UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/933,770	03/23/2018	Jae Woong JEON	USG-6355-68	7094

130936 7590 10/11/2018

Nixon & Vanderhye PC / Samsung
901 N. Glebe Rd., 11th Floor
Arlington, VA 22203

EXAMINER	
TRINH, TAN H	

ART UNIT	PAPER NUMBER
2648	

NOTIFICATION DATE	DELIVERY MODE
10/11/2018	ELECTRONIC

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

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

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

pair_nixon@firsttofile.com
ptomail@nixonvan.com

Office Action Summary	Application No. 15/933,770	Applicant(s) JEON et al.	
	Examiner TAN H TRINH	Art Unit 2648	AIA Status Yes

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 03-23-2018.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-20 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-20 is/are rejected.

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

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on 03-23-2018 is/are: a)☑ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☑ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☑ All b)☐ Some** c)☐ None of the:

1.☑ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 03-23-2018, the information disclosure statement has been considered by the examiner.

Claim Rejections - 35 USC § 102

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

> A person shall be entitled to a patent unless –
>
> (a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale or otherwise available to the public before the effective filing date of the claimed invention.

4. Claims 1-4, 9, 11-13, 18 and 20 is/are rejected under 35 U.S.C. 102(a)(1) as being anticipated by Lee (U.S. Pub. No. 2015/0296460).

Regarding claims 1 and 12, Lee teaches an electronic device (100/200/300) (fig. 1-3), comprising: at least one antenna (page 9, par [0124]); a wireless communication module (220-(221/223/225/227-228, 310/320) comprising a plurality of processing circuits (120/210/330/CP/SoC) performing communication using the at least one antenna (fig. 2-3, page 4, 9, par [0055-0062, 0124]) (*see the cellular module 221 and a Wi-Fi processor*); and one or more processors (120/210/330) (fig. 1-2, page 4, par [0055]), wherein the one or more processors (120/210) are configured to: determine whether the wireless communication module (220-(221/223/225/227-228, 310/320) is simultaneously operating in a plurality of frequency bands (fig. 2-3, page 4, 6, par [0055-0062, **0084-0087** (*see the first communication module 310 and the second communication module 320 may be simultaneously activated, cellular network /Wi-Fi network*);

obtain a number of processing circuits (210/330) that are operating in the wireless communication module (220/310/320) if the wireless communication module (310/320) is simultaneously operating in the plurality of frequency bands (*cellular network /Wi-Fi network)* (fig. 2-3, page 6, par [0084-0087]); and reduce (*adjust*) a transmission power level of the wireless communication module (310/320) based on the number of processing circuits that are operating (fig. 3, page 6, par [0089-0090]) (*see the control module 330 may adjust transmission power of each of the first communication module 310 and the second communication module 320*).

Regarding claim 2, Lee teaches wherein the one or more processors (210/330) are disposed outside the wireless communication module (220/310/320) (fig. 2-3, page 7, par [0090]) (*see the control module 330 may be disposed outside the processor independently*), and/or wherein at least one of the one or more processors (210/330) is disposed inside the wireless communication module (310/320) (page 9, par [0134-0135]) (*see the first communication module 310 or the second communication module 320, or may be stored in an AP (e.g., the AP 210 of FIG. 2), the first communication module 310, the second communication module 320, the control module 330, the sensor 340, and the memory 350 may be separately implemented and/or two or more of the foregoing elements may be integrated with each other*).

Regarding claim 3, Lee teaches wherein the one or more processors are configured to: reduce the transmission power level of the wireless communication module if the number of processing circuits (*the cellular module 221 and a Wi-Fi processor*) that are operating exceeds a specified number (fig. 3, page 6, par [0089-0090]) (*see the control module 330 may adjust transmission power of each of the first communication module 310 and the second communication module 320 when operating exceeds a specified number= the cellular module 221 and a Wi-Fi processor*).

Regarding claims 4 and 13, Lee teaches wherein the one or more processors are configured to: increase a decrement of the transmission power level as the number of processing circuits that are operating increases (page 7, par [0091]).

Regarding claims 9 and 18, Lee teaches a memory (350) configured to store transmission power level information according to the number of processing circuits that are operating (fig. 3, 6, page par [0117-0121]), wherein the one or more processors are configured to: verify (*check*) the transmission power level information corresponding to the number of processing circuits (page 1, 3, par [0012, 0051-0052]); and reduce (adjust) the transmission power level based on the verified transmission power level information (page 6-7, par [0089, 0091-0094]).

Regarding claim 11, Lee teaches wherein the one or more processors are configured to: determine that the wireless communication module (220/310/320) is simultaneously operating in the plurality of frequency bands (*cellular/WiFi*) if a specified application is running (fig. 2-3, page 5-6, par [0056-0057, 0084-0087]).

Regarding claim 20, Lee teaches an electronic device (100/200/300) (fig. 1-3) comprising: one or more antennas (page 9, par [0124]); a wireless communication module (220-(221/223/225/227-228, 310/320) comprising a plurality of processing circuit s(120/210/330/CP/SoC) (fig. 2-3, page 4, par [0055-0062]) (*see the cellular module 221 processor and a Wi-Fi processor*); and one or more processors (120/210/330/730), wherein the one or more processors are configured to: determine whether the wireless communication module (220/310/320) outputs first transmission power through a first frequency band (*cellular*) and outputs second transmission power through a second frequency band (*WiFi*) using at least part of the one or more antennas (fig. 7, page 8-10, par [0108, 0111, 0117-0118, 0123-0124, 0134, 0140-0142]); obtain a number of processing circuits (210/330), which are operating, from among the plurality of processing circuits (210/330/730) if the wireless communication module outputs the first transmission

power and the second transmission power (fig. 2-7, page 1, 6, par [0010-0012, 0084-0087, 0089); determine a first power level corresponding to the first transmission power and determine a second power level corresponding to the second transmission power (fig. 4-7, page 7-8, par [0098-0105]), from among a plurality of transmission power levels associated with the wireless communication module based on the number of the processing circuits (fig.2-7, page 6-8 par [0086-0103, 0104-0105, 0111-0112, 0117-0121]); and change (*adjust*) a power level of the first transmission power to the first power level and change a power level of the second transmission power to the second power level (page 7-9, par [0094, 0104, 0108, 0121-0123]).

(*see the control module 330 may adjust the transmission power of the first communication module 310 or the second communication module 320 so that the sum of the transmission power of the first communication module 310 and the second communication module 320 does not exceed a preset threshold value (or specified ranges). The preset threshold value or the specified ranges may be* ***changed*** *according to a characteristic of the first communication module 310 or the second communication module 320*).

Claim Rejections - 35 USC § 103

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

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5-8, 10, 14-17 and 19 are rejected under 35 U.S.C. 103 as being unpatentable over Lee (U.S. Pub. No. 2015/0296460).

Regarding claims 5 and 14, Lee teaches the wireless communication module (220) further includes a cellular module (221) comprising cellular communication circuitry (221/229) (fig. 2, page 4, par [0058-0062]), and wherein the one or more processors (210/330) are configured to: verify (*check*) an

operating state (*power*) of the cellular module (310) (fig. 11, page 7 par [0092-0093]); reduce the transmission power level to a first level if the cellular module is not in operation (page 7, par [0093-0094]) (*see the basis of the checked transmission power of the first communication module 310 does not exceed a preset threshold value (or specified ranges). The preset threshold value or the specified ranges may be changed according to a characteristic of the first communication module 310= cellular module is not in operation)*; and reduce the transmission power level to a second level lower than the first level if the cellular module is in operation (page 7, par [0093-0094, and 0097]) (*see the control module 330 may adjust the transmission power of the first communication module 310 so that the sum of the transmission power of the first communication module 310 and the second communication module 320 does not exceed a preset threshold value (or specified ranges (a second level lower than the first level) with the basis of values of a predefined transmission power data table*).

As to claims 5 and 14, references fail to disclose various values such as, second level lower than the first level …. as cited in the claims. However, these skilled in the art would have appreciated that the above differences would not render the claims patentable over the applied references. The reasons are that the above differences would merely depend on how one would like to select particular values regarding the second level lower than the first level ….. to be suitable to the system requirements.

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the applied references as claimed, so that the system of the applied references would be suitable to different system requirements.

Regarding claims 6 and 15, Lee teaches the wireless communication module (220) further includes a Bluetooth module (225/320) comprising Bluetooth circuitry (fig. 2, page 4, 8, par [0057-0062, 0105]), and wherein the one or more processors (120/210/330/830/CP/SoC) are configured to: verify (*check*) an operating state of the Bluetooth module (225/160/800/810) (fig. 1-3, 8, 11, page 4, par [0053, 0057, 0061, 0144-**0145**]) (*see the AP/CP 830 may check whether the BT communication module 810 is activated*); reduce the transmission power level to a first level if the Bluetooth module is not in operation (fig. 8-15, page 10, 12, par [0145, 0176, 0180]) (*see the transmission power is not adjusted as a whole. According to the methods of adjusting transmission power illustrated in FIGS. 13 and 14, the transmission power of the first communication module or the second communication module may be pre-*

checked so that the transmission power may be adaptively adjusted on the basis of the pre-checked transmission power. If the receiver is not activated, the electronic device may not adjust the transmission power of the transmission module);

and reduce (*adjust*) the transmission power level to a third level lower than the first level if the Bluetooth module is in operation (page 8, 12, par [**0108, 0111**, 0160, 0164, 0176, 0179, 0184]), (*see the preset amount or the specified ranges may be changed according to a characteristic of the first communication module 310 or the second communication module BT-320, and the second communication module BT-320 below the preset threshold value = to a third level lower than the first level*).

As to claims 6 and 15, references fail to disclose various values such as, a third level lower than the first level …. as cited in the claims. However, these skilled in the art would have appreciated that the above differences would not render the claims patentable over the applied references. The reasons are that the above differences would merely depend on how one would like to select particular values regarding the third level lower than the first level ….. to be suitable to the system requirements.

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the applied references as claimed, so that the system of the applied references would be suitable to different system requirements.

Regarding claims 7 and 16, Lee teaches a receiver (310/320/284/240) (fig. 2-3, page 5-6, par [0071, 0081]); and a proximity sensor (240G) (fig. 2), wherein the one or more processors are configured to: verify (*check*) at least one of an operating state (*contact state*) of the receiver **or** the proximity sensor (240G/340) (fig. 2, page 7, 10, par [0098, 0151]); reduce (*adjust*) the transmission power level to a first level if the receiver is not in operation **and/or** an object is not sensed by the proximity sensor within a specified distance (fig. 4-6, page 7, par [0099-0100, 0103]) (*see the control module 330 may differently adjust the transmission power to a case where the receiver 284 **or** the microphone 288 of the electronic device 300 is not activated or deactivated*); and

reduce the transmission power level to a fourth level if the receiver is in operation and the object is sensed by the proximity sensor (*contact state*) within the specified distance (fig. 4-6, 8-15, page 7-8, 10, par [0108, 0151-0156, 0168, 0173, 0181-0184]) (*see the electronic device may determine whether the electronic device contacts the human body in operation 1530. In this case, it may be determined*

using at least one of various sensors of the electronic device whether the electronic device contacts the human body f, on the other hand, the electronic device contacts the human body, the electronic device may adjust the transmission power of the transmission module corresponding to the Wi-Fi network in operation of the transmission power level to a fourth level (specification /preset amount of x (dB))

As to claims 7 and 16, references fail to disclose various values such as, a fourth level …. as cited in the claims. However, these skilled in the art would have appreciated that the above differences would not render the claims patentable over the applied references. The reasons are that the above differences would merely depend on how one would like to select particular values regarding the a fourth level ….. to be suitable to the system requirements.

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the applied references as claimed, so that the system of the applied references would be suitable to different system requirements.

Regarding claims 8 and 17, Lee teaches a grip sensor (240F) (fig. 2, page 5, par [0066]), wherein the one or more processors are configured to: verify (*check*) an operating state of the grip sensor (240F) (fig. 2, page 7, 10, par [0098-0099, 0151]); reduce (adjust) the transmission power level to a first level if the electronic device is not gripped by a user (pager 7, par [0099-0100]) (*see the control module 330 may differently adjust the transmission power for a case where the user has a telephone conversation using a speaker (e.g., the speaker 282 of FIG. 2*);

and reduce (adjust/back-off) the transmission power level to a fifth level if the electronic device is gripped by the user (fig. 6, page 7, par [0101-0102]) (*see the control module 330 may differently make a determination for a case where the electronic device 300 is simply gripped by the user and another case where the electronic device 300 is gripped by the user closely to the user's head to make or receive a call. the control module 330 may adjust the transmission power of the first communication module 310 or the second communication module 320 on the basis of which part of the human body contacts the electronic device 30, such as to a fifth level*).

As to claims 8 and 17, references fail to disclose various values such as, a fifth level …. as cited in the claims. However, these skilled in the art would have appreciated that the above differences would not render the claims patentable over the applied references. The reasons are that the above differences would merely depend on how one would like to select particular values regarding a fifth level ….. to be suitable to the system requirements.

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the applied references as claimed, so that the system of the applied references would be suitable to different system requirements.

Regarding claims 10 and 19, Lee teaches the power level information includes: pieces of transmission power level information respectively corresponding to the plurality of processing circuits (210/330) included in the wireless communication module (220/310/320) (fig. 2-3, 6, page 3, 7, par [0051, 0066-0068, 0093, 0117-0120]).

Conclusion

7. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(571) 273-8300, (for Technology Center 2600 only)

Hand-delivered responses should be brought to the Customer Service Window (now located at the Randolph Building, 401 Dulany Street, Alexandria, VA 22314).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan Trinh whose telephone number is (571) 272-7888. The examiner can normally be reached on Monday-Friday from 9:00 AM to 6:00 PM.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, Applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor, Kim, Wesley L.; can be reached at (571) 272-7867.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tan H. Trinh
Division 2648
October 5, 2018

/TAN H TRINH/
Primary Examiner, Art Unit 2648

Notice of References Cited	Application/Control No. 15/933,770	Applicant(s)/Patent Under Reexamination	
	Examiner TAN H TRINH	Art Unit 2648	Page 1 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20150296460-A1	10-2015	LEE; Jong Won	H04B1/3838	455/522
*	B	US-20130090142-A1	04-2013	Lee; Jaewook	H04B1/0475	455/501
*	C	US-20140161035-A1	06-2014	YOSHIDA; Yuki	H04W88/06	370/328
*	D	US-20120309332-A1	12-2012	Liao; Shen-Yi	H04B1/005	455/103
*	E	US-20160248276-A1	08-2016	HONG; Seon-Eui	H02J50/10	1/1
*	F	US-20170230123-A1	08-2017	LAGNADO; ISAAC	H04B17/102	1/1
*	G	US-20130267284-A1	10-2013	RYU; Seungwoo	H04W88/06	455/575.7
*	H	US-20120302283-A1	11-2012	Sun; Rong-Cheng	H04B1/44	455/552.1
*	I	US-20150188617-A1	07-2015	Kuo; Cheng-Hao	H04B7/0602	375/295
*	J	US-20150131613-A1	05-2015	Jung; Sunghoon	H04W24/10	370/331
*	K	US-20170303254-A1	10-2017	KANG; Woo-chul	H04W52/06	1/1
*	L	US-20090082017-A1	03-2009	CHANG; Henry S.	H04B1/406	455/435.2
*	M	US-20100040184-A1	02-2010	Haralabidis; Nikolaos	H04B1/0475	375/373

FOREIGN PATENT DOCUMENTS

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

NON-PATENT DOCUMENTS

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

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

Notice of References Cited	Application/Control No. 15/933,770	Applicant(s)/Patent Under Reexamination	
	Examiner TAN H TRINH	Art Unit 2648	Page 2 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20100216524-A1	08-2010	Thomas; John W.	H04W52/0264	455/574
*	B	US-20180123757-A1	05-2018	KO; Geonjung	H04L27/18	1/1
*	C	US-20140327587-A1	11-2014	WON; Youn-Su	H01Q5/335	343/720
*	D	US-20090068969-A1	03-2009	Lindoff; Bengt	H04W48/18	455/161.1
*	E	US-20070054680-A1	03-2007	Mo; Shaomin Samuel	H04B1/71632	455/502
*	F	US-20180063031-A1	03-2018	WLOCZYSIAK; Stephane Richard Marie	H04B1/0057	1/1
*	G	US-20180067558-A1	03-2018	Eagleman; David M.	G08B1/08	1/1
*	H	US-20140063345-A1	03-2014	Chen; Shih-Chieh	H04N21/42638	348/552
*	I	US-20170134057-A1	05-2017	KIM; Hyung Gon	H03F3/195	1/1
*	J	US-20130176891-A1	07-2013	Lee; Jaewook	H04W24/10	370/252
*	K	US-20100040184-A1	02-2010	Haralabidis; Nikolaos	H04B1/0475	375/373
*	L	US-9929763-B1	03-2018	Zheng; Ming	H04B1/3838	1/1
*	M	US-20180241369-A1	08-2018	GHIM; Jaegon	H03H7/46	1/1

FOREIGN PATENT DOCUMENTS

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

NON-PATENT DOCUMENTS

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

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