502584077 11/26/2013

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

EPAS ID: PAT2630165

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
HYE-YOUNG LEE	11/11/2013
KIE-BONG KU	11/11/2013
CHOUNG-KI SONG	11/11/2013
SUNG-HWA OK	11/11/2013
SE-JIN YOO	11/11/2013

RECEIVING PARTY DATA

Name:	SK HYNIX INC.
Street Address:	2091, GYEONGCHUNG-DAERO, BUBAL-EUB, ICHEON-SI
City:	GYEONGGI-DO
State/Country:	KOREA, REPUBLIC OF

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	14090945

CORRESPONDENCE DATA

 Fax Number:
 (571)327-5452

 Phone:
 571-327-5450

 Email:
 ipntlaw@ipntlaw.com

Correspondence will be sent via US Mail when the email attempt is unsuccessful.

Correspondent Name: IP & T GROUP LLP
Address Line 1: 8230 LEESBURG PIKE

Address Line 2: SUITE 650

Address Line 4: VIENNA, VIRGINIA 22182

ATTORNEY DOCKET NUMBER:	P13H0183/US
NAME OF SUBMITTER:	MYUNG SOO KIM

PATENT REEL: 031681 FRAME: 0641 D \$40.00 1409

502584077

Signature:	/Myung Soo KIM/
Date:	11/26/2013
	This document serves as an Oath/Declaration (37 CFR 1.63).
Total Attachments: 5 source=IVX000131449_P13H0183US_ASS source=IVX000131449_P13H0183US_ASS	IGNMENT&DECLARATION#page2.tif

source=IVX000131449_P13H0183US_ASSIGNMENT&DECLARATION#page3.tif source=IVX000131449_P13H0183US_ASSIGNMENT&DECLARATION#page4.tif source=IVX000131449_P13H0183US_ASSIGNMENT&DECLARATION#page5.tif

PATENT REEL: 031681 FRAME: 0642

Shinsong: iv	X000131449
Attorney Docket No.:	
ASSIGNMENT OF AND DECLARATION FOR APPLICATION FOR UNITED STATES LETTERS PATENT	
WHEREAS LEE, Hye-Young , h	ereinafter
referred to collectively as the assignor and inventor, has invented a certain improvement relating to SEMICONDUCTOR DEVICE	
[X] said application being attached hereto; [] said application having been filed in the United States Patent and Trademark Office on	s amended
AND WHEREAS SK hynix Inc. hereinafter referred to as the assignee or applicant, is desirous of acquiring the entire right, title and interest in a application, including any and all divisions and continuations thereof, and in and to said invention and any and which may be granted therefor, including any and all renewals, reissues and prolongations thereof;	nd to said all patents
NOW THIS WITNESSETH, that for and in consideration of One Dollar (\$1.00), and other good consideration paid by said assignee to said assigner, the receipt of which is hereby acknowledged, said assigns, sells and transfers to said assignee, and said assignee's successors and assigns, the full and exclusive righterest in and to said application, including any and all divisions and continuations thereof, and in and to said in any and all patents which may be granted therefor, including any and all renewals, reissues and prolongations assignee, and said assignee's successors and assigns, to have, fold, exercise and enjoy the said application, in and all divisions and continuations thereof, and the said invention and any and all patents which may be grad including any and all renewals, reissues and prolongations thereof, with all the rights, powers, privileges and anywise arising from or appertaining thereto, for and diving the term or terms of any and all such patents wincluding any and all renewals, reissues and prolongations thereof, for the use and benefit of said assign assignee's successors and assigns, in as any prolongations thereof, for the use and benefit of said assign assignee's successors and assigns, in as any prolongations thereof, for the use and benefit of could be enjoyed the same, if this assignment had not been made.	ignor hereby ght, title and nvention and thereof; said teluding any ted therefor, dvantages in hen granted, ee, and said twe held and
AND said assignor hereby agrees to perform, upon the request of said assignce, or said assignce's s assigns, any and all acts relating to the obtaining or to the asserting of said patents, including any and all renew and prolongations thereof.	uccessors or rals, reissues
AND said assignor authorizes and requests the Commissioner of Patents and Trademarks to issue Letter said application, and on any and all divisions and continuations thereof, to said assignee, and said assignee's surface assigns, in accordance herewith.	ers Patent on occessors and
As an above-named inventor, I hereby declare that the above-identified application was made or authorized by me, and that I am the original inventor or an original joint inventor of a claimed invention in the application.	orized to be tion.
I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 to by fine or imprisonment of not more than five (5) years, or both.	J.S.C. 1001
ASSIGNOR (INVENTOR):	
Signature: Lee Hye Young Dale: November 11, 2013	

Page 1 of 1

Printed or Typed Name: <u>LEE, Hyc-Young</u>

SHINSUNG: IVX000131449

Attorney Docket No.:	
ASSIGNMENT OF AND DECLARATION FOR APPLICATION FOR UNITED STATES LETTERS PATENT	
WHEREAS K.U. Kie-Bong , i	nereinafter
referred to collectively as the assignor and inventor, has invented a certain improvement relating to SEMICONDUCTOR DEVICE	
[X] said application being attached hereto; [] said application having been filed in the United States Patent and Trademark Office on	vas amended
[] the specification of which was filed under the Patent Cooperation Treaty on	
AND WHEREAS SK hynix Inc. hereinafter referred to as the assignee or applicant, is desirous of acquiring the entire right, title and interest in	 -
application, including any and all divisions and continuations thereof, and in and to said invention and any and which may be granted therefor, including any and all renewals, reissues and prolongations thereof;	and to said lall patents
NOW THIS WITNESSETH, that for and in consideration of One Dollar (\$1.00), and other good consideration paid by said assignee to said assigner, the receipt of which is hereby acknowledged, said as assigns, sells and transfers to said assignee, and said assignee's successors and assigns, the full and exclusive a interest in and to said application, including any and all divisions and continuations thereof, and in and to said any and all patents which may be granted therefor, including any and all renewals, reissues and prolongations assignee, and said assignee's successors and assigns, to have, jield, exercise and enjoy the said application, and all divisions and continuations thereof, and the said invention and any and all patents which may be graincluding any and all renewals, reissues and prolongations thereof, with all the rights, powers, privileges and anywise arising from or appertaining thereto, for and diving the term or terms of any and all such patents wincluding any and all renewals, reissues and prolongations thereof, for the use and benefit of said assignee's successors and assigns, in as ample and beneficial a manner as the said assignor might or could be enjoyed the same, if this assignment had not been made. AND said assignor hereby agrees to perform, upon the request of said assignee, or said assignee's assigns, any and all acts relating to the obtaining or to the asserting of said patents, including any and all renewal and prolongations thereof.	signor hereby right, title and invention and a thereof; said including any, atted therefor, advantages in when granted, nee, and said have held and successors or wals, reissues
AND said assignor authorizes and requests the Commissioner of Patents and Trademarks to issue Lett said application, and on any and all divisions and continuations thereof, to said assignce, and said assignce's su assigns, in accordance herewith.	ers Patent on accessors and
As an above-named inventor, I hereby declare that the above-identified application was made or autimade by me, and that I am the original inventor or an original joint inventor of a claimed invention in the application.	horized to be ation.
I hereby acknowledge that any willful faise statement made in this declaration is punishable under 18 by fine or imprisonment of not more than five (5) years, or both.	U.S.C. 1001
ASSIGNOR (INVENTOR):	
Signature:	
Printed or Typed Name: KU, Kie-Bong	
Page 1 of 1	

SHINSUNG: IVX000131449
Attorney Docket No.:

ASSIGNMENT OF AND DECLARATION FOR APPLICATION FOR UNITED STATES LETTERS PATENT

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Page lof I

PATENT REEL: 031681 FRAME: 0645

SHINSUNG: IVX000131449

Attorney Docket No.:	
ASSIGNMENT OF AND DECLARATION FOR APPLICATION FOR UNITED STATES LETTERS PATENT	
WHEREAS OK, Sung-Hwa	hereinafter
referred to collectively as the assignor and inventor, has invented a certain improvement relating to SEMICONDUCTOR DEVICE	
	·
[X] said application being attached hereto; [] said application having been filed in the United States Patent and Trademark Office on	was amended
AND WHEREAS <u>SK hynix Inc.</u> hereinafter referred to as the assignee or applicant, is desirous of acquiring the entire right, title and interest i application, including any and all divisions and continuations thereof, and in and to said invention and any any which may be granted therefor, including any and all renewals, reissues and prolongations thereof;	n and to said nd all patents
NOW THIS WITNESSETH, that for and in consideration of One Dollar (\$1.00), and other god consideration paid by said assignee to said assigner, the receipt of which is hereby acknowledged, said assigns, sells and transfers to said assignee, and said assignee's successors and assigns, the full and exclusive interest in and to said application, including any and all divisions and continuations thereof, and in and to said any and all patents which may be granted therefor, including any and all renewals, reissues and prolongation and all divisions and continuations thereof, and the said invention and any and all patents which may be granted therefor, including any and all patents which may be granted therefor, and the said invention and any and all patents which may be granted all divisions and continuations thereof, and the said invention and any and all patents which may be granted any wise arising from or appertaining thereto, for and during the term or terms of any and all such patents including any and all renewals, reissues and prolongations thereof, for the use and benefit of said assignee's successors and assigns, in as ample and beneficial a manner as the said assignor might or could enjoyed the same, if this assignment had not been made.	assignor hereby c right, title and id invention and one thereof; said n, including any tranted therefor, d advantages in a when granted, times, and said
AND said assignor hereby agrees to perform, upon the request of said assignee, or said assignee assigns, any and all acts relating to the obtaining or to the asserting of said patents, including any and all related prolongations thereof.	's successors or newals, reissues
AND said assignor authorizes and requests the Commissioner of Patents and Trademarks to issue L said application, and on any and all divisions and continuations thereof, to said assignee, and said assignee's assigns, in accordance herewith.	etters Patent on successors and
As an above-named inventor, I hereby declare that the above-identified application was made or a made by me, and that I am the original inventor or an original joint inventor of a claimed invention in the application.	uthorized to be lication.
I hereby acknowledge that any willful false statement made in this declaration is punishable under 1 by fine or imprisonment of not more than five (5) years, or both.	(8 U.S.C. 1001
ASSIGNOR (INVENTOR):	
Signature: Date: November 11, 2013	
Printed or Typed Name: OK, Sung-Hwa	
Page 1 of 1	

SHINSUNG: IVX000131449

		Altorney L	backet No.:	~~~~~~
ASSIG		CLARATION FOR APPLICATION TES LETTERS PATENT	ON	
WHEREAS	You, Sejin		here	einafter
referred to collectively as the assig	nor and inventor, has inv	ented a certain improvement relation	ig to	
SEMICONDUCTOR	DEVICE	-		
<u> </u>				
[X] said application being attached [] said application having been fi on [] the specification of which was	hereto; led in the United States I	Intent and Turdemark Office on		
the specification of which was	filed under the Patent Co	operation Treaty on		
Serial No, th	e United States of Ameri	ca being designated.		
AND WHEREAS SK hyni	x Inc.			<u>. </u>
hereinafter referred to as the assign application, including any and all d which may be granted therefor, inc	ivisions and continuation	is thereof, and in and to said inventi	ion and any and a	nd to said all patents
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AND said assignor authori said application, and on any and all assigns, in accordance herewith.	zes and requests the Con divisions and continuati	nmissioner of Patents and Trademar ons thereof, to suid assignce, and se	rks to issue Lette aid assignee's suc	rs Patent on occssors and
As an above-named invent made by me, and that I am the origin	or, I hereby declare that al inventor or an origina	the above-identified application will joint inventor of a claimed inventi	as made or author on in the applican	orized to be
I hereby acknowledge that by fine or imprisonment of not more	any willful false stateme than five (5) years, or be	nt made in this declaration is punisonth.	hable under 18 (J.S.C. 1001
ASSIGNOR (INVENTOR):				
Signature: Syin	y00	Date: November 11	, 2013	***********
Printed or Typed Name:	Yoo, Sejin			
	Page	1 of 1		

PATENT REEL: 031681 FRAME: 0647

RECORDED: 11/26/2013