#### 03/21/2016 503746358

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3793003

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
SEUNGRYUL YANG	03/07/2016
MINSUNG KWAK	03/07/2016
KYOUNGSOO MOON	03/09/2016
WOOSUK KO	03/07/2016
SUNGRYONG HONG	03/08/2016
JANGWON LEE	03/11/2016

## **RECEIVING PARTY DATA**

Name:	LG ELECTRONICS INC.
Street Address:	128, YEOUI-DAERO YEONGDEUNGPO-GU
City:	SEOUL
State/Country:	KOREA, REPUBLIC OF
Postal Code:	07336

#### **PROPERTY NUMBERS Total: 1**

Property Type	Number	
Application Number:	15056343	

## **CORRESPONDENCE DATA**

Fax Number: (703)205-8050

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.

Phone: 703-205-8000

Spencer.Garth@bskb.com, mailroom@bskb.com Email: BIRCH, STEWART, KOLASCH & BIRCH, LLP **Correspondent Name:** 

P. O. BOX 747 Address Line 1:

Address Line 4: FALLS CHURCH, VIRGINIA 22042-1248

ATTORNEY DOCKET NUMBER:	0465-5478PUS1
NAME OF SUBMITTER:	SPENCER GARTH
SIGNATURE:	/spencer garth/
DATE SIGNED:	03/21/2016
	This document serves as an Oath/Declaration (37 CFR 1.63).

**PATENT** REEL: 038051 FRAME: 0204

# **Total Attachments: 5**source=2016-03-21\_DecAndAssgn\_0465-5478PUS1#page1.tif source=2016-03-21\_DecAndAssgn\_0465-5478PUS1#page2.tif source=2016-03-21\_DecAndAssgn\_0465-5478PUS1#page3.tif source=2016-03-21\_DecAndAssgn\_0465-5478PUS1#page4.tif source=2016-03-21\_DecAndAssgn\_0465-5478PUS1#page5.tif

PATENT REEL: 038051 FRAME: 0205

## BIRCH, STEWART, KOLASCH & BIRCH, LLP

P.O. Box 747 • Falls Church, Virginia 22040-0747 Telephone: (703) 205-8000 • Facsimile: (703) 205-8030 • Email: mailroom@bskb.com

## **DECLARATION AND ASSIGNMENT** FOR PATENT AND DESIGN APPLICATIONS

UNITED STATES PATENT RIGHTS, OR

		UNITED STATES PLUS ALL POREIGN PATENT RIGHTS
Title of Invention	ಳ	APPARATUS FOR TRANSMITTING BROADCAST SIGNALS, APPARATUS FOR RECEIVING BROADCAST SIGNALS, METHOD OF TRANSMITTING BROADCAST SIGNALS AND METHOD OF RECEIVING BROADCAST SIGNALS
		As a below named inventor (hereinafter designated as the undersigned), I hereby declare that:
		This declaration is directed to the application attached hereto,
Application not Attached	¢	If the application is not attached hereto, the application is as identified by the attorney docket number as set forth above and/or the following:
Enter Appln. No.	⇔	United States Application Number or PCT International Appln. No. 15/056,343
Enter Filing Date	ε,	filed on February 29, 2016
		The above-identified application was made or authorized to be made by me.
		I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.
		I have reviewed and understand the contents of the above-identified application, including the claims:
		I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations $\S$ 1.56.
		WHEREAS, the undersigned has invented certain new and useful improvements described in the application identified.
Insert Name of Assignee	భ	WHEREAS, LG ELECTRONICS INC.
Insert Address of Assignce	<b>*</b>	of 128 Yeoui-daero, Yeongdeungpo-gu, Seoul 07336, Republic of Korea,
•		its heirs, successors, legal representatives and assigns (hereinafter designated as the Assignee) is desirous of acquiring the entire right, title and interest in and to said invention and in and to any Letters Patent(s) that may be granted therefor in the United States of America and
Check Box if Appropriate	ಎ	in any foreign countries.
		NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, the undersigned has sold, assigned and transferred; and by these presents does (do) sell, assign and transfer unto said Assignee the full and exclusive right to the said invention in the United States of America, its territories, dependencies and possessions and the entire right, title and interest in and to any and all Letters Patent(s) which may be granted therefor in the United States of America, its territories, dependencies and possessions, and if the box above is designated, in any and all foreign countries; and to

any and all divisions, reissues, continuations, conversions and extensions thereof for the full term or

terms for which the same may be granted.

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**PATENT** REEL: 038051 FRAME: 0206

The undersigned agrees to execute all papers necessary in connection with this application and any continuing, divisional, conversion or reissue applications thereof and also to execute separate assignments in connection with such applications as the Assignee may deem necessary or expedient.

The undersigned agrees to execute all papers necessary in connection with any interference which may be declared concerning this application or continuation, division, conversion or reissue thereof or Letters Patent(s) or reissue patent issued thereon and to cooperate with the Assignee in every way possible in obtaining and producing evidence and proceeding with such interference.

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

The undersigned agrees to perform all affirmative acts which may be necessary to obtain a grant of (a) valid United States of America patent(s) or a grant of (a) valid United States of America and any foreign patent(s) to the Assignee and to vest all rights therein hereby conveyed to said Assignee as fully and entirely as the same would have been held by the undersigned if this Assignment and sale had not been made.

The undersigned hereby authorizes and requests the Patent and Trademark Office Officials in the United States of America and in any foreign countries to issue any and all Letters Patent(s) resulting from said application or any continuing, divisional conversion or reissue applications thereof to the said Assignee, as Assignee of the entire interest, and hereby covenants that he has the full right to convey the entire interest herein assigned, and that he has not executed, and will not execute, any agreement in conflict herewith.

The undersigned hereby grants the law firm of Birch, Stewart, Kolasch & Birch, LLP the power to insert any further identification which may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office.

The undersigned hereby covenants that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment.

The undersigned hereby acknowledges that any willful false statement made in this declaration is punishable under 18 U.S.C. § 1001 by fine or imprisonment of not more than five (5) years, or both.

In witness whereof, executed by the undersigned on the date opposite the undersigned name.

Additional inventors are being named on the 1 supplemental sheet(s) attached hereto.

LEGAL NAME OF INVENTOR		AME OF INVENTOR			
Inventor's Name □ ⇔	Inventor:	YANG, Seungryul	Date: 3-7-2016		
Inventor's Signature ⇔	Signature:	DATE			
An application de Use a separate fo	ata sheet (PT) rm for each i	O/SB/14 or equivalent), including naming the entire inventor; or check the box below and complete the att	inventive entity, must accompany this form. tached page(s) to list additional inventors.		

85K8-DECASSKGN\(09-12)

## SUPPLEMENTAL SHEET FOR DECLARATION AND ASSIGNMENT

## ADDITIONAL INVENTOR Supplemental Sheet Page 1 of 1

	LEGAL N	AME OF JOINT INVENTOR, IF ANY	
Inventor's Name	" Inventor:	KWAK, Minsung	Date: 7. March. 2016
Inventor's Signature	⇒ Signature:		
	LEGAL N	AME OF JOINT INVENTOR, IF ANY	
Inventor's Name	* Inventor:	MOON, Kyoungsoo	Date:
Inventor's Signature	⇒ Signature:		
	LEGAL N	AME OF JOINT INVENTOR, IF ANY	
Inventor's Name	⇔Inventor:	KO, Woosuk	Date: 7 Mar. 2016
Inventor's Signature	⇔Signature:	(A)	
	LEGAL N	AME OF JOINT INVENTOR, IF ANY	
Inventor's Name	*Inventor:	HONG, Sungryong	Date:
Inventor's Signature	⇔Signature:		
	LEGAL N	AME OF JOINT INVENTOR, IF ANY	
Inventor's Name	⇔Inventor:	LEE, Jangwon	Date: 11. Mar. 2016
Inventor's Signature	⇔Signature:	Maria	
	LEGAL N	AME OF JOINT INVENTOR, IF ANY	
Inventor's Name	**Inventor:		Date:
Inventor's Signature	*Signature:		
	LEGAL N	AME OF JOINT INVENTOR, IF ANY	
Inventor's Name	*>Inventor:	-	Date:
Inventor's Signature	⇔Signature:		
	LEGAL N	AME OF JOINT INVENTOR, IF ANY	
Inventor's Name	⇔Inventor;		Date:
inventor's Signature	⇔Signature:		

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REEL: 038051 FRAME: 0208

# SUPPLEMENTAL SHEET FOR DECLARATION AND ASSIGNMENT

## ADDITIONAL INVENTOR Supplemental Sheet Page 1 of 1

## LEGAL NAME OF JOINT INVENTOR, IF ANY

Inventor's Name	→ Inventor:	KWAK, Minsung	Date:
Inventor's Signature	⇒ Signature:		
•	LEGAL N	AME OF JOINT INVENTOR, IF ANY	- 14 2 0
Inventor's Name	⇒ Inventor:	MOON, Kyoungsoo	Date: 20/6. 3.9
Inventor's Signature	Signature:		
	LEGAL N	AME OF JOINT INVENTOR, IF ANY	
Inventor's Name	⇒Inventor:	KO, Woosuk	Date:
Inventor's Signature	⇔Signature:		
	LEGAL N	AME OF JOINT INVENTOR, IF ANY	
Inventor's Name	⇔Inventor:	HONG, Sungryong	Date:
Inventor's Signature	⇔Signature:		
	LEGAL N	AME OF JOINT INVENTOR, IF ANY	
Inventor's Name	⇔Inventor:	LEE, Jangwon	Date:
Inventor's Signature	⇔Signature:		· · · · · · · · · · · · · · · · · · ·
	LEGAL N	AME OF JOINT INVENTOR, IF ANY	
Inventor's Name	⇔Inventor:		Date:
Inventor's Signature	⇔Signature:		
	LEGAL N	AME OF JOINT INVENTOR, IF ANY	
Inventor's Name	⇔Inventor:		Date:
Inventor's Signature	⇔Signature:	<b>***</b>	
	LEGAL N.	AME OF JOINT INVENTOR, IF ANY	
Inventor's Name	⇒Inventor:		Date:
Inventos's Signature	⇔Signature:		

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# SUPPLEMENTAL SHEET FOR DECLARATION AND ASSIGNMENT

## ADDITIONAL INVENTOR Supplemental Sheet Page 1 of 1

## LEGAL NAME OF JOINT INVENTOR, IF ANY

Inventor's Name	→ Inventor:	KWAK, Minsung	Date:	·····		
Inventor's Signature	⇒ Signature:					······································
	LEGAL N	AME OF JOINT INVENTOR, IF ANY				
Inventor's Name	⇔ Inventor:	MOON, Kyoungsoo	Date:			
Inventor's Signature	⇔ Signature:	<u></u>				
	LEGAL N	AME OF JOINT INVENTOR, IF ANY				
Inventor's Name	⇒Inventor:	KO, Woosuk	Date:			
Inventor's Signature	⇔Signature:					
	LEGAL N	AME OF JOINT INVENTOR, IF ANY		~		
Inventor's Name	olnventor:	HONG, Sungryong	Date:	28	Mah	2018
Inventor's Signature	Signature:					······································
	LEGAL N	AME OF JOINT INVENTOR, IF ANY				
Inventor's Name	⇔Inventor:	LEE, Jangwon	Date:			
Inventor's Signature	⇒Signature:	<u> </u>				
	LEGAL N	AME OF JOINT INVENTOR, IF ANY				
Inventor's Name	⇒Inventor:	<u></u>	Date:	i		
Inventor's Signature	⇔Signature:	Control of the Contro		<del></del>		
	LEGAL N	AME OF JOINT INVENTOR, IF ANY				
Inventor's Name	⇔Inventor:		Date:			
Inventor's Signature	⇔Signature:		<del></del>			<del></del>
	LEGAL N	AME OF JOINT INVENTOR, IF ANY				
Inventor's Name	⇒Inventor:		Date:	······	······	<u> </u>
Inventor's Signature	⇔Signature:					

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**RECORDED: 03/21/2016**