

(51) International Patent Classification:
H04B 7/26 (2006.01) *H04B 7/204* (2006.01)(21) International Application Number:
PCT/KR2010/000699(22) International Filing Date:
4 February 2010 (04.02.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/150,306 5 February 2009 (05.02.2009) US
61/170,087 16 April 2009 (16.04.2009) US
10-2009-0067488 23 July 2009 (23.07.2009) KR(71) Applicant (for all designated States except US): **LG ELECTRONICS INC.** [KR/KR]; 20, Yeouido-dong, Yeongdeungpo-gu, Seoul 150-721 (KR).

(72) Inventors; and

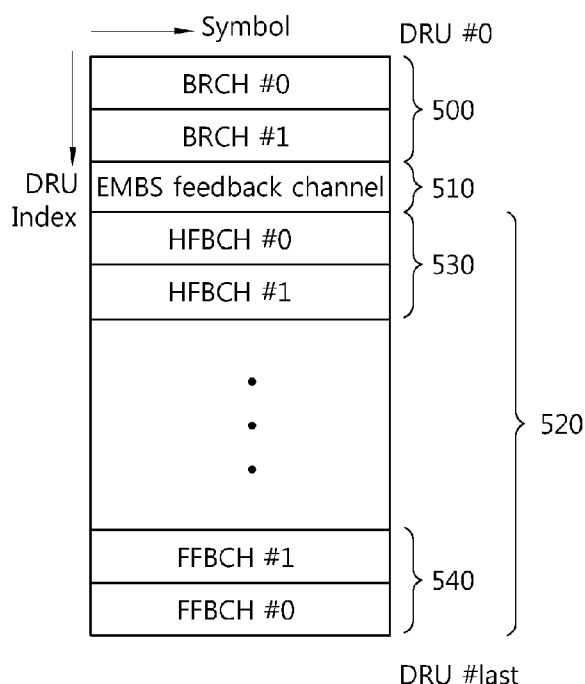
(75) Inventors/Applicants (for US only): **CHUN, Jin Young** [KR/KR]; LG R&D Complex, 533, Hoge 1-dong, Don-gan-gu, Anyang-si, Gyeonggi-do 431-749 (KR). **KIM, Sunam** [KR/KR]; LG R&D Complex, 533, Hoge 1-dong, Dongan-gu, Anyang-si, Gyeonggi-do 431-749 (KR). **LEE, Suk Woo** [KR/KR]; LG R&D Complex, 533, Hoge 1-dong, Dongan-gu, Anyang-si, Gyeonggi-do 431-749 (KR). **IHM, Bin Chul** [KR/KR]; LG R&D Complex, 533, Hoge 1-dong, Dongan-gu, Anyang-si, Gyeonggi-do 431-749 (KR).(74) Agent: **YANG, Moon Ock**; S&IP Patent & Law Firm, 2F. Samheung Yeoksam Bldg., 735-10 Yeoksam-dong, Gangnam-gu, Seoul 135-080 (KR).

(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, 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, 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, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE,

[Continued on next page]

(54) Title: METHOD AND APPARATUS OF TRANSMITTING UPLINK CONTROL SIGNAL IN WIRELESS COMMUNICATION SYSTEM

[Fig. 6]



(57) Abstract: A method and apparatus of transmitting an uplink control signal in a wireless communication system is provided. A user equipment receives pieces of resource allocation information about a plurality of respective uplink control channels, and transmits the uplink control signal through one of the plurality of uplink control channels. Radio resources sequentially adjacent to each other on a basis of one reference uplink control channel, selected from the plurality of uplink control channels, are allocated to the respective uplink control channels. And the resource allocation information comprises size of the radio resources allocated to each of the plurality of uplink control channels within a resource region in which the plurality of uplink control channels is configured.



SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

Published:

- (84) Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (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, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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

25 November 2010

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2010/000699**A. CLASSIFICATION OF SUBJECT MATTER****H04B 7/26(2006.01)i, H04B 7/204(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)

H04B 7/26; H04J 11/00; H04B 3/36; H04B 7/14; H04B 7/005

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: respective, uplink, channel, adjacent, control

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2004-0097189 A1 (DAVID BONGFELDT et al.) 20 May 2004 See the Abstract; Paragraphs [0008]-[0013]; Figs. 1-8; Claims 1-19.	1-15
A	US 2003-0060163 A1 (ROBERT JOHN FILKINS et al.) 27 March 2003 See the Abstract; Paragraphs [0007]-[0013]; Claims 1-38.	1-15
A	JP 2007-195184 A (MOTOROLA INC.) 02 August 2007 See the Abstract; Figs. 1-6; Claims 1-18.	1-15
A	US 2004-0162037 A1 (ERAN SHPAK) 19 August 2004 See the Abstract; Paragraphs [0008]-[0034]; Figs. 1-3; Claims 1-24.	1-15



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 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

30 SEPTEMBER 2010 (30.09.2010)

Date of mailing of the international search report

04 OCTOBER 2010 (04.10.2010)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
Government Complex-Daejeon, 139 Seonsa-ro, Seo-
gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

Park, Sung Woong

Telephone No. 82-42-481-8596



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR2010/000699

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2004-0097189 A1	20.05.2004	AU 2002-10299 A1	29.04.2002
		AU 2002-304917 A8	09.12.2002
		AU 2002-313423 A8	17.02.2003
		CA 2323881-A1	18.04.2002
		CN 1470144 A0	21.01.2004
		CN 1471765 A0	28.01.2004
		EP 1327369 A1	16.07.2003
		EP 1391060 A2	25.02.2004
		EP 1413063 A2	28.04.2004
		EP 1413063 B1	28.02.2007
		US 2002-0044594 A1	18.04.2002
		US 2002-045431 A1	18.04.2002
		US 2002-045461 A1	18.04.2002
		US 6889033 B2	03.05.2005
		US 7088953 B2	08.08.2006
		WO 02-098014 A2	05.12.2002
		WO 02-098014 A3	05.12.2002
		WO 02-33996 A1	25.04.2002
		WO 03-013005 A2	13.02.2003
		WO 03-013005 A3	13.02.2003
		WO 03-013028 A1	13.02.2003
US 2003-0060163 A1	27.03.2003	US 7039362 B2	02.05.2006
JP 2007-195184 A	02.08.2007	CA 2573876-A1	18.07.2007
		CN 101030795 A	05.09.2007
		CN 101030795 C0	05.09.2007
		EP 1811683 A2	25.07.2007
		EP 2200379 A2	23.06.2010
		EP 2200380 A2	23.06.2010
		KR 10-0933606 B1	23.12.2009
		KR 2007-0076533 A	24.07.2007
		US 2007-0178930 A1	02.08.2007
US 2004-0162037 A1	19.08.2004	CN 1778052 A	24.05.2006
		EP 1597840 A2	23.11.2005
		JP 2006-520137 A	31.08.2006
		KR 10-2005-0116797 A	13.12.2005
		US 2004-160929 A1	19.08.2004
		US 2006-0146747 A1	06.07.2006
		US 7035243 B2	25.04.2006
		US 7164674 B2	16.01.2007
		WO 2004-075454 A2	02.09.2004
		WO 2004-075454 A3	03.02.2005
		WO 2004-075455 A2	02.09.2004
		WO 2004-075455 A3	02.09.2004