

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2017/109417

## 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, 3GPP: 参考信号, 资源, 池, 分配, 配置, 波束赋形, 端口, reference signal, resource, pool, CRS, CSI-RS, allocate, beamforming, port

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 103874207 A (HUAWEI TECHNOLOGIES CO., LTD.) 18 June 2014 (18.06.2014), description, paragraphs [0043]-[0125]	1-12, 29-40
A	CN 102469589 A (ZTE CORPORATION) 23 May 2012 (23.05.2012), entire document	1-56
A	CN 104703224 A (YULONG COMPUTER TELECOMMUNICATION SCIENTIFIC (SHENZHEN) CO., LTD.) 10 June 2015 (10.06.2015), entire document	1-56
A	US 2012108254 A1 (PANTECH CO., LTD.) 03 May 2012 (03.05.2012), entire document	1-56
A	QUALCOM INCORPORATED. Enhancements on Beamformed CSI-RS for eFD-MIMO, R1-163039. 3GPP TSG-RAN WG1 #84bis, 15 April 2016 (15.04.2016), sections 2 and 3	1-56

Further documents are listed in the continuation of Box C.

See patent family annex.

<p>* Special categories of cited documents:</p> <p>“A” document defining the general state of the art which is not considered to be of particular relevance</p> <p>“E” earlier application or patent but published on or after the international filing date</p> <p>“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)</p> <p>“O” document referring to an oral disclosure, use, exhibition or other means</p> <p>“P” document published prior to the international filing date but later than the priority date claimed</p>	<p>“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</p> <p>“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</p> <p>“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</p> <p>“&amp;” document member of the same patent family</p>
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<p>Date of the actual completion of the international search</p> <p style="text-align: center;">15 December 2017</p>	<p>Date of mailing of the international search report</p> <p style="text-align: center;">29 January 2018</p>
<p>Name and mailing address of the ISA</p> <p>State Intellectual Property Office of the P. R. China</p> <p>No. 6, Xitucheng Road, Jimenqiao</p> <p>Haidian District, Beijing 100088, China</p> <p>Facsimile No. (86-10) 62019451</p>	<p>Authorized officer</p> <p style="text-align: center;">FENG, Ji</p> <p>Telephone No. (86-10) 62413298</p>

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

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Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
CN 103874207 A	18 June 2014	WO 2014090203 A1	19 June 2014
CN 102469589 A	23 May 2012	EP 2640140 A1	18 September 2013
		JP 2014500649 A	09 January 2014
		WO 2012062178 A1	18 May 2012
		US 2013223332 A1	29 August 2013
CN 104703224 A	10 June 2015	WO 2016161709 A1	13 October 2016
US 2012108254 A1	03 May 2012	EP 2448139 A2	02 May 2012
		WO 2010151050 A2	29 December 2010
		KR 20100138261 A	31 December 2010
		JP 2012531798 A	10 December 2012
		CN 102460999 A	16 May 2012