PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5064016

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
SANG WAN NAM	06/14/2018
DONG HUN KWAK	06/14/2018
WAN DONG KIM	06/14/2018
CHI WEON YOON	06/14/2018

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:	16043474

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.

703-207-0008 Phone: Email: eoa@lee-iplaw.com LEE & MORSE, P.C. **Correspondent Name:**

3141 FAIRVIEW PARK DRIVE Address Line 1:

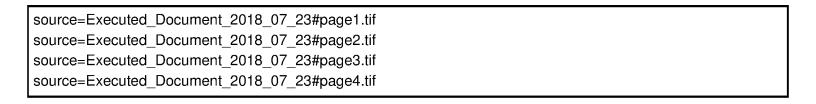
Address Line 2: SUITE 500

Address Line 4: FALLS CHURCH, VIRGINIA 22042

ATTORNEY DOCKET NUMBER:	285/1124_00
NAME OF SUBMITTER:	EUGENE M. LEE
SIGNATURE:	/Eugene M. Lee/
DATE SIGNED:	07/24/2018
	This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 4

PATENT REEL: 046441 FRAME: 0129



PATENT REEL: 046441 FRAME: 0130

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

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 collective	ly as Assignor, has invented:
Title: ME	EMORY DEVICE		
for which A patent.	ssignor is about to make or ha	is made United States	or International application for
WHEREAS	, as a below named inventor(s), I/(we) hereby decla	re that:
Section I. I	Declaration		
This declara following is		l U.S. non-provisiona	I patent application, unless the
	U.S. non-provisional paten		filed on
	PCT international patent a		, filed on
	as amended by the Preli	iminary Amendment :	attached hereto.
	as amended by the Prel	iminary Amendment	filed on
The above-io	dentified application was mad	e or authorized to be	made by me (us).
	e that I am (we are) the origin the above-identified applicati	, , ,	joint inventors) of a claimed
	y acknowledge that any willfus.C. 1001 by fine or imprison		e in this declaration is punishable five (5) years, or both.
•	e that I have reviewed and undincluding the claims (as amen		
	ge that I am aware of the duty as defined in 37 CFR § 1.56.	to disclose information	on which is material to
SEC Par No.	ID-201710-017-1-US0	Attorney	208/1223 00
Ref No.	\$\$\$\\\$*\$ \ \ \$\$\$\\\$\\$\\$\\$\\$\\$\\$	Ref No.	285/1124_00

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

Page 1 of 4

PATENT REEL: 046441 FRAME: 0131

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 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 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

***************************************	······································		
SEC		Attorney	
Ref No.	ID-201710-017-1-US0	Ref No.	285/1124_00

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

13:42 Page 2 of 4

Flash설계팀(메모리)/남상완/04001234/2018-06-14 11:42

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)/Assignar(s) Signature(s)

LEGAL NAME OF First	Family Name	First Given Name	Second Given Name
NVENTOR/ASSIGNOR	NAM	Sang Wan	
			L
	7 2.5	* }	
SIGNATURE	Song-Won	Viii DATE	2018/06/14

S 623 CM C	1	 		Second Given Name
Second NVENTOR/ASSIGNOR	Has DOKWAKA		ong Hun	
SIGNATURE	1500/e Pore	Hom	DATE	5018/6/14

SEC		Attorney	
Ref No.	ID-201710-017-1-US0	Ref No.	285/1124_00

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

Bash설계팅(메모리)/남상완/04001234/2018-06-14 11:42

Page 3 of 4

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
Third INVENTOR/ASSIGNOR	KIM	Wan Dong	
SIGNATURE	Lin Uhn de	DATE DATE	2018.6.14
LEGAL NAME OF	Family Name	First Given Name	Second Given Name
Fourth INVENTOR/ASSIGNOR	YOON	Chi Weon	
	Joseph Company	以特别的 电电流设施	

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

Attorney

Ref No.

Flash설계팀(메모리)/남성완/04001234/2018-06-14 11:42

RECORDED: 07/24/2018

ID-201710-017-1-US0

SEC

Ref No.

PATENT

REEL: 046441 FRAME: 0134

285/1124_00