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BIB DATA SHEET

CONFIRMATION NO. 2398

SERIAL NUMBER 90/019,247	FILING or 371(c) DATE 09/11/2023 RULE	CLASS 725	GROUP ART UNIT 3992	ATTORNEY DOCKET NO. 50348.109
APPLICANTS ENTROPIC COMMUNICATIONS LLC(OWNER), Residence Not Provided; RAGHAV BAJAJ, DALLAS, TX;				
INVENTORS 7594249, Residence Not Provided; IP Section HAYNES AND BOONE, LLP, Residence Not Provided; 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 application 90/019,247 09/11/2023 is a REX of 09/910,412 07/21/2001 PAT 7594249 which claims benefit of 60/288,967 05/04/2001				
** FOREIGN APPLICATIONS *****				
** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **				
Foreign Priority claimed ☐ Yes ☐ No 35 USC 119(a-d) conditions met ☐ Yes ☐ No Verified and Acknowledged ☐ Yes ☐ No Examiner's Signature _____ Initials _____		STATE OR COUNTRY ☐ Met after Allowance	SHEETS DRAWINGS 17	TOTAL CLAIMS 3
ADDRESS MCANDREWS HELD & MALLOY, LTD 500 WEST MADISON STREET SUITE 3400 CHICAGO, IL 60661 UNITED STATES				
TITLE NETWORK INTERFACE DEVICE AND BROADBAND LOCAL AREA NETWORK USING COAXIAL CABLE				
FILING FEE RECEIVED 0.00	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	



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/019,247	09/11/2023	7594249	50348.109	2398

23446 7590 09/27/2023
MCANDREWS HELD & MALLOY, LTD
500 WEST MADISON STREET
SUITE 3400
CHICAGO, IL 60661

EXAMINER
CAMPBELL, JOSHUA D

ART UNIT	PAPER NUMBER
3992	

MAIL DATE	DELIVERY MODE
09/27/2023	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



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(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

HAYNES & BOONE, LLP.
IP SECTION
2323 VICTORY AVENUE
SUITE 700
DALLAS, TX, 75219

***EX PARTE* REEXAMINATION COMMUNICATION TRANSMITTAL FORM**

REEXAMINATION CONTROL NO. 90/019,247.

PATENT UNDER REEXAMINATION 7594249.

ART UNIT 3992.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

<i>Ex Parte Reexamination Interview Summary – Pilot Program for Waiver of Patent Owner's Statement</i>	Control No.	Patent Under Reexamination is Requested	
	90/019,247	7594249	
	Examiner	Art Unit	AIA (FITF) Status
	CAMPBELL	3992	No

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

All participants (USPTO official and patent owner):

(1) MANUEL SALDANA, CRU (3) _____

(2) RONALD SPUHLER, 52245 (4) _____

Date of Telephonic Interview: 18 September 2023.

A. The USPTO official requested waiver of the patent owner's statement pursuant to the pilot program for waiver of patent owner's statement in *ex parte* reexamination proceedings.*

☐ The patent owner **agreed** to waive its right to file a patent owner's statement under 35 U.S.C. 304 in the event reexamination is ordered for the above-identified patent.

☐ The patent owner **did not agree** to waive its right to file a patent owner's statement under 35 U.S.C. 304 at this time.

☒ USPTO personnel were unable to reach the patent owner.**

B. The Patent Owner of record telephoned the Office and indicated they would like to participate in the pilot program for waiver of patent owner's statement in *ex parte* reexamination proceedings.*

☐ The Patent owner of record telephoned the Office and **agreed** to waive its right to file a patent owner's statement under 35 U.S.C. 304 in the event reexamination is ordered for the above-identified patent.

The patent owner is not required to file a written statement of this telephone communication under 37 CFR 1.560(b) or otherwise. However, any disagreement as to this interview summary must be brought to the immediate attention of the USPTO, and no later than one month from the mailing date of this interview summary. Extensions of time are governed by 37 CFR 1.550(c).

*For more information regarding this pilot program, see *Pilot Program for Waiver of Patent Owner's Statement in Ex Parte Reexamination Proceedings*, 75 Fed. Reg. 47269 (August 5, 2010), available on the USPTO Web site at <http://www.uspto.gov/patents/law/notices/2010.jsp>.

**The patent owner may contact the USPTO personnel at (571) 272-7705 or at the telephone number provided below if the patent owner decides to waive the right to file a patent owner's statement under 35 U.S.C. 304.

/MANUEL SALDANA/ (571)272-7740
Signature and telephone number of the USPTO official, who contacted, was contacted by, or attempted to contact the patent owner.

cc: Requester (if third party requester)



UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/019,247	09/11/2023	7594249	50348.109	2398

23446 7590 10/26/2023
MCANDREWS HELD & MALLOY, LTD
500 WEST MADISON STREET
SUITE 3400
CHICAGO, IL 60661

EXAMINER
CAMPBELL, JOSHUA D

ART UNIT	PAPER NUMBER
3992	

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Please find below and/or attached an Office communication concerning this application or proceeding.

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UNITED STATES PATENT AND TRADEMARK OFFICE

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HAYNES AND BOONE, LLP IP SECTION
2323 VICTORY AVENUE
SUITE 700
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***EX PARTE* REEXAMINATION COMMUNICATION TRANSMITTAL FORM**

REEXAMINATION CONTROL NO. 90/019,247 .

PATENT UNDER REEXAMINATION 7594249 .

ART UNIT 3992 .

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Order Granting Request For Ex Parte Reexamination	Control No. 90/019,247	Patent Under Reexamination 7594249	
	Examiner JOSHUA D CAMPBELL	Art Unit 3992	AIA (FITF) Status No

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

The request for *ex parte* reexamination filed 11 September 2023 has been considered and a determination has been made. An identification of the claims, the references relied upon, and the rationale supporting the determination are attached.

Attachments: a) ☐ PTO-892, b) ☒ PTO/SB/08, c) ☐ Other: _____

1. ☒ The request for *ex parte* reexamination is GRANTED.

RESPONSE TIMES ARE SET AS FOLLOWS:

For Patent Owner's Statement (Optional): TWO MONTHS from the mailing date of this communication (37 CFR 1.530 (b)). **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).**

For Requester's Reply (optional): TWO MONTHS from the **date of service** of any timely filed Patent Owner's Statement (37 CFR 1.535). **NO EXTENSION OF THIS TIME PERIOD IS PERMITTED.** If Patent Owner does not file a timely statement under 37 CFR 1.530(b), then no reply by requester is permitted.

/JOSHUA D CAMPBELL/
Primary Examiner, Art Unit 3992

cc:Requester (if third party requester)

U.S. Patent and Trademark Office
PTOL-471G(Rev. 01-13)

Office Action in *Ex Parte* Reexamination

Part of Paper No. 20231010

Decision on Request

1) A substantial new question (SNQ) of patentability affecting claim 10 of United States Patent Number 7,594,249 (hereinafter “ ‘249 Patent”) is raised by the request for *ex parte* reexamination filed 11 September 2023.

35 USC 325(d)

2) A review of the post grant history for the underlying patent indicates that there have been no other Office post grant challenges made to the patent (Reexamination Proceedings or Inter Partes Review, Post Grant Review, Covered Business Method trials). Accordingly, a discretionary denial of reexamination pursuant to 35 USC 325(d) is not applicable.

Information Disclosure Statement

3) Where the IDS citations are submitted but not described, the examiner is only responsible for cursorily reviewing the references. The initials of the examiner on the PTO-1449 indicate only that degree of review unless the reference is either applied against the claims, or discussed by the examiner as pertinent art of interest, in a subsequent office action.

See Guidelines for Reexamination of Cases in View of *In re Portola Packaging, Inc.*, 110 F.3d 786, 42 USPQ2d 1295 (Fed. Cir. 1997), 64 FR at 15347, 1223 Off. Gaz. Pat. Office at 125 (response to comment 6).

Consideration by the examiner of the information submitted in an IDS means that the examiner will consider the documents in the same manner as other documents in Office search files are considered by the examiner while conducting a search of the prior art in a proper field of search. The initials of the examiner placed adjacent to the citations on the PTO-1449 or PTO/SB/08A and 08B or its equivalent mean that the information has been considered by the examiner to the extent noted above.

Regarding IDS submissions MPEP 2256 recites the following: "Where patents, publications, and other such items of information are submitted by a party (patent owner) in compliance with the requirements of the rules, the requisite degree of consideration to be given to such information will be normally limited by the degree to which the party filing the information citation has explained the content and relevance of the information."

Affidavits, Declarations, or Other Written Evidence

4) The Examiner recognizes that declaration by Stuart Lipoff (Exhibit 1008) has been referenced in support of Third Party Requester. The declaration has been considered and made of record. The Examiner further notes that affidavits or declarations or other written evidence which explain the contents or pertinent dates of prior art patents or printed publications in more detail may be considered in reexamination (see: MPEP 2258(I)(E)), but any rejection must be based upon the prior art patents or printed publications as explained by the affidavits or declarations or other written evidence. The rejection in such circumstances cannot be based on the affidavits or declarations or other written evidence as such, but must be based on the prior art patents or printed publications. In the instant case, the submitted Lipoff Declaration at least further explains the contents of the prior art patents and printed publications in more detail.

Prior art cited in the Request

5) The present request indicates that the Requester considers that a substantial new question of patentability is raised as to claim 10 of the '249 Patent by the following references:

- a. **Afshary** – U.S. Patent Application Publication No. 2006/0218593
- b. **Mills** – U.S. Patent No. 6,795,450
- c. **Amit** – U.S. Patent No. 7,127,734

Prosecution History

6) The '249 Patent application was assigned serial number 09/910,412 (hereinafter "'412 application"), filed July 1, 2001. During the original prosecution, the '412 application was initially filed with claims 1-18. The '412 application had priority to provisional application 60/288,967, filed May 4, 2001.

In a first action mailed July 28, 2005, the examiner rejected all claims over Carhart or Carhart in view of Boesch, O'Shea, Langlais, Paul, Margulis, and/or Horton.

In response the patent owner filed an amendment on October 14, 2005, amending claims 5, 9, 17, and 18 and cancelling claims 10-16.

In response to this amendment, the examiner mailed a final rejection on January 11, 2006, rejecting all claims over Carhart or Carhart in view of Boesch, O'Shea, Langlais, Paul, Margulis, and/or Horton.

In response the patent owner filed an amendment on April 17, 2006, amending claims 1 and 5 and adding new claims 19-22.

In response to this amendment, the examiner mailed a non-final rejection on May 26, 2006, rejecting all claims over Li or Li in view of Manchester, Boesch, O'Shea, Langlais, Paul, Margulis, Horton, Zelenz, and/or Carhart.

In response the patent owner filed an amendment on September 14, 2006, amending claims 5 and 18, cancelling claims 1-4, 6-9, 17, and 19-22, and adding new claims 23-35.

In response to this amendment, the examiner mailed a final rejection on November 28, 2006, rejecting all claims over Li in view of Manchester, Langlais, Horton, Ling, Zhang, Van Cleave, Mukherjee, Kapoor, Ise, and/or Nakakita.

In response the patent owner filed an amendment on May 25, 2007, amending claims 5, 18, 23-27, and 29-34 and adding new claims 36 and 37.

In response to this amendment, the examiner mailed a non-final rejection on July 24, 2007, rejecting all claims over Kliger in view of Wu, Manssen, Ling, Zhang, Mukherjee, Kapoor, and/or Ise.

In response the patent owner filed an amendment on January 22, 2008, amending claims 5, 18, 23-27, 29, 36, and 37.

In response to this amendment, the examiner mailed a final rejection on April 4, 2008, rejecting all claims over Kliger or Kliger in view of Wu, Manssen, Mukherjee, Kapoor, and/or Ise.

In response the patent owner filed a response on July 28, 2008, for a request for reconsideration in view of the arguments presented in said response.

In response to this amendment, the examiner mailed a non-final rejection on October 20, 2008, maintaining all rejections in view of the examiner's response to patent owner's arguments.

In response the patent owner filed an amendment on January 19, 2008, amending independent claims 5, 25, and 29 as follows (using claim 25 as example, claim 25 is renumbered to patent claim 10 at allowance):

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.

The patent owner also provided arguments in reference to the amendments made, patent owner argued the following:

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.

...

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.

(pages ... and 7 of PO's response filed 1/19/2009 in the '412 application)

The previous art rejections of the claims were withdrawn in response to the amendments and arguments made. The application was passed to allowance in the Notice of Allowance mailed May 18, 2009. The examiner gave the following 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.

(Notice of Allowance mailed May 18, 2009 in the '412 application)

Thus, as it currently stands based on the prosecution history of the '412 application, it appears that the claims of the '249 Patent were allowed at least in part based on the following limitations:

a filter located at the point of entry of the building wiring that rejects 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;

(patent claim 10)

Priority

7) As mentioned above, the '973 application has priority to provisional application 60/288,967, filed May 4, 2001.

Substantial New Question of Patentability

8) The italicized sections of claim 10 are utilized by the examiner to show how specific teachings of the proposed references create a substantial new question of patentability.

10. 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 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.

Afshary in view of Mills

- 9) The Request shows that Afshary in view of Mills provides teachings relevant to the determination of patentability regarding the following limitations for claim 10:

a filter located at the point of entry of the building wiring that rejects 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;

Afshary describes a filter (LPF 18) located at the point of entry of the building wiring prevents local signals from getting back to the public network and reflects cable LAN back into the network (Fig. 1 and paragraphs [0015] and [0016] of Afshary).

The Afshary and Mills references were not previously discussed by the examiner nor applied to claim 10 in the prior examination of the '249 Patent as discussed above.

It is agreed that Afshary in view of Mills raises a substantial new question of patentability with respect to claim 10 of the '249 Patent. There is a substantial likelihood that an examiner would consider

these new, non-cumulative technological teachings important in deciding whether or not these claims are patentable.

Accordingly, Afshary in view of Mills raises a substantial new question of patentability with respect to claim 10 of the '249 Patent, a question which has not been decided in a previous examination of the '249 Patent nor was there a final holding of invalidity by the Federal Courts regarding the '249 Patent.

Amit in view of Mills

10) The Request shows that Amit in view of Mills provides teachings relevant to the determination of patentability regarding the following limitations for claim 10:

a filter located at the point of entry of the building wiring that rejects 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;

Amit describes a filter (notch filter 202) located at the point of entry of the building wiring prevents home networking signals from getting back to the public network and reflects home networking signals back into the network (Fig. 2 and column 6, lines 29-41 and column 14, lines 1-6 of Amit).

The Amit and Mills references were not previously discussed by the examiner nor applied to claim 10 in the prior examination of the '249 Patent as discussed above.

It is agreed that Amit in view of Mills raises a substantial new question of patentability with respect to claim 10 of the '249 Patent. There is a substantial likelihood that an examiner would consider these new, non-cumulative technological teachings important in deciding whether or not these claims are patentable.

Accordingly, Amit in view of Mills raises a substantial new question of patentability with respect to claim 10 of the '249 Patent, a question which has not been decided in a previous examination of the '249 Patent nor was there a final holding of invalidity by the Federal Courts regarding the '249 Patent.

Scope of Reexamination

- 11) Claim 10 will be reexamined as requested.
- 12) Claims 1-9 and 11-17 are not subject to reexamination.

Conclusion

13) Extensions of time under 37 CFR 1.136(a) will not be permitted in these proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. 305 requires that reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.550(a)). Extension of time in *ex parte* reexamination proceedings are provided for in 37 CFR 1.550(c).

The patent owner is reminded of the continuing responsibility under 37 CFR 1.565(a) to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving Patent No. 7,594,249 throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286.

All correspondence relating to this *ex parte* reexamination proceeding should be directed as follows:

By U.S. Postal Service Mail to:

Mail Stop Ex Parte Reexam
ATTN: Central Reexamination Unit
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

By FAX to:

(571) 273-9900
Central Reexamination Unit

By hand to:

Customer Service Window
Randolph Building
401 Dulany St.
Alexandria, VA 22314

By EFS-Web:

Registered users of EFS-Web may alternatively submit such correspondence via the electronic filing system EFS-Web, at

<https://efs.uspto.gov/efile/myportal/efs-registered>

EFS-Web offers the benefit of quick submission to the particular area of the Office that needs to act on the correspondence. Also, EFS-Web submissions are “soft scanned” (i.e., electronically uploaded) directly into the official file for the reexamination proceeding, which offers parties the opportunity to review the content of their submissions after the “soft scanning” process is complete.

Any inquiry concerning this communication or earlier communications from the Reexamination Legal Advisor or Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

/JOSHUA D CAMPBELL/
Primary Examiner, Art Unit 3992

Conferees:

/DENNIS G BONSHOCK/
Primary Examiner, Art Unit 3992

/ALEXANDER J KOSOWSKI/
Supervisory Patent Examiner, Art Unit 3992

<i>Search Notes</i> 	Application/Control No. 90/019,247	Applicant(s)/Patent Under Reexamination 7594249
	Examiner JOSHUA D CAMPBELL	Art Unit 3992

CPC - Searched*		
Symbol	Date	Examiner

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Reviewed patented file's prosecution history, the request, and proposed prior art	10/10/2023	JDC
PDP for continuity data	10/10/2023	JDC
P-TACTS for AIA Proceedings	10/10/2023	JDC

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

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Reexamination 	Application/Control No. 90/019,247	Applicant(s)/Patent Under Reexamination 7594249
	Certificate Date	Certificate Number

Requester Correspondence Address: ☐ Patent Owner ☒ Third Party
HAYNES AND BOONE, LLP IP SECTION 2323 VICTORY AVENUE SUITE 700 DALLAS, TX 75219

LITIGATION REVIEW ☒	JDC (examiner initials)	10 October 2023 (date)
Case Name		Director Initials
2:23cv00050 - Entropic Communications, LLC v. Charter Communications Inc. (Open)		
2:23cv01043 - Entropic Communications, LLC v. Dish Network Corporation et al. (Open)		
2:23cv01047 - Entropic Communications, LLC v. Cox Communications Inc. et al. (Open)		
2:23cv01048 - Entropic Communications, LLC v. Comcast Corporation et al . (Open)		
2:23cv05253 - Entropic Communications, LLC v. DirecTV, LLC et al. (Open)		

COPENDING OFFICE PROCEEDINGS	
TYPE OF PROCEEDING	NUMBER

--	--

Bibliographic Data

Application No: 90/019,247

Foreign Priority claimed:

☐ Yes ☒ No

35 USC 119 (a-d) conditions met:

☐ Yes ☒ No

☐ Met After Allowance

Verified and Acknowledged:

/JOSHUA D CAMPBELL/

Examiner's Signature

Initials

Title:

NETWORK INTERFACE DEVICE AND BROADBAND LOCAL
AREA NETWORK USING COAXIAL CABLE

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
09/11/2023	725	3992	50348.109
RULE			

APPLICANTS

INVENTORS

7594249,
ITZHAK GURANTZ, SAN DIEGO, CA, UNITED STATES
LADD EIWARDANI, LA JOLLA, CA, UNITED STATES
ANTON MONK,
BRETT BERNATH,
MAGNUS BERGGREN,

CONTINUING DATA

This application is a REX of 09910412 07/21/2001 PAT 7594249
09910412 has PRO of 60288967 05/04/2001

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

STATE OR COUNTRY

ADDRESS

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SUITE 3400
CHICAGO, IL 60661
UNITED STATES

FILING FEE RECEIVED

\$225

In place of PTO-1449 Form	U. S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		Complete if Known		
			Application Number	In Ex Parte Reexamination of 7,594,249	
			Filing Date	Herewith	
			First Inventor Name	Itzhak Gurantz et al.	
			Art Unit	TBD	
			Examiner Name	TBD	
SHEET	1	OF	1	Attorney Docket Number	50348.109

U. S. PATENTS				
Examiner's Initials	Cite No.	Document Number	Issue Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
	Exhibit 1004	6,795,450	09-21-2004	Mills et al
	Exhibit 1006	7,127,734	10-24-2006	Amit

U. S. PATENT APPLICATION PUBLICATIONS				
Examiner's Initials	Cite No.	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
	Exhibit 1003	2006/0218593	09-28-2006	Afshary et al.

FOREIGN PATENT DOCUMENTS					
Examiner's Initials	Cite No.	Foreign Patent Document (Country Code – Number – Kind)	Publication Date MM-DD-YYYY	Patentee or Applicant of Cited Document	Translation Y/N

NON-PATENT LITERATURE DOCUMENTS		
Examiner's Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article, title of the item, date, page(s), volume-issue number(s), publisher, city/country where published

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION # 90/019,247	RECEIPT DATE / TIME 01/22/2024 07:41:09 PM Z ET	ATTORNEY DOCKET # 50348.109
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Title of Invention

NETWORK INTERFACE DEVICE AND BROADBAND LOCAL AREA NETWORK USING COAXIAL CABLE

Application Information

APPLICATION TYPE	Utility / ex parte reexam	PATENT #	7594249
CONFIRMATION #	2398	FILED BY	Laura Foley
PATENT CENTER #	64043598	FILING DATE	09/11/2023
CUSTOMER #	23446	FIRST NAMED INVENTOR	- 7594249
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Wayne Bradley

Documents

TOTAL DOCUMENTS: 43

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
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NPL-0014.pdf	7	Non Patent Literature	2149 KB
NPL-0016.pdf	8	Non Patent Literature	2483 KB
NPL-0019.pdf	10	Non Patent Literature	1600 KB
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		90019247	
	Filing Date		2023-09-11	
	First Named Inventor	Itzhak Gurantz		
	Art Unit	3992		
	Examiner Name	CAMPBELL, JOSHUA D.		
	Attorney Docket Number	50348.109		

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STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number		90019247
Filing Date		2023-09-11
First Named Inventor	Itzhak Gurantz	
Art Unit	3992	
Examiner Name	CAMPBELL, JOSHUA D.	
Attorney Docket Number	50348.109	

1	PETITION FOR INTER PARTES REVIEW OF UNITED STATES PATENT NO. 7,594,249 PURSUANT TO 35 U.S.C. §§311–319, 37 C.F.R. §42	☐
2	DISH-1001 U.S. Patent 7,594,249 to Gurantz et al. ("the '249 patent")	☐
3	DISH-1002 Excerpts from the Prosecution History of the '249 Patent ("the Prosecution History")	☐
4	DISH-1003 Declaration of Dr. Scott Acton	☐
5	DISH-1004 Curriculum Vitae of Dr. Scott Acton	☐
6	DISH-1005 U.S. Patent 7,127,734 to Amit et al. ("Amit")	☐
7	DISH-1006 Excerpts from Dennis J. Rauchmayer, ADSL/VDSL Principles, 1999 ("ADSL/VDSL")	☐
8	DISH-1007 Jacobsen et al., An Efficient Digital Modulation Scheme for Multimedia Transmission on the Cable Television Network, 43rd Annual National Cable Television Association Convention and Exposition, New Orleans, LA. 1994 ("Jacobsen")	☐
9	DISH-1008 Excerpts from Walter Y. Chen, DSL: Simulation Techniques and Standards Development for Digital Subscriber Lines, 1998 ("DSL Simulation Techniques")	☐
10	DISH-1009 Proof of Service of Summons and Complaint on DISH Network Corporation in Entropic Communications, LLC v. DISH Network Corporation et al., Case 2:23-cv-01043, ECF No. 14 (C.D. Cal. Feb. 23, 2023)	☐
11	DISH-1010 Weinberg, G. (1972). Cost Analysis of CATV Components. Final Report. ("Weinberg")	☐

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STATEMENT BY APPLICANT**
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Application Number	90019247
Filing Date	2023-09-11
First Named Inventor	Itzhak Gurantz
Art Unit	3992
Examiner Name	CAMPBELL, JOSHUA D.
Attorney Docket Number	50348.109

12	DISH-1011 Dodds, D. E., & Swanson, L. (1999, August). Simultaneous voice and Internet data on rural subscriber lines. In 1999 IEEE Pacific Rim Conference on Communications, Computers and Signal Processing (PACRIM 1999). Conference Proceedings (Cat. No. 99CH36368) (pp. 18-21). IEEE. ("Dodds")	☐
13	DISH-1012 Maxemchuk, N., & Netravali, A. (1985). Voice and Data on a CATV Network. IEEE Journal on Selected Areas in Communications, 3(2), 300-311 ("Maxemchuk")	☐
14	DISH-1013 Jacobsen, K. S. (1997, November). Synchronized Discrete Multi-Tone (SDMT) Modulation for Cable Modems: Making the Most of the Scarce Reverse Channel Bandwidth. In WESCON/97 Conference Proceedings (pp. 374-380). IEEE. ("Jacobsen-2")	☐
15	DISH-1014 Fryxell, D., Lanning, S., & Sirbu, M. (1999). Broadband Access Networks and the Emergence of Voice over IP (VoIP): an Economic Analysis for Cable and ADSL. In 27th Annual Telecommunications Policy Research Conference, Alexandria, VA ("Fryxell")	☐
16	DISH-1015 Lipoff, S. J. (1994). Personal communications networks bridging the gap between cellular and cordless phones. Proceedings of the IEEE, 82(4), 564-571 ("Lipoff")	☐
17	DISH-1016 S. Ovadia, "Advanced upstream CATV access technologies and standards," 1999 Digest of the LEOS Summer Topical Meetings: Nanostructures and Quantum Dots/WDM Components/VCSELs and Microcavities/RF Photonics for CATV and HFC Systems (Cat. No.99TH8455), San Diego, CA, USA, 1999, pp. IV35-IV36 ("Ovadia")	☐
18	DISH-1017 Roden, M. S. (1985). Analog and digital communication systems. Prentice-Hall, Inc. ("Roden")	☐
19	DISH-1018 Jorasch, R., & Price, K. (1988, March). Advanced satellite system architecture for VSATs with ISDN compatibility. In 12th International Communication Satellite Systems Conference ("Jorasch")	☐
20	DISH-1019 Smalley, D. (1994). Equalization concepts: a tutorial. Atlanta Regional Technology Center, Texas Instruments ("Smalley")	☐
21	DISH-1020 Santella, G., & Mazzenga, F. (1998). A hybrid analyticalsimulation procedure for performance evaluation in M-QAMOFDM schemes in presence of nonlinear distortions. IEEE Transactions on Vehicular Technology, 47(1). ("Santella")	☐
22	DISH-1021 Corvaja, R., Costa, E., & Pupolin, S. (1998, October). Analysis of M-QAM-OFDM transmission system performance in the presence of phase noise and nonlinear amplifiers. In 1998 28th European Microwave Conference (Vol. 1, pp. 481-486). IEEE.	☐

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	First Named Inventor	Itzhak Gurantz
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	Attorney Docket Number	50348.109

	23	DISH-1022 Declaration of June Munford	☐
	24	DISH-1023 Excerpts from the Prosecution History of U.S. Patent 7,127,734 to Amit ("the Amit Prosecution History")	☐
	25	DISH-1024 Federal Court Management Statistics for September 2023 published by the Administrative Office of the U. S. Courts, retrieved from https://www.uscourts.gov/sites/default/files/data_tables/fcms_na_distcomparison0930.2023.pdf	☐
	26	DISH-1025 Order Granting Stipulation Setting Claim Construction Schedule, Entropic Communications, LLC v. DISH Network Corporation et al., Case 2:23-cv-01043-JWH-KES (CDCA)	☐
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	Examiner Name	CAMPBELL, JOSHUA D.
	Attorney Docket Number	50348.109

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☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).			
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☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.			
☒ A certification statement is not submitted herewith.			
SIGNATURE			
A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.			
Signature	/Wayne H. Bradley/	Date (YYYY-MM-DD)	2024-01-22
Name/Print	Wayne H. Bradley	Registration Number	39916
This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.			

Privacy Act Statement

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

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

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



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/019,247	09/11/2023	7594249	50348.109	2398

23446 7590 02/21/2024
MCANDREWS HELD & MALLOY, LTD
500 WEST MADISON STREET
SUITE 3400
CHICAGO, IL 60661

EXAMINER
CAMPBELL, JOSHUA D

ART UNIT	PAPER NUMBER
3992	

MAIL DATE	DELIVERY MODE
02/21/2024	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



UNITED STATES PATENT AND TRADEMARK OFFICE

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HAYNES AND BOONE, LLP IP SECTION
2323 VICTORY AVENUE
SUITE 700
DALLAS, TX 75219

***EX PARTE* REEXAMINATION COMMUNICATION TRANSMITTAL FORM**

REEXAMINATION CONTROL NO. 90/019,247 .

PATENT UNDER REEXAMINATION 7594249 .

ART UNIT 3992 .

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Office Action in Ex Parte Reexamination	Control No. 90/019,247	Patent Under Reexamination 7594249	
	Examiner JOSHUA D CAMPBELL	Art Unit 3992	AIA (FITF) Status No

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

- a. ☐ Responsive to the communication(s) filed on _____.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
- b. ☐ This action is made FINAL.
- c. ☒ A statement under 37 CFR 1.530 has not been received from the patent owner.

A shortened statutory period for response to this action is set to expire 2 month(s) from the mailing date of this letter. Failure to respond within the period for response will result in termination of the proceeding and issuance of an *ex parte* reexamination certificate in accordance with this action. 37 CFR 1.550(d). **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).** If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|---|---|
| 1. ☐ Notice of References Cited by Examiner, PTO-892. | 3. ☐ Interview Summary, PTO-474. |
| 2. ☒ Information Disclosure Statement, PTO/SB/08. | 4. ☐ _____. |

Part II SUMMARY OF ACTION

- 1a. ☒ Claims 10 are subject to reexamination.
- 1b. ☒ Claims 1-9 and 11-17 are not subject to reexamination.
2. ☐ Claims _____ have been canceled in the present reexamination proceeding.
3. ☐ Claims _____ are patentable and/or confirmed.
4. ☒ Claims 10 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ The drawings, filed on _____ are acceptable.
7. ☐ The proposed drawing correction, filed on _____ has been (7a) ☐ approved (7b) ☐ disapproved.
8. ☐ Acknowledgment is made of the priority claim under 35 U.S.C. 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the certified copies have
 - 1 ☐ been received.
 - 2 ☐ not been received.
 - 3 ☐ been filed in Application No. _____.
 - 4 ☐ been filed in reexamination Control No. _____.
 - 5 ☐ been received by the International Bureau in PCT application No. _____.
- * See the attached detailed Office action for a list of the certified copies not received.
9. ☐ Since the proceeding appears to be in condition for issuance of an *ex parte* reexamination certificate except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte* Quayle, 1935 C.D. 11, 453 O.G. 213.
10. ☐ Other: _____

cc: Requester (if third party requester)

U.S. Patent and Trademark Office
PTOL-466 (Rev. 08-13)

Office Action in Ex Parte Reexamination

Part of Paper No. 20240202

DETAILED ACTION

1) This Office action addresses claim 10 of United States Patent Number 7,594,249 (hereinafter “‘249 Patent”) for which it has been determined in the Order Granting *Ex Parte* Reexamination mailed October 26, 2023, regarding Reexamination Control No. 90/019,247 (hereinafter the “Order”) that a substantial new question of patentability was raised in the Request for *Ex Parte* reexamination filed on September 11, 2023 (hereinafter the “Request”).

2) This action is Non-Final.

Status of Claims

- 3) Claim 10 is rejected as discussed below.
- 4) Claims 1-9 and 11-17 are not subject to reexamination.

Information Disclosure Statement

5) Where the IDS citations are submitted but not described, the examiner is only responsible for cursorily reviewing the references. The initials of the examiner on the PTO-1449 indicate only that degree of review unless the reference is either applied against the claims, or discussed by the examiner as pertinent art of interest, in a subsequent office action.

See Guidelines for Reexamination of Cases in View of *In re Portola Packaging, Inc.*, 110 F.3d 786, 42 USPQ2d 1295 (Fed. Cir. 1997), 64 FR at 15347, 1223 Off. Gaz. Pat. Office at 125 (response to comment 6).

Consideration by the examiner of the information submitted in an IDS means that the examiner will consider the documents in the same manner as other documents in Office search files are considered by the examiner while conducting a search of the prior art in a proper field of search. The initials of the

examiner placed adjacent to the citations on the PTO-1449 or PTO/SB/08A and 08B or its equivalent mean that the information has been considered by the examiner to the extent noted above.

Regarding IDS submissions MPEP 2256 recites the following: "Where patents, publications, and other such items of information are submitted by a party (patent owner) in compliance with the requirements of the rules, the requisite degree of consideration to be given to such information will be normally limited by the degree to which the party filing the information citation has explained the content and relevance of the information."

Rejections

6) The following rejections are utilized by the examiner below, referencing the proposed prior art listed on page 10 of the Request:

Issue 1: Claim 10 in view of Afshary and Mills

Issue 2: Claim 10 in view of Amit and Mills

7) The rejections below are confined to what has been deemed to be the best available art from the Request. However, prior to conclusion of this reexamination proceeding, claims must be patentable over all prior art cited in the order granting reexamination in order to be considered patentable or confirmed on the reexamination certificate.

Affidavits, Declarations, or Other Written Evidence

8) The Examiner recognizes that declaration by Stuart Lipoff (Exhibit 1008) has been referenced in support of Third Party Requester. The declaration has been considered and made of record. The Examiner further notes that affidavits or declarations or other written evidence which explain the contents or pertinent dates of prior art patents or printed publications in more detail may be considered in

reexamination (see: MPEP 2258(I)(E)), but any rejection must be based upon the prior art patents or printed publications as explained by the affidavits or declarations or other written evidence. The rejection in such circumstances cannot be based on the affidavits or declarations or other written evidence as such, but must be based on the prior art patents or printed publications. In the instant case, the submitted Lipoff Declaration at least further explains the contents of the prior art patents and printed publications in more detail.

Claim Rejections

9) *Claim Rejections - 35 USC § 103*

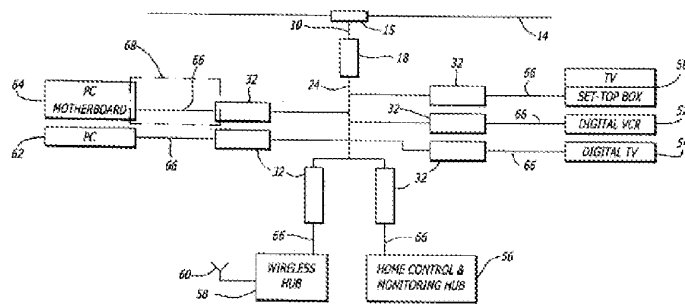
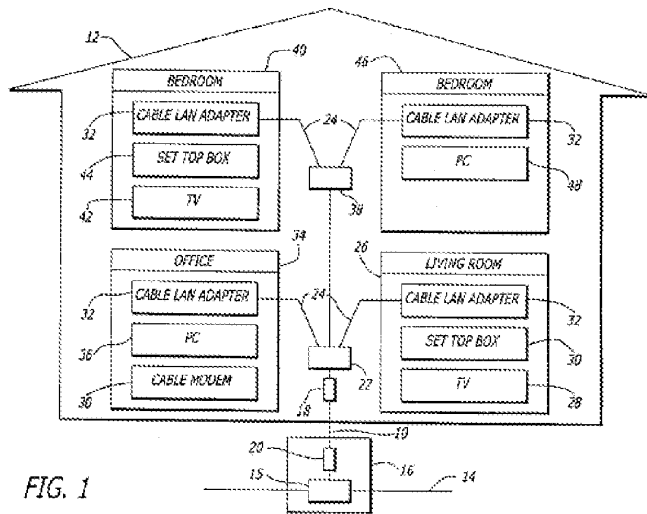
The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Issue 1

10) Claim 10 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Afshary (U.S. Patent Application Publication No. 2006/0218593) in view of Mills (U.S. Patent No. 6,795,450).

Regarding independent claim 10, Afshary discloses a broadband local area network for transmitting modulated signals using coaxial cable building wiring containing a plurality of branches comprising: (Abstract, Figs. 1 and 2, and paragraph [0026] of Afshary)



a filter located at the point of entry of the building wiring that rejects 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;

(“LPF” – Fig. 1, item 18 and paragraphs [0014]-[0016] and [0018] of Afshary)

at least one signal splitter;

(“splitter” – Fig. 1, item 22 and paragraphs [0016] and [0018] of Afshary)

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,

(multiple “cable lan adapter” devices – Fig. 1, item 32
 and paragraphs [0018]-[0021] and [0023] of Afshary)

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.

Afshary does not explicitly disclose “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”. However, Mills discloses terminal devices that perform equalization on the received signal that restores a flat frequency response to overcome communication channel impairments caused by signals (column 6, lines 22-32 and column 23, lines 41-46 of Mills). In these citations, Mills explicitly states, “**receivers use an equalizer** to adjust for the characteristics of the incoming line... This results in a frequency response that is **as flat as possible** across the spectrum, for that cable length” (column 6, lines 22-32 of Mills, emphasis added).

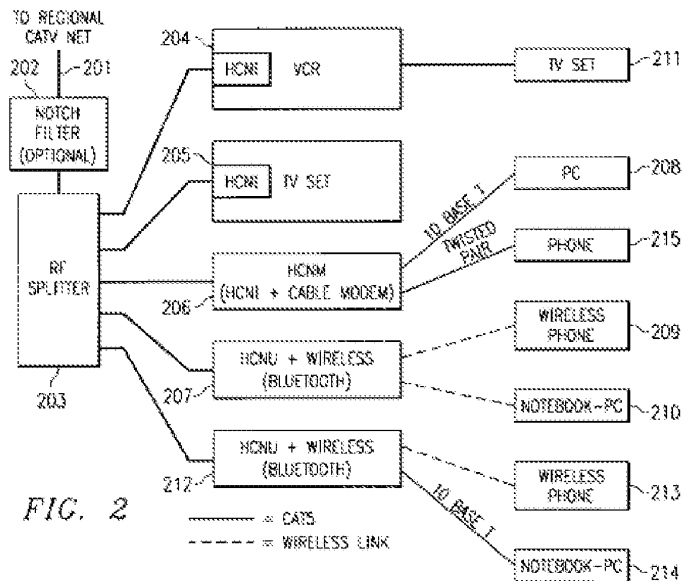
It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Afshary including reflected signals with the teachings of Mills for equalizing signals because it would have allowed for the a “frequency response that is **as flat as possible**” (column 6, lines 22-32 of Mills). Additionally, the use of an equalizer would have been a mere application of a known technique to a known device ready for improvement (receiver/terminal device) to yield predictable results (flat signal) (KSR v. Teleflex, 550 U.S. 398, 417 (2007)).

Issue 2

11) Claim 10 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Amit (U.S. Patent No. 7,127,734) in view of Mills (U.S. Patent No. 6,795,450).

Regarding independent claim 10, Amit discloses a broadband local area network for transmitting modulated signals using coaxial cable building wiring containing a plurality of branches comprising:

(Fig. 2 and column 3, lines 1-9; column 5, lines 22-40; and column 9, lines 36-42 of Amit)



a filter located at the point of entry of the building wiring that rejects 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;

(“Notch Filter” – Fig. 2, item 202 and column 3, lines 15-23;
 column 6, lines 29-41; and column 14, lines 1-6 of Amit)

at least one signal splitter;

(“RF Splitter” – Fig. 2, item 203 and column 6, lines 36-41 of Amit)

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,

(multiple “home units” – Fig. 2, items 204-207 and 212; column
 6, lines 39-64; and column 13, lines 31-43 of Amit)

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.

Amit does not explicitly disclose the “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”. However, Mills discloses terminal devices that perform

equalization on the received signal that restores a flat frequency response to overcome communication channel impairments caused by signals (column 6, lines 22-32 and column 23, lines 41-46 of Mills). In these citations, Mills explicitly states, “**receivers use an equalizer** to adjust for the characteristics of the incoming line... This results in a frequency response that is **as flat as possible** across the spectrum, for that cable length” (column 6, lines 22-32 of Mills, emphasis added).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Amit including reflected signals with the teachings of Mills for equalizing signals because it would have allowed for the a “frequency response that is **as flat as possible**” (column 6, lines 22-32 of Mills). Additionally, the use of an equalizer would have been a mere application of a known technique to a known device ready for improvement (receiver/terminal device) to yield predictable results (flat signal) (KSR v. Teleflex, 550 U.S. 398, 417 (2007)).

Conclusion

12) In order to ensure full consideration of any amendments, affidavits or declarations, or other documents as evidence of patentability, such documents must be submitted in response to this Office action. Submissions after the next Office action, which is intended to be a final action, will be governed by the requirements of 37 CFR 1.116, after final rejection and 37 CFR 41.33 after appeal, which will be strictly enforced.

13) The patent owner is reminded of the continuing responsibility under 37 CFR 1.565(a) to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving Patent No.

7,594,249 throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286.

14) Extensions of time under 37 CFR 1.136(a) will not be permitted in these proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. 305 requires that reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.550(a)). Extension of time in *ex parte* reexamination proceedings are provided for in 37 CFR 1.550(c).

15) **All** correspondence relating to this *ex parte* reexamination proceeding should be directed:

Electronically: Registered users may submit via Patent Center at <https://patentcenter.uspto.gov/>.

By Mail to: Mail Stop *Ex Parte* Reexam
Central Reexamination Unit
Commissioner for Patents
United States Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

By FAX to: (571) 273-9900
Central Reexamination Unit

By hand: Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

For electronic transmissions, 37 CFR 1.8(a)(1)(i)(C) and (ii) states that correspondence (except for a request for reexamination and a corrected or replacement request for reexamination) will be considered timely filed if (a) it is transmitted via the USPTO patent electronic filing system in accordance with 37 CFR 1.6(a)(4), and (b) includes a certificate of transmission for each piece of correspondence

stating the date of transmission, which is prior to the expiration of the set period of time in the Office action.

Any inquiry concerning this communication should be directed to Joshua Campbell at telephone number (571) 272-4133.

/JOSHUA D CAMPBELL/
Primary Examiner, Art Unit 3992

Conferees:

/ADAM L BASEHOAR/
Primary Examiner, Art Unit 3992

/ALEXANDER J KOSOWSKI/
Supervisory Patent Examiner, Art Unit 3992

Reexamination 	Application/Control No. 90/019,247	Applicant(s)/Patent Under Reexamination 7594249
	Certificate Date	Certificate Number

Requester Correspondence Address: ☐ Patent Owner ☒ Third Party
HAYNES AND BOONE, LLP IP SECTION 2323 VICTORY AVENUE SUITE 700 DALLAS, TX 75219

LITIGATION REVIEW ☒	JDC (examiner initials)	10 October 2023 (date)
Case Name		Director Initials
2:23cv00050 - Entropic Communications, LLC v. Charter Communications Inc. (Open)		
2:23cv01043 - Entropic Communications, LLC v. Dish Network Corporation et al. (Open)		
2:23cv01047 - Entropic Communications, LLC v. Cox Communications Inc. et al. (Open)		
2:23cv01048 - Entropic Communications, LLC v. Comcast Corporation et al . (Open)		
2:23cv05253 - Entropic Communications, LLC v. DirecTV, LLC et al. (Open)		

COPENDING OFFICE PROCEEDINGS	
TYPE OF PROCEEDING	NUMBER

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<i>Search Notes</i> 	Application/Control No. 90/019,247	Applicant(s)/Patent Under Reexamination 7594249
	Examiner JOSHUA D CAMPBELL	Art Unit 3992

CPC - Searched*		
Symbol	Date	Examiner

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Reviewed patented file's prosecution history, the request, and proposed prior art	10/10/2023	JDC
PDP for continuity data	10/10/2023	JDC
P-TACTS for AIA Proceedings	10/10/2023	JDC

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

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Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

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PTO/SB/08a (01-22)

Approved for use through 05/31/2024. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		90019247	
	Filing Date		2023-09-11	
	First Named Inventor	Itzhak Gurantz		
	Art Unit		3992	
	Examiner Name	CAMPBELL, JOSHUA D.		
	Attorney Docket Number		50348.109	

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Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	90019247
Filing Date	2023-09-11
First Named Inventor	Itzhak Gurantz
Art Unit	3992
Examiner Name	CAMPBELL, JOSHUA D.
Attorney Docket Number	50348.109

1	PETITION FOR INTER PARTES REVIEW OF UNITED STATES PATENT NO. 7,594,249 PURSUANT TO 35 U.S.C. §§311–319, 37 C.F.R. §42	☐
2	DISH-1001 U.S. Patent 7,594,249 to Gurantz et al. ("the '249 patent")	☐
3	DISH-1002 Excerpts from the Prosecution History of the '249 Patent ("the Prosecution History")	☐
4	DISH-1003 Declaration of Dr. Scott Acton	☐
5	DISH-1004 Curriculum Vitae of Dr. Scott Acton	☐
6	DISH-1005 U.S. Patent 7,127,734 to Amit et al. ("Amit")	☐
7	DISH-1006 Excerpts from Dennis J. Rauchmayer, ADSL/VDSL Principles, 1999 ("ADSL/VDSL")	☐
8	DISH-1007 Jacobsen et al., An Efficient Digital Modulation Scheme for Multimedia Transmission on the Cable Television Network, 43rd Annual National Cable Television Association Convention and Exposition, New Orleans, LA. 1994 ("Jacobsen")	☐
9	DISH-1008 Excerpts from Walter Y. Chen, DSL: Simulation Techniques and Standards Development for Digital Subscriber Lines, 1998 ("DSL Simulation Techniques")	☐
10	DISH-1009 Proof of Service of Summons and Complaint on DISH Network Corporation in Entropic Communications, LLC v. DISH Network Corporation et al., Case 2:23-cv-01043, ECF No. 14 (C.D. Cal. Feb. 23, 2023)	☐
11	DISH-1010 Weinberg, G. (1972). Cost Analysis of CATV Components. Final Report. ("Weinberg")	☐

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	90019247
Filing Date	2023-09-11
First Named Inventor	Itzhak Gurantz
Art Unit	3992
Examiner Name	CAMPBELL, JOSHUA D.
Attorney Docket Number	50348.109

12	DISH-1011 Dodds, D. E., & Swanson, L. (1999, August). Simultaneous voice and Internet data on rural subscriber lines. In 1999 IEEE Pacific Rim Conference on Communications, Computers and Signal Processing (PACRIM 1999). Conference Proceedings (Cat. No. 99CH36368) (pp. 18-21). IEEE. ("Dodds")	☐
13	DISH-1012 Maxemchuk, N., & Netravali, A. (1985). Voice and Data on a CATV Network. IEEE Journal on Selected Areas in Communications, 3(2), 300-311 ("Maxemchuk")	☐
14	DISH-1013 Jacobsen, K. S. (1997, November). Synchronized Discrete Multi-Tone (SDMT) Modulation for Cable Modems: Making the Most of the Scarce Reverse Channel Bandwidth. In WESCON/97 Conference Proceedings (pp. 374-380). IEEE. ("Jacobsen-2")	☐
15	DISH-1014 Fryxell, D., Lanning, S., & Sirbu, M. (1999). Broadband Access Networks and the Emergence of Voice over IP (VoIP): an Economic Analysis for Cable and ADSL. In 27th Annual Telecommunications Policy Research Conference, Alexandria, VA ("Fryxell")	☐
16	DISH-1015 Lipoff, S. J. (1994). Personal communications networks bridging the gap between cellular and cordless phones. Proceedings of the IEEE, 82(4), 564-571 ("Lipoff")	☐
17	DISH-1016 S. Ovadia, "Advanced upstream CATV access technologies and standards," 1999 Digest of the LEOS Summer Topical Meetings: Nanostructures and Quantum Dots/WDM Components/VCSELs and Microcavities/RF Photonics for CATV and HFC Systems (Cat. No.99TH8455), San Diego, CA, USA, 1999, pp. IV35-IV36 ("Ovadia")	☐
18	DISH-1017 Roden, M. S. (1985). Analog and digital communication systems. Prentice-Hall, Inc. ("Roden")	☐
19	DISH-1018 Jorasch, R., & Price, K. (1988, March). Advanced satellite system architecture for VSATs with ISDN compatibility. In 12th International Communication Satellite Systems Conference ("Jorasch")	☐
20	DISH-1019 Smalley, D. (1994). Equalization concepts: a tutorial. Atlanta Regional Technology Center, Texas Instruments ("Smalley")	☐
21	DISH-1020 Santella, G., & Mazzenga, F. (1998). A hybrid analyticalsimulation procedure for performance evaluation in M-QAMOFDM schemes in presence of nonlinear distortions. IEEE Transactions on Vehicular Technology, 47(1). ("Santella")	☐
22	DISH-1021 Corvaja, R., Costa, E., & Pupolin, S. (1998, October). Analysis of M-QAM-OFDM transmission system performance in the presence of phase noise and nonlinear amplifiers. In 1998 28th European Microwave Conference (Vol. 1, pp. 481-486). IEEE.	☐

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	90019247
Filing Date	2023-09-11
First Named Inventor	Itzhak Gurantz
Art Unit	3992
Examiner Name	CAMPBELL, JOSHUA D.
Attorney Docket Number	50348.109

23	DISH-1022 Declaration of June Munford	☐
24	DISH-1023 Excerpts from the Prosecution History of U.S. Patent 7,127,734 to Amit ("the Amit Prosecution History")	☐
25	DISH-1024 Federal Court Management Statistics for September 2023 published by the Administrative Office of the U. S. Courts, retrieved from https://www.uscourts.gov/sites/default/files/data_tables/fcms_na_distcomparison0930.2023.pdf	☐
26	DISH-1025 Order Granting Stipulation Setting Claim Construction Schedule, Entropic Communications, LLC v. DISH Network Corporation et al., Case 2:23-cv-01043-JWH-KES (CDCA)	☐
27	DISH-1026 LegalMetric Time to Trial Report, Central District of California, Patent Cases (Jan. 2023 – Nov. 2023)	☐

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

EXAMINER SIGNATURE

Examiner Signature	/JOSHUA D CAMPBELL/	Date Considered	02/06/2024
--------------------	---------------------	-----------------	------------

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

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

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	90019247
Filing Date	2023-09-11
First Named Inventor	Itzhak Gurantz
Art Unit	3992
Examiner Name	CAMPBELL, JOSHUA D.
Attorney Docket Number	50348.109

CERTIFICATION STATEMENT

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

- ☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).
- OR
- ☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).
- ☐ See attached certification statement.
- ☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.
- ☒ A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Wayne H. Bradley/	Date (YYYY-MM-DD)	2024-01-22
Name/Print	Wayne H. Bradley	Registration Number	39916

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

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

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

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

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**REEXAMINATION OR SUPPLEMENTAL
EXAMINATION – PATENT OWNER POWER OF
ATTORNEY OR REVOCATION OF POWER OF
ATTORNEY WITH A NEW POWER OF ATTORNEY
AND CHANGE OF CORRESPONDENCE ADDRESS
FOR REEXAMINATION OR SUPPLEMENTAL
EXAMINATION AND PATENT**

Control Number(s)	90/019,247
Filing Date(s)	09/11/2023
First Named Inventor	Itzhak Gurantz
Title	NETWORK INTERFACE DEVICE AND BROADBAND LOCAL AREA NETWORK
Patent Number	7594249
Examiner Name	Joshua D Campbell
Attorney Docket No(s)	189005.TR004

I. Power of Attorney. This form may be used to change the Power of Attorney in a reexamination or supplemental examination proceeding (or multiple proceedings where merged). This form may also be used to change the Power of Attorney in the patent file; in such a case, a copy of this form will be placed in both the patent file and the reexamination or supplemental examination proceeding.

A. Revocation of Previous Power of Attorney. I hereby revoke all previous patent owner powers of attorney, if any, given:

☒ in the above-identified reexamination or supplemental examination proceeding control number(s) (more than one may be changed only if the proceedings are merged).

☒ in the file of the above-identified patent.

(check BOTH boxes if change in BOTH the patent file and the reexamination or supplemental examination proceeding is requested).

B. Designation of Power of Attorney.

☒ A Power of Attorney is submitted herewith.

OR

☐ I hereby appoint Practitioner(s) associated with the Customer Number identified in the box at right as my/our attorney(s) or agent(s) to prosecute the proceeding(s)/patent identified above and selected in section I(A), and to transact all business in the United States Patent and Trademark Office connected therewith:

OR

☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) to prosecute the proceeding(s) identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

Practitioner(s) Name	Registration Number

Authorization for the Power of Attorney is provided by the signature on page 2 of this form.

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995, unless the information collection has a currently valid OMB Control Number. The OMB Control Number for this information collection is 0651-0035. Public burden for this form is estimated to average 15 minutes hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 or email InformationCollection@uspto.gov. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. If filing this completed form by mail, 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.

II. Change of Correspondence Address

Please recognize or change the correspondence address for the above-identified reexamination or supplemental examination proceeding control number(s) (more than one may be changed **only** if they are merged proceedings) **and for the file of the above-identified patent** to be:

☐ The address associated with the above-identified Customer Number.

OR

☒ The address associated with the Customer Number identified in the box at right:

153979

OR

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

NOTE: THE CORRESPONDENCE ADDRESS FOR THE REEXAMINATION OR SUPPLEMENTAL EXAMINATION PROCEEDING CONTROL NUMBER(S) MUST BE THE SAME AS THAT FOR THE PATENT. SEE 37 CFR 1.33.

III. Authorization for Power of Attorney and (if selected) Change of Correspondence Address

I am the:

☐ Inventor, having ownership of the patent being reexamined.

OR

☒ Patent owner.

Statement under 37 CFR 3.73(c) (Form PTO/AIA/96) submitted herewith or filed on 04/12/2021.

Signature of Inventor or Patent Owner		Date	3/7/2024
Name	Patrick Diaz	Telephone	917-471-4090
Title and Company	Chief Financial Officer / Entropic Communications LLC		

NOTE: Signatures of all the inventors or patent owners of the entire interest or their representative(s) are required. If more than one signature is required, submit multiple forms, check the box below, and identify the total number of forms submitted in the blank below.

☒ A total of 1 forms are submitted. If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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Routine uses of the information in this record may include disclosure to: 1) law enforcement, in the event that the system of records indicates a violation or potential violation of law; 2) a Federal, state, local, or international agency, in response to its request; 3) a contractor of the USPTO having need for the information in order to perform a contract; 4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record; 5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record; 6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations; 7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals; 8) another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)); 9) the Office of Personnel Management (OPM) for personnel research purposes; and 9) the Office of Management and Budget (OMB) for legislative coordination and clearance.

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Doc Code: PA..

Document Description: Power of Attorney

PTO/AIA/82B (07-13)

Approved for use through 09/30/2025. OMB 0651-0035

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number

Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☒ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

153979

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

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☒ 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 (if the Applicant is a juristic entity, list the Applicant name in the box):

ENTROPIC COMMUNICATIONS LLC

- ☐ Inventor or Joint Inventor (title not required below)
- ☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)
- ☒ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)
- ☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature

Date (Optional)

Name

Patrick Diaz

Title

Chief Financial Officer

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☒ Total of 1 forms are submitted.

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995, unless the information collection has a currently valid OMB Control Number. The OMB Control Number for this information collection is 0651-0035. Public burden for this form is estimated to average 3 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 or email InformationCollection@uspto.gov. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS.** If filing this completed form by mail, send to: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Routine uses of the information in this record may include disclosure to: 1) law enforcement, in the event that the system of records indicates a violation or potential violation of law; 2) a Federal, state, local, or international agency, in response to its request; 3) a contractor of the USPTO having need for the information in order to perform a contract; 4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record; 5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record; 6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations; 7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals; 8) another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)); 9) the Office of Personnel Management (OPM) for personnel research purposes; and 9) the Office of Management and Budget (OMB) for legislative coordination and clearance.

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PATENT AND TRADEMARK OFFICE

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
90/019,247

RECEIPT DATE / TIME
03/08/2024 10:19:57 PM Z ET

ATTORNEY DOCKET #
50348.109

Title of Invention

NETWORK INTERFACE DEVICE AND BROADBAND LOCAL AREA NETWORK USING COAXIAL CABLE

Application Information

APPLICATION TYPE Utility / ex parte reexam

PATENT # 7594249

CONFIRMATION # 2398

FILED BY Xuanjie Wang

PATENT CENTER # 64616958

FILING DATE 09/11/2023

CUSTOMER # 23446

FIRST NAMED
INVENTOR - 7594249

CORRESPONDENCE
ADDRESS -

AUTHORIZED BY Hao Tan

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
189005.TR004 90019247 - POA Transmittal.pdf	5	Power of Attorney	3117 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
189005.TR004 90019247 - POA Transmittal.pdf	3A2EAA36847DAECBC2D5DA8ABE58AD5E590CE354E9E8680 BA5865A5F3D7AACF27694AC6FF328F252F08A593D2E6459B1 E6F528E1E2FEA8299E995043ABEB1038

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 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.



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 Alexandria, Virginia 22313-1450
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BIB DATA SHEET

CONFIRMATION NO. 2398

SERIAL NUMBER 90/019,247	FILING or 371(c) DATE 09/11/2023 RULE	CLASS 725	GROUP ART UNIT 3992	ATTORNEY DOCKET NO. 50348.109	
APPLICANTS ENTROPIC COMMUNICATIONS LLC(OWNER), Residence Not Provided; RAGHAV BAJAJ, DALLAS, TX;					
INVENTORS 7594249, Residence Not Provided; IP Section HAYNES AND BOONE, LLP, Residence Not Provided; 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 application 90/019,247 09/11/2023 is a REX of 09/910,412 07/21/2001 PAT 7594249 which claims benefit of 60/288,967 05/04/2001					
** FOREIGN APPLICATIONS *****					
** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **					
Foreign Priority claimed ☐ Yes ☐ No 35 USC 119(a-d) conditions met ☐ Yes ☐ No Verified and Acknowledged ☐ Yes ☐ No Examiner's Signature _____ Initials _____	☐ Met after Allowance	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS 17	INDEPENDENT CLAIMS 3
ADDRESS Arch & Lake LLP 203 North LaSalle Street, Suite 2100 Chicago, IL 60601 UNITED STATES					
TITLE NETWORK INTERFACE DEVICE AND BROADBAND LOCAL AREA NETWORK USING COAXIAL CABLE					
FILING FEE RECEIVED 0.00	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		



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
90/019,247	09/11/2023	7594249	50348.109

153979
Arch & Lake LLP
203 North LaSalle Street, Suite 2100
Chicago, IL 60601

CONFIRMATION NO. 2398

POA ACCEPTANCE LETTER



OC000000069537192

Date Mailed: 03/12/2024

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/08/2024.

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

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

/rbell/



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
90/019,247	09/11/2023	7594249	50348.109

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

CONFIRMATION NO. 2398

POWER OF ATTORNEY NOTICE



OC000000069537081

Date Mailed: 03/12/2024

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/08/2024.

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

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

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/019,247	09/11/2023	7594249	189005.TR004	2398
153979	7590	04/18/2024		
Arch & Lake LLP 203 North LaSalle Street, Suite 2100 Chicago, IL 60601			EXAMINER CAMPBELL, JOSHUA D	
			ART UNIT	PAPER NUMBER
			3992	
			MAIL DATE	DELIVERY MODE
			04/18/2024	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



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2323 VICTORY AVENUE
SUITE 700
DALLAS, TX 75219

***EX PARTE* REEXAMINATION COMMUNICATION TRANSMITTAL FORM**

REEXAMINATION CONTROL NO. 90/019,247 .

PATENT UNDER REEXAMINATION 7594249 .

ART UNIT 3992 .

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

<i>Ex Parte Reexamination Interview Summary</i>	Control No.	Patent Under Reexamination	
	90/019,247	7594249	
	Examiner	Art Unit	AIA (FITF) Status
	JOSHUA D CAMPBELL	3992	No

All participants (USPTO personnel, patent owner, patent owner's representative):

(1) <u>JOSHUA CAMPBELL</u>	(3) <u>HOA TAN (Reg. No. 73,711)</u>
(2) <u>ADAM BASEHOAR, ALEX KOSOWSKI</u>	(4) <u>CHRISTOPHER FAHY, ALYSSA YANG</u>

Date of Interview: 12 April 2024

Type: a) ☒ Telephonic b) ☐ Video Conference
c) ☐ Personal (copy given to: 1) ☐ patent owner 2) ☐ patent owners representative)

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.
If Yes, brief description: _____

Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.
Any other agreement(s) are set forth below under "Description of the general nature of what was agreed to..."

Claim(s) discussed: 10 .

Identification of prior art discussed: Afshary, Mills, and Amit .

Description of the general nature of what was agreed to if an agreement was reached, or any other comments:
See Continuation Sheet .

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims patentable, if available, must be attached. Also, where no copy of the amendments that would render the claims patentable is available, a summary thereof must be attached.)

A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION MUST INCLUDE PATENT OWNER'S STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. (See MPEP § 2281). IF A RESPONSE TO THE LAST OFFICE ACTION HAS ALREADY BEEN FILED, THEN PATENT OWNER IS GIVEN **ONE MONTH** FROM THIS INTERVIEW DATE TO PROVIDE THE MANDATORY STATEMENT OF THE SUBSTANCE OF THE INTERVIEW (37 CFR 1.560(b)). THE REQUIREMENT FOR PATENT OWNERS STATEMENT CAN NOT BE WAIVED. **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).**

/JOSHUA D CAMPBELL/ Primary Examiner, Art Unit 3992		/A.J.K/ Supervisory Patent Examiner, Art Unit 3992
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cc: Requester (if third party requester)

Continuation of Description of the general nature of what was agreed to if an agreement was reached, or any other comments: Discussed the teachings of Mills and the combination of said teachings with Afshary and Mitt. Examiner recommended providing more detailed analysis of the language in the references themselves when providing the written arguments. It was discussed that expert declarations are appropriate in responses in reexamination.



ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION # 90/019,247	RECEIPT DATE / TIME 04/22/2024 10:29:09 PM Z ET	ATTORNEY DOCKET # 189005.TR004
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Title of Invention

NETWORK INTERFACE DEVICE AND BROADBAND LOCAL AREA NETWORK USING COAXIAL CABLE

Application Information

APPLICATION TYPE	Utility / ex parte reexam	PATENT #	7594249
CONFIRMATION #	2398	FILED BY	Xuanjie Wang
PATENT CENTER #	65198993	FILING DATE	09/11/2023
CUSTOMER #	153979	FIRST NAMED INVENTOR	- 7594249
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Hao Tan

Documents

TOTAL DOCUMENTS: 4

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
189005.TR004_Response.pdf	25	-	265 KB
189005.TR004_Response-A...pdf	(1-1) 1	Amendment/Request for Reconsideration-After Non-Final Rejection	162 KB
189005.TR004_Response-CLM.pdf	(2-5) 4	Claims	93 KB
189005.TR004_Response-REM.pdf	(6-25) 20	Applicant Arguments/Remarks Made in an Amendment	222 KB
189005.TR004_Interview	2	Applicant summary of interview	108 KB

Summary.pdf

with examiner

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
189005.TR004__Response.pdf	55D95C6A276D4DE74F6430451B28853EBAB4EC9236557C2CF 836D17B1CF7EE8C5D9ED8E3DD1BDDFD32A5814F06187333D 5859AE4CF862F27ED4E61E76DB1BD20
189005.TR004__Response- A....pdf	46AA1000186984790815F2C9B3B8B452AE2A2825483652E199A C5D799F78FCC72468FAF97A270E587603909F76939D81B0916 B2EC361794775184582AE0456B5
189005.TR004__Response- CLM.pdf	F2705C09747415773AAF9C83A14F11D96C666B7E5C5EF94EA 904EC857F559E07BB54927A25848D38842B2660407EC49A5D8 CC7340C6C7B06A9047723F3220778
189005.TR004__Response- REM.pdf	F5A7C07B86F9A740B305299F9AFFD14836BA8796B4A5C7D9B B2E2F2436CB0319B3534F974BF823998BB73F136C50752148C C9B7D22AA88C630D9DB5770B500E5
189005.TR004__Interview Summary.pdf	966F10A8ACD2CAA1DAE13113D392D91EC9B88EBF7D809AF4 9468D026FF1B2AF6E3D51C440CD197DEB3B211287273AEBAF 0F4B52955C60D5F0147D70091E3146E

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for 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.

CERTIFICATE OF ELECTRONIC SUBMISSION

I hereby certify this document is being electronically filed with the U.S. Patent and Trademark Office on:

Date: April 22, 2024 Name: Hao Tan Reg. No. 73,711 Signature: /Hao Tan/

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Owner: Entropic Communications, Inc.

Inventors: Itzhak Gurantz et al.

App. No.: 90/019,247

Filed: September 11, 2023

Conf. No.: 2398

Examiner: CAMPBELL, JOSHUA D

Art Unit: 3992

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

Docket No.: 189005.TR004

SUMMARY OF TELEPHONE INTERVIEW

Patent Owner thanks the Examiners for their time and attention in this matter. During the interview conducted on April 12, 2024 at 1:30 pm (Easter). Patent Owner and Examiners discussed the following:

1. The rejection of claim 10 under pre-AIA 35 U.S.C. 103(a) as allegedly being unpatentable over Afshary (U.S. Patent Application Publication No. 2006/0218593) in view of Mills (U.S. Patent No. 6,795,450).

2. The rejection of claim 10 under pre-AIA 35 U.S.C. 103(a) as allegedly being unpatentable over Amit (U.S. Patent No. 7,127, 734) in view of Mills (U.S. Patent No. 6,795,450).

To overcome claim rejections under pre-AIA 35 U.S.C. 103(a), Patent Owner presented arguments on that the combination of references is not operable. The Examiner advised the Patent Owner to explain those arguments in more detail. No agreement was reached regarding patentability of the claims.

Respectfully submitted,

Date: April 22, 2024

/Hao Tan/

Hao Tan, Reg. No. 73,711

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Chicago, IL 60601

Tel: 312-375-9408

CERTIFICATE OF ELECTRONIC SUBMISSION

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Date: April 22, 2024 Name: Hao Tan Reg. No. 73,711 Signature: /Hao Tan/

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Owner: Entropic Communications, Inc.

Inventors: Itzhak Gurantz et al.

App. No.: 90/019,247

Filed: September 11, 2023

Conf. No.: 2398

Examiner: CAMPBELL, JOSHUA D

Art Unit: 3992

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

Docket No.: 189005.TR004

RESPONSE TO NON-FINAL OFFICE ACTION

Mail Stop *Ex Parte Reexam*
Central Reexamination Unit
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner,

In response to the Non-Final Office Action dated February 21, 2024, please consider the following remarks.

A **Listing of Claims** begin on page 2 of this paper.

Applicants **Remarks** begin on page 6 of this paper.

LISTING OF CLAIMS

No claim is amended. The listing of claims is provided for reference only.

1. A signal distribution network comprising:

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;

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.

2. The signal distribution network of claim 1, 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.

3. The signal distribution network of claim 2, 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.

4. The signal distribution network of claim 1, 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.

5. 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.

6. The broadband local area network of claim 5 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.

7. The broadband local area network of claim 5, 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.

8. The broadband local area network of claim 5 wherein the frequency used for communicating is above the cable television band.

9. The broadband local area 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.

10. 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 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.

11. The network of claim 10 wherein the equalization is frequency domain equalization.

12. The network of claim 10 wherein the equalization is time domain equalization.

13. The network of claim 10 wherein the equalization is adaptive.

14. The network of claim 13 wherein the terminal devices use orthogonal frequency division multiplexing (OFDM) modulation to overcome the communication channel impairments caused by the reflected signals.

15. The network of claim 14 wherein the terminal devices use forward error correction to recover the transmitted signals without errors.

16. The network of claim 10 wherein the terminal devices use orthogonal frequency division multiplexing (OFDM) modulation to overcome the communication channel impairments caused by the reflected signals.

17. The broadband local area network of claim 10, 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

Claim 10 is subject to reexamination. No new matter has been added. Patent Owner respectfully requests reconsideration of the claims in view of the following remarks. Patent Owner respectfully thanks the Examiner for the opportunity to discuss the rejection telephonically on April 12, 2024.

Rejected Claim

One claim, Claim 10, is rejected in the OA, the text of which is reproduced below:

10. 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 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 [using]¹ 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.

¹ During prosecution, then-pending claim 29 (which later became issued claim 10) recited “each terminal device capable of communicating with other terminal devices **using** the reflected signal path created by the filter.” On July 28, 2008, the same claim 29 was re-presented as “previously amended” (i.e., no changes intended), but inadvertently dropped the word “using.” Nevertheless, the meaning of Claim 10 is clear that the word using is to be understood as part of this claim.

References Relied Upon in First Rejection***Afshary***

U.S. Patent Application Publication No. 2006/0218593 (hereinafter “Afshary”) describes a coaxial local area network “for digitally communicating client generated data between clients of the cable LAN.” (Afshary at Abstract; [0012]). Afshary uses a frequency spectrum that does “not interfere with the operating frequency of client data within the coaxial cable.” (*Id.*; *id* at [0012]). Afshary’s network includes a low pass filter (LPF) 18 located “near the point at which drop cable 10 enters home 12. (*Id.* at [0014]). This filter “maintains security for the cable LAN, works to improve the performance of the cable LAN, and prevents signals generated within the cable LAN from interfering with cable service company operations.” (*Id.* at [0015]). Afshary explains that this LPF restricts “cable LAN signals to the premise of the user” by “preventing such signals from getting back to the public cable network.” (*Id.* at [0016]).

Afshary explains that in some situations, the LPF may be located close to splitter 22, and when in close proximity, “the return loss characteristics of the LPF may be helpful in coupling the cable LAN signal power from one arm of splitter 22 to another arm of splitter 22.” (*Id.* at 16.) Afshary goes on to explain that “[t]his, in turn, would decrease the amount of power needed to transmit cable LAN signals and thus improve the performance of the invention.” (*Id.*). Using Figure 1 as an example, when communicating from cable LAN adapter 32 of office 34 to cable LAN adapter 32 of living room 26, and when LPF 18 is in close proximity to splitter 22, any signal reflection off LPF will effectively boost the power of the transmitted signal due to the phase and frequency alignment caused by the combination of the reflected signal with the originally transmitted signal. Conversely, the further from splitter 22 the LPF is located, the less

coupled the two components are, and the reflection off LPF 18 will interfere with the originally transmitted signal.

To account for this, Afshary explains that where the reflection causes mismatch between the signal and the reflected signal, filters may be used to filter out such reflected signals. (*Id.* at [0042]). Paragraph 42 also confirms that this reflection may “compensate for signal attenuation due to splitters” consistent with the above description. (*Id.* at [0042]).

In other words, in one scenario, Afshary’s LPF 18 and splitter 22 are located in close proximity and thus helps “compensate for signal attenuation” such that the reflection “would decrease the amount of power needed to transmit cable LAN signals and thus improve the performance of the invention.” (*Id.* at [0016], [0042]). In a different scenario, Afshary’s LPF 18 and splitter 22 are not located close enough to effectively couple, and instead “cause a reflection mismatch between the signal and the reflected signal,” and Afshary explains that a filter within Baseband section 90 is needed to filter out the reflected signal.

In sum, in Afshary, the reflected signal either matches the original signal and the added power from the reflected signal combining with the original signal is an overall benefit to the system, or the reflected signal causes a mismatch between the reflected signal and the original signal and the system of Afshary uses a filter to filter out the reflected signal.

Mills

U.S. Patent No. 6,795,450, (hereinafter “Mills”) “relates to the field of computer network **point to point data communications**, and more particularly to **communications links** that normally use constant idle bit streams between packet transmissions.” (Mills at 1:10-13). Specifically, Mills discloses that “[physical layer device (PHY)] receivers typically use a Phase Lock Loop (PLL) to tune to the transmitting PHY’s output. The tuned PLL lets the PHY receiver

sample the correct points in the received signal to determine if that location or bit in the waveform is a 1 or 0.” (Mills at 6:3-6). “[T]o assist the [Phase Lock Loop], most receivers use an equalizer to adjust for the **characteristics of the incoming line**. Various types of equalizers (e.g. adaptive, fixed, etc.) can be used to balance out the effect the characteristics of the media have on the incoming signal. For example, a twisted pair cable typically experiences an attenuation which is a function of its length and the frequency of interest. The equalizer will compensate for the attenuation by creating a frequency dependent gain. This results in a frequency response that is as flat as possible, across the spectrum, for that cable length.” (Mills at 6:22-34). In Mills, “**an adaptive receiver PHY equalizer is designed to remember the input characteristics of the link, as last determined**. For example, storage of the equalizer coefficients, which contain information that maps the input characteristics, will enable the receiver to quickly adapt to the received signal.” (Mills at 23:41-46). Mills is silent with regard to any one-to-many communication channel, and only describes its equalization of a signal transmitted over this point to point data communication channel.

Response to First Rejection under 35 U.S.C. § 103

Claim 10 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Afshary in view of Mills.

Failure To Allege A Prima Facie Case Of Obviousness

As an initial matter, the OA fails to establish a prima facie case of obviousness for Claim 10. The OA does not allege that either of Mills or Afshary recognizes that **reflected** signals can cause channel impairments in a network **where reflected signals are both used to propagate the main signal, as well as constitute an impairment to the transmitted signal**. (OA at 6).

Claim 10 expressly requires not only that “terminal devices perform equalization on the received signal that restores a flat frequency response to overcome communication channel impairments caused by the reflected signals” but also that signals are “reflected by the filter back into all branches of the building wiring,” such that “terminal device[s are] capable of communicating with other terminal devices [using] the reflected signal path created by the filter.”

Unlike Afshary, where the reflected signal *either* 1) is used to augment the propagation of the main signal (such that no additional processing of the reflected signal occurs) (Afshary at [0016] (“the return loss characteristics of LPF 18 may be helpful in coupling the cable LAN signal power ...”), [0042] (“reflection from low pass filter 18 may compensate for signal attenuation”)), or 2) causes a mismatch and the reflected signal is completely filtered out (*Id.* at [0042] (“Filters within Baseband section 90 filter out such reflected signals.”)), Claim 10 of the ’249 Patent recognizes that the reflection can both allow for communication between terminal devices and introduce interference or impairments that require processing (i.e. equalization) to correct for. Thus, claim 10 recites that its “terminal device [are] capable of communicating with other terminal devices [using] the reflected signal path created by the filter” but also that there needs to be “equalization on the received signal that restores a flat frequency response to overcome communication channel impairments caused by the reflected signals.”

The specification of the ’249 Patent confirms the dual effects of the claimed reflection. As the patent describes, “[b]y reflecting upstream signals back into the building as downstream signals, the network interface device provides a path for terminal devices to transmit to and receive from other terminal devices.” (’249 Patent at 3:15-18). Indeed, the ’249 Patent “intentionally introduces a reflection into the LAN wiring and exploits the reflected signal to

provide communication path in a system that has high isolation between terminal devices due to splitters 230, 231, and 232 installed in the wiring.” (*Id.* at 4:2-6).

The ’249 Patent also recognizes that because the invention involves communicating across the path of the reflected signals, there are additional issues that arise. (*Id.* at 5:64-6:48). The ’249 Patent explains that “[t]he present invention operates by introducing a reflection in the LAN electrical wiring.” (*Id.* at 5:64-65). However, it recognizes that when reflections occur, a multi-path signal can create inter-symbol interference (ISI). (*Id.* at 5:65-67). To address this, the ’249 Patent recognized that “The effects of ISI can be overcome by applying modulation techniques or receiver processing techniques.” (*Id.* at 6:7-9). One way of accomplishing the receiver processing is to use the equalizer that “creates a filter response that restores a flat frequency response impaired by the multipath signal.” (*Id.* at 6:9-11; *see also* Claim 10 “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.”).

Afshary, in contrast, treats its reflections as *either* a means of assisting the propagation of the main signal *or* a source of interference. It does not, however, envision a system in which the reflection both provides a communications path and is the source of interference that requires equalization—i.e., in Afshary’s system, the reflection is one or the other, but not both. In other words, if the reflections in Afshary’s system cause interference, Afshary teaches that “[f]ilters within baseband section 90 filter out [the] reflected signals.” (Afshary at [0042]). Thus—as the OA admits on page 6—Afshary does not disclose a system where “terminal devices [are] capable of communicating with other terminal devices [using] the reflected signal” *and* where “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**” as Claim 10 requires.

The OA does not assert that Mills cures this deficiency. Thus, even taken in combination, Afshary and Mills do not disclose every element of Claim 10.

Further, on the same page the OA only alleges that “Mills discloses terminal devices that perform equalization on the received signal that restores a flat frequency response to overcome communication channel impairments cause by signals.” There is again no allegation in the OA that Mills discloses equalization on channel impairments caused by the *reflected* signals, because Mills simply equalizes all signals and is completely silent with regard to “overcome[ing] communication channel impairments caused by the reflected signals.” Neither Mills nor Afshary is alleged to “perform equalization...to overcome communication channel impairments caused by the reflected signal” as neither reference recognizes that equalization can even be used to “overcome communication channel impairments caused by the reflected signal.”

Second, while Afshary describes a low pass filter that “reflect[s] cable LAN transmitted signals back into the network of the cable LAN,” it does not disclose these reflected signals as being “reflected by the filter back into *all* branches of the building wiring;” as is required by Claim 10. Instead, Afshary’s LPF simply exists to “prevent[] such signals from getting back to the public cable network.” (Afshary at [0016]). Conversely, in Claim 10, the reflected signals must be reflected into *all* branches of the network.

The OA Fails To Allege A Rational Basis To Combine The Teachings Of Mills With Afshary

Afshary describes two situations, 1) a first where the reflected signal is considered a net positive for the system and the added power from the reflected signal augments the power of the original carrier (a situation where no filtering or processing of any reflected signal is needed),

and 2) a second where the reflected signal causes mismatch and the reflected signal is filtered out.

As set forth above, in neither of these situations does the proposed combination disclose all elements of claim 10. In the first, there is no filtering or additional processing needed or desired (indeed, the reflected signal is considered a goal of Afshary). In the second, the reflected signal is a problem and is removed, however in the second, there is no “terminal device capable of communicating with other terminal devices [using] the reflected signal path created by the filter” of Claim 10 as the reflected signal has been filtered out. In the second implementation of Afshary, Afshary fails with regard to the communication using the reflected signal path. In the first implementation, there is no processing at the terminal device that ever happens.

Further, in each of the two situations described above, Afshary purports to disclose a system that provides for communications between its various endpoints. Afshary does not suggest—and the OA identifies no other evidence suggesting—a problem or deficiency in the performance of Afshary’s system that would cause a POSITA to look to Mills to improve it.

Beyond that issue, even if the proposed combination of Afshary and Mills did disclose each element of claim 10, there is no rational basis for combining the teachings of the two references as the OA proposes. The OA alleges two theories allegedly supporting the proposed combination: one that the combination would have allowed for a frequency response that is as flat as possible, and the other that “the use of an equalizer would have been a mere application of a known technique to a known device ready for improvement (receiver/terminal device) to yield predictable results (flat signal).” (OA at 6).

Addressing the two in turn, the *first*, Mills does not disclose an in-home coaxial network like that of Afshary, nor does it disclose a network in which communications occur through

branching splitters. While Mills mentions coaxial cable, it does so in the context of point-to-point communication paths. (Mills at 2:21, 3:18, 12:38). As described above, Mills' equalization requires using **remembered** characteristics of an established, continuous point-to-point communication channel to provide a predetermined equalization based on the channel characteristics. In Mills, this is possible because Mills's disclosure is entirely directed towards a specific implementation: a pre-established point-to-point link. This allows Mills's receiver to quickly adapt the received signal because it already knows the signal came from a pre-determined source. As such, in Mills, the ability to provide for a "frequency response that is as flat as possible" is only possible because the link of Mills is predetermined.

In order to equalize, the system of Mills must already know the origin of the signal to account for the channel between the two communication nodes. This teaching is incompatible with Afshary's network. Specifically, in Afshary's network, there is no description of knowing the source of any given message before the message is sent. Afshary specifically describes how in its network, the in-home LAN is used to distribute data to and from all of the devices on the network. (Afshary at [0004]). In this regard, Afshary suggests that each of its network devices can receive a signal from any other device, via splitters, such that all signals arriving at a given device will arrive via the same last leg of coaxial cable. Said otherwise, signals from Living Room LAN adaptor and Office LAN Adaptor will both arrive at Bedroom (40) LAN Adapter 32 via the same coaxial cable that enters Bedroom 40. In this regard, the Bedroom LAN Adapter 32 cannot remember incoming channel characteristics, because signals that take different paths all arrive on the same last leg of coaxial cable.

Given the dramatically different networking contexts between Afshary and Mills, the OA provides no rational basis why a POSITA would look to the teachings of Mills to improve the

system described in Afshary or expect any success from applying the teachings of Mills to Afshary. The OA and Mills both fail to suggest that the equalization of Mills would provide any restoration in a network where pre-determined channel characteristics were not already remembered by the system.

In fact, it was not until the '249 Patent that a network recognized the use of a reflected signal to carry data from one node to all branches of the building wiring (whereby relying on the reflected signal), while also recognizing that the reflected signals would also cause impairments that would benefit from equalization. ('249 Patent at 5:64-6:13).

With regard to the *second* basis, the OA fails to allege that Afshary discloses any device that was “ready for improvement.” Afshary’s already addresses how to compensate for the drop in signal strength of a reflected signal: it provides for a coupled splitter/LPF that then combines the reflected signal with the original signal to “decrease the amount of power needed to transmit cable LAN signals and thus improve the performance of the invention.” (Afshary at [0016]).

Afshary confirms that this reflection “may compensate for signal attenuation due to splitters in the coaxial cable network.” As such the alleged device that is “ready for improvement” in fact is not ready for improvement as the disclosure of Afshary already solves the problem that equalization would otherwise address. A POSITA would not be motivated to look outside Afshary to solve a problem Afshary expressly solves in its own unique way that functions in a reflected signal environment. *See e.g., Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d. 1342, 1369 (Fed. Cir. 2012) (“[B]oth of these references independently accomplish similar functions Because each device independently operates effectively, a person having ordinary skill in the art, who was merely seeking to create a better device [], *would have no reason to combine the features of both devices into a single device.*”).

Finally, the OA's combination ignores the fact that nothing in Afshary or Mills suggests any equalization "to overcome communication channel impairments caused by the reflected signals." Indeed, the only instance of any use of equalization to overcome channel impairments caused by reflected signals is the '249 Patent itself. *Univ. of Strathclyde v. Clear-Vu Lighting LLC*, 17 F.4th 155, 165 (Fed. Cir. 2021) ("[t]he inventor's own path itself never leads to a conclusion of obviousness; that is hindsight.")

The Alleged Combination Would Not Suggest The Claimed Network

Even assuming that (contrary to Afshary's own disclosure) that a POSITA would recognize a need to improve Afshary's system, and even assuming that (contrary to the incompatibilities between Afshary's system and Mills' equalization technique) a POSITA would then look to combine Afshary and Mills, the combine system would not lead to the claimed network. In this regard, the combination would either completely remove any reflected signal or fail to identify any impairment caused by the reflected signal, such that neither operational state of Afshary would be combined with Mills' equalization to arrive at the claimed network.

Mills is silent with regard to any signal reflection. Mills is silent with regard to signal transmission through coaxial splitters. Mills is silent with regard to filtering or equalization of any reflected signal.

Afshary, which in some embodiments relies on the reflected signal and in other embodiments completely removes the reflected signal (when a mismatch exists), would not have suggested any basis to look to Mills. More importantly, there's no basis to conclude that implementing any teaching of Mills in Afshary would lead to the claimed network. Indeed, unlike either of Mills or Afshary, the '249 Patent specifically identified and claimed the use of carrier signals that are "reflected by the filter back into all branches of the building wiring,"

thereby allowing “terminal device[s to] communicat[e] with other terminal devices [using] the reflected signal path created by the filter,” while also recognizing that there would be a need for the terminal devices to “perform equalization on the received signal that restores a flat frequency response to overcome communication channel impairments caused by the reflected signals.”

Neither Afshary nor Mills contemplate such a use. Afshary either completely removes the reflected signals with its filter (such that there is no path to ensure the “terminal device [are] capable of communicating with other terminal devices [using] the reflected signal path created by the filter,” as the reflected signal is removed) or in the other configuration Afshary does not suggest any impairments are caused by the reflected signal.

Mills is entirely silent with regard to any reflected signal. In this regard, any reflection in Mills would be considered interference and will be removed or filtered out (such that there is no path to ensure the “terminal device [are] capable of communicating with other terminal devices [using] the reflected signal path created by the filter,” as the reflected signal is removed, an interpretation consistent with Afshary’s filtering out of reflected signals) and in Afshary’s other configuration (where the reflected signal is used to “compensate for signal attenuation”), Mills would have no applicability as Afshary would have no impairments caused by the reflected signals.

Therefore, the two references fail to teach or suggest the claimed network, alone or in combination, where a signal is both intentionally reflected into all branches of the building wiring, thereby allowing “each terminal device [to] communicat[e] with other terminal devices [using] the reflected signal path created by the filter,” while also “perform[ing] equalization on the received signal that restores a flat frequency response to overcome communication channel impairments caused by the reflected signals” as recited in Claim 10.

Afshary and Mills, individually or in combination, fail to teach or suggest all features recited in Claim 10 for at least the reasons above. A POSITA would not have combined Afshary and Mills. Even if the combination were proper, it still would not teach the claimed network. Therefore, Claim 10 is allowable over the cited art.

References Relied Upon in Second Rejection***Amit***

U.S. Patent No. 7,127,734, (hereinafter “Amit”) also describes a coaxial in-home network that allows for communication between devices in a home, without transmission through a cable headend device. (Amit at 2:34-40). Amit explains that its network supplies “connectivity between any two home networking nodes” without loading the local TV network with the in-home signals. (*Id.* at 2:44-48). Amit describes two modes of operation, Connected Home operation mode and Single Home operation mode. (*Id.* at 7:23-35). These modes are mutually exclusive, in that a home cannot operate in both concurrently. (*Id.* at 7:12-14 (“The HomeCN operation modes are determined according to the existence/not existence of notch filter at the home entrance (see FIG. 2 [202]).”).). The frequency re-use discussion, which requires an allocation by a management system, is only applicable to the “connected home operational mode” (*Id.* at 8:44-53). Connected home operation mode does not have a notch filter, which has been mapped to the claimed “filter located at the point of entry of the building wiring.”

Amit explains that “[i]t may be recommended to use splitters that deliberately have high reflection levels” (*Id.* at 6:41-44), and “the reflection from the notch filter is in the power of the signal or it might be higher. When this reflection is higher than the signal we can use this reflection ***as our main signal***.” (*Id.* at 14:1-5). In this regard, Amit intentionally seeks out reflected signals, and uses amplifiers to overcome signal attenuation due to interference caused by splitters. (*Id.* at 9:20-27). Amit further describes the use of frequency re-use, but this frequency re-use is only applicable in embodiments without the notch filter. (*Id.* at 9:28-30).

Amit only describes a filter in the context of its notch filter (which itself is only available in certain embodiments), but in all instances Amit fails to identify any awareness of any issues or impairments that may be caused by reflected signals.

In fact, in its “RF challenges” section (Amit at 13:53-14:6), it notes that while “high reflection” can be an issue, when the power of the reflection off the notch filter is as high or higher than the power of the original signal, it can be considered the main signal. (Amit at 14:1-6). In this context, Amit describes a combination filter amplifier (Amit at 12:11, Fig. 10 (depicting “Entrance Unit” as including amplifier and notch filter in one unit), 8:63-65) that suggests a reflected signal could have a greater power level than the original signal. Said otherwise, Amit’s approach to channel impairments of any kind is simply to add additional power to the transmitted signal.

Mills

The same Mills reference from the first rejection is used in combination with Amit in the second rejection.

Response to Second Rejection under 35 U.S.C. § 103

Claim 10 is also rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Amit in view of Mills.

Failure To Allege A Prima Facie Case Of Obviousness

As an initial matter, the OA fails to establish a prima facie case of obviousness for Claim 10. The OA does not allege that either of Mills or Amit recognizes that **reflected** signals can cause channel impairments in a network **where reflected signals are both used to propagate the main signal, as well as constitute an impairment to the transmitted signal**. (OA at 7-8).

Claim 10 expressly requires not only that “terminal devices perform equalization on the received signal that restores a flat frequency response to overcome communication channel impairments caused by the reflected signals” but also that signals are “reflected by the filter back into all branches of the building wiring,” such that “terminal device[s are] capable of communicating with other terminal devices [using] the reflected signal path created by the filter.”

The OA acknowledges that Amit does not disclose “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.” (OA at 7-8). In fact, Amit is completely silent with regard to any channel impairments caused by reflected signals. Similarly, Mills is completely silent with regard to any impairments caused by reflected signals, and in fact is silent with regard to any reflected signals. As such, the OA fails to allege a prima facie case of obviousness regarding Claim 10.

The OA Fails To Allege A Rational Basis To Combine The Teachings Of Mills With Amit

Amit specifically seeks out a reflected signal as a benefit to the system. (Amit at 6:41-44 (“It may be recommended to use splitters that deliberately have high reflection levels”); 14:1-5 (“the reflection from the notch filter is in the power of the signal or it might be higher. When this reflection is higher than the signal we can use this reflection as our main signal.”)). Amit never identifies any issues or impairments caused by any reflected signals. Mills also never identifies any issues or impairments caused by any reflected signals, as Mills is completely silent with regard to reflected signals. In this regard, there is nothing in the OA that suggests a basis to add equalization “to overcome communication channel impairments caused by the reflected signals”

as is required by the claims, because there is nothing to suggest that such impairments exist in Amit's system (or that either Amit or a POSITA would recognize that they existed).

The OA alleges two theories of obviousness: one that the combination would have allowed for a frequency response that is as flat as possible, and the other that "the use of an equalizer would have been a mere application of a known technique to a known device ready for improvement (receiver/terminal device) to yield predictable results (flat signal)." (OA at 8).

Regarding the first, for the same reasons outlined above with regard to Afshary and Mills, The OA and Mills both fail to suggest that the equalization of Mills would work—that is, would provide any restoration of the frequency response in a network like that of Amit, where pre-determined channel characteristics were not and could not be already remembered by the system. In Amit, like Afshary, there is no description of knowing the source of any given message before the message is sent. In contrast, Amit specifically describes how in its network, the reflected signals are reflected back to home units 204-207. (Amit at 6:39-41). Thus, similar to Afshary, each of Amit's network devices (204, 205, 206, 207, 212) can receive a signal from any other device, via splitters, such that all signals arriving at a given device will arrive via the same last leg of coaxial cable. Said otherwise, signals from 206 and 205 sent for 204 will arrive at 204 using the same portion of coaxial cable from 203 to 204. In this regard, 204 is incapable of remembering incoming channel characteristics and applying those to an incoming signal, because signals that take different paths all arrive on the same last leg of coaxial cable. The OA and Mills both fail to suggest that the equalization of Mills would provide any restoration in a network where pre-determined channel characteristics were not already remembered by the system.

In fact, it was not until the '249 Patent that a network recognized the use of a reflected signal to carry data from one node to all branches of the building wiring (whereby relying on the reflected signal), while also recognizing that the reflected signals would also cause impairments that would benefit from equalization. ('249 Patent at 5:64-6:13).

With regard to the *second* basis, the OA ignores the fact that Amit does not disclose any device that was “ready for improvement”—and indeed expressly teaches an alternative solution that would render the OA’s proposed “improvement” redundant and unnecessary. In particular, Amit already addresses how to compensate for the drop in signal strength of a reflected signal: it simply provides the highest-powered signal. (Amit at 14:1-6). In this regard, Amit intentionally seeks out reflected signals, and uses amplifiers to overcome signal attenuation due to interference caused by splitters. (Amit, 9:20-27).

As such the alleged device that is “ready for improvement” in fact is not ready for improvement, and not in the manner proposed, as the disclosure of Amit already solves the problem that equalization would otherwise address. A POSITA would not be motivated to look outside Amit to solve a problem Amit solves in its own way that functions in a reflected signal environment. *See e.g., Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d. 1342, 1369 (Fed. Cir. 2012) (“[B]oth of these references independently accomplish similar functions Because each device independently operates effectively, a person having ordinary skill in the art, who was merely seeking to create a better device [], *would have no reason to combine the features of both devices into a single device.*”).

The OA’s combination ignores the fact that nothing in Amit or Mills suggests any equalization “to overcome communication channel impairments caused by the reflected signals.” Indeed, the only instance of any use of equalization to overcome channel impairments caused by

reflected signals is the '249 Patent itself. *Strathclyde v. Clear-Vu Lighting*, 17 F.4th at 165 (“[t]he inventor's own path itself never leads to a conclusion of obviousness; that is hindsight.”)

The Alleged Combination Would Not Suggest Claimed Network

Mills is silent with regard to any signal reflection. Mills is silent with regard to signal transmission through coaxial splitters. Mills is silent with regard to filtering or equalization of any reflected signal.

Conversely, Amit reflects fully and relies on that reflected signal as part of its principle of operation. Indeed, unlike either of Mills or Amit, the '249 Patent specifically identified and claimed the use of carrier signals that are “reflected by the filter back into all branches of the building wiring,” thereby allowing “terminal device[s] to communicat[e] with other terminal devices [using] the reflected signal path created by the filter,” while also recognizing that there would be a need for the terminal devices to “perform equalization on the received signal that restores a flat frequency response to overcome communication channel impairments caused by the reflected signals.”

Neither Amit nor Mills contemplate such a use. Both Amit and Mills are completely silent with regard to any impairments caused by the reflected signal.

Therefore, the two references fail to teach or suggest the claimed network, alone or in combination, where a signal is both intentionally reflected into all branches of the building wiring, thereby allowing “each terminal device [to] communicat[e] with other terminal devices [using] the reflected signal path created by the filter,” while also “perform[ing] equalization on the received signal that restores a flat frequency response to overcome communication channel impairments caused by the reflected signals” as recited in Claim 10.

Amit and Mills, individually or in combination, fail to teach or suggest all features recited in Claim 10 for at least the reasons above. A POSITA would not have combined Amit and Mills. Even if the combination were proper, it still would not teach the claimed network. Therefore, Claim 10 is allowable over the cited art.

Conclusion

Thus, withdrawal of the rejections under 35 U.S.C. 103 are respectfully requested. These remarks are believed to address all of the rejections in the instant Office Action. Applicant respectfully requests that the rejections be withdrawn and that a Notice of Allowance be granted. The Examiner is respectfully requested to contact the undersigned in the event that a telephone interview would expedite consideration of the application. Should any fee be required in this response, please charge the fee due to Deposit Account 60-2239.

Respectfully submitted,

Date: April 22, 2024

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Owner: Entropic Communications, Inc.

Inventors: Itzhak Gurantz et al.

App. No.: 90/019,247

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Conf. No.: 2398

Examiner: CAMPBELL, JOSHUA D

Art Unit: 3992

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

Docket No.: 189005.TR004

CERTIFICATE OF SERVICE

Mail Stop *Ex Parte Reexam*
Central Reexamination Unit
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner,

I hereby certify that I served a copy of this Response to the Office Action of April 22, 2024 on the *ex parte* reexamination requestor in accordance with MPEP § 2266, 37 C.F.R. § 1.550 and 35 C.F.R. § 1.248 via first class mail and email on April 23, 2024. The name and address of the party served is:

Raghav Bajaj
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2323 Victory Avenue, Suite 700
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Respectfully submitted,

Date: April 23, 2024

/Hao Tan/
Hao Tan, Reg. No. 73,711



ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION # 90/019,247	RECEIPT DATE / TIME 04/23/2024 06:13:35 PM Z ET	ATTORNEY DOCKET # 189005.TR004
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Title of Invention

NETWORK INTERFACE DEVICE AND BROADBAND LOCAL AREA NETWORK USING COAXIAL CABLE

Application Information

APPLICATION TYPE	Utility / ex parte reexam	PATENT #	7594249
CONFIRMATION #	2398	FILED BY	Xuanjie Wang
PATENT CENTER #	65213813	FILING DATE	09/11/2023
CUSTOMER #	153979	FIRST NAMED INVENTOR	- 7594249
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Hao Tan

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
189005.TR004_certificate of service.pdf	1	Reexam Certificate of Service	83 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
189005.TR004_certificate of service.pdf	4869E1A483FD3106757FF9D0A342F8E57BC1E5A8B84466E9C0D577774BB1BEC910419A826722F36C606CEDB7DCEED93AA222F963F231038AAC291B1D16477DB0

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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.