## PATENT ASSIGNMENT

# Electronic Version v1.1

Stylesheet Version v1.1

ATURE OF CONVEYANCE: CONVEYING PARTY DATA Hyun Soo KO Jae Hoon CHUNG Bin Chul IHM Moon II LEE Seung Hee HAN RECEIVING PARTY DATA	ASSIGNMENT Name ONICS INC.		Execution Date           02/10/2012           03/12/2012           02/10/2012           03/06/2012           02/10/2012	
Hyun Soo KO Jae Hoon CHUNG Bin Chul IHM Moon II LEE Seung Hee HAN			02/10/2012 03/12/2012 02/10/2012 03/06/2012	
Jae Hoon CHUNG Bin Chul IHM Moon II LEE Seung Hee HAN			02/10/2012 03/12/2012 02/10/2012 03/06/2012	
Jae Hoon CHUNG Bin Chul IHM Moon II LEE Seung Hee HAN			03/12/2012 02/10/2012 03/06/2012	
Bin Chul IHM Moon II LEE Seung Hee HAN	ONICS INC.		02/10/2012 03/06/2012	
Moon II LEE Seung Hee HAN	ONICS INC.		03/06/2012	
Seung Hee HAN	ONICS INC.			
	ONICS INC.		02/10/2012	
RECEIVING PARTY DATA	ONICS INC.			
	ONICS INC.			
Name: LG ELECTR				
Street Address: 20 Yeouido-	dong, Yeongdeungpo-gu			
City: Seoul				
State/Country: KOREA, RE	KOREA, REPUBLIC OF			
Postal Code: 150-721				
Property Type		Number		
Application Number: 13499907				
CORRESPONDENCE DATA				
Fax Number: (213)62	23-2211			
Phone: 213623				
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Correspondence will be sent to the via US Mail.	e-maii auuress iirsi; ii tha	u is unsuccessiui, It l	wiii de seite	
	ong, Degerman, Kang & V	Vaimey		
	Figueroa St., 23rd Fl.			
Address Line 4: Los An	geles, CALIFORNIA 9001	7		
ATTORNEY DOCKET NUMBER:	2101-5231			
AME OF SUBMITTER:	Harry S. Lee			
	]		PATENT	

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2101-5231 Attorney Docket No.

#### ASSIGNMENT

(1-8)	Insert Name(s) of Inventor(s)	(1) KO, Hyun Soo (2) CHUNG, Jae Hoon (3) IHM, Bin Chul	(4) LEE, Moon II (5) HAN, Seung Hee	
		valuable considerations paid	one dollar (\$1.00) and other good and to each of the undersigned, the , and hereby does assign, transfer and	
(9)	Insert name of Assignee	(9) LG ELECTRONICS INC.		
(10)	Insert state of Incorporation of Assignee	(10) Korea		
(11)	Insert address of Assignee	(11) 20 Yeouido-dong, Yeongdeun (hereinafter designated as the Assign interest in the invention known as	gpo-gu, Seoul 150-721 Korea ee) the entire worldwide right, title and	
(12)	Insert identification of Invention, such as Title,	(12) TRANSMISSION METHOD AN REFERENCE SIGNAL	D DEVICE FOR A DOWNLINK	
Case Number or Foreign Application Number		for which the undersigned has (have) executed an application for patent in the United States of America and all patent applications in foreign countries corresponding thereto or based thereon.		
(13)	Insert Date of Signing of Application	(13)		

1) The undersigned agree(s) to execute all papers necessary in connection with any original, reissue, divisional and continuing United States and foreign applications for the above-identified invention and also to execute separate assignments in connection with such applications as the Assignee may deem necessary or expedient.

2) The undersigned agree(s) to execute all papers necessary in connection with any interference which may be declared concerning this application or continuation or division thereof and to cooperate with the Assignee in every way possible in obtaining evidence and going forward with such interference.

3) The undersigned agree(s) to execute all papers and documents and perform any act which may be necessary in connection with claims or provisions of the International Convention for Protection of Industrial Property or similar agreements.

4) The undersigned agree(s) to perform all affirmative acts which may be necessary to obtain a grant of a valid United States patent to the Assignee.

5) The undersigned hereby authorize(s) and request(s) the Commissioner of Patents to issue any and all Letters Patents of the United States resulting from said application or any division or divisions or continuing applications thereof to the said Assignee, as Assignee of the entire interest, and hereby covenants that he has (they have) full right to convey the entire interest herein assigned, and that he has (they have) not executed any agreement in conflict herewith.

The undersigned hereby appoints the Attorneys associated with Customer No. 035884 the power to insert on this assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document.

PATENT REEL: 028097 FRAME: 0271

1) Date:	10 Feb 2012	Signature of Inventor	J OT
2) Date:		Signature of Inventor	
3) Date:	10 Feb sola	Signature of Inventor	el ultr
4) Date:		Signature of Inventor	
5) Date:	10 hebrolz	Signature of Inventor	

2/2

Application

2101-5231 Attorney Docket No.

#### ASSIGNMENT

(1-8)	Insert Name(s) of Inventor(s)	(1) KO, Hyun Soo	(4) LEE, Moon II
	niventor(s)	(2) CHUNG, Jae Hoon (3) IHM, Bin Chul	(5) HAN, Seung Hee
		valuable considerations	im of one dollar (\$1.00) and other good and paid to each of the undersigned, the assign, and hereby does assign, transfer and
(9)	Insert name of Assignee	(9) LG ELECTRONICS INC.	
(10)	Insert state of Incorporation of Assignee	(10) Korea	
(11)	Insert address of Assignee		deungpo-gu, Seoul 150-721 Korea ssignee) the entire worldwide right, title and as
(12) Insert identification of Invention, such as Title,		(12) TRANSMISSION METHO REFERENCE SIGNAL	D AND DEVICE FOR A DOWNLINK
	Case Number or Foreign Application Number		have) executed an application for patent in d all patent applications in foreign countries thereon.
(13)	Insert Date of Signing of	(13)	

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## PATENT REEL: 028097 FRAME: 0273

1) Date:	Signature of Inventor	~	18 22 28 1991 1991 1991 1991 1992 1992 1		· · · · · · · · · · · · · · · · · · ·	
2) Date: 12 March, 20/2	Signature of Inventor	Joe	Hoon	ang		
3) Date:	Signature of Inventor				· .	•
4) Date:	Signature of Inventor					
5) Date:	Signature of Inventor					

2/2

2101-5231 Attorney Docket No.

#### ASSIGNMENT

(1-8)	Insert Name(s) of Inventor(s)		EE, Moon II IAN, Seung Hee	
		In consideration of the sum of one do valuable considerations paid to ea undersigned agree(s) to assign, and h set over to	ach of the undersigned, the	
(9)	Insert name of Assignee	(9) LG ELECTRONICS INC.		
(10)	Insert state of Incorporation of Assignee	(10) Korea		
(11)	Insert address of Assignee	(11) 20 Yeouido-dong, Yeongdeungpo-gu, Seoul 150-721 Korea (hereinafter designated as the Assignee) the entire worldwide right, title and interest in the invention known as		
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PATENT REEL: 028097 FRAME: 0275

1) Date:	Signature of Inventor
2) Date:	Signature of Inventor
3) Date:	Signature of Inventor
4) Date: & March, 2017	Signature of Inventor
5) Date:	Signature of Inventor