

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	
CONVEYING PARTY DATA		
	Name	Execution Date
	JUNG-HYUN KIM	02/20/2017
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:	15447254
CORRESPONDENCE DATA		
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<i>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.</i>		
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ATTORNEY DOCKET NUMBER:	P16H0198/US	
NAME OF SUBMITTER:	JUN JEONG PARK	
SIGNATURE:	/Jun Jeong PARK/	
DATE SIGNED:	03/02/2017	
	This document serves as an Oath/Declaration (37 CFR 1.63).	
Total Attachments: 1		
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Attorney Docket No.: _____

ASSIGNMENT OF AND DECLARATION FOR APPLICATION FOR UNITED STATES LETTERS PATENT

WHEREAS KIM, Jung-Hyun

hereinafter referred to collectively as the assignor and inventor, has invented a certain improvement relating to
REFRESH CONTROL CIRCUIT FOR TARGET REFRESH OPERATION OF SEMICONDUCTOR MEMORY DEVICE,
 AND OPERATING METHOD THEREOF

[X] said application being attached hereto;

[] said application having been filed in the United States Patent and Trademark Office on

_____, as Application Serial No. _____ and was amended
 on _____ (if applicable);

[] the specification of which was filed under the Patent Cooperation Treaty on _____,
 Serial No. _____, the United States of America being designated.

AND WHEREAS SK hynix Inc.

hereinafter referred to as the assignee or applicant, is desirous of acquiring the entire right, title and interest in and to said
 application, including any and all divisions and continuations thereof, and in and to said invention and any and all patents
 which may be granted therefor, including any and all renewals, reissues and prolongations thereof;

NOW THIS WITNESSETH, that for and in consideration of One Dollar (\$1.00), and other good and valuable
 consideration paid by said assignee to said assignor, the receipt of which is hereby acknowledged, said assignor hereby
 assigns, sells and transfers to said assignee, and said assignee's successors and assigns, the full and exclusive right, title and
 interest in and to said application, including any and all divisions and continuations thereof, and in and to said invention and
 any and all patents which may be granted therefor, including any and all renewals, reissues and prolongations thereof; said
 assignee, and said assignee's successors and assigns, to have, hold, exercise and enjoy the said application, including any
 and all divisions and continuations thereof, and the said invention and any and all patents which may be granted therefor,
 including any and all renewals, reissues and prolongations thereof, with all the rights, powers, privileges and advantages in
 anywise arising from or appertaining thereto, for and during the term or terms of any and all such patents when granted,
 including any and all renewals, reissues and prolongations thereof, for the use and benefit of said assignee, and said
 assignee's successors and assigns, in as ample and beneficial a manner as the said assignor might or could have held and
 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 successors or
 assigns, any and all acts relating to the obtaining or to the asserting of said patents, including any and all renewals, reissues
 and prolongations thereof.

AND said assignor authorizes and requests the Commissioner of Patents and Trademarks to issue Letters Patent on
 said application, and on any and all divisions and continuations thereof, to said assignee, and said assignee's successors and
 assigns, in accordance herewith.

As an above-named inventor, I hereby declare that the above-identified application was made or authorized to be
 made by me, and that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001
 by fine or imprisonment of not more than five (5) years, or both.

ASSIGNOR (INVENTOR):

Signature: KIM JUNG HYUN Date: 2017. 2. 20

Printed or Typed Name: KIM, Jung-Hyun

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김정현/VPO그룹

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PATENT**RECORDED: 03/02/2017****REEL: 041859 FRAME: 0112**