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13/645,245 4 October 2012 (04.10.2012) US(71) Applicant: **QUALCOMM INCORPORATED** [US/US];
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IP ADMINISTRATION, 5775 Morehouse Drive, San
Diego, California 92121 (US).(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY,BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,
KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,
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NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU,
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GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ,
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
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ML, MR, NE, SN, TD, TG).**Declarations under Rule 4.17:**

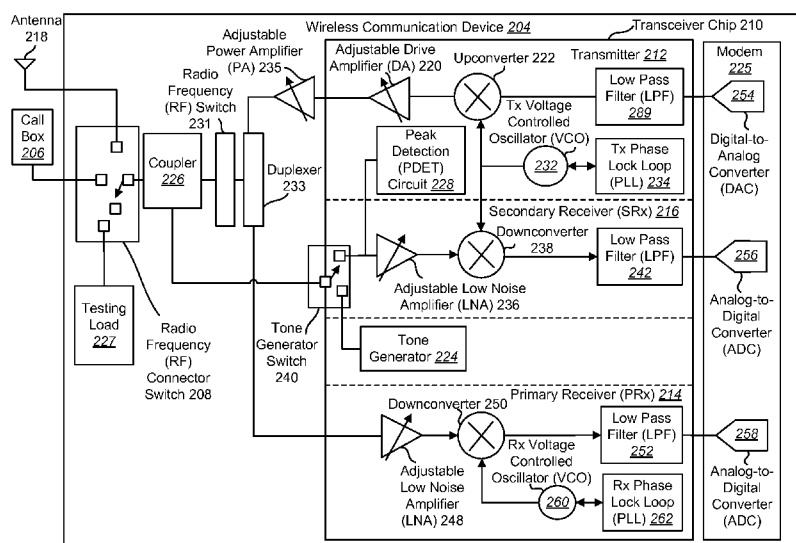
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

- with international search report (Art. 21(3))

[Continued on next page]

(54) Title: GENERATING TEST MEASUREMENT VALUES FOR AUTOMATIC CALIBRATION USING AN INTERNAL TESTING LOAD

**FIG. 2**

(57) Abstract: A wireless communication device configured for automatic calibration is described. The wireless communication device includes a testing load. The wireless communication device also includes a transceiver chip. The wireless communication device further includes a radio frequency connector switch that couples circuitry on the transceiver chip to one of the testing load, an external load and a radiating element.



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(88) **Date of publication of the international search report:**
28 November 2013

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2013/034737

A. CLASSIFICATION OF SUBJECT MATTER
INV. H04B17/00
ADD.

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 G01R H04W

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

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

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 390 495 A (MOTOROLA INC [US]) 7 January 2004 (2004-01-07)	1,2,4-18
Y	claims 1-42 figures 1,2 page 2, line 28 - page 3, line 9 page 9, line 21 - page 17, line 11 page 19, line 5 - page 20, line 9 page 28, line 30 - page 29, last line	3
Y	US 2011/237199 A1 (VENKATARAMAN VISHWANATH [US] ET AL) 29 September 2011 (2011-09-29) claims 1-21 figures 1-3 paragraph [0001] - paragraph [0009] paragraphs [0019], [0020], [0022], [0027] - [0029] paragraph [0039] - paragraph [0043] ----- -/-	3



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

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07/10/2013

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2013/034737

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 2006/094159 A2 (CISCO TECH INC [US]) 8 September 2006 (2006-09-08) claims 1-20 figures 1-3 page 1, line 1 - line 17 page 6, line 9 - page 8, line 9 page 10, line 5 - page 13, line 7 page 20, line 15 - line 27 -----	3
A	US 5 185 568 A (MOTHERSBAUGH JAMES M [US] ET AL) 9 February 1993 (1993-02-09) figures 1-3 column 1, line 1 - line 53 column 4, line 10 - last line claims 1-12 -----	1,40
A	EP 2 093 580 A1 (DIALOG SEMICONDUCTOR GMBH [DE]) 26 August 2009 (2009-08-26) claims 1-17 figures 3,4 paragraph [0012] - paragraph [0017] -----	1,40
X	US 2005/260963 A1 (PONCE DE LEON LORENZO A [US] ET AL) 24 November 2005 (2005-11-24) claims 1-20 figures 1,2,4,5 paragraphs [0003], [0014] paragraph [0024] - paragraph [0030] paragraph [0037] - paragraph [0038] -----	19-45
X,P	WO 2012/106437 A1 (RF MICRO DEVICES INC [US]) 9 August 2012 (2012-08-09)	19,20, 40,41, 43,44
A,P	figures 1,2,3 paragraphs [0003], [0006] paragraph [0043] - paragraph [0055] -----	21-39
A	US 2010/113011 A1 (GREGG JUSTIN [US] ET AL) 6 May 2010 (2010-05-06) claims 1-26 figures 1-6 paragraph [0001] - paragraph [0009] paragraph [0020] - paragraph [0021] paragraph [0042] - paragraph [0064] -----	19-45

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2013/034737

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2390495	A	07-01-2004	AU 2003242764 A1 25-02-2004
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			WO 2012106437 A1 09-08-2012
US 2010113011	A1	06-05-2010	NONE

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2013/034737

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-18

A wireless communication device configured for automatic calibration

2. claims: 19-45

An apparatus for generating test measurement values
