PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5542856

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
DOYOUNG JUNG	04/26/2019
YIBIN SUN	05/07/2019
JUNG-MIN MOON	04/25/2019
INGIL BAEK	04/26/2019
JUNHEE JEONG	04/26/2019

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:	16464509

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.comCorrespondent Name:JEFFERSON IP LAW, LLP

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

Address Line 4: WASHINGTON, D.C. 20036

ATTORNEY DOCKET NUMBER:	0202-1519
NAME OF SUBMITTER:	JAMES J. LIVINGSTON
SIGNATURE:	/James J. LIVINGSTON/
DATE SIGNED:	05/28/2019

Total Attachments: 10

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PATENT REEL: 049295 FRAME: 0078

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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)	2. Name and address of receiving party(ies)		
1) Doyoung JUNG, 2) Yibin SUN, 3) Jung-Min MOON, 4) Ingil BAEK, and 5) Junhee JEONG	Name: Samsung Electronics Co., Ltd.		
,	Internal Address:		
Additional name(s) of conveying party(ies) attached? Yes V No			
3. Nature of conveyance/Execution Date(s):	Street Address: 129, Samsung-ro, Yeongtong-gu		
Execution Date(s) 04/25/2019, 04/26/2019 and 05/07/2019			
Assignment Merger		_	
Security Agreement Change of Name	City: Suwon-si, Gyeonggi-do		
Joint Research Agreement	State:		
Government Interest Assignment	Country: Republic of Korea Zip: 16677		
Executive Order 9424, Confirmatory License	Zip. 10077		
Other	Additional name(s) & address(es) attached? Yes	∠ No	
Additional numbers att	ached? Yes VNo		
5. Name and address to whom correspondence	6. Total number of applications and patents		
concerning document should be mailed:	involved: One		
Name: Jefferson IP Law, LLP	7. Total fee (37 CFR 1.21(h) & 3.41) \$		
Internal Address: James J Livingston	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 affect	ting title)	
City: Washington	8. Payment Information		
State: District of Columbia Zip: 20036	a. Credit Card Last 4 Numbers Expiration Date		
Phone Number: 202-293-0804			
Fax Number: 202-403-3587	b. Deposit Account Number		
Email Address: usdocketing@jeffersonip.com	Authorized User Name		
9. Signature: /James J. LIVINGSTON/ Reg.	#55,394 May 28, 2019		
Signature	Date		
	Total number of pages including cover sheet, attachments, and documents:	10	

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: 049295 FRAME: 0080

CLIENT REF.: SP17050-PCT/US_DMC SAMSUNG REF.: NG-201606-009-1-US0

Assignment

WHEREAS, the following inventors, namely 1) Doyoung JUNG, 2) Yibin SUN, 3) Jung-Min MOON, 4) Ingil BAEK, and 5) Junkee JEONG (hereinafter called "Assignors"), having made or discovered certain new, useful and non-obvious improvements in an invention having a working title of:

DEVICE AND METHOD FOR DETECTING BEAM MISALIGNMENT 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 <u>May 28, 2019</u>, and assigned Serial No.16/464,509; 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 all other foreign countries, 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 other foreign country 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
 - 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;

1

CLIENT REF.: SP17050-PCT/US_DMC SAMSUNG REF.: NG-201606-009-1-US0

- 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;
- to communicate to the Assignce 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.

CLIENT REF.: SP17050-PCT/US_DMC SAMSUNG REF.: NG-201606-009-1-US0

Signature of Inventor:	Jung, doxoung	April 26,2019
	Doyoung JUNG	Date
Signature of Inventor:		
	Yibin SUN	Date
Signature of Inventor:		
	Jung-Min MOON	Date
Signature of Inventor:	ma in qi	April 26,20/9
	Ingil BAEK	Date
Signature of Inventor:	Julie JEONG	26 April , 2019
	Junhee JEONG	Date

CLIENT REF.: SP17050-PCT/US_DMC SAMSUNG REF.: NG-201606-009-1-US0

Assignment

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CLIENT REF.: SP17050-PCT/US_DMC SAMSUNG REF.: NG-201606-009-1-US0

- 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;
- to communicate to the Assignce 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;
- 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.

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DOCKET NO.: 6282-1519

CLIENT REF.: SP17050-PCT/US_DMC SAMSUNG REF.: NG-201606-009-1-US0

Signature of Inventor:		
	Doyoung JUNG	Date
Signature of Inventor:	No. of the second secon	Hay 07, 2019
	Yibin SUN	Date
Signature of Inventor:		
	Jung-Min MOON	Date
Signature of Inventor:		
	Ingil BAEK	Date
Signature of Inventor:		
	Innho WING	Date

CLIENT REF.: SP17050-PCT/US_DMC SAMSUNG REF.: NG-201606-009-1-US0

Assignment

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CLIENT REF.: SP17050-PCT/US_DMC SAMSUNG REF.: NG-201606-009-1-US0

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CLIENT REF.: SP17858-PCT/US_DMC SAMSUNG REF.: NG-201686-009-1-US0

	Doyoung JUNG	Date
Signature of Inventor:		
	Yibin SUN	Date
Signature of Inventor:	Tung Mir Hoor	April 25, 2019
	Jung-Min MOON	Dato
Signature of Inventor:		
	Ingil BAEK	Date
Signature of Inventor:		
	Junher HANG	Date