504279948 03/20/2017

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
JANG GN YUN	01/24/2017
SUN YOUNG KIM	01/24/2017
HOO SUNG CHO	01/24/2017

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:	15463138	

CORRESPONDENCE DATA

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using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

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Email: aloomis@volentine.com Correspondent Name: **VOLENTINE & WHITT, PLLC**

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ATTORNEY DOCKET NUMBER:	SEC.4169
NAME OF SUBMITTER:	ADAM C. VOLENTINE
SIGNATURE:	/ADAM C. VOLENTINE/
DATE SIGNED:	03/20/2017
	This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 4

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> **PATENT** REEL: 041646 FRAME: 0044 504279948

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PATENT REEL: 041646 FRAME: 0045

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

the inventi	on and as the declaration (37 CFR	1.63) for a Utility or D	esign Application.
WHEREAS,	the undersigned, hereinafter refe	rred to collectively as	Assignor, has invented:
Title: MI	EMORY DEVICES		
for which A for patent.	issignor is about to make or has m	ade United States or I	nternational application
WHEREAS,	as a below named inventor(s), I/(v	ve) hereby declare tha	9£
Section I. I	Declaration		
This declar	ation is directed to:		
	The attached U.S. non-provision	onal patent applicatio	n, or
	U.S. non-provisional patent ap		, filed
	PCT international patent applic	cation number	, filed on
The above-	identified application was made o	r authorized to be ma	de by me (us).
	ve that I am (we are) the original in the above-identified application.		inventors) of a claimed
	by acknowledge that any willful fa under 18 U.S.C. 1001 by fine or in		
¹ This form re	equires the use of an Application Data Sh	eet.	
SEC Ref No.	IC-201605-002-1-US0	Attorney Ref No.	OPP-2016-0818-21622 SEC.4169

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

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,

2			
SEC Ref No.	IC-201605-002-1-US0	Attorney Ref No.	OPP-2016-0818-21622
		,	SEC.4169

divisional, renewal or substitute thereof, and as to letters patent any reissue, reexamination, 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 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 **VOLENTINE & WHITT, 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.

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

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
FIRST INVENTOR/ASSIGNOR	YUN	Jang Gn	
· h)
SIGNATURE ==		DATE	5m, 24, 2019
SIGNATORE			

3			
SEC Ref No.	IC-201605-002-1-US0	Attorney Ref No.	OPP-2016-0818-21622
			SEC.4169

LEGAL NAME OF SECOND	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	KIM	Sun Young	
SIGNATURE	Kim Sunyang	DATE	2017, 1.24

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
THIRD	СНО	Hoo Sung	
SIGNATURE _	The Hor Su	DATE	2012-1-24

4

IC-201605-002-1-US0 Attorney Ref No

Attorney Ref No. OPP-2016-0818-21622 SEC.4169

SEC Ref No.