

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT5183131

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
LG ELECTRONICS, INC.	12/19/2013
RECEIVING PARTY DATA	
Name:	OPTIS CELLULAR TECHNOLOGY, LLC
Street Address:	PO BOX 250649
City:	PLANO
State/Country:	TEXAS
Postal Code:	75025
PROPERTY NUMBERS Total: 3	
Property Type	Number
Application Number:	16142027
Application Number:	15907766
Application Number:	15276870
CORRESPONDENCE DATA	
Fax Number:	(703)816-4100
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
Phone:	7038164000
Email:	LMM@nixonvan.com
Correspondent Name:	JOHN LASTOVA / NIXON & VANDERHYE
Address Line 1:	901 N. GLEBE RD., 11TH FLOOR
Address Line 4:	ARLINGTON, VIRGINIA 22203
ATTORNEY DOCKET NUMBER:	ML5&ML7.LG-OCT
NAME OF SUBMITTER:	JOHN R. LASTOVA
SIGNATURE:	/John R. Lastova/
DATE SIGNED:	10/11/2018
Total Attachments: 28	
source=2013-12-19 - PAA - LGE to OCT#page1.tif	
source=2013-12-19 - PAA - LGE to OCT#page2.tif	
source=2013-12-19 - PAA - LGE to OCT#page3.tif	
source=2013-12-19 - PAA - LGE to OCT#page4.tif	

source=2013-12-19 - PAA - LGE to OCT#page5.tif
source=2013-12-19 - PAA - LGE to OCT#page6.tif
source=2013-12-19 - PAA - LGE to OCT#page7.tif
source=2013-12-19 - PAA - LGE to OCT#page8.tif
source=2013-12-19 - PAA - LGE to OCT#page9.tif
source=2013-12-19 - PAA - LGE to OCT#page10.tif
source=2013-12-19 - PAA - LGE to OCT#page11.tif
source=2013-12-19 - PAA - LGE to OCT#page12.tif
source=2013-12-19 - PAA - LGE to OCT#page13.tif
source=2013-12-19 - PAA - LGE to OCT#page14.tif
source=2013-12-19 - PAA - LGE to OCT#page15.tif
source=2013-12-19 - PAA - LGE to OCT#page16.tif
source=2013-12-19 - PAA - LGE to OCT#page17.tif
source=2013-12-19 - PAA - LGE to OCT#page18.tif
source=2013-12-19 - PAA - LGE to OCT#page19.tif
source=2013-12-19 - PAA - LGE to OCT#page20.tif
source=2013-12-19 - PAA - LGE to OCT#page21.tif
source=2013-12-19 - PAA - LGE to OCT#page22.tif
source=2013-12-19 - PAA - LGE to OCT#page23.tif
source=2013-12-19 - PAA - LGE to OCT#page24.tif
source=2013-12-19 - PAA - LGE to OCT#page25.tif
source=2013-12-19 - PAA - LGE to OCT#page26.tif
source=2013-12-19 - PAA - LGE to OCT#page27.tif
source=2013-12-19 - PAA - LGE to OCT#page28.tif

PATENT ASSIGNMENT AGREEMENT

This PATENT ASSIGNMENT AGREEMENT ("Agreement") dated as of December 19, 2013 (the "Effective Date") by and between:

- (i) LG Electronics, Inc., a company duly established under the laws of the Republic of Korea, with a business address of LG Twin Towers 20, Yoido-dong, Youngdungpo-gu, Seoul, South Korea, 150-721 ("Assignor"); and
- (ii) Optis Cellular Technology, LLC, a Delaware limited liability company ("Assignee").

WITNESSETH:

WHEREAS, Assignor and Assignee, among others, entered into a certain Master Sale Agreement, dated as of December 19, 2013 (the "Master Sale Agreement");

WHEREAS, under the Master Sale Agreement Assignor agreed to transfer its rights in the Assigned Patents (as defined below) to Assignee;

WHEREAS, pursuant to the Master Sale Agreement Assignor and Assignee entered into the Patent Sale and Grant-Back License Agreement, dated as of the Effective Date (the "Assignment Agreement"), whereby Assignor assigned its right, title and interest in and to the Assigned Patents to Assignee; and

WHEREAS, Assignor now wishes to confirm its assignment of the Assigned Patents to Assignee as provided for in the Master Sale Agreement as further set forth below.

NOW, THEREFORE, in consideration of the foregoing and the mutual promises and agreements contained in this Agreement, and for other good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree as follows:

1. Assignment. Pursuant and subject to the terms and conditions of the Master Sale Agreement, Assignor hereby transfers, assigns and conveys to Assignee its right, title, and interest throughout the world (under any and all laws and in any and all jurisdictions) in and to all of the patents, patent applications and provisional patent applications set forth on Schedule A attached hereto (collectively, the "Assigned Patents"), in each case, subject to all existing encumbrances. Pursuant to the foregoing assignment, each of the Assigned Patents shall hereafter be for Assignee's own use and enjoyment, and for the use and enjoyment of Assignee's successors and assigns, as fully and entirely as the same would have been held and enjoyed by the applicable Assignor if this Agreement had not been made. The foregoing assignment includes, without limitation, the rights of Assignor, if any, to (A) register or apply in all countries and regions for patents, utility models, design registrations and like rights of exclusion and for inventors' certificates for the Assigned Patents; (B) prosecute, maintain and defend the Assigned Patents before any public or private agency, office or registrar including by filing reissues, reexaminations, divisions, continuations, continuations-in-part, substitutes, extensions and all other applications and post issue proceedings included in the Assigned Patents; (C) claim priority based on the filing dates

of any of the Assigned Patents under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, the Paris Convention, and all other treaties of like purposes; and (D) sue and recover damages or other compensation for past, present or future infringements thereof, the right to sue and obtain equitable relief, including injunctive relief, in respect of such infringements, and the right to fully and entirely stand in the place of the applicable Assignor in all matters related to the Assigned Patents.

2. Authorization. Assignor also hereby expressly authorizes the respective patent office or governmental agency in each and every jurisdiction worldwide (including the Commissioner of Patents and Trademarks in the United States Patent and Trademark Office, and the corresponding entities or agencies in any applicable foreign countries or multinational authorities) (the "Applicable IP Offices") to: (A) issue any and all patents or certificates of invention or equivalent which may be granted upon any of the Assigned Patents in the name of Assignee, as the assignee to the Assignor's interest therein; and (B) record Assignee as the assignee of the Assigned Patents and to deliver to Assignee, and to Assignee's attorneys, agents, successors or assigns, all official documents and communications as may be warranted by this Agreement.

3. Further Assurances. Each party hereby agrees to execute and deliver to the other party all necessary documents and take all necessary actions reasonably requested by such party from time to time to confirm or effect the assignments set forth in this Agreement, or otherwise to carry out the purposes of this Agreement, including, without limitation, by providing executed originals of short-form assignment agreements entered into by Assignor and Assignee on the Effective Date for filing or otherwise evidencing the assignments set forth in this Agreement with the Applicable IP Offices; provided, however, that nothing contained herein shall obligate Assignor to incur any cost or pay any expense in connection therewith.

4. Governing Law. This Agreement shall be governed by the laws of Delaware.

5. General Provisions. This Agreement may be executed in any number of counterparts, each of which shall be deemed to be an original, and all of which together shall constitute one and the same instrument. Delivery of an executed counterpart of a signature page to this Agreement by facsimile or electronic mail shall be as effective as delivery of a manually executed counterpart of this Agreement. This Agreement may not be supplemented, altered, or modified in any manner except by a writing signed by all parties hereto. The failure of any party to enforce any terms or provisions of this Agreement shall not waive any of its rights under such terms or provisions. In the event of a conflict between the terms and conditions of this Agreement and the terms and conditions of the Master Sale Agreement or any of the Ancillary Agreements (as defined in the Master Sale Agreement, provided that for purposes of this Agreement such term shall exclude this Agreement), the terms and conditions of the Master Agreement (or the applicable Ancillary Agreement) shall govern.

[Remainder of this page intentionally left blank.]

IN WITNESS WHEREOF, Assignor and Assignee have caused this instrument to be executed by their respective duly authorized representative as of the Effective Date.

Assignor:

LG ELECTRONICS, INC.

By



Name: JEONG HWAN LEE

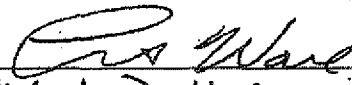
Title: Executive Vice President

[Signature Page fo Patent Assignment Agreement -- LGB to Optis Cellular Technology]

PATENT
REEL: 047214 FRAME: 0383

Assignee:

OPTIS CELLULAR TECHNOLOGY, LLC

By 
Name: Leslie D. Ware
Title President

By _____
Name:
Title

RefNo.	Country	Status	Title	App No.	App Date	Patent No.	Patent Date
1A	PC	FILED	Method for scheduling distributed virtual resource blocks	PCT/KR09/00041	2009-01-06		
1A	US	GRANTED	Method for scheduling distributed virtual resource blocks	12/349465	2009-01-06	7729377	2010-06-01
1A	EP	FILED	Method for scheduling distributed virtual resource blocks	091501809	2009-01-07		
1A	TW	FILED	Method for scheduling distributed virtual resource blocks	098100393	2009-01-07		
1A	US	GRANTED	Method for scheduling distributed virtual resource blocks	12/759645	2010-04-13	8472466	2013-06-25
1A	CN	FILED	Method for scheduling distributed virtual resource blocks	2009-80101806	2010-07-07	NOA	
1A	CN	FILED	Method for scheduling distributed virtual resource blocks	2013-10189147	2013-05-21		
1A	CN	FILED	Method for scheduling distributed virtual resource blocks	2013-10021346	2013-01-21		
1A	CA	FILED	Method for scheduling distributed virtual resource blocks	2711298	2010-06-30		
1A	JP	GRANTED	Method for scheduling distributed virtual resource blocks	2010-533974	2009-01-06	5108954	2012-10-12
1A	RU	GRANTED	Method for scheduling distributed virtual resource blocks	2010128217	2010-08-09	2468511	2012-11-27

Ref No.	Country	Status	Title	App No.	App Date	Patent No.	Patent Date
1A	RU	FILED	Method for scheduling distributed virtual resource blocks	2012152805	2012-12-07		
1A	US	GRANTED	Method for scheduling distributed virtual resource blocks	12/868642	2010-08-25	8018966	2011-09-13
1A	JP	FILED	Method for scheduling distributed virtual resource blocks	2012-180577	2012-08-16		
1A	US	FILED	Method for scheduling distributed virtual resource blocks	13/409057	2012-02-29	NOA	
1A	KR	GRANTED	Method for scheduling distributed virtual resource blocks	10-2008-0131113	2008-12-22	10-0913099	2009-08-13
2A	US	GRANTED	Method for performing random access procedures and terminal thereof	12/457653	2009-06-17	7933243	2011-04-26
2A	PC	FILED	Method for performing random access procedures and terminal thereof	PCT/KR09/03274	2009-06-18		
2A	GB	GRANTED	Method for performing random access procedures and terminal thereof	0910415.9	2009-06-16	2461158	2011-03-02
2A	EP	FILED	Method for performing random access procedures and terminal thereof	09007920	2009-06-17		
2A	JP	GRANTED	Method for performing random access procedures and terminal thereof	2011-512394	2010-12-03	5189204	2013-02-01

Ref No.	Country	Status	Title	App No.	App Date	Patent No.	Patent Date
2A	CN	FILED	Method for performing random access procedures and terminal thereof	2009-80123161	2010-12-17		
2A	IN	FILED	Method for performing random access procedures and terminal thereof	4045KOL NP2010	2010-10-28		
2A	US	GRANTED	Method for performing random access procedures and terminal thereof	13/071280	2011-03-24	8467343	2013-06-18
2A	US	FILED	Method for performing random access procedures and terminal thereof	13/894948	2013-05-15		
2A	KR	GRANTED	Method for performing random access procedures and terminal thereof	10-2009-0048775	2009-06-02	10-0968020	2010-06-28
3A	US	GRANTED	Data transmitting and receiving method using phase shift based precoding and transceiver supporting the same	12/678200	2010-03-15	7970074	2011-06-28
3A	US	GRANTED	Data transmitting and receiving method using phase shift based precoding and transceiver supporting the same	12/724318	2010-03-15	7961808	2011-06-14
3A	RU	GRANTED	Data transmitting and receiving method using phase shift based precoding and transceiver supporting the same	2010115271	2010-04-16	2446574	2012-03-27
3A	JP	FILED	Data transmitting and receiving method using phase shift based precoding and transceiver supporting the same	2010-525748	2010-03-18		
3A	CN	FILED	Data transmitting and receiving method using phase shift based precoding and transceiver supporting the same	2008-80113871	2010-04-29	NOA	

Ref No.	Country	Status	Title	App No.	App Date	Patent No.	Patent Date
3A	PC	FILED	Data transmitting and receiving method using phase shift based precoding and transceiver supporting the same	PCT/KR08/05423	2008-09-12		
3A	US	GRANTED	Data transmitting and receiving method using phase shift based precoding and transceiver supporting the same	13/109962	2011-05-17	8208576	2012-06-26
3A	US	FILED	Data transmitting and receiving method using phase shift based precoding and transceiver supporting the same	13/109963	2011-05-17		
3A	KR	GRANTED	Data transmitting and receiving method using phase shift based precoding and transceiver supporting the same	10-2010-7003778	2010-02-22	10-0983289	2010-09-14
4A	US	GRANTED	Method of generating reference signal in wireless communication system	12/205530	2008-09-05	7848448	2010-12-07
4A	PC	FILED	Method of generating reference signal in wireless communication system	PCT/KR08/05271	2008-09-05		
4A	US	GRANTED	Method of generating reference signal in wireless communication system	12/913654	2010-10-27	8098760	2012-01-17
4A	US	FILED	Method of generating reference signal in wireless communication system	13/312809	2011-12-06		
4A	US	FILED	Method of generating reference signal in wireless communication system	13/312804	2011-12-06		

RefNo.	Country	Status	Title	App No.	App Date	Patent No.	Patent Date
4A	EP	GRANTED	Method of generating reference signal in wireless communication system	08793726	2008-05-09	2186282	2013-05-22
4A	CN	GRANTED	Method of generating reference signal in wireless communication system	2008-80105859	2010-03-05	ZL2008801058591	2013-04-10
4A	JP	GRANTED	Method of generating reference signal in wireless communication system	2010-523956	2008-09-05	5086437	2012-09-14
4A	GB	GRANTED	Method of generating reference signal in wireless communication system	1002895.9	2010-02-19	2464254	2012-01-25
4A	CA	GRANTED	Method of generating reference signal in wireless communication system	2696795	2010-02-17	2696795	2012-11-20
4A	RU	GRANTED	Method of generating reference signal in wireless communication system	2010108279	2010-04-07	2451414	2012-05-20
4A	BR	FILED	Method of generating reference signal in wireless communication system	PI08156174	2010-02-19		
4A	EP	FILED	Method of generating reference signal in wireless communication system	13151379	2013-01-15		
4A	CN	FILED	Method of generating reference signal in wireless communication system	2013-10073979	2013-03-08		
4A	KR	GRANTED	Method of generating reference signal in wireless communication system	10-2008-0033799	2008-04-11	10-0940730	2010-01-28
5A	US	GRANTED	Method for transmitting status report of PDCP layer in mobile telecommunications system and receiver of mobile telecommunications	12/523090	2009-07-14	7936723	2011-05-03

Ref No.	Country	Status	Title	App No.	App Date	Patent No.	Patent Date
5A	EP	FILED	Method for transmitting status report of PDCP layer in mobile telecommunications system and receiver of mobile telecommunications	08793753	2009-09-23		
5A	CN	GRANTED	Method for transmitting status report of PDCP layer in mobile telecommunications system and receiver of mobile telecommunications	200880020625.7	2008-09-10	ZL200880020625.7	2012-10-03
5A	JP	GRANTED	Method for transmitting status report of PDCP layer in mobile telecommunications system and receiver of mobile telecommunications	2009-551959	2009-08-28	5279732	2013-05-31
5A	PC	FILED	Method for transmitting status report of PDCP layer in mobile telecommunications system and receiver of mobile telecommunications	PCT/KR08/05345	2008-09-10		
5A	US	FILED	Method for transmitting status report of PDCP layer in mobile telecommunications system and receiver of mobile telecommunications	13/051803	2011-03-18	NOA	
5A	CN	FILED	Method for transmitting status report of PDCP layer in mobile telecommunications system and receiver of mobile telecommunications	2012-10301159	2012-08-22		
5A	KR	GRANTED	Method for transmitting status report of PDCP layer in mobile telecommunications system and receiver of mobile telecommunications	10-2008-0088970	2008-09-09	10-0907978	2009-07-08
6A	JP	GRANTED	Method for transmitting uplink signals	2010-524774	2010-03-12	5183743	2013-01-25

Ref No.	Country	Status	Title	App No.	App Date	Patent No.	Patent Date
6A	CN	FILED	Method for transmitting uplink signals	2008-80112278	2010-04-19		
6A	IN	FILED	Method for transmitting uplink signals	98IKOLN P2010	2010-03-16		
6A	EP	FILED	Method for transmitting uplink signals	080160146	2008-09-11		
6A	TW	GRANTED	Method for transmitting uplink signals	97135181	2008-09-12	1387252	2013-02-21
6A	PC	FILED	Method for transmitting uplink signals	PCT/KR08/05225	2008-09-04		
6A	US	GRANTED	Method for transmitting uplink signals	12/209136	2008-09-11	8102833	2012-01-24
6A	US	FILED	Method for transmitting uplink signals	13/316315	2011-12-09		
6A	JP	FILED	Method for transmitting uplink signals	2013-004901	2013-01-15		
6A	KR	FILED	Method for transmitting uplink signals	10-2008-0068634	2008-07-15		
7A	US	FILED	Method for transmitting and receiving control information through PDCCH	13/590048	2012-08-20		
7A	US	GRANTED	Method for transmitting and receiving control information through PDCCH	12/252270	2008-10-15	7873004	2011-01-18
7A	PC	FILED	Method for transmitting and receiving control information through PDCCH	PCT/KR08/05226	2008-09-04		
7A	TW	GRANTED	Method for transmitting and receiving control information through PDCCH	97134459	2008-09-08	1387238	2013-02-21

Ref No.	Country	Status	Title	App No.	App Date	Patent No.	Patent Date
7A	JP	GRANTED	Method for transmitting and receiving control information through PDCCH	2010-547550	2010-08-19	5291125	2013-06-14
7A	IN	FILED	Method for transmitting and receiving control information through PDCCH	2848KOL NP2010	2010-08-04		
7A	ID	GRANTED	Method for transmitting and receiving control information through PDCCH	W0020100 3143	2010-09-07	IDP0032734	2013-01-15
7A	CA	FILED	Method for transmitting and receiving control information through PDCCH	2715980	2010-08-18		
7A	CN	FILED	Method for transmitting and receiving control information through PDCCH	2008-80127086	2010-08-19	NOA	
7A	US	GRANTED	Method for transmitting and receiving control information through PDCCH	12/963570	2010-12-08	8019332	2011-09-13
7A	US	GRANTED	Method for transmitting and receiving control information through PDCCH	12/963588	2010-12-08	8014769	2011-09-06
7A	EP	FILED	Method for transmitting and receiving control information through PDCCH	12150670	2012-01-10		
7A	US	GRANTED	Method for transmitting and receiving control information through PDCCH	13/185343	2011-07-18	8213377	2012-07-03
7A	US	GRANTED	Method for transmitting and receiving control information through PDCCH	13/185362	2011-07-18	8270363	2012-09-18
7A	EP	FILED	Method for transmitting and receiving control information through PDCCH	13154720	2013-02-08		
7A	EP	GRANTED	Method for transmitting and receiving control information through PDCCH	08016013 8	2008-09-11	2093953	2013-04-03

RefNo.	Country	Status	Title	App.No.	App.Date	Patent No.	Parent Date
7A	KR	GRANTED	Method for transmitting and receiving control information through PDCCH	10-2008-0068633	2008-07-15	10-0943908	2010-02-17
8A	US	GRANTED	Method of performing uplink synchronization in random access procedure	12/392654	2009-02-25	7843895	2010-11-30
8A	EP	FILED	Method of performing uplink synchronization in random access procedure	09003203	2009-03-05		
8A	PC	FILED	Method of performing uplink synchronization in random access procedure	PCT/KR09/00836	2009-02-23		
8A	CN	FILED	Method of performing uplink synchronization in random access procedure	2009-80105144	2010-08-13		
8A	US	FILED	Method of performing uplink synchronization in random access procedure	12/909780	2010-10-21		
8A	KR	GRANTED	Method of performing uplink synchronization in random access procedure	10-2008-0023807	2008-03-14	10-0925333	2009-10-29
9A	PC	FILED	Method for transmitting downlink control information	PCT/KR09/00455	2009-01-30		
9A	US	GRANTED	Method for transmitting downlink control information	12/363522	2009-01-30	7835337	2010-11-16
9A	EP	FILED	Method for transmitting downlink control information	091517888	2009-01-30		

Ref No.	Country	Status	Title	App No.	App Date	Patent No.	Patent Date
9A	TW	GRANTED	Method for transmitting downlink control information	98103264	2009-02-02	I384783	2013-02-01
9A	JP	FILED	Method for transmitting downlink control information	2010-543068	2010-07-14		
9A	CN	GRANTED	Method for transmitting downlink control information	200980103502.4	2009-01-30	ZL200980103502.4	2012-12-19
9A	KR	GRANTED	Method for transmitting downlink control information	10-2008-0090733	2008-09-16	10-0908064	2009-07-09
10A	CN	GRANTED	Method for effectively transmitting control signal in wireless communication system	2009-80000101	2009-03-16	ZL2009800001016	2013-01-16
10A	JP	GRANTED	Method for effectively transmitting control signal in wireless communication system	2010-503991	2009-03-16	4932032	2012-02-24
10A	PC	FILED	Method for effectively transmitting control signal in wireless communication system	PCT/KR09/01287	2009-03-16		
10A	US	GRANTED	Method for effectively transmitting control signal in wireless communication system	12/404873	2009-03-16	7774686	2010-08-10
10A	EP	FILED	Method for effectively transmitting control signal in wireless communication system	09155262	2009-03-16		
10A	TW	GRANTED	Method for effectively transmitting control signal in wireless communication system	98108514	2009-03-16	I376909	2012-11-11

Ref No.	Country	Status	Title	App No.	App Date	Patent No.	Patent Date
10A	US	GRANTED	Method for effectively transmitting control signal in wireless communication system	12/836403	2010-07-14	8108757	2012-01-31
10A	US	GRANTED	Method for effectively transmitting control signal in wireless communication system	13/563472	2012-07-31	8423858	2013-04-16
10A	US	GRANTED	Method for effectively transmitting control signal in wireless communication system	13/345532	2012-01-06	8250443	2012-08-21
10A	US	FILED	Method for effectively transmitting control signal in wireless communication system	13/802066	2013-03-13	NOA	
10A	KR	GRANTED	Method for effectively transmitting control signal in wireless communication system	10-2009-0021715	2009-03-13	10-0905385	2009-06-23
11A	US	GRANTED	Side button switch in mobile communication terminal and vibration-preventing device thereof	10/341356	2003-01-14	7383066	2008-06-03
11A	JP	GRANTED	Side button switch in mobile communication terminal and vibration-preventing device thereof	P03-006442	2003-01-14	4167495	2008-08-08
11A	CN	GRANTED	Side button switch in mobile communication terminal and vibration-preventing device thereof	03101656.1	2003-01-13	ZL03101656.1	2009-08-12
11A	EP	GRANTED	Side button switch in mobile communication terminal and vibration-preventing device thereof	03000431.1	2003-01-10	1389787	2007-11-14

Ref No.	Country	Status	Title	App No.	App Date	Patent No.	Patent Date
11A	KR	GRANTED	Side button switch in mobile communication terminal and vibration-preventing device thereof	10-2002-0048071	2002-08-14	10-0487614	2005-04-26
12A	CL	GRANTED	Apparatus and methods of selecting special characters in a mobile communication terminal	065/2002	2002-01-14	43558	2008-06-09
12A	BR	FILED	Apparatus and methods of selecting special characters in a mobile communication terminal	PI0200087-3	2002-01-15		
12A	VZ	FILED	Apparatus and methods of selecting special characters in a mobile communication terminal	42/2002	2002-01-09		
12A	US	GRANTED	Apparatus and methods of selecting special characters in a mobile communication terminal	10/036377	2002-01-07	7423647	2008-09-09
12A	US	GRANTED	Apparatus and methods of selecting special characters in a mobile communication terminal	11/147350	2005-06-08	7453462	2008-11-18
12A	US	GRANTED	Apparatus and methods of selecting special characters in a mobile communication terminal	12/247567	2008-10-08	7714868	2010-05-11
12A	KR	GRANTED	Apparatus and methods of selecting special characters in a mobile communication terminal	10-2001-0002390	2001-01-16	10-0498323	2005-06-21
13A	EP	GRANTED	Portable terminal	07009075.8	2007-05-04	1884870	2010-08-25
13A	DE	GRANTED	Portable terminal	202007018285	2007-05-04	2020070182856	2008-03-27

Ref No.	Country	Status	Title	App No.	App Date	Patent No.	Patent Date
13A	BR	FILED	Portable terminal	PI0702596 3	2007-05-15		
13A	DE	FILED	Portable terminal	10200702 1058.4	2007-05-04		
13A	TW	FILED	Portable terminal	96115255	2007-04-30		
13A	MX	GRANTED	Portable terminal	MX/A/200 7/005715	2007-05-11	270849	2009- 10-12
13A	IN	FILED	Portable terminal	645KOL2 007	2007-04-26		
13A	RU	GRANTED	Portable terminal	20071235 78	2007-06-22	2435301	2011- 11-27
13A	CA	FILED	Portable terminal	2586836	2007-05-01		
13A	US	GRANTED	Portable terminal	11/828978	2007-07-26	7525535	2009- 04-28
13A	CN	GRANTED	Portable terminal	20071010 3969.1	2007-05-17	ZL2007101039 69.1	2012- 03-28
13A	KR	GRANTED	Portable terminal	10-2006- 0071043	2006-07-27	10-0778483	2007- 11-15
14A	US	GRANTED	File downloading apparatus and method for mobile communication system	10/465724	2003-06-20	7289817	2007- 10-30

Ref No.	Country	Status	Title	App No.	App Date	Patent No.	Patent Date
14A	US	GRANTED	File downloading apparatus and method for mobile communication system	11/896419	2007-08-31	7634260	2009-12-15
14A	KR	GRANTED	File downloading apparatus and method for mobile communication system	10-2002-0034472	2002-06-20	10-0553082	2006-02-09
15A	US	GRANTED	Method of displaying object and terminal capable of implementing the same	12/648248	2009-12-28	8174506	2012-05-08
15A	US	GRANTED	Method of displaying object and terminal capable of implementing the same	11/729807	2007-03-30	7663610	2010-02-16
15A	EP	FILED	Method of displaying object and terminal capable of implementing the same	10012606	2010-09-30		
15A	CN	GRANTED	Method of displaying object and terminal capable of implementing the same	200710091718.6	2007-03-29	ZL2007100917186	2013-07-17
15A	EP	FILED	Method of displaying object and terminal capable of implementing the same	07006748.3	2007-03-30		
15A	KR	GRANTED	Method of displaying object and terminal capable of implementing the same	10-2006-0028933	2006-03-30	10-0833862	2008-05-26
16A	EP	FILED	Method for transmitting VoIP packet	08793213	2008-08-13		
16A	PC	FILED	Method for transmitting VoIP packet	PCT/KR08/04699	2008-08-13		
16A	US	GRANTED	Method for transmitting VoIP packet	12/673262	2010-02-12	8391311	2013-03-05

Ref No.	Country	Status	Title	App No.	App Date	Patent No.	Patent Date
16A	US	GRANTED	Method for transmitting VoIP packet	12/705215	2010-02-12	8396070	2013-03-12
16A	CN	GRANTED	Method for transmitting VoIP packet	2008-80010489	2008-08-13	2008800104893	2013-05-22
16A	JP	GRANTED	Method for transmitting VoIP packet	2010-519160	2010-01-27	5231550	2013-03-29
1B	JP	GRANTED	Mobile terminal having retractable camera	2003-273114	2003-07-10	3822583	2006-06-30
1B	EP	GRANTED	Mobile terminal having retractable camera	03012235.2	2003-06-10	1422931	2010-07-28
1B	CN	GRANTED	Mobile terminal having retractable camera	03146605.2	2003-07-07	ZL031466052	2008-01-16
1B	US	GRANTED	Mobile terminal having retractable camera	10/607551	2003-06-27	7418280	2008-08-26
1B	KR	GRANTED	Mobile terminal having retractable camera	10-2002-0071615	2002-11-18	10-0455776	2004-10-26
2B	US	GRANTED	Data transmission control method for GPRS	10/438032	2003-05-15	7443795	2008-10-28
2B	CN	GRANTED	Data transmission control method for GPRS	2003136041	2003-05-15	ZL03136041.6	2005-10-12

Ref No.	Country	Status	Title	App No.	App Date	Patent No.	Patent Date
2B	JP	GRANTED	Data transmission control method for GPRS	2003132405	2003-05-09	3746491	2005-12-02
2B	EP	GRANTED	Data transmission control method for GPRS	03009776.0	2003-05-08	1363427	2005-07-27
2B	KR	GRANTED	Data transmission control method for GPRS	10-2002-0026822	2002-05-15	10-0442368	2004-07-20
3B	US	GRANTED	Signal connecting apparatus for a folder type mobile terminal	11/016308	2004-12-17	7229289	2007-06-12
3B	EP	GRANTED	Signal connecting apparatus for a folder type mobile terminal	04030041.0	2004-12-17	1545098	2010-11-17
3B	CN	GRANTED	Signal connecting apparatus for a folder type mobile terminal	200410095459.0	2004-12-17	ZL200410095459.0	2010-05-26
3B	KR	GRANTED	Signal connecting apparatus for a folder type mobile terminal	10-2003-0094038	2003-12-19	10-0652622	2006-11-24
4B	EP	GRANTED	Method for operating data communication service in mobile communication system	03028715.5	2003-12-12	1432266	2010-10-06
4B	US	GRANTED	Method for operating data communication service in mobile communication system	10/737212	2003-12-15	7349694	2008-03-25
4B	CN	GRANTED	Method for operating data communication service in mobile communication system	200310120498.7	2003-12-16	200310120498	2006-10-25

Ref. No.	Country	Status	Title	App. No.	App. Date	Patent No.	Patent Date
4B	JP	GRANTED	Method for operating data communication service in mobile communication system	20034139 95	2003-12-11	3917971	2007-02-16
4B	KR	GRANTED	Method for operating data communication service in mobile communication system	10-2002-0080475	2002-12-16	10-0524741	2005-10-21
5B	EP	GRANTED	System, apparatus, and method for enhancing mobile communication terminal push to talk service	05028653. 3	2005-12-29	1677551	2012-06-20
5B	JP	GRANTED	System, apparatus, and method for enhancing mobile communication terminal push to talk service	2005-356948	2005-12-09	4344353	2009-07-17
5B	CN	GRANTED	System, apparatus, and method for enhancing mobile communication terminal push to talk service	20051004 8831.7	2005-12-30	ZL2005100488 31.7	2011-06-29
5B	US	GRANTED	System, apparatus, and method for enhancing mobile communication terminal push to talk service	11/325934	2005-12-30	7684814	2010-03-23
5B	KR	GRANTED	System, apparatus, and method for enhancing mobile communication terminal push to talk service	10-2004-0117361	2004-12-30	10-0664190	2006-12-26
6B	JP	GRANTED	Slide type mobile terminal	2006-102551	2006-04-03	4302708	2009-05-01
6B	EP	GRANTED	Slide type mobile terminal	06007064. 6	2006-04-03	1710985	2010-06-30
6B	CN	GRANTED	Slide type mobile terminal	20061007 3322.4	2006-04-04	ZL2006100733 22.4	2009-01-21

Ref No.	Country	Status	Title	App No.	App Date	Patent No.	Patent Date
6B	US	GRANTED	Slide type mobile terminal	11/397496	2006-04-03	7555120	2009-06-30
6B	KR	GRANTED	Slide type mobile terminal	10-2005-0028228	2005-04-04	10-0652718	2006-11-24
7B	CN	GRANTED	Card ejecting mechanism and mobile communication terminal having the same	200610092365.7	2006-06-01	ZL200610092365.7	2010-02-03
7B	EP	GRANTED	Card ejecting mechanism and mobile communication terminal having the same	06011105.1	2006-05-30	1729245	2011-04-06
7B	JP	GRANTED	Card ejecting mechanism and mobile communication terminal having the same	2006-145878	2006-05-25	4414982	2009-11-27
7B	US	GRANTED	Card ejecting mechanism and mobile communication terminal having the same	11/445825	2006-06-02	7494353	2009-02-24
7B	KR	GRANTED	Card ejecting mechanism and mobile communication terminal having the same	10-2005-0047420	2005-06-02	10-0700576	2007-03-21
8B	CN	GRANTED	Mobile communication terminal having opening mechanism	200610129033	2006-09-04	ZL2006101290331	2009-08-19
8B	EP	GRANTED	Mobile communication terminal having opening mechanism	06018254.0	2006-08-31	1760998	2010-08-04
8B	JP	GRANTED	Mobile communication terminal having opening mechanism	2006-239642	2006-09-04	4405490	2009-11-13

Ref No.	Country	Status	Title	App No.	App Date	Patent No.	Patent Date
8B	US	GRANTED	Mobile communication terminal having opening mechanism	11/469063	2006-08-31	7787914	2010-08-31
8B	KR	GRANTED	Mobile communication terminal having opening mechanism	10-2005-0081940	2005-09-02	10-0739179	2007-07-06
8B	KR	GRANTED	Mobile communication terminal having opening mechanism	10-2005-0091620	2005-09-29	10-0690843	2007-02-27
8B	KR	GRANTED	Mobile communication terminal having opening mechanism	10-2005-0083880	2005-09-08	10-0690832	2007-02-27
9B	US	GRANTED	Method for transmitting emergency call of mobile phone	09/671115	2000-09-28	7113764	2006-09-26
9B	EP	GRANTED	Method for transmitting emergency call of mobile phone	00308450.6	2000-09-27	1093317	2004-09-22
9B	KR	GRANTED	Method for transmitting emergency call of mobile phone	10-1999-0041802	1999-09-29	10-0344872	2002-07-03
10B	US	GRANTED	Method of controlling timing for uplink synchronous transmission scheme	10/078674	2002-02-21	7190691	2007-03-13
10B	EP	GRANTED	Method of controlling timing for uplink synchronous transmission scheme	02003916	2002-02-21	1235367	2010-06-23
11B	JP	GRANTED	Apparatus and method for estimating position of mobile communication terminal	2002100591	2002-04-02	3820177	2006-06-23
11B	US	GRANTED	Apparatus and method for estimating position of mobile communication terminal	10/125331	2002-04-19	7057557	2006-06-06
11B	EP	GRANTED	Apparatus and method for estimating position of mobile communication terminal	02006908	2002-03-26	1251709	2006-02-08

Ref No.	Country	Status	Title	App No.	App Date	Patent No.	Patent Date
11B	CN	GRANTED	Apparatus and method for estimating position of mobile communication terminal	2002105759	2002-04-17	ZL02105759.1	2007-06-06
11B	KR	GRANTED	Apparatus and method for estimating position of mobile communication terminal	10-2001-0021456	2001-04-20	10-0480045	2005-03-22
11B	KR	GRANTED	Apparatus and method for estimating position of mobile communication terminal	10-2001-0030996	2001-06-02	10-0400556	2003-09-23
12B	US	GRANTED	Data receiving and transmitting method with coding type determination	10/192895	2002-07-11	7366119	2008-04-29
12B	CN	GRANTED	Data receiving and transmitting method with coding type determination	02140709.6	2002-07-12	ZL02140709.6	2009-08-12
12B	JP	GRANTED	Data receiving and transmitting method with coding type determination	2002203238	2002-07-11	3744884	2005-12-02
12B	EP	GRANTED	Data receiving and transmitting method with coding type determination	02015253.4	2002-07-09	1276265	2010-12-01
12B	KR	GRANTED	Data receiving and transmitting method with coding type determination	10-2001-0041895	2001-07-12	10-0735692	2007-06-28
13B	JP	GRANTED	Apparatus and method for increasing channel capacity of a mobile communication system	2003-126085	2003-04-30	3824598	2006-07-07
13B	EP	GRANTED	Apparatus and method for increasing channel capacity of a mobile communication system	03016637	2003-07-30	1389844	2007-10-10
13B	CN	GRANTED	Apparatus and method for increasing channel capacity of a mobile communication system	03154325.1	2003-08-15	ZL03154325.1	2009-06-24

Ref No.	Country	Status	Title	App No.	App Date	Patent No.	Patent Date
13B	US	GRANTED	Apparatus and method for increasing channel capacity of a mobile communication system	10/630721	2003-07-31	7369486	2008-05-06
14B	CN	GRANTED	Method for analyzing data transmission throughput in a wireless LAN	200410007821.4	2004-02-12	ZL200410007821.4	2009-01-21
14B	EP	GRANTED	Method for analyzing data transmission throughput in a wireless LAN	04003049	2004-02-11	1447937	2008-01-16
14B	JP	GRANTED	Method for analyzing data transmission throughput in a wireless LAN	2004033823	2004-02-12	3849875	2006-09-08
14B	US	GRANTED	Method for analyzing data transmission throughput in a wireless LAN	10/775240	2004-02-11	7321579	2008-01-22
14B	KR	GRANTED	Method for analyzing data transmission throughput in a wireless LAN	10-2003-0008882	2003-02-12	10-0474316	2005-02-22
15B	CN	GRANTED	Method for implementing system information broadcasting function in asynchronous mobile communication system	2001141548	2001-10-12	ZL011415487	2008-07-02
15B	US	GRANTED	Method for implementing system information broadcasting function in asynchronous mobile communication system	09/974845	2001-10-12	7116648	2006-10-03
15B	EP	GRANTED	Method for implementing system information broadcasting function in asynchronous mobile communication system	01123989	2001-10-08	1198079	2006-07-26

Ref No.	Country	Status	Title	App No.	App Date	Patent No.	Patent Date
15B	KR	GRANTED	Method for implementing system information broadcasting function in asynchronous mobile communication system	10-2000-0060565	2000-10-14	10-0525381	2005-10-25
16B	JP	GRANTED	Mobile communication terminal and method for displaying an image	2007-111585	2007-04-20	5055010	2012-08-03
16B	EP	GRANTED	Mobile communication terminal and method for displaying an image	07 008 131.0	2007-04-20	1855488	2012-01-18
16B	CN	GRANTED	Mobile communication terminal and method for displaying an image	20071010 1385.0	2007-04-20	ZL2007101013 85.0	2012-07-11
16B	US	GRANTED	Mobile communication terminal and method for displaying an image	11/735377	2007-04-13	7881523	2011-02-01
16B	KR	GRANTED	Mobile communication terminal and method for displaying an image	10-2006-0042488	2006-05-11	10-1137347	2012-04-10

Ref Category	Title	App No.	App Date	Patent No.	Patent Date	Country
Wireless Communication	Reduction method of successive hand handoffs between base stations in code division multiple access (CDMA) mobile communication system	09/078578	1998/05/14	6301234	2001/10/29	U.S.A.
		98102168.9	1998/05/21	ZL98102168.9	2003/06/04	CHINA
Wireless Communication	Method of canceling interference components included in received signals of base station in mobile communication system	09/273765	1999/03/22	6574204	2003/06/03	U.S.A.
		10-1998-0010327	1998/03/25	10-0294701	2001/04/19	KOREA
Wireless Communication	Radio packet data terminal and method of determining internet interworking protocol address	09/224053	1998/12/31	6404754	2002/06/11	U.S.A.
		10-1998-0037253	1998/09/07	10-0396643	2003/08/21	KOREA
Wireless Communication	Method for controlling power for forward common channel	09/671208	2000/09/28	6615053	2003/09/02	U.S.A.
		10-1999-0047995	1999/11/01	10-0386562	2003/05/23	KOREA
UI	Mobile terminal and multimedia contents service providing system and method for call connection waiting using the same	11/459223	2006/07/21	7738645	2010/06/15	U.S.A.
		10-2005-0067027	2005/07/22	10-0747450	2007/08/02	KOREA
UI	Method and apparatus for reproducing multimedia files	11/538424	2006/10/03	8086962	2011/12/27	U.S.A.
		10-2005-0097133	2005/10/14	10-0778001	2007/11/14	KOREA
Wireless Communication	Fine granularity scalability encoding/decoding apparatus and method	10/659386	2003/09/11	7003034	2006/02/21	U.S.A.
		10-2002-0056566	2002/09/17	10-0556838	2006/02/23	KOREA
UI	Apparatus and method for providing pause function of broadcasting streaming in terminal	2011-10026536	2011/01/10			CHINA
		11/322280	2005/12/29	8046483	2011/10/25	U.S.A.
		05028558.4	2005/12/28	1677539	2008/07/23	E.P.O
		10-2004-0116953	2004/12/30	10-0595708	2006/06/23	KOREA
UI	Method of applying for communication service and communication terminal thereof	06 004 232.2	2006/03/02	1699206	2008/11/26	E.P.O
		200610058857.4	2006/03/02	ZL200610058857.4	2009/09/09	CHINA
		2006-056307	2006/03/02	4562670	2010/08/06	JAPAN
		11/364410	2006/03/01	7720494	2010/05/18	U.S.A.
		10-2005-0017200	2005/03/02	10-0628085	2006/09/19	KOREA
UI	Character input apparatus and method for mobile communications terminal	11/441139	2006/05/26	7705752	2010/04/27	U.S.A.
		10-2005-0045251	2005/05/27	10-0652725	2006/11/24	KOREA
UI	Method for downloading a message in a mobile terminal, method for forwarding message, and mobile terminal for performing the same	11/864752	2007/09/28	8160550	2012/04/17	U.S.A.
		10-2006-0097242	2006/10/02	10-1132611	2012/03/27	KOREA
UI	MOBILE TERMINAL AND METHOD OF DISPLAYING MENU ICON THEREOF	1020080335134	2008/07/17			GERMANY
		12/176314	2008/07/18	NOA		U.S.A.
		10-2007-0075147	2007/07/26			KOREA

Ref Category	Title	App No.	App Date	Patent No.	Patent Date	Country
UI	Mobile communication terminal for controlling display information	200810144602	2008/04/28			CHINA
		08155163	2008/04/25			E.P.O
		12/111004	2008/04/28	8111255	2012/02/07	U.S.A.
		10-2007-0041185	2007/04/27			KOREA
UI	Mobile terminal providing web page-merge function and operating method of the mobile terminal	12/506486	2009/07/20	8532712	2013/09/10	U.S.A.
		10-2008-0099302	2008/10/09			KOREA
UI	Adjusting the display orientation of an image on a mobile terminal	09006227	2009/05/07			E.P.O
		12/423769	2009/04/14	8564618	2013/10/22	U.S.A.
		10-2008-0090270	2008/09/12			KOREA
UI	Method for automatically managing information using hyperlink features of a mobile terminal	10/902801	2004/08/02	7409394	2008/08/05	U.S.A.
		200410074810	2004/08/30	ZL2004100748108	2007/10/31	CHINA
		10-2003-0060594	2003/08/30	10-0565289	2006/03/22	KOREA
UI	Method for managing menu function in mobile station	09/737283	2000/12/15	7137073	2006/11/14	U.S.A.
		11/682957	2007/03/07	8127250	2012/02/28	U.S.A.
		11/549629	2006/10/13	7861184	2010/12/28	U.S.A.
		00128228.X	2000/12/18	ZL00128228.X	2007/01/10	CHINA
		200610149382.X	2007/11/16			CHINA
		13/353270	2012/01/18			U.S.A.
		10-1999-0059083	1999/12/18	10-0357259	2002/10/05	KOREA
		10-2000-0075956	2000/12/13	10-0390364	2003/06/25	KOREA