-away diagram 400. A satellite LNB+coupler 402 (this may be two or more separate devices that are connected to each other by signal communication, but is shown here as a single entity for convenience) receives and down converts a satellite signal from the frequencies transmitted from the satellite to the antenna (not shown) to frequencies that can be carried over the coaxial cable 404. The

signal is carried by a coaxial cable 404 to a room 406 having a STB 408 that tunes, demodulates and decodes the satellite signal into a signal for display on television 410. The STB 408 may be equipped to stream a digitally-encoded video show via a BCN modem located in the STB to another BCN modem in another room. The streamed video may be transmitted from the STB 408 to another room 412 via the LNB+coupler 402. The streamed video may be received at the slave BCN modem 414 that is attached to television 416. The slave BCN modem 414communicates with other networking devices, such as a router 418, DSL/Cable Modem 420, and an A/V jukebox 422, using a communication standard such as TCP/IP over Ethernet or IEEE 1394 standard. The A/V jukebox 422 may have a network-attached storage (NAS) 424. The router 418 may be connected to a personal computer 426 that communicates via a USB connection with a printer 428.

[071] The satellite signal is received at the LNB+coupler 402 and is then transmitted via the coaxial cable 404 to the STB 408. The STB 408 has 1+N tuners/receivers used to select desired channels. The channel received by the first tuner is demodulated, decoded and is shown on the connected TV (or monitor) 410. The other N tuners may each select a channel and demodulate and decode the signal received at the selected channel as a digital video data stream. The data stream is carried by the BCN network back through the LNB+coupler 402 to the device having the slave BCN modem located in another room 412 for display on television 406 or through the router 418 to be displayed on the personal computer 426. Such transmission of data between devices and rooms may occur to any number of rooms, provided another BCN modem is present on the BCN network

in the other rooms. Transmission may be point-to-point or point-to-multipoint. The LNB+coupler 402 provides the means of communication between the various cables 404 connected to it at a certain frequency band or several frequency bands that do not interfere with other signals on these cables. Such frequencies may include both baseband frequencies and RF frequencies.

[072] In FIG. 5, another satellite television bridging approach that employs the BCN network of FIG. 3 is illustrated in cut-away diagram 500. A cable 502 from a satellite antenna is coupled to a STB 504 having 1+N tuners/receivers. The STB 504 may have a second connection via a BCN modem to the BCN network 310 via cable 506 and cable television (CATV) drop 508. The BCN network 310 has outlets in other rooms, such as 412.

[073] In this implementation, the satellite signal is received at the STB via cable 502. At least one of the 1+N tuners converts the signal into a video signal for display on a local television 410. The other N tuner/receivers tune and demodulate other possible channels where any, some or all demodulated data are then encoded into one or more digital streams and transmitted across the BCN network 310 by the BCN modem enabled device. The digital stream is then received in another room 412 at a device having another BCN modem. The digital stream is then converted and/or RF modulated for display on a television 416 or directly streamed to a personal computer 426. Even though digital streaming of video is used here to demonstrate data transmission across a BCN network, other types of data may be exchanged to transmit and/or receive.

[074] Turning to FIG. 6, a block diagram 600 of a multiple dwelling unit ("MDU") application that employs the BCN network is shown. It is often desirable to provide office buildings and apartment/condominium developments with cost effective data and video services. Such a system may be referred to as an "access type" implementation and is described with a cable television (CATV) headend 602 being a source for reception of video transmission from a provider of video services and connection to other two-way networks for data and video. The CATV headend 602 may have a fiber optical encoder 604 that encodes a single or multiple analog or digital video signals onto an optical physical transport medium, such as multimode fiber-optic cable 606. The headend 602 may also have an Ethernet to passive optical network ("E-PON") transceiver 608 that converts Ethernet data for transmission over a fiber-optic cable 610. The fiber-optic cables 606 and 610 may be terminated at a hybrid fiber-optic cable ("HFC") node 612.

[075] The HFC node 612 may have an Optical to Electrical converter 614 to decode the received video signal for transmission over a coaxial cable 616. The coaxial cable 616 may have one or more amplifiers 618 to maintain the necessary transmitted signal strength range along the coaxial distribution. A passive optical network ("PON") splitter 620 may split the optical signal to multiple location terminations, e.g., 16 terminations.

[076] At least two different access implementation examples in a MDU are shown where data may be supplied by fiber-optic cable to the MDU and distributed to the different units on the coaxial cable typically used for video services, such as cable television distribution. The first example, referred to as "Type A MDU" dwelling 622, has a POE 624 to the dwelling 622. The coaxial cable within the dwelling 622 forms the

BCN network 623. Often within the dwelling 622, one or more amplifiers 626, 628 are installed along with one or more passive splitters 630 to form the BCN network 623. The BCN network 623 is connected to BCN modems 632, 634, and 636 that enable Ethernet traffic to be carried over the BCN network 623. The BCN modem 632 may be connected to a personal computer (PC) 638, as BCN modem 634 is connected to PC 640, and BCN modem 636 to PC 642. The BCN network may also carry analog or digital video signals to set-top boxes 644, 646, and 648 that may be connected to televisions 650, 652, and 654, respectively.

[077] The BCN network 623 is connected to the Internet via a BCN modem enabled Ethernet hub 656 that is shown connected to an optical network unit (ONU) 658 that functions as a transceiver on the fiber-optic cable 660 connected to PON 620. Thus downstream video and audio signals are transmitted via the HFC node 612 to the dwelling 622. A two-way data path exists from the ONU 658 to the E-PON 608 located at the headend 602.

[078] The "Type A" MDU implementation enables multiple units, e.g., 32 units in the example embodiment, to share the BCN modem enabled Ethernet hub 656 and ONU 658. The communication between devices, such as PCs 638 and 640 in the "Type A" implementation, flows through the PON 620 and headend 602. This is in contrast to the single home BCN network, shown in FIG. 3, where devices within the home communicate directly with each other.

[079] In the other implementation example, "Type B" MDU 661 has a coaxial cable POE 662 connected to the internal coaxial network 663. The internal coaxial network

663 may have passive elements such as splitters 664. The coaxial network 663 may have BCN modems 670 and 672 connected to PCs 674 and 676, respectively, or other Ethernet enabled devices. The BCN modems 670 and 672 communicate with the BCN modem enabled hub 673 that is coupled to the ONU 675 for bi-directional communication with the PON 620 via a fiber optical cable 677. One or more STBs, such as 678, may be connected to televisions, such as 680, and the coaxial network 663. Unlike the "Type A" MDU 622 implementation, the "Type B" MDU 661 implementation has some units with access to the BCN Modem enabled hub 673 while others only receive the traditional features provided by a cable company.

[080] Within either the "Type A" or Type B" MDU implementations, the coaxial cable may employ a frequency plan 690 that uses 50-770 MHz 692 for broadcasting of video and audio signals. Another area of the frequency plan 690 employs a 50MHz bandwidth 694 at approximately 900MHz for use by the BCN modems. The upper end of the frequency band 1030MHz – 1450MHz 696 may be used by satellite television systems, such as DIRECTV.

[081] The BCN modems are able to create a BCN network while supporting features such as high definition television, Dolby 5.1 digital audio, parental control systems, return channels (remote or interactive television), and Internet data. They enable CPE devices that are TCP/IP enabled, or utilize other protocols, to communicate across the BCN network by communicating with a BCN modem that receives the data via a communication protocol, such as TCP/IP, and converts the TCP/IP signal into a signal for transmission across the BCN network.

[082] The BCN modems may also use encryption algorithms to encrypt data to be transmitted across the BCN network. The transmitted data is then decrypted at the receiving BCN modem for delivery to another CPE. The encryption may be DES based or use other encryption algorithms such as IP-SEC, etc. Various keying systems can be used and the various keying methods are well established in various standards, such as IEEE 802.11, Docsis, and others, and need not be detailed herein.

[083] In FIG. 7, a block diagram 700 of a BCN network similar to that of FIG. 3 is shown. The coaxial cable 304 enters the premises at the POE 306. One or more passive splitters, such as passive splitter 722 may be in the BCN network 310, FIG. 3. The splitter 722 splits the signals in coaxial cable 730 into multiple coaxial cable lines 732, 734, and 736. The coaxial cable line 732 is coupled to Node A 724, coaxial cable line 734 is coupled to Node B 726, and coaxial cable line 736 is coupled to Node C 728. Each Node may have a BCN modem that transmits and receives TCP/IP (or other protocols) data over their respective coaxial cable lines 732, 734, or 736. The BCN modem also converts the data from/to a physical layer and link layers transmitted on the twisted pair Ethernet cable lines 710, 712, and 714, to the BCN network. The cable lines 710, 712 and 714 may also be USB cables, IEEE 1394 cables or any other communication connections, including printed circuit board communication lines or even communication wires inside integrated circuits. These cable lines represent any communications methods, including all layers of the communications protocol, which are then translated at Nodes A 724, B 726, and C 728, prior to transmission over the BCN network. Each CPE 704, 706, and 708 may be connected to an Ethernet cable 710, 712,

and 714, respectively (or other communications methods). The different CPEs 704, 706 and 708 may communicate over the BCN network across the splitter 722.

[084] In FIG. 8, a functional diagram 800 showing the logical communication between various nodes, Node A 724, Node B 726, Node C 728, and Node D 808, in the form of a virtual logical mesh network is shown. The nodes 724, 726, 728, and 808 may be interconnected between node pairs utilizing corresponding inter-node channels between the node pairs. It is appreciated by those skilled in the art that even if the nodes are individually connected with one another via a single inter-node channel between the node pairs, each inter-node channel between node pairs may be asymmetric. Therefore, inter-node channels between Node A 724, Node B 726, Node C 728 and Node D 808 may be asymmetric and may require different modulation schemes for optimizing the specific link. Such optimization may be a different bit-loading scheme in an OFDM-based communications system or some other optimized method that optimizes the communications based on the specific channel available, which may be different on one physical link, depending on the direction of the signals between the nodes. As a result, the typically asymmetric inter-node channels between Node A 724, Node B 726, Node C 728, and Node D 808 may be described by the corresponding direction-dependent node channels AB, BA, AC, CA, BC, CB, AD, DA, BD, DB, CD, and DC.

[085] As an example, Node A 724 is in signal communication with Node B 726 via signal paths 810 and 812. Signal path 812 corresponds to the AB channel and signal path 810 corresponds to the BA channel. Additionally, Node A 724 is also in signal communication with Node C 728 via signal paths 822 and 824. Signal path 822

corresponds to the AC channel and signal path 824 corresponds to the CA channel. Similarly, Node B 726 is also in signal communication with Node C 728 via signal paths 802 and 804. Signal path 804 corresponds to the BC channel and signal path 802 corresponds to the CB channel.

[086] In this example, the AB channel corresponds to the channel utilized by Node A 724 transmitting to Node B 726 along signal path 812. The BA channel corresponds to the reverse channel utilized by Node B 726 transmitting to Node A 724 along signal path 810. Similarly, the AC channel corresponds to the channel utilized by Node A 724 transmitting to Node C 728 along signal path 822. The CA channel corresponds to the reverse channel utilized by Node C 728 transmitting to Node A 724 along signal path 824.

[087] Because all links are individually optimized to maximize the throughput on each link, a multicast or a broadcast transmission is problematic. In an example of operation, in order for Node A 724 to transmit the same message to both Node B 726 and Node C 728 using the AB channel along signal path 812 and the AC channel along signal path 822, Node A 724 may need to transmit (i.e., "unicast") the same message twice, once to Node B 726 and a second time to Node C 728 if the channel pre-coding makes the optimized signal waveform on the AC channel quite different from that of the AB channel. Since the nature of communicating on the network may include a significant percentage of multicast/broadcast communications, this may have a significant impact on network efficiency if similar messages need to be repeated on each optimized link.

[088] To maximize the network efficiency even for multicast and broadcast traffic profiles, each of the nodes utilizes the individual link optimization into a combined link optimization as follows; when a node, such as Node A, joins the network, it optimizes its transmission to each of the other nodes in the network. This optimized link is stored in the node's storage. Once a node wishes to transmit a certain message to multiple other nodes, it may do it by repeating the message multiple times or computing an optimal "multicast" transmission profile from the individual profiles in its memory. The node may also utilize a hybrid scheme if a better throughput can be achieved. In such a hybrid scheme, the node may decide to break the nodes it wishes to send the same message to into subsets of nodes that may share largely similar channel characteristics. Each of these subsets will utilize a specifically optimized channel transmission and the same message will be transmitted to all such subset groups. In actual operation, it may be that most messaging will be unicast or broadcast, so that in addition to the individually optimized transmission to each of the other nodes in the network, only a broadcast optimized transmission may be necessary. The preferred implementation of the optimized multicast or broadcast scheme in the proposed network takes advantage of the preferred bit-loaded OFDM scheme and utilizes a combined bit-loading for the subset of the channels to which a node wants to send the common message. This method is described further in the following sections.

[089] The network topology shown in FIG. 8 is a full-mesh peer-to-peer network. The BCN modem may utilize other forms of network topology, which may include a partial-mesh network, a star network, or a combination thereof. Because in a star network,

communications are always between a central node and the network nodes only, the optimized transmission is performed between the central node and the other network nodes only, and in the preferred optimization, the bit-loading scheme is established between the central node device acting as the NC and each of the remaining nodes in the network.

[090] The BCN modems may automatically be configured as either a NC or a slave during startup. Each BCN modem is capable of transmitting and receiving on a selected control and/or broadcast channel using what is commonly referred to as precoding. The selected broadcast channel is selected as a channel having sufficient quality to enable all BCN modems to communicate with the NC.

[091] If a BCN modem is started and it does not detect a control channel with a NC BCN modem, then it assumes the role of a NC. Otherwise a NC BCN modem is detected and the BCN modem starting up is configured as a slave BCN modem. For example, when Node A 724 starts up first and assumes the role of NC, the other Nodes B 726 and Node C 728 start up later as slave BCN modems. If two or more BCN modem start up at the same time, a random back-off timer may be used to stagger the establishment of a NC BCN modem. Further, if the network is divided, a BCN modem slave will determine that no NC is present and assume the role of the NC.

[092] Once a NC, such as Node A, is established, the quality of the data paths to and between the other nodes is determined. There may be multiple communications paths between Node A and the other nodes due to the signal reflections that may occur at splitters and other network connections. The data paths for communication between

selected nodes is determined and the path between one node to multiple nodes commonly called multicast is determined. It may not be true that the best signal quality path for a pair of nodes will be the best quality for a multicast to the pair of nodes and one or more other nodes. Often there may be a common channel that has an acceptable quality for all the nodes involved in the multicast.

[093] The multicasting is typically setup at the link layer of the protocol with a multicast group and members join and leave the group as required. A multicast address translation protocol may map up to 64 multicast channels to unique BCN modem channels. Further, either the NC or slave BCN modem may initiate a multicast session.

[094] In FIG. 9, another functional diagram 900 showing the interfaces and functional relationships between the Nodes of FIG. 3 is shown. In this diagram, Node A 724 may transmit a message in broadcast or multicast mode simultaneously to Node B 726 and Node C 728 channel via signal paths 812 and 822. When the network was established, Node A 724 had optimized its communications with Node B 726 as channel AB. Also, Node A 724 optimized its communications with Node C 728 as channel AC. If Node A 724 needs to transmit a message to Node B 726 or Node C 728, it utilizes the optimized transmission for channel AB or channel AC, respectively. However, once Node A 724 wishes to transmit a message to both Node B 726 and Node C 728 simultaneously, it may not be able to do it effectively if the optimized transmissions for channel AB and channel AC are different. Node A 724 may transmit the message twice, once to Node B 726 with an optimized transmission to channel AB, and once to Node C 728, with an optimized transmission to channel AC. However, analysis has shown that there is a better and more

efficient way to transmit the same message to both Nodes B 726 and C 728. Node A 724 can optimize the transmission to a new channel denoted as channel A-BC. This optimized transmission is the best transmission for messages destined to both Nodes B 726 and C 728. Extensive analysis on models of real cable systems have shown that in most cases, such method is preferred and yields a better throughput compared to repeating the message for optimized channels AB and AC. In the implementation discussed herein, the optimization for channel A-BC is relatively straightforward. Because each of the optimizations for channel AB and channel AC are done by bit-loading according to the frequency responses of paths 812 and 822, channel A-BC optimized transmission is the one that optimizes the bit-loading for the combined response of paths 812 and 813.

[095] It is appreciated by those skilled in the art that the different channels typically utilize different bit-loading modulation schemes, because the channels typically are physically and electrically different in the BCN network. Physically the channels often vary in length between nodes and electrically vary because of the paths through and the reflections from the various cables, switches, terminals, connections, and other electrical components in the BCN network. A bit-loading scheme is described in U. S. Utility Application Serial No. 10/322,834 titled "Broadband Network for Coaxial Cable Using Multi-carrier Modulation," filed December 18, 2002, which is incorporated herein, in its entirety, by this reference.

[096] In another implementation, the BCN network may operate with waveforms that utilize bit-loaded orthogonal frequency division multiplexing (OFDM). Therefore, the

BCN network may transmit multiple carrier signals with different QAM constellations on each carrier. As an example, over a bandwidth of about 50 MHz, the BCN network may have 256 different carriers that in the best circumstances would utilize up to 256 QAM modulations. However, the modulation of each carrier may be adjusted according to the specific channel response. If at certain frequencies, the response is poor, the BCN network may utilize BPSK or a low order QAM for carriers in those frequencies. If the channel is good in some other frequencies, then a high order QAM can be utilized on those frequencies which is the essence of bit-loading optimization.

[097] The application of bit-loading in a BCN network is demonstrated in Fig 10. As an example, in FIG. 10, a block diagram of the BCN network 700 of FIG. 7 is shown. The BCN network 700 may be in signal communication with a cable provider (not shown), satellite TV dish (not shown), and/or external antenna (not shown) via a signal path 304, such as a main coaxial cable from the customer premises to a cable connection switch (not shown) outside of the customer premises.

[098] The BCN network 700 may include the POE 306 and splitter network 722 that has a main splitter 1006, a sub-splitter 1008, Nodes A 724, B 726 and C 728, and STBs A 1016, B 1018 and C 1020. Within the BCN network 700, the POE 306 may be in signal communication with the main splitter 1006 via signal path 1022. The POE 306 may be implemented as a coaxial cable connector, transformer and/or filter.

[099] The main splitter 1006 may be in signal communication with sub-splitter 1008 and Node C 728 via signal paths 1024 and 1026, respectively. The sub-splitter 1008 may be in signal communication with Node A 724 and Node B 726 via signal paths 1028 and

1030, respectively. The main splitter 1006 and sub-splitter 1008 may be implemented as coaxial cable splitters. Node A 724 may be in signal communication with STB A 1016 via signal path 1032. Similarly, Node B 726 may be in signal communication with STB B 1018 via signal path 1034. Moreover, Node C 728 may be in signal communication with STB C 1020 via signal path 1036. STBs A 1016, B 1018 and C 1020 may be implemented by numerous well known STB coaxial units, such as cable television set-top boxes and/or satellite television set-top boxes. Typically, the signal paths 304, 1022, 1024, 1026, 1028, 1030, 1032, 1034, and 1036 may be implemented utilizing coaxial cables.

[0100] As an example of operation, if STB A 1016 transmits a message to STB B 1018, the message will propagate through at least two transmission paths from Node A 724 to Node B 726. The first transmission path 1040 travels from Node A 724 through signal path 1028, leakage between output ports in sub-splitter 1008, and signal path 1030 to Node B 726. The second transmission path includes transmission sub-paths 1042 and 1044. The first sub-path 1042 travels from Node A 724 through signal path 1028, sub-splitter 1008, signal path 1024, main splitter 1006, and signal path 1022 to POE 306. The message may reflect due to less than ideal termination at the input or output of the POE 306 and go back through the second sub-path 1044. The second sub-path 1044 travels from POE 306, through signal path 1022, main splitter 1006, signal path 1024, sub-splitter 1008, and signal path 1030.

[0101] The first transmission path 1040 typically tends to experience a certain attenuation because of the isolation between the output ports of sub-splitter 1008. The

second transmission path 1042 attenuation results mostly from the reflection at the POE 306 due primarily to impedance mismatches between the input or output of POE 306 and the rest of the BCN network 700. Of course, there may be additional paths the signal can travel through due to other reflections in the various paths of the BCN network 700. The result of all these multiple transmission paths is a potentially extensive dispersive channel between STB A 1016 and STB B 1018. This channel, however, is fairly static and does not change rapidly.

[0102] As another example, in FIG. 11, the communications between STB A 1016 and STB C 1020 is described for the BCN network of Fig 10. In this example of operation, if STB A 1016 transmits a message to STB C 1020, the message will propagate through two or more transmission paths from Node A 724 to Node C 728. Two transmission paths of this example are shown in FIG. 11. The first transmission path 1040 travels from Node A 724 through signal path 1028, sub-splitter 1008, signal path 1024, and signal path 1026 to Node C 728, with leakage between the output ports of the main splitter 1006. A second transmission path includes transmission sub-paths 1042 and 1044 and the reflection at the input and/or the output of the POE 306.

[0103] In the example of Fig 11, it is to be expected that the dispersal may be of a different nature than that of Fig 10 because the leakage through the main splitter 1006 output ports is likely to be different compared to the leakage between the output ports of the sub-splitter 1008, and the difference in path lengths between the two transmission paths in the example of Fig 11 is likely to be smaller because it includes only the traversing of the path 1022 twice, once on the way to the POE 306 and once on the way

back. In contrast, in the example of Fig 10, the difference in the paths includes the traversing twice of both the 1022 and 1024 paths.

[0104] In FIG. 12, a plot 1200 of the frequency response of the Node A to Node B 1208 two transmission path and the Node A to Node C 1206 two transmission path is shown. In both channels, the two transmission paths have similar attenuation, resulting in a frequency response with deep notches. This occurs at frequencies where the phase difference through the two paths is 180 degrees, resulting in the cancellation of the signal because their amplitude is identical. It may be noted that the frequency response of the Node A to Node B 1208 transmission path contains more notches per unit frequency than the Node A to Node C 1306 transmission path because its path time difference is larger. Similarly, because the time difference between the two paths of the Node A to Node C channel is smaller, the frequency difference between the notches in its frequency response is larger, as should be expected. Thus, Fig 12 illustrates that in order to communicate between Node A and Node B, or between Node A and Node C, a special waveform may be required in order to deal effectively with the respective channels. Moreover, these channel responses are likely to be different in different cable systems and also are likely to change in time due to a change in configuration, such as when a user may add new devices to his cable system or change its topology, or due to slowly occurring changes caused by aging or changes in temperature or humidity that can change the leakage through the devices. Hence, the transmission system needs to constantly adapt to changing channel conditions.

[0105] In the example implementation, such adaptation is performed through a technique of OFDM modulation combined with an optimized bit-loading. In an OFDM optimized bit-loading, the modulation for each carrier is adapted to the channel response and noise (and interference) at the carrier frequency. Fig 12 shows an example of bit-loading constellation 1202 versus frequency 1204 for the channel path utilized by Node A to transmit to Node B 1208 and the channel path utilized by node A to transmit to Node C 1206. Line 1208 represents the AB channel and line 1206 represents the AC channel. As can be seen from Fig 12, at frequencies where the frequency response provides good transmission path and depending on the noise level, the BCN network may utilize high order modulation to permit better throughput at these frequencies. The modulation axis 1202 shows the QAM level (16, 32, 64...256) corresponding to a given frequency response level 1206 and 1208 at a given frequency 1204. Around the notch frequencies 1212 and 1214 of the response 1208 and 1210 of the response 1206, nothing at all may be transmitted because the notch is very deep. Sufficient margin may be provided to ensure that the selected modulation provides the necessary Bit Error Rate ("BER") and allows for small changes in the response. Additional QAM levels such as 2-QAM, also known as BPSK, and 4-QAM, also known as QPSK, can be used but are not shown in FIG. 12.

[0106] Returning to FIG. 9, the BCN network 900, in order to ensure that both Node B 726 and Node C 728 are able to receive a broadcast signal transmitted from Node A 724, utilizes a bit-loading modulation scheme that is known as the common bit-loaded modulation scheme. The common bit-loaded modulation scheme transmitted via the A-BC channel, along signal path 902, is a combination of the bit-loading modulation

scheme transmitted via the AB channel, along signal path 812, and the AC channel, along signal path 822.

[0107] FIGs. 13A, 13B and 13C provide examples of common bit-loading. In FIG. 13A, a plot 1300 of carrier frequency signals of various bit-loading constellations 1302 versus carrier number 1304 for the AB channel path such as that of FIG. 9 between Node A and Node B is shown. Line 1306 represents the AB channel frequency response and a corresponding envelope of the constellation sizes of 8 different carrier signals numbered 1-8 within the transmission signal for the AB channel. In the example, within the AB channel the transmitted OFDM signal includes the individual carriers with different modulation constellations, such as carrier number signals 1 and 8 that may transmit at a constellation size of 256 QAM, carrier number signals 2, 3 and 7 that may transmit at a constellation size of 128 QAM, carrier number signals 4 and 6 that may transmit at a constellation size of 64 QAM, and carrier number signal 5 that may be OFF (i.e., no carrier signal may be transmitted because of the null in the channel response).

[0108] Similarly in FIG. 13B, a plot 1308 of a frequency response 1314 and the corresponding bit loading scheme 1310 vs. frequency 1312 for the OFDM carrier frequency signals for the AC channel such as that of FIG. 9 is shown. Again, line 1314 represents the AC channel response and there is a corresponding envelope of the constellation sizes of the 8 different carrier number signals within the AC channel. As an example, within the AC channel, carrier number signals 1, 2, 4, 6 and 8 may transmit at a constellation size of 128 QAM, carrier number signal 5 may transmit at a constellation

size of 256 QAM, and carrier number signals 3 and 7 may be OFF (again, no carrier signals may be transmitted because of nulls in the channel response).

[0109] In FIG. 13C, a plot 1316 shows the common bit-loading scheme of the OFDM carriers constellations 1318 versus carrier number 1320 for broadcasting messages over the A-BC channel path between Node A and Nodes B and C. In this example, plot 1316 shows that within the A-BC channel, an OFDM signal consisting of carrier number signals 1, 2, and 8 may transmit at a constellation size of 128 QAM, carrier number signals 4 and 6 may transmit at a constellation size of 64 QAM, and carrier number signals 3, 5, and 7 are OFF. These carrier number signal values are the result of comparing the carrier number signals from the AB channel in FIG. 13A and the corresponding carrier number signals from the AC channel in FIG. 13B and choosing the lowest corresponding modulation value for each carrier number. The resulting common carrier frequency signals in FIG. 13C graphically represent signals utilizing the common bit-loaded modulation scheme. These signals would be able to transmit information from Node A to Node B and Node C simultaneously.

[0110] Turning to FIG. 14, a block diagram of an Ethernet bridge node of the BCN network 700 for FIG. 7 or FIG. 3 is shown. The BCN network cable 1502 may be connected to a standard coaxial cable wall plate 1504, such as those made by LEVITON. The Coaxial wall plate 1404 may secure to the cable 1402 via a connector, such as a F-type or BNC connector. Typically the cable may be 75-ohm RG-59, some type of RG-6, or a combination of such 75-ohm cables. The Ethernet to Coax Bridge Device 1406 may have a diplexer 1408 that passes the RF frequencies below 860MHz to a cable 1410 that

may be connected to a video type device (not shown), such as a television, VCR, Audio/Visual Receiver, or television tuner PC card.

[0111] The Ethernet to Coax Bridge Device 1406 may have a BCN modem 1404 that connects to a BCN network such as that shown in FIG. 3 and FIG. 7, and that enables it to code and decode messages between connected devices such as a wireless access point 1412, media server 1414 or a network attached storage 1416 for transport across the BCN network through the cable 1402. The various devices wishing to communicate over the BCN Network to other devices in other bedrooms communicate by using standard Ethernet packets. The Ethernet to Coax Bridge (ECB) provide Ethernet bridging, switching and/or routing functions for all connected devices to other devices connected over the BCN network. Hence, a laptop (not shown) may be connected wirelessly to the Wireless AP 1412. The Wireless AP may route the Laptop packets to other devices connected to the ECB or through the BCN Network, to other devices in other rooms that are connected to the BCN Network through other ECBs or directly to STBs, PCs, TVs, gateway and any other device that is capable of communications over the BCN network through a BCN modem. Similarly, the Media Server 1414 may communicate through the ECB to TV sets, other Media Servers or Media Extenders connected to the BCN Network in any room. The ECB may operate a bridge, switch and or router over an Ethernet network. However, its functionality spans not only any Ethernet segment it is connected to but also across the full BCN Network, providing a full Layer 2 and upper layers functionality across the whole BCN network and other networks through gateways. Due to the capabilities of the BCN Network, the ECBs may provide high levels of Quality of

Service ("QOS"), including network wide priorities such as IEEE 802.1p, and even higher level of QOS services including prioritized flow control for selected flow across the network. These capabilities are inherent in the BCN Network and can be utilized by all the devices connected to the BCN Network including ECBs.

[0112] In FIG. 15, a cable home gateway/router node 1500 is shown. The cable home gateway/router node 1500 is connected to BCN network by a cable 1502. The cable home gateway/router node 1500 may have a diplexer 1504 that passes RF frequencies below 860 MHz to another cable 1506 that may be connected to a video type device or any other cable device that utilizes frequencies below 860 MHz, such as a STB, TV set, cable modem, etc. A BCN modem 1508 may be connected to BCN network cable 1502 via the diplexer 1504. The BCN modem 1508 may also be connected to a network processor/CPU 1510, such as a host microprocessor, digital signal processor, or other known digital controllers by an electrical bus, such as a PCI bus 1509 or any other internal or external parallel or serial high speed bus.

[0113] The Network Processor/CPU 1510 may be configured to support WAN connectivity, such as the Docsis cable modem communication standard for data communication with a cable head end or DSL, dial-up connection, or Wireless Access through a WAN port. This port may or may not support MAC functions, but may transmit and receive WAN Packet Data Units to the WAN port 1524. Further, the Network Processor/CPU may support other connections, such as USB1.0, USB2.0, or other networking technologies. A N-port switch (4-port shown) 1612 may also be incorporated into the cable home gateway node/router 1500. The ports 1514, 1516, 1518,

and 1520 (typically called local area network ports) may be coupled to Ethernet network devices (not shown). The cable home gateway/router node 1500 may also provide multiple networking functions, including gateway functions, e.g., WAN to/from LAN packet transmission and protocol conversions, LAN switching and/or routing functions and protocol conversions between the multiple LAN and WAN functions, which may include one or more BCN networks.

[0114] Turning to FIG. 16, an integrated Ethernet bridge/router with integrated WAN modems ("IEBR") 1600 is shown. In this example implementation, the functionality and options of the bridge/router of FIG. 15 is integrated with the functionality of cable modem and/or DSL and/or wireless access, and also with wireless LAN connectivity as additional local ports. A BCN network cable 1602 is connected to a triplexer 1604 that may pass RF frequencies less than 860 MHz on another cable 1606 to a video device (not shown). The triplexer 1604 may also be coupled to a Docsis cable modem 1610 and a BCN modem 1612. The IEBR 1600 also may have a DSL modem that interfaces to a telephone line (not shown) and also to a wireless WAN access modem 1608. The IEBR 1600 may also be connected to a network processor 1614 and support an N-port switch (4-port switch shown) 1616 and a wireless LAN 1609. Each of the ports of the N-port switch may be connected to an Ethernet enabled device, such as a media server/PC 1618. The media server/PC 1618 may also be connected to the other cable 1606. The functionality of the integrated router/WAN modem is similar to that of FIG. 15 but is integrated with the WAN modems and a wireless LAN.

[0115] In FIG. 17, a diagram 1700 of frequency plans is illustrated. In most two-way cable systems 1702, an upstream frequency band is located in the 5-42 MHz band 1704. Analog and digital cable television signals and cable modem downstream carriers are found in the 50-860 MHz band 1706 and the BCN network 1708 is located between 940-1400 MHz. In theory, the BCN network can be located above 860 MHz, but in order to allow diplexers in systems that may require it, it may be prudent to allow a certain frequency band for the filters roll-off. A different implementation, such as the network shown in FIG. 4 or one where the BCN network is not connected to cable at all and is available exclusively for satellite use, is shown in Fig 17, 1710. In this implementation, the BCN network 1712 may be located between 2-38 MHz and off-air signals 1714 between 50-806 MHz. The Satellite L-Band 1716 may be located between 950-2150 MHz. In yet another implementation 1718, the system operates on a BCN Cable Network that is capable of providing both satellite and cable services. In this case, the cable upstream frequency band 1720 may be present between 5-42 MHz, the cable TV signals between 50-860 MHz 1722, the BCN network 1724 in a frequency band found between 880 and 940 MHz, and satellite L-band 1726 located between 950-2150 MHz. The final implementation 1728 demonstrates the application over cable systems where two or more distinct BCN networks 1730 and 1732 located above the 5-42 upstream frequency band 1734 and cable TV 50-860 frequency band are utilized. In this frequency plan, although only two BCN Networks, 1730 and 1732, are shown, many more may be placed above the ones shown in this frequency plan. Thus, it is shown that BCN

networks may be located above or below traditional services in addition to there being multiple BCN networks.

[0116] Turning to FIG. 18, a plurality of BCN modem enabled devices 1800 is shown. The first device is STB 1802 having a BCN modem 1804 with a coaxial cable input 1806 and an output 1808 (optional) that may be connected to a TV or monitor. A bridge/gateway 1810 is shown with a BCN modem 1812 attached to a coaxial cable connection 1806 and an output, such as Ethernet, USB1.1 or USB2.0 or IEEE 1394 connected to another network 1814. A television set 1816 is shown with a BCN modem 1818 connected to a coaxial cable 1806 and optionally connected to an internal or an external optional storage device 1820. A game console 1822 is shown with a BCN modem 1924 connected to coaxial cable 1906 and another optional connection 1808 to a TV or monitor. A digital video recorder (DVR)/DVD device/video cassette recorder (VCR) 1826 is shown with a BCN modem 1828 connected to a coaxial cable 1806 and having another optional connection 1808 to a TV or monitor. A PC 1830 may have a BCN modem 1832 connected to coaxial cable 1806 and may have another connection 1814, such as USB, IEEE 1394, serial and/or Ethernet to name but a few. Similarly, a media center 1836 may have a BCN modem 1938 connected to a coaxial cable 1806 and other optional connections such as 1808 to a monitor or a TV set and/or a second connection 1814 to other devices. A cable modem 1840 may be connected to a cable system 1842 and have a BCN modem 1844 connected to the same or another segment of a coaxial cable 1846 or another type of home networking connection such as Ethernet, wireless AP, powerline network, HPNA, etc. A router/switch 1848 may have a BCN

modem 1850 connected to a coaxial cable 1806 and may provide multiple outputs for Ethernet, USB, IEEE 1394 or other types and combinations of networking connections 1854. A wireless access point 1856 may have a BCN modem 1858 connected to a coaxial cable 1806. These are examples of different types of devices that may benefit from having a BCN modem functionality and technology integrated within their designs.

[0117] FIG. 19 shows a flowchart 1900 illustrating the method performed by the BCN network shown in FIG. 7 in order to achieve the common bit-loading of FIG. 9, and also discussed in FIGs. 12, 13A, 13B, and 13C. In FIG. 19, the process starts in step 1902. In step 1904, a transmitting node transmits a probe signal to a plurality of receiving nodes In step 1906, a receiving node of the plurality of receiving nodes receives the probe signal through the appropriate channel path of transmission. The receiving node then determines the transmission characteristics of the channel path from the transmitting node to the receiving node in step 1908 and in response to the determined transmission characteristics of the channel path, the receiving node determines a bit-loaded modulation scheme for the transmission characteristics of the channel path in step 1910. The receiving node then, in step 1912, transmits a response signal to the transmitting node, informing the transmitting node of the recently determined bit-loaded modulation scheme.

[0118] The transmitting node then receives a plurality of response signals, in step 1914, from the corresponding receiving nodes wherein each of the response signals informs the transmitting node of the corresponding bit-loaded modulation scheme determined by each of the plurality of receiving nodes. In response to receiving the plurality of response

signals, the transmitting node, in step 1916, compares the plurality of bit-loaded modulation schemes from the corresponding received plurality of response signals and, in step 1918, determines the common bit-loaded modulation scheme. Once the transmitting node determines the common bit-loaded modulation scheme, the transmitting node, in step 1920, transmits a broadcast signal relaying the common bit-loaded modulation scheme to the plurality of receiving nodes. This broadcast signal may either contain handshake information from the transmitting node to the plurality of receiving nodes or it may actually be a communication message containing information such as video, music, voice and/or other data.

[0119] In step 1922, if all the nodes in the BCN network have performed the handshake process that determines the common bit-loaded modulation scheme in steps 1902 through 1920, the handshake process is complete and process ends in step 1924, at which time the BCN network may begin to freely transmit information between the various nodes. If instead, there are still nodes in the BCN network that have not performed the handshake process that determines the common bit-loaded modulation scheme in steps 1902 through 1920, the process then returns to step 1926. In step 1926, the BCN network selects the next node in the BCN network and the process repeats steps 1902 through 1922 again. Once all the nodes in the BCN network have performed the handshake process, the handshake process is complete and the process ends in step 1924, at which time the BCN network may begin to freely transmit information between the various nodes.

[0120] The process in FIG. 19 may be performed by hardware or software. If the process is performed by software, the software may reside in software memory or memories (not

shown) in the BCN network. The software in software memory may include an ordered listing of executable instructions for implementing logical functions (i.e., "logic" that may be implemented either in digital form such as digital circuitry or source code or in analog form such as analog circuitry or an analog source such as an analog electrical, sound or video signal), may selectively be embodied in any computer-readable (or signal-bearing) medium for use by or in connection with an instruction execution system, apparatus, or device, such as a computer-based system, processor-containing system, or other system that may selectively fetch the instructions from the instruction execution system, apparatus, or device and execute the instructions. In the context of this document, a "computer-readable medium" and/or "signal-bearing medium" is any means that may contain, store, communicate, propagate, or transport the program for use by or in connection with the instruction execution system, apparatus, or device. The computer readable medium may selectively be, for example but not limited to, an electronic, magnetic, optical, electromagnetic, infrared, or semiconductor system, apparatus, device, or propagation medium. More specific examples, that is "a non-exhaustive list" of the computer-readable media, would include the following: an electrical connection (electronic) having one or more wires, a portable computer diskette (magnetic), a RAM (electronic), a read-only memory "ROM" (electronic), an erasable programmable read-only memory (EPROM or Flash memory) (electronic), an optical fiber (optical), and a portable compact disc read-only memory "CDROM" (optical). Note that the computer-readable medium may even be paper or another suitable medium upon which the program is printed, as the program can be electronically captured, via for instance, optical

scanning of the paper or other medium, then compiled, interpreted or otherwise processed in a suitable manner if necessary, and then stored in a computer memory.

[0121] While various embodiments of the invention have been described, it will be apparent to those of ordinary skill in the art that many more embodiments and implementations are possible that are within the scope of this invention.

CLAIMS

What is claimed is:

1. A Broadband Coaxial Network ("BCN"), comprising:

a first BCN modem in signal communication with a coaxial cable network ("CCN"); and

another BCN modem in signal communication with the CCN that is capable of two-way signal communication with the first BCN modem across one or more passive network devices having high isolation in the CCN.

2. The BCN of claim 1, wherein the first BCN modem further includes a controller coupled to the first BCN modem that establishes the first BCN modem as a network controller upon connection to the CCN.

3. The BCN of claim 2, wherein a control signal is generated by the first BCN modem in response to the first BCN modem being the network controller.

4. The BCN of claim 1, wherein the another BCN modem further includes a controller coupled to the other BCN modem that detects a control signal that identifies a network controller is coupled to the CCN.

5. The BCN of claim 1, wherein the signal communication occurs between the BCN modems that are located within a building.

6. The BCN of claim 5, wherein the building is a single family home.

7. The BCN of claim 5 wherein the building is a multi-unit dwelling unit.

8. The BCN of claim 1, wherein the signal communication occurs via a Time Division Multiple Access (TDMA) access scheme on one or more Radio Frequency(RF) channels.

9. The BCN network of claim 1, wherein the signal communication carries encrypted data between the first BCN modem and the other BCN modem.

10. A Broadband Coaxial Network ("BCN") for communicating on an in-building coaxial cable network ("CCN"), comprising:

a first BCN modem connected to a coaxial cable network ("CCN"); and

another BCN modem connected the CCN that is capable of signal communication with the first BCN modem across one or more passive network devices having high isolation in the CCN,

wherein the first BCN modem and the another BCN modem are configured to communicate with each other utilizing TDMA and Time Division Duplex (TDD).

11. The BCN of claim 10, wherein the first BCN modem employs adaptive communication techniques that adapts to the characteristics of a coaxial channel between the first BCN modem and the other BCN modem.

12. The BCN of claim 10, wherein the first BCN modems is directly in signal communication with the other BCN modem across the CCN.

13. The BCN of claim 12 wherein the CCN is a type of network having a architectural configuration selected from a group consisting of a star configuration and a mesh configuration and a combinations of these configurations, in a TDMA , TDD access fashion, and the type of network utilizes at least one frequency channel.

14. The BCN of claim 13, wherein the adaptive communication techniques includes utilization of the adaptive communication techniques in both transmitting processing and receiving processing of data.

15. The BCN of claim 14, wherein the adaptive communication techniques utilize pre-coding for transmitting processing.

16. The BCN of claim 14, wherein the adaptive communication techniques utilize adaptive equalization for receiving processing.

17. The BCN of claim 14, wherein the adaptive communication techniques include pre-coding for transmitting processing based on known or learned channel response.

18. The BCN of claim 14, wherein additional signal processing techniques are used which are selected from a group consisting of OFDM bit-loading, transmit power control, transmission diversity, OFDM cyclic prefix, and probes.

19. The BCN of claim 14, further including additional MAC and communication processing including the provision of best effort and reserved communication services, processes and protocol adaptations to adapt other communication services to operate over the BCN.

20. The BCN of claim 19, wherein the communication services and processes includes utilization of a Network Controller ("NC") to control the access to the BCN.

21. The BCN of claim 20, wherein the NC includes a configuration selected from the group consisting of:

a configuration that enables every BCN modem to act as a NC;

a configuration that utilizes a frequency plan;

a configuration that allows a new BCN modem admission to the BCN Network;

a configuration that allows a new BCN modem to communicate with another BCN modem to characterize the channel response between them and determine a bit loading in either direction; and

a configuration that allows each BCN modem in the network to request and be granted a transmission opportunity without a transmission conflict.

22. The BCN of claim 21, wherein the communications services provided by the BCN include BCN wide transmission priorities.

23. The BCN of claim 22, wherein the BCN services include a configuration that provides reserved bandwidth communication services

24. The BCN of claim 19, wherein the BCN modem provides a protocol adaptation layer for communication over the BCN, the protocol adaptation layer utilizes protocols selected from the group consisting of:

Ethernet,

IEEE 1394,

Universal Serial Bus ("USB"); and

MPEG-TS.

25. The BCN of claim 11, wherein the BCN modem is embedded as a part of a device selected from the group consisting of:

a set-top box ("STB");

a Personal Computer (PC);

an IP STB;

a Media Center box;

a Media Extender box;

a DVD player;

a cable modem;

a personal video recorder ("PVR");

a TV set;

a networking device;

a switch/router;

a bridge/Gateway;

a video game console;

a wireless access point (WAP); and

a network attached storage.

26. The BCN of claim 25, wherein the STB is a device selected from the group consisting of a satellite STB, cable STB, and DSL STB.

27. The BCN of claim 25, wherein the BCN modem utilizes the PCI bus structure.

28. The BCN of claim 27, wherein the BCN modem utilizes another host device.

29. The BCN of claim 28, wherein the host device is either a bridging host device or a switching host device.

30. The BCN of claim 10, wherein an at least one TDMA frequency channel used by the BCN network is in one or more of the following frequency bands:

above 860 MHz;

between 860 MHz and 950 MHz; and

below 50 MHz.

31. The BCN of claim 10, wherein the CCN network is one of the following:

coaxial cables that have been installed for the carriage of satellite signals; and

coaxial cables for video distribution.

ABSTRACT OF THE DISCLOSURE

A BCN network with BCN modems that enable network wired devices to communicate over a typical home coaxial network that may include passive splitters and different types of coaxial cable.

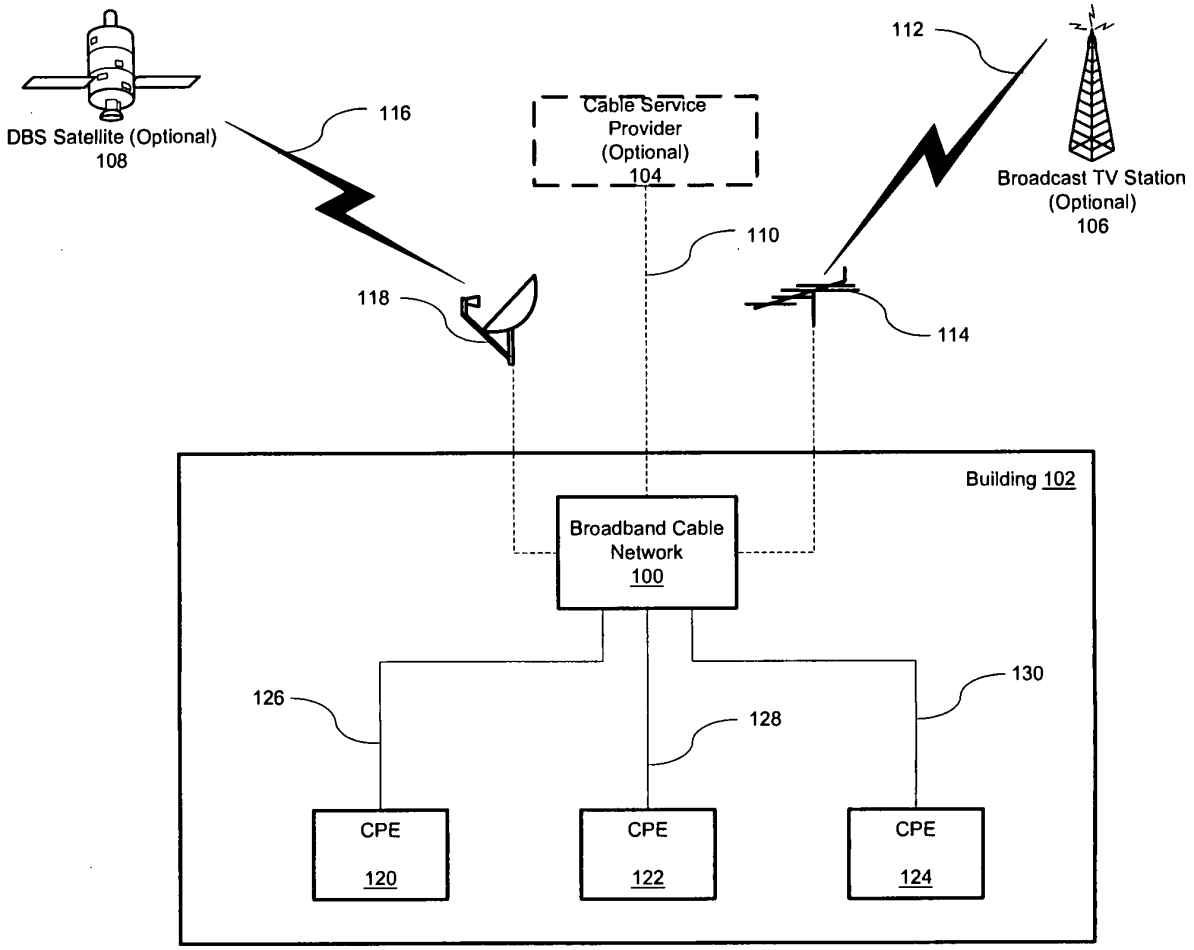


FIG. 1 (Prior Art)

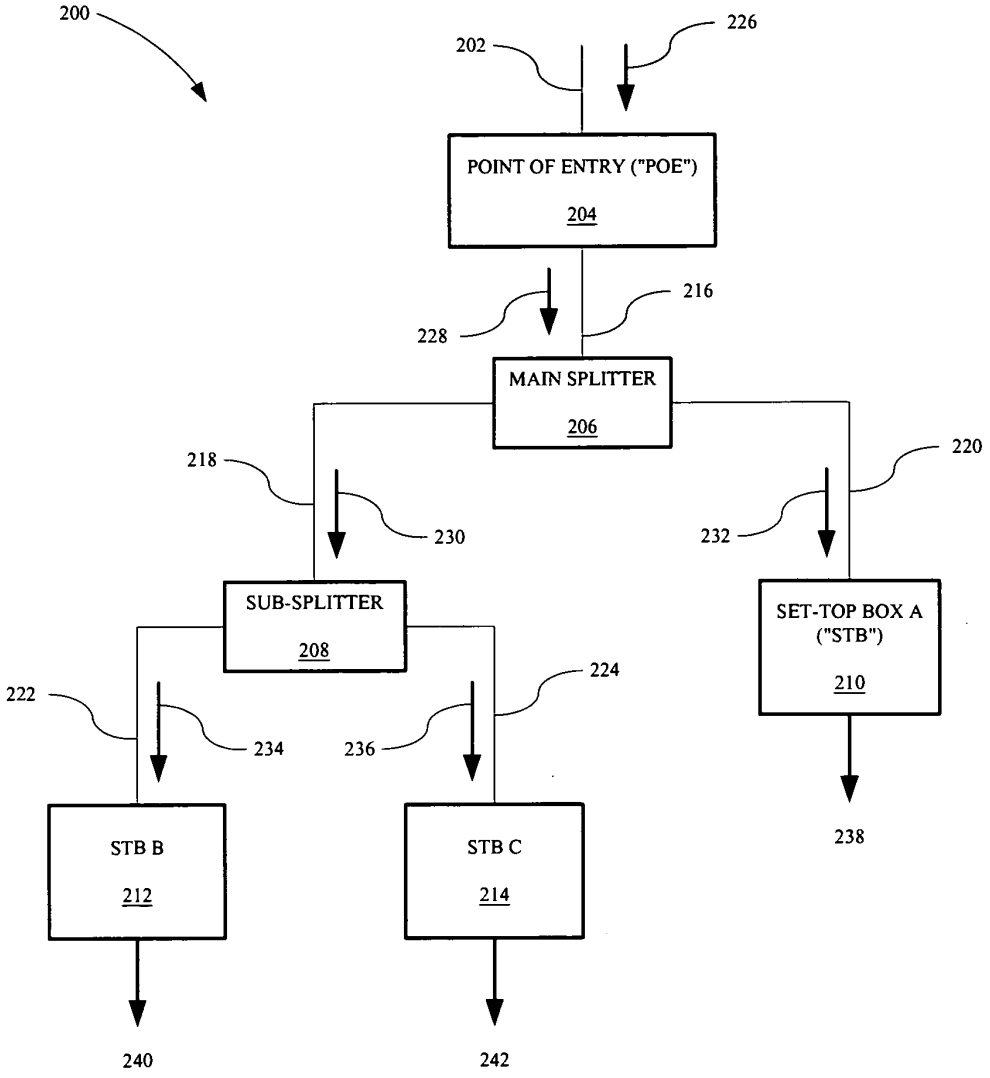


FIG. 2 (Prior Art)

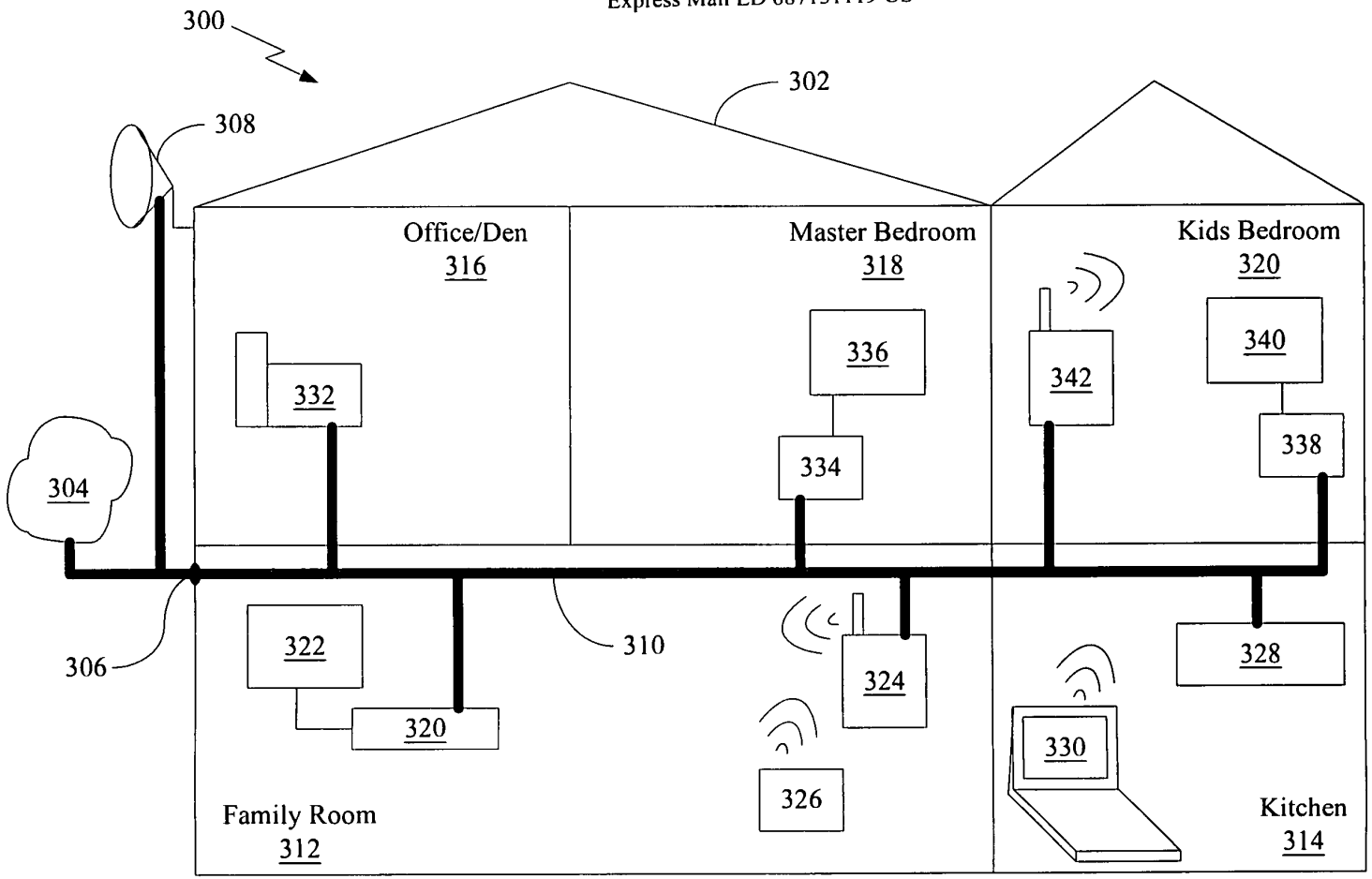

300
302
308
Office/Den
316
Master Bedroom
318
Kids Bedroom
320
336
340
342
332
338
334
304
322
328
310
324
306
320
330
326
Family Room
312
Kitchen
314

FIG. 3

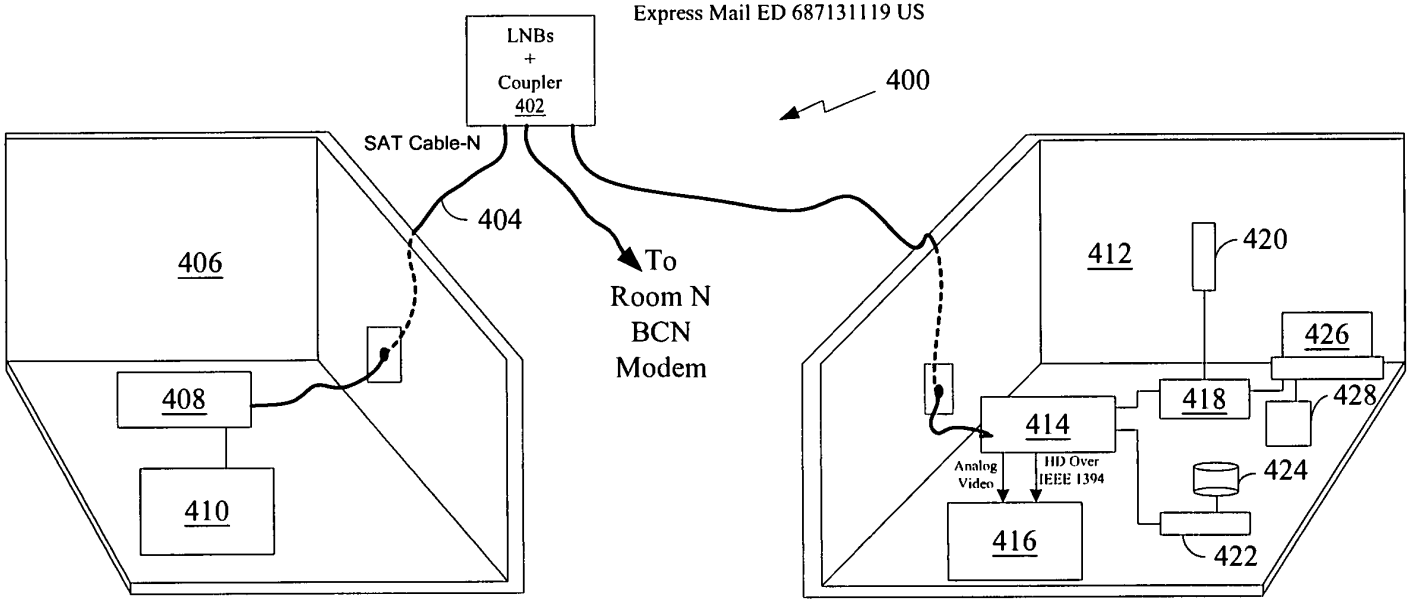


FIG. 4

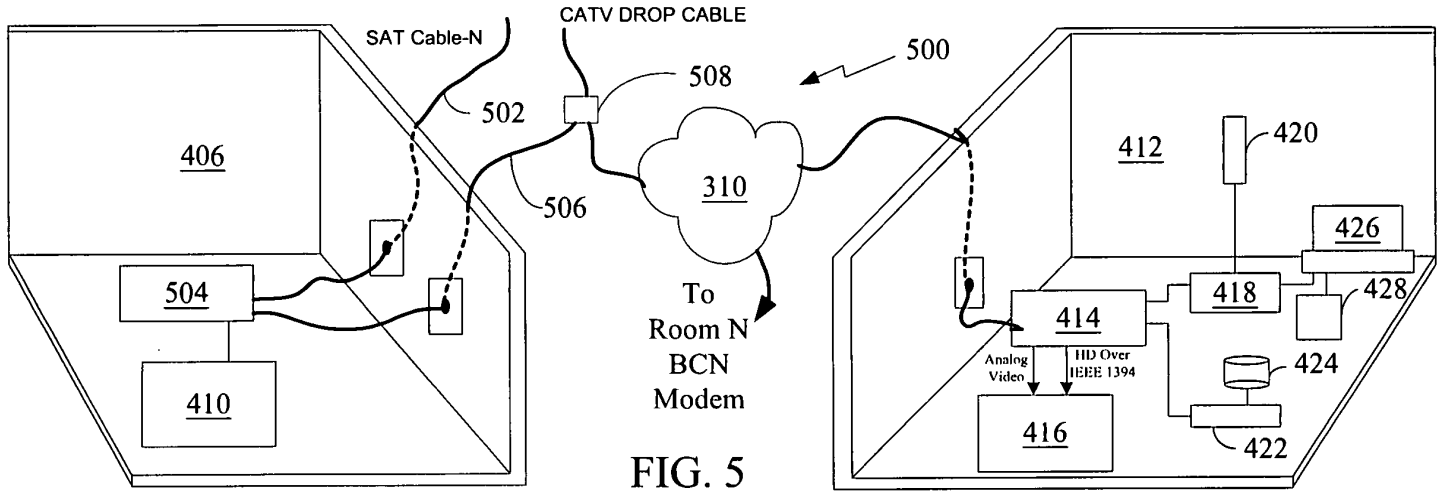


FIG. 5

714

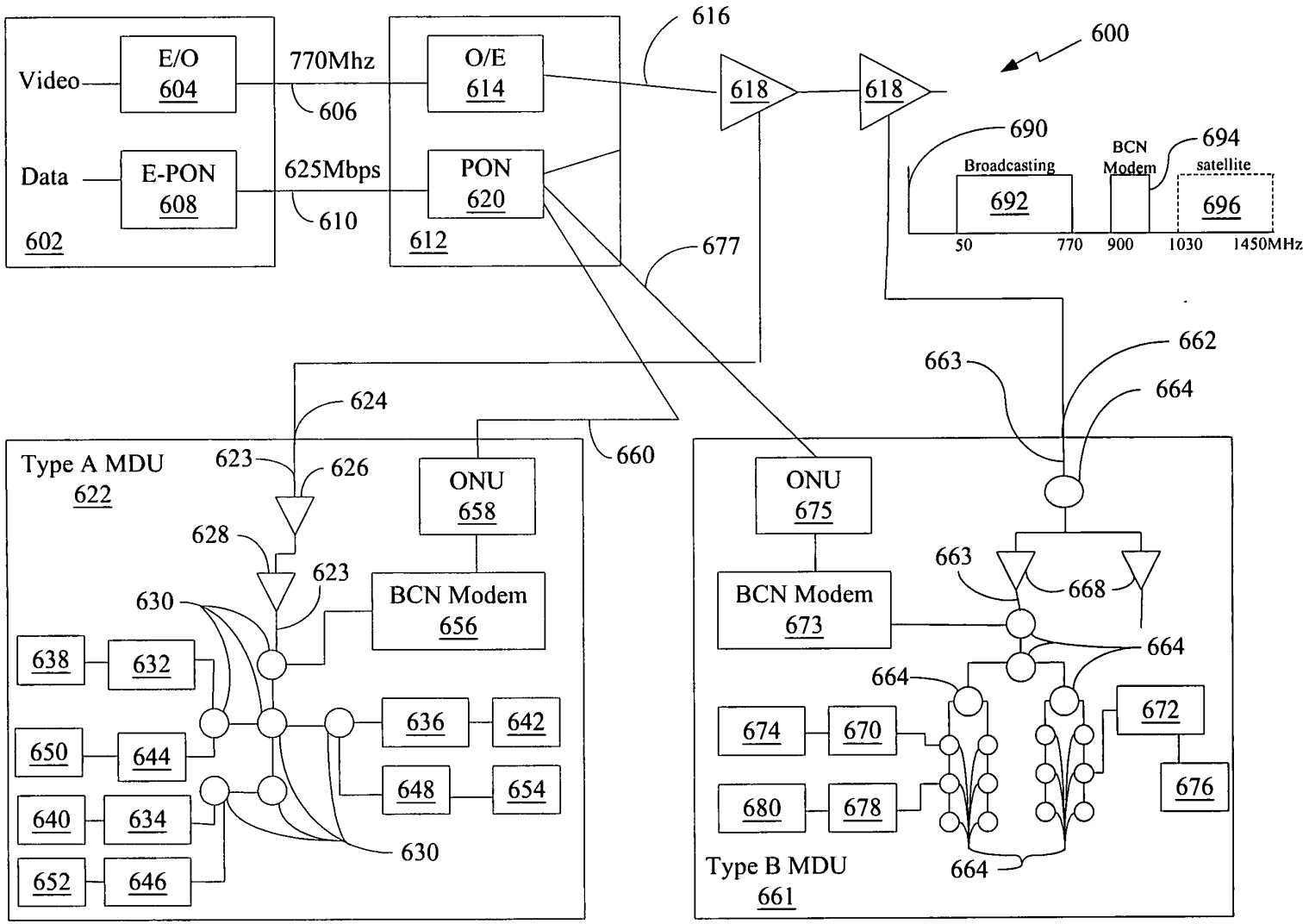

Video
E/O
604
770Mhz
606
Data
E-PON
608
625Mbps
610
602
O/E
614
PON
620
612
616
618
618
600
690
Broadcasting
692
BCN
Modem
694
satellite
696
50
770
900
1030
1450MHz
677
662
663
664
624
660
Type A MDU
622
623
626
628
623
630
ONU
658
BCN Modem
656
638
632
636
642
650
644
648
654
640
634
652
646
630
ONU
675
BCN Modem
673
663
668
664
664
674
670
672
680
678
676
664
Type B MDU
661

FIG. 6

715

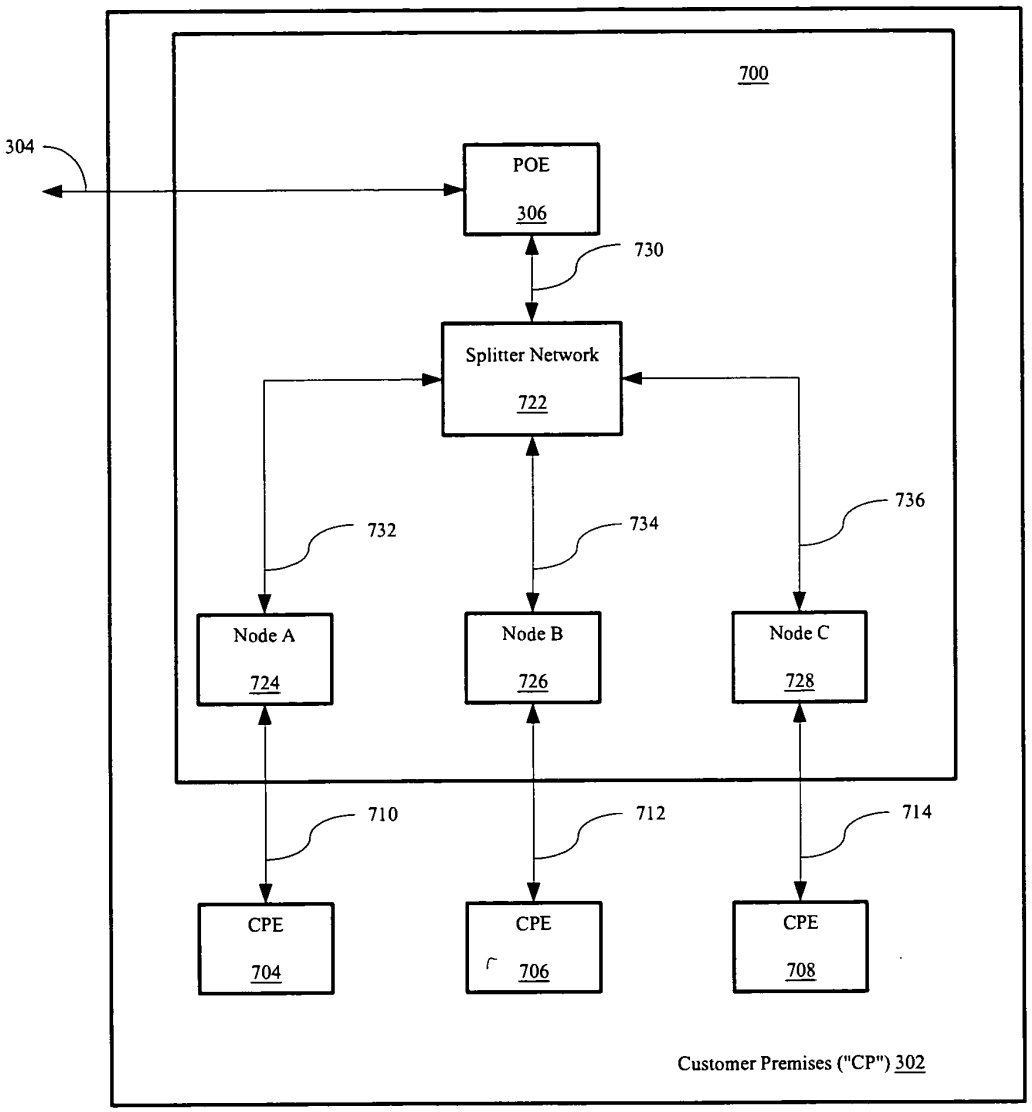

700
304
POE
306
730
Splitter Network
722
732
734
736
Node A
724
Node B
726
Node C
728
710
712
714
CPE
704
CPE
706
CPE
708
Customer Premises ("CP") 302

FIG. 7

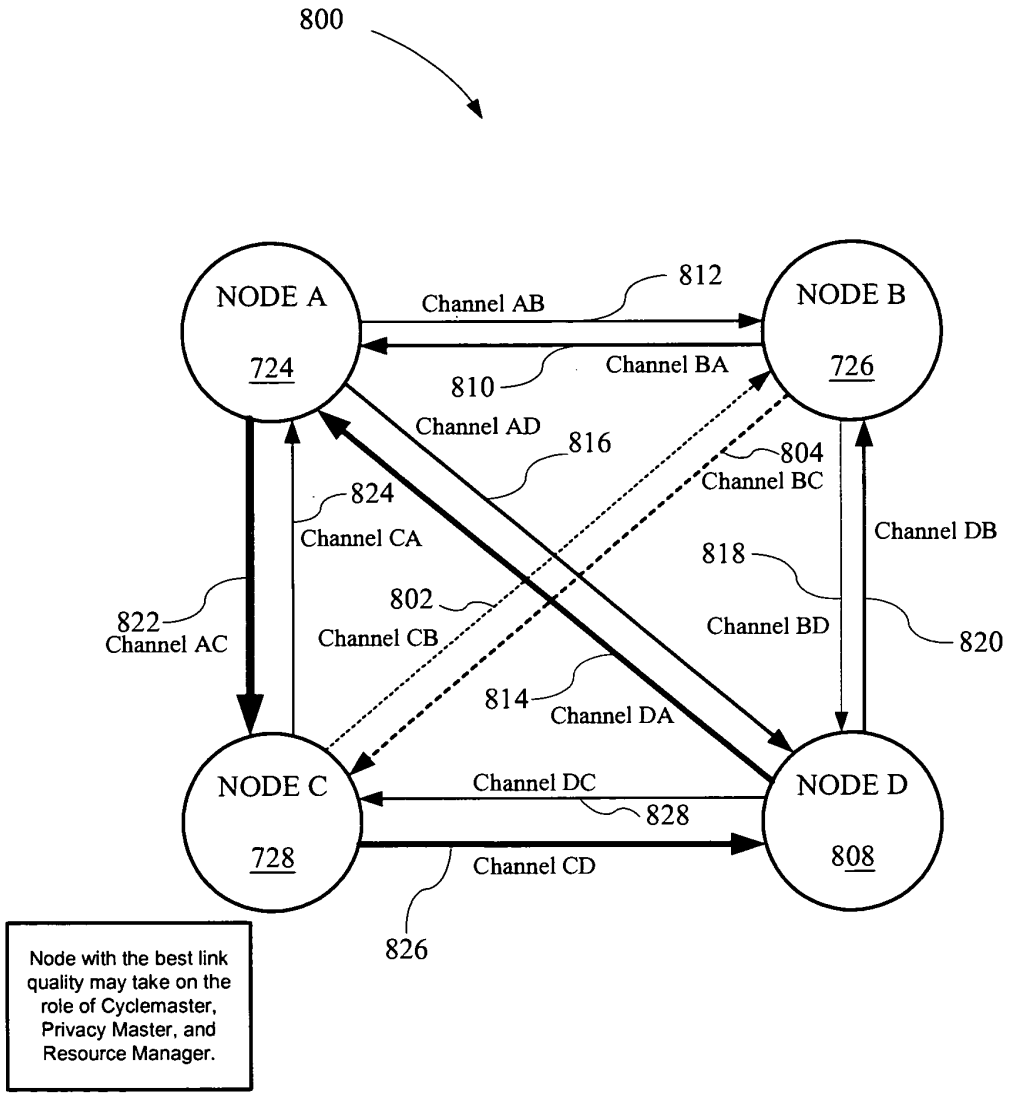

800
NODE A
724
NODE B
726
NODE C
728
NODE D
808
Channel AB
812
Channel BA
810
Channel AD
816
804
Channel BC
824
Channel CA
Channel DB
818
802
Channel CB
Channel BD
820
822
Channel AC
814
Channel DA
Channel DC
828
Channel CD
826
Node with the best link quality may take on the role of Cyclemaster, Privacy Master, and Resource Manager.

FIG. 8

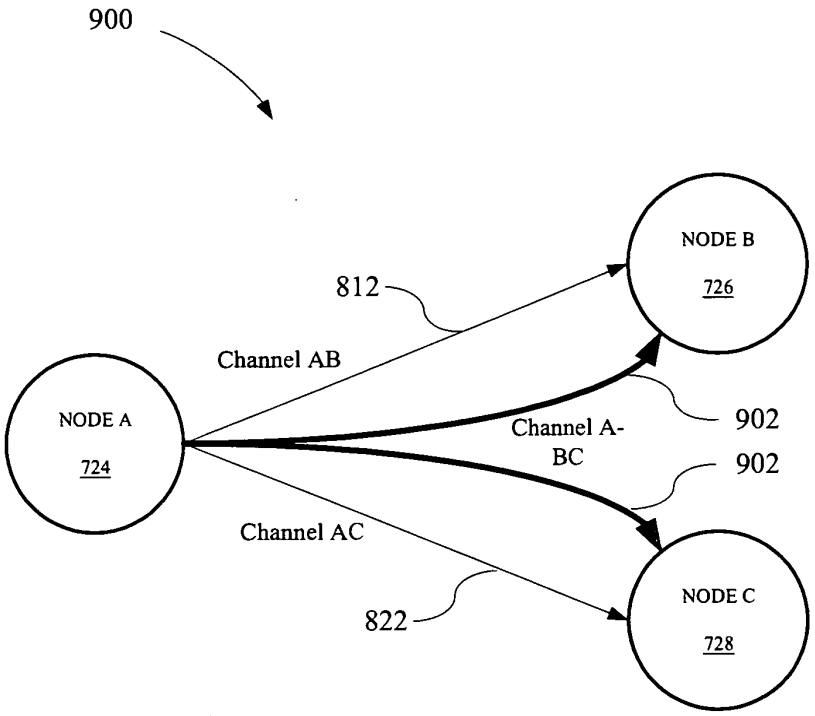

900
NODE B
726
812
Channel AB
NODE A
724
902
Channel A-
BC
902
Channel AC
822
NODE C
728

FIG. 9

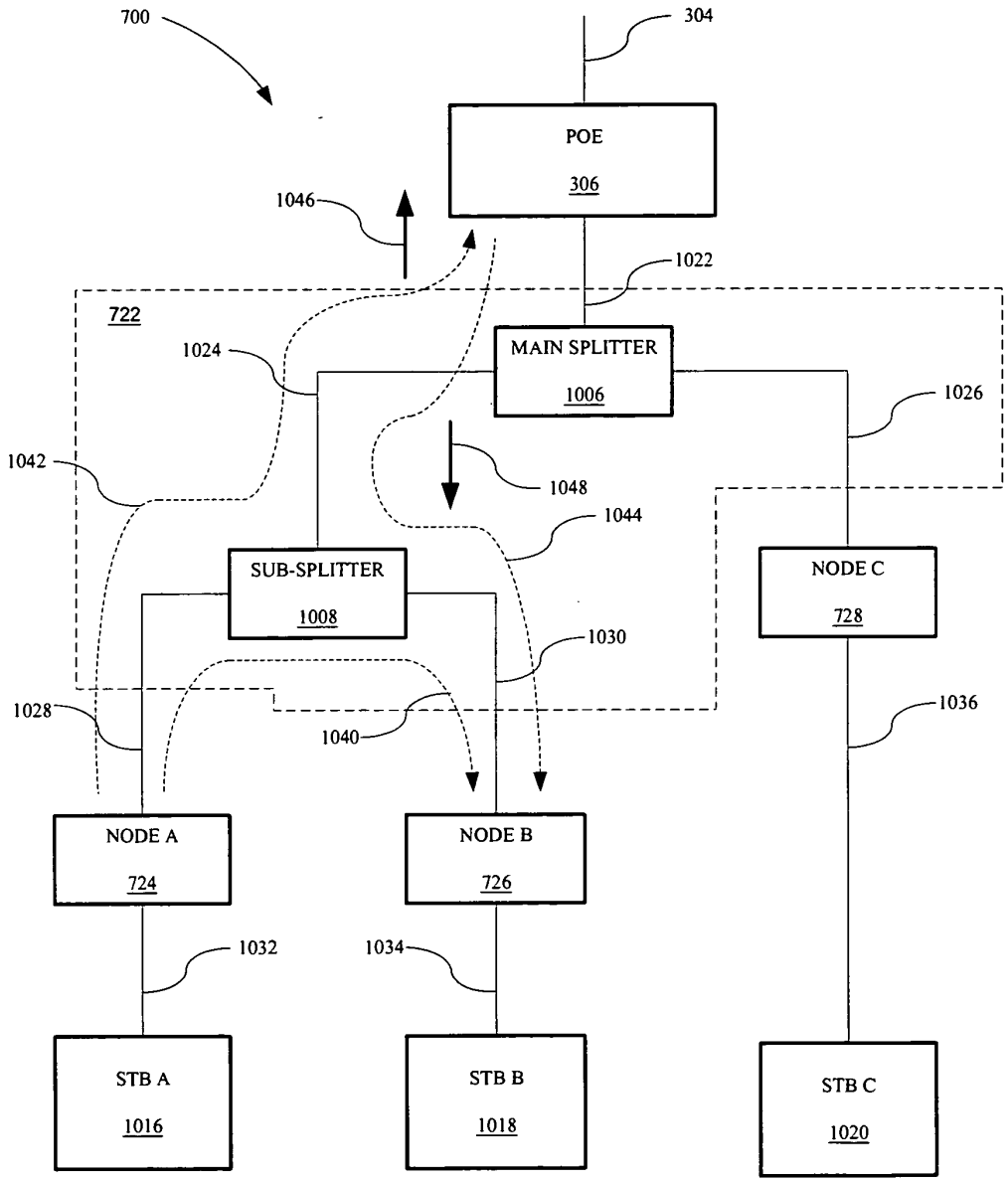

700
304
POE
306
1046
1022
722
1024
MAIN SPLITTER
1006
1026
1042
1048
1044
SUB-SPLITTER
1008
NODE C
728
1030
1028
1040
1036
NODE A
724
NODE B
726
1032
1034
STB A
1016
STB B
1018
STB C
1020

FIG. 10

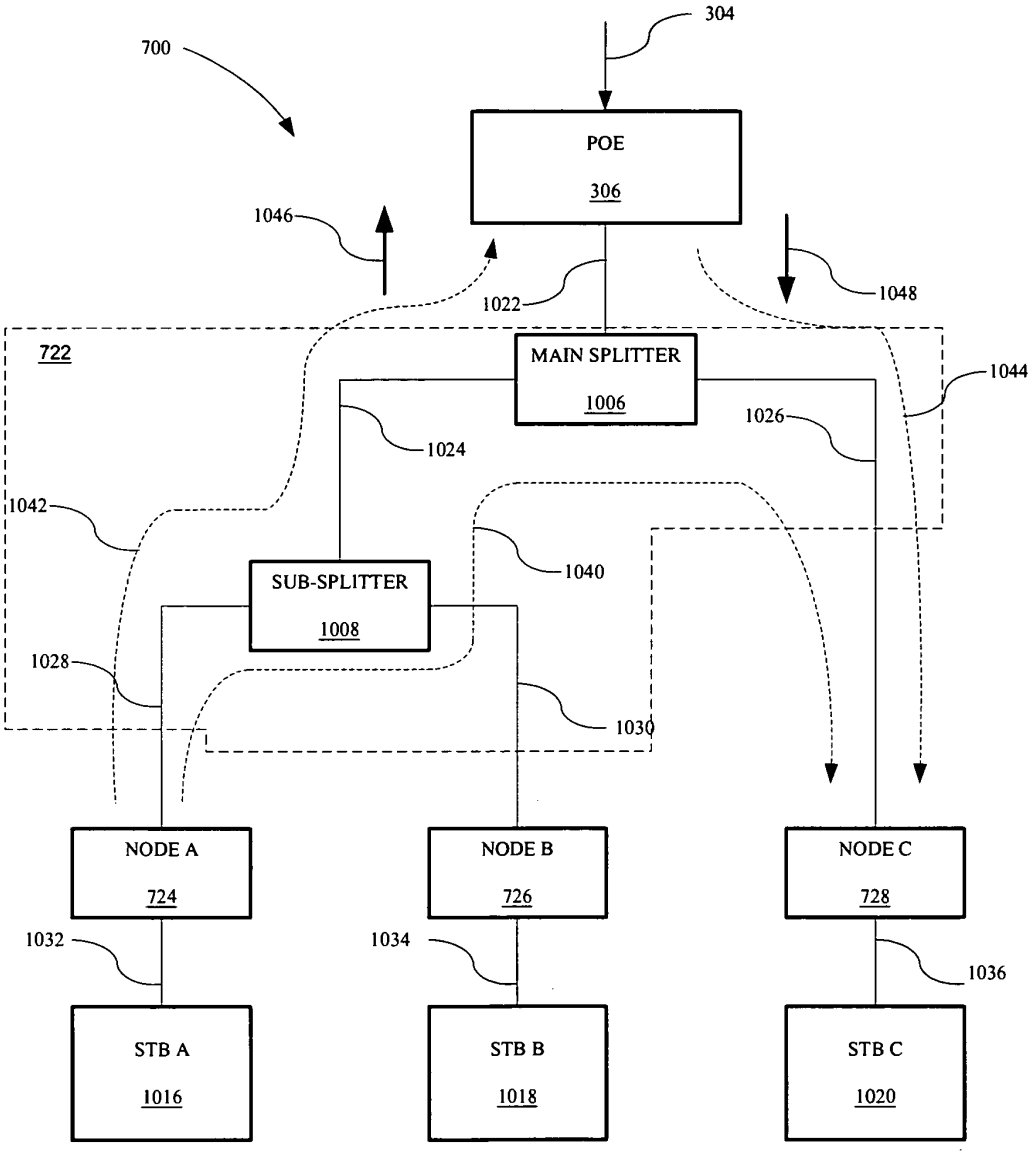

700
304
POE
306
1046
1022
1048
722
MAIN SPLITTER
1006
1044
1026
1024
1042
1040
SUB-SPLITTER
1008
1028
1030
NODE A
724
NODE B
726
NODE C
728
1032
1034
1036
STB A
1016
STB B
1018
STB C
1020

FIG. 11

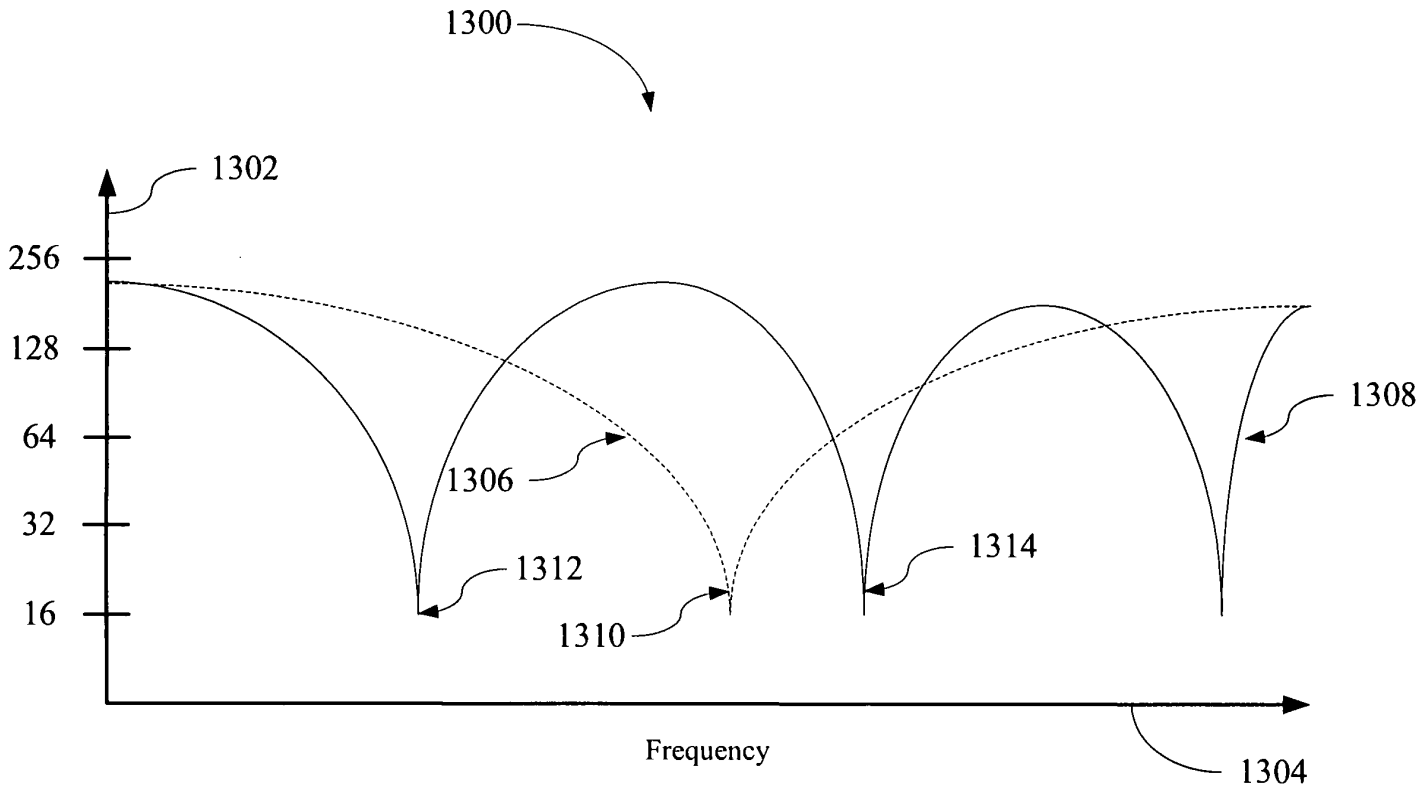

1300
1302
256
128
64
32
16
1306
1308
1312
1314
1310
Frequency
1304

FIG. 12

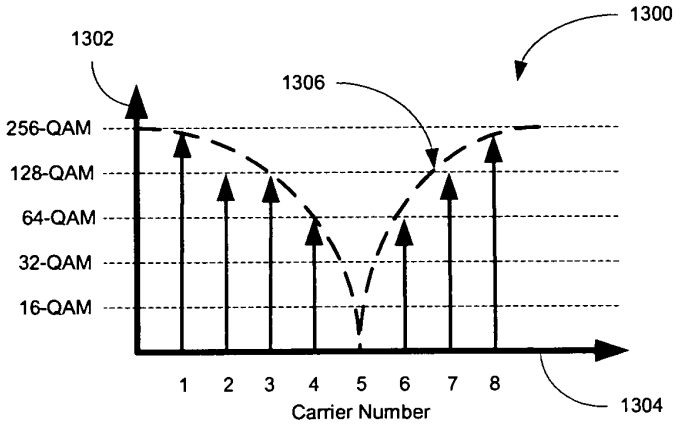


FIG. 13A

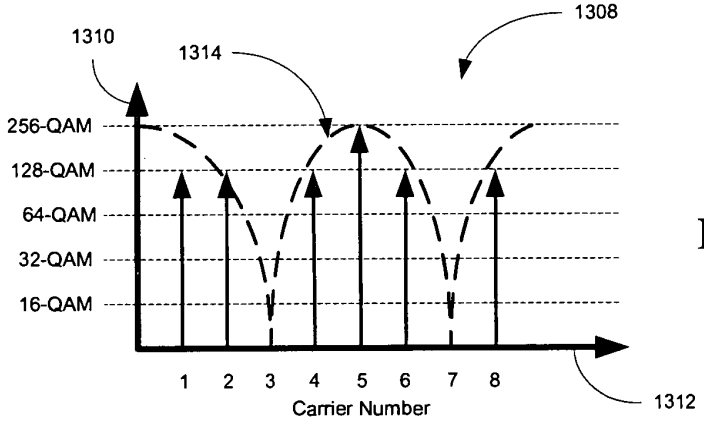


FIG. 13B

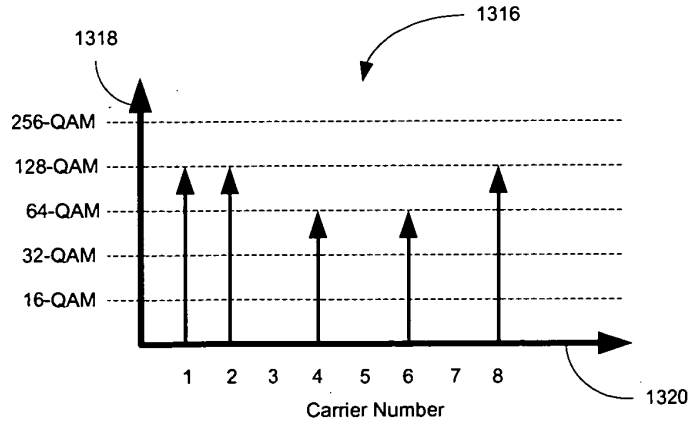


FIG. 13C

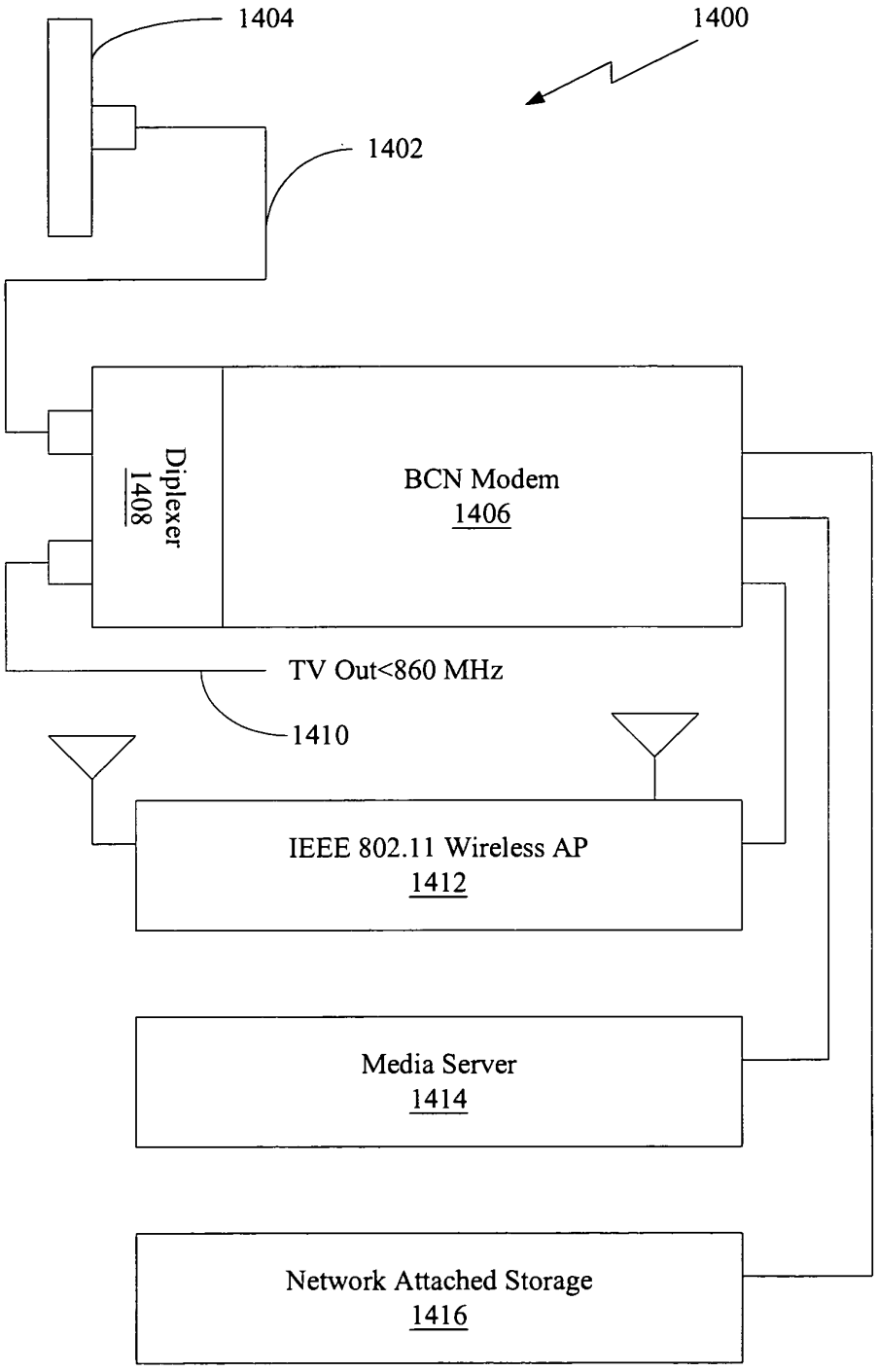

1404
1400
1402
Diplexer
1408
BCN Modem
1406
TV Out<860 MHz
1410
IEEE 802.11 Wireless AP
1412
Media Server
1414
Network Attached Storage
1416

FIG. 14

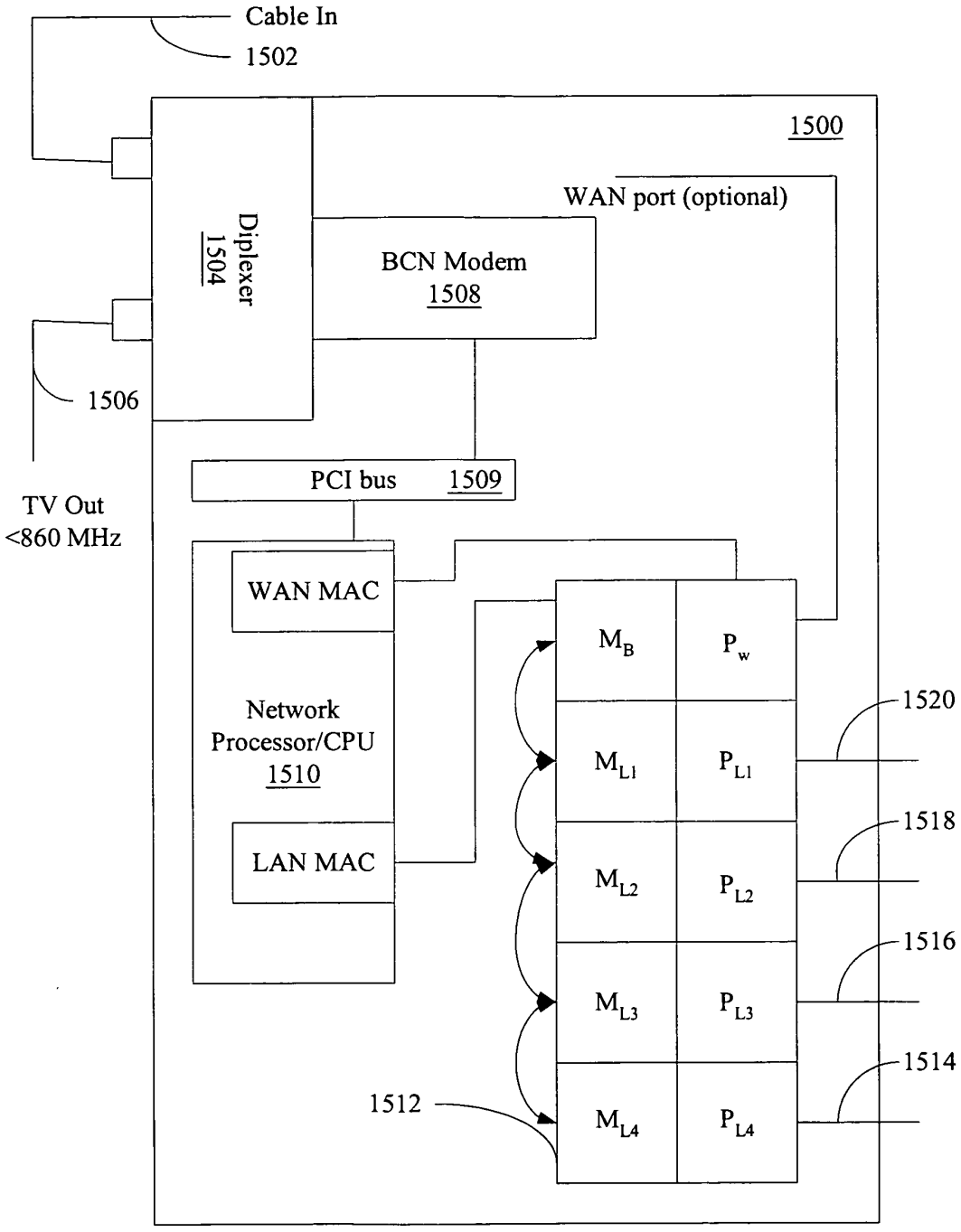

Cable In
1502
1500
WAN port (optional)
Diplexer
1504
BCN Modem
1508
1506
PCI bus 1509
TV Out
<860 MHz
WAN MAC
Network
Processor/CPU
1510
LAN MAC
M_B
P_w
M_{L1}
P_{L1}
M_{L2}
P_{L2}
M_{L3}
P_{L3}
M_{L4}
P_{L4}
1520
1518
1516
1514
1512

FIG. 15

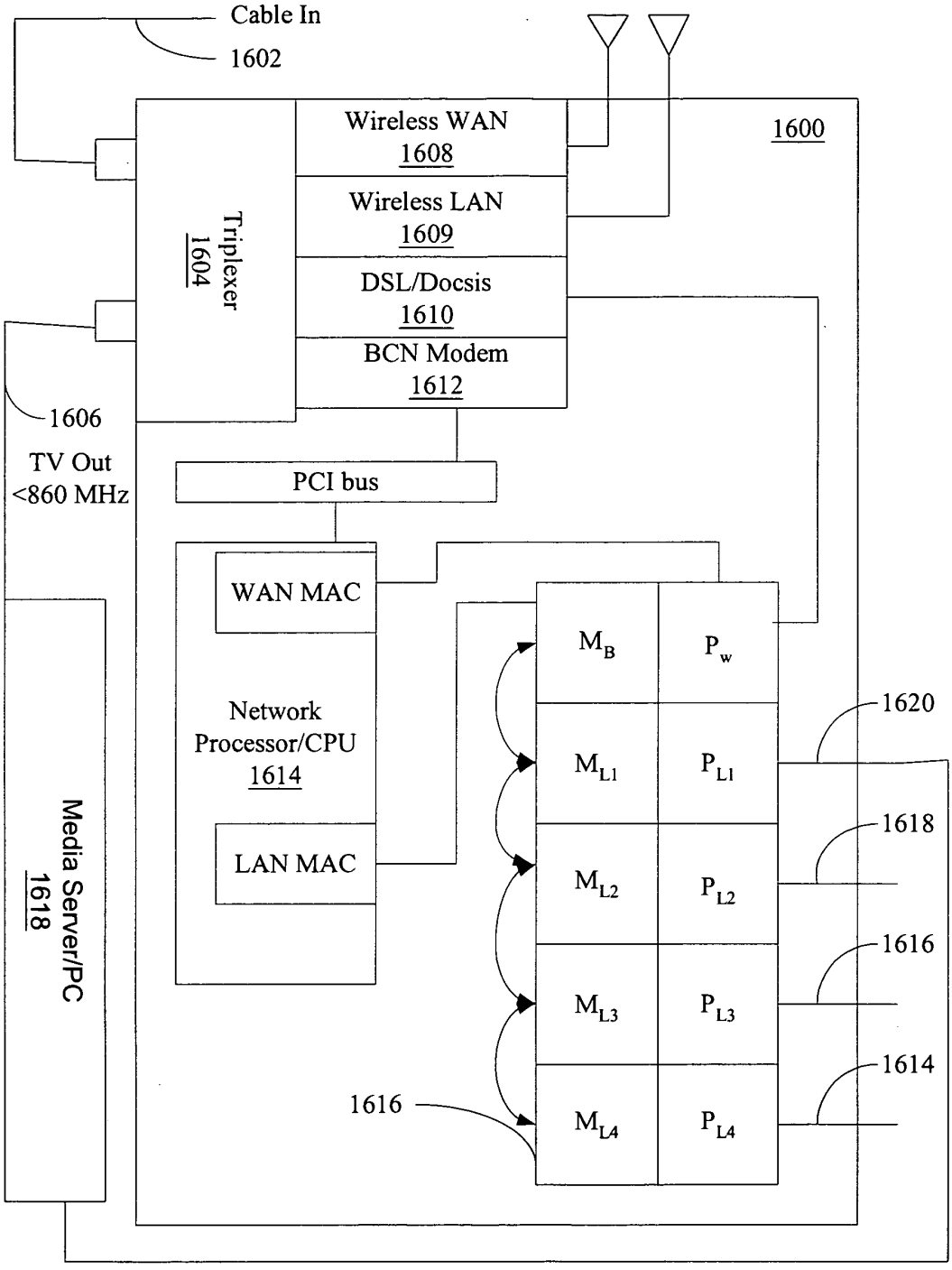
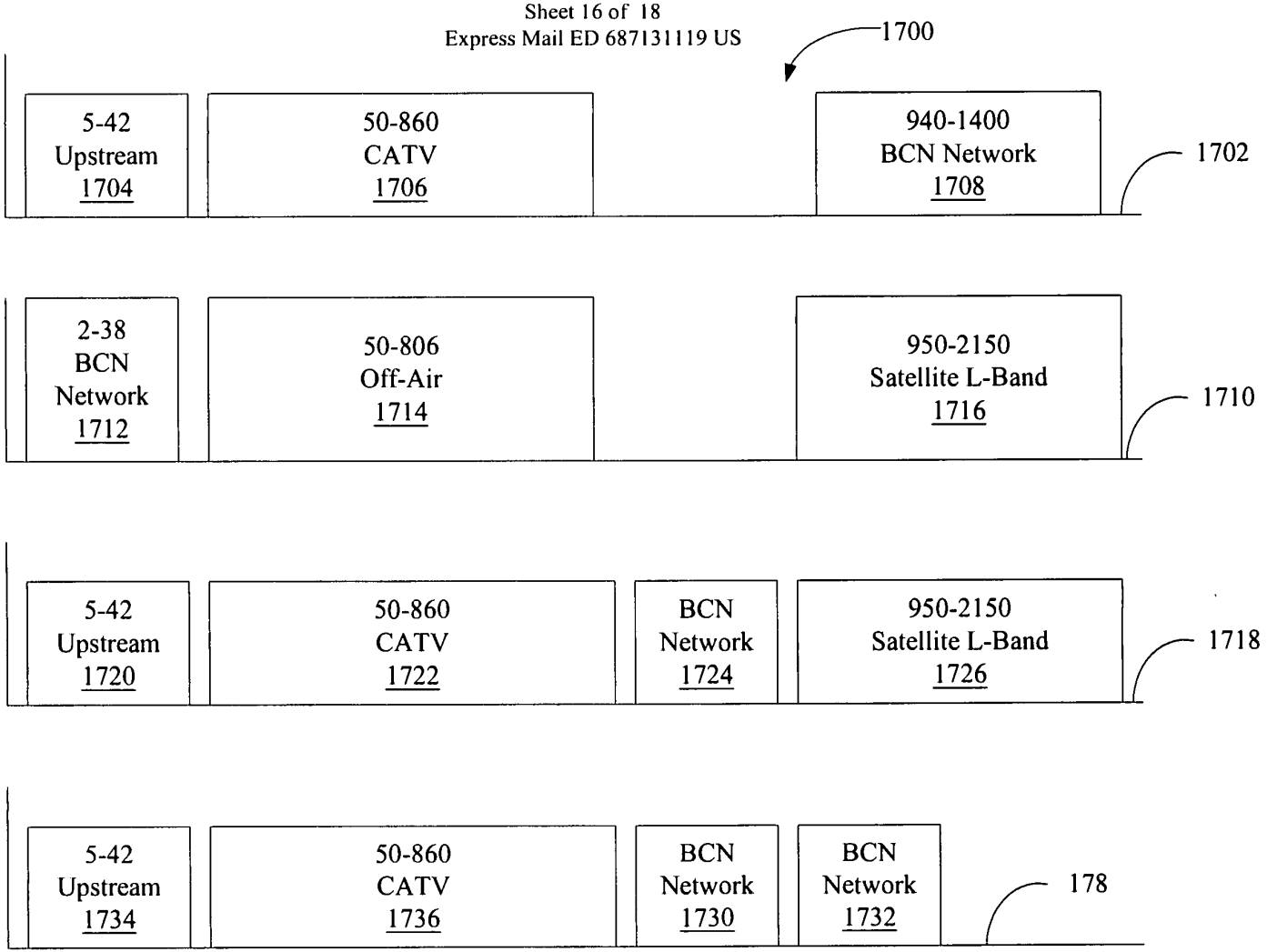

Cable In
1602
Wireless WAN
1608
Wireless LAN
1609
DSL/Docsis
1610
BCN Modem
1612
Triplexer
1604
1600
1606
TV Out
<860 MHz
PCI bus
WAN MAC
Network
Processor/CPU
1614
LAN MAC
Media Server/PC
1618
M_B
P_w
M_{L1}
P_{L1}
M_{L2}
P_{L2}
M_{L3}
P_{L3}
M_{L4}
P_{L4}
1620
1618
1616
1614
1616

FIG. 16


1700
5-42
Upstream
1704
50-860
CATV
1706
940-1400
BCN Network
1708
1702
2-38
BCN
Network
1712
50-806
Off-Air
1714
950-2150
Satellite L-Band
1716
1710
5-42
Upstream
1720
50-860
CATV
1722
BCN
Network
1724
950-2150
Satellite L-Band
1726
1718
5-42
Upstream
1734
50-860
CATV
1736
BCN
Network
1730
BCN
Network
1732
178

726

FIG. 17

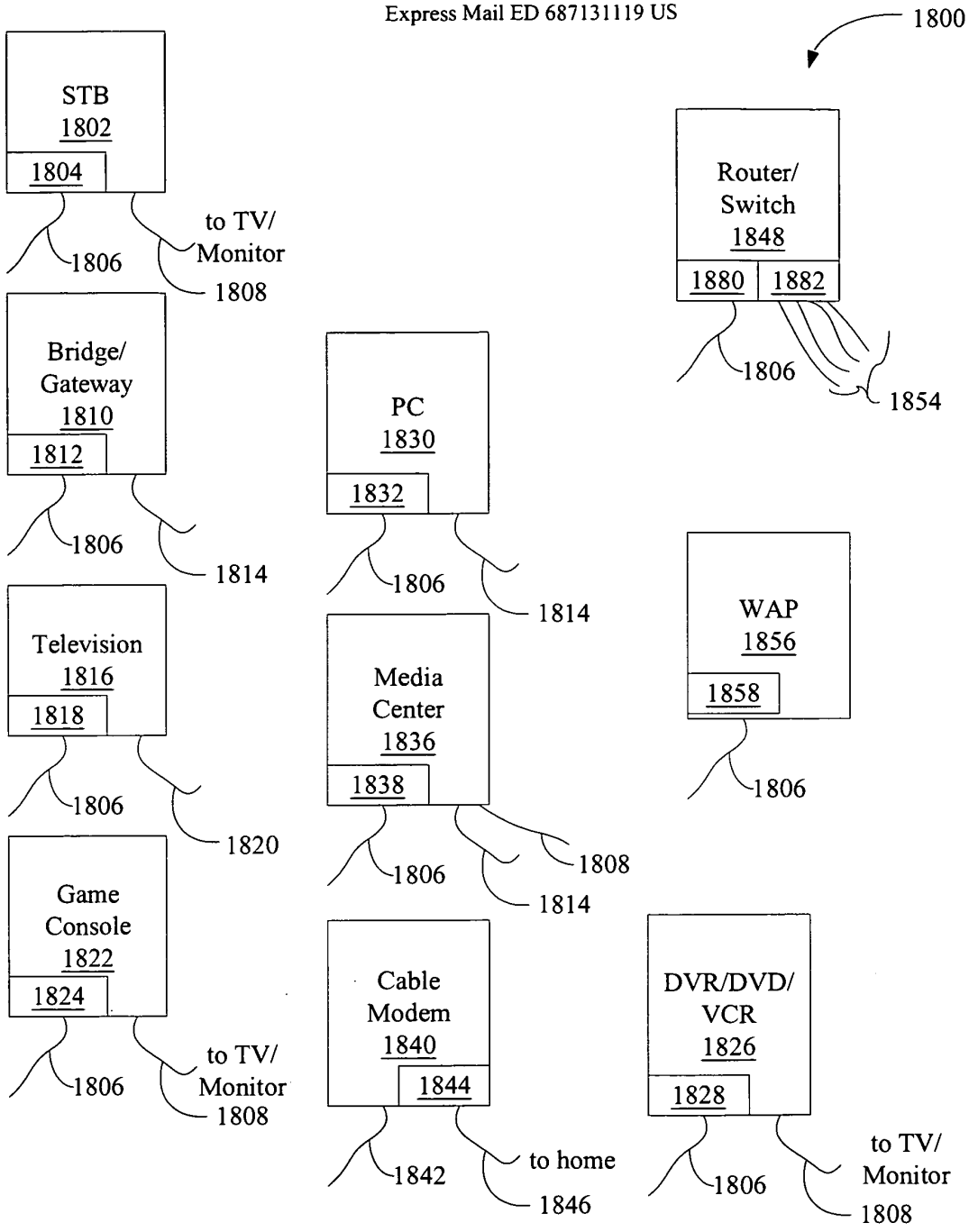

1800
STB
1802
1804
1806
to TV/
Monitor
1808
Router/
Switch
1848
1880
1882
1806
1854
Bridge/
Gateway
1810
1812
1806
1814
PC
1830
1832
1806
1814
WAP
1856
1858
1806
Television
1816
1818
1806
1820
Media
Center
1836
1838
1806
1808
1814
Game
Console
1822
1824
1806
to TV/
Monitor
1808
Cable
Modem
1840
1844
1842
to home
1846
DVR/DVD/
VCR
1826
1828
1806
to TV/
Monitor
1808

FIG. 18

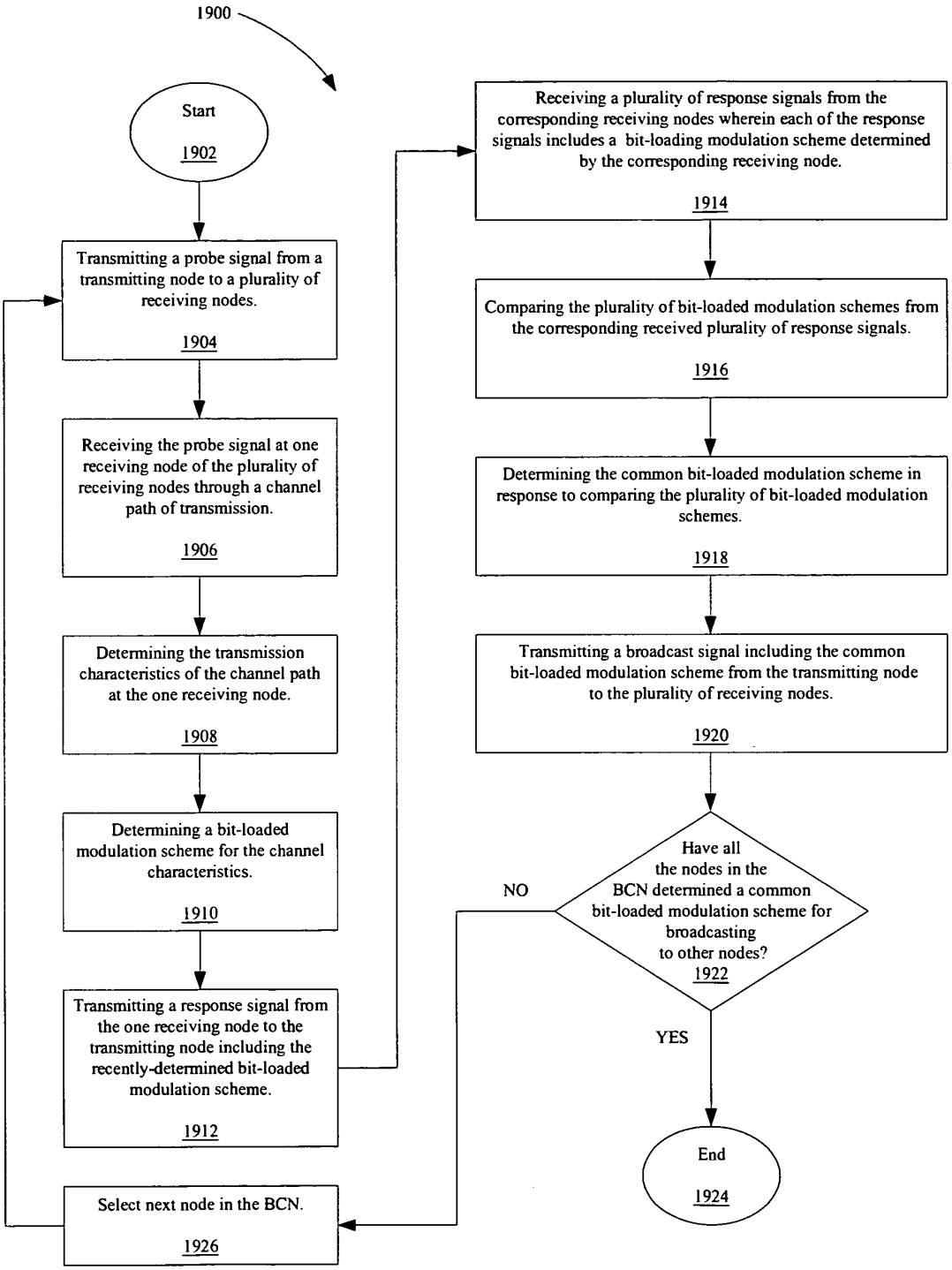

1900
Start
1902
Transmitting a probe signal from a transmitting node to a plurality of receiving nodes.
1904
Receiving the probe signal at one receiving node of the plurality of receiving nodes through a channel path of transmission.
1906
Determining the transmission characteristics of the channel path at the one receiving node.
1908
Determining a bit-loaded modulation scheme for the channel characteristics.
1910
Transmitting a response signal from the one receiving node to the transmitting node including the recently-determined bit-loaded modulation scheme.
1912
Select next node in the BCN.
1926
Receiving a plurality of response signals from the corresponding receiving nodes wherein each of the response signals includes a bit-loading modulation scheme determined by the corresponding receiving node.
1914
Comparing the plurality of bit-loaded modulation schemes from the corresponding received plurality of response signals.
1916
Determining the common bit-loaded modulation scheme in response to comparing the plurality of bit-loaded modulation schemes.
1918
Transmitting a broadcast signal including the common bit-loaded modulation scheme from the transmitting node to the plurality of receiving nodes.
1920
Have all the nodes in the BCN determined a common bit-loaded modulation scheme for broadcasting to other nodes?
1922
NO
YES
End
1924

FIG. 19

PTO/SB/35 (09-04)
Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U. S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

NONPUBLICATION REQUEST UNDER 35 U.S.C. 122(b)(2)(B)(i)

First Named Inventor	Anton Monk
Title	A Broadband Local Area Network
Attorney Docket Number	EC04004USU

I hereby certify that the invention disclosed in the attached application **has not and will not be** the subject of an application filed in another country, or under a multilateral agreement, that requires publication at eighteen months after filing.

I hereby request that the attached application not be published under 35 U.S.C. 122(b).



Signature — September 19, 2005 (Date)

Francisco A. Rubio-Campos (Typed or printed name) — 45,358 (Registration Number, if applicable)

(949) 448-9410
Telephone Number

This request must be signed in compliance with 37 CFR 1.33(b) and submitted with the application **upon filing.**

Applicant may rescind this nonpublication request at any time. If applicant rescinds a request that an application not be published under 35 U.S.C. 122(b), the application will be scheduled for publication at eighteen months from the earliest claimed filing date for which a benefit is claimed.

If applicant subsequently files an application directed to the invention disclosed in the attached application in another country, or under a multilateral international agreement, that requires publication of applications eighteen months after filing, the applicant **must** notify the United States Patent and Trademark Office of such filing within forty-five (45) days after the date of the filing of such foreign or international application. **Failure to do so will result in abandonment of this application (35 U.S.C. 122(b)(2)(B)(iii)).**

This collection of information is required by 37 CFR 1.213(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

BEST AVAILABLE COPY

PTO/SB/06 (12-04)
Approved for use through 7/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 11231349

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	150		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	250		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	100		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	31 minus 20 =	* 11	x 25 =	275	OR	x =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2 minus 3 =	* 0	x 100 =			x =	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))			N/A			N/A	
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	775		TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT A

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
Application Size Fee (37 CFR 1.16(s))									
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					N/A		OR	N/A	
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
Application Size Fee (37 CFR 1.16(s))									
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					N/A		OR	N/A	
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.