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NOTICE OF ALLOWANCE AND FEE(S) DUE

77330 7590 05/18/2009

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

EXAMINER	
CHOWDHURY, SUMAIYA A	
ART UNIT	PAPER NUMBER
2421	

DATE MAILED: 05/18/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/910,412	07/21/2001	Itzhak Gurantz	E010001USU1	2398

TITLE OF INVENTION: NETWORK INTERFACE DEVICE AND BROADBAND LOCAL AREA NETWORK USING COAXIAL CABLE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1510	$300	$0	$1810	08/18/2009

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.

PTOL-85 (Rev. 08/07) Approved for use through 08/31/2010.

DISH 1002

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)

77330 7590 05/18/2009

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

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.
09/910,412	07/21/2001	Itzhak Gurantz	E010001USU1	2398

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APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1510	$300	$0	$1810	08/18/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
CHOWDHURY, SUMAIYA A	2421	725-078000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1_____

2_____

3_____

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

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

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

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

4a. The following fee(s) are submitted:

❑ Issue Fee

❑ Publication Fee (No small entity discount permitted)

❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): (**Please first reapply any previously paid issue fee shown above**)

❑ A check is enclosed.

❑ Payment by credit card. Form PTO-2038 is attached.

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

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

❑ 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.

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.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/910,412	07/21/2001	Itzhak Gurantz	E010001USU1	2398

77330 7590 05/18/2009

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SAN DIEGO, CA 92121

EXAMINER
CHOWDHURY, SUMAIYA A

ART UNIT	PAPER NUMBER
2421	

DATE MAILED: 05/18/2009

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 816 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 816 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.

PTOL-85 (Rev. 08/07) Approved for use through 08/31/2010.

Notice of Allowability	Application No.	Applicant(s)	
	09/910,412	GURANTZ ET AL.	
	Examiner	Art Unit	
	SUMAIYA A. CHOWDHURY	2421	

-- 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 *1/19/09*.

2. ☒ The allowed claim(s) is/are *5, 18, 23-37*.

3. ☐ 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.

4. ☐ 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.

5. ☐ 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).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ 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
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 _____.

/John W. Miller/
Supervisory Patent Examiner, Art Unit 2421

DETAILED ACTION

Allowable Subject Matter

1. Claims 5, 18, and 23-37 are allowed.

Reasons for Allowance

2. The following is an examiner's statement of reasons for allowance:

Regarding claims 5, 25, and 29, the prior art of record to Kliger (US 2002/0069417) teaches a home network system in which a module in one room can communicate with modules in other rooms through a signal reflector unit. The prior art of record fails to reasonably show or suggest a filter located at the point of entry of a building tuned to reject network signals originating in the building such that the network signals originating in the building do not pass through the filter, but rather are reflected back into the building.

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

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SUMAIYA A. CHOWDHURY whose telephone number is (571)272-8567. The examiner can normally be reached on Mon-Fri, 9-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571) 272-7353. 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.

/John W. Miller/
Supervisory Patent Examiner, Art Unit 2421

/Sumaiya A Chowdhury/
Examiner, Art Unit 2421

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	09910412	GURANTZ ET AL.
	Examiner	**Art Unit**
	SUMAIYA A CHOWDHURY	2421

✓	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	03/25/2008	10/12/2008	05/06/2009						
1	5	✓	✓	=						
2	18	✓	✓	=						
4	23	✓	✓	=						
3	24	✓	✓	=						
5	25	✓	✓	=						
6	26	✓	✓	=						
7	27	✓	✓	=						
8	28	✓	✓	=						
10	29	✓	✓	=						
11	30	✓	✓	=						
12	31	✓	✓	=						
13	32	✓	✓	=						
16	33	✓	✓	=						
14	34	✓	✓	=						
15	35	✓	✓	=						
9	36	✓	✓	=						
17	37	✓	✓	=						

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	09910412	GURANTZ ET AL.
	Examiner	**Art Unit**
	SUMAIYA A CHOWDHURY	2421

ORIGINAL		INTERNATIONAL CLASSIFICATION										
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED				
725	78	H	0	4	N	7 / 18 (2006.01.01)					

CROSS REFERENCE(S)

CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				
725	51	54	74	78	80
725	85	125	119	127	

☐ 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	5	17	37												
2	18														
4	23														
3	24														
5	25														
6	26														
7	27														
8	28														
10	29														
11	30														
12	31														
13	32														
16	33														
14	34														
15	35														
9	36														

/SUMAIYA A CHOWDHURY/ Examiner.Art Unit 2421 (Assistant Examiner)	5/6/09 (Date)	**Total Claims Allowed:** 17
/John W Miller/ Supervisory Patent Examiner.Art Unit 2421 (Primary Examiner)	05/08/2009 (Date)	O.G. Print Claim(s): 5 O.G. Print Figure: 2

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	09910412	GURANTZ ET AL.
	Examiner	**Art Unit**
	SUMAIYA A CHOWDHURY	2421

SEARCHED

Class	Subclass	Date	Examiner
725	51	3/25/2008	SAC
725	51, 54	4/17/2009	SAC
725	74, 78, 80	4/20/2009	SAC
725	85, 125, 119	4/21/2009	SAC
725	127	5/6/2009	SAC

SEARCH NOTES

Search Notes	Date	Examiner
Double Patenting Search	4/20/2009	SAC
Inventorship Search	4/20/2009	SAC
Consulted Chris Grant	1/4/06	SAC
Consulted Hai Tran	5/2/06	SAC
Consulted Jason Salce	5/2/06	SAC
Consulted Vivek Srivastava	5/2/06	SAC
Consulted Drew Koenig	5/22/06	SAC
Consulted Dominic Saltarelli	5/23/06	SAC
Consulted Ngoc Vu	5/23/06	SAC

INTERFERENCE SEARCH

Class	Subclass	Date	Examiner
725	78, 80, 85	5/6/2009	SAC

/S. A. C./ Examiner.Art Unit 2421	

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BIB DATA SHEET

CONFIRMATION NO. 2398

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
09/910,412	07/21/2001 **RULE**	725	2421	E010001USU1

APPLICANTS

Itzhak Gurantz, San Diego, CA;
Ladd Eiwardani, La Jolla, CA;
Anton Monk, San Diego, CA;
Brett Bernath, San Diego, CA;
Magnus Berggren, San Diego, CA;

**** CONTINUING DATA ***************************

This appln claims benefit of 60/288,967 05/04/2001

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****

09/06/2001

			STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged	/SUMAIYA A CHOWDHURY/ Examiner's Signature	☐ Met after Allowance Initials	CA	5	18	3

ADDRESS

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

TITLE

Network interface device and broadband local area network using coaxial cable

FILING FEE RECEIVED		
355	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

BIB (Rev. 05/07).

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L3	0	2002/0069417.did.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/05/06 19:43
L4	2	"20020069417".did.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/05/06 19:43
L5	85	725/78.CCLS. AND 725/80.CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/05/06 19:53
L6	27	725/78.CCLS. AND 725/85.CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/05/06 19:53
L7	377	725/127.CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/05/06 19:55
L8	9116	(NETWORK ADJ INTERFACE ADJ DEVICE)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/05/06 20:11
L9	202	(NETWORK ADJ INTERFACE ADJ DEVICE) same filter	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/05/06 20:11

L10	9	(NETWORK ADJ INTERFACE ADJ DEVICE) same filter same building	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/05/06 20:11
L11	1	(NETWORK ADJ INTERFACE ADJ DEVICE) same filter same building same reflect$4	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/05/06 20:11
S1	2	"20020069417".did.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/20 18:25
S2	12026	filter with reject$3 with signal$1	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/20 18:53
S3	138	(filter with reject$3 with signal$1) and ("725"). clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/20 18:53
S4	176	(filter with reject$3 with signal$1) same (building house housing)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/20 18:55
S5	23	(filter with reject$3 with signal$1) same (building house housing) same reflect$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/20 18:56
S6	814	(filter with reject$3 with signal$1) same communicat$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/20 18:57

S7	211	(filter with reject$3 with signal$1) same communicat$3 same (device$1 appliance$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/20 18:58
S8	421	(filter with (reflect$3 reject$3) with signal$1) same communicat$3 same (device$1 appliance$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/20 18:59
S9	12	(filter with (reflect$3 reject$3) with signal$1) same communicat$3 same (device$1 appliance$1) and "725"/$.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/20 18:59
S10	270	("20010005906" | "20010017920" | "20010030664" | "20010039660" | "20020002707" | "20020007485" | "20020010936" | "20020019984" | "20020035726" | "20020035729" | "20020040475" | "20020044762" | "20020051200" | "20020051581" | "20020056112" | "20020059615" | "20020059617" | "20020059637" | "20020066101" | "20020067437" | "20020069417" | "20020083438" | "20020087996" | "20020090198" | "20020095673" | "20020095689" | "20020100041" | "20020104001" | "20020108121" | "20020116626" | "20020133558" | "20020137517" | "20020141582" | "20020144262" | "20020146237" | "20020154892" | "20020157112" |	US-PGPUB; USPAT; USOCR	OR	ON	2009/04/20 19:04

		"20020166124" | "20020174444" | "20020178445" | "20020187779" | "20020194596" | "20030005300" | "20030009763" | "20030026423" | "20030028886" | "20030028890" | "20030044165" | "20030063003" | "20030063814" | "20030097563" | "20030108199" | "20030108336" | "20030142664" | "20030145336" | "20030149986" | "20030149991" | "20030159140" | "20030159157" | "20030181160" | "20030202772" | "20030204856" | "20030207672" | "20030233667" | "20040028216" | "20040032902" | "20040032950" | "20040034874" | "20040040035" | "20040051638" | "20040054771" | "20040064714" | "20040068739" | "20040068747" | "20040068754" | "20040078825" | "20040107445" | "20040109497" | "20040128681" | "20040128682" | "20040172658" | "20040177381" | "20040221304" | "20040255326" | "20040257976" | "20040261126" | "20050022248" | "20050028190" | "20050028208" | "20050042999" | "20050050557" | "20050063422" | "20050155052").PN. OR				

		("20050235323" | "20050251827" | "20050262542" | "20060069645" | "20060218591" | "20060259584" | "4215366" | "4290081" | "4439784" | "4535355" | "4540958" | "4578533" | "4644526" | "4686564" | "4706121" | "4751578" | "4885803" | "4908713" | "4916532" | "4963994" | "4963995" | "5010299" | "5010399" | "5038211" | "5048054" | "5251074" | "5253066" | "5293357" | "5406626" | "5412416" | "5479268" | "5481542" | "5508815" | "5515377" | "5524051" | "5568272" | "5574964" | "5579308" | "5590195" | "5600364" | "5600573" | "5600707" | "5621793" | "5638423" | "5666151" | "5682206" | "5699105" | "5701383" | "5708961" | "5714945" | "5715020" | "5715277" | "5751806" | "5758257" | "5774527" | "5787472" | "5793413" | "5793414" | "5796442" | "5808659" | "5809204" | "5828403" | "5835128" | "5851149" | "5867485" | "5872644" | "5886732" | "5886753" | "5915068" | "5920801" | "5930247" | "5936660" | "5940073" | "5940387" | "5970386" | "5983068" | "5990927" | "5995258" | "6005861" | "6014546" | "6026150" |				

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		"7140033" | "7146628" | "7155012" | "7184550" | "7190901" | "7209667" | "7222358" | "7233669" | "7260829" | "7310355" | "7360233" | "7360235").PN.				
S11	10	(reflector with signal$1 with (device$1 appliance $1)) and "725"/$.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/20 19:07
S12	143	(reflector with signal$1 with (device$1 appliance $1) with communicat $3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/20 19:10
S13	87279	filter$1 with reflect$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/20 19:20
S14	111854	filter$1 with (reject$3 reflect$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/20 19:21
S15	400	725/51,54.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/20 20:20
S16	416	725/80.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/20 21:33
S17	321	725/74.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/20 21:40

S18	395	725/78.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/20 23:45
S19	416	725/80.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/21 10:39
S20	106	725/85.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/21 11:34
S21	6	"910412".ap.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/21 12:03
S22	2	"910412".ap. and filter $3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/21 12:13
S23	413	(block$3 reject$3 reflect $3) with filter$3 with mismatch$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/21 12:26
S24	150	(block$3 reject$3 reflect $3) with filter$3 with mismatch$3 with signal $3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/21 12:27
S26	150	(block$3 reject$3 reflect $3) with filter$3 with mismatch$3 with signal $4	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/21 12:27

S27	13	((block$3 reject$3 reflect$3) with filter$3 with mismatch$3 with signal$4) same (device $1 appliance$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/21 12:28
S28	3	((block$3 reject$3 reflect$3) with filter$3 with mismatch$3 with signal$4) same (building house housing)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/21 12:30
S29	3	((block$3 reject$3 reflect$3) with filter$3 with mismatch$3 with signal$4) same (building house hous$3 room$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/21 12:30
S30	5	((block$3 reject$3 reflect$3) with filter$3 with mismatch$3) same (building house hous$3 room$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/21 12:31
S31	15	((block$3 reject$3 reflect$3) with filter$3 with mismatch$3) same (building home hospital hotel school office multiunit multiroom hous $3 room$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/21 12:35
S32	10	((block$3 reject$3 reflect$3) with filter$3 with mismatch$3) same (building home hospital hotel school office multiunit multiroom hous $3 room$1) not S30	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/21 12:35
S33	28	((block$3 reject$3 reflect$3) with filter$3 with mismatch$3) same communicat$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/21 12:36
S34	0	((block$3 reject$3 reflect$3) with filter$3 with mismatch$3) same premis$2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/21 12:39

S35	0	((block$3 reject$3 reflect$3) with filter$3 with mismatch$3) same premise$1	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/21 12:39
S36	150	((block$3 reject$3 reflect$3) with filter$3 with mismatch$3 with signal$4)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/21 12:39
S37	14	((block$3 reject$3 reflect$3) with filter$3 with mismatch$3 with signal$4) same (television$1 device$1 appliance$1)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/21 12:41
S38	105	725/125.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/21 13:40
S40	337	725/119.CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/04/21 13:51

5/6/2009 8:12:15 PM
C:\Documents and Settings\schowdhury\My Documents\EAST\Workspaces\09910412.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
09/910,412	07/21/2001	Itzhak Gurantz	9202

CONFIRMATION NO. 2398

POWER OF ATTORNEY NOTICE

77676
Michael W. Landry
5098 Seachase Street
San Diego, CA 92130

OC000000034576137

Date Mailed: 02/18/2009

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 01/19/2009.

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

/gbien-aime/

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

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www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/910,412	07/21/2001	Itzhak Gurantz	9202

CONFIRMATION NO. 2398

POA ACCEPTANCE LETTER

77330
ENTROPIC COMMUNICATIONS, INC.
6290 SEQUENCE DRIVE
SAN DIEGO, CA 92121

OC000000034576173

Date Mailed: 02/18/2009

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 01/19/2009.

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

/gbien-aime/

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

PTO/SB/81 (01-09)
Approved for use through 11/30/2011. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS

Application Number	09/910,412
Filing Date	21-Jul-2001
First Named Inventor	Itzhak Gurantz
Title	Network interface device...
Art Unit	2421
Examiner Name	CHOWDHURY, SUMAIYA A
Attorney Docket Number	9202

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: 77330

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 February 11, 2009.

SIGNATURE of Applicant or Assignee of Record

Signature		Date	February 11, 2009
Name	Bruce W. Greenhaus	Telephone	858-768-3679
Title and Company	V.P. Chief Patent Counsel, 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 2 forms are submitted.

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

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

PTO/SB/96 (01-09)
Approved for use through 02/28/2009. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Entropic Communications Inc.

Application No./Patent No.: 09/910,412 Filed/Issue Date: 21-Jul-2001

Titled:
Network interface device and broadband local area network using coaxial cable

Entropic Communications Inc., a Corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

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

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

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

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

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

1. From: Itzhak Gurantz et. al. To: Entropic Communications Inc.
The document was recorded in the United States Patent and Trademark Office at
Reel 012499, Frame 0136, or for which a copy thereof is attached.

2. From: Entropic Communications Inc. To: Silicon Valley Bank
The document was recorded in the United States Patent and Trademark Office at
Reel 013016, Frame 0075, or for which a copy thereof is attached.

3. From: Silicon Valley Bank To: Entropic Communications Inc.
The document was recorded in the United States Patent and Trademark Office at
Reel 014072, Frame 0754, 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 — February 11, 2009 (Date)

Bruce W. Greenhaus (Printed or Typed Name) — V.P. Chief Patent Counsel (Title)

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

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

Electronic Acknowledgement Receipt

EFS ID:	4773209
Application Number:	09910412
International Application Number:	
Confirmation Number:	2398
Title of Invention:	Network interface device and broadband local area network using coaxial cable
First Named Inventor/Applicant Name:	Itzhak Gurantz
Customer Number:	77676
Filer:	Bruce Wayne Greenhaus/Tim Ellis
Filer Authorized By:	Bruce Wayne Greenhaus
Attorney Docket Number:	9202
Receipt Date:	11-FEB-2009
Filing Date:	21-JUL-2001
Time Stamp:	12:54:50
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		E010001USU1_POA-3_73b_2-11-09.pdf	1266026 e0af0ad7caa007e75cdb3449ae035addf0916e9d	yes	2

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Power of Attorney	1	1
	Assignee showing of ownership per 37 CFR 3.73(b).	2	2
Warnings:			
Information:			
	Total Files Size (in bytes):	1266026	

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

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

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

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:
Gurantz, et al.

Serial No.: 09/910,412

Filed: June 21, 2001

For: NETWORK INTERFACE DEVICE AND BROADBAND LOCAL AREA NETWORK USING COAXIAL CABLE

Group Art Unit: 2421

Confirmation No. 2398

AMENDMENT

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

Attention: Sumaiya A. Chowdhury
Examiner

Dear Sir:

In response to the Office Action of October 20th, 2008, please note the following remarks and comments:

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

Remarks/Comments begin on page 6 of this paper.

I hereby certify that this correspondence is being electronically deposited with the Commissioner for Patents through the USPTO electronic filing system, on:

September 24, 2008
(Date of Deposit)

Tim L. Ellis
(Name of Person Making Deposit)

/Tim L. Ellis/
(Signature)

AMENDMENTS TO THE CLAIMS:

1-4. (Cancelled)

5. (Currently Amended) A signal distribution network comprising:

a filter located at the point of entry of a building tuned to reject ~~reflect~~ network signals originating in the building ~~back into the building~~, such that the network signals originating in the building do not pass through the filter, but rather are reflected back into the building;

at least one signal splitter, the signal splitter having a common port and a plurality of tap ports, the common port of the signal splitter being coupled to the filter; and

a plurality of terminal devices, each terminal device being coupled to a tap port of at least one signal splitter, at least one of the terminal devices providing frequency bins with more transmit bits which occupy parts of the channel where the signal to noise ratio (SNR) is high;

wherein the reflections from the filter provide a path for terminal devices back through the tap port of the signal splitter and out each other tap port to transmit signals to other terminal devices thus allowing terminal devices to communicate directly with each other to form the signal distribution network.

6-17 (Cancelled)

18. (Previously Amended) The signal distribution network of claim 5, wherein at least one of the communication channels between terminal devices uses time division duplex protocol for communications and the communications are synchronized by broadcasting a beacon message on the network.

19-22. (Cancelled)

23. (Previously Amended) The signal distribution network of claim 5, wherein the signal modulation used by the terminal devices is orthogonal frequency division multiplexing (OFDM) and the modulation order of each OFDM carrier is adjusted according to the signal

to noise ratio (SNR) at each OFDM carrier frequency to overcome frequency selective channel impairments caused by the reflections from the filter.

24. (Previously Amended) The signal distribution network of claim 18, wherein the power level of each OFDM carrier is adjusted according to the signal loss at each OFDM carrier frequency to overcome frequency selective channel impairments caused by the reflections from the filter.

25. (Currently Amended) A broadband local area network using coaxial cable building wiring as a communication channel, the network comprising:

a plurality of terminal devices, each terminal device communicating with other terminal devices using orthogonal frequency division multiplexing (OFDM) modulation, at least one of the terminal devices providing frequency bins with more transmit bits which occupy parts of the channel where the signal to noise ratio (SNR) is high;

a network of building cables coupled to the plurality of terminal devices; and

a filter having a first and second port, the first port connected to a building point of entry and the second port connected to the plurality of terminal devices via the network of building cables, wherein signals transmitted by any of the terminal devices and received at the second port of the filter are rejected by the filter such that such signals do not pass through the filter, but rather are reflected back into the network of building cables in order to create a communication path between the transmitting terminal device and at least one other terminal device coupled to the network of building cables.

26. (Previously Amended) The broadband local area network of claim 25 wherein the modulation order of each OFDM carrier is adjusted according to the signal to noise ratio (SNR) at each OFDM carrier frequency to overcome frequency selective channel impairments present in the coaxial building wiring caused by the reflections from the filter.

27. (Previously Amended) The broadband local area network of claim 25, wherein the power level of each OFDM carrier is adjusted according to the signal loss at each OFDM

carrier frequency to overcome frequency selective channel impairments present in the coaxial building wiring caused by the reflections from the filter.

28. (Previously Amended) The broadband local area network of claim 25 wherein the frequency used for communicating is above the cable television band.

29. (Currently Amended) A broadband local area network for transmitting modulated signals using coaxial cable building wiring containing a plurality of branches comprising:

a filter located at the point of entry of the building wiring that rejects ~~reflects~~ network signals originating in the building wiring such that the rejected network signals do not pass through the filter, but rather are reflected by the filter back into all branches of the building wiring;

at least one signal splitter;

a plurality of terminal devices connected to the wiring branches, each terminal device capable of communicating with other terminal devices the reflected signal path created by the filter, wherein the terminal devices perform equalization on the received signal that restores a flat frequency response to overcome communication channel impairments caused by the reflected signals.

30. (Previously Amended) The network of claim 29 wherein the equalization is frequency domain equalization.

31. (Previously Amended) The network of claim 29 wherein the equalization is time domain equalization.

32. (Previously Amended) The network of claim 29 wherein the equalization is adaptive.

33. (Previously Amended) The network of claim 29 wherein the terminal devices use orthogonal frequency division multiplexing (OFDM) modulation to overcome the communication channel impairments caused by the reflected signals.

34. (Previously Amended) The network of claim 32 wherein the terminal devices use orthogonal frequency division multiplexing (OFDM) modulation to overcome the communication channel impairments caused by the reflected signals.

35. (Previously Presented) The network of claim 34 wherein the terminal devices use forward error correction to recover the transmitted signals without errors.

36. (Previously Amended) The broadband local area network of claim 25, wherein at least one of the communication channels between terminal devices uses time division duplex protocol for communications and the communications_are synchronized by broadcasting a beacon message on the network.

37. (Previously Amended) The broadband local area network of claim 29, wherein at least one of the communication channels between terminal devices uses time division duplex protocol for communications and the communications are synchronized by broadcasting a beacon message on the network.

REMARKS/ARGUMENTS

Claims 5, 18, and 23-37 are pending in the application. Claims 5, 18, and 23-37 were rejected. Applicants have amended Claims 5, 25, and 29. Applicants respectfully request reconsideration and allowance of all pending claims.

Discussion of Rejections Under 35 U.S.C. §102

Claims 5, 23, 25-30 were rejected under 35 U.S.C. §102(e) as being Anticipated by Kliger. The Examiner indicated that Applicants' arguments are not persuasive. The Examiner once again disputes Applicants' contention that Kliger does not teach or suggest using a filter to reflect the signals back through the splitter for transmission to other devices in the network. In order to further clarify the issues, Applicants have amended the claims to recite that the filter is "tuned to **reject** network signals originating in the building, such that the network signals originating in the building **do not pass through the filter**, but rather are reflected back into the building.

Applicants respectfully point out to the Examiner that a rejection based upon 102(e) requires that the Examiner identify within the cited reference relied upon, each and every element recited in the claims being rejected. In particular, Applicants contend that the Examiner has failed to show that the references cited disclose a filter as recited in independent claims 5, 25, and 29.

Examiner has stated that:

> Kliger teaches a signal distribution network comprising: a filter (44 - fig. 2) located at the point of entry of a building tuned to reflect network signals originating in the building back into the building - (HRU 44 is located within demarcation point unit 14 which is located at the point of entry of the building. [0055], [0056]).

The Examiner provides support for this contention in paragraph 2 of the Office Action dated 10/20/08, which has the heading "Response to Arguments". The Examiner contends that "Fig.2 in Kliger illustrates the demarcation point unit 14 which reflects incoming signals from various devices in a home network." However, as noted by Applicant in earlier

responses (and as is made more clear by the currently presented amendments that do not alter the scope of Claim 5 or the other amended claims), the HRU 44, while located within demarcation point unit 14 is located at the point of entry of the building, is not **tuned to reject** signals that originate in the building. Rather, the HRU 44 of Kliger takes those signals in and loops them back out after processing those signals. The amount of hardware necessary to perform that looping function (as opposed to rejecting the signal, as recited in the currently amended claims) is significantly more than just the filter that is recited in currently presented claims, such as Claim 5. Kliger at paragraph [55] states:

> FIG. 2A shows another embodiment of the HRU 44 including a diplexer 42, band pass (BP) filters 46, 48, amplifiers 50, 52, an **RF down-converter 54, an RF up-converter 56** and an intermediate frequency filter and amplifier unit 58. (emphasis added).

It should be clear that there is a significant difference between the Kliger **looping** HRU 44 which requires that the signal be filtered, up and down converted, amplified, filtered again, etc. and the simple structure of the **filter tuned to reject signals** originating from inside the building. More specifically, **Kliger does not teach or suggest a filter tuned to reject signals** in order to reflect those signals back to their source. The ultimate end result is the same, that is, to return signals back to the building. However, the structure that is claimed for achieving this end result is completely different from that disclosed by Kliger.

Applicants believe that by rephrasing the language of the claims to recite that the filter is **tuned to reject the signals and not to allow the signals to pass** that Applicants will more clearly distinguish the claimed invention from Kliger's disclosed HRU 44 which performs the looping function noted above and which the Examiner so eloquently described in the most recent office action. Applicants believe that it should be quite clear in light of the current amendments that it is the particular claimed structure that distinguishes the present claims from Kliger and not the fact that both Kliger and the claimed invention return signals to the building to allow devices within the building to communicate with one another through circuitry provided at the point of demarcation.

Accordingly, Applicants respectfully request that the Examiner reconsider the applicant's contention that the references, neither alone nor in combination, teach nor suggest

all claimed features. Even more particularly, Applicants respectfully still contend that none of the references teach, suggest or motivate one of ordinary skill in the art to make the claimed invention, since none of the cited references teach **a filter that rejects network signals and thus reflects those rejected signals** back into the building in order to allow terminals coupled to the tap ports (those ports other than the common port) within a network to communicate directly with one another. Nor would it otherwise be obvious to combine elements provided in the prior art in light of the failure of the prior art to provide the missing element of a filter tuned to reject the signals, rather than passing them and looping them back into a splitter.

Note that nothing in Kliger (and more particularly in the discussion of the HRU 44) teaches or suggests that the HRU 44 is (or uses) a filter to reject the signals that are returned to the building. **Applicants contend that the failure of the prior art to teach or disclose the use of a filter is due to the effects that were discussed in the previous response, namely the distortion that the use of a filter that reflects the signals would create. It is only by the additional improvements to the signal processing that use of such a filter becomes a consideration, and through the use of these improvements, such as the circuits for doing bitloading and power control, as those terms were discussed and described in Applicants' previous response.**

Applicant's once again point out that while the embodiment disclosed in figure 2A teaches the inclusion of two bandpass filters (BPFs) in the HRU 44, those filters are **only used for the purpose of separating the high frequencies from the low frequencies**. The two BPFs shown in figure 2A clearly **do not reject and reflect the signal** that is applied to them.

Likewise, independent Claims 25 and 29 have been amended to recite the limitations similar to those limitations discussed above with respect to Claim 5. Thus, Applicants contend that Claims 5, 25 and 29 and those claims that depend therefrom are in condition for allowance.

Discussion of Rejections Under 35 U.S.C. §103

Claims 18, 24, and 36 were rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger as applied to claim 5 above, and further in view of Manssen (5809421).

Claims 29, 30, and 33 were rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger in view of Mukherjee (6226322).

Claim 31 was rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger, and Mukherjee as applied to claim 29 above, and further in view of Kapoor (6,396,886).

Claim 35 was rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger, Mukherjee, and Ise in view of Wu.

Claims 32, 34, and 35, were rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger and Mukherjee as applied to claim 29 above, and further in view of Ise (6,778,601).

Claim 37 was rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger and Mukherjee as applied to claim 29 above, and further in view of Manssen.

It should be noted that while the Examiner has cited several additional references (including: Manssen, Zhang, Ling, Mukherjee, Kapoor, Ise and Wu) in rejecting some of the dependent claims, none of these references teach or suggest the missing element of a filter tuned to reject and reflect signals back into the network from which they were transmitted as described above and recited in the claims as now presented.

Accordingly, Applicants respectfully request reconsideration and allowance of claims 5, 25, 29 and those claims that depend therefrom.

CONCLUSION

Applicants believe that all claims pending in the application are allowable. Applicants therefore respectfully request that a timely Notice of Allowance be issued in this case.

This is a response to the Office Action mailed on 10/20/08, and as such, is submitted timely and no fee is required.

If there are any other fees due in connection with the filing of the response, please charge the fees to our Deposit Account No. 50-4613. If a fee is required for an extension of time under 37 CFR 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned.

Respectfully submitted,

Dated: January 19, 2009

By: /Bruce W. Greenhaus/

Bruce W. Greenhaus
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Print Form

PTO/SB/81 (11-08)
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POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS

Application Number	09/910,412
Filing Date	21-Jul-2001
First Named Inventor	Gurantz, Itzhak
Title	Network interface device and broadband local area network
Art Unit	2421
Examiner Name	Sumaiya A. Chowdhury
Attorney Docket Number	9202

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: 77330

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.

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☐ 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 May 19, 2003.

SIGNATURE of Applicant or Assignee of Record

Signature		Date	1-19-09
Name	Bruce W. Greenhaus	Telephone	+1 (858) 768-3679
Title and Company	V.P., Chief Patent Counsel		

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

☒ *Total of 2 forms are submitted.

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

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

Electronic Acknowledgement Receipt	
EFS ID:	4637319
Application Number:	09910412
International Application Number:	
Confirmation Number:	2398
Title of Invention:	Network interface device and broadband local area network using coaxial cable
First Named Inventor/Applicant Name:	Itzhak Gurantz
Customer Number:	77676
Filer:	Bruce Wayne Greenhaus/Tim Ellis
Filer Authorized By:	Bruce Wayne Greenhaus
Attorney Docket Number:	9202
Receipt Date:	19-JAN-2009
Filing Date:	21-JUL-2001
Time Stamp:	18:36:25
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		E010001USU1_OA_Response_1-19-09.pdf	123063 059b90637caf5ad6ce5290df38e80d70bf16aaa2	yes	10

	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	9
	Amendment/Req. Reconsideration-After Non-Final Reject	10	10

Warnings:

Information:

2		E010001USU1_POA_3-73b_Statement_1-19-09.pdf	1250198 c3833412d18c4a1666f0427a0e8798cd5382fce4	yes	2

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

Warnings:

Information:

Total Files Size (in bytes):	1373261

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.

REMARKS/ARGUMENTS

Claims 5, 18, and 23-37 are pending in the application. Claims 5, 18, and 23-37 were rejected. Applicants have amended Claims 5, 25, and 29. Applicants respectfully request reconsideration and allowance of all pending claims.

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> FIG. 2A shows another embodiment of the HRU 44 including a diplexer 42, band pass (BP) filters 46, 48, amplifiers 50, 52, an **RF down-converter 54, an RF up-converter 56** and an intermediate frequency filter and amplifier unit 58. (emphasis added).

It should be clear that there is a significant difference between the Kliger **looping** HRU 44 which requires that the signal be filtered, up and down converted, amplified, filtered again, etc. and the simple structure of the **filter tuned to reject signals** originating from inside the building. More specifically, **Kliger does not teach or suggest a filter tuned to reject signals** in order to reflect those signals back to their source. The ultimate end result is the same, that is, to return signals back to the building. However, the structure that is claimed for achieving this end result is completely different from that disclosed by Kliger.

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Accordingly, Applicants respectfully request that the Examiner reconsider the applicant's contention that the references, neither alone nor in combination, teach nor suggest

all claimed features. Even more particularly, Applicants respectfully still contend that none of the references teach, suggest or motivate one of ordinary skill in the art to make the claimed invention, since none of the cited references teach **a filter that rejects network signals and thus reflects those rejected signals** back into the building in order to allow terminals coupled to the tap ports (those ports other than the common port) within a network to communicate directly with one another. Nor would it otherwise be obvious to combine elements provided in the prior art in light of the failure of the prior art to provide the missing element of a filter tuned to reject the signals, rather than passing them and looping them back into a splitter.

Note that nothing in Kliger (and more particularly in the discussion of the HRU 44) teaches or suggests that the HRU 44 is (or uses) a filter to reject the signals that are returned to the building. **Applicants contend that the failure of the prior art to teach or disclose the use of a filter is due to the effects that were discussed in the previous response, namely the distortion that the use of a filter that reflects the signals would create. It is only by the additional improvements to the signal processing that use of such a filter becomes a consideration, and through the use of these improvements, such as the circuits for doing bitloading and power control, as those terms were discussed and described in Applicants' previous response.**

Applicant's once again point out that while the embodiment disclosed in figure 2A teaches the inclusion of two bandpass filters (BPFs) in the HRU 44, those filters are **only used for the purpose of separating the high frequencies from the low frequencies**. The two BPFs shown in figure 2A clearly **do not reject and reflect the signal** that is applied to them.

Likewise, independent Claims 25 and 29 have been amended to recite the limitations similar to those limitations discussed above with respect to Claim 5. Thus, Applicants contend that Claims 5, 25 and 29 and those claims that depend therefrom are in condition for allowance.

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Claims 29, 30, and 33 were rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger in view of Mukherjee (6226322).

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Accordingly, Applicants respectfully request reconsideration and allowance of claims 5, 25, 29 and those claims that depend therefrom.

CONCLUSION

Applicants believe that all claims pending in the application are allowable. Applicants therefore respectfully request that a timely Notice of Allowance be issued in this case.

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If there are any other fees due in connection with the filing of the response, please charge the fees to our Deposit Account No. 50-4613. If a fee is required for an extension of time under 37 CFR 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned.

Respectfully submitted,

Dated: January 19, 2009

By: /Bruce W. Greenhaus/

Bruce W. Greenhaus
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:
Gurantz, et al.

Serial No.: 09/910,412

Filed: June 21, 2001

For: NETWORK INTERFACE DEVICE AND BROADBAND LOCAL AREA NETWORK USING COAXIAL CABLE

Group Art Unit: 2421

Confirmation No. 2398

AMENDMENT

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

Attention: Sumaiya A. Chowdhury
Examiner

Dear Sir:

In response to the Office Action of October 20th, 2008, please note the following remarks and comments:

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

Remarks/Comments begin on page 6 of this paper.

I hereby certify that this correspondence is being electronically deposited with the Commissioner for Patents through the USPTO electronic filing system, on:

January 19, 2009
(Date of Deposit)

Tim L. Ellis
(Name of Person Making Deposit)

/Tim L. Ellis/
(Signature)

AMENDMENTS TO THE CLAIMS:

1-4. (Cancelled)

5. (Currently Amended) A signal distribution network comprising:

a filter located at the point of entry of a building tuned to reject ~~reflect~~ network signals originating in the building ~~back into the building~~, such that the network signals originating in the building do not pass through the filter, but rather are reflected back into the building;

at least one signal splitter, the signal splitter having a common port and a plurality of tap ports, the common port of the signal splitter being coupled to the filter; and

a plurality of terminal devices, each terminal device being coupled to a tap port of at least one signal splitter, at least one of the terminal devices providing frequency bins with more transmit bits which occupy parts of the channel where the signal to noise ratio (SNR) is high;

wherein the reflections from the filter provide a path for terminal devices back through the tap port of the signal splitter and out each other tap port to transmit signals to other terminal devices thus allowing terminal devices to communicate directly with each other to form the signal distribution network.

6-17 (Cancelled)

18. (Previously Amended) The signal distribution network of claim 5, wherein at least one of the communication channels between terminal devices uses time division duplex protocol for communications and the communications are synchronized by broadcasting a beacon message on the network.

19-22. (Cancelled)

23. (Previously Amended) The signal distribution network of claim 5, wherein the signal modulation used by the terminal devices is orthogonal frequency division multiplexing (OFDM) and the modulation order of each OFDM carrier is adjusted according to the signal

to noise ratio (SNR) at each OFDM carrier frequency to overcome frequency selective channel impairments caused by the reflections from the filter.

24. (Previously Amended) The signal distribution network of claim 18, wherein the power level of each OFDM carrier is adjusted according to the signal loss at each OFDM carrier frequency to overcome frequency selective channel impairments caused by the reflections from the filter.

25. (Currently Amended) A broadband local area network using coaxial cable building wiring as a communication channel, the network comprising:

a plurality of terminal devices, each terminal device communicating with other terminal devices using orthogonal frequency division multiplexing (OFDM) modulation, at least one of the terminal devices providing frequency bins with more transmit bits which occupy parts of the channel where the signal to noise ratio (SNR) is high;

a network of building cables coupled to the plurality of terminal devices; and

a filter having a first and second port, the first port connected to a building point of entry and the second port connected to the plurality of terminal devices via the network of building cables, wherein signals transmitted by any of the terminal devices and received at the second port of the filter are rejected by the filter such that such signals do not pass through the filter, but rather are reflected back into the network of building cables in order to create a communication path between the transmitting terminal device and at least one other terminal device coupled to the network of building cables.

26. (Previously Amended) The broadband local area network of claim 25 wherein the modulation order of each OFDM carrier is adjusted according to the signal to noise ratio (SNR) at each OFDM carrier frequency to overcome frequency selective channel impairments present in the coaxial building wiring caused by the reflections from the filter.

27. (Previously Amended) The broadband local area network of claim 25, wherein the power level of each OFDM carrier is adjusted according to the signal loss at each OFDM

carrier frequency to overcome frequency selective channel impairments present in the coaxial building wiring caused by the reflections from the filter.

28. (Previously Amended) The broadband local area network of claim 25 wherein the frequency used for communicating is above the cable television band.

29. (Currently Amended) A broadband local area network for transmitting modulated signals using coaxial cable building wiring containing a plurality of branches comprising:

a filter located at the point of entry of the building wiring that rejects ~~reflects~~ network signals originating in the building wiring such that the rejected network signals do not pass through the filter, but rather are reflected by the filter back into all branches of the building wiring;

at least one signal splitter;

a plurality of terminal devices connected to the wiring branches, each terminal device capable of communicating with other terminal devices the reflected signal path created by the filter, wherein the terminal devices perform equalization on the received signal that restores a flat frequency response to overcome communication channel impairments caused by the reflected signals.

30. (Previously Amended) The network of claim 29 wherein the equalization is frequency domain equalization.

31. (Previously Amended) The network of claim 29 wherein the equalization is time domain equalization.

32. (Previously Amended) The network of claim 29 wherein the equalization is adaptive.

33. (Previously Amended) The network of claim 29 wherein the terminal devices use orthogonal frequency division multiplexing (OFDM) modulation to overcome the communication channel impairments caused by the reflected signals.

34. (Previously Amended) The network of claim 32 wherein the terminal devices use orthogonal frequency division multiplexing (OFDM) modulation to overcome the communication channel impairments caused by the reflected signals.

35. (Previously Presented) The network of claim 34 wherein the terminal devices use forward error correction to recover the transmitted signals without errors.

36. (Previously Amended) The broadband local area network of claim 25, wherein at least one of the communication channels between terminal devices uses time division duplex protocol for communications and the communications_are synchronized by broadcasting a beacon message on the network.

37. (Previously Amended) The broadband local area network of claim 29, wherein at least one of the communication channels between terminal devices uses time division duplex protocol for communications and the communications are synchronized by broadcasting a beacon message on the network.

REMARKS/ARGUMENTS

Claims 5, 18, and 23-37 are pending in the application. Claims 5, 18, and 23-37 were rejected. Applicants have amended Claims 5, 25, and 29. Applicants respectfully request reconsideration and allowance of all pending claims.

Discussion of Rejections Under 35 U.S.C. §102

Claims 5, 23, 25-30 were rejected under 35 U.S.C. §102(e) as being Anticipated by Kliger. The Examiner indicated that Applicants' arguments are not persuasive. The Examiner once again disputes Applicants' contention that Kliger does not teach or suggest using a filter to reflect the signals back through the splitter for transmission to other devices in the network. In order to further clarify the issues, Applicants have amended the claims to recite that the filter is "tuned to **reject** network signals originating in the building, such that the network signals originating in the building **do not pass through the filter**, but rather are reflected back into the building.

Applicants respectfully point out to the Examiner that a rejection based upon 102(e) requires that the Examiner identify within the cited reference relied upon, each and every element recited in the claims being rejected. In particular, Applicants contend that the Examiner has failed to show that the references cited disclose a filter as recited in independent claims 5, 25, and 29.

Examiner has stated that:

> Kliger teaches a signal distribution network comprising: a filter (44 - fig. 2) located at the point of entry of a building tuned to reflect network signals originating in the building back into the building - (HRU 44 is located within demarcation point unit 14 which is located at the point of entry of the building. [0055], [0056]).

The Examiner provides support for this contention in paragraph 2 of the Office Action dated 10/20/08, which has the heading "Response to Arguments". The Examiner contends that "Fig.2 in Kliger illustrates the demarcation point unit 14 which reflects incoming signals from various devices in a home network." However, as noted by Applicant in earlier

responses (and as is made more clear by the currently presented amendments that do not alter the scope of Claim 5 or the other amended claims), the HRU 44, while located within demarcation point unit 14 is located at the point of entry of the building, is not **tuned to reject** signals that originate in the building. Rather, the HRU 44 of Kliger takes those signals in and loops them back out after processing those signals. The amount of hardware necessary to perform that looping function (as opposed to rejecting the signal, as recited in the currently amended claims) is significantly more than just the filter that is recited in currently presented claims, such as Claim 5. Kliger at paragraph [55] states:

> FIG. 2A shows another embodiment of the HRU 44 including a diplexer 42, band pass (BP) filters 46, 48, amplifiers 50, 52, an **RF down-converter 54, an RF up-converter 56** and an intermediate frequency filter and amplifier unit 58. (emphasis added).

It should be clear that there is a significant difference between the Kliger **looping** HRU 44 which requires that the signal be filtered, up and down converted, amplified, filtered again, etc. and the simple structure of the **filter tuned to reject signals** originating from inside the building. More specifically, **Kliger does not teach or suggest a filter tuned to reject signals** in order to reflect those signals back to their source. The ultimate end result is the same, that is, to return signals back to the building. However, the structure that is claimed for achieving this end result is completely different from that disclosed by Kliger.

Applicants believe that by rephrasing the language of the claims to recite that the filter is **tuned to reject the signals and not to allow the signals to pass** that Applicants will more clearly distinguish the claimed invention from Kliger's disclosed HRU 44 which performs the looping function noted above and which the Examiner so eloquently described in the most recent office action. Applicants believe that it should be quite clear in light of the current amendments that it is the particular claimed structure that distinguishes the present claims from Kliger and not the fact that both Kliger and the claimed invention return signals to the building to allow devices within the building to communicate with one another through circuitry provided at the point of demarcation.

Accordingly, Applicants respectfully request that the Examiner reconsider the applicant's contention that the references, neither alone nor in combination, teach nor suggest

all claimed features. Even more particularly, Applicants respectfully still contend that none of the references teach, suggest or motivate one of ordinary skill in the art to make the claimed invention, since none of the cited references teach **a filter that rejects network signals and thus reflects those rejected signals** back into the building in order to allow terminals coupled to the tap ports (those ports other than the common port) within a network to communicate directly with one another. Nor would it otherwise be obvious to combine elements provided in the prior art in light of the failure of the prior art to provide the missing element of a filter tuned to reject the signals, rather than passing them and looping them back into a splitter.

Note that nothing in Kliger (and more particularly in the discussion of the HRU 44) teaches or suggests that the HRU 44 is (or uses) a filter to reject the signals that are returned to the building. **Applicants contend that the failure of the prior art to teach or disclose the use of a filter is due to the effects that were discussed in the previous response, namely the distortion that the use of a filter that reflects the signals would create. It is only by the additional improvements to the signal processing that use of such a filter becomes a consideration, and through the use of these improvements, such as the circuits for doing bitloading and power control, as those terms were discussed and described in Applicants' previous response.**

Applicant's once again point out that while the embodiment disclosed in figure 2A teaches the inclusion of two bandpass filters (BPFs) in the HRU 44, those filters are **only used for the purpose of separating the high frequencies from the low frequencies**. The two BPFs shown in figure 2A clearly **do not reject and reflect the signal** that is applied to them.

Likewise, independent Claims 25 and 29 have been amended to recite the limitations similar to those limitations discussed above with respect to Claim 5. Thus, Applicants contend that Claims 5, 25 and 29 and those claims that depend therefrom are in condition for allowance.

Discussion of Rejections Under 35 U.S.C. §103

Claims 18, 24, and 36 were rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger as applied to claim 5 above, and further in view of Manssen (5809421).

Claims 29, 30, and 33 were rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger in view of Mukherjee (6226322).

Claim 31 was rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger, and Mukherjee as applied to claim 29 above, and further in view of Kapoor (6,396,886).

Claim 35 was rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger, Mukherjee, and Ise in view of Wu.

Claims 32, 34, and 35, were rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger and Mukherjee as applied to claim 29 above, and further in view of Ise (6,778,601).

Claim 37 was rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger and Mukherjee as applied to claim 29 above, and further in view of Manssen.

It should be noted that while the Examiner has cited several additional references (including: Manssen, Zhang, Ling, Mukherjee, Kapoor, Ise and Wu) in rejecting some of the dependent claims, none of these references teach or suggest the missing element of a filter tuned to reject and reflect signals back into the network from which they were transmitted as described above and recited in the claims as now presented.

Accordingly, Applicants respectfully request reconsideration and allowance of claims 5, 25, 29 and those claims that depend therefrom.

CONCLUSION

Applicants believe that all claims pending in the application are allowable. Applicants therefore respectfully request that a timely Notice of Allowance be issued in this case.

This is a response to the Office Action mailed on 10/20/08, and as such, is submitted timely and no fee is required.

If there are any other fees due in connection with the filing of the response, please charge the fees to our Deposit Account No. 50-4613. If a fee is required for an extension of time under 37 CFR 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned.

Respectfully submitted,

Dated: January 19, 2009

By: /Bruce W. Greenhaus/
Bruce W. Greenhaus
Attorney for Applicants
Registration No. 37,339

Entropic Communications, Inc.
6290 Sequence Drive
San Diego, California 92121
Telephone: (619) 980-2612
e-mail address: bruceg@entropic.com

Print Form

PTO/SB/81 (11-08)
Approved for use through 11/30/2011. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS

Application Number	09/910,412
Filing Date	21-Jul-2001
First Named Inventor	Gurantz, Itzhak
Title	Network interface device and broadband local area network
Art Unit	2421
Examiner Name	Sumaiya A. Chowdhury
Attorney Docket Number	9202

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: 77330

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 May 19, 2003.

SIGNATURE of Applicant or Assignee of Record

Signature		Date	1-19-09
Name	Bruce W. Greenhaus	Telephone	+1 (858) 768-3679
Title and Company	V.P., Chief Patent Counsel		

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

☒ *Total of 2 forms are submitted.

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

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Electronic Acknowledgement Receipt

EFS ID:	4637365
Application Number:	09910412
International Application Number:	
Confirmation Number:	2398
Title of Invention:	Network interface device and broadband local area network using coaxial cable
First Named Inventor/Applicant Name:	Itzhak Gurantz
Customer Number:	77676
Filer:	Bruce Wayne Greenhaus/Tim Ellis
Filer Authorized By:	Bruce Wayne Greenhaus
Attorney Docket Number:	9202
Receipt Date:	19-JAN-2009
Filing Date:	21-JUL-2001
Time Stamp:	18:52:01
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		E010001USU1_2ND_OA_Response_1-19-09.pdf	123078 3f7485589e16a99a0753921f9d1584dcdc5be101	yes	10

	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	9
	Amendment/Req. Reconsideration-After Non-Final Reject	10	10
Warnings:			
Information:			

2		E010001USU1_POA_3-73b_Statement_1-19-09.pdf	1250198 c3833412d18c4a1666f0427a0e8798cd5382fce4	yes	2

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Power of Attorney	1	1
	Assignee showing of ownership per 37 CFR 3.73(b).	2	2
Warnings:			
Information:			
	Total Files Size (in bytes):	1373276	

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

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

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

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

PTO/SB/96 (01-09)
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STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Entropic Communications Inc.

Application No./Patent No.: 09/910,412 Filed/Issue Date: 21-Jul-2001

Titled:
Network interface device and broadband local area network using coaxial cable

Entropic Communications Inc., a Corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.

states that it is:

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

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

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

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

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

1. From: Gurantz et al. To: Entropic Communications Inc.
The document was recorded in the United States Patent and Trademark Office at
Reel 012499, Frame 0136, or for which a copy thereof is attached.

2. From: Entropic Communications Inc. To: Silicon Valley Banks
The document was recorded in the United States Patent and Trademark Office at
Reel 013016, Frame 0075, or for which a copy thereof is attached.

3. From: Silicon Valley Bank To: Entropic Communications Inc.
The document was recorded in the United States Patent and Trademark Office at
Reel 014072, Frame 0754, 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 1-19-09 Date

Bruce W. Greenhaus V.P. Chief Patent Counsel
Printed or Typed Name Title

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

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STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Entropic Communications Inc.

Application No./Patent No.: 09/910,412 Filed/Issue Date: 21-Jul-2001

Titled:
Network interface device and broadband local area network using coaxial cable

Entropic Communications Inc. , a Corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.

states that it is:

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

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

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

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

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

1. From: Gurantz et al. To: Entropic Communications Inc.
The document was recorded in the United States Patent and Trademark Office at
Reel 012499, Frame 0136, or for which a copy thereof is attached.

2. From: Entropic Communications Inc. To: Silicon Valley Banks
The document was recorded in the United States Patent and Trademark Office at
Reel 013016, Frame 0075, or for which a copy thereof is attached.

3. From: Silicon Valley Bank To: Entropic Communications Inc.
The document was recorded in the United States Patent and Trademark Office at
Reel 014072, Frame 0754, 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

1-19-09
Date

Bruce W. Greenhaus
Printed or Typed Name

V.P. Chief Patent Counsel
Title

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

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	
09/910,412	07/21/2001	☐ To be Mailed

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☐ RATE ($)	SMALL ENTITY FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 01/19/2009

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 17	Minus	** 20	= 0	X $ =		OR	X $52=	0
Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $ =		OR	X $220=	0
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

AMENDMENT

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

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

Legal Instrument Examiner:
/BRUCE D. HARRISON/

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:
Gurantz, et al.

Serial No.: 09/910,412

Filed: June 21, 2001

For: NETWORK INTERFACE DEVICE AND BROADBAND LOCAL AREA NETWORK USING COAXIAL CABLE

Group Art Unit: 2623

AMENDMENT

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

Attention: Sumaiya A. Chowdhury
Examiner

Dear Sir:

In response to the Office Action of July 24, 2007, please amend the above-identified application as follows:

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

Remarks/Arguments begin on page 7 of this paper.

I hereby certify that this correspondence is being sent via first class mail addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on:

_____
(Date of Deposit)

_____
(Name of Person Making Deposit)

_____
(Signature)

AMENDMENTS TO THE CLAIMS:

1-4. (Cancelled)

5. (Currently Amended) A signal distribution network ~~for transmitting modulated signals using coaxial cable building wiring containing a plurality of branches as a communication channel~~ comprising:

a ~~network interface device~~ filter located at the point of entry of ~~the~~ a building ~~wiring that reflects~~ tuned to reflect network signals originating in the building ~~wiring~~ back into ~~all branches of~~ the building ~~wiring wherein the reflection introduced by the network interface device produces a multipath signal in the wiring branches that creates impairments to the performance of the communication channel~~;

at least one signal splitter, the signal splitter having a common port and a plurality of tap ports, the common port of the signal splitter being coupled to the filter; and

a plurality of terminal devices, ~~wherein the signal modulation used by the terminal devices is orthogonal frequency division multiplexing to overcome the communication channel impairments caused by the network interface device~~ each terminal device being coupled to a tap port of at least one signal splitter, at least one of the terminal devices providing frequency bins with more transmit bits which occupy parts of the channel where the signal to noise ratio (SNR) is high;

wherein the ~~network interface device provides~~ reflections from the filter provide a path for terminal devices back through the tap port of the signal splitter and out each other tap port to transmit signals to ~~and receive from~~ other terminal devices ~~and wherein~~ thus allowing terminal devices to communicate directly with each other to form the signal distribution network.

6-17 (Cancelled)

18. (Currently Amended) The signal distribution network of claim 5, ~~further comprising a method of sharing~~ wherein at least one of the communication ~~channel~~ channels between terminal devices ~~using~~ uses time division duplex protocol for communications and the communications ~~that~~ are synchronized by broadcasting a beacon message on the network.

19-22. (Cancelled)

23. (Currently Amended) The signal distribution network of claim 5 ~~18~~, wherein the signal modulation used by the terminal devices is orthogonal frequency division multiplexing (OFDM) and the modulation order of each OFDM carrier is adjusted according to the signal to noise ratio (SNR) at each OFDM carrier frequency to overcome frequency selective channel impairments ~~present in the coaxial building wiring~~ caused by the reflections from the ~~network interface device~~ filter.

24. (Currently Amended) The signal distribution network of claim 18, wherein the power level of each OFDM carrier is adjusted according to the signal loss at each OFDM carrier frequency to overcome frequency selective channel impairments ~~present in the coaxial building wiring~~ caused by the reflections from the ~~network interface device~~ filter.

25. (Currently Amended) A broadband local area network ~~to enable terminal devices to transmit messages to and receive messages from other terminal devices~~ using coaxial cable building wiring as a communication channel ~~comprising a point of entry and a plurality of branches connected to terminal devices~~, the network comprising:

~~a network interface device connected to the point of entry of the building wiring comprising:~~

~~a first port connected to the point of entry side of a branch of the building wiring;~~

~~a second port connected to the terminal device side of a branch of the building wiring; and~~

~~a frequency selective signal at the second port is reflected out the port and back a reflected signal path is created that produces a multipath signal in the wiring branches that creates impairments to the performance of the communication channel;~~

a plurality of terminal devices ~~connected to the wiring branches~~, each terminal device ~~bidirectionally~~ communicating with other terminal devices ~~through the reflected signal path created by the network interface device~~ using orthogonal frequency division multiplexing (OFDM) modulation, at least one of the terminal devices

providing frequency bins with more transmit bits which occupy parts of the channel where the signal to noise ratio (SNR) is high ~~to overcome the communication channel impairments caused by the network interface device~~.;

a network of building cables coupled to the plurality of terminal devices; and

a filter having a first and second port, the first port connected to a building point of entry and the second port connected to the plurality of terminal devices via the network of building cables, wherein signals transmitted by any of the terminal devices and received at the second port of the filter are reflected back into the network of building cables in order to create a communication path between the transmitting terminal device and at least one other terminal device coupled to the network of building cables.

26. (Currently Amended) The broadband local area network of claim 25 wherein the modulation order of each OFDM carrier is adjusted according to the signal to noise ratio (SNR) at each OFDM carrier frequency to overcome frequency selective channel impairments present in the coaxial building wiring caused by the reflections from the ~~network interface device~~ filter.

27. (Currently Amended) The broadband local area network of claim 25, wherein the power level of each OFDM carrier is adjusted according to the signal loss at each OFDM carrier frequency to overcome frequency selective channel impairments present in the coaxial building wiring caused by the reflections from the ~~network interface device~~ filter.

28. (Previously Amended) The broadband local area network of claim 25 wherein the frequency used for communicating is above the cable television band.

29. (Currently Amended) A broadband local area network for transmitting modulated signals using coaxial cable building wiring containing a plurality of branches comprising:

a ~~network interface device~~ filter located at the point of entry of the building wiring that reflects network signals originating in the building wiring back into all branches of the building wiring ~~wherein the network interface device is frequency dependent and reflects signals by reflecting a predetermined frequency band of~~

~~signals, wherein the reflected signals produce a multipath signal in the wiring branches that creates impairments to the performance of the communication channel~~;

at least one signal splitter;

a plurality of terminal devices connected to the wiring branches, each terminal device capable of ~~bidirectionally~~ communicating with other terminal devices ~~through~~ using the reflected signal path created by the ~~network interface device~~ filter, wherein the terminal devices perform equalization on the received signal that restores a flat frequency response to overcome ~~the~~ communication channel impairments caused by the reflected signals ~~multipath signals~~.

30. (Previously Amended) The network of claim 29 wherein the equalization is frequency domain equalization.

31. (Previously Amended) The network of claim 29 wherein the equalization is time domain equalization.

32. (Previously Amended) The network of claim 29 wherein the equalization is adaptive.

33. (Previously Amended) The network of claim 29 wherein the terminal devices use orthogonal frequency division multiplexing (OFDM) modulation to overcome the communication channel impairments caused by the reflected signals.

34. (Previously Amended) The network of claim 32 wherein the terminal devices use orthogonal frequency division multiplexing (OFDM) modulation to overcome the communication channel impairments caused by the reflected signals.

35. (Previously Presented) The network of claim 34 wherein the terminal devices use forward error correction to recover the transmitted signals without errors.

36. (Currently Amended) The broadband local area network of claim 25, ~~further comprising a method of sharing~~ wherein at least one of the communication ~~channel~~ channels

between terminal devices ~~using~~ uses time division duplex protocol for communications and the communications ~~that~~ are synchronized by broadcasting a beacon message on the network.

37. (Currently Amended) The broadband local area network of claim 29, ~~further comprising a method of sharing~~ wherein at least one of the communication ~~channel~~ channels between terminal devices ~~using~~ uses time division duplex protocol for communications and the communications ~~that~~ are synchronized by broadcasting a beacon message on the network.

REMARKS/ARGUMENTS

Claims 5, 18, and 23-37 are pending in the application. Claims 5, 18, and 23-37 were rejected. Applicants, by this paper, amend claims 5, 18, 23-27, 29, 36 and 37. No new matter is added by amendment. Applicants respectfully request reconsideration and allowance of all pending claims.

Discussion of Rejections Under 35 U.S.C. §103

Claims 5, 25 and 28 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kliger in view of Wu.

To establish a *prima facie* case of obviousness, the prior art reference, or references when combined, must provide all of the claim limitations and must establish that it would be obvious for one of ordinary skill in the art to combine the references in a way that would successfully result in the claimed invention.

Applicants contend that, in light of the amendments that have been made to the claims as now presented, a *prima facie* case of obviousness cannot be established and Applicants respectfully traverse the rejections. In particular, Applicants contend that the references, neither alone nor in combination, teach nor suggest all claimed features. Even more particularly, Applicants contend that none of the references teach, suggest or motivate one of ordinary skill in the art to make the claimed invention, since none of the cited references teach a filter that reflects signals back into a splitter in order to allow terminals coupled to the tap ports (those ports other than the common port) within a network to communicate directly with one another. Nor would it otherwise be obvious to combine elements provided in the prior art in light of the failure of the prior art to provide the missing element of a filter tuned to reflect signals back into a splitter.

While Applicants are well aware that the use of filters has a long a rich history, the use of a filter in the present context would not be obvious. That is because use of a filter recited in the present claims would typically result in a relatively weak reflection that would not provide sufficient energy reflecting back into the network. This is true even without a splitter to attenuate the reflection, but all the more so when the splitter is in the path of the

reflected signal. Filters that are sharp enough to reflect sufficient energy in the signal are difficult to make and expensive to purchase. It is for this reason that Kliger has not disclosed the use of filters to perform this function. The benefits to using such filters are typically not considered to be achievable in a practical solution. However, what makes it possible for the present invention to take advantage of the use of such a filter as a means for reflecting the signals back into the network is the use of two techniques (used either separately or together) for dealing with the variable nature of the interference that occurs to the transmission of the data over the network. The first of these techniques is known as "bitloading" and is disclosed on page 18, line 12, et al. of the present application. In accordance with the technique,

> Higher SNR channels can support higher data capacity. Frequency bins occupying parts of the channel where the SNR is high can be used to transmit more bits. Each carrier may be modulated with a different order constellation, where higher SNR frequencies can bear a higher order constellation, and the resulting closer spacing of the constellation points. Frequencies with the lower SNR use lower order constellation such as QPSK. (Original Specification page 18, line 12-19).

The second of these techniques is referred to as "power control". This term is used by those skilled in the art to describe several different techniques, however in this case the term is used to refer to the technique described on page 18 at lines 21-28, which states that:

> The power in individual frequency bins can be adjusted to compensate for insertion loss that varies as a function of frequency. The power level in regions of the channel can be altered by scaling the complex valued vector for the bins where power adjustment is needed before applying the inverse Fourier transform. **In order to avoid interference with certain bands in the RF spectrum, the power level of certain bins can be reduced to zero**.

Accordingly, Claim 5 has been amended to recite the use of the bitloading technique together with the filter and a Claim 24 recites the use of power control together with the filter.

It should be noted that Claim 18, 23 and 24 depend from Claim 5 and accordingly, for the reasons stated above, each of these claims should are considered to be in condition for allowance.

Claim 25 has been amended to recite the filter as described above and the bitloading technique discussed in connection with the use of the filter. Since, as noted above, none of the references teach or suggest the filter recited in Claim 25, Applicants respectfully contend that Claim 25 is also in condition for allowance. Claims 26-28 and 36 depend from Claim 25 and so for the same reasons as noted with regard to Claim 25, Applicants respectfully content that Claims 26-28 and 36 are in condition for allowance.

Likewise, Claim 29 has been amended to recite the filter discussed above with respect to Claim 5 and thus Applicants contend that Claim 29 and those claims that depend therefrom (Claims 30-35, and 37) are in condition for allowance.

It should be noted that while the Examiner has cited several additional references (including: Manssen, Zhang, Ling, Mukherjee and Kapoor) in rejecting some of the dependent claims, none of these references teach or suggest the missing element of a filter turned to reflect signals back into the network from which they were transmitted together with the use of bitloading and/or power control to make use of the filter viable as described above and recited in the claims as now presented.

Accordingly, Applicants respectfully request reconsideration and allowance of claims 5, 25, 29 and those claims that depend therefrom.

CONCLUSION

Applicants believe that all claims pending in the application are allowable. Applicants therefore respectfully request that a timely Notice of Allowance be issued in this case.

This is a response to the Office Action mailed on 7/24/07, and as such, is submitted together with a request for a three month extension of time and the fee required for such a three month extension of time.

If there are any other fees due in connection with the filing of the response, please charge the fees to Deposit Account No. 502165. If a fee is required for an extension of time under 37 CFR 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned.

Respectfully submitted,

Dated: January 22, 2008

By: /Michael W. Landry/

Michael W. Landry
Attorney for Applicants
Registration No. 38,216
858-229-6801

PTO/SB/22 (10-07)
Approved for use through 10/31/2007. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARMENT OF COMMERCE
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PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) **FY 2006** *(Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)*	Docket Number (Optional) 9202
Application Number 09/910,412	Filed 7/21/2001
For Network Interface Device and Broadband Local Area Network Using Coaxial Cable	
Art Unit 2623	Examiner Chowdhury

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

		Fee	Small Entity Fee	
☐	One month (37 CFR 1.17(a)(1))	$120	$60	$
☐	Two months (37 CFR 1.17(a)(2))	$460	$230	$
☑	Three months (37 CFR 1.17(a)(3))	$1050	$525	$ 1050
☐	Four months (37 CFR 1.17(a)(4))	$1640	$820	$
☐	Five months (37 CFR 1.17(a)(5))	$2230	$1115	$

☐ 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.~~ Filed online

☐ 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 502165. I have enclosed a duplicate copy of this sheet.

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

I am the

☐ applicant/inventor.

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

☑ attorney or agent of record. Registration Number 38,216

☐ attorney or agent under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 _____

/Michael W. Landry/ — Signature

January 22, 2008 — Date

Michael W. Landry — Typed or printed name

858-229-6801 — Telephone Number

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

☐ Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Electronic Patent Application Fee Transmittal

Application Number:	09910412
Filing Date:	21-Jul-2001
Title of Invention:	Network interface device and broadband local area network using coaxial cable
First Named Inventor/Applicant Name:	Itzhak Gurantz
Filer:	Michael William Landry/Michelle Landry
Attorney Docket Number:	9202

Filed as Large Entity

Utility 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	1050	1050

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**1050**

Electronic Acknowledgement Receipt

EFS ID:	2745193
Application Number:	09910412
International Application Number:	
Confirmation Number:	2398
Title of Invention:	Network interface device and broadband local area network using coaxial cable
First Named Inventor/Applicant Name:	Itzhak Gurantz
Customer Number:	24244
Filer:	Michael William Landry/Michelle Landry
Filer Authorized By:	Michael William Landry
Attorney Docket Number:	9202
Receipt Date:	22-JAN-2008
Filing Date:	21-JUL-2001
Time Stamp:	01:02:08
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$ 1050
RAM confirmation Number	11234
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)

1	Amendment - After Non-Final Rejection	9202-OAresponse-831-f-2-ver2-EFS.pdf	124572 6db64144828c4b9d6011e862e35546850c6c0e8a	no	10
Warnings:					
Information:					
2	Extension of Time	9202-extension-of-time-EFS.pdf	54823 8c5c210240c69ac8d4cce4d32d22644764985470	no	1
Warnings:					
Information:					
3	Fee Worksheet (PTO-06)	fee-info.pdf	8173 076b416016b41a3f60ee06314b69b6f978d07a1e	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	187568	

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.

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

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

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

PTO/SB/06 (07-06)
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	
09/910,412	07/21/2001	☐ To be Mailed

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☐ RATE ($)	SMALL ENTITY FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 01/22/2008

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 17	Minus	** 20	= 0	X $ =		OR	X $50=	0
Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $ =		OR	X $210=	0
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

AMENDMENT

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

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

Legal Instrument Examiner:
/EUGENIA v. HARDY/

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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