



(51) International Patent Classification:

H04W 52/24 (2009.01) H04W 52/38 (2009.01)
H04W 52/28 (2009.01) H04W 52/32 (2009.01)

(21) International Application Number:

PCT/IB2014/002007

(22) International Filing Date:

8 August 2014 (08.08.2014)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

201310347939.0 9 August 2013 (09.08.2013) CN

(71) Applicant: **ALCATEL LUCENT** [FR/FR]; 148/152
Route de la Reine, F-92100 Boulogne-Billancourt (FR).

(72) Inventors: **ZHONG, Chongxian**; 388# Ningqiao RD,
Shanghai 201206 (CN). **YANG, Tao**; 388# Ningqiao RD,
Shanghai 201206 (CN).

(74) Agent: **THERIAS, Philippe**; Alcatel-Lucent International,
148/152 Route de la Reine, F-92100 Boulogne-Billancourt
(FR).

(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, IR, 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) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
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,
TR), OAPI (BF, BJ, CF, CG, CL, CM, GA, GN, GQ, GW,
KM, ML, MR, NE, SN, TD, TG).

Published:

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

(88) Date of publication of the international search report:

7 May 2015

(54) Title: METHOD AND DEVICE FOR MITIGATING INTERFERENCE

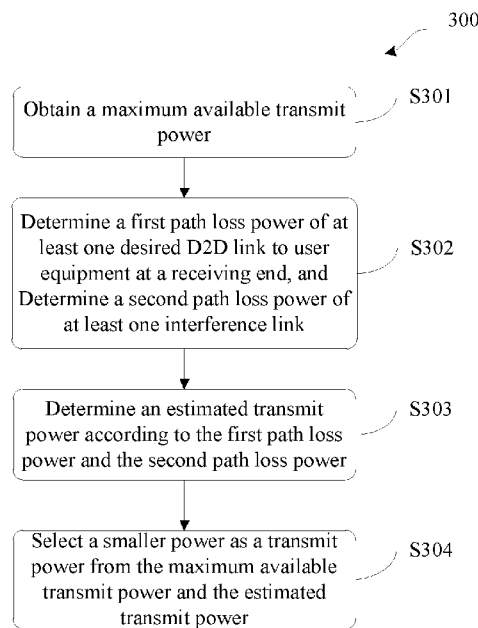


Fig. 3

(57) Abstract: Embodiments of the present invention provide a method of mitigating interference in user equipment at a transmitting end and corresponding user equipment. The method comprises: obtaining a maximum available transmit power; determining a first path loss power of at least one desired D2D link to user equipment at a receiving end, and determining a second path loss power of at least one interference link; determining an estimated transmit power according to the first path loss power and the second path loss power; and selecting a smaller power from the maximum available transmit power and the estimated transmit power, as a transmit power. By employing the method according to embodiments of the present invention, the transmit power of the user equipment at the transmitting end is controlled, which not only ensures communication quality of the desired D2D link but also effectively mitigates the interference caused by the transmitting end of the desired D2D link to the receiving ends of other links multiplexing the same resource blocks as it since interference of an interference link is considered, thereby improving the capability of interference mitigation in D2D communication.



INTERNATIONAL SEARCH REPORT

International application No PCT/IB2014/002007

A. CLASSIFICATION OF SUBJECT MATTER INV. H04W52/24 H04W52/28 H04W52/38 ADD. H04W52/32		
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) 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	CN 103 139 889 A (HUAWEI TECH CO LTD) 5 June 2013 (2013-06-05)	1,2,5-8, 11-15, 19-21,24
Y	abstract	3,4,9, 10, 16-18, 22,23
Y	- & EP 2 770 786 A1 (HUAWEI TECH CO LTD [CN]) 27 August 2014 (2014-08-27) paragraphs [0003], [0018] - [0023], [0031], [0041], [0093] - [0095], [0144] figures 1,2 ----- US 2013/157676 A1 (BAEK SEUNG KWON [KR] ET AL) 20 June 2013 (2013-06-20) paragraph [0020] ----- -/--	3,4,9, 10,16-18
<input checked="" 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	"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	
"E" earlier application or patent but published on or after the international filing date	"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	
"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)	"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	
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	
"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	Date of mailing of the international search report	
10 February 2015	17/02/2015	
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Reville, Lenora	

INTERNATIONAL SEARCH REPORT

International application No PCT/IB2014/002007

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>LU QIANXI ET AL: "Radio resource management for network assisted D2D in cellular uplink", 2013 IEEE/CIC INTERNATIONAL CONFERENCE ON COMMUNICATIONS IN CHINA, WORKSHOPS (CIC/ICCC), 1 August 2013 (2013-08-01), pages 159-164, XP055114226, DOI: 10.1109/ICCChinaW.2013.6670586 ISBN: 978-1-47-991403-6 page 162, right-hand column, line 5 - page 163, right-hand column, line 1 figures 3-5</p> <p align="center">-----</p>	22,23

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/IB2014/002007
--

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
CN 103139889 A	05-06-2013	CN 103139889 A EP 2770786 A1 US 2014274196 A1 WO 2013078946 A1	05-06-2013 27-08-2014 18-09-2014 06-06-2013

EP 2770786 A1	27-08-2014	CN 103139889 A EP 2770786 A1 US 2014274196 A1 WO 2013078946 A1	05-06-2013 27-08-2014 18-09-2014 06-06-2013

US 2013157676 A1	20-06-2013	KR 20130070661 A US 2013157676 A1	28-06-2013 20-06-2013
