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Table with columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO., EXAMINER, ART UNIT, PAPER NUMBER, NOTIFICATION DATE, DELIVERY MODE. Includes application details for Qingyu Miao and examiner CORRIELUS, JEAN B.

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):

elofdocket@clairvalex.com



### **DETAILED ACTION**

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

#### ***Drawings***

2. Figures 1-4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

#### ***Claim Objections***

3. Claims 2-4 and 6-8 are objected to because of the following informalities: claim 2, please provide the required signal connection between the antenna, the transmission signal path and the reception signal path.

Claim 3 recites "a received signal" in line 7. However there is an unclear antecedent in claim 1, line 6. If the "received signal" recited in claim 3 is different from the received signal recited in claim 1, claim 3 can be amended to insert "second" before "received".

As per claim 5, see claim 2.

As per claim 6, see claim 3.

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Claims 4 and 8 are objected for their dependency to objected claims 3/7.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of 35 U.S.C. 112(b):  
(b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 3-4 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

6. Claim elements "coefficient estimation unit" and "an IM product calculation unit", recited in claim 3, each is a limitation that invokes 35 U.S.C. 112, sixth paragraph. However, the written description fails to disclose the corresponding structure, material, or acts for the claimed function.

Applicant may:

- (a) Amend the claim so that the claim limitation will no longer be interpreted as a limitation under 35 U.S.C. 112, sixth paragraph; or

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(b) Amend the written description of the specification such that it expressly recites what structure, material, or acts perform the claimed function without introducing any new matter (35 U.S.C. 132(a)).

If applicant is of the opinion that the written description of the specification already implicitly or inherently discloses the corresponding structure, material, or acts so that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function, applicant should clarify the record by either:

(a) Amending the written description of the specification such that it expressly recites the corresponding structure, material, or acts for performing the claimed function and clearly links or associates the structure, material, or acts to the claimed function, without introducing any new matter (35 U.S.C. 132(a)); or

(b) Stating on the record what the corresponding structure, material, or acts, which are implicitly or inherently set forth in the written description of the specification, perform the claimed function. For more information, see 37 CFR 1.75(d) and MPEP §§ 608.01(o) and 2181.

Claim 4 is likewise rejected for being dependent on an objected claim.

***Claim Rejections - 35 USC § 102***

7. 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.

8. Claim(s) 1-2 and 5-6 is/are rejected under 35 U.S.C. 102(a)(1) as being anticipated by Smith US Patent Application Publication No. 20110075754 A1.

As per claim 1, Smith discloses a method and apparatus fig. 6 comprising: a pre-distortion circuit (note 6024 and 6025) configured to estimate a first IM product caused by a transmission signal (6024 is used to “generate” (estimate) the first IM product see para. [0195]) and pre-distort the transmission signal to cancel the first IM product (see 6025 and paras. [0176] and [0195]); component 6011 corresponding to the claimed “IM product calculator” configured to calculate a second IM product caused by the transmission signal in a received signal based on the first IM product (note para. [0200] in addition, note that the signal at the input of the 6011 is based on the IM product produced by 6024, hence the output of 6011 is based on the first IM product); and a summing node 6016 corresponding to the claimed “subtractor” configured to subtract the second IM product from the received signal ( note para. [0192] that teaches the subtraction and para. [0199] teaches that 6016 is a summing node configured to receive an output of the 6011 (IMP) and a receive signal (see output of 6009).

As per claim 2, fig. 6 show a transceiver that include a transmit path (self-evident), a received path (self-evident) an antenna front end (6001); the first IM product produced by 6024 is in the transmit path; the second IM product is produced in the antenna front end and reception path (see fig. 6).

As per claim 5, see claim 1.

As per claim 6, see claim 2.

***Allowable Subject Matter***

9. Claims 7-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B. Corrielus whose telephone number is (571)272-3020. The examiner can normally be reached on Monday-Thursday from 9:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sam K Ahn can be reached on 571-272-3044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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

/Jean B Corrielus/  
Primary Examiner, Art Unit 2633

<b>Notice of References Cited</b>	Application/Control No. 14/898,838	Applicant(s)/Patent Under Reexamination MIAO ET AL.	
	Examiner Jean B. Corrielus	Art Unit 2633	Page 1 of 1

**U.S. PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-2014/0362949 A1	12-2014	Pratt; Patrick	H04B1/0475	375/296
*	B	US-2014/0334349 A1	11-2014	MAO; Mengda	H04B1/0475	370/278
*	C	US-2007/0217488 A1	09-2007	Smaini; Lydi	H04B1/525	375/219
*	D	US-2015/0236731 A1	08-2015	GHANNOUCHI; Fadhel M.	H04B1/0475	375/296
*	E	US-9,270,231 B2	02-2016	Utsunomiya; Yuichi	H03F1/3247	1/1
*	F	US-2008/0187035 A1	08-2008	Nakamura; Manabu	H03F1/0288	375/232
	G	US-				
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**FOREIGN PATENT DOCUMENTS**

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**NON-PATENT DOCUMENTS**

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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\*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.