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(71) Applicant *(for all designated States except US)*: **INTEL CORPORATION** [US/US]; 2200 Mission College Boulevard, MS: RNB-4-150, Santa Clara, California 95052 (US).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **KRAVITZ, Lior** [IL/IL]; 49 Hapa'amon St., 76965 Kfar Bilu (IL).

(74) Agents: **SCHUBERT, Jeffrey, S.** et al.; Schubert Osterieder & Nickelson PLLC, CPA Global LLC, 900 Second Avenue South, Ste. 1560, Minneapolis, Minnesota 55402 (US).

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(54) Title: CALIBRATION OF QUADRATURE IMBALANCE VIA LOOPBACK PHASE SHIFTS

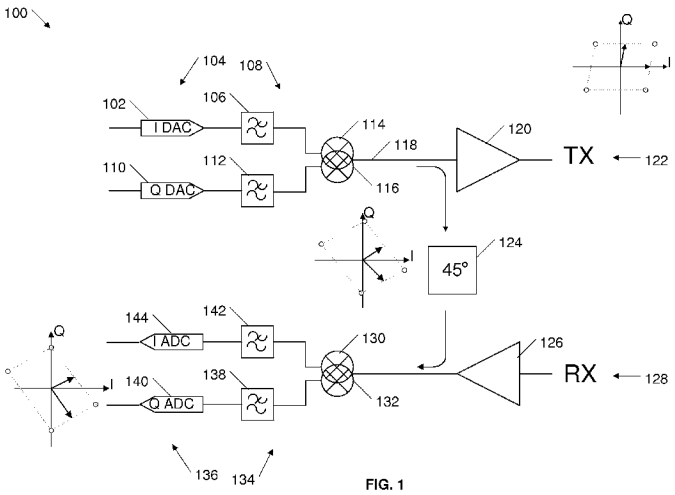

FIG. 1

(57) Abstract: Apparatuses, systems, and methods for calibration of quadrature imbalance in direct conversion transceivers are contemplated. A transceiver controller may perform a self-calibration to address quadrature imbalance. The controller may isolate the transmitter and receiver from any antennas, couple the radio frequency (RF) section of the transmitter to the RF section of the receiver via a loopback path, and inject a calibration signal into the transmitter. In the loopback path, the controller may phase-shift the signal that propagates through the transmitter using two different phase angles to produce two different signals that propagate into the receiver. By measuring the two different signals that exit the receiver, the controller may be able to calculate correction coefficients, or parameters, which may be used to adjust elements that address or correct the quadrature imbalance for both the transmitter and receiver.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

H04B 1/04(2006.01)i, H04B 1/12(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

H04B 1/04; H04B 7/00; H04L 27/22; H03D 3/00; H04B 1/16; H04B 1/30; H04B 1/10

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: self-calibration , quadrature imbalance , compensation

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2008-0166985 A1 (KLAAS WORTEL et al.) 10 July 2008 See claims 1-28 and figures 1-13.	1-20
A	EP 2088681 A2 (MAXLINEAR, INC.) 12 August 2009 See claims 1-15 and figures 1-6.	1-20
A	US 2009-0116586 A1 (BERNARD ARAMBEPOLA et al.) 07 May 2009 See claims 1-7 and figures 1-4.	1-20

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:
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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
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Name and mailing address of the ISA/KR	Authorized officer
Korean Intellectual Property Office Government Complex-Daejeon, 189 Cheongsa-ro, Seo-gu, Daejeon 302-701, Republic of Korea	JUNG, Yun Seok
Facsimile No. 82-42-472-7140	Telephone No. 82-42-481-8123

INTERNATIONAL SEARCH REPORT

Information on patent family members

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