

## PATENT ASSIGNMENT COVER SHEET

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Stylesheet Version v1.2

EPAS ID: PAT3980729

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
SANG-HYUN CHANG	07/18/2016
BYOUNG-HOON JUNG	07/18/2016
SEONGWON KIM	07/18/2016
YOUNGWOOK SON	07/18/2016
SEUNGMIN YOO	07/18/2016
JAEHONG YI	07/18/2016
SUNGHYUN CHOI	07/18/2016
SOO-YOUNG JANG	07/18/2016
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	SAMSUNG ELECTRONICS CO., LTD.
<b>Street Address:</b>	129, SAMSUNG-RO, YEONGTONG-GU
<b>City:</b>	SUWON-SI, GYEONGGI-DO
<b>State/Country:</b>	KOREA, REPUBLIC OF
<b>Name:</b>	SEOUL NATIONAL UNIVERSITY R&DB FOUNDATION
<b>Street Address:</b>	1, GWANAK-RO, GWANAK-GU
<b>City:</b>	SEOUL
<b>State/Country:</b>	KOREA, REPUBLIC OF
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15220984
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	
<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>	202-293-0804
<b>Email:</b>	usdocketing@jeffersonip.com
<b>Correspondent Name:</b>	JEFFERSON IP LAW, LLP
<b>Address Line 1:</b>	1130 CONNECTICUT AVE., NW, SUITE 420
<b>Address Line 4:</b>	WASHINGTON, D.C. 20036

<b>ATTORNEY DOCKET NUMBER:</b>	0201-1503
<b>NAME OF SUBMITTER:</b>	GREGORY L. CLINTON
<b>SIGNATURE:</b>	/Gregory L. CLINTON/
<b>DATE SIGNED:</b>	07/27/2016

**Total Attachments: 5**

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# RECORDATION FORM COVER SHEET PATENTS ONLY

To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.

### 1. Name of conveying party(ies)

1) Sang-Hyun CHANG, 2) Byoung-Hoon JUNG, 3) Seongwon KIM,  
4) Youngwook SON, 5) Seungmin YOO, 6) Jaehong YI,  
7) Sunghyun CHOI, and 8) Soo-Young JANG

Additional name(s) of conveying party(ies) attached?  Yes  No

### 3. Nature of conveyance/Execution Date(s):

Execution Date(s) July 18, 2016

- Assignment  Merger
- Security Agreement  Change of Name
- Joint Research Agreement
- Government Interest Assignment
- Executive Order 9424, Confirmatory License
- Other \_\_\_\_\_

### 2. Name and address of receiving party(ies)

Name: Samsung Electronics Co., Ltd.

Internal Address: \_\_\_\_\_

Street Address: 129, Samsung-ro, Yeongtong-gu

City: Suwon-si, Gyeonggi-do

State: \_\_\_\_\_

Country: Republic of Korea Zip: \_\_\_\_\_

Additional name(s) & address(es) attached?  Yes  No

### 4. Application or patent number(s):

A. Patent Application No.(s)  
15/220,984

This document is being filed together with a new application.

B. Patent No.(s)

Additional numbers attached?  Yes  No

### 5. Name and address to whom correspondence concerning document should be mailed:

Name: Jefferson IP Law, LLP

Internal Address: Gregory L. Clinton

Street Address: 1130 Connecticut Ave., NW, Suite 420

City: Washington

State: DC Zip: 20036

Phone Number: 202-293-0804

Fax Number: 202-403-3587

Email Address: usdocketing@jeffersonip.com

### 6. Total number of applications and patents involved: One

7. Total fee (37 CFR 1.21(h) & 3.41) \$ \_\_\_\_\_
- Authorized to be charged by credit card
  - Authorized to be charged to deposit account
  - Enclosed
  - None required (government interest not affecting title)

### 8. Payment Information

a. Credit Card Last 4 Numbers \_\_\_\_\_  
Expiration Date \_\_\_\_\_

b. Deposit Account Number \_\_\_\_\_

Authorized User Name \_\_\_\_\_

### 9. Signature:

\_\_\_\_\_  
/Gregory L. CLINTON/ Reg. #59,134  
Signature

\_\_\_\_\_  
July 27, 2016  
Date

\_\_\_\_\_  
Gregory L. Clinton  
Name of Person Signing

Total number of pages including cover sheet, attachments, and documents: 5

Documents to be recorded (including cover sheet) should be faxed to (571) 273-0140, or mailed to:  
Mail Stop Assignment Recordation Services, Director of the USPTO, P.O.Box 1450, Alexandria, V.A. 22313-1450

**PATENT**  
**REEL: 039272 FRAME: 0209**

Page 2  
Recordation of assignment

Additional name and address of receiving parties:

Name: **SEOUL NATIONAL UNIVERSITY R&DB FOUNDATION**

Address: 1, Gwanak-ro, Gwanak-gu,  
Seoul, Republic of Korea

DOCKET NO.: 0201-1503  
CLIENT REF.: P21117-US/DMC  
SAMSUNG REF.: MJ-201507-024-1-US0

### Assignment

*WHEREAS*, the following inventors, namely 1) Sang-Hyun CHANG, 2) Byoung-Hoon JUNG, 3) Seongwon KIM, 4) Youngwook SON, 5) Seungmin YOO, 6) Jaehong YI, 7) Sunghyun CHOI, and 8) Soo-Young JANG, all, citizens of the Republic of Korea (hereinafter called "Assignors"), having made or discovered certain new, useful and non-obvious improvements in an invention having a working title of:

#### **METHOD AND APPARATUS FOR DETERMINING CARRIER SENSE THRESHOLD IN WIRELESS COMMUNICATION SYSTEM,**

for which a United States Patent Application is being filed concurrently herewith or, if not being concurrently filed, was filed on July 27, 2016, and assigned Serial No. 15/220,984 \_\_\_\_\_; and,

*WHEREAS*, Samsung Electronics Co., Ltd., a corporation duly organized under the laws of the Republic of Korea, located and doing business at 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea, 16677 and SEOUL NATIONAL UNIVERSITY R&DB FOUNDATION, a corporation duly organized under the laws of the Republic of Korea, located and doing business at 1, Gwanak-ro, Gwanak-gu, Seoul, Republic of Korea, 08826 (hereinafter called "Assignees"), are desirous of acquiring the entire right, title and interest therein;

*NOW, THEREFORE, BE IT KNOWN* that for and in good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignors do hereby sell, assign and transfer unto said Assignees the entire and exclusive worldwide right, title and interest in and to all said inventions and discoveries disclosed in said application, and in and to said application, any and all substitutions, divisions, provisionals, conversions of provisionals and continuations thereof, and in and to all Letters Patent, United States and foreign, that may be granted for said inventions and discoveries, and in and to all extensions, renewals and reissues thereof; and the right to file any foreign application and/or claim priority under the provisions of any international treaty or convention arising from this application or any divisional, continuing, substitute or reissue application therefrom. The aforesaid assignment includes the right in and to all income, royalties, damages and payments, now or hereafter due or payable with respect to any Letters Patent which may be granted, and in and to all causes of action (either in law or in equity), and the right to sue, counterclaim, and recover for past, present and future infringement of the rights assigned or to be assigned under this Assignment, as fully and entirely as the same would have been held and enjoyed by Assignors if this sale, assignment and transfer had not been made.

Assignors covenant and agree, without further compensation to said Assignors but at Assignees' expense:

- a. to execute:
  - i. all papers to be used in connection with this application and any divisional, continuing, substitute or reissue application thereof, as the Assignees may deem necessary or expedient, and

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CLIENT REF.: P22117-US/DMC  
SAMSUNG REF.: MJ-201507-024-1-US0

- ii. all papers in connection with any interference, litigation, mediation, arbitration or other proceeding relating to this application or any divisional, continuing, substitute or reissue application thereof, as may be necessary or expedient;
- b. to cooperate with the Assignees in every way possible in obtaining evidence and going forward in any interference, litigation, mediation, arbitration or other proceeding relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof;
- c. to communicate to the Assignees any facts relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof, including evidence for any interference, litigation, mediation, arbitration or other proceeding relating to said invention, whenever requested;
- d. to testify in any interference, litigation, mediation, arbitration or other proceeding relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof whenever requested; and
- e. to perform all other affirmative acts which may be necessary or desirable to secure full and complete protection of the inventions and discoveries or that may be necessary or desirable to vest in Assignees the complete title to the inventions and discoveries and Letters Patent hereby conveyed and to enable Assignees to record title.

Assignors hereby authorize and request the United States Patent and Trademark Office or any other issuing authority to issue any and all Letters Patent that may be granted upon this invention and/or this application or any divisional, continuing, substitute or reissue application thereof to the Assignees, its legal representatives, successors and assigns.


Assignors each hereby represents, covenants and warrants that he or she has the full right to convey the entire right, title and interest by this instrument, free of any encumbrances and that no other agreement has been or will be executed in conflict herewith.

The provisions of this Assignment are binding upon Assignors' heirs, legal representatives and/or administrators and assigns.


Assignors hereby grant to the law firm of Jefferson IP Law, LLP of Washington, DC and its attorneys and agents as associated with Customer No. 68103 the authority and power to insert on this instrument any further identification which may be necessary or desirable for purposes of recordation in the United States Patent and Trademark Office or a Patent Office of any foreign country.

DOCKET NO.: 0201-1503  
CLIENT REF.: P22117-US/DMC  
SAMSUNG REF.: MJ-201507-024-1-US0

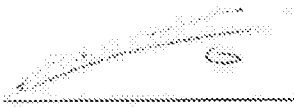
Signature of Inventor:   
Sang-Hyun CHANG July 18, 2016  
Date


Signature of Inventor:   
Byung-Hoon JUNG July 18, 2016  
Date

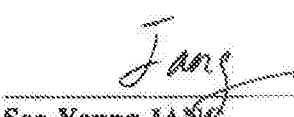
Signature of Inventor:   
Seongwon KIM July 18, 2016  
Date

Signature of Inventor:   
Youngwook SON July 18, 2016  
Date

Signature of Inventor:   
Seungmin YOO July 18, 2016  
Date

Signature of Inventor:   
Jaehong YI July 18, 2016  
Date

Signature of Inventor:   
Sunghyun CHOI July 18, 2016  
Date

Signature of Inventor:   
Soo-Young JANG July 18, 2016  
Date