### 504811183 03/08/2018

# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4857917

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
KYEONG-YEON KIM	03/07/2018
YEO-HUN YUN	03/07/2018
SUNG-NAM HONG	03/07/2018
CHAN-HONG KIM	03/07/2018
JI-YUN SEOL	03/07/2018
YONG-HO CHO	02/27/2018

#### **RECEIVING PARTY DATA**

Name:	SAMSUNG ELECTRONICS CO., LTD.
Street Address:	129, SAMSUNG-RO, YEONGTONG-GU
City:	SUWON-SI, GYEONGGI-DO
State/Country:	KOREA, REPUBLIC OF
Postal Code:	16677

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

Property Type	Number
Application Number:	15758640

#### **CORRESPONDENCE DATA**

Fax Number:

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:** 202-293-0804

Email: usdocketing@jeffersonip.com
Correspondent Name: JEFFERSON IP LAW, LLP

Address Line 1: 1130 CONNECTICUT AVE., NW, SUITE 420

Address Line 4: WASHINGTON, D.C. 20036

ATTORNEY DOCKET NUMBER: 0201-1916

NAME OF SUBMITTER: DONALD A. DIPAULA

SIGNATURE: /Donald A. DIPAULA/

DATE SIGNED: 03/08/2018

Total Attachments: 7

PATENT REEL: 045148 FRAME: 0079

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PATENT REEL: 045148 FRAME: 0080

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.			
<ol> <li>Name of conveying party(ies)</li> <li>Kyeong-Yeon KIM, 2) Yeo-Hun YUN, 3) Sung-Nam HONG,</li> <li>Chan-Hong KIM, 5) Ji-Yun SEOL, and 6) Yong-Ho CHO</li> </ol>	2. Name and address of receiving party(ies)  Name: Samsung Electronics Co., Ltd.  Internal Address:		
Additional name(s) of conveying party(ies) attached? Yes No  3. Nature of conveyance/Execution Date(s):  Execution Date(s) February 27, 2018 and March 7, 2018  Assignment Merger  Security Agreement Change of Name  Joint Research Agreement  Government Interest Assignment  Executive Order 9424, Confirmatory License  Other	Street Address: 129, Samsung-ro, Yeongtong-gu  City: Suwon-si, Gyeonggi-do  State:  Country: Republic of Korea  Zip:16677  Additional name(s) & address(es) attached? Yes		
A. Patent Application No.(s) 15/758,640	document is being filed together with a new application.  B. Patent No.(s)  ached? Yes No  6. Total number of applications and patents		
concerning document should be mailed:	involved: One		
Name: Jefferson IP Law, LLP Internal Address: Donald A. DiPaula	7. Total fee (37 CFR 1.21(h) & 3.41) \$ Authorized to be charged by credit card Authorized to be charged to deposit account		
Street Address: 1130 Connecticut Ave., NW, Suite 420	Enclosed  None required (government interest not affecting title)		
City: Washington	8. Payment Information		
State: District of Columbia Zip:20036	a. Credit Card Last 4 Numbers Expiration Date		
Phone Number: <u>202-293-0804</u>	•		
Fax Number: 202-403-3587	b. Deposit Account Number		
Email Address: usdocketing@jeffersonip.com	Authorized User Name		
9. Signature:  /Donald A. DIPAULA/ Reg. # Signature  Donald A. DiPaula  Name of Person Signing	Total number of pages including cover sheet, attachments, and documents:  7		

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

REEL: 045148 FRAME: 0081

CLIENT REF.: P22823-US(MJ-201503-079-1-US0)

## **Assignment**

WHEREAS, the following inventors, namely 1) Kyeong-Yeon KIM, a citizen of the Republic of Korea, 2) Yeo-Hun YUN, a citizen of the Republic of Korea, 3) Sung-Nam HONG, a citizen of the Republic of Korea, 4) Chan-Hong KIM, a citizen of the Republic of Korea, 5) Ji-Yun SEOL, a citizen of the Republic of Korea, 6) Yong-Ho CHO, a citizen of the Republic of Korea, 7) Ming HOKA, a citizen of the Hong Kong, (hereinafter called "Assignors"), having made or discovered certain new, useful and non-obvious improvements in an invention having a working title of:

# "APPARATUS AND METHOD FOR TRANSMITTING/RECEIVING SIGNAL IN MULTI-CARRIER SYSTEM"

for which a United States Patent Application is being filed concurrently herewith or, if not being concurrently filed, was filed on <u>March 8, 2018</u>, and assigned Serial No. <u>15/758,640</u>; 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 (hereinafter called "Assignee"), is 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 Assignee 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 Assignee's expense:

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

1

CLIENT REF.: P22823-US(MJ-201503-079-1-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;
- to cooperate with the Assignee 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 Assignee 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 Assignee the complete title to the inventions and discoveries and Letters Patent hereby conveyed and to enable Assignee 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 Assignee, 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.

Signature of Inventor:

Kyeong-Yeon KIM

Mar. 7, 2018

Date

Signature of Inventor:	Yeo-Hun YUN	Mar. 7, 2018  Date
Signature of Inventor:	Sung-Nam HONG	Mar. 7, 201 Date
Signature of Inventor:	Chan-Hong KIM	Mar. 7, 2018 Date
Signature of Inventor:	Ji-Yun SEOL	Mar. 7, 2018  Date
Signature of Inventor:	Yong-Ho CHO	Date

Signature of Inventor:

CLIENT REF.: P22823-US(MJ-201503-079-1-US0)

Ming HOKA

Date

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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 (hereinafter called "Assignee"), is 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 Assignee 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.

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  - all papers to be used in connection with this application and any divisional, continuing, substitute or reissue application thereof, as the Assignee may deem necessary or expedient, and

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CLIENT REF.: P22823-US(MJ-201503-079-1-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;
- to cooperate with the Assignee 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 Assignee 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 Assignee the complete title to the inventions and discoveries and Letters Patent hereby conveyed and to enable Assignee 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 Assignee, 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.

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Signature of Inventor:

Kyeong-Yeon KIM

Mar. 7, 2018

Date

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Signature of Inventor:		
	Yeo-Hun YUN	Date
Signature of Inventor:		
	Sung-Nam HONG	Date
Signature of Inventor:		
	Chan-Hong KIM	Date
Signature of Inventor:		
	Ji-Yun SEOL	Date
Signature of Inventor:	Yong-Ho CHO	2018. 02.27 Date
Signature of Inventor:		
	NASSE TANKA	Dota

3