

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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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. 2:23-cv-01050	DATE FILED 2/10/2023	U.S. DISTRICT COURT Central District of California
PLAINTIFF ENTROPIC COMMUNICATIONS, LLC		DEPENDANT COMCAST CORPORATION, ET AL.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,223,775	7/17/2012	Entropic Communications, LLC
2 8,284,690	10/9/2012	Entropic Communications, LLC
3 8,792,008	7/29/2014	Entropic Communications, LLC
4 9,210,362	12/8/2015	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
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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.	9,825,826	11/21/2017	Entropic Communications, LLC
6.	10,135,682	11/20/2018	Entropic Communications, LLC
7.	11,381,866	7/5/2022	Entropic Communications, LLC
8.	11,399,206	7/26/2022	Entropic Communications, LLC

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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. 2:23-cv-01049	DATE FILED 2/10/2023	U.S. DISTRICT COURT Central District of California
PLAINTIFF ENTROPIC COMMUNICATIONS, LLC		DEPENDANT COX COMMUNICATIONS, INC., ET AL.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,223,775	7/17/2012	Entropic Communications, LLC
2 8,284,690	10/9/2012	Entropic Communications, LLC
3 8,792,008	7/29/2014	Entropic Communications, LLC
4 9,210,362	12/8/2015	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	
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DECISION/JUDGEMENT		
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AO 120 – Patents (Continued)

	Patent No.	Date of Patent	Holder of Patent
5.	9,825,826	11/21/2017	Entropic Communications, LLC
6.	10,135,682	11/20/2018	Entropic Communications, LLC
7.	11,381,866	7/5/2022	Entropic Communications, LLC
8.	11,399,206	7/26/2022	Entropic Communications, LLC

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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 Eastern District of Texas on the following

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

DOCKET NO. 2:22-cv-125	DATE FILED 4/27/2022	U.S. DISTRICT COURT Eastern District of Texas
PLAINTIFF ENTROPIC COMMUNICATIONS, LLC		DEPENDANT CHARTER COMMUNICATIONS, INC., ET AL
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,223,775	7/17/2012	Entropic Communications, LLC
2 8,284,690	10/9/2012	Entropic Communications, LLC
3 8,792,008	7/29/2014	Entropic Communications, LLC
4 9,210,362	12/8/2015	Entropic Communications, LLC
5 9,825,826	11/21/2017	Entropic Communications, LLC

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

DECISION/JUDGEMENT		
CLERK	(BY) DEPUTY CLERK	DATE

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 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

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

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

DOCKET NO. 2:22-cv-125	DATE FILED 4/27/2022	U.S. DISTRICT COURT Eastern District of Texas
PLAINTIFF ENTROPIC COMMUNICATIONS, LLC		DEPENDANT CHARTER COMMUNICATIONS, INC., ET AL
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 10,135,682	11/20/2018	Entropic Communications, LLC
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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
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 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy



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
10/675,566	09/30/2003	Gordon Y. Li	

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

CONFIRMATION NO. 9980
POA ACCEPTANCE LETTER



Date Mailed: 07/29/2021

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/23/2021.

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.

/sharris/



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
10/675,566	09/30/2003	Gordon Y. Li	29566US01

CONFIRMATION NO. 9980

POWER OF ATTORNEY NOTICE

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



Date Mailed: 07/29/2021

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/23/2021.

- 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.

/sharris/

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:

☒ 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:

☒ 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:	43333150
Application Number:	10675566
International Application Number:	
Confirmation Number:	9980
Title of Invention:	ARCHITECTURE FOR A FLEXIBLE AND HIGH-PERFORMANCE GATEWAY CABLE MODEM
First Named Inventor/Applicant Name:	Gordon Y. Li
Customer Number:	23446
Filer:	Ronald H. Spuhler/Deborah Wilson
Filer Authorized By:	Ronald H. Spuhler
Attorney Docket Number:	29566US01
Receipt Date:	23-JUL-2021
Filing Date:	30-SEP-2003
Time Stamp:	16:16:33
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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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	29566US01_373c_Statement_A IA-96.pdf	126514 b28a0b4ad7460082b63a61d73ca6aa8b7fb f092f	no	3

Warnings:

Information:					
2	Assignee showing of ownership per 37 CFR 3.73	29566US01_3-73-statement-supplemental-sheet.pdf	18951 5b2f8879153a6be06233cb3d778d074ab050f667	no	1
Warnings:					
Information:					
3	Power of Attorney	Entropic-POA_General_Assignee_EntropicCommunications_ALG.pdf	487892 51444e06ae84b241bfc127dc47c5d6c646944dd7	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			633357		
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.					

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: ENTROPIC COMMUNICATIONS, LLC

Application No./Patent No.: 10/675,566 Filed/Issue Date: 2003-09-30

Titled: ARCHITECTURE FOR A FLEXIBLE AND HIGH-PERFORMANCE GATEWAY CABLE MODEM

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: Gordon Y. Li, Yoav Hebron To: CONEXANT SYSTEMS, INC.

The document was recorded in the United States Patent and Trademark Office at
Reel 015024, Frame 0251, or for which a copy thereof is attached.

2. From: CONEXANT SYSTEMS, INC. To: NXP, B.V.

The document was recorded in the United States Patent and Trademark Office at
Reel 021531, Frame 0523, or for which a copy thereof is attached.

[Page 1 of 2]

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.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: NXP, B.V. To: NXP HOLDING 1 B.V.

The document was recorded in the United States Patent and Trademark Office at
Reel 023928, Frame 0489, or for which a copy thereof is attached.

4. From: TRIDENT MICROSYSTEMS (EUROPE) B.V., NXP HOLDING 1 B.V. To: TRIDENT MICROSYSTEMS (FAR EAST) LTD.

The document was recorded in the United States Patent and Trademark Office at
Reel 023928, Frame 0552, or for which a copy thereof is attached.

5. From: TRIDENT MICROSYSTEMS, INC., TRIDENT MICROSYSTEMS (FAR EAST) LTD. To: ENTROPIC COMMUNICATIONS, INC.

The document was recorded in the United States Patent and Trademark Office at
Reel 028153, Frame 0440, or for which a copy thereof is attached.

6. 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.

☒ 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/

2021-07-23

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.

STATEMENT UNDER 37 CFR 3.73(c) -- Supplemental Sheet

Applicant/Patent Owner: ENTROPIC COMMUNICATIONS, LLC

Application No./Patent No.: 10/675,566 Filed/Issue Date: 2003-09-30

Titled: ARCHITECTURE FOR A FLEXIBLE AND HIGH-PERFORMANCE GATEWAY CABLE MODEM

Assignee: ENTROPIC COMMUNICATIONS, LLC, a limited liability company

7. 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.

8. From ENTROPIC COMMUNICATIONS 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.

9. 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.

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

[RONALD H. SPUHLER]

/Ronald H. Spuhler/

Dated: 2021-07-23

Reg. No. 52245



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
10/675,566	09/30/2003	Gordon Y. Li	E5982-00282

CONFIRMATION NO. 9980

POA ACCEPTANCE LETTER

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



Date Mailed: 08/05/2015

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/24/2015.

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.

/mmasfaw/



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
10/675,566	09/30/2003	Gordon Y. Li	E5982-00282

CONFIRMATION NO. 9980

POWER OF ATTORNEY NOTICE



OC000000076660714

77561

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

Date Mailed: 08/05/2015

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/24/2015.

- 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.

/mmasfaw/

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		

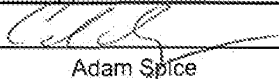
Assignee Name and Address:

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	6/5/15
Name	Adam Spice	Telephone	
Title	Chief Financial Officer		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. This 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:	23015034
Application Number:	10675566
International Application Number:	
Confirmation Number:	9980
Title of Invention:	ARCHITECTURE FOR A FLEXIBLE AND HIGH-PERFORMANCE GATEWAY CABLE MODEM
First Named Inventor/Applicant Name:	Gordon Y. Li
Customer Number:	77561
Filer:	Christopher C. Winslade/Deb Wilson
Filer Authorized By:	Christopher C. Winslade
Attorney Docket Number:	E5982-00282
Receipt Date:	24-JUL-2015
Filing Date:	30-SEP-2003
Time Stamp:	12:52:05
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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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	29566US01_373b_Statement_s b96.pdf	430293 ee2bb6ac2d760dc8698b5ba5763f3b4ed9 4df52	no	2

Warnings:

Information:

2	Assignee showing of ownership per 37 CFR 3.73	29566US01_SuppSheet.pdf	19282 77f94689dbe37f89ca72754543a8844550a528a7	no	1
Warnings:					
Information:					
3	Power of Attorney	Entropic_POA_PreAIA.pdf	340881 8107f4c6d5473b527f97e45769199b81a37aad1b	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			790456		
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.					

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Gordon Y. Li, Yoav Hebron

Application No./Patent No.: 8,223,775

Filed/Issue Date: 07/17/2012

Titled: ARCHITECTURE FOR A FLEXIBLE AND HIGH-PERFORMANCE GATEWAY CABLE MODEM

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: Gordon Y. Li, Yoav Hebron To: CONEXANT SYSTEMS, INC.

The document was recorded in the United States Patent and Trademark Office at
Reel 015024, Frame 0251, or for which a copy thereof is attached.

2. From: CONEXANT SYSTEMS, INC. To: NXP, B.V.

The document was recorded in the United States Patent and Trademark Office at
Reel 021531, Frame 0523, or for which a copy thereof is attached.

3. From: NXP To: NXP HOLDING 1 B.V.

The document was recorded in the United States Patent and Trademark Office at
Reel 023928, Frame 0489, 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/

07/24/2015

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.**

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Privacy Act Statement

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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).
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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.

STATEMENT UNDER 37 CFR 3.73(b) – SUPPLEMENTAL SHEET

4. From: TRIDENT MICROSYSTEMS (EUROPE) B.V. and NXP HOLDING 1 B.V.
To: TRIDENT MICROSYSTEMS (FAR EAST) LTD.
The document was recorded in the United States Patent and Trademark Office at Reel, 023928 Frame, 0552 or for which a copy thereof is attached.
5. From: TRIDENT MICROSYSTEMS, INC. and TRIDENT MICROSYSTEMS (FAR EAST) LTD. To: ENTROPIC COMMUNICATIONS, INC.
The document was recorded in the United States Patent and Trademark Office at Reel, 028153 Frame, 0440 or for which a copy thereof is attached.
6. From: EXCALIBUR ACQUISITION CORPORATION and 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.
7. From: ENTROPIC COMMUNICATIONS, INC. and 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.



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.
10/675,566	07/17/2012	8223775	E5982-00282	9980

77561 7590 06/27/2012
Duane Morris LLP (Entropic)
IP Department
30 South 17th Street
Philadelphia, PA 19103-4196

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 2220 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):

Gordon Y. Li, San Diego, CA;
Yoav Hebron, San Diego, CA;



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
10/675,566	09/30/2003	Gordon Y. Li	E5982-00282

CONFIRMATION NO. 9980

POA ACCEPTANCE LETTER



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

Date Mailed: 06/19/2012

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/14/2012.

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.

/nhorne/

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
10/675,566	09/30/2003	Gordon Y. Li	348162-982350

CONFIRMATION NO. 9980

94518
DLA PIPER LLP (US)
2000 UNIVERSITY AVENUE
EAST PALO ALTO, CA 94303

POWER OF ATTORNEY NOTICE



Date Mailed: 06/19/2012

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/14/2012.

- 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).

/nhorne/

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

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)

94518 7590 03/19/2012
DEA PIPER LLP (US) Duane Morris LLP
2000 UNIVERSITY AVENUE Suite 2900
EAST BAY CA 94603 750 B Street
 San Diego, CA 92101
 USA

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.

Ruth Der	(Depositor's name)
	(Signature)
June 14, 2012	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,566	09/30/2003	Gordon Y. Li	E5982-00282	9980

TITLE OF INVENTION: ARCHITECTURE FOR A FLEXIBLE AND HIGH-PERFORMANCE GATEWAY CABLE MODEM

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1740	\$300	\$0	\$2040	06/19/2012
EXAMINER		ART UNIT	CLASS-SUBCLASS			
WINDER, PATRICE L		2452	370-401000			

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 James Sze
 2 Duane Morris LLP
 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)
ENTROPIC COMMUNICATIONS, INC.

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 041679 (enclose an extra copy of this form).

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

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☒ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

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 /James Sze/ Date June 14, 2012
 Typed or printed name James Sze Registration No. 43,943

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.

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Electronic Patent Application Fee Transmittal				
Application Number:		10675566		
Filing Date:		30-Sep-2003		
Title of Invention:		ARCHITECTURE FOR A FLEXIBLE AND HIGH-PERFORMANCE GATEWAY CABLE MODEM		
First Named Inventor/Applicant Name:		Gordon Y. Li		
Filer:		James Y.C. Sze		
Attorney Docket Number:		348162-982350		
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	1740	1740
Publ. Fee- early, voluntary, or normal	1504	1	300	300

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				2040

Electronic Acknowledgement Receipt	
EFS ID:	13013684
Application Number:	10675566
International Application Number:	
Confirmation Number:	9980
Title of Invention:	ARCHITECTURE FOR A FLEXIBLE AND HIGH-PERFORMANCE GATEWAY CABLE MODEM
First Named Inventor/Applicant Name:	Gordon Y. Li
Customer Number:	94518
Filer:	James Y.C. Sze
Filer Authorized By:	
Attorney Docket Number:	348162-982350
Receipt Date:	14-JUN-2012
Filing Date:	30-SEP-2003
Time Stamp:	13:30:44
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$2040
RAM confirmation Number	25830
Deposit Account	041679
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	Power of Attorney	poachngcorradd.pdf	132523	no	1
			a1992b9313964323250c08f98c8f8165d6cd608f		
Warnings:					
Information:					
2	Assignee showing of ownership per 37 CFR 3.73(b).	statement373.pdf	191654	no	2
			8710be6dd188231249c3924d24a9807564531fb5		
Warnings:					
Information:					
3	Issue Fee Payment (PTO-85B)	partbfeestransmittal.pdf	155673	no	1
			a6fd5686f73c5c3f085ae7170fba06735c24920f		
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	32257	no	2
			481a33c650a62eef485599c7fdcf6a6492dd288cf		
Warnings:					
Information:					
Total Files Size (in bytes):			512107		
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.					

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	10/675,566
	Filing Date	September 30, 2003
	First Named Inventor	Gordon Y. Li
	Title	Architecture for a flexible and high-perfor
	Art Unit	2452
	Examiner Name	Patrice L. Winder
	Attorney Docket Number	E5982-00282

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

Name

Bruce W. Greenhaus

Telephone

(858) 768-3679

Title and Company

Vice President, Entropic Communications, Inc.

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 1.31, 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.

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: ENTROPIC COMMUNICATIONS, INC.

Application No./Patent No.: 10/675,566

Filed/Issue Date: September 30, 2003

Titled:

ARCHITECTURE FOR A FLEXIBLE AND HIGH-PERFORMANCE GATEWAY CABLE MODEM

ENTROPIC COMMUNICATIONS, INC., 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: Gordon Y. Li and Yoav Hebron To: Conexant Systems, Inc.

The document was recorded in the United States Patent and Trademark Office at
Reel 015024, Frame 0251, or for which a copy thereof is attached.

2. From: Brooktree Broadband Holding, Inc. To: The Bank of NY Trust Co., N.A.

The document was recorded in the United States Patent and Trademark Office at
Reel 018573, Frame 0337, or for which a copy thereof is attached.

3. From: Conexant Systems, Inc. To: Bank of NY Trust Co., N.A.

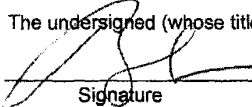
The document was recorded in the United States Patent and Trademark Office at
Reel 018711, Frame 0818, or for which a copy thereof is attached.

☐ 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.


Signature

6-7-12
Date

Bruce W. Greenhaus

Vice President

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.

SUPPLEMENTAL STATEMENT UNDER 37 CFR 3.73(b)

Application No. 10/675,566, filed September 30, 2003

1 B Continued:

4. From: Bank of NY Mellon Trust Co., N.A. (Formerly, Bank of New York Trust Company, N.A.)
To: Conexant Systems, Inc.
Recorded at Reel 021523, Frame 0790
5. From: Bank of NY Mellon Trust Co., N.A. (Formerly, Bank of New York Trust Company, N.A.)
To: Conexant Systems, Inc.
Recorded at Reel 021523, Frame 0804
6. From: Conexant Systems, Inc.
To: NXP, B.V.
Recorded at Reel 021523, frame 0523
7. From: NXP
To: NXP Holding 1 B.V.
Recorded at 023928, Frame 0489
8. From: NXP Holding 1 B.V. and Trident Microsystems (Europe) B.V.
To: Trident Microsystems (Far East) Ltd.
Recorded at 023928, Frame 0552
9. From: Trident Microsystems, Inc. and Trident Microsystems (Far East) Ltd.
To: ENTROPIC COMMUNICATIONS, INC.
Recorded at Reel 028153, frame 0440



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

94518 7590 03/19/2012
DLA PIPER LLP (US)
2000 UNIVERSITY AVENUE
EAST PALO ALTO, CA 94303

EXAMINER

WINDER, PATRICE L

ART UNIT

PAPER NUMBER

2452

DATE MAILED: 03/19/2012

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,566	09/30/2003	Gordon Y. Li	348162-982350	9980

TITLE OF INVENTION: ARCHITECTURE FOR A FLEXIBLE AND HIGH-PERFORMANCE GATEWAY CABLE MODEM

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1740	\$300	\$0	\$2040	06/19/2012

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 SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

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)

94518 7590 03/19/2012
DLA PIPER LLP (US)
2000 UNIVERSITY AVENUE
EAST PALO ALTO, CA 94303

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.
10/675,566	09/30/2003	Gordon Y. Li	348162-982350	9980

TITLE OF INVENTION: ARCHITECTURE FOR A FLEXIBLE AND HIGH-PERFORMANCE GATEWAY CABLE MODEM

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1740	\$300	\$0	\$2040	06/19/2012

EXAMINER	ART UNIT	CLASS-SUBCLASS
WINDER, PATRICE L	2452	370-401000

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, 1 _____
(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. 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 3.111. 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)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

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.

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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.
10/675,566	09/30/2003	Gordon Y. Li	348162-982350	9980
94518	7590	03/19/2012	EXAMINER	
DLA PIPER LLP (US) 2000 UNIVERSITY AVENUE EAST PALO ALTO, CA 94303			WINDER, PATRICE L	
			ART UNIT	PAPER NUMBER

2452

DATE MAILED: 03/19/2012

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 1748 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 1748 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.	Applicant(s)	
	10/675,566	LI ET AL.	
	Examiner	Art Unit	
	PATRICE WINDER	2452	

-- 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 3-2-2012.
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 2-4 and 6-22.
4. ☐ 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 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. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
 - (b) ☐ 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).**
7. ☐ 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)

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. ☐ Notice of References Cited (PTO-892) 2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) 3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date ____ 4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. ☐ Notice of Informal Patent Application 6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date ____ 7. ☐ Examiner's Amendment/Comment 8. ☐ Examiner's Statement of Reasons for Allowance 9. ☐ Other ____ |
|---|---|

/Patrice L Winder/
Primary Examiner, Art Unit 2452

EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	4146	(broadband or residential) near2 gateway	US-PGPUB; USPAT	OR	ON	2012/03/10 16:47
L2	49219	cable near2 modem	US-PGPUB; USPAT	OR	ON	2012/03/10 16:47
L3	843	l1 same2 l2	US-PGPUB; USPAT	OR	ON	2012/03/10 16:48
L4	2	l3 and docis	US-PGPUB; USPAT	OR	ON	2012/03/10 16:48
L5	43	l3 and (cablelav or cablehome or packetcable)	US-PGPUB; USPAT	OR	ON	2012/03/10 16:49
L6	30	l5 and (@ad<"20030930" or @rlad<"20030930")	US-PGPUB; USPAT	OR	ON	2012/03/10 16:53
L7	8281	hub same ((home or data) near2 network)	US-PGPUB; USPAT	OR	ON	2012/03/10 16:57
L8	1	l2 and docis and l7	US-PGPUB; USPAT	OR	ON	2012/03/10 16:58
L9	2986	l2 and l7	US-PGPUB; USPAT	OR	ON	2012/03/10 16:58
L10	534	l2 same2 l7	US-PGPUB; USPAT	OR	ON	2012/03/10 16:58
L11	1994034	nat or network ad2 translat\$3	US-PGPUB; USPAT	OR	ON	2012/03/10 16:58
L12	6049	(internal or private) near2 address with (external or public) near2 address	US-PGPUB; USPAT	OR	ON	2012/03/10 16:59
L13	534	l10 and (l11 or l12)	US-PGPUB; USPAT	OR	ON	2012/03/10 16:59
L14	112980	nat or network adj2 address adj2 translat\$3	US-PGPUB; USPAT	OR	ON	2012/03/10 17:00
L15	50	l10 and (l12 or l14)	US-PGPUB; USPAT	OR	ON	2012/03/10 17:00
L16	28	l15 and (@ad<"20030930" or @rlad<"20030930")	US-PGPUB;	OR	ON	2012/03/10 17:00

			USPAT			
S1	1	("20040139233").PN.	US-PGPUB; USPAT	OR	OFF	2012/02/10 17:25

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L17	636	(broadband or residential).clm. near2 gateway.clm.	US-PGPUB; USPAT; UPAD	OR	ON	2012/03/10 17:22
L18	2826	cable.clm. near2 modem.clm.	US-PGPUB; USPAT; UPAD	OR	ON	2012/03/10 17:22
L19	0	l17 and l18 and docis.clm.	US-PGPUB; USPAT; UPAD	OR	ON	2012/03/10 17:23
L20	0	l17 and l18 and (cablelab or cablehome or packetcable).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2012/03/10 17:23
L21	924	hub.clm. and ((home or data).clm. near2 network.clm.)	US-PGPUB; USPAT; UPAD	OR	ON	2012/03/10 17:24
L22	0	l17 and l18 and l21	US-PGPUB; USPAT; UPAD	OR	ON	2012/03/10 17:24
L23	1679	(internal or private).clm. near2 address.clm. and (external or public).clm. near2 address.clm.	US-PGPUB; USPAT; UPAD	OR	ON	2012/03/10 17:25
L24	2332	nat.clm. or network.clm. adj2 address.clm. adj2 translat\$3.clm.	US-PGPUB; USPAT; UPAD	OR	ON	2012/03/10 17:26
L25	2	l17 and l18 and (l23 or l24)	US-PGPUB; USPAT; UPAD	OR	ON	2012/03/10 17:26
L26	30	l18 and l21	US-PGPUB; USPAT; UPAD	OR	ON	2012/03/10 17:29
L27	0	l26 and docis.clm.	US-PGPUB; USPAT; UPAD	OR	ON	2012/03/10 17:30

3/ 10/ 2012 5:30:38 PM**C:\Users\pwinder\Documents\EAST\Workspaces\10675566_03102012_Allow.wsp**

Issue Classification 	Application/Control No. 10675566	Applicant(s)/Patent Under Reexamination LI ET AL.
	Examiner PATRICE WINDER	Art Unit 2452

ORIGINAL						INTERNATIONAL CLASSIFICATION												
CLASS		SUBCLASS				CLAIMED					NON-CLAIMED							
370		401				H	O	4	L	12 / 46 (2006.0)								
CROSS REFERENCE(S)																		
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)																	
709	249																	

☐ 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	14	17												
2	2	16	18												
3	3	17	19												
4	4	18	20												
	5	19	21												
5	6	20	22												
1	7														
6	8														
7	9														
8	10														
9	11														
10	12														
11	13														
12	14														
15	15														
13	16														

NONE		Total Claims Allowed:	
		20	
(Assistant Examiner)	(Date)		
/PATRICE WINDER/ Primary Examiner. Art Unit 2452	03/10/2012	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

Search Notes 	Application/Control No. 10675566	Applicant(s)/Patent Under Reexamination LI ET AL.
	Examiner Patrice Winder	Art Unit 2452

SEARCHED			
Class	Subclass	Date	Examiner
709	249	3-10-2012	plw

SEARCH NOTES		
Search Notes	Date	Examiner
US Patents and PG Publications (using EAST) - see attached search history	3-10-2012	plw

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner
709	249	3-10-2012	plw
	PG PUB text search of CLAIMS (using EAST) - see attached search printout	3-10-2012	plw

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 Alexandria, Virginia 22313-1450
 www.uspto.gov

BIB DATA SHEET

CONFIRMATION NO. 9980

SERIAL NUMBER 10/675,566	FILING or 371(c) DATE 09/30/2003 RULE	CLASS 370	GROUP ART UNIT 2452	ATTORNEY DOCKET NO. 348162-982350	
APPLICANTS Gordon Y. Li, San Diego, CA; Yoav Hebron, San Diego, CA; ** CONTINUING DATA ***** ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** 12/23/2003					
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☐ No Verified and /PATRICE L WINDER/ Acknowledged Examiner's Signature		☐ Met after Allowance Initials	STATE OR COUNTRY CA	SHEETS DRAWINGS 2	TOTAL CLAIMS 15 INDEPENDENT CLAIMS 3
ADDRESS DLA PIPER LLP (US) 2000 UNIVERSITY AVENUE EAST PALO ALTO, CA 94303 UNITED STATES					
TITLE Architecture for a flexible and high-performance gateway cable modem					
FILING FEE RECEIVED 900	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		

<i>Index of Claims</i> 	Application/Control No. 10675566	Applicant(s)/Patent Under Reexamination LI ET AL.
	Examiner PATRICE WINDER	Art Unit 2452

✓	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	02/16/2009	08/24/2009	01/30/2010	08/29/2011	03/10/2012			
	1	✓	÷	✓	✓	-			
2	2	✓	÷	✓	✓	=			
3	3	✓	÷	✓	✓	=			
4	4	✓	÷	✓	✓	=			
	5	✓	÷	✓	✓	-			
5	6	✓	÷	✓	✓	=			
1	7	✓	÷	✓	✓	=			
6	8	✓	÷	✓	✓	=			
7	9	✓	÷	✓	✓	=			
8	10	✓	÷	✓	✓	=			
9	11	✓	÷	✓	✓	=			
10	12	✓	÷	✓	✓	=			
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12	14	✓	÷	✓	✓	=			
15	15	✓	÷	✓	✓	=			
13	16		÷	✓	✓	=			
14	17					=			
16	18					=			
17	19					=			
18	20					=			
19	21					=			
20	22					=			

Appln. No.: 10/675,566
Amend/Response filed Mar. 2, 2012
Responsive to Office action of Sept. 2, 2011

PATENT
348162-982350

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appln. No.	:	10/675,566	Conf. No.:	9980
First Named Inventor	:	Gordon Y. Li		
Filed	:	September 30, 2003		
Art Unit	:	2452		
Examiner	:	Winder, Patrice L.		
Docket No.	:	348162-982350		

Title: Architecture For A Flexible And High-Performance Gateway Cable Modem

AMENDMENT AND RESPONSE TO OFFICE ACTION

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

Madam:

In response to the Office action mailed September 2, 2011, please enter the amendments set forth below and consider the following remarks.

Amendments to the Claims are reflected in the listing of claims that begins on page 2 of this paper.

Remarks begin on page 9 of this paper.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. **(Canceled)**
2. **(Currently Amended)** A cable modem system as claimed in claim [[1]] 7, wherein all DOCSIS functions are localized in the cable modem engine.
3. **(Original)** A cable modem system as claimed in claim 2, wherein VoIP functionality is embedded in the cable modem engine.
4. **(Currently Amended)** A cable modem system as claimed in claim [[1]] 7, and further comprising an advanced crypto engine configured to perform all crypto functions for both the data networking engine and the cable modem engine, the advanced crypto engine being separate from both the data networking engine and the cable modem engine.
5. **(Canceled)**
6. **(Currently Amended)** A cable modem system as claimed in claim [[5]] 7, wherein the DOCSIS PHY layer includes a hardware transmitter and receiver.
7. **(Currently Amended)** A cable modem system comprising: as claimed in claim 5,
a data networking engine implemented in a first circuit that includes at least one
processor, the data networking engine programmed with software that when executed
by the at least one processor of the first circuit causes the data networking engine to

perform home networking functions including interfacing with customer provided equipment, wherein the at least one processor is a RISC processor;

a cable modem engine implemented in a second circuit that includes at least one processor, the second circuit being separate from the first circuit, the cable modem engine including a DOCSIS PHY layer, a DOCSIS controller, and a DOCSIS controller and programmed with software that when executed by the at least one processor of the second circuit causes the cable modem engine to perform cable modem functions other than the home networking functions performed by the data networking engine, the cable modem functions including interfacing with cable media, the cable modem engine configured to enable upgrades to its software in a manner that is independent of upgrades to the software of the data networking engine; and

a data bus that connects the data networking engine to the cable modem engine, wherein the cable modem functions performed by the cable modem engine are completely partitioned from the home networking functions performed by the data networking engine;

wherein the DOCSIS MAC processor is configured to process downstream PDU packets and forward the processed packets directly to the data networking engine without the involvement of the DOCSIS controller in order to boost downstream throughput.

8. **(Currently Amended)** A cable modem system as claimed in claim [[5]] 7, wherein all VoIP functionality is implemented in the DOCSIS controller.

9. **(Original)** A cable modem system as claimed in claim 8, wherein the VoIP functionality is in conformance with the PacketCable specification.

10. **(Currently Amended)** A cable modem system as claimed in claim [[5]] 7, wherein the data networking engine is configured to perform all data networking processing

including advanced multi-port bridging routing with NAT/firewall and VPN, and home networking applications.

11. **(Original)** A cable modem system as claimed in claim 10, wherein the data networking engine comprises the entire embedded portal services functionality of the CableHome specification.

12. **(Currently Amended)** A cable modem system as claimed in claim [[5]] 7, wherein with regard to the cable modem engine ~~includes~~:

- the DOCSIS PHY layer includes a transmitter and receiver;
- the DOCSIS MAC processor is configured to implement real-time MAC functions for both upstream and downstream communications; and
- the DOCSIS controller is configured to implement VoIP functionality; and wherein the data networking engine includes a RISC processor configured to implement a majority of data networking processing and home networking applications decoupled from the implementation of the MAC functions and the VoIP functionality of the cable modem engine.

13. **(Currently Amended)** A cable modem ~~architecture~~ system as claimed in claim 12, wherein the DOCSIS controller is configured to provide VoIP functionality in accordance with the PacketCable specification, wherein the data networking engine is configured to provide the embedded portal services functionality of the CableHome specification, and wherein the CableHome functionality provided by the data networking engine is completely decoupled from the PacketCable and DOCSIS functionality provided by the cable modem engine.

14. **(Currently Amended)** A cable modem ~~architecture~~ system as claimed in claim 13, wherein the DOCSIS MAC processor is an ARM9TDMI-based RISC processor, and wherein the DOCSIS controller is an ARM940-based RISC processor.

15. **(Currently Amended)** A method ~~of for~~ cable modem operation as claimed in claim 17, further comprising:

- providing a flexible and partitioned cable modem gateway comprising:
 - providing data and home networking functionality in the data networking engine;
 - providing DOCSIS and VoIP functionality in the cable modem engine; and
 - partitioning the data networking engine from the cable modem engine so that the data and home networking functionality is completely decoupled from the DOCSIS and VoIP functionality.

16. **(Currently Amended)** A cable modem system as claimed in claim ~~[[5]]~~ 7, wherein the data networking engine includes consumer provided equipment drivers including a USB driver and an Ethernet driver and the data networking engine is configured to provide the embedded portal services functionality of the CableHome specification, wherein the DOCSIS controller is configured to provide VoIP functionality in accordance with the PacketCable specification, and wherein the CableHome functionality provided by the data networking engine is completely decoupled from the PacketCable and DOCSIS functionality provided by the cable modem engine.

17. **(New)** A method of cable modem operation comprising:

- executing, via at least one processor of a first circuit that implements a data networking engine, first software that causes the data networking engine to perform home networking functions including interfacing with customer provided equipment, wherein the at least one processor is a RISC processor;

- executing, via one or more processors of a second circuit that implements a cable modem engine programmed with second software, the second software to cause the cable modem engine to perform cable modem functions other than the home networking functions performed by the data networking engine, the cable modem

functions including interfacing with cable media, the cable modem engine configured to enable upgrades to its software in a manner that is independent of upgrades to the software of the data networking engine, wherein the second circuit is separate from the first circuit, and wherein the cable modem engine includes a DOCSIS PHY layer, a DOCSIS controller and a DOCSIS controller;

connecting, via a data bus, the data networking engine to the cable modem engine, wherein the cable modem functions performed by the cable modem engine are completely partitioned from the home networking functions performed by the data networking engine;

processing, via the DOCSIS MAC processor, downstream PDU packets and forwarding the processed packets directly to the data networking engine without the involvement of the DOCSIS controller in order to boost downstream throughput.

18. **(New)** A method as claimed in claim 17, further comprising:

providing VoIP functionality in accordance with the PacketCable specification in the DOCSIS controller; and

providing the embedded portal services functionality of the CableHome specification in the data networking engine;

wherein the CableHome functionality provided by the data networking engine is completely decoupled from the PacketCable and DOCSIS functionality provided by the cable modem engine.

19. **(New)** A method as claimed in claim 17, further comprising:

providing the embedded portal services functionality of the CableHome specification in the data networking engine; and

providing VoIP functionality in accordance with the PacketCable specification in the DOCSIS controller;

wherein the data networking engine includes consumer provided equipment drivers including a USB driver and an Ethernet driver; and

wherein the CableHome functionality provided by the data networking engine is completely decoupled from the PacketCable and DOCSIS functionality provided by the cable modem engine.

20. **(New)** A cable modem system comprising:

a data networking engine implemented in a first circuit that includes at least one processor, the data networking engine programmed with software that when executed by the at least one processor of the first circuit causes the data networking engine to perform home networking functions including interfacing with customer provided equipment;

a cable modem engine implemented in a second circuit that includes at least one processor, the second circuit being separate from the first circuit, the cable modem engine programmed with software that when executed by the at least one processor of the second circuit causes the cable modem engine to perform cable modem functions other than the home networking functions performed by the data networking engine, the cable modem functions including interfacing with cable media, and the cable modem engine configured to enable upgrades to its software in a manner that is independent of upgrades to the software of the data networking engine, the cable modem engine including a DOCSIS controller and a DOCSIS MAC processor, the DOCSIS MAC processor configured to process downstream PDU packets and forward the processed packets directly to the data networking engine without the involvement of the DOCSIS controller in order to boost downstream throughput; and

a data bus that connects the data networking engine to the cable modem engine, wherein the cable modem functions performed by the cable modem engine are completely partitioned from the home networking functions performed by the data networking engine.

21. **(New)** A cable modem system as claimed in claim 20, wherein all DOCSIS functions are localized in the cable modem engine.

22. **(New)** The cable modem system as claimed in claim 20 wherein the DOCSIS MAC processor is configured to implement real-time MAC functions for both upstream and downstream communications.

REMARKS

In reply to the non-final Office Action mailed September 2, 2011, please enter the amendments set forth above and consider the following remarks. By this response, Applicants cancel claims 1 and 5 without prejudice or disclaimer, amend claims 2, 4, 6-8, 10, 12-15, and 16, and present new claims 17-22. No new matter has been added. After entry of this paper, claims 2-4 and 6-22 will be pending in this application.

In the Office action, the Examiner (i) rejected claims 1-2, 4-6, 10 and 11 under 35 U.S.C. 103(a), as being anticipated by Schain et al. (US 6,944,706 B2); (ii) rejected claims 3, 8, 9, 12-16 under 35 U.S.C. 103(a) as being unpatentable over Schain et al. as applied to claims 2, 5 above, and further in view of Winters et al. (US 2006/0080650 A1). With regard to the rejections, Applicants respectfully traverse, submitting that the standing rejections are unsupportable/moot/overcome as against the claims presented for at least the reasons set forth below. Reconsideration is respectfully requested.

Claim Rejections Under 35 USC § 103 (a)

Claims 1-2, 4-6, 10 and 11 stand rejected under 35 U.S.C. 103(a), as being anticipated by Schain et al. (US 6,944,706 B2).

Claims 3, 8, 9, 12-16 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Schain et al. as applied to claims 2, 5 above, and further in view of Winters et al. (US 2006/0080650 A1).

Applicants respectfully traverse these rejections.

As an initial matter, Applicants have canceled claims 1 and 5 without prejudice or disclaimer, and respectfully submit the rejections against these claims are moot..

Further and without acquiescence, in the interests, e.g., of advancing the prosecution of this case, avoiding additional costs, etc., Applicants have canceled the rejected claims, or amended the claims to depend from a claim indicated as allowable by the Examiner. Accordingly, Applicants submits that the rejections are moot or now unsupported in view of the amended claims, and respectfully request that they be withdrawn.

Specifically, the Examiner indicates on page 9 of the Office Action that claim 7 is allowable if rewritten in independent form. Claim 7 has been rewritten in independent

form, and claims 2-4, 6, 8-14, and 16 depend directly or indirectly on claim 7. Independent claim 15 has been amended to depend on new claim 17 which recites subject matter indicated as allowable by the Examiner (see, e.g., Office Action, pg. 9).

New Claims

Claims 17-22 are new claims presented in place of the claims canceled by Applicant without prejudice or disclaimer. New claims 17-22 are either copies of existing claims (with different dependencies or additional language) or are new claims reciting features indicated to be patentable. Further, all of these claims either depend on allowable claims or recite subject matter consistent with existing allowable claims. Accordingly, Applicants respectfully submit that these new claims present no new matter, and are allowable for at least the same reasons as their related claims.

Closing Remarks

In view of the above, it is respectfully submitted that the claims are now in condition for formal allowance, and early and favorable action to that end is respectfully requested.

The Examiner is encouraged to call Applicants' attorney at the number below if doing so will in any way advance the prosecution of this application.

The Commissioner is hereby petitioned to grant any extensions of time required to enter this paper as well as authorized to charge any fees which may be required, or credit in the overpayment, to Deposit Account No. 07-1896 referencing Attorney Docket No. 348162-982350.

Respectfully submitted,

DLA PIPER US LLP

By: /Andy Schwaab/
Andrew B. Schwaab
Reg. No. 38,611
Attorneys for Applicant

Dated: March 2, 2012

DLA PIPER US LLP
2000 University Avenue
East Palo Alto, CA 94303
Atty direct (650) 833-2258

Electronic Patent Application Fee Transmittal				
Application Number:	10675566			
Filing Date:	30-Sep-2003			
Title of Invention:	Architecture for a flexible and high-performance gateway cable modem			
First Named Inventor/Applicant Name:	Gordon Y. Li			
Filer:	Andrew B. Schwaab			
Attorney Docket Number:	348162-982350			
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 - 3 months with \$0 paid	1253	1	1270	1270

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				1270

Electronic Acknowledgement Receipt	
EFS ID:	12217941
Application Number:	10675566
International Application Number:	
Confirmation Number:	9980
Title of Invention:	Architecture for a flexible and high-performance gateway cable modem
First Named Inventor/Applicant Name:	Gordon Y. Li
Customer Number:	94518
Filer:	Andrew B. Schwaab
Filer Authorized By:	
Attorney Docket Number:	348162-982350
Receipt Date:	02-MAR-2012
Filing Date:	30-SEP-2003
Time Stamp:	20:54:34
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$1270
RAM confirmation Number	6509
Deposit Account	071896
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	Amendment/Req. Reconsideration-After Non-Final Reject	Response_To_9-2-11_Office_Action_348162-982350.pdf	71995	no	10
			32ccaae6e0fb9d36e7a8133d479cecfce989765		

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	30020	no	2
			7615d5d1392763b8313f940579deaa5f4602b94b		

Warnings:

Information:

Total Files Size (in bytes):	102015
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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.

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 10/675,566		Filing Date 09/30/2003		☐ To be Mailed			
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.												
APPLICATION AS AMENDED – PART II												
(Column 1)			(Column 2)			(Column 3)			SMALL ENTITY OR		OTHER THAN SMALL ENTITY	
AMENDMENT	03/02/2012	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)		RATE (\$)	ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 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))											
	TOTAL ADD'L FEE											
OR												
TOTAL ADD'L FEE 0												
(Column 1) (Column 2) (Column 3)												
AMENDMENT		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))											
	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:
/DIANA BATES/

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.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,566	09/30/2003	Gordon Y. Li	81373818US01-02CXT0070D	9980

94518 7590 09/02/2011
DLA PIPER LLP (US)
2000 UNIVERSITY AVENUE
EAST PALO ALTO, CA 94303

EXAMINER

WINDER, PATRICE L

ART UNIT	PAPER NUMBER
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2452

MAIL DATE	DELIVERY MODE
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09/02/2011

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)	
	10/675,566		LI ET AL.	
	Examiner		Art Unit	
	PATRICE WINDER		2452	

-- 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 June 2010.

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) 1-16 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) 1-16 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

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 June 7, 2010 has been entered.

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 negated by the manner in which the invention was made.

Claims 1-2, 4-6, 10, 11, are rejected under 35 U.S.C. 103(a) as being unpatentable over Schain et al., US 6,944,706 B2 (hereafter referred to Schain).

Regarding claim 1, Schain taught a cable modem system (column 4, lines 12-21) comprising:

a data networking engine implemented in a first circuit that includes at least one processor (processing element), the data networking engine programmed with software that when executed by the at least one processor of the first circuit causes the data

networking engine to perform home networking functions including interfacing with customer provided equipment (column 4, lines 22-28);

a cable modem engine implemented in a second circuit that includes at least one processor, the second circuit being separate from the first circuit (column 10, lines 28-34), the cable modem engine programmed with software that when executed by the at least one processor of the second circuit causes the cable modem engine to perform cable modem functions other than the home networking functions performed by the data networking engine, the cable modem functions including interfacing with cable media (column 4, lines 28-43; column 8, lines 35-48), and the cable modem engine configured to enable upgrades to its software in a manner that is independent of upgrades to the software of the data networking engine (column 10, lines 28-34); and

a data bus that connects the data networking engine to the cable modem engine, wherein the cable modem functions performed by the cable modem engine are completely partitioned from the home networking functions performed by the data networking engine (column 9, lines 26-28). Schain does not specifically teach separate processing elements but suggests embodiments where the engines would be implemented in the separate processing elements (column 10, lines 10-20). It would have been obvious to one of ordinary skill in the art at the time the invention was made that incorporating separate processing elements would have been equivalent embodiment.

Regarding dependent claim 2, Schain taught all DOCSIS functions are localized in the cable modem engine (column 8, lines 49-51).

Regarding dependent claim 4, Schain taught a cable modem system further comprising an advanced crypto engine configured to perform all crypto functions for both the data networking engine and the cable modem engine, the advanced crypto engine being separate from both the data networking engine and the cable modem engine (column 12, lines 55-64).

Regarding dependent claim 5, Schain taught a cable modem engine includes: a DOCSIS PHY layer; a DOCSIS MAC processor; and a DOCSIS controller, and wherein the at least one processor of the data networking engine is a RISC processor (column 13, lines 26-36).

Regarding dependent claim 6, Schain taught DOCSIS PHY layer includes a hardware transmitter and receiver (column 7, lines 47-51).

Regarding dependent claim 10, Schain taught the data networking engine is configured to perform all data networking processing including advanced multi-port bridging routing with NAT/firewall and VPN, and home networking applications (column 11, lines 59-67; column 12, lines 10).

Regarding dependent claim 11, Schain does not specifically teach the data networking engine comprises the entire embedded portal services functionality of the CableHome specification. "Official notice" is taken embedded portal services functionality CableHome specification is well known in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made that incorporating the CableHome specification in Schain's data networking engine would

have improved effectiveness. The motivation would have been to provide new services in a standardized manner.

Claims 3, 8, 9, 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schain as applied to claims 2, 5 above, and further in view of Winters et al., US 2006/0080650 A1 (hereafter referred to as Winters).

Regarding dependent claim 3, Schain does not specifically teach VoIP functionality is embedded in the cable modem engine. However, Winters taught VoIP functionality is embedded in the cable modem engine (paragraphs 5-6). It would have been obvious to one of ordinary skill in the art at the time the invention was made that incorporating Winter's VoIP functionality in Schain's cable modem would have extended functionality. The motivation would have to expand Schain's functionality to include voice telephony and provide capabilities for other cable modem services.

Regarding dependent claim 8, Schain does not specifically teach all VoIP functionality is implemented in the DOCSIS controller. However, Winters taught VoIP functionality is implemented in the DOCSIS controller of a cable modem (paragraphs 5-6). It would have been obvious to one of ordinary skill in the art at the time the invention was made that incorporating Winter's VoIP functionality in Schain's cable modem would have extended functionality. The motivation would have to expand functionality to include voice telephony and provide capabilities for other cable modem services.

Regarding dependent claim 9, Winters taught the VoIP functionality is in conformance with the PacketCable specification (paragraphs 5-6).

Regarding dependent claim 12, Schain taught the cable modem engine includes: the DOCSIS PHY layer includes a transmitter and receiver (column 7, lines 47-51); the DOCSIS MAC processor is configured to implement real-time MAC functions for both upstream and downstream communications (column 12, lines 25-38); and the DOCSIS controller is configured to implement other functionality (column 10, lines 54-62); and wherein the data networking engine includes a processing element configured to implement a majority of data networking processing and home networking applications decoupled from the implementation of the MAC functions and the other functionality of the cable modem engine (column 8, lines 35-48). Schain does not specifically teach the other functionality is VoIP functionality. However, Winters taught VoIP functionality is implemented in the DOCSIS controller of a cable modem (paragraphs 5-6). It would have been obvious to one of ordinary skill in the art at the time the invention was made that incorporating Winter's VoIP functionality in Schain's cable modem would have extended functionality. The motivation would have to expand functionality to include voice telephony and provide capabilities for other cable modem services.

Regarding dependent claim 13, Winters taught the DOCSIS controller is configured to provide VoIP functionality in accordance with the PacketCable specification, wherein the data networking engine is configured to provide the embedded portal services functionality of the CableHome specification, and wherein the CableHome functionality provided by the data networking engine is completely

decoupled from the PacketCable and DOCSIS functionality provided by the cable modem engine (paragraphs 5-6).

Regarding dependent claim 14, Schain does not teach the DOCSIS MAC processor is an RISC processor, and wherein the DOCSIS controller is an RISC processor (column 13, lines 26-36). Schain does not specifically teach ARM940-based or ARM9TDMI-based. However, both models are from a well known processor family. It would have been obvious to one of ordinary skill in the art at the time the invention was made that incorporating ARM 940-based processors in Schain's RISC processors would have been an acceptable selection. The motivation would have been because ARM 940 based processors have similar advantages.

Regarding claim 15, Schain taught a method for providing a flexible and partitioned cable modem gateway comprising:

providing data and home networking functionality in a data networking engine (column 4, lines 22-28);

providing DOCSIS and other functionality in a cable modem engine (column 4, lines 28-43; column 8, lines 35-48); and

partitioning the data networking engine from the cable modem engine so that the data and home networking functionality is completely decoupled from the DOCSIS and other functionality (column 10, lines 6-15). Schain does not specifically teach the other functionality is VoIP functionality in accordance with the PacketCable specification. However, Winters taught VoIP functionality is implemented in the DOCSIS controller of a cable modem in accordance with PacketCable specification (paragraphs 5-6). It would

have been obvious to one of ordinary skill in the art at the time the invention was made that incorporating Winter's VoIP functionality in Schain's cable modem would have extended functionality. The motivation would have been to expand functionality to include voice telephony and provide capabilities for other cable modem services.

Regarding dependent claim 16, Schain taught the data networking engine includes consumer provided equipment drivers including a USB driver and an Ethernet driver (column 11, lines 9-15). Schain does not specifically teach the data networking engine comprises the entire embedded portal services functionality of the CableHome specification. "Official notice" is taken embedded portal services functionality CableHome specification is well known in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made that incorporating the CableHome specification in Schain's data networking engine would have improved effectiveness. The motivation would have been to provide new services in a standardized manner.

Schain does not specifically teach the other functionality is VoIP functionality in accordance with the PacketCable specification. However, Winters taught VoIP functionality is implemented in the DOCSIS controller of a cable modem in accordance with PacketCable specification (paragraphs 5-6). It would have been obvious to one of ordinary skill in the art at the time the invention was made that incorporating Winter's VoIP functionality in Schain's cable modem would have extended functionality. The

motivation would have to expand functionality to include voice telephony and provide capabilities for other cable modem services.

In combination Schain-Winter the CableHome functionality provided by the data networking engine is completely decoupled from the PacketCable and DOCSIS functionality provided by the cable modem engine (column 10, lines 6-15).

Allowable Subject Matter

Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the DOCSIS MAC processor is configured to process downstream PDU packets and forward the processed packets directly to the data networking engine without the involvement of the DOCSIS controller in order to boost downstream throughput.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PATRICE WINDER whose telephone number is (571)272-3935. The examiner can normally be reached on Monday-Friday, 12:00 pm - 8:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thu V. Nguyen can be reached on 571-272-6967. 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.

/Patrice L Winder/
Primary Examiner, Art Unit 2452

August 29, 2011

Notice of References Cited	Application/Control No. 10/675,566	Applicant(s)/Patent Under Reexamination LI ET AL.	
	Examiner PATRICE WINDER	Art Unit 2452	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,944,706 B2	09-2005	Schain et al.	709/250
*	B	US-2006/0080650 A1	04-2006	Winters et al.	717/168
	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.

<i>Search Notes</i> 	Application/Control No. 10675566	Applicant(s)/Patent Under Reexamination LI ET AL.
	Examiner Patrice Winder	Art Unit 2452

SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
US Patents and PG Publications (using EAST) - see attached search history	8-9-2011	plw
US Patents and PG Publications (using EAST) - see attached search history	8-25-2011	plw

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

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EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	("20010039600").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2011/08/25 20:57
L2	773	broadband adj2 gateway	US-PGPUB; USPAT	OR	ON	2011/08/25 21:04
L3	43907	cable adj2 modem	US-PGPUB; USPAT	OR	ON	2011/08/25 21:04
L4	245	I2 same2 I3	US-PGPUB; USPAT	OR	ON	2011/08/25 21:04
L5	131	I4 and docsis	US-PGPUB; USPAT	OR	ON	2011/08/25 21:05
L6	17	I5 and (cablelab or packetcable or cablehome)	US-PGPUB; USPAT	OR	ON	2011/08/25 21:06
L7	2791	residential adj2 gateway	US-PGPUB; USPAT	OR	ON	2011/08/25 21:08
L8	536	I3 same2 I7	US-PGPUB; USPAT	OR	ON	2011/08/25 21:08
L9	207	I8 and docsis	US-PGPUB; USPAT	OR	ON	2011/08/25 21:09
L10	50	I9 and (cablelab or packetcable or cablehome)	US-PGPUB; USPAT	OR	ON	2011/08/25 21:09
L11	32	I10 and (@ad<"20030930" or @rlad<"20030930")	US-PGPUB; USPAT	OR	ON	2011/08/25 21:10
L12	85	I5 and (@ad<"20030930" or @rlad<"20030930")	US-PGPUB; USPAT	OR	ON	2011/08/25 21:17
L13	3171	I3 same2 hub	US-PGPUB; USPAT	OR	ON	2011/08/25 21:23
L14	2121	I3 same hub	US-PGPUB; USPAT	OR	ON	2011/08/25 21:23
L15	637	I14 and docsis	US-PGPUB; USPAT	OR	ON	2011/08/25 21:23
L16	436	I15 and (@ad<"20030930" or @rlad<"20030930")	US-PGPUB; USPAT	OR	ON	2011/08/25 21:23
L17	1665	hub near8 (home adj2 network or data adj2 network)	US-PGPUB; USPAT	OR	ON	2011/08/25 21:24
L18	96	I3 same2 I17	US-PGPUB; USPAT	OR	ON	2011/08/25 21:24
L19	67	I18 and (@ad<"20030930" or @rlad<"20030930")	US-PGPUB; USPAT	OR	ON	2011/08/25 21:24

L20	103172	nat or newtork adj2 translat \$3	US-PGPUB; USPAT	OR	ON	2011/08/25 21:31
L21	0	internal adj2 address near8 external adj2 address	US-PGPUB; USPAT	OR	ON	2011/08/25 21:32
L22	5212	(configur\$3 or configuration or provision\$3) near8 (vpn or virtual adj2 (private or network))	US-PGPUB; USPAT	OR	ON	2011/08/25 21:32
L23	3179	internal adj2 address with external adj2 address	US-PGPUB; USPAT	OR	ON	2011/08/25 21:33
L24	599	l3 same2 (l20 or l22 or l23)	US-PGPUB; USPAT	OR	ON	2011/08/25 21:33
L25	350	l3 same (l20 or l22 or l23)	US-PGPUB; USPAT	OR	ON	2011/08/25 21:33
L26	202	l25 and (@ad<"20030930" or @rlad<"20030930")	US-PGPUB; USPAT	OR	ON	2011/08/25 21:33
L27	34	l26 and docsis	US-PGPUB; USPAT	OR	ON	2011/08/25 21:34
L28	18	(US-20030106067-\$ or US- 20100074267-\$).did. or (US- 7149474-\$ or US-7046796-\$ or US-6775273-\$ or US- 7460546-\$ or US-6944706-\$ or US-6889321-\$ or US- 6728239-\$ or US-7334252-\$ or US-6888850-\$ or US- 6588016-\$ or US-7620055-\$ or US-7590144-\$ or US- 7092397-\$ or US-6697864-\$ or US-6693878-\$ or US- 6577642-\$).did.	US-PGPUB; USPAT	OR	ON	2011/08/25 21:52

8/ 25/ 2011 9:52:14 PM

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Workspace 1600x1200.wsp

EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	43598	cable adj2 modem	US-PGPUB; USPAT	OR	ON	2011/08/09 21:00
L2	48097	co\$1process\$3 or bypass\$3 near8 process\$3	US-PGPUB; USPAT	OR	ON	2011/08/09 21:01
L3	182810	vpn or virtual adj2 private or nat or network adj2 translat \$3 or firewall	US-PGPUB; USPAT	OR	ON	2011/08/09 21:01
L4	282	l2 same l3	US-PGPUB; USPAT	OR	ON	2011/08/09 21:02
L5	12	l1 and l4	US-PGPUB; USPAT	OR	ON	2011/08/09 21:02
L6	4	l5 and (@ad<"20030930" or @rlad<"20030930")	US-PGPUB; USPAT	OR	ON	2011/08/09 21:02
L7	143	l1 same2 l2	US-PGPUB; USPAT	OR	ON	2011/08/09 21:03
L8	2	l7 and docis	US-PGPUB; USPAT	OR	ON	2011/08/09 21:03
L9	2	l8 and (@ad<"20030930" or @rlad<"20030930")	US-PGPUB; USPAT	OR	ON	2011/08/09 21:03
L10	297101	(multiple or plural\$3) near8 (processor or engine)	US-PGPUB; USPAT	OR	ON	2011/08/09 21:05
L11	1177	l1 same2 l10	US-PGPUB; USPAT	OR	ON	2011/08/09 21:06
L12	28560	l10 same (independent or separate or distinct)	US-PGPUB; USPAT	OR	ON	2011/08/09 21:06
L13	49	l1 same2 l12	US-PGPUB; USPAT	OR	ON	2011/08/09 21:07
L14	35	l13 and (@ad<"20030930" or @rlad<"20030930")	US-PGPUB; USPAT	OR	ON	2011/08/09 21:07

L15	1	docis same engine	US-PGPUB; USPAT	OR	ON	2011/08/09 21:10
L16	200	docsis same engine	US-PGPUB; USPAT	OR	ON	2011/08/09 21:11
L17	182	l1 and l16	US-PGPUB; USPAT	OR	ON	2011/08/09 21:11
L18	133	l17 and (@ad<"20030930" or @rlad<"20030930")	US-PGPUB; USPAT	OR	ON	2011/08/09 21:11
L19	19	l3 and l18	US-PGPUB; USPAT	OR	ON	2011/08/09 21:11
L20	3583	gateway same cable adj2 modem	US-PGPUB; USPAT	OR	ON	2011/08/09 21:15
L21	867	l3 same2 l20	US-PGPUB; USPAT	OR	ON	2011/08/09 21:15
L22	571	l3 same l20	US-PGPUB; USPAT	OR	ON	2011/08/09 21:15
L23	1	l22 same (co\$1process\$3 or engine)	US-PGPUB; USPAT	OR	ON	2011/08/09 21:16
L24	17	l22 same2 (co\$1process\$3 or engine)	US-PGPUB; USPAT	OR	ON	2011/08/09 21:16
L25	14	l24 and (@ad<"20030930" or @rlad<"20030930")	US-PGPUB; USPAT	OR	ON	2011/08/09 21:16
L26	11165	l3 near8 gateway	US-PGPUB; USPAT	OR	ON	2011/08/09 21:17
L27	793	l20 and l26	US-PGPUB; USPAT	OR	ON	2011/08/09 21:17
L28	129	l27 and partition\$3	US-PGPUB; USPAT	OR	ON	2011/08/09 21:17
L29	49	l28 and (@ad<"20030930" or @rlad<"20030930")	US-PGPUB; USPAT	OR	ON	2011/08/09 21:18
L30	1	(US-6944706-\$).did.	USPAT	OR	ON	2011/08/09 21:22

8/9/2011 9:26:00 PM

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Workspace 1600x1200.wsp**

EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	0	li-gordon\$.in.	US-PGPUB; USPAT	OR	ON	2011/08/09 20:35
L2	9	li-gordon\$.in.	US-PGPUB; USPAT	OR	ON	2011/08/09 20:35
L3	11	hebron-yoav\$.in.	US-PGPUB; USPAT	OR	ON	2011/08/09 20:35
L4	17	l2 or l3	US-PGPUB; USPAT	OR	ON	2011/08/09 20:35
L5	3074	cable adj2 modem	FPRS; EPO; JPO; DERWENT	OR	ON	2011/08/09 20:38
L6	127992	nat or network adj2 address adj2 translat\$3 or firewall or vpn or virtual adj2 private adj2 network \$3	FPRS; EPO; JPO; DERWENT	OR	ON	2011/08/09 20:42
L7	1944	l6 with (engine or process \$3)	FPRS; EPO; JPO; DERWENT	OR	ON	2011/08/09 20:42
L8	8	l5 and l7	FPRS; EPO; JPO; DERWENT	OR	ON	2011/08/09 20:42
L9	0	l8 and @pd< "20030930"	FPRS; EPO; JPO; DERWENT	OR	ON	2011/08/09 20:43
L10	6189	(independent or decoupl \$3 or distinct or different) near2 engine	FPRS; EPO; JPO; DERWENT	OR	ON	2011/08/09 20:43
L11	2	l5 and l10	FPRS; EPO; JPO; DERWENT	OR	ON	2011/08/09 20:43
L12	0	l11 and @pd< "20030930"	FPRS; EPO; JPO; DERWENT	OR	ON	2011/08/09 20:43
L13	49	l5 and engine	FPRS; EPO; JPO; DERWENT	OR	ON	2011/08/09 20:44
L14	9	l13 and @pd< "20030930"	FPRS; EPO; JPO; DERWENT	OR	ON	2011/08/09 20:44
L15	4	l6 same co\$1processor	FPRS; EPO; JPO; DERWENT	OR	ON	2011/08/09 20:46
L16	1	l15 and @pd< "20030930"	FPRS; EPO; JPO; DERWENT	OR	ON	2011/08/09 20:46
L17	0	l5 and co\$1processor	FPRS; EPO; JPO; DERWENT	OR	ON	2011/08/09 20:46
L18	58	l5 and l6	FPRS; EPO; JPO; DERWENT	OR	ON	2011/08/09 20:47

L19	8	l18 and @pd<"20030930"	FPRS; EPO; JPO; DERWENT	OR	ON	2011/08/09 20:47
L20	270	functional near4 partition \$3	FPRS; EPO; JPO; DERWENT	OR	ON	2011/08/09 20:49
L21	0	l5 and l20	FPRS; EPO; JPO; DERWENT	OR	ON	2011/08/09 20:50

8/ 9/ 2011 8:55:27 PM

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Workspace 1600x1200.wsp**

<i>Index of Claims</i> 	Application/Control No. 10675566	Applicant(s)/Patent Under Reexamination LI ET AL.
	Examiner Patrice Winder	Art Unit 2452

✓	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	02/16/2009	08/24/2009	01/30/2010	08/29/2011				
	1	✓	÷	✓	✓				
	2	✓	÷	✓	✓				
	3	✓	÷	✓	✓				
	4	✓	÷	✓	✓				
	5	✓	÷	✓	✓				
	6	✓	÷	✓	✓				
	7	✓	÷	✓	✓				
	8	✓	÷	✓	✓				
	9	✓	÷	✓	✓				
	10	✓	÷	✓	✓				
	11	✓	÷	✓	✓				
	12	✓	÷	✓	✓				
	13	✓	÷	✓	✓				
	14	✓	÷	✓	✓				
	15	✓	÷	✓	✓				
	16		÷	✓	✓				



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/675,566	09/30/2003	Gordon Y. Li	81373818US01-02CXT0070D

CONFIRMATION NO. 9980

65913
NXP, B.V.
NXP INTELLECTUAL PROPERTY & LICENSING
M/S41-SJ
1109 MCKAY DRIVE
SAN JOSE, CA 95131

POWER OF ATTORNEY NOTICE



Date Mailed: 06/18/2010

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 04/06/2010.

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

/cdsmith/

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



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/675,566	09/30/2003	Gordon Y. Li	81373818US01-02CXT0070D

CONFIRMATION NO. 9980

94518
DLA PIPER LLP (US)
2000 UNIVERSITY AVENUE
EAST PALO ALTO, CA 94303

POA ACCEPTANCE LETTER



Date Mailed: 06/18/2010

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 04/06/2010.

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.

/cdsmith/

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

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**Request
for
Continued Examination (RCE)
Transmittal**

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

Application Number	10/675,566
Filing Date	September 30, 2003
First Named Inventor	Gordon Y. Li
Art Unit	2445
Examiner Name	Tanim M. Hossain
Attorney Docket Number	348162-982350 [81373818US01]

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. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. **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).
- a. ☐ 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.
- i. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ii. ☐ Other _____
- b. ☒ Enclosed
- i. ☒ Amendment/Reply
- iii. ☐ Information Disclosure Statement (IDS)
- ii. ☐ Affidavit(s)/ Declaration(s)
- iv. ☐ Other _____
2. **Miscellaneous**
- a. ☐ 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)
- b. ☐ Other _____
3. **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 the following fees, any underpayment of fees, or credit any overpayments, to Deposit Account No. 07-1896.
- a. ☒
- i. ☒ RCE fee required under 37 CFR 1.17(e)
- ii. ☒ Extension of time fee (37 CFR 1.136 and 1.17)
- iii. ☐ Other _____
- b. ☐ Check in the amount of \$ _____ enclosed
- c. ☐ Payment by credit card (Form PTO-2038 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.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Signature	/Gerald T. Sekimura/	Date	June 7, 2010
Name (Print/Type)	Gerald T. Sekimura	Registration No.	30,103

CERTIFICATE OF MAILING OR ELECTRONIC TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or electronically transmitted to the U.S. Patent and Trademark Office on the date shown below.

Signature	/Ta-Tanisha L. Henry/	Date	June 7, 2010
Name (Print/Type)	Ta-Tanisha L. Henry		

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. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop RCE, 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.

Appl. No. : 10/675,566
Applicants : Gordon Y. Li, et al.
Filed : September 30, 2003
TC/A.U. : 2445
Examiner : Tanim M. Hossain

Confirmation No. 9980

Docket No. : 348162-982350
[81373818US01]
Customer : 94518
No.

Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

AMENDMENT

Sir:

In connection with the Request for Continued Examination, filed herewith,
please amend the subject application as follows:

Any Amendments to the Claims are reflected in the listing of claims
which begins on page 2 of this paper.

Remarks/Arguments begin on page 6 of this paper.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A cable modem system comprising:

a data networking engine implemented in a first circuit that includes at least one processor, the data networking engine programmed with software that when executed by the at least one processor of the first circuit causes the data networking engine to perform home networking functions including interfacing with customer provided equipment;

a cable modem engine implemented in a second circuit that includes at least one processor, the second circuit being separate from the first circuit, the cable modem engine programmed with software that when executed by the at least one processor of the second circuit causes the cable modem engine to perform cable modem functions other than the home networking functions performed by the data networking engine, the cable modem functions including interfacing with cable media, and the cable modem engine configured to enable upgrades to its software in a manner that is independent of upgrades to the software of the data networking engine; and

a data bus that connects the data networking engine to the cable modem engine,

wherein the cable modem functions performed by the cable modem engine are completely partitioned from the home networking functions performed by the data networking engine.

2. (Original) A cable modem system as claimed in claim 1, wherein all DOCSIS functions are localized in the cable modem engine.

3. (Original) A cable modem system as claimed in claim 2, wherein VoIP functionality is embedded in the cable modem engine.

4. (Previously presented) A cable modem system as claimed in claim 1, and further comprising an advanced crypto engine configured to perform all crypto functions for both the data networking engine and the cable modem engine, the advanced crypto engine being separate from both the data networking engine and the cable modem engine.

5. (Previously presented) A cable modem system as claimed in claim 1, wherein the cable modem engine includes:

- a DOCSIS PHY layer;
- a DOCSIS MAC processor; and
- a DOCSIS controller, and

wherein the at least one processor of the data networking engine is a RISC processor.

6. (Previously presented) A cable modem system as claimed in claim 5, wherein the DOCSIS PHY layer includes a hardware transmitter and receiver.

7. (Previously presented) A cable modem system as claimed in claim 5, wherein the DOCSIS MAC processor is configured to process downstream PDU packets and forward the processed packets directly to the data networking engine without the involvement of the DOCSIS controller in order to boost downstream throughput.

8. (Original) A cable modem system as claimed in claim 5, wherein all VoIP functionality is implemented in the DOCSIS controller.

9. (Original) A cable modem system as claimed in claim 8, wherein the VoIP functionality is in conformance with the PacketCable specification.

10. (Previously presented) A cable modem system as claimed in claim 5, wherein the data networking engine is configured to perform all data networking processing including advanced multi-port bridging routing with NAT/firewall and VPN, and home networking applications.

11. (Original) A cable modem system as claimed in claim 10, wherein the data networking engine comprises the entire embedded portal services functionality of the CableHome specification.

12. (Previously presented) A cable modem system as claimed in claim 5, wherein the cable modem engine includes:

the DOCSIS PHY layer includes a transmitter and receiver;

the DOCSIS MAC processor is configured to implement real-time MAC functions for both upstream and downstream communications; and

the DOCSIS controller is configured to implement VoIP functionality; and wherein

the data networking engine includes a RISC processor configured to implement a majority of data networking processing and home networking applications decoupled from the implementation of the MAC functions and the VoIP functionality of the cable modem engine.

13. (Previously presented) A cable modem architecture as claimed in claim 12, wherein the DOCSIS controller is configured to provide VoIP functionality in accordance with the PacketCable specification, wherein the data networking engine is configured to provide the embedded portal services functionality of the CableHome specification, and wherein the CableHome functionality provided by the data networking engine is completely decoupled from the PacketCable and DOCSIS functionality provided by the cable modem engine.

14. (Original) A cable modem architecture as claimed in claim 13, wherein the DOCSIS MAC processor is an ARM9TDMI-based RISC processor, and wherein the DOCSIS controller is an ARM940-based RISC processor.

15. (Original) A method for providing a flexible and partitioned cable modem gateway comprising: providing data and home networking functionality in a data networking engine; providing DOCSIS and VoIP functionality in a cable modem engine; and partitioning the data networking engine from the cable modem engine so that the data and home networking functionality is completely decoupled from the DOCSIS and VoIP functionality.

16. (Previously presented) A cable modem system as claimed in claim 5, wherein the data networking engine includes consumer provided equipment drivers including a USB driver and an Ethernet driver and the data networking engine is configured to provide the embedded portal services functionality of the CableHome specification, wherein the DOCSIS controller is configured to provide VoIP functionality in accordance with the PacketCable specification, and wherein the CableHome functionality provided by the data networking engine is completely decoupled from the PacketCable and DOCSIS functionality provided by the cable modem engine.

REMARKS/ARGUMENTS

Reconsideration of the subject application, as amended, is respectfully requested.

Claims 1-16 are pending in the subject application. Claim 1 has been amended to recite that the cable modem functions include interfacing with cable media. Support for this amendment is found in the implementation examples of Figures 1 and 2, and the illustrated interfaces to the HFC or RF external sources.

In the February 5, 2010 Office Action, made final, the Examiner rejected claims 1-16 under 35 USC 102(e) as being anticipated by Brooks (U.S. 2001/0039600) ("Brooks '600"). (See, Office Action, p. 3.) Claim 12 was rejected under 35 USC 112, first paragraph, as failing to comply with the written description. Claims 12-14 were rejected under 35 USC 112, second paragraph, as indefinite.

A Request to Withdraw Finality and Response to Final Office Action was filed on April 5, 2010 in which claims 1 and 12 were amended to address the Examiner's section 112 rejections, and it was pointed out that there was continued uncertainty as to how the Examiner was interpreting and applying the disclosures of Brooks '600 to the claims at issue. More specifically, it was pointed out that in Brooks '600, only two processors were disclosed. Therefore, from the Examiner's position that "the data networking engine and cable modem engines are represented in figures 1 and 2" (Office Action, p. 8), it would follow that one of the two processors corresponded to the networking engine, and the other of the two processors corresponded to the cable modem engine. It was further pointed out that while the discussion concerning Figure 2 in Brooks '600 paragraph 0042 makes clear that cable modem functions are performed by CMAC unit 224, if the cable modem engine is to contain a processor and perform CMAC functions as claimed, the cited cable modem engine must include circuitry

to connect one of the processors with the CMAC unit. It was noted, however, that because available connecting circuitry would be shared by both the one processor and the other processor, the asserted cable modem engine and home networking engine could not be completely partitioned as claimed.

In the Examiner's Advisory Action (notification date May 11, 2010) the Examiner withdrew the section 112 rejections, continued the finality of the 102(e) rejection, and provided a limited further explanation of his view of how the disclosure of Brooks '600 applies to the pending claims. However, despite this further explanation, it is still not clear as to what the Examiner considers to be the cable modem engine and the data networking engine in Brooks '600.

The Examiner explained that:

Brooks' abstract, for example, discloses bifurcated processing architecture. The first processor processes information flowing to and from cable media interface circuitry. This constitutes the data networking engine, which performs the interacting with equipment, as claimed. The second processor performs the management of some message processing and scheduling, which constitutes cable modem functions other than those of the data networking engine (please see paragraph 0026). This the constitutes the cable modem engine, as claimed. Claim 9 of the Brooks reference further teaches partitioned processors, where the co-processor supports the processing of cable media and performs data transfer, and the first processor performs a plurality of other processing functions.

(Advisory Action Before Filing of an Appeal Brief, sheet 3.)

First of all, the Examiner's assertion that "[t]his constitutes the data networking engine, which performs the interacting with equipment, as claimed" appears to equate the "cable media interface circuitry" with the "customer provided equipment" of, for example, claim 1. Presumably, the Examiner is referring to the CMAC/CPHY block (114, 118, 224 and 228) of Fig. 2 as the cable media interface circuitry. However, Brooks '600 does not describe such blocks as customer provided equipment. Thus, it is not clear what the Examiner considers to correspond to "customer provided equipment" in Brooks '600.

Further, from the above explanation, it appears that the Examiner may be asserting that the cable modem engine includes second processor 104, that the data networking engine is first processor 102 (see Fig. 2), and that the CMAC/CPHY block (114, 118, 224 and 228) is also a part of the cable modem engine. However, processor 102 handles many cable modem functions (see Fig. 4, paragraphs 0053 to 0062), and is explicitly described as “programmed to implement the desired MAC functionality” (paragraph 0026). Paragraph 0025 states “[i]n the case of DOCSIS, typical MAC functionality includes MPEG and MCNS decoding and frame synchronization.” On the other hand, processor 104 is described only as providing operating system support and that it “may manage some message processing and scheduling” (paragraph 0026, emphasis added). Thus, the Examiner’s designation of the first processor as the “data networking engine” is at odds with the Brooks ‘600 description of processor 102 as being “programmed to implement the desired MAC functionality.”

The Examiner’s apparent designation of the first processor 102 in Brooks ‘600 as the “data networking engine,” and the second processor 104 and the CMAC/CPHY block (114, 118, 224 and 228) as the “cable modem engine,” further does not square with the claim 1 feature that “the cable modem functions performed by the cable modem engine are completely partitioned from the home networking functions performed by the data networking engine,” and the claim 15 feature of “partitioning the data networking engine from the cable modem engine so that the data and home networking functionality is completely decoupled from the DOCSIS and VOIP functionality.” This is because the CMAC/CPHY block (114, 118, 224 and 228) communicates with both the processors 102 and 104 by sharing the same data paths and sharing the same direct memory access controller. (See peripheral bus 112 – bridge 110 – system bus 108 in Fig. 1 and APB 214 – DMA Controller/ASB-APB Bridge 212 – ASB 210 in Fig. 2, and paragraphs 0034 and 0035).

Further, accepting the Examiner's assertion that first processor 102 handles data networking functionality, and considering the description of paragraphs 0025 and 0026 that processor 102 is programmed to implement the desired MAC functionality (which would include typical DOCSIS MAC functionality), leads to a conclusion that the Brooks '600 processor 102 does not implement a complete partitioning or a completely decoupled arrangement of the data networking engine from the cable modem engine.

Thus, Brooks '600 does not provide the complete partitioning or completely decoupled arrangement of the data networking engine from the cable modem engine that the Examiner apparently asserts it does.

For at least the above reasons, it is respectfully submitted that Brooks '600 does not teach or make obvious the claimed subject matter.

The Examiner also asserts that claim 9 of the Brooks reference:

further teaches partitioned processors, where the co-processor supports the processing of cable media and performs data transfer, and the first processor performs a plurality of other processing functions.

(Advisory Action Before Filing of an Appeal Brief, sheet 3.)

It is respectfully submitted that the description that the "co-processor supports the processing of cable media and performs data transfer" (emphasis added) indicates that there is no partitioning of cable modem functionality from data networking functionality in the co-processor, but instead a combining of the same. Thus, claim 9 of Brooks '600 does not support the Examiner's rejection of the claims of the subject application.

In view of the above, it is respectfully submitted that the application is now in condition for allowance. The Examiner's reconsideration and further examination are respectfully requested.

Appl. No. 10/675,566
Amendment in connection with RCE
348162-982350

The undersigned attorney would welcome an opportunity to discuss the claims as amended and Brooks '600 with the Examiner in order to better understand the Examiner's interpretation of the same, and to advance the subject application toward allowance.

Respectfully submitted,

DLA Piper LLP (US)

Dated: June 7, 2010

By: /Gerald T. Sekimura/
Gerald T. Sekimura
Reg. No. 30,103
Tel.: (415) 836-2500

Attn.: Patent Department
DLA Piper LLP (US)
555 Mission Street, Suite 2400
San Francisco, CA 94105-2933

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PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)		Docket Number (Optional)	
FY 2009 (Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)		348162-982350 [81373818US01]	
Application Number 10/675,566		Filed September 30, 2003	
For Architecture for a Flexible and High-Performance Gateway Cable Modem			
Art Unit 2445		Examiner Tanim M. Hossain	
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):			
	<u>Fee</u>	<u>Small Entity Fee</u>	
☒ 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 <u>07-1896</u> .			
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 <u>30,103</u>			
☐ attorney or agent under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____			
<u>/Gerald T. Sekimura/</u>		<u>June 7, 2010</u>	
Signature		Date	
<u>Gerald T. Sekimura</u>		<u>(415) 836-2500</u>	
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 <u>1</u> 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.

Electronic Patent Application Fee Transmittal				
Application Number:		10675566		
Filing Date:		30-Sep-2003		
Title of Invention:		Architecture for a flexible and high-performance gateway cable modem		
First Named Inventor/Applicant Name:		Gordon Y. Li		
Filer:		Gerald T. Sekimura./Ta-Tanisha Henry		
Attorney Docket Number:		81373818US01-02CXT0070D		
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:	7760990
Application Number:	10675566
International Application Number:	
Confirmation Number:	9980
Title of Invention:	Architecture for a flexible and high-performance gateway cable modem
First Named Inventor/Applicant Name:	Gordon Y. Li
Customer Number:	94518
Filer:	Gerald T. Sekimura./Ta-Tanisha Henry
Filer Authorized By:	Gerald T. Sekimura.
Attorney Docket Number:	81373818US01-02CXT0070D
Receipt Date:	07-JUN-2010
Filing Date:	30-SEP-2003
Time Stamp:	16:27:16
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	3079
Deposit Account	071896
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	Request for Continued Examination (RCE)	RCE.pdf	48886	no	1
			c85fe713393b1f9cd3dc1fcdfa6d70fc5f758569		
Warnings:					
This is not a USPTO supplied RCE SB30 form.					
Information:					
2	Amendment Submitted/Entered with Filing of CPA/RCE	AMDWRCE.pdf	264973	no	10
			d3563b1c983ce99c9eb55bee255fa27eb3825d4b		
Warnings:					
Information:					
3	Extension of Time	EXTOFTIME.pdf	39944	no	1
			85fc5cbe6b09b83b3da5b23062dedb695b72ca68		
Warnings:					
Information:					
4	Fee Worksheet (PTO-875)	fee-info.pdf	32070	no	2
			86f2919b0938be6416273613089982c4e03262a8		
Warnings:					
Information:					
Total Files Size (in bytes):			385873		
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.					



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.
10/675,566	09/30/2003	Gordon Y. Li	81373818US01-02CXT0070D	9980
94518 7590 05/11/2010 DLA PIPER LLP (US) 2000 UNIVERSITY AVENUE EAST PALO ALTO, CA 94303			EXAMINER HOSSAIN, TANIM M	
			ART UNIT 2445	PAPER NUMBER
			MAIL DATE 05/11/2010	DELIVERY MODE 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. 10/675,566	Applicant(s) LI ET AL.	
	Examiner Tanim Hossain	Art Unit 2445	

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

THE REPLY FILED 05 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 _____ 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: _____. (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: 1-16.

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:
See Continuation Sheet.

12. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____

13. ☐ Other: _____.

/NIVEK SRIVASTAVA/
 Supervisory Patent Examiner, Art Unit 2445

Continuation of 11. does NOT place the application in condition for allowance because: Brooks' abstract, for example, discloses bifurcated processing architecture. The first processor processes information flowing to and from cable media interface circuitry. This constitutes the data networking engine, which performs the interacting with equipment, as claimed. The second processor performs the management of some message processing and scheduling, which constitutes cable modem functions other than those of the data networking engine (please see paragraph 0026). This then constitutes the cable modem engine, as claimed. Claim 9 of the Brooks reference further teaches partitioned processors, where the co-processor supports the processing of cable media and performs data transfer, and the first processor performs a plurality of other processing functions.

The 112 rejections are hereby withdrawn.

Finality of the previous office action is proper, given that the cited paragraphs point to the bifurcated nature of the cable modem, where each of the processors perform different functions. This is sufficient to equate the corresponding processor to the data networking engine (the processor that handles the data flow), and the other to the cable modem engine (the processor that performs other functions).

Reply under 37 C.F.R. 1.116
Expedited Procedure
Technology Center 2445

Confirmation No. 9980

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	LI <i>et al.</i>	Examiner:	Hossain, Tanim
Serial No.:	10/675,566	Group Art Unit:	2445
Filed:	September 30, 2003	Docket No.:	81373818US01 (NXPS.615PA)
Title:	ARCHITECTURE FOR A FLEXIBLE AND HIGH-PERFORMANCE GATEWAY CABLE MODEM		

**REQUEST TO WITHDRAW FINALITY AND
RESPONSE TO FINAL OFFICE ACTION**

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Customer No.

65913

Okay to enter amendments.
Thanks, TH

Dear Sir:

In acknowledgement of the Final Office Action dated February 5, 2010, please reconsider the application in view of the following amendments and remarks.

A complete listing of the claims, including any amendments, and Remarks/Arguments follow.

Authorization is given to charge/credit **Deposit Account 50-4019 (81373818US01)** all required fees/overages to enter this paper.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: G. Li
Serial No: 10/675,566
Filed: September 30, 2003
Title: Architecture For A Flexible And High-Performance Gateway Cable Modem
Docket No.: 348162-982350
Customer No.: 94518

Certificate of Transmission Under 37 CFR 1.8
I hereby certify that this correspondence is being
transmitted via electronic submission, Commissioner for
Patents, Alexandria, VA 22313-1450 on:

<u>April 5, 2010</u>	<u>/Susan Pingue/</u>
<i>Date</i>	<i>Susan Pingue</i>

COMMUNICATION

Assistant Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

Sir:

Attached herewith are copies of the Power of Attorney Form (SB/80) and Statement Under 37 CFR 3.73(b) (SB/96) signed by David L. Teichmann, Secretary and Director of Trident Microsystems (Far East) Ltd. in connection with the above-referenced US patent application.

Please note that the new Attorney Docket Number is 348162-982350.

The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 07-1896 referencing our Docket No. 348162-982350.

Respectfully submitted,

DLA PIPER LLP US

Dated: April 5, 2010

By /David L. Alberti/
David L. Alberti
Reg. No. 43,465
Attorney for Applicants

DLA Piper LLP US
2000 University Avenue
East Palo Alto, CA 94303
Telephone: (650) 833-2052
Facsimile : (650) 833-2001

CUSTOMER NO. 94518

/SCP

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: NXP

Application No./Patent No.: 10/675,566 Filed/Issue Date: Sep. 30, 2003

Entitled:

Trident Microsystems (Far East) Ltd., 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)

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 023928, Frame 0552, 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.

[Signature]
Signature

Feb. 19, 2010
Date

David L. Teichmann,
Printed or Typed Name

Secretary and Director
Trident Microsystems
(Far East) Ltd.
Title

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:

94518

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:

94518

OR

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

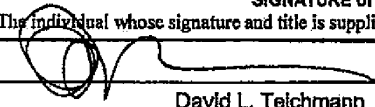
Assignee Name and Address:

Trident Microsystems (Far East) Ltd.
Ugland House, South Church Street
Grand Cayman, Cayman Islands

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/86 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	Feb. 19, 2010
Name	David L. Teichmann	Telephone	408/764-8808
Title	Secretary and Director, Trident Microsystems (Far East) Ltd.		

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.

Electronic Acknowledgement Receipt	
EFS ID:	7356207
Application Number:	10675566
International Application Number:	
Confirmation Number:	9980
Title of Invention:	Architecture for a flexible and high-performance gateway cable modem
First Named Inventor/Applicant Name:	Gordon Y. Li
Customer Number:	65913
Filer:	David L. Alberti/Susan Pingue
Filer Authorized By:	David L. Alberti
Attorney Docket Number:	81373818US01-02CXT0070D
Receipt Date:	06-APR-2010
Filing Date:	30-SEP-2003
Time Stamp:	00:58:42
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		982350Documents.pdf	110392	yes	4
			15c4e60163b42cc7843deb01c0d9d2c2f38c78ed		

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Miscellaneous Incoming Letter	1	2
	Assignee showing of ownership per 37 CFR 3.73(b).	3	3
	Power of Attorney	4	4
Warnings:			
Information:			
Total Files Size (in bytes):		110392	
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.			

Reply under 37 C.F.R. 1.116
Expedited Procedure
Technology Center 2445

Confirmation No. 9980

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	LI <i>et al.</i>	Examiner:	Hossain, Tanim
Serial No.:	10/675,566	Group Art Unit:	2445
Filed:	September 30, 2003	Docket No.:	81373818US01 (NXPS.615PA)
Title:	ARCHITECTURE FOR A FLEXIBLE AND HIGH-PERFORMANCE GATEWAY CABLE MODEM		

**REQUEST TO WITHDRAW FINALITY AND
RESPONSE TO FINAL OFFICE ACTION**

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Customer No.

65913

Dear Sir:

In acknowledgement of the Final Office Action dated February 5, 2010, please reconsider the application in view of the following amendments and remarks.

A complete listing of the claims, including any amendments, and Remarks/Arguments follow.

Authorization is given to charge/credit **Deposit Account 50-4019 (81373818US01)** all required fees/overages to enter this paper.

In the Claims:

1. (Currently amended) A cable modem system comprising:

a data networking engine implemented in a first circuit that includes at least one processor, the data networking engine programmed with software that when executed by the at least one processor of the first circuit causes the data networking engine to perform home networking functions including interfacing with customer provided equipment;

a cable modem engine implemented in a second circuit that includes at least one processor, the second circuit being separate from the first circuit, the cable modem engine programmed with software that when executed by the at least one processor of the second circuit causes the cable modem ~~mode~~ engine to perform cable modem functions other than the home networking functions performed by the data networking engine, the cable modem engine configured to enable upgrades to its software in a manner that is independent of upgrades to the software of the data networking engine; and

a data bus that connects the data networking engine to the cable modem engine, wherein the cable modem functions performed by the cable modem engine are completely partitioned from the home networking functions performed by the data networking engine.

2. (Original) A cable modem system as claimed in claim 1, wherein all DOCSIS functions are localized in the cable modem engine.

3. (Original) A cable modem system as claimed in claim 2, wherein VoIP functionality is embedded in the cable modem engine.

4. (Previously presented) A cable modem system as claimed in claim 1, and further comprising an advanced crypto engine configured to perform all crypto functions for both the data networking engine and the cable modem engine, the advanced crypto engine being separate from both the data networking engine and the cable modem engine.

5. (Previously presented) A cable modem system as claimed in claim 1, wherein the cable modem engine includes:

- a DOCSIS PHY layer;
- a DOCSIS MAC processor; and
- a DOCSIS controller, and

wherein the at least one processor of the data networking engine is a RISC processor.

6. (Previously presented) A cable modem system as claimed in claim 5, wherein the DOCSIS PHY layer includes a hardware transmitter and receiver.

7. (Previously presented) A cable modem system as claimed in claim 5, wherein the DOCSIS MAC processor is configured to process downstream PDU packets and forward the processed packets directly to the data networking engine without the involvement of the DOCSIS controller in order to boost downstream throughput.

8. (Original) A cable modem system as claimed in claim 5, wherein all VoIP functionality is implemented in the DOCSIS controller.

9. (Original) A cable modem system as claimed in claim 8, wherein the VoIP functionality is in conformance with the PacketCable specification.

10. (Previously presented) A cable modem system as claimed in claim 5, wherein the data networking engine is configured to perform all data networking processing including advanced multi-port bridging routing with NAT/firewall and VPN, and home networking applications.

11. (Original) A cable modem system as claimed in claim 10, wherein the data networking engine comprises the entire embedded portal services functionality of the CableHome specification.

12. (Currently Amended) A cable modem system as claimed in claim 5, wherein the cable modem engine includes:

the DOCSIS PHY layer includes a transmitter and receiver;

the DOCSIS MAC processor is configured to implement real-time MAC functions for both upstream and downstream communications; and

the DOCSIS controller is configured to implement VoIP functionality; and wherein

the data networking engine ~~that~~ includes a RISC processor configured to implement ~~substantially all~~ a majority of data networking processing and home networking applications decoupled from the implementation of the MAC functions and the VoIP functionality of the cable modem engine.

13. (Previously presented) A cable modem architecture as claimed in claim 12, wherein the DOCSIS controller is configured to provide VoIP functionality in accordance with the PacketCable specification, wherein the data networking engine is configured to provide the embedded portal services functionality of the CableHome specification, and wherein the CableHome functionality provided by the data networking engine is completely decoupled from the PacketCable and DOCSIS functionality provided by the cable modem engine.

14. (Original) A cable modem architecture as claimed in claim 13, wherein the DOCSIS MAC processor is an ARM9TDMI-based RISC processor, and wherein the DOCSIS controller is an ARM940-based RISC processor.

15. (Original) A method for providing a flexible and partitioned cable modem gateway comprising: providing data and home networking functionality in a data networking engine; providing DOCSIS and VoIP functionality in a cable modem engine; and partitioning the data networking engine from the cable modem engine so that the data and home networking functionality is completely decoupled from the DOCSIS and VoIP functionality.

16. (Previously presented) A cable modem system as claimed in claim 5, wherein the data networking engine includes consumer provided equipment drivers including a USB driver and an Ethernet driver and the data networking engine is configured to provide the embedded portal services functionality of the CableHome specification, wherein the DOCSIS controller is configured to provide VoIP functionality in accordance with the PacketCable specification, and wherein the CableHome functionality provided by the data networking engine is completely decoupled from the PacketCable and DOCSIS functionality provided by the cable modem engine.

Remarks

In the non-final Office Action dated February 5, 2010, the following grounds of rejection are presented: claim 1 is objected to as to informalities; claim 12 is rejected under 35 U.S.C § 112, first paragraph as failing to comply with the written description requirement; claims 12-14 are rejected under 35 U.S.C § 112, second paragraph as being indefinite; claims 1-16 stand rejected under 35 U.S.C. § 102(e) over Brooks (U.S. Patent Pub. 2001/0039600). In the following discussion, Applicant does not acquiesce in any regard to averments in this Office Action (unless Applicant expressly indicates otherwise).

Applicant has amended claim 1 to correct a typographical error, and requests that the objection be removed.

Applicant respectfully traverses the § 102(e) rejection of claims 1-16 because the cited portions of the '600 reference do not correspond to aspects of the claimed invention. For example, Applicant is uncertain how the '600 reference discloses aspects of the claimed invention directed to data networking functions performed by a data networking engine being completely partitioned/decoupled from the other cable modem functions performed by a cable modem engine. The Examiner has repeatedly failed to identify elements of the '600 reference corresponding to these aspects as requested. In contrast, the Office Action make the conclusion statement that "the data networking engine and cable modem engines are represented in Figures 1 and 2 of the ['600] reference" (*see, e.g.*, p. 8 of the Office Action). However, Applicant is uncertain how any reasonable interpretation of these Figures can provide correspondence. For example, Figure 2 of the '600 reference discloses only two processors, each of which, therefore, must correspond to the claimed data-networking and cable-modem engines. However, the discussion of Figure 2 makes clear that the cable modem functions are performed by CMAC unit 224 (*see, e.g.*, paragraph 0042). Therefore, in order for the cable modem engine to contain a processor and perform the CMAC functions as claimed, the cited cable modem engine must include circuitry to connect the processors with the CMAC unit. Because available connecting circuitry would be shared with the other processor, Applicant is uncertain how the asserted cable modem engine and home networking engine can be completely

partitioned as claimed. Because the Office Action has not identified these claimed aspects in the '600 reference, a *prima facie* case has not been presented and Applicant requests that the rejection of claims 1-16 be withdrawn.

Applicant submits that the Examiner's failure to identify corresponding elements as requested in Applicant's response constitutes an incomplete answer under M.P.E.P. § 707.07 and, therefore, makes the finality of the Office Action improper. In order to comply with 35 U.S.C. § 132, sufficient detail must be provided by the Examiner regarding the alleged correspondence between the claimed invention and the cited reference to enable Applicant to adequately respond to the rejections. *See, also*, 37 CFR 1.104 ("The pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified.") and M.P.E.P. § 706.02(j), ("It is important for an Examiner to properly communicate the basis for a rejection so that the issues can be identified early and the applicant can be given fair opportunity to reply."). Because the Examiner has repeatedly failed to identify specific elements of the '600 reference which provide correspondence (as requested in the previous response), Applicant submits that the Office Action is unresponsive to Applicant's arguments and Applicant requests the finality of the Office Action be withdrawn.

Applicant respectfully traverses the § 112(1) rejection of claim 12 because aspects of the claim directed to a RISC processor are fully supported by Applicant's specification in compliance with the written description requirement. As shown in Figure 1 and related discussion at paragraph 0028 of Applicant's published specification, "the functions of the cable modem and data networking are rationally distributed among three different processors: DOCSIS MAC processor 114 (ARM #2); DOCSIS controller 116 (ARM #1); and data networking engine 120 (ARM #3)." Applicant submits that ARM, as commonly used in the art, refers to the Advanced RISC Machine (ARM). ARM is a 32-bit reduced instruction set computer (RISC) instruction set architecture developed by ARM Holding. Applicant submits that word-for-word correspondence is not required by the M.P.E.P. or relevant law, and maintains that the figures, together with the aforementioned discussion in the specification, fully support the claim limitations. *See, e.g., Union Oil Co. of California v. Atlantic Richfield Co.*, 208 F.3d 989 (Fed. Cir. 2000), *cert. denied*, 69 U.S.L.W. 3165 (Feb. 20, 2001) (No. 00-249) (quoting *In re Gosteli*, 872

F.2d 1008, 1012, 10 U.S.P.Q.2d 1614, 1618 (Fed. Cir. 1989) ("The written description requirement does not require the applicant "to describe exactly the subject matter claimed, [instead] the description must clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed. "). Accordingly the 112(1) rejection is improper and should be withdrawn.

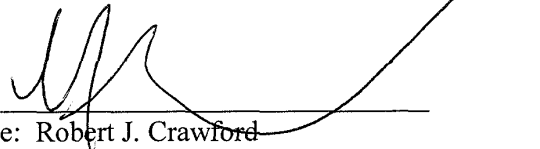
Applicant respectfully traverses the § 112(2) rejection of claims 12-14. While the Office Action erroneously suggests that "substantially" must be defined in the specification. Consistent with § 112(2), Applicant submits that, as used, the phrase "substantially all" would be understood by one of ordinary skill in the art in light of the specification and in the context of decoupling performance of data networking and home networking applications from the implementation of the MAC and VoIP functionality. *See, Andrew Corp. v. Gabriel Electronics*, 847 F.2d 819 (Fed. Cir. 1988). Accordingly, the §112(2) rejection of claims 12-14 fails. Notwithstanding the above, Applicant has amended the claims for clarity and to better reflect the original intent of the claims. The §112(2) rejection is believe to no longer apply.

In view of the above, Applicant believes that each of the rejections is improper and should be withdrawn and that the application is in condition for allowance. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is asked to contact the agent overseeing the application file, Peter Zawilski, of NXP Corporation at (408) 474-9063 (or the undersigned).

Please direct all correspondence to:

Corporate Patent Counsel
NXP Intellectual Property & Standards
1109 McKay Drive; Mail Stop SJ41
San Jose, CA 95131

CUSTOMER NO. 65913

By: 
Name: Robert J. Crawford
Reg. No.: 32,122
651-686-6633
(NXPS.615PA)

Electronic Acknowledgement Receipt	
EFS ID:	7353649
Application Number:	10675566
International Application Number:	
Confirmation Number:	9980
Title of Invention:	Architecture for a flexible and high-performance gateway cable modem
First Named Inventor/Applicant Name:	Gordon Y. Li
Customer Number:	65913
Filer:	Robert J. Crawford/Kelly Davis
Filer Authorized By:	Robert J. Crawford
Attorney Docket Number:	81373818US01-02CXT0070D
Receipt Date:	05-APR-2010
Filing Date:	30-SEP-2003
Time Stamp:	17:28:10
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		81373818US01_response.pdf	379587 3fd06cee436ac96c2743e668df9e17153ed69a54	yes	8

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Amendment After Final	1	1
	Claims	2	5
	Applicant Arguments/Remarks Made in an Amendment	6	8
Warnings:			
Information:			
Total Files Size (in bytes):		379587	
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.			

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 10/675,566		Filing Date 09/30/2003		☐ To be Mailed	
APPLICATION AS FILED – PART I										
(Column 1)			(Column 2)			SMALL ENTITY ☐ OR		OTHER THAN SMALL ENTITY		
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	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 \$ =			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										
(Column 1)			(Column 2)			SMALL ENTITY OR		OTHER THAN SMALL ENTITY		
AMENDMENT	04/05/2010	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	* 16	Minus	** 20	= 0	X \$ =		OR	X \$2=	0
	Independent (37 CFR 1.16(h))	* 2	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))									
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0	
AMENDMENT	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	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))									
					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:
/VIOLA ROGERS/

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.**

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 10/675,566		Filing Date 09/30/2003		☐ To be Mailed	
APPLICATION AS FILED – PART I										
(Column 1)			(Column 2)			SMALL ENTITY ☐ OR		OTHER THAN SMALL ENTITY		
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	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.										
APPLICATION AS AMENDED – PART II										
(Column 1)			(Column 2)			SMALL ENTITY OR		OTHER THAN SMALL ENTITY		
AMENDMENT	04/05/2010	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	* 16	Minus	** 20	= 0	X \$ =		OR	X \$2= 0	
	Independent (37 CFR 1.16(h))	* 2	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))									
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0
AMENDMENT	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))									
						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.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,566	09/30/2003	Gordon Y. Li	81373818US01-02CXT0070D	9980
65913 7590 02/05/2010 NXP, B.V. NXP INTELLECTUAL PROPERTY & LICENSING M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			EXAMINER HOSSAIN, TANIM M	
			ART UNIT 2445	PAPER NUMBER
			NOTIFICATION DATE 02/05/2010	DELIVERY MODE ELECTRONIC

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.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No.	Applicant(s)	
	10/675,566	LI ET AL.	
	Examiner	Art Unit	
	Tanim Hossain	2445	

-- 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 05 October 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) 1-16 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) 1-16 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: _____.
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DETAILED ACTION

Claim Objections

Claim 1 is objected to because of the following informalities: The term, “the cable mode engine” in line 9 appears to be a typographical error. Appropriate correction is required.

Election/Restriction

The restriction requirement filed on September 3, 2009 is hereby withdrawn.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 12 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 12 discloses that the data networking engine includes a RISC processor, which is not supported by the specification.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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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.

Claims 12 -14 are 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.

Claim 12 contains the term "substantially" The term is not defined in the specification rendering the claim indefinite. Other claims are dependent from claim 12.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Brooks (U.S. 2001/0039600).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As per claim 1, Brooks teaches a cable modem system comprising: a data networking engine implemented in a first circuit that includes at least one processor (Figure 2), the data networking engine programmed with software that when executed by the at least one processor of the first circuit causes the data networking engine to perform home networking functions including interfacing with customer provided equipment (Abstract; paragraphs 0014, 0026, 0037, 0066-0068); a cable modem engine implemented in a second circuit that includes at least one processor, the second circuit being separate from the first circuit, the cable modem engine programmed with software that when executed by the at least one processor of the second circuit causes the cable modem engine to perform cable modem functions other than the home networking functions performed by the data networking engine, the cable modem engine configured to enable upgrades to its software in a manner that is independent of upgrades to the software of the data networking engine (paragraphs 0026, 0037, 0042-0046, 0050-0052); a data bus that connects the data networking engine to the cable modem engine, wherein the cable modem functions performed by the cable modem engine are completely partitioned from the home networking functions performed by the data networking engine (0042-0046).

As per claim 2, Brooks teaches a cable modem system as claimed in claim 1, wherein all DOCSIS functions are localized in the cable modem engine (0024-0026).

As per claim 3, Brooks teaches a cable modem system as claimed in claim 2, wherein VoIP functionality is embedded in the cable modem engine (0024-0026).

As per claim 4, Brooks teaches a cable modem system as claimed in claim 1, and further comprising an advanced crypto engine that performs all crypto functions (0013).

As per claim 5, Brooks teaches a cable modem system as claimed in claim 1, wherein the cable modem engine comprises: a DOCSIS PHY layer (0024-0026); a DOCSIS MAC processor (0024-0026); and a DOCSIS controller (0024-0026).

As per claim 6, Brooks teaches a cable modem system as claimed in claim 5, wherein the DOCSIS PHY layer comprises a hardware transmitter and receiver (0013, 0024-0026).

As per claim 7, Brooks teaches a cable modem system as claimed in claim 5, wherein the DOCSIS MAC processor processes downstream PDU packets and forwards the processed packets directly to the data networking engine without the involvement of the DOCSIS controller in order to boost downstream throughput (0024-0026, 0028).

As per claim 8, Brooks teaches a cable modem system as claimed in claim 5, wherein all VoIP functionality is implemented in the DOCSIS controller (0024-0026).

As per claim 9, Brooks teaches a cable modem system as claimed in claim 8, wherein the VoIP functionality is in conformance with the PacketCable specification (0024-0026).

As per claim 10, Brooks teaches a cable modem system as claimed in claim 5, wherein the data networking engine is responsible for all data networking processing including advanced

Art Unit: 2445

multi-port bridging/routing with NAT/firewall and VPN, and home networking applications (0024-0026, 0030).

As per claim 11, Brooks teaches a cable modem system as claimed in claim 10, wherein the data networking engine comprises the entire embedded portal services functionality of the CableHome specification (0024-0026).

As per claim 12, Brooks teaches a cable modem as claimed in claim 5, wherein the cable modem engine includes: the DOCSIS PHY layer includes a transmitter and receiver (0030); the DOCSIS MAC processor is configured to implement real-time MAC functions for both upstream and downstream communications (0053-0054); the DOCSIS controller is configured to implement VoIP functionality (0025); and wherein the data networking engine includes a RISC processor configured to implement all data networking processing and home networking applications, decoupled from the implementation of the MAC functions and the VoIP functionality of the cable modem engine (0037, 0043-0045).

As per claim 13, Brooks teaches a cable modem architecture as claimed in claim 12, wherein the DOCSIS controller provides VoIP functionality in accordance with the PacketCable specification, and wherein the data networking engine provides the embedded portal services functionality of the CableHome specification, wherein the CableHome functionality provided by the data networking engine is completely decoupled from the PacketCable and DOCSIS functionality provided by the cable modem engine (0013-0016, 0024-0026).

As per claim 14, Brooks teaches a cable modem architecture as claimed in claim 13, wherein the DOCSIS MAC processor is an ARM9TDMI-based RISC processor, and wherein the DOCSIS controller is an ARM940-based RISC processor (0013-0016, 0024-0026, 0037).

As per claim 15, Brooks teaches a method for providing a flexible and partitioned cable modem gateway comprising: providing data and home networking functionality in a data networking engine; providing DOCSIS and VoIP functionality in a cable modem engine (0013-0016, 0024-0026); and partitioning the data networking engine from the cable modem engine so that the data and home networking functionality is completely decoupled from the DOCSIS and VoIP functionality (0013-0016, 0024-0026).

As per claim 16, Brooks teaches a cable modem system as claimed in claim 5, wherein the data networking engine includes consumer provided equipment drivers including a USB driver and an Ethernet driver and the data networking engine is configured to provide the embedded portal services functionality of the CableHome specification, wherein the DOCSIS controller is configured to provide VoIP functionality in accordance with the PacketCable specification, and wherein the CableHome functionality provided by the data networking engine is completely decoupled from the PacketCable and DOCSIS functionality provided by the cable modem engine (0044-0045).

Response to Remarks

Applicant's remarks filed on May 19, 2009 have fully been considered.

The data networking engine and cable modem engines are represented in figures 1 and 2 of the Brooks reference, including buses carrying out separate networking functions. For example, the data networking engine interfaces with the peripheral devices and employs operating system functions, and the cable modem engine implements DOCSIS functionality. These entities are completely partitioned from each other, as discussed in the cited sections.

Paragraphs 0036-0042 discuss the transfer of packets between the cable modem and data networking engines. Therefore, examiner respectfully disagrees with the assertion that there is no data networking engine, and it is respectfully submitted that the Brooks invention fully teaches the limitations of claim 7. Further, paragraph 0010 discusses the inclusion of various CableLabs standards. Because PacketCable and CableHome specifications constitute these standards, Brooks fully teaches the claim limitations.

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 Tanim Hossain whose telephone number is (571)272-3881. The examiner can normally be reached on 8:30 am - 5 pm.

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.

Tanim Hossain
Patent Examiner
Art Unit 2445

/Nabil El-Hady/
Supervisory Patent Examiner, Art Unit 4191

<i>Index of Claims</i> 	Application/Control No. 10675566	Applicant(s)/Patent Under Reexamination LI ET AL.
	Examiner Tanim Hossain	Art Unit 2445

✓	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	02/16/2009	08/24/2009	01/30/2010						
	1	✓	÷	✓						
	2	✓	÷	✓						
	3	✓	÷	✓						
	4	✓	÷	✓						
	5	✓	÷	✓						
	6	✓	÷	✓						
	7	✓	÷	✓						
	8	✓	÷	✓						
	9	✓	÷	✓						
	10	✓	÷	✓						
	11	✓	÷	✓						
	12	✓	÷	✓						
	13	✓	÷	✓						
	14	✓	÷	✓						
	15	✓	÷	✓						
	16		÷	✓						

<i>Search Notes</i> 	Application/Control No. 10675566	Applicant(s)/Patent Under Reexamination LI ET AL.
	Examiner Tanim Hossain	Art Unit 2445

SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
EAST	2/16/09	TH
EAST	1/30/10	TH

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

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EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	3981	docsis	US-PGPUB; USPAT	OR	OFF	2010/01/30 19:52
L2	3546	docsis and modem\$4	US-PGPUB; USPAT	OR	OFF	2010/01/30 19:52
L3	505	docsis and modem\$4 and partition\$4	US-PGPUB; USPAT	OR	OFF	2010/01/30 19:52
L4	518	docsis and modem\$4 and (partition\$4 or bifurcat\$)	US-PGPUB; USPAT	OR	OFF	2010/01/30 19:52
L5	184	docsis and modem\$4 and ((partition\$4 or bifurcat\$) same function \$7)	US-PGPUB; USPAT	OR	OFF	2010/01/30 19:53
L6	52	docsis and modem\$4 and ((partition\$4 or bifurcat\$) same function \$7) and risc	US-PGPUB; USPAT	OR	OFF	2010/01/30 19:53
S1	28271	cable\$4 near2 modem\$4	US-PGPUB; USPAT	OR	OFF	2009/02/16 05:09
S2	2625	(cable\$4 near2 modem \$4) and docsis	US-PGPUB; USPAT	OR	OFF	2009/02/16 05:09
S3	482	(cable\$4 near2 modem \$4).ab. and docsis	US-PGPUB; USPAT	OR	OFF	2009/02/16 05:10

S4	91	(cable\$4 near2 modem \$4).ab. and docsis and ((integrat\$4 with (function \$4 or service \$4) same modem\$4))	US- PGPUB; USPAT	OR	OFF	2009/02/16 05:12
S5	21	(cable\$4 near2 modem \$4).ab. and docsis and ((integrat\$4 with (function \$4 or service \$4) same modem\$4)) and partition \$4	US- PGPUB; USPAT	OR	OFF	2009/02/16 05:12
S6	13	(cable\$4 near2 modem \$4).ab. and docsis and ((integrat\$4 with (function \$4 or service \$4) same modem\$4)) and partition \$4 and voip\$4	US- PGPUB; USPAT	OR	OFF	2009/02/16 05:12
S7	230	(cable\$4 near2 modem \$4).ab. and docsis and ((integrat\$4 or multipl\$4 or pluralit\$4) with (function \$4 or service \$4) same modem\$4)	US- PGPUB; USPAT	OR	OFF	2009/02/16 05:25

S8	35	(cable\$4 near2 modem \$4).ti. and docsis and ((integrat\$4 with (function \$4 or service \$4) same modem\$4))	US- PGPUB; USPAT	OR	OFF	2009/02/16 05:26
S9	94	(cable\$4 near2 modem \$4).ti. and docsis and ((integrat\$4 or multipl\$4 or pluralit\$4) with (function \$4 or service \$4) same modem\$4)	US- PGPUB; USPAT	OR	OFF	2009/02/16 05:27

1/ 30/ 10 7:58:05 PM

**C:\ Documents and Settings\ thossain\ My Documents\ EAST\ Workspaces
 \ 10675566 Li - Multiple Function Cable Modem.wsp**

Confirmation No. 9980

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	LI <i>et al.</i>	Examiner:	Hossain, Tanim
Serial No.:	10/675,566	Group Art Unit:	2445
Filed:	September 30, 2003	Docket No.:	81373818US01 (NXPS.615PA)
Title:	ARCHITECTURE FOR A FLEXIBLE AND HIGH-PERFORMANCE GATEWAY CABLE MODEM		

RESPONSE TO ELECTION/RESTRICTION

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Customer No. 65913

Dear Sir:

This communication is in reply to the Office Action dated September 3, 2009 in which a restriction/election requirement was presented.

A complete listing of the Claims, to include any amendments thereto, and the Remarks follow.

In the Claims:

1. (Previously presented) A cable modem system comprising:

a data networking engine implemented in a first circuit that includes at least one processor, the data networking engine programmed with software that when executed by the at least one processor of the first circuit causes the data networking engine to perform home networking functions including interfacing with customer provided equipment;

a cable modem engine implemented in a second circuit that includes at least one processor, the second circuit being separate from the first circuit, the cable modem engine programmed with software that when executed by the at least one processor of the second circuit causes the cable mode engine to perform cable modem functions other than the home networking functions performed by the data networking engine, the cable modem engine configured to enable upgrades to its software in a manner that is independent of upgrades to the software of the data networking engine; and

a data bus that connects the data networking engine to the cable modem engine, wherein the cable modem functions performed by the cable modem engine are completely partitioned from the home networking functions performed by the data networking engine.

2. (Original) A cable modem system as claimed in claim 1, wherein all DOCSIS functions are localized in the cable modem engine.

3. (Original) A cable modem system as claimed in claim 2, wherein VoIP functionality is embedded in the cable modem engine.

4. (Previously presented) A cable modem system as claimed in claim 1, and further comprising an advanced crypto engine configured to perform all crypto functions for both the data networking engine and the cable modem engine, the advanced crypto engine being separate from both the data networking engine and the cable modem engine.

5. (Previously presented) A cable modem system as claimed in claim 1, wherein the cable modem engine includes:

- a DOCSIS PHY layer;
- a DOCSIS MAC processor; and
- a DOCSIS controller, and

wherein the at least one processor of the data networking engine is a RISC processor.

6. (Previously presented) A cable modem system as claimed in claim 5, wherein the DOCSIS PHY layer includes a hardware transmitter and receiver.

7. (Previously presented) A cable modem system as claimed in claim 5, wherein the DOCSIS MAC processor is configured to process downstream PDU packets and forward the processed packets directly to the data networking engine without the involvement of the DOCSIS controller in order to boost downstream throughput.

8. (Original) A cable modem system as claimed in claim 5, wherein all VoIP functionality is implemented in the DOCSIS controller.

9. (Original) A cable modem system as claimed in claim 8, wherein the VoIP functionality is in conformance with the PacketCable specification.

10. (Previously presented) A cable modem system as claimed in claim 5, wherein the data networking engine is configured to perform all data networking processing including advanced multi-port bridging routing with NAT/firewall and VPN, and home networking applications.

11. (Original) A cable modem system as claimed in claim 10, wherein the data networking engine comprises the entire embedded portal services functionality of the CableHome specification.

12. (Currently amended) A cable modem system as claimed in claim 5, wherein the
~~architecture comprising~~ a cable modem engine ~~that~~ includes:

the [[a]] DOCSIS PHY layer includes ~~comprising~~ a transmitter and receiver;

the [[a]] DOCSIS MAC processor is configured to implement real-time ~~critical~~ MAC functions for both upstream and downstream communications; and

the [[a]] DOCSIS controller is configured to implement VoIP functionality; and wherein

the [[a]] data networking engine ~~that~~ includes a RISC processor configured to implement substantially all data networking processing and home networking applications, ~~wherein the implementation of the data networking processing and home networking applications by the data networking engine is completely decoupled from the implementation of the MAC functions and the VoIP functionality of~~ by the cable modem engine.

13. (Previously presented) A cable modem architecture as claimed in claim 12, wherein the DOCSIS controller is configured to provide VoIP functionality in accordance with the PacketCable specification, wherein the data networking engine is configured to provide the embedded portal services functionality of the CableHome specification, and wherein the CableHome functionality provided by the data networking engine is completely decoupled from the PacketCable and DOCSIS functionality provided by the cable modem engine.

14. (Original) A cable modem architecture as claimed in claim 13, wherein the DOCSIS MAC processor is an ARM9TDMI-based RISC processor, and wherein the DOCSIS controller is an ARM940-based RISC processor.

15. (Original) A method for providing a flexible and partitioned cable modem gateway comprising: providing data and home networking functionality in a data networking engine; providing DOCSIS and VoIP functionality in a cable modem engine; and partitioning the data networking engine from the cable modem engine so that the data and home networking functionality is completely decoupled from the DOCSIS and VoIP functionality.

16. (Previously presented) A cable modem system as claimed in claim 5, wherein the data networking engine includes consumer provided equipment drivers including a USB driver and an Ethernet driver and the data networking engine is configured to provide the embedded portal services functionality of the CableHome specification, wherein the DOCSIS controller is configured to provide VoIP functionality in accordance with the PacketCable specification, and wherein the CableHome functionality provided by the data networking engine is completely decoupled from the PacketCable and DOCSIS functionality provided by the cable modem engine.

Remarks

In the Office Action dated September 3, 2009, a Restriction/Election was made, requesting that Applicant elect either Group I (consisting of claims 1-11 and 16) or Group II (consisting of claims 12-15). Applicant elects the claims identified under Group I (claims 1-11, 12-14 as amended and 16) with traverse. Applicant respectfully submits that the rationale used in support of the restrictions does not comply with the rules and guidelines set forth in the M.P.E.P. Applicant submits that the restrictions should be withdrawn.

The Office Action asserts that the inventions of Groups I and II are related as subcombinations as usable together in a single combination and that both inventions may be implemented separately from one another. Specifically, the Office Action asserts that the invention of Group I “discloses the upgrading of software for the system in an independent fashion” and the invention of Group II “includes the implementation and use of various protocols to employ different network functionalities.”

Applicant traverses for lack of compliance with the restriction guidelines in the M.P.E.P. and because no basis has been provided to support the separate use conclusion in the Office Action.

Notwithstanding, Applicant has amended claim 12 to comport to the scope presented in the Office Action.

Accordingly, Applicants respectfully requests that the Examiner withdraw the present restriction requirement(s) for examination of all the claims.

App. Serial No. 10/675,566
Docket No.: 81373818US01

In view of the above, Applicant believes that each of the rejections is improper and should be withdrawn and that the application is in condition for allowance. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is asked to contact the agent overseeing the application file, Peter Zawilski, of NXP Corporation at (408) 474-9063 (or the undersigned).

Please direct all correspondence to:

Corporate Patent Counsel
NXP Intellectual Property & Standards
1109 McKay Drive; Mail Stop SJ41
San Jose, CA 95131

CUSTOMER NO. 65913

By: 
Name: Robert J. Crawford
Reg. No.: 32,122
651-686-6633
(NXPS.615PA)

Electronic Acknowledgement Receipt	
EFS ID:	6202616
Application Number:	10675566
International Application Number:	
Confirmation Number:	9980
Title of Invention:	Architecture for a flexible and high-performance gateway cable modem
First Named Inventor/Applicant Name:	Gordon Y. Li
Customer Number:	65913
Filer:	Robert J. Crawford/Kelly Davis
Filer Authorized By:	Robert J. Crawford
Attorney Docket Number:	81373818US01-02CXT0070D
Receipt Date:	05-OCT-2009
Filing Date:	30-SEP-2003
Time Stamp:	15:37:03
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		81373818US01_response.pdf	261101 e4476c5e6f4367403a4b9650ed67b62dd69c90fc	yes	7

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Response to Election / Restriction Filed	1	1
	Claims	2	5
	Applicant Arguments/Remarks Made in an Amendment	6	7
Warnings:			
Information:			
Total Files Size (in bytes):		261101	
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.			

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 10/675,566		Filing Date 09/30/2003		☐ To be Mailed	
APPLICATION AS FILED – PART I										
(Column 1)			(Column 2)			SMALL ENTITY ☐ OR		OTHER THAN SMALL ENTITY		
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	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 \$ =			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.										
APPLICATION AS AMENDED – PART II										
(Column 1)			(Column 2)			SMALL ENTITY OR		OTHER THAN SMALL ENTITY		
AMENDMENT	10/05/2009	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	* 16	Minus	** 20	= 0	X \$ =		OR	X \$52=	0
	Independent (37 CFR 1.16(h))	* 2	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))									
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0	
(Column 1)			(Column 2)			SMALL ENTITY OR		OTHER THAN SMALL ENTITY		
AMENDMENT	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	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))									
					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:
/CATHERINE d. SMITH/

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.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,566	09/30/2003	Gordon Y. Li	81373818US01-02CXT0070D	9980
65913 7590 09/03/2009 NXP, B.V. NXP INTELLECTUAL PROPERTY & LICENSING M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			EXAMINER HOSSAIN, TANIM M	
			ART UNIT 2445	PAPER NUMBER
			NOTIFICATION DATE 09/03/2009	DELIVERY MODE ELECTRONIC

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.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No.	Applicant(s)	
	10/675,566	LI ET AL.	
	Examiner	Art Unit	
	Tanim Hossain	2445	

-- 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 1 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 5/19/09.

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) 1-16 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) _____ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☒ Claim(s) 1-16 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: _____.
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DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-11 and 16, drawn to computer software upgrading, classified in class 717, subclass 168.
- II. Claims 12-15, drawn to network protocol implementation, classified in class 709, subclass 230.

Inventions I and II are related as subcombinations as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, Invention I discloses the upgrading of software for the system in an independent fashion. This specific upgrading concept is classified in class 717, subclass 168. On the other hand, Invention II includes the implementation and use of various protocols to employ different network functionalities, and is thus classified accordingly, in class 709, subclass 230. Both inventions may be implemented separately from one another.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classifications, restriction for examination purposes as indicated is proper.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tanim Hossain whose telephone number is (571)272-3881. The examiner can normally be reached on 8:30 am - 5 pm.

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.

Tanim Hossain
Patent Examiner
Art Unit 2445

Application/Control Number: 10/675,566
Art Unit: 2445

Page 4

/VIVEK SRIVASTAVA/

Supervisory Patent Examiner, Art Unit 2445

<i>Index of Claims</i> 	Application/Control No. 10675566	Applicant(s)/Patent Under Reexamination LI ET AL.
	Examiner Tanim Hossain	Art Unit 2445

✓	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	02/16/2009	08/24/2009						
	1	✓	÷						
	2	✓	÷						
	3	✓	÷						
	4	✓	÷						
	5	✓	÷						
	6	✓	÷						
	7	✓	÷						
	8	✓	÷						
	9	✓	÷						
	10	✓	÷						
	11	✓	÷						
	12	✓	÷						
	13	✓	÷						
	14	✓	÷						
	15	✓	÷						
	16		÷						

Confirmation No. 9980

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	LI <i>et al.</i>	Examiner:	Hossain, Tanim
Serial No.:	10/675,566	Group Art Unit:	2445
Filed:	September 30, 2003	Docket No.:	81373818US01 (NXPS.615PA)
Title:	ARCHITECTURE FOR A FLEXIBLE AND HIGH-PERFORMANCE GATEWAY CABLE MODEM		

AMENDMENT AND RESPONSE TO OFFICE ACTION

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Customer No. 65913

Dear Sir:

In acknowledgement of the non-final Office Action dated February 19, 2009,
please reconsider the application in view of the following amendments and remarks.

A complete listing of the claims, including any amendments, and
Remarks/Arguments follow.

In the Claims:

Please amend the claims as indicated below.

1. (Currently Amended) A cable modem system comprising:

a data networking engine implemented in a first circuit that includes at least one processor, the data networking engine programmed with software that when executed by the at least one processor of the first circuit causes the data networking engine to perform that performs home data networking functions including interfacing with customer provided equipment; and

a cable modem engine implemented in a second circuit that includes at least one processor, the second circuit being separate from the first circuit, the cable modem engine programmed with software that when executed by the at least one processor of the second circuit causes the cable mode engine to perform that performs all other cable modem functions other than the home networking functions performed by the data networking engine, the cable modem engine configured to enable upgrades to its software in a manner that is independent of upgrades to the software of the data networking engine; and

a data bus that connects the data networking engine to the cable modem engine, wherein the cable modem functions performed by the cable modem engine are being completely partitioned from the home networking functions performed by the data networking engine.

2. (Original) A cable modem system as claimed in claim 1, wherein all DOCSIS functions are localized in the cable modem engine.

3. (Original) A cable modem system as claimed in claim 2, wherein VoIP functionality is embedded in the cable modem engine.

4. (Currently Amended) A cable modem system as claimed in claim 1, and further comprising an advanced crypto engine configured to perform that performs all crypto functions for both the data networking engine and the cable modem engine, the advanced crypto engine being separate from both the data networking engine and the cable modem

engine.

5. (Currently Amended) A cable modem system as claimed in claim 1, wherein the cable modem engine includes ~~comprises~~:

- a DOCSIS PHY layer;
- a DOCSIS MAC processor; and
- a DOCSIS controller, and

wherein the at least one processor of the data networking engine is a RISC processor.

6. (Currently Amended) A cable modem system as claimed in claim 5, wherein the DOCSIS PHY layer includes ~~comprises~~ a hardware transmitter and receiver.

7. (Currently Amended) A cable modem system as claimed in claim 5, wherein the DOCSIS MAC processor is configured to process ~~processes~~ downstream PDU packets and forward ~~forwards~~ the processed packets directly to the data networking engine without the involvement of the DOCSIS controller in order to boost downstream throughput.

8. (Original) A cable modem system as claimed in claim 5, wherein all VoIP functionality is implemented in the DOCSIS controller.

9. (Original) A cable modem system as claimed in claim 8, wherein the VoIP functionality is in conformance with the PacketCable specification.

10. (Currently Amended) A cable modem system as claimed in claim 5, wherein the data networking engine is configured to perform ~~responsible for~~ all data networking processing including advanced multi-port bridging-bridng/routing with NAT/firewall and VPN, and home networking applications.

11. (Original) A cable modem system as claimed in claim 10, wherein the data networking engine comprises the entire embedded portal services functionality of the CableHome specification.

12. (Currently Amended) A cable modem architecture comprising:

a cable modem engine that includes comprises:

a DOCSIS PHY layer comprising a transmitter and receiver;

a DOCSIS MAC processor configured to implement that implements real-time critical MAC functions for both upstream and downstream communications; and

a DOCSIS controller configured to implement implementing VoIP functionality; and

a data networking engine that includes a RISC processor configured to implement implementing all data networking processing and home networking applications, wherein the implementation of the data networking processing and home networking applications by the data networking engine is completely decoupled from the implementation of the MAC functions and the VoIP functionality by the cable modem engine.

13. (Currently Amended) A cable modem architecture as claimed in claim 12, wherein the DOCSIS controller is configured to provide provides VoIP functionality in accordance with the PacketCable specification, and wherein the data networking engine is configured to provide provides the embedded portal services functionality of the CableHome specification, and wherein the CableHome functionality is provided by the data networking engine is completely decoupled from the PacketCable and DOCSIS functionality provided by the cable modem engine.

14. (Original) A cable modem architecture as claimed in claim 13, wherein the DOCSIS MAC processor is an ARM9TDMI-based RISC processor, and wherein the DOCSIS controller is an ARM940-based RISC processor.

15. (Original) A method for providing a flexible and partitioned cable modem gateway comprising: providing data and home networking functionality in a data networking engine; providing DOCSIS and VoIP functionality in a cable modem engine; and partitioning the data networking engine from the cable modem engine so that the data and home networking functionality is completely decoupled from the DOCSIS and VoIP functionality.

16. (New) A cable modem system as claimed in claim 5, wherein the data networking engine includes consumer provided equipment drivers including a USB driver and an Ethernet driver and the data networking engine is configured to provide the embedded portal services functionality of the CableHome specification, wherein the DOCSIS controller is configured to provide VoIP functionality in accordance with the PacketCable specification, and wherein the CableHome functionality provided by the data networking engine is completely decoupled from the PacketCable and DOCSIS functionality provided by the cable modem engine.

Remarks

In the non-final Office Action dated February 19, 2009, the following grounds of rejection are presented: claims 1-15 stand rejected under 35 U.S.C. § 102(e) over Brooks (U.S. Patent Pub. 2001/0039600). In the following discussion, Applicant does not acquiesce in any regard to averments in this Office Action (unless Applicant expressly indicates otherwise).

Applicant respectfully traverses the § 102(e) rejection of claims 1-15 because the cited portions of the '600 reference do not correspond to aspects of the claimed invention directed to the data networking functions performed by a data networking engine being completely partitioned/decoupled from the other cable modem functions performed by a cable modem engine. The cited portions of the '600 reference teach a cable modem device 100 that includes two separate processors 102 and 104 (*see, e.g.*, Figure 1 and paragraphs 0024-0026, which are apparently being asserted as corresponding to the DOCSIS MAC processor and the DOCSIS controller of Applicant's cable modem engine (*see, e.g.*, claims 5-14). Applicant submits that the '600 reference does not teach a separate data networking engine (as claimed) that implements certain functionality in a manner that is completely partitioned/decoupled from the functionality performed by processors 102 and 104 of cable modem device 100. Specifically, the '600 reference teaches that the home-networking functionality is implemented by the same processors that implement the DOCSIS and VoIP functionality, instead of implementing these functionalities in a partitioned manner in separate engines, as claimed. Thus, the cited portions of the '600 reference do not correspond to the claimed invention.

Applicant notes that the Office Action does not identify what element of the '600 reference is being asserted as corresponding to Applicant's data networking engine. In fact, the Office Action fails to provide any explanation regarding which specific elements of the '600 reference (*e.g.*, processors 102 and 104) are alleged to correspond to any element of the claimed invention (*e.g.*, Applicant's data networking engine, cable modem engine, DOCSIS MAC processor and the DOCSIS controller). In order to comply with 35 U.S.C. § 132, sufficient detail must be provided by the Examiner regarding the alleged correspondence between the claimed invention and the cited reference to enable Applicant to adequately respond to the rejections. *See, also*, 37 CFR 1.104 ("The pertinence of each reference, if not apparent, must be clearly explained and each rejected

claim specified.”) and M.P.E.P. § 706.02(j), (“It is important for an Examiner to properly communicate the basis for a rejection so that the issues can be identified early and the applicant can be given fair opportunity to reply.”). As such, should any rejection based on the ‘600 reference be maintained, Applicant respectfully requests that the Examiner specifically identify which element of the ‘600 reference is being alleged to correspond to each element of the claimed invention.

In view of the above, the § 102(e) rejection of claims 1-15 is improper and Applicant requests that it be withdrawn.

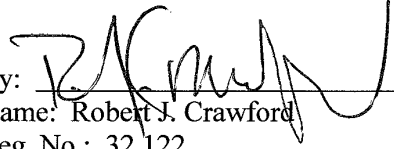
Applicant further traverses the § 102(e) rejection of various dependent claims because the Office Action fails to adequately address these claims. Regarding claim 7, the ‘600 reference does not teach that processor 102 (taught by the ‘600 reference to implement MAC functionality) processes PDU packets and forwards these packets to an apparently nonexistent data networking engine (as claimed) without the involvement of some other processor, which is not identified by the Office Action. Regarding claims 9, 11 and 13-14, the ‘600 reference does not teach that cable modem device 100 implements functionality of the PacketCable specification or functionality of the CableHome specification. In fact, the ‘600 reference does not make any mention of either the PacketCable specification or the CableHome specification. Accordingly, the § 102(e) rejection of claims 7, 9, 11 and 13-14 is improper and Applicant requests that it be withdrawn.

In view of the above, Applicant believes that each of the rejections is improper and should be withdrawn and that the application is in condition for allowance. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is asked to contact the agent overseeing the application file, David Cordeiro, of NXP Corporation at (408) 474-9063 (or the undersigned).

Please direct all correspondence to:

Corporate Patent Counsel
NXP Intellectual Property & Standards
1109 McKay Drive; Mail Stop SJ41
San Jose, CA 95131

CUSTOMER NO. 65913

By: 
Name: Robert J. Crawford
Reg. No.: 32,122
651-686-6633
(NXPS.615PA)

Electronic Acknowledgement Receipt	
EFS ID:	5362874
Application Number:	10675566
International Application Number:	
Confirmation Number:	9980
Title of Invention:	Architecture for a flexible and high-performance gateway cable modem
First Named Inventor/Applicant Name:	Gordon Y. Li
Customer Number:	65913
Filer:	Robert J. Crawford/Kelly Davis
Filer Authorized By:	Robert J. Crawford
Attorney Docket Number:	81373818US01-02CXT0070D
Receipt Date:	19-MAY-2009
Filing Date:	30-SEP-2003
Time Stamp:	17:01:02
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		81373818US01_response.pdf	326820 0a183edcebd36c4d5747626605e5741e9d dfb039	yes	7

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	5
	Applicant Arguments/Remarks Made in an Amendment	6	7
Warnings:			
Information:			
Total Files Size (in bytes):		326820	
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.			

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 101675546	
APPLICATION AS FILED - PART I						
(Column 1)		(Column 2)		SMALL ENTITY		OR
FOR	NUMBER FILED	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(h), (i), or (m))	N/A	N/A	N/A			
EXAMINATION FEE (37 CFR 1.16(e), (p), or (q))	N/A	N/A	N/A			
TOTAL CLAIMS (37 CFR 1.16(j))	minus 20 =		x 25 =		OR	x 50 =
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =		x 105 =			x 210 =
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$260 (\$130 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))			185		370	
			TOTAL		TOTAL	
* If the difference in column 1 is less than zero, enter "0" in column 2.						
APPLICATION AS AMENDED - PART II						
(Column 1)		(Column 2)		(Column 3)		
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR
	Total (37 CFR 1.16(j))	Minus	20	x 25 =	x 50 =	OR
	Independent (37 CFR 1.16(h))	Minus	3	x 105 =	x 210 =	OR
	Application Size Fee (37 CFR 1.16(s))			185	370	OR
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))			TOTAL ADD'L FEE	TOTAL ADD'L FEE	OR
(Column 1)		(Column 2)		(Column 3)		
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR
	Total (37 CFR 1.16(j))	Minus	20	x 25 =	x 50 =	OR
	Independent (37 CFR 1.16(h))	Minus	3	x 105 =	x 210 =	OR
	Application Size Fee (37 CFR 1.16(s))			185	370	OR
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))			TOTAL ADD'L FEE	TOTAL ADD'L FEE	OR
* 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.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,566	09/30/2003	Gordon Y. Li	81373818US01-02CXT0070D	9980
65913	7590	02/19/2009		
NXP, B.V. NXP INTELLECTUAL PROPERTY DEPARTMENT M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			EXAMINER HOSSAIN, TANIM M	
			ART UNIT 2445	PAPER NUMBER
			NOTIFICATION DATE 02/19/2009	DELIVERY MODE ELECTRONIC

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.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No.		Applicant(s)	
	10/675,566		LI ET AL.	
	Examiner		Art Unit	
	Tanim Hossain		2445	

-- 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 30 September 2003.

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) 1-15 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) 1-15 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 30 September 2003 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 § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Brooks (U.S. 2001/0039600)

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

As per claim 1, Brooks teaches a cable modem system comprising: a data networking engine that performs data networking functions (Abstract; paragraphs 0013-0016); and a cable modem engine that performs all other cable modem functions (Abstract; paragraphs 0013-0016); the cable modem engine being completely partitioned from the data networking engine (Abstract; paragraphs 0013-0016).

As per claim 2, Brooks teaches a cable modem system as claimed in claim 1, wherein all DOCSIS functions are localized in the cable modem engine (0024-0026).

As per claim 3, Brooks teaches a cable modem system as claimed in claim 2, wherein VoIP functionality is embedded in the cable modem engine (0024-0026).

As per claim 4, Brooks teaches a cable modem system as claimed in claim 1, and further comprising an advanced crypto engine that performs all crypto functions (0013).

As per claim 5, Brooks teaches a cable modem system as claimed in claim 1, wherein the cable modem engine comprises: a DOCSIS PHY layer (0024-0026); a DOCSIS MAC processor (0024-0026); and a DOCSIS controller (0024-0026).

As per claim 6, Brooks teaches a cable modem system as claimed in claim 5, wherein the DOCSIS PHY layer comprises a hardware transmitter and receiver (0024-0026).

As per claim 7, Brooks teaches a cable modem system as claimed in claim 5, wherein the DOCSIS MAC processor processes downstream PDU packets and forwards the processed packets directly to the data networking engine without the involvement of the DOCSIS controller in order to boost downstream throughput (0024-0026).

As per claim 8, Brooks teaches a cable modem system as claimed in claim 5, wherein all VoIP functionality is implemented in the DOCSIS controller (0024-0026).

As per claim 9, Brooks teaches a cable modem system as claimed in claim 8, wherein the VoIP functionality is in conformance with the PacketCable specification (0024-0026).

As per claim 10, Brooks teaches a cable modem system as claimed in claim 5, wherein the data networking engine is responsible for all data networking processing including advanced

multi-port bridging/routing with NAT/firewall and VPN, and home networking applications (0024-0026).

As per claim 11, Brooks teaches a cable modem system as claimed in claim 10, wherein the data networking engine comprises the entire embedded portal services functionality of the CableHome specification (0024-0026).

As per claim 12, Brooks teaches a cable modem architecture comprising: a cable modem engine comprising: a DOCSIS PHY layer comprising a transmitter and receiver (0024-0026); a DOCSIS MAC processor that implements real-time critical MAC functions for both upstream and downstream communications (0024-0026); and a DOCSIS controller implementing VoIP functionality (0024-0026); and a data networking engine implementing all data networking processing and home networking applications, wherein the data networking engine is completely decoupled from the cable modem engine (0024-0026).

As per claim 13, Brooks teaches a cable modem architecture as claimed in claim 12, wherein the DOCSIS controller provides VoIP functionality in accordance with the PacketCable specification, and wherein the data networking engine provides the embedded portal services functionality of the CableHome specification, wherein the CableHome functionality is provided by the data networking engine is completely decoupled from the PacketCable and DOCSIS functionality provided by the cable modem engine (0013-0016, 0024-0026).

As per claim 14, Brooks teaches a cable modem architecture as claimed in claim 13, wherein the DOCSIS MAC processor is an ARM9TDMI-based RISC processor, and wherein the DOCSIS controller is an ARM940-based RISC processor (0013-0016, 0024-0026).

As per claim 15, Brooks teaches a method for providing a flexible and partitioned cable modem gateway comprising: providing data and home networking functionality in a data networking engine; providing DOCSIS and VoIP functionality in a cable modem engine (0013-0016, 0024-0026); and partitioning the data networking engine from the cable modem engine so that the data and home networking functionality is completely decoupled from the DOCSIS and VoIP functionality (0013-0016, 0024-0026).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tanim Hossain whose telephone number is (571)272-3881. The examiner can normally be reached on 8:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached on 571/272-3949. 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.

Tanim Hossain
Patent Examiner
Art Unit 2445

/Larry D Donaghue/
Primary Examiner, Art Unit 2454

Notice of References Cited	Application/Control No. 10/675,566	Applicant(s)/Patent Under Reexamination LI ET AL.	
	Examiner Tanim Hossain	Art Unit 2445	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2001/0039600	11-2001	Brooks et al.	710/126
	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.

<i>Index of Claims</i> 	Application/Control No. 10675566	Applicant(s)/Patent Under Reexamination LI ET AL.
	Examiner Tanim Hossain	Art Unit 2445

✓	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	02/16/2009								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
	6	✓								
	7	✓								
	8	✓								
	9	✓								
	10	✓								
	11	✓								
	12	✓								
	13	✓								
	14	✓								
	15	✓								

Search Notes 	Application/Control No. 10675566	Applicant(s)/Patent Under Reexamination LI ET AL.
	Examiner Tanim Hossain	Art Unit 2445

SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
EAST	2/16/09	TH

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

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EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	28271	cable\$4 near2 modem \$4	US-PGPUB; USPAT	OR	OFF	2009/02/16 05:09
S2	2625	(cable\$4 near2 modem \$4) and docsis	US-PGPUB; USPAT	OR	OFF	2009/02/16 05:09
S3	482	(cable\$4 near2 modem \$4).ab. and docsis	US-PGPUB; USPAT	OR	OFF	2009/02/16 05:10
S4	91	(cable\$4 near2 modem \$4).ab. and docsis and ((integrat\$4 with (function \$4 or service \$4) same modem\$4))	US-PGPUB; USPAT	OR	OFF	2009/02/16 05:12
S5	21	(cable\$4 near2 modem \$4).ab. and docsis and ((integrat\$4 with (function \$4 or service \$4) same modem\$4)) and partition \$4	US-PGPUB; USPAT	OR	OFF	2009/02/16 05:12

S6	13	(cable\$4 near2 modem \$4).ab. and docsis and ((integrat\$4 with (function \$4 or service \$4) same modem\$4)) and partition \$4 and voip \$4	US-PGPUB; USPAT	OR	OFF	2009/02/16 05:12
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2/ 16/ 09 12:08:56 PM

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\ 10675566 Li - Multiple Function Cable Modem.wsp



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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/675,566	09/30/2003	Gordon Y. Li	109822-95

CONFIRMATION NO. 9980

POA ACCEPTANCE LETTER

65913
NXP, B.V.
NXP INTELLECTUAL PROPERTY DEPARTMENT
M/S41-SJ
1109 MCKAY DRIVE
SAN JOSE, CA 95131



Date Mailed: 09/26/2008

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/17/2008.

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.

/sleutchit/

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
10/675,566	09/30/2003	Gordon Y. Li	109822-95

26021
HOGAN & HARTSON L.L.P.
1999 AVENUE OF THE STARS
SUITE 1400
LOS ANGELES, CA 90067

CONFIRMATION NO. 9980
POWER OF ATTORNEY NOTICE



Date Mailed: 09/26/2008

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/17/2008.

- 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).

/sleutchit/

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

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	10675566
	Filing Date	Sep 30, 2003
	First Named Inventor	Gordon Li
	Title	Architecture for a flexible and high-performance gateway cable modem
	Art Unit	2153
	Examiner Name	LIM, KRISNA
	Attorney Docket Number	109822-95

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:

65913

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:

☐ Firm or Individual Name			
Address			
City		State	
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	/Peter Zawilski/	Date	Sep 17, 2008
Name	Peter S. Zawilski, Reg. No. 43,305	Telephone	(408) 474-9063
Title and Company	Authorized Representative, NXP, B.V.		

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 1.31, 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.

STATEMENT UNDER 37 CFR 3.73(b)Applicant/Patent Owner: NXP, B.V.Application No./Patent No.: 10675566 Filed/Issue Date: Sep 30, 2003Entitled: Architecture for a flexible and high-performance gateway cable modemNXP, B.V., 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; 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 021531, Frame 0523, 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.

☐ 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.

/Peter Zawilski/Sep 17, 2008

Signature

Date

Peter S. Zawilski, Reg. No. 43,305(408) 474-9063

Printed or Typed Name

Telephone Number

Authorized Representative

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:	3961639
Application Number:	10675566
International Application Number:	
Confirmation Number:	9980
Title of Invention:	Architecture for a flexible and high-performance gateway cable modem
First Named Inventor/Applicant Name:	Gordon Y. Li
Customer Number:	26021
Filer:	Peter Zawilski
Filer Authorized By:	
Attorney Docket Number:	109822-95
Receipt Date:	17-SEP-2008
Filing Date:	30-SEP-2003
Time Stamp:	20:25:02
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	10675566_SB-81_96_XML-Combo_2008-SEP-17.pdf	42541 6a4d7fcd44fc5f10c019a4266ad6ac241f761e2	no	2

Warnings:

Information:

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.

PLUS Search Results for S/N 10675566, Searched Mon Jul 30 12:49:22 EDT 2007

The Patent Linguistics Utility System (PLUS) is a USPTO automated search system for U.S. Patents from 1971 to the present PLUS is a query-by-example search system which produces a list of patents that are most closely related linguistically to the application searched. This search was prepared by the staff of the Scientific and Technical Information Center, SIRA.

20050071492 76

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PLUS Search Results for S/N 10675566, Searched Mon Jul 30 12:49:37 EDT 2007
The Patent Linguistics Utility System (PLUS) is a USPTO automated search system for U.S. Patents from 1971 to the present PLUS is a query-by-example search system which produces a list of patents that are most closely related linguistically to the application searched. This search was prepared by the staff of the Scientific and Technical Information Center, SIRA.

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APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/675,566	09/30/2003	Gordon Y. Li	109822-95

TROY M SCHMELZER
 HOGAN & HARTSON
 500 SOUTH GRAND AVENUE
 SUITE 1900
 LOS ANGELES, CA 90071

CONFIRMATION NO. 9980

OC000000014379272

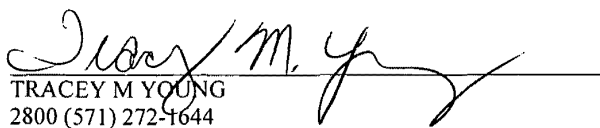
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Date Mailed: 11/16/2004

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 11/01/2004.

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.


 TRACEY M YOUNG
 2800 (571) 272-1644

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United States Patent and Trademark Office
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APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/675,566	09/30/2003	Gordon Y. Li	109822-95

27189
PROCOPIO, CORY, HARGREAVES & SAVITCH LLP
530 B STREET
SUITE 2100
SAN DIEGO, CA 92101

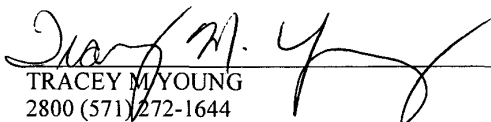
CONFIRMATION NO. 9980
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OC000000014379227

Date Mailed: 11/16/2004

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

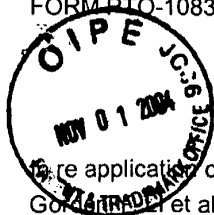
This is in response to the Power of Attorney filed 11/01/2004.

- 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).


TRACEY M. YOUNG
2800 (571) 272-1644

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2833



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

are application of:
Gordon et al.

Art Unit: 2833
Examiner: Not Assigned

Serial No: 10/675,566
Confirmation No.: 9980
Filed: September 30, 2003
For: ARCHITECTURE FOR A FLEXIBLE AND HIGH-
PERFORMANCE GATEWAY CABLE MODEM

I hereby certify that this correspondence is
being 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
October 26, 2004

Date of Deposit

Joyce Hegeman

Name

Signature

October 26, 2004

Date

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

Dear Sir:

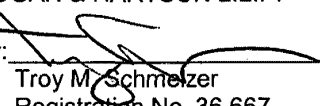
Transmitted in the above-identified application is the following:

- ☒ Power of Attorney By Assignee of Entire Interest and
Change of Correspondence Address
- ☒ Return postcard
- ☒ The Commissioner is hereby authorized to charge any deficiencies of fees associated with this
communication or credit any overpayment to Deposit Account No. 50-1314. **A copy of this sheet is
enclosed.**
- ☒ Any filing fees under 37 C.F.R. § 1.16 for the presentation of extra claims
- ☒ Any patent application processing fees under 37 C.F.R. § 1.17

Respectfully submitted,
HOGAN & HARTSON L.L.P.

Date: October 26, 2004

Biltmore Tower
500 South Grand Avenue, Suite 1900
Los Angeles, California
90071
Telephone: 213 337-6700
Facsimile: 213 337-6701

By: 
Troy M. Schmelzer
Registration No. 36,667
Attorney for Applicant(s)



PATENT
88357.0002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Matters of:

Assignee: Conexant Systems, Inc.

Please see Schedule A (attached)

**POWER OF ATTORNEY BY ASSIGNEE OF ENTIRE
INTEREST AND CHANGE OF CORRESPONDENCE
ADDRESS**

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

Sir:

I hereby certify that this correspondence
is being 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

7-14-04
Date of Deposit

Joyce Hegeman
Name

Signature

7-14-04
Date

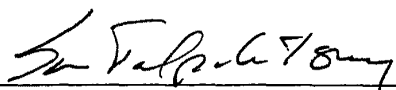
Conexant Systems, Inc., assignee of the patent applications listed on the attached Schedule A, revokes all previous powers of attorney or authorizations of agent and appoints as its attorneys and/or agents, with full power of substitution and revocation, to prosecute these applications and transact all business in the United States Patent and Trademark Office, and in countries other than the United States, and to do all things necessary or appropriate therefore before any competent international authorities in connection with any international patent applications and patents corresponding to these applications:

Troy M. Schmelzer, Reg. No. 36,667; Stuart Lubitz, Reg. No. 20,680; Anthony J. Orler, Reg. No. 41,232; Lawrence J. McClure, Reg. No. 44,228; Barry Shuman, Reg. No. 50,220; Jeffrey Hopkins, Reg. No. 53,034; Yanan Luo, Reg. No. 54,284; Olga Berson, Reg. No. 55,001; Sam Talpalatsky, Reg. No. 35,380; and Joseph H. Lee, Reg. No. 37,664.

Please direct all correspondence in the applications listed in the attached Schedule A to:

Troy M. Schmelzer
HOGAN & HARTSON L.L.P.
500 South Grand Avenue, Suite 1900
Los Angeles, California 90071
Phone: 213-337-6700
Fax: 213-337-670

Date: 7-9-04


Sam Talpalatsky
IP Counsel
Conexant Systems, Inc.
4000 MacArthur Road
Department 927, K10-171
Newport Beach, CA 92660

SCHEDULE A



1	U.S. Application No. 09/239,501
2	U.S. Application No. 09/828,568
3	U.S. Application No. 09/634,265
4	U.S. Application No. 09/588,992
5	U.S. Application No. 10/786,921
6	U.S. Application No. 10/210,591
7	U.S. Application No. 10/214,960
8	U.S. Application No. 10/245,982
9	U.S. Application No. 10/000,878
10	U.S. Application No. 09/865,300
11	U.S. Application No. 09/428,953
12	U.S. Application No. 09/537,967
13	U.S. Application No. 10/325,618
14	U.S. Application No. 10/353,538
15	U.S. Application No. 10/376,824
16	U.S. Application No. 09/989,100
17	U.S. Application No. 09/547,424
18	U.S. Application No. 10/637,324
19	U.S. Application No. 10/675,566
20	U.S. Application No. 10/677,110
21	U.S. Application No. 10/676,900
22	U.S. Application No. 10/749,571
23	U.S. Application No. 10/749,570



PATENT
PCHS Ref. 109822-95
02CXT0070D

DECLARATION FOR UTILITY PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

ARCHITECTURE FOR A FLEXIBLE AND HIGH-PERFORMANCE GATEWAY CABLE MODEM

the specification of which

☐ is attached hereto

OR

☒ was filed on September 30, 2003 as United States Application Serial No. 10/675,566 or PCT International Application No. _____ and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 USC 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed:

Prior Foreign Application Number(s)	Country	Date of Filing	Priority Claimed	
			Yes	No

I hereby claim the benefit under 35 USC 119(e) of any United States provisional application(s) listed below:

Application Number(s)	Filing Date

I hereby claim the benefit under 35 USC 120 of any United States application(s), or 365(c) of any PCT international application designating the United States, listed below and, insofar as the subject matter of any claim of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 USC 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

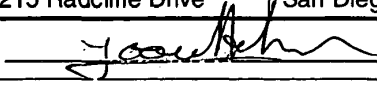
U.S. Parent Application Number	PCT Parent Number	Parent Filing Date	Status-Patented, Pending or Abandoned

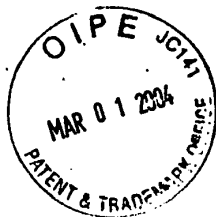
Please direct all correspondence to Troy Schmelzer at Customer Number 27189:

PROCOPIO, CORY, HARGREAVES & SAVITCH, LLP
530 B Street, Suite 2100
San Diego, CA 921010-4469
Tel: 619-238-1900
Fax: 619-235-0398

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 are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 USC 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

FULL NAME OF INVENTOR	FIRST Name Gordon	MIDDLE Initial Y.	LAST Name Li	
RESIDENCE & CITIZENSHIP	City San Diego	State or Foreign Country California	Country of Citizenship Canada	
POST OFFICE ADDRESS	Street 12346 Pathos Lane	City San Dieog	State or Country California	Zip Code 92129
INVENTOR'S SIGNATURE <u>Gordon Li</u>			DATE <u>Nov. 12, '03</u>	

FULL NAME OF INVENTOR	FIRST Name Yoav	MIDDLE Initial	LAST Name Hebron	
RESIDENCE & CITIZENSHIP	City San Diego	State or Foreign Country California	Country of Citizenship United States	
POST OFFICE ADDRESS	Street 6215 Radcliffe Drive	City San Diego	State or Country California	Zip Code 92122
INVENTOR'S SIGNATURE 		DATE <u>11/12/03</u>		



PATENT
PCHS Matter No. 109822-95
02CXT0070D

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: :
:
Gordon G. Li and Yoav Hebron :
:
Serial No. 10/675,566 :
:
Filed: September 30, 2003 :
:
For: Architecture for a Flexible and :
:
High-performance Gateway Cable Modem :
:

POWER OF ATTORNEY

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

Sir:

Conexant Systems, Inc., assignee of the captioned patent application, hereby appoints as its attorneys and/or agents, with full power of substitution and revocation, to prosecute this application and transact all business in the United States Patent and Trademark Office and in countries other than the United States, and to do all things necessary or appropriate therefor before any competent international authorities in connection with any international patent applications corresponding to the captioned application, Sam Talpalatsky, Reg. No. 35,380, Joseph H. Lee, Reg. No. 37,664, and all of the registered practitioners identified by Customer Number 27189.

Please direct all correspondence to Troy M. Schmelzer at Customer No. 27189:



27189

PATENT TRADEMARK OFFICE

PROCOPIO, CORY, HARGREAVES & SAVITCH LLP
530 B Street, Suite 2100
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The undersigned is authorized to sign this document on behalf of Conexant Systems, Inc.

Respectfully submitted,

Conexant Systems, Inc.

Dated: 12.4.03

By:


Sam Talpalatsky



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
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 Alexandria, Virginia 22313-1450
 www.uspto.gov

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
10/675,566	09/30/2003	Gordon G. Li	

CONFIRMATION NO. 9980

27189
 PROCOPIO, CORY, HARGREAVES & SAVITCH LLP
 530 B STREET
 SUITE 2100
 SAN DIEGO, CA 92101

FORMALITIES LETTER



OC000000011576390

Date Mailed: 12/29/2003

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 \$ 770 to complete the basic filing fee for a non-small entity. If appropriate, applicant may make a written assertion of entitlement to small entity status and pay the small entity filing fee (37 CFR 1.27).
- 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.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of \$130 for a non-small entity, must be submitted with the missing items identified in this letter.

SUMMARY OF FEES DUE:

Total additional fee(s) required for this application is **\$900** for a Large Entity

- **\$770** Statutory basic filing fee.
- **\$130** Late oath or declaration Surcharge.

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.



Customer Service Center

Initial Patent Examination Division (703) 308-1202

PART 3 - OFFICE COPY

Patent
109822-95

Mail Stop: Patent Application
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

NEW APPLICATION TRANSMITTAL
UTILITY

22141 U.S. PTO
10/675566
09/30/03

Sir:

Transmitted herewith for filing is a **utility** patent application entitled:

**ARCHITECTURE FOR A FLEXIBLE AND HIGH-PERFORMANCE GATEWAY
CABLE MODEM**

Inventors: Gordon G. Li and Yoav Hebron

I. PAPERS ENCLOSED HEREWITH FOR FILING UNDER 37 C.F.R. § 1.53(b):

- 11 Page(s) of Written Description
- 4 Page(s) of Claims
- 1 Page(s) of Abstract
- 2 Sheets of Drawings ☒ Formal ☐ Informal

II. ADDITIONAL PAPERS ENCLOSED IN CONNECTION WITH THIS FILING:

- ☐ Declaration
- ☐ Power of Attorney: ☐ Separate or ☐ Combined with Declaration
- ☐ Assignment to Conexant Systems, Inc., and Recordation Cover Sheet
- ☐ Information Disclosure Statement, PTO Form 1449 ☐ Copies of Cited References
- ☒ Return Postcard

CERTIFICATE OF MAILING
(37 C.F.R. §1.10)

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as 'Express Mail Post Office To Addressee' in an envelope addressed to Mail Stop: Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

EL986038243US
Express Mail Label No.

September 30, 2003
Date of Deposit

Troy M. Schmelzer
Name of Person Mailing Paper

[Signature]
Signature of Person Mailing Paper

109822.000095/426940.01

III. FEE CALCULATION

☐ Applicant claims small entity status under 37 CFR 1.27.

BASIC FILING FEE:						750.00
Total Claims	15	-	20	=	0	x \$18.00 \$0.00
Independent Claims	3	-	3	=	0	x \$84.00 \$0.00
Multiple Dependent Claims	\$280.00	(if applicable)				☐ \$0.00
TOTAL OF ABOVE CALCULATIONS						\$750.00
Reduction by ½ for Filing by Small Entity.						☐ \$0.00
Petition to Make Special						\$0.00
TOTAL FEES DUE HERewith						\$750.00

IV. PRIORITY - 35 USC § 119(e)

☐ Priority of provisional application Serial No. _____, filed on _____, is claimed under 35 USC § 119(e).

V. METHOD OF PAYMENT OF FEES

- ☐ Attached is a check in the amount of \$_____.
- ☐ Charge Procopio, Cory, Hargreaves & Savitch's Deposit Account No. 50-2075 in the amount of \$_____.
- ☒ Not attached. No filing fee is submitted. [This and the surcharge required by 37 CFR § 1.16(e) can be paid subsequently.]

VI. AUTHORIZATION TO CHARGE ADDITIONAL FEES

The Commissioner is hereby authorized to credit Procopio, Cory, Hargreaves & Savitch's Deposit Account No. 50-2075 for any over payment of fees and to charge the following additional fees by this paper and during the entire pendency of this application to Deposit Account No. 50-2075:

- ☐ 37 CFR § 1.16 (Filing fees and excess claims fees)
- ☐ 37 CFR § 1.17 (Application processing fees)
- ☐ 37 CFR § 1.21 (Assignment recordation fees)

Please send all correspondence to Troy M. Schmelzer at Customer Number 27189:

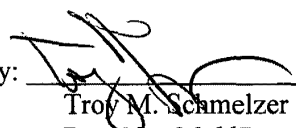


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San Diego, CA 92101-4469
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Please direct all inquiries to Troy M. Schmelzer, at the above Customer Number.

Respectfully submitted,
PROCOPIO, CORY HARGREAVES
& SAVITCH LLP

Dated: September 30, 2003

By: 

Troy M. Schmelzer
Reg. No. 36,667

U.S. Express Mail No.: EL986038243US
Filing Date: September 30, 2003

PATENT
PCHS Matter No. 109822-95
02CXT0070D

UNITED STATES PATENT APPLICATION
FOR

ARCHITECTURE FOR A FLEXIBLE AND HIGH-PERFORMANCE
GATEWAY CABLE MODEM

INVENTORS:

GORDON G. LI
YOAV HEBRON

PREPARED BY:
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530 B STREET
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SAN DIEGO, CA 92101-4469

ARCHITECTURE FOR A FLEXIBLE AND HIGH- PERFORMANCE GATEWAY CABLE MODEM

Field of the Invention

[01] The present invention relates to cable modems and, in particular, relates to a cable modem system having a functionally partitioned and flexible architecture.

Background of the Invention

[02] The future gateway cable modem (CM) will provide a wide range of data networking and VoIP services, as exemplified by the requirements for initiatives such as CableHome and PacketCable. The major challenge in designing such a gateway cable modem is integration of these services with the basic cable modem functionality in an efficient and cost-effective. Several objectives need to be met:

[03] **Functional Partitioning.** The gateway cable modem will incorporate a variety of functions beyond the traditional cable modem, including IP routing, network address translation (NAT)/firewall, virtual private network (VPN), web server and VoIP. These functions need to utilize DOCSIS (Data Over Cable Service Interface Specification) services (link-layer transport and QoS) for wide area network (WAN) access. Partitioning these functions along with other cable modem functions among different computational agents is an essential issue in designing a gateway cable modem.

[04] **Flexibility.** The architecture of the gateway cable modem should be flexible enough to allow independent software development and field-upgrade of gateway value-added services and basic DOCSIS cable modem services. From a development standpoint, the architecture should facilitate different software-partnering models, including all in-house, software components licensing, and OEM vendor-differentiating design. From a multiple system operator (MSO) perspective, it is highly desirable to be able to independently provision, maintain and upgrade revenue-producing gateway services and basic broadband access services.

[05] **Performance.** The gateway cable modem should be able to support a large number of simultaneous data application sessions originated from/terminated on multiple CPE (customer provided equipment) devices. VoIP applications must not be adversely impacted by an concurrent data applications, and the data path for voice packets must be optimized to minimize delay and jitter.

[06] **Cost.** The gateway cable modem chip should have a small incremental hardware cost/functional increase relative to stand-alone cable modem chips.

[07] **Software Re-Use.** It should be possible to carry over existing cable modem software to the new gateway cable modem without major changes. The existing software running on network processors should be easily portable to run on the gateway platform without major adaptation.

[08] The present invention provides a gateway cable modem architecture that meets all of these objectives.

Summary of the Invention

[09] The present invention provides a gateway cable modem system and architecture that meets the above objectives and provides a highly flexible, high performance system capable of handling multiple cable modem voice, data and networking services.

[10] One embodiment of the invention is a cable modem system comprising a data networking engine that performs data networking functions and a cable modem engine that performs all other cable modem functions, wherein the cable modem engine is completely partitioned from the data networking engine.

[11] Another embodiment of the invention is a cable modem architecture. The architecture includes a cable modem engine having a DOCSIS PHY layer with a hardware transmitter and receiver, a DOCSIS MAC processor that implements real-time critical MAC functions for both upstream and downstream communications, and a DOCSIS controller implementing VoIP functionality. The architecture also includes a data networking engine implementing all data networking processing and home networking applications. The data networking engine is completely decoupled from the cable modem engine. In one implementation, the VoIP functionality provided by the cable modem is in accordance with the PacketCable specification and the data networking functionality provided by the data networking engine is in accordance with the CableHome specification.

[12] Another embodiment of the invention is a method for providing a flexible and partitioned cable modem gateway. Data and home networking functionality is provided by a data networking engine, and DOCSIS and VoIP functionality is provided by a cable

modem engine. The data networking engine is partitioned from the cable modem engine so that the data and home networking functionality is completely decoupled from the DOCSIS and VoIP functionality.

[13] 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

[14] 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.

[15] FIG. 1 is a block diagram of a gateway cable modem architecture according to the present invention.

[16] FIG. 2 is a functional block diagram implementing the cable modem architecture of FIG. 1.

Detailed Description of the Invention

[17] FIG. 1 illustrates a cable modem system architecture 100 according to the present invention. System 100 comprises three major subsystems: cable modem engine 110; data networking engine 120; and advanced crypto engine 130. The functional sub-components of these three-subsystems are illustrated in greater detail in FIG. 2.

[18] Cable modem engine 110 implements the entire DOCSIS cable modem functionality and is further divided into three functional blocks: DOCSIS PHY layer 112; DOCSIS MAC processor 114 and DOCSIS controller 116. DOCSIS PHY layer 112 comprises a hardware transmitter and receiver. In one implementation, it is for a DOCSIS 2.0-compliant PHY. As seen in FIG. 1, DOCSIS PHY layer 112 receives downstream data, transmits upstream data and receives and transmits voice data from/to an external source. In one implementation, the external source is a HFC (hybrid fiber coax) cable employing both fiber optic and coaxial cable as an effective means for delivering combined data, video, voice, CATV and other communications.

[19] Processor 114 implements real-time critical MAC functions for both upstream (US) and downstream (DS) communications. These functions include US and DS synchronization, DS MAC address filtering, DS protocol filtering, US and DS PHS, concatenation, fragmentation, MAP processing, US transmission scheduling, as well as DOCSIS link-layer DES encryption and decryption. Processor 114 receives downstream data from, provides upstream data to and exchanges voice data in both directions with DOCSIS PHY 112. It also receives upstream data from, and exchanges voice data in both directions with, controller 116. To increase downstream throughput, all processing

of DS PDU (protocol data unit) packets is done within processor 114 without involving controller 116. After being processed, DS PDU packets are forwarded by processor 116 directly to data networking engine 120 along path 118, bypassing controller 116. In one implementation, processor 114 is an ARM9TDMI-based RISC processor. In FIG. 2, processor 114 is represented by MAC DS block 152 and MAC US block 154.

[20] Controller 116 receives US PDU packets from data networking engine 120. As previously described, DS PDU packets are forwarded by processor 114 to data networking engine 120 without involvement of controller 116. In one implementation, controller 116 is an ARM940-based RISC processor. Controller 116 implements the following DOCSIS (blocks 200-212) functions: MAC management message (MMM) processing (ranging, registration, UCD, UCC, DCC, DCI, UP-DIS, DSx and BPI+) (functional block 200 of FIG. 2), IGMP, MAC address learning, classification, US protocol filtering (functional block 202 of FIG. 2) and CM IP stack and software downloading. Functional block 204 carries out cable modem IP/UDP functions, functional block 206 carries out SNMP, DHCP, TFTP and TOD functionality and functional block 208 is responsible for cable modem provisioning. Controller 116 also includes a data network engine driver 210 in communication with data network engine 120 and cable MAC driver 212.

[21] In addition, in order to minimize the latency and jitter of voice packets, controller 116 also implements all PacketCable functionality. In FIG. 2, PacketCable functionality is represented by functional blocks 220-228. These PacketCable functions include provisioning (block 220), security and signaling. Functional blocks 222 (voice DSP

driver), 224 (streamlined IP/UDP/RTP with classification; PHS, IP/LLC filtering) and 226 (voice MAC driver) interface with external voice DSP 119. Additionally MGCP and RTCP functions are provided by functional block 228.

[22] Data networking engine 120 is responsible for all data networking processing including advanced multi-port bridging/routing with NAT/firewall and VPN (block 250) and home networking applications (CableHome, Web Server, etc.) (block 252). In one implementation, the entire embedded portal services (PS) functionality of the CableHome specification is contained within data networking engine 120, with the CableHome functionality being completely decoupled from the PacketCable and DOCSIS functionality provided by cable modem engine 110. As a result of the virtual de-coupling from cable modem engine 110, data networking engine 120 can be independently software-upgraded without impacting the functionality of cable modem engine 110 (and vice versa).

[23] As seen in FIG. 1, data networking engine is capable of additional CPE functionality such as Ethernet, USB and other LAN I/F communications (802.11, Bluetooth, Powerline, etc.), with appropriate CPE drivers 254, 256, 258 being provided to support such communications. Additionally, cable modem engine driver 260 communicates with cable modem engine 110 and functional block 262 provides SNMP, DHCP, TFTP and TOD functionality.

[24] Advanced crypto engine 130 provides hardware support for crypto functions. These include common crypto functions required by the baseline DOCSIS link-layer

security, PacketCable voice security and data-networking security (e.g. VPN). These functions include DES/3DES, AES and HMAC-MD5/SH-1.

[25] The architecture of gateway cable modem 100 addresses the objectives set forth in the “Background” section above as follows:

[26] **Functional Partitioning.** Cable modem 100 completely partitions data networking functions (advanced bridging/routing, NAT/firewall, VPN, web server and CableHome applications) from DOCSIS cable modem functionality. This is accomplished by localizing data networking functions in the data networking engine processor and localizing cable modem functions in the cable modem engine processor. Additionally, PacketCable VoIP functionality (embedded MTA) is implemented within cable modem engine 110 to address the facts that embedded MTA is closely coupled with cable modem MAC services and that the latency and jitter of voice packets needs to be minimized.

[27] **Flexibility.** Since the data networking and cable modem functions are decoupled and implemented in different processors 110 and 120, independent software upgrading and maintenance of these functions is feasible. From a development standpoint, the architecture can facilitate different software-partnering models, such as complete in-house development, software-components licensing and OEM vendor-differentiating design. In particular, data networking engine 120 provides third parties and OEMs with a dedicated computational platform to develop advanced services outside of the baseline cable modem and VoIP/PacketCable services, minimizing their support dependency on the cable modem provider. Moreover, the software architecture within cable modem

engine 110 is designed in a modular way so that the PacketCable E-MTA can be implemented with minimum impact on the cable modem.

[28] **Performance.** System 100 is able to support a large number of simultaneous data-application sessions originated from/terminated on multiple CPE devices. Its performance is enhanced by the pipe-lining nature of system 100: the processing-intensive functions of the cable modem and data networking are rationally distributed among three different processors: DOCSIS MAC processor 114 (ARM#2); DOCSIS controller 116 (ARM#1); and data networking engine 120 (ARM#3), according to their orders in the packet flow. To further boost downstream throughput, the downstream PDU packets are directly forwarded from the DOCSIS MAC processor 114 to the data networking engine 120 without going through DOCSIS controller 116. This is made possible by exploiting the asymmetric nature of the DOCSIS US/DS 152 and 154. In addition, the data path for voice packets is laid entirely within cable modem engine 110 and is optimized to reduce delay and jitter.

[29] **Cost.** A chip implementing cable modem system 100 will have only a small incremental hardware cost/functional increase over current stand-alone cable modem chips. The major cost difference relative to current chips is the addition of another ARM940-type processor to the chip.

[30] **Software Re-Use.** Existing cable modem software may be carried over to system 100 without major or drastic changes. Existing software running on PCD network processors may be easily ported to run on data networking engine 120 without major adaptation.

[31] 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.

What is claimed is:

1. A cable modem system comprising:
a data networking engine that performs data networking functions; and
a cable modem engine that performs all other cable modem functions; the cable modem engine being completely partitioned from the data networking engine.
2. A cable modem system as claimed in claim 1, wherein all DOCSIS functions are localized in the cable modem engine.
3. A cable modem system as claimed in claim 2, wherein VoIP functionality is embedded in the cable modem engine.
4. A cable modem system as claimed in claim 1, and further comprising an advanced crypto engine that performs all crypto functions.
5. A cable modem system as claimed in claim 1, wherein the cable modem engine comprises:
a DOCSIS PHY layer;
a DOCSIS MAC processor; and
a DOCSIS controller.

6. A cable modem system as claimed in claim 5, wherein the DOCSIS PHY layer comprises a hardware transmitter and receiver.

7. A cable modem system as claimed in claim 5, wherein the DOCSIS MAC processor processes downstream PDU packets and forwards the processed packets directly to the data networking engine without the involvement of the DOCSIS controller in order to boost downstream throughput.

8. A cable modem system as claimed in claim 5, wherein all VoIP functionality is implemented in the DOCSIS controller.

9. A cable modem system as claimed in claim 8, wherein the VoIP functionality is in conformance with the PacketCable specification.

10. A cable modem system as claimed in claim 5, wherein the data networking engine is responsible for all data networking processing including advanced multi-port bridging/routing with NAT/firewall and VPN, and home networking applications.

11. A cable modem system as claimed in claim 10, wherein the data networking engine comprises the entire embedded portal services functionality of the CableHome specification.

12. A cable modem architecture comprising:
a cable modem engine comprising:
a DOCSIS PHY layer comprising a transmitter and receiver;
a DOCSIS MAC processor that implements real-time critical MAC functions for both upstream and downstream communications; and
a DOCSIS controller implementing VoIP functionality; and
a data networking engine implementing all data networking processing and home networking applications, wherein the data networking engine is completely decoupled from the cable modem engine.

13. A cable modem architecture as claimed in claim 12, wherein the DOCSIS controller provides VoIP functionality in accordance with the PacketCable specification, and wherein the data networking engine provides the embedded portal services functionality of the CableHome specification, wherein the CableHome functionality is provided by the data networking engine is completely decoupled from the PacketCable and DOCSIS functionality provided by the cable modem engine.

14. A cable modem architecture as claimed in claim 13, wherein the DOCSIS MAC processor is an ARM9TDMI-based RISC processor, and wherein the DOCSIS controller is an ARM940-based RISC processor.

15. A method for providing a flexible and partitioned cable modem gateway comprising:
- providing data and home networking functionality in a data networking engine;
 - providing DOCSIS and VoIP functionality in a cable modem engine; and
 - partitioning the data networking engine from the cable modem engine so that the data and home networking functionality is completely decoupled from the DOCSIS and VoIP functionality.

ARCHITECTURE FOR A FLEXIBLE AND HIGH-PERFORMANCE GATEWAY CABLE MODEM

Abstract

[32] A cable modem system and architecture. A cable modem engine performs all
5 cable modem functions, and a data networking engine performs all data and home
networking functions. The cable modem engine is completely partitioned from the data
networking engine. DOCSIS and VoIP functionality is implemented in the cable modem
engine. The VoIP functionality may be in accordance with the PacketCable specification.
The data networking functionality provided by the data networking engine may be in
10 accordance with the CableHome specification.

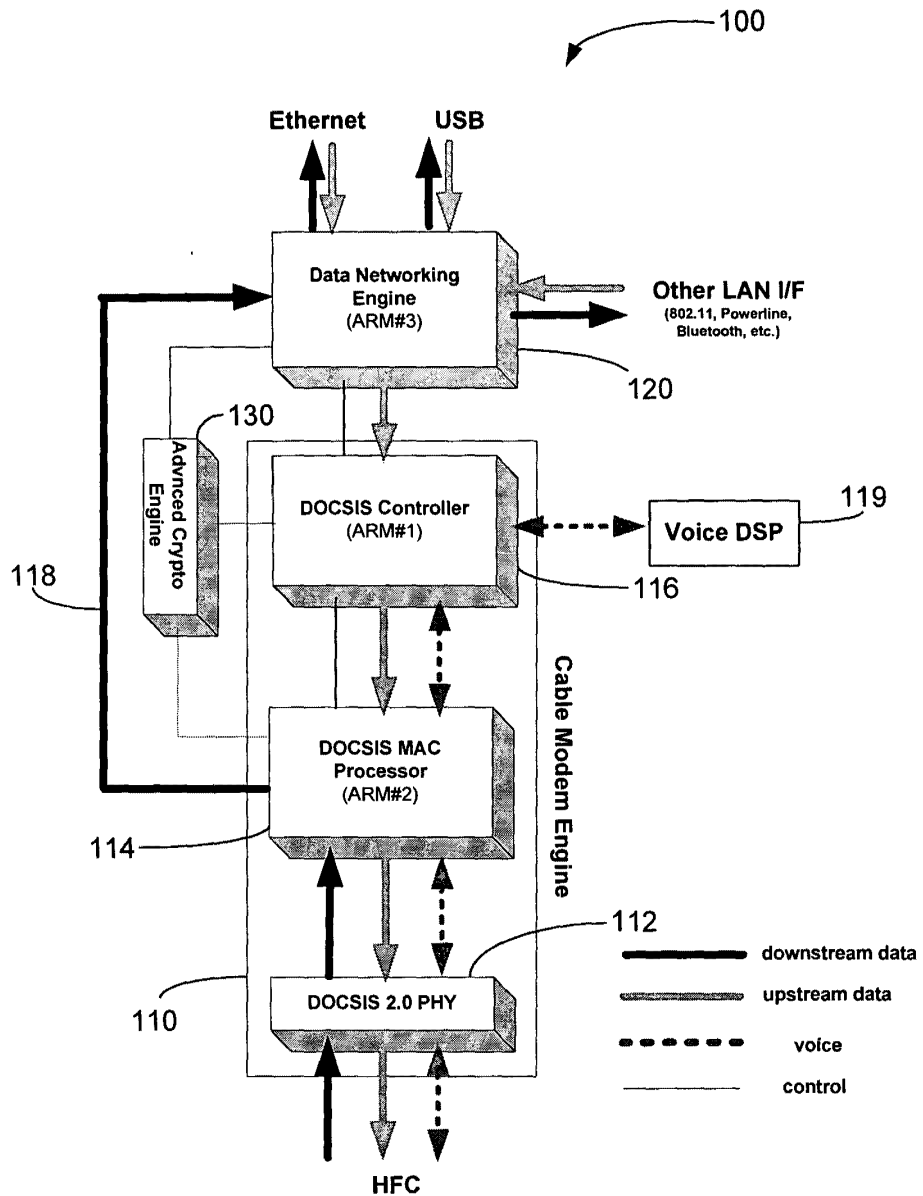


Figure 1

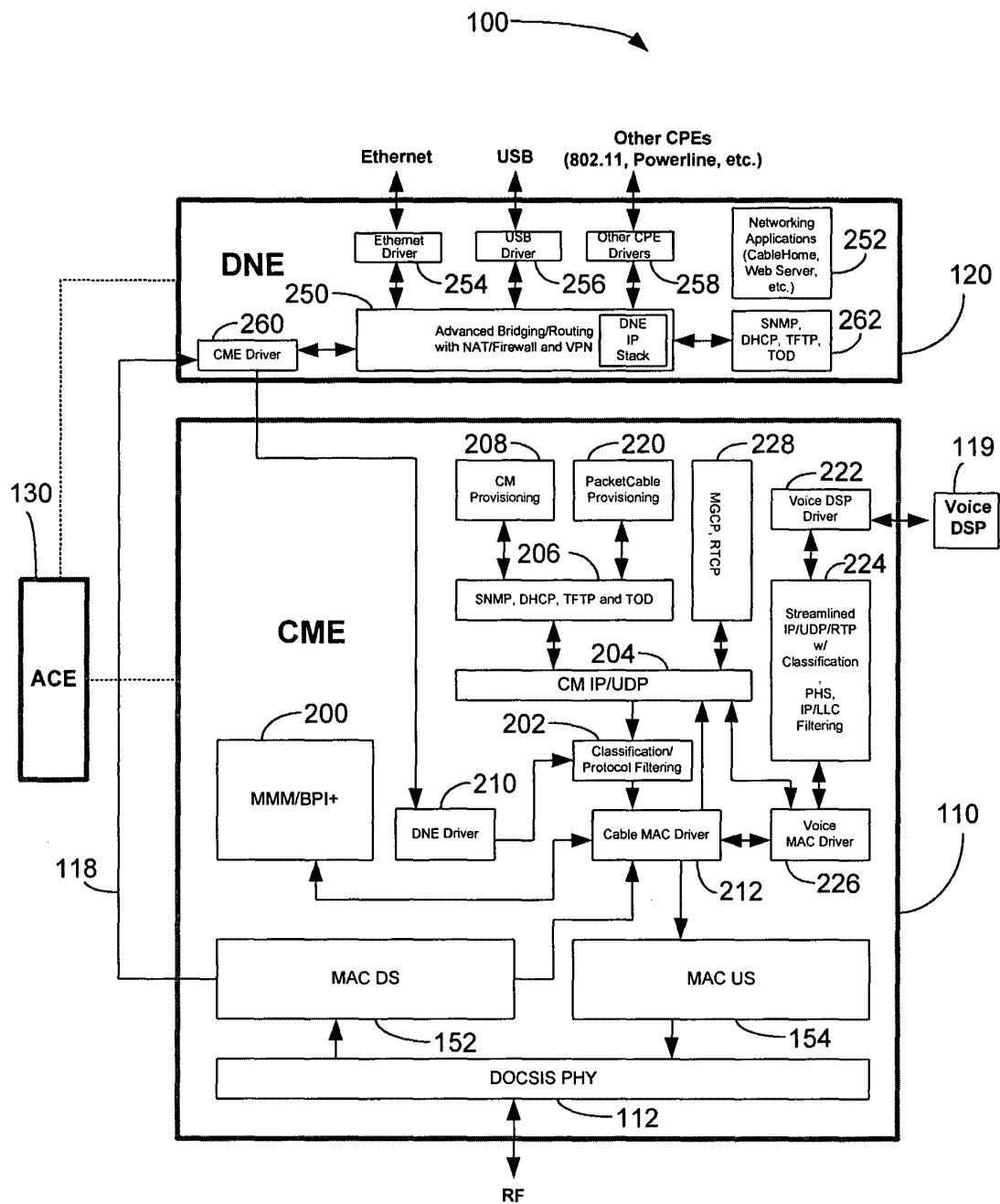


Figure 2

PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 2003

Application or Docket Number

10675566

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	15	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	15 minus 20 =	*
INDEPENDENT CLAIMS	3 minus 3 =	*
MULTIPLE DEPENDENT CLAIM PRESENT ☐		

* If the difference in column 1 is less than zero, enter "0" in column 2

CLAIMS AS AMENDED - PART II

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	*	Minus	**
Independent	*	Minus	***
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐			

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	*	Minus	**
Independent	*	Minus	***
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐			

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	*	Minus	**
Independent	*	Minus	***
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐			

* 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.

SMALL ENTITY TYPE ☐

OR OTHER THAN SMALL ENTITY

RATE	FEE
BASIC FEE	385.00
X\$ 9=	
X43=	
+145=	
TOTAL	

RATE	FEE
BASIC FEE	770.00
X\$18=	
X86=	
+290=	
TOTAL	770

SMALL ENTITY

OR OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE
X\$ 9=	
X43=	
+145=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$18=	
X86=	
+290=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$ 9=	
X43=	
+145=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
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TOTAL ADDIT. FEE	

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+145=	
TOTAL ADDIT. FEE	

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TOTAL ADDIT. FEE	