

(12) 按照专利合作条约所公布的国际申请

(19) 世界知识产权组织
国际局

(43) 国际公布日
2013 年 12 月 27 日 (27.12.2013)



(10) 国际公布号
WO 2013/189347 A3

- (51) 国际专利分类号:
H04W 76/04 (2009.01)
- (21) 国际申请号: PCT/CN2013/081655
- (22) 国际申请日: 2013 年 8 月 16 日 (16.08.2013)
- (25) 申请语言: 中文
- (26) 公布语言: 中文
- (30) 优先权:
201310201714.4 2013 年 5 月 27 日 (27.05.2013) CN
- (71) 申请人: 中兴通讯股份有限公司 (ZTE CORPORATION) [CN/CN]; 中国广东省深圳市南山区高新技术产业园科技南路中兴通讯大厦, Guangdong 518057 (CN)。
- (72) 发明人: 陈霖 (CHEN, Lin); 中国广东省深圳市南山区高新技术产业园科技南路中兴通讯大厦中兴通讯股份有限公司转交, Guangdong 518057 (CN)。 支周 (ZHI, Zhou); 中国广东省深圳市南山区高新技术产业园科技南路中兴通讯大厦中兴通讯股份有限公司转交, Guangdong 518057 (CN)。 王谦 (WANG, Qian); 中国广东省深圳市南山区高新技术产业园科技南路中兴通讯大厦中兴通讯股份有限公司转交, Guangdong 518057 (CN)。 禹忠 (YU,

Zhong); 中国广东省深圳市南山区高新技术产业园科技南路中兴通讯大厦中兴通讯股份有限公司转交, Guangdong 518057 (CN)。

- (74) 代理人: 北京安信方达知识产权代理有限公司 (AFD CHINA INTELLECTUAL PROPERTY LAW OFFICE); 中国北京市海淀区学清路 8 号 B 座 1601A, Beijing 100192 (CN)。
- (81) 指定国 (除另有指明, 要求每一种可提供的国家保护): 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, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW。
- (84) 指定国 (除另有指明, 要求每一种可提供的地区保护): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), 欧亚 (AM, AZ, BY, KG, KZ, RU, TJ, TM), 欧洲 (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,

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(54) Title: MULTIPLEXING TRANSMISSION METHOD FOR MILLIMETER-WAVE COMMUNICATION SPACE, AND MILLIMETER-WAVE COMMUNICATION DEVICE

(54) 发明名称: 一种毫米波通信空间复用传输方法及毫米波通信设备

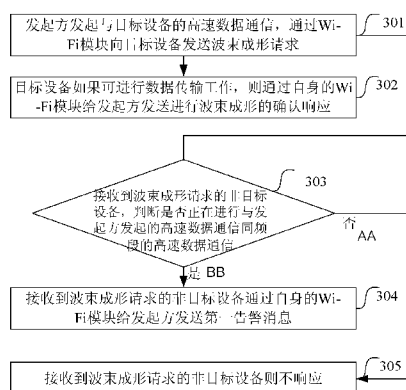


图 3 / Fig. 3

301 An initiator initiating high-speed data communication with a target device and sending a beamforming request to the target device through a WiFi module
302 If being able to conduct a data transmission operation, the target device sending to the initiator a confirmation response of conducting beamforming through the WiFi module thereof
303 A non-target device which receives the beamforming request judging whether high-speed data communication with the same frequency band as the high-speed data communication initiated by the initiator is being conducted
304 The non-target device which receives the beamforming request sending a first alarm message to the initiator through a WiFi module thereof
305 The non-target device which receives the beamforming request not responding
AA No
BB Yes

(57) Abstract: A multiplexing transmission method for a millimeter-wave communication space. The method comprises: a millimeter-wave communication device initiating high-speed data communication with a target device, sending a beamforming request to the target device through a low-frequency band communication module, and configuring a transmitting power which is lower than a default power to conduct beam scanning if an acknowledgement response sent by the target device is received through the low-frequency band communication module and it is learned that a non-target device is conducting high-speed data communication with the same frequency band as the high-speed data communication initiated by the millimeter-wave communication device.

(57) 摘要: 一种毫米波通信空间复用传输方法, 该方法包括: 毫米波通信设备发起与目标设备的高速数据通信, 通过低频段通信模块向目标设备发送波束成形请求, 如通过所述低频段通信模块接收到所述目标设备发送的确认响应, 并获知存在非目标设备正在进行与毫米波通信设备发起的高速数据通信同频段的高速数据通信, 则配置一低于默认功率的发射功率进行波束扫描。



RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG)。

根据细则 4.17 的声明:

- 关于申请人有权申请并被授予专利(细则 4.17(ii))
- 发明人资格(细则 4.17(iv))

本国际公布:

- 包括国际检索报告(条约第 21 条(3))。

- 在修改权利要求的期限届满之前进行, 在收到该修改后将重新公布(细则 48.2(h))。
- 根据申请人的请求, 在条约第 21 条(2)(a)所规定的期限届满之前进行。

(88) 国际检索报告公布日期: 2014 年 4 月 24 日

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2013/081655**A. CLASSIFICATION OF SUBJECT MATTER**

H04W 76/04 (2009.01) 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)

IPC: 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: ZTE; CHEN, Lin; ZHI, Zhou; WANG, Qian; YU, Zhong; 60G, shape, wifi, 2.4G, request, data, ultra-high frequency, co-frequency, transmission, exist, conduct, mm wave, millimeter wave, high frequency, low frequency, beam, sweep, scan, control, signaling, request, interfere, power, low, communication

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CN 102483452 A (NOKIA CORPORATION), 30 May 2012 (30.05.2012), claims 1-14, description, paragraphs [0150]-[0160], and figures 2 and 3	1-12
A	CN 102545972 A (ZTE CORP.), 04 July 2012 (04.07.2012), the whole document	1-12
A	CN 101137221 A (UNIVERSITY OF ELECTRONIC SCIENCE AND TECHNOLOGY OF CHINA), 05 March 2008 (05.03.2008), the whole document	1-12
A	US 2011/0199918 A1 (QUALCOMM INCORPORATED), 18 August 2011 (18.08.2011), the whole document	1-12

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:	“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
“A” document defining the general state of the art which is not considered to be of particular relevance	“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
“E” earlier application or patent but published on or after the international filing date	“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
“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)	“&” document member of the same patent family
“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	

Date of the actual completion of the international search 05 December 2013 (05.12.2013)	Date of mailing of the international search report 27 February 2014 (27.02.2014)
Name and mailing address of the ISA/CN: State Intellectual Property Office of the P. R. China No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088, China Facsimile No.: (86-10) 62019451	Authorized officer CAO, Xiaoning Telephone No.: (86-10) 62413294

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2013/081655

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
CN 102483452 A	30.05.2012	WO 2011/000391 A1	06.01.2011
		EP 2449398 A1	09.05.2012
		US 2012/0220315 A1	30.08.2012
CN 102545972 A	04.07.2012	WO 2013/107116 A1	25.07.2013
CN 101137221 A	05.03.2008	None	
US 2011/0199918 A1	18.08.2011	WO 2011/063182 A1	26.05.2011
		KR 20120096016 A	29.08.2012
		EP 2502432 A1	26.09.2012
		CN 102648642 A	22.08.2012
		JP 2013511914 A	04.04.2013

国际检索报告

国际申请号

PCT/CN2013/081655

A. 主题的分类

H04W 76/04 (2009.01) i

按照国际专利分类(IPC)或者同时按照国家分类和 IPC 两种分类

B. 检索领域

检索的最低限度文献(标明分类系统和分类号)

IPC: H04W; H04Q

包含在检索领域中的除最低限度文献以外的检索文献

在国际检索时查阅的电子数据库(数据库的名称, 和使用的检索词(如使用))

CNPAT, CNKI, WPI, EPODOC: 中兴, 陈霖, 支周, 王谦, 禹忠, 毫米波, 60G, 波束, 成形, 扫描, wifi, 2.4G, 控制, 信令, 请求, 干扰, 数据, 极高频, 低频, 功率, 低, 同频, 通信, 传输, 存在, 有, 进行, mm wave, millimeter wave, high frequency, low frequency, beam, sweep, scan, control, signaling, request, interfere, power, low, communication

C. 相关文件

类 型*	引用文件, 必要时, 指明相关段落	相关的权利要求
A	CN 102483452 A (诺基亚公司) 30.5 月 2012 (30.05.2012) 权利要求第 1-14 项, 说明书第[0150]-[0160]段及附图 2, 3	1-12
A	CN 102545972 A (中兴通讯股份有限公司) 04.7 月 2012 (04.07.2012) 全文	1-12
A	CN 101137221 A (电子科技大学) 05.3 月 2008 (05.03.2008) 全文	1-12
A	US 2011/0199918 A1 (QUALCOMM INCORPORATED) 18.8 月 2011 (18.08.2011) 全文	1-12

☐ 其余文件在 C 栏的续页中列出。

☒ 见同族专利附件。

* 引用文件的具体类型:

“A” 认为不特别相关的表示了现有技术一般状态的文件

“E” 在国际申请日的当天或之后公布的在先申请或专利

“L” 可能对优先权要求构成怀疑的文件, 或为确定另一篇引用文件的公布日而引用的或者因其他特殊理由而引用的文件(如具体说明的)

“O” 涉及口头公开、使用、展览或其他方式公开的文件

“P” 公布日先于国际申请日但迟于所要求的优先权日的文件

“T” 在申请日或优先权日之后公布, 与申请不相抵触, 但为了理解发明之理论或原理的在后文件

“X” 特别相关的文件, 单独考虑该文件, 认定要求保护的发明不是新颖的或不具有创造性

“Y” 特别相关的文件, 当该文件与另一篇或者多篇该类文件结合并且这种结合对于本领域技术人员为显而易见时, 要求保护的发明不具有创造性

“&” 同族专利的文件

国际检索实际完成的日期
05.12 月 2013 (05.12.2013)

国际检索报告邮寄日期
27.2 月 2014 (27.02.2014)

ISA/CN 的名称和邮寄地址:
中华人民共和国国家知识产权局
中国北京市海淀区蓟门桥西土城路 6 号 100088
传真号: (86-10)62019451

授权官员

曹晓宁
电话号码: (86-10) **62413294**

国际检索报告
关于同族专利的信息

国际申请号
PCT/CN2013/081655

检索报告中引用的 专利文件	公布日期	同族专利	公布日期
CN 102483452 A	30.05.2012	WO 2011/000391 A1	06.01.2011
		EP 2449398 A1	09.05.2012
		US 2012/0220315 A1	30.08.2012
CN 102545972 A	04.07.2012	WO 2013/107116 A1	25.07.2013
CN 101137221 A	05.03.2008	无	
US 2011/0199918 A1	18.08.2011	WO 2011/063182 A1	26.05.2011
		KR 20120096016 A	29.08.2012
		EP 2502432 A1	26.09.2012
		CN 102648642 A	22.08.2012
		JP 2013511914 A	04.04.2013