# 504463260 07/19/2017

# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4509962

NATURE OF CONVEYANCE:       ASSIGNMENT         CONVEYING PARTY DATA         Name         SHARMA DEEPAK         RAJEEV RANJAN         KUCHANURI SUBHASH         CHULHONG PARK         JAESEOK YANG         KWANYOUNG CHUN         RECEIVING PARTY DATA         RECEIVING PARTY DATA         SAMSUNG ELECTRONICS CO., LTD         Street Address:         129, SAMSUNG-RO, YEONGTONG-GU         City:         SUWON-SI, GYEONGGI-DO         State/Country:       KOREA, REPUBLIC OF         PROPERTY NUMBERS Total: I         Property Type         Number         Application Number:	Execution Date           04/28/2017           04/28/2017           04/28/2017           04/28/2017           04/28/2017           04/28/2017           04/28/2017           04/28/2017
NameSHARMA DEEPAKRAJEEV RANJANKUCHANURI SUBHASHCHULHONG PARKJAESEOK YANGKWANYOUNG CHUNRECEIVING PARTY DATARECEIVING PARTY DATAName:SAMSUNG ELECTRONICS CO., LTDStreet Address:129, SAMSUNG-RO, YEONGTONG-GUCity:SUWON-SI, GYEONGGI-DOState/Country:KOREA, REPUBLIC OFPostal Code:16677PROPERTY NUMBERS Total: 1Number	04/28/2017 04/28/2017 04/28/2017 04/28/2017 04/28/2017 04/28/2017
SHARMA DEEPAK RAJEEV RANJAN KUCHANURI SUBHASH CHULHONG PARK JAESEOK YANG KWANYOUNG CHUN 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	04/28/2017 04/28/2017 04/28/2017 04/28/2017 04/28/2017 04/28/2017
RAJEEV RANJAN         KUCHANURI SUBHASH         CHULHONG PARK         JAESEOK YANG         KWANYOUNG CHUN         RECEIVING PARTY DAT         RECEIVING PARTY DAT         SAMSUNG ELECTRONICS CO., LTD         Street Address:       129, SAMSUNG-RO, YEONGTONG-GU         City:       SUWON-SI, GYEONGGI-DO         State/Country:       KOREA, REPUBLIC OF         Postal Code:       16677         Number	04/28/2017 04/28/2017 04/28/2017 04/28/2017
KUCHANURI SUBHASH         CHULHONG PARK         JAESEOK YANG         KWANYOUNG CHUN         RECEIVING PARTY DATA         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         Number	04/28/2017 04/28/2017 04/28/2017
CHULHONG PARK         JAESEOK YANG         KWANYOUNG CHUN         RECEIVING PARTY DAT         RECEIVING PARTY DAT         SAMSUNG ELECTRONICS CO., LTD         Street Address:       129, SAMSUNG-RO, YEONGTONG-GU         City:       SUWON-SI, GYEONGGI-DO         State/Country:       KOREA, REPUBLIC OF         Postal Code:       16677         Number	04/28/2017 04/28/2017
JAESEOK YANG KWANYOUNG CHUN RECEIVING PARTY DAT 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	04/28/2017
KWANYOUNG CHUN         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         Number         Number	
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State/Country:     KOREA, REPUBLIC OF       Postal Code:     16677       PROPERTY NUMBERS Total: 1     Property Type       Number	
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PROPERTY NUMBERS Total: 1 Property Type Number	
Property Type Number	
Application Number: 15635615	
CORRESPONDENCE DATA	
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ATTORNEY DOCKET NUMBER: SAM-55122	
NAME OF SUBMITTER: ALI IMAM	
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DATE SIGNED: 07/19/2017	

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### COMBINED DECLARATION (37 CFR §1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM<sup>1</sup>

The undersigned acknowledges that this document is being used both as an assignment of the invention and as the declaration (37 CFR 1.63) for a Utility or Design Application.

WHEREAS, the undersigned, hereinafter referred to collectively as Assignor, has invented:

Title: SEMICONDUCTOR DEVICE AND METHOD OF MANUFACTURING SEMICONDUCTOR DEVICE

for which Assignor is about to make or has made United States or International application for patent.

WHEREAS, as a below named inventor(s), I/(we) hereby declare that:

Section I. Declaration

This declaration is directed to:

- The attached U.S. non-provisional patent application, or
  - U.S. non-provisional patent application number \_\_\_\_\_\_\_, filed on

PCT international patent application number \_\_\_\_\_\_, filed on

The above-identified application was made or authorized to be made by me (us).

I (we) believe that I am (we are) the original inventor (original joint inventors) of a claimed invention in the above-identified application.

I (we) hereby acknowledge 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.

<sup>1</sup> This form requires the use of an Application Data Sheet.

SEC Ref No.		
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IE-201608-074-1-US0

Attorney Ref No.

SAM-55122

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND RACENENT FORM BUILS 16029213102342342 20170428144616 Page 1 of 5 REEL: 043041 HRAME 10299 I hereby state that I have reviewed and understand the contents of the above identified application, including the claims.

I acknowledge that I am aware of the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

#### Section II. Assignment

In consideration of the sum of One Dollar (\$1.00) and other good and valuable consideration paid to each of the undersigned, the undersigned hereby sell(s) and assign(s) to

Samsung Electronics Co., Ltd.

having an address at 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do 16677, Republic of Korea (hereinafter designated as the Assignee), the entire (100%) right, title and interest for the United States as defined in 35 USC §100, in the invention described in the application identified in Section I of this document.

Assignor hereby confirms any prior assignment to Assignee, and to the extent that Assignor has not already done so, agrees to assign, and hereby does, sell, assign and transfer unto Assignee and its successors in interest, the full and exclusive right, title and interest in the United States of America and throughout the world, including the right to claim priority under the laws of the United States, the Paris Convention, and any foreign countries, to the inventions as described in the aforesaid application, to the aforesaid application itself, and all divisions, continuations, continuations-in-part, or other applications claiming priority directly or indirectly from the aforesaid application, and any United States or foreign Letters Patent, utility model, or other similar rights which may be granted thereon, including reissues, reexaminations and extensions thereof, and all copyright rights throughout the world in the aforesaid application and the subject matter disclosed therein, these rights, title and interest to be held and enjoyed by Assignee to the full end of the term for which the Letters Patent, utility model, or other similar rights, are granted and any extensions thereof as fully and entirely as the same would have been held by Assignor had this assignment and sale not been made, and the right to sue for, and recover for past infringements of, or liabilities for, any of the rights relating to any of the applications, patents, utility models, or other similar rights, resulting therefrom, and the copyright rights;

Assignor hereby covenants and agrees to execute all instruments or documents required or requested for the making and prosecution of any applications of any type for patent, utility model, or other similar rights, and for copyright, in the United States and in all foreign countries including, but not limited to, any provisional, continuation, continuation-in-part, divisional, renewal or substitute thereof, and as to letters patent any reissue, re-examination, or extension thereof, and for litigation regarding, or for the purpose of protecting title and to the said invention, the United States application for patent, or Letters

SEC Ref No.

IE-201608-074-1-US0

Attorney Ref No.

SAM-55122

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND 伊久丁王的丁 FORM 型式單16029213102842342 20170428144616 Page 2 of 5 REEL: 043041 FRAME 10300

Patent therefor, and to testify in support thereof, for the benefit of Assignee without further or other compensation than that above set forth;

Assignor hereby covenants that no assignment, sale, license, agreement or encumbrance has been or will be entered into which would conflict with this Assignment; and

Assignor hereby requests the United States Patent and Trademark Office to issue the Letters Patent of the United States of America to Assignee, and requests that any official of any country or countries foreign to the United States, whose duty it is to issue or grant patents and applications as aforesaid, to issue the Letters Patent, Utility Model Registration or other similar right to Assignee.

The undersigned hereby grant(s) the law firm of Muir Patent Law, PLLC the power to insert on this Declaration and Assignment any further identification which may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office for recordation of this document.

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
FIRST INVENTOR/ASSIGNOR	DEEPAK	SHARMA	
SIGNATURE	Bugak	DATE	2017/04/28

#### Section III. Inventor(s)/Assignor(s) Signature(s)

LEGAL NAME OF SECOND	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	RANJAN	RAJEEV	
SIGNATURE	Rojez Rojor	DATE	2017/14/28
SEC Ref No. IE-2	01608-074-1-US0	Attorney Ref No.	SAM-55122

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND 주요 TENT FORM 권지목16029213102342342 20170428144616 Page 3 of 5 REEL: 043041 FRAME: 030 대해

	Family Name	First Given Name	Second Given Name
THIRD	SUBHASH	KUCHANURI	
SIGNATURE	<u></u>	DATE	2017/04/28

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
FOURTH INVENTOR/ASSIGNOR	PARK	CHULHONG	
	2600	DATE	2017/4/28.
SIGNATURE	2/////S	······	

YANG	IACCEON	
	JAESEOK	
5	DATE	2011 (4) 2
508-074-1-US0	Attorney Ref No.	SAM-55122
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	Family Name	First Given Name	Second Given Name
SIXTH NVENTOR/ASSIGNOR	CHUN	KWANYOUNG	
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	12		and a beard
SIGNATURE		–	04-23-247
	ISUNG EI		

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND PATENT FORM