504508514 08/17/2017

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4555219

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
YOUNG-CHUL CHO	06/02/2017
MIN-SU AHN	07/15/2017
JUNG-HWAN CHOI	06/02/2017

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:	15679662

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.

Phone: 703-207-0008

Email: eoa@lee-iplaw.com

Correspondent Name: LEE & MORSE, P.C.

Address Line 1: 3141 FAIRVIEW PARK DRIVE

Address Line 2: SUITE 500

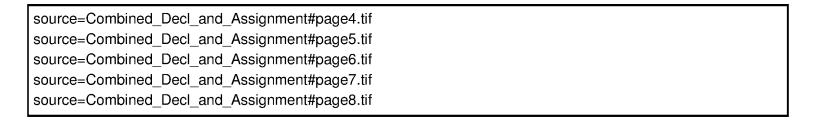
Address Line 4: FALLS CHURCH, VIRGINIA 22042

ATTORNEY DOCKET NUMBER:	253/1142_00
NAME OF SUBMITTER:	EUGENE M. LEE
SIGNATURE:	/Eugene M. Lee/
DATE SIGNED:	08/17/2017

Total Attachments: 8

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PATENT 504508514 REEL: 043321 FRAME: 0821



PATENT REEL: 043321 FRAME: 0822

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:	e: SEMICONDUCTOR DEVICE AND SEMICONDUCTOR PACKAGE INCLUDING THE SAME				
for whice patent.	ch Assi	gnor is about to make or has made United States or International application for			
WHERE	AS, as a	a below named inventor(s), I/(we) hereby declare that:			
Section	I. Dec	laration			
This dec	laratio	on is directed to:			
1	\boxtimes_{i}	The attached U.S. non-provisional patent application, or			
[U.S. non-provisional patent application number			
	<u> </u>	PCT International patent application number, filed on			
The abo	ve-ide	ntified application was made or authorized to be made by me (us).			
		that I am (we are) the original inventor (original joint inventors) of a claimed e above-identified application.			
	• ;	acknowledge that any willful false statement made in this declaration is der 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or			
¹ This for		ires the use of an Application Data Sheet.			
SEC Ref	No	ID-201609-005-1-US0 Attorney Ref No. 253/1142_00 (AY4052US)			
сомві	INED DE	ECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM			

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PATENT

REEL: 043321 FRAME: 0823

SAMSUNG ELECTRONICS CO., LTD.

I hereby state that I have reviewed and understand the contents of the above identified application, including the claims.

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

SEC Ref No.	ID-201609-005-1-US0	Attorney Ref No.	253/1142 00 (AY4052US)
SEC RELITO.	117-201007-003-1-030	Attorney her No.	255/1142_00 (A1405205)

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

PATENT REEL: 043321 FRAME: 0824 SAMSUNG ELECTRONICS CO., LTD.

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 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
INVENTOR/ASSIGNOR	СНО	Young-Chul	
		1	<u></u>
	MO Youngch	1	2017 6.2

SEC Ref No.	ID-201609-005-1-US0	Attorney Ref No.	253/1142_00 (AY4052US)
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COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM Page 3 of 4

SAMSUNG ELECTRONICS CO., LTD.

LEGAL NAME OF

SECOND INVENTOR/ASSIGNOR	AHN	Min-Su	
SIGNATURE		DATE	
LEGAL NAME OF	Family Name	First Given Name	Second Given Name
TUND	CHOI	Jung-Hwan	

Family Name

First Given Name

Second Given Name

SEC Ref No.	1D-201609-005-1-US0	Attorney Ref No.	253/1142_00 (AY4052US)

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

DRAM설계팀(메모리)/조명철/01023161/2017-06-02 18:38

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

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Title:	SEM	MICONDUCTOR DEVICE AND SEMICONDUCTOR PACKAGE INCLUDING THE SAME			
for wh		ignor is about to make or has ma	de United States or	International application for	
WHER	EAS, as	a below named inventor(s), I/(w	e) hereby declare th	at:	
Sectio	n I. De	claration			
This de	eclarati	on is directed to:	,		
	\boxtimes	The attached U.S. non-provisio	nal patent application	on, or	
		U.S. non-provisional patent app	lication number	, filed on	
		PCT International patent applica	ation number	, filed on	
The ab	ove-id	entified application was made or	authorized to be ma	nde by me (us).	
		that I am (we are) the original in he above-identified application.	ventor (original join	t inventors) of a claimed	
		acknowledge that any willful fals nder 18 U.S.C. 1001 by fine or imp			
ⁱ This f	orm req	uires the use of an Application Data She	et.		
SEC Re	f No.	ID-201609-005-1-US0	Attorney Ref No.	253/1142_00 (AY4052US)	
COM	RINED F	DECLARATION (37 CFR 1.63) FOR UTI	LITY PATENT APPLICA	TION AND ASSIGNMENT FORM	

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PATENT

REEL: 043321 FRANE: 0821

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

SEC Ref No.	ID-201609-005-1-US0	Attorney Ref No.	253/1142_00 (AY4052US)

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

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 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 FIRST	Family Name CHO	First Given Name	Second Given Name	
INVENTOR/ASSIGNOR		Young-Chul		
SIGNATURE		DATE		
JIGHATORE		DATE		

SEC Ref No.	ID-201609-005-1-US0	Attorney Ref No.	253/1142_00 (AY4052US)

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM
Page 3 of 4

SAMISUNG ELECTRONICS CO., LTD.

LEGAL MANAE OF SECOND	Family Name	First Given Name	Second Given Mame
NVENTOR/ASSIGNOR	AHN	Min-Su:	
		a kan mananan m	
	DATEN.		

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
NVENTOR/ASSIGNOR	CHOI	Name-Hwan	
· · · · · · · · · · · · · · · · · · ·		in francisco de la companione de la comp	**************************************
SIGNATURE		DATE	

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

PATENT REEL: 043321 FRAME: 0830

RECORDED: 08/17/2017