PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
SANG HWAN PARK	05/20/2016
WHANKYUN KIM	05/20/2016
KEEWON KIM	05/20/2016
YOUNGMAN JANG	05/20/2016

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:	15244498

CORRESPONDENCE DATA

Fax Number: (703)207-0003

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.

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Correspondent Name: LEE & MORSE, P.C.

Address Line 1: 3141 FAIRVIEW PARK DRIVE

Address Line 2: SUITE 500

Address Line 4: FALLS CHURCH, VIRGINIA 22042

ATTORNEY DOCKET NUMBER:	239/1118_00
NAME OF SUBMITTER:	EUGENE M. LEE
SIGNATURE:	/Eugene M. Lee/
DATE SIGNED:	08/23/2016
	This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 4

PATENT REEL: 039510 FRAME: 0271

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PATENT REEL: 039510 FRAME: 0272

COMBINED DECLARATION (37 CFR §1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM¹

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:	SEMI	CONDUCTOR MEMORY DEVICE		
for whi		ignor is about to make or has mad	de United States or In	ternational application for
WHERE	EAS, as	a below named inventor(s), I/(we	e) hereby declare that	56 N
Section	al. De	claration		
This de	clarati	on is directed to:		
	\boxtimes	The attached U.S. non-provision	nal patent application,	, or
		U.S. non-provisional patent appl	ication number	, filed on
		PCT international patent applica	tion number	, filed on
The abo	ove-ide	entified application was made or a	authorized to be made	e by me (us).
		that I am (we are) the original inv ne above-identified application.	entor (original joint ir	nventors) of a claimed
		acknowledge that any willful false ider 18 U.S.C. 1001 by fine or imp		
		that I have reviewed and undersicluding the claims.	tand the contents of t	he above identified
¹ This fo	orm requ	uires the use of an Application Data Sher	et.	
SEC Ref	f No	IE-201506-079-1-US0	Attorney Ref No.	239/1118_00
COME	BINED D	ECLARATION (37 CFR 1.63) FOR UTIL	JTY PATENT APPLICATIO	ON AND ASSIGNMENT FORM

Page 1 of 4

PATENT REEL: 039510 FRAME: 0273 SAMSUNG ELECTRONICS CO., LTD.

Lacknowledge that Lam 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 Patent therefor, and to testify in

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COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM Page 2 of 4

SAMSUNG ELECTRONICS CO., LTD.

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 LEE & MORSE, PC 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.

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

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
FIRST NVENTOR/ASSIGNOR	PARK	Sang Hwan	
		<u>;</u>	
	US Khar		2016, 5, 20

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	XX	meeting that that	

LEGAL NAME OF SECOND	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	KIM	Whankyun	
SIGNATURE	Sen	DATE	2016. 5.20

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
THIRD INVENTOR/ASSIGNOR	KIM	Keewon	

LEGAL NAME OF FOURTH	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	JANG	Youngman	
	h /		
	M.	DATE	and the

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COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM Page 4 of 4