

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT5545152

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
Bohyun NAM	04/04/2017
Namhee KIM	04/17/2017
Jinju KIM	04/04/2017
Hyeonjeong AN	04/04/2017
Jungbae HWANG	05/06/2017
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	LG ELECTRONICS INC.
<b>Street Address:</b>	128, YEOUI-DAERO, YEONGDEUNGPO-GU
<b>City:</b>	SEOUL
<b>State/Country:</b>	KOREA, REPUBLIC OF
<b>Postal Code:</b>	07336
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	16236813
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(877)769-7945
<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>	
<b>Phone:</b>	+1 202-626-7708
<b>Email:</b>	stadnick@fr.com, apsi@fr.com
<b>Correspondent Name:</b>	MINSEUNG AHN
<b>Address Line 1:</b>	FISH & RICHARDSON P.C.
<b>Address Line 2:</b>	P.O.BOX 1022
<b>Address Line 4:</b>	MINNEAPOLIS, MINNESOTA 55440-1022
<b>ATTORNEY DOCKET NUMBER:</b>	20519-0303008
<b>NAME OF SUBMITTER:</b>	SHANNON STADNICK
<b>SIGNATURE:</b>	/Shannon Stadnick/
<b>DATE SIGNED:</b>	05/29/2019
<b>Total Attachments: 4</b>	

source=Executed Assignment#page1.tif

source=Executed Assignment#page2.tif

source=Executed Assignment#page3.tif

source=Executed Assignment#page4.tif

**ASSIGNMENT**

- |  |  |  |
|--|--|--|
| (1-8) <i>Insert Name(s) of Inventor(s)</i> | (1) Bohyun NAM<br>(2) Namhee KIM<br>(3) Jinju KIM<br>(4) Hyeonjeong AN | (5) Jungbae HWANG<br>(6)<br>(7)<br>(8) |
|--|--|--|
- In consideration of the sum of one dollar (\$1.00) and other good and valuable considerations paid to each of the undersigned, the undersigned agree(s) to assign, and hereby does assign, transfer and set over to
- |  |   |
|--|---|
| (9) <i>Insert name of Assignee</i>   | (9) LG Electronics Inc.   |
| (10) <i>Insert state of Incorporation of Assignee</i>  | (10) Republic of Korea  |
| (11) <i>Insert address of Assignee</i>   | (11) 128, Yeoui-daero, Yeongdeungpo-gu, Seoul, 07336, Republic of Korea<br>(hereinafter designated as the Assignee) the entire worldwide right, title and interest in the invention known as                            |
| (12) <i>Insert identification of Invention, such as Title, Case Number or Foreign Application Number</i> | (12) <b>CLEANER</b><br>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. |

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.

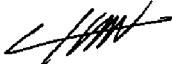
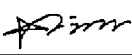
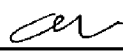
2) The undersigned agree(s) to execute all papers necessary in connection with any interference which may be declared concerning this application or continuation or division thereof and to cooperate with the Assignee in every way possible in obtaining evidence and going forward with such interference.

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.

Date: April 4, 2017      Signature of Inventor (1)   
Date: \_\_\_\_\_      Signature of Inventor (2) \_\_\_\_\_  
Date: April 4, 2017      Signature of Inventor (3)   
Date: April 4, 2017      Signature of Inventor (4)   
Date: \_\_\_\_\_      Signature of Inventor (5) \_\_\_\_\_

Date: \_\_\_\_\_ Signature of Inventor (1) \_\_\_\_\_

Date: 8.19.87 Signature of Inventor (2) \_\_\_\_\_

Date: \_\_\_\_\_ Signature of Inventor (3) \_\_\_\_\_

Date: \_\_\_\_\_ Signature of Inventor (4) \_\_\_\_\_

Date: \_\_\_\_\_ Signature of Inventor (5) \_\_\_\_\_

Date: \_\_\_\_\_ Signature of Inventor (1) \_\_\_\_\_  
 Date: \_\_\_\_\_ Signature of Inventor (2) \_\_\_\_\_  
 Date: \_\_\_\_\_ Signature of Inventor (3) \_\_\_\_\_  
 Date: \_\_\_\_\_ Signature of Inventor (4) \_\_\_\_\_  
 Date: 05/29/19 Signature of Inventor (5) [Signature]