

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference PCT17090CN	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/CN2017/097223	International filing date (<i>day/month/year</i>) 11 August 2017	(Earliest) Priority Date (<i>day/month/year</i>)
Applicant Motorola Mobility LLC		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

the international application in the language in which it was filed.

a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

b. This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).

c. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. **Certain claims were found unsearchable** (see Box No. II).

3. **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

the text is approved as submitted by the applicant.

the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

the text is approved as submitted by the applicant.

the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 1

as suggested by the applicant.

as selected by this Authority, because the applicant failed to suggest a figure.

as selected by this Authority, because this figure better characterizes the invention.

b. none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2017/097223

A. CLASSIFICATION OF SUBJECT MATTER		
H04L 5/00(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)		
H04L; H04W; H04Q		
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)		
CNPAT,CNKI,WPI,EPODOC: reference, signal, receive, power, beam, communicate, descending, ascending, adjacent, list, encod+, modulate		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2015171055 A1 (TELEFONAKTIEBOLAGET L M ERICSSON PLUBL) 12 November 2015 (2015-11-12) claim 1 and description, paragraphs 21-30	1-48
A	CN 101394213 A (ZTE CORP.) 25 March 2009 (2009-03-25) the whole document	1-48
A	CN 103517308 A (TSINGHUA UNIVERSITY) 15 January 2014 (2014-01-15) the whole document	1-48
A	US 2012183093 A1 (FUJITSU LIMITED) 19 July 2012 (2012-07-19) the whole document	1-48
A	US 2012195264 A1 (NTT DOCOMO, INC.) 02 August 2012 (2012-08-02) the whole document	1-48
A	US 2010062779 A1 (INFINEON TECHNOLOGIES AG) 11 March 2010 (2010-03-11) the whole document	1-48
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> 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		Date of mailing of the international search report
16 March 2018		28 March 2018
Name and mailing address of the ISA/CN		Authorized officer
STATE INTELLECTUAL PROPERTY OFFICE OF THE P.R.CHINA 6, Xitucheng Rd., Jimen Bridge, Haidian District, Beijing 100088 China		GUO,Jing
Facsimile No. (86-10)62019451		Telephone No. (86-10)53961671

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2017/097223

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
WO	2015171055	A1	12 November 2015	EP	3140948	A1	15 March 2017
				EP	3140947	A1	15 March 2017
				KR	20160145112	A	19 December 2016
				US	2017214503	A1	27 July 2017
				WO	2015171054	A1	12 November 2015
				CN	106664173	A	10 May 2017
				US	2015349908	A1	03 December 2015
				US	2016218841	A1	28 July 2016

CN	101394213	A	25 March 2009	None			

CN	103517308	A	15 January 2014	None			

US	2012183093	A1	19 July 2012	CN	102594496	A	18 July 2012
				EP	2477341	A1	18 July 2012
				JP	2012151844	A	09 August 2012

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				CN	102577532	A	11 July 2012
				JP	2011082705	A	21 April 2011
				EP	2487965	A1	15 August 2012

US	2010062779	A1	11 March 2010	WO	2010028983	A1	18 March 2010
				EP	2338300	A1	29 June 2011
				CN	102217373	A	12 October 2011
