### PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

EPAS ID: PAT4178919

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date	
YI-MIN LIN	11/30/2016	
AMAN BHATIA	11/10/2016	
NAVEEN KUMAR	11/10/2016	
JOHNSON YEN	11/10/2016	

#### **RECEIVING PARTY DATA**

Name:	SK HYNIX MEMORY SOLUTIONS INC.	
Street Address:	3103 NORTH FIRST STREET	
City:	SAN JOSE	
State/Country:	CALIFORNIA	
Postal Code:	95134	

#### **PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	15356069

#### **CORRESPONDENCE DATA**

Fax Number: (571)327-5452

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: 571-327-5450

Email: ipntlaw@ipntlaw.com IP & T GROUP LLP **Correspondent Name:** Address Line 1: 8230 LEESBURG PIKE

Address Line 2: SUITE 650

Address Line 4: VIENNA, VIRGINIA 22182

ATTORNEY DOCKET NUMBER: P16HS0023	
NAME OF SUBMITTER:	MYUNG SOO KIM
SIGNATURE:	/Myung Soo KIM/
DATE SIGNED:	12/09/2016
	This document serves as an Oath/Declaration (37 CFR 1.63).

**Total Attachments: 4** 

**PATENT** REEL: 040701 FRAME: 0401

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PATENT REEL: 040701 FRAME: 0402

Attorney Docket	No.: P16HS0023	

## ASSIGNMENT OF AND DECLARATION FOR APPLICATION FOR UNITED STATES LETTERS PATENT

WHEREAS	Yi-Min Lin	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
hereinafter referred to collectively	as the assignor and inventor,	has invented a certain improv	ement r	elating	to	
DATA MAPPING SCHEME FOR  [ ] said application being attached [ X ] said application having been November 18, 2016	hereto; filed in the United States Pat , as Application Serial N	ent and Trademark Office on	and	was	amended	on
(if applicable) [ ] the specification of which was Serial No	ttied angel the Lateur Cooke.			?		
AND WHEREAS	nee or applicant, is desirous of divisions and continuations the	of acquiring the entire right, tit sereof, and in and to said inver	ition an			
NOW THIS WITNESSE consideration paid by said assign assigns, sells and transfers to said interest in and to said application, any and all patents which may be assignee, and said assignee's succeall divisions and continuations the including any and all renewals, reanywise arising from or appertain including any and all renewals, assignee's successors and assigns, enjoyed the same, if this assignment	ee to said assignor, the rec- assignee, and said assignee's including any and all division granted therefor, including a assors and assigns, to have, be bereof, and the said invention issues and prolongations the sing thereto, for and during reissues and prolongations in as ample and beneficial	s successors and assigns, the f ms and continuations thereof, any and all renewals, reissues old, exercise and enjoy the saion and any and all patents v reof, with all the rights, powe the term or terms of any and thereof, for the use and ben	owledge iil and and in a and pro d applic which re rs, priv all suc efit of	ed, said exclusiond to a comment of the comment of	assignor here right, title aid invention ions thereof; neluding any granted then advantage its when grantesignee, and	reby and and said and efor, es in nted, said
AND said assignor herel assigns, any and all acts relating t and prolongations thereof.		the request of said assignee, exting of said patents, includin				
AND said assignor autho said application, and on any and a assigns, in accordance herewith.		iissioner of Patents and Trade is thereof, to said assignee, an				
As an above-named inve- made by me, and that I am the orig		ne above-identified application pint inventor of a claimed inve				o be
I hereby acknowledge the by fine or imprisonment of not mo	it any willful false statement re than five (5) years, or both	made in this declaration is pr	mishab	le unde	r 18 U.S.C. 1	001
ASSIGNOR (INVENTOR):		. 1				
Signature: Y-Min	Lin	Date:	***********			
Printed or Typed Name:	Yi-Mis Lin		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	***************************************		

	P16HS0023	

## ASSIGNMENT OF AND DECLARATION FOR APPLICATION FOR UNITED STATES LETTERS PATENT

WHEREAS	Aman Bhatia			
hereinafter referred to c	ollectively as the assignor and inventor, has invented a certain improvement relating to			
[X] said application be [] said application hav	ng been filed in the United States Patent and Trademark Office on , as Application Serial No. , and was amended			
[ ] the specification of v	(if applicable); which was filed under the Patent Cooperation Treaty on,			
Serial No.	the United States of America being designated.			
hereinafter referred to a application, including a	SK Hynix Memory Solutions Inc.  s the assignee or applicant, is desirous of acquiring the entire right, title and interest in and to said by and all divisions and continuations thereof, and in and to said invention and any and all patents derefor, 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 assigner, 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.				
	viedge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 of not more than five (5) years, or both.			
ASSIGNOR (INVENTO				
Signature:	2. Bratio : Date: 11/10/2016			
Printed or Typed Name:	Aman Bhatia			

Page 2 of 4



# ASSIGNMENT OF AND DECLARATION FOR APPLICATION FOR UNITED STATES LETTERS PATENT

WHEREAS	Naveen Kumar		for a second			á.
hereinafter referred to collecti	vely as the assignor and inve	ntor, has inven	ited a certain improvement	relating	to	
DATA MAPPING SCHEME			-			
[X] said application being at	tached hereto;					
[ ] said application having be	en filed in the United States F	atent and Trac	demark Office on			
	, as Application Serial	No		, and	was	amended
on [ ] the specification of which	(if app	licable);				
La the specification of which	was filed under the Patent Co	operation Trea	aty on	·····		
Serial No.	_, the United States of Ameri	ca being desig	inated.			
AND WHEREAS	SK Hynix Memory Sol	utions Inc.				
hereinafter referred to as the a	ssignee or applicant, is desiro	us of acquirin	g the entire right, title and	interest i	n and t	o said
application, including any and	all divisions and continuation	as thereof, and	I in and to said invention a	nd any ar	nd all p	atents
which may be granted therefor	, including any and all renew	als, reissues ar	ad prolongations thereof;			
NOW THIS WITNE	SSETH, that for and in cor	edderation of	One Dellan (\$1.00) and			1 Yo 11 2
consideration paid by said as	signee to said assigner the	receipt of wh	tich is hereby administrate	otner go	od and	i valuable
assigns, sells and transfers to	said assignee, and said assign	reets successor	reard assigns the full and	jeu, saiu Levebieù	ngises doir ac	or nereny
interest in and to said applicat	ion, including any and all div	isions and cor	tinuations thereof and in	and to se	id inve	ntion and
any and all patents which may	be granted therefor, includi	ng any and all	renewals, reissues and pr	rolongati	ons the	reof: said
assignee, and said assignee's si	accessors and assigns, to have	e, hold, exerci-	se and emov the said appli	ication, in	nchidin	ยาลหงาลกส์
all divisions and continuation	is thereof, and the said inve	ention and an	y and all patents which r	may be s	granted	therefor.
including any and all renewals	, reissues and prolongations	thereof, with	all the rights, powers, priv	zileges ar	nd adva	antages in
anywise arising from or apper	taining thereto, for and duri	ng the term o	r terms of any and all suc	ch patent	ts wher	r granted,
including any and all renewa assignee's successors and assig	ne in seamole and banefic	ns inereot, io	ir the use and benefit of	said ass	signee.	and said
enjoyed the same, if this assign	ment had not been made	iai a mainiti	as me sam assignor migni	i or com	o nave	neid and
AND said assignor h	ereby agrees to perform, upo	on the request	of said assignee, or said	assignee	e's succ	essors or
assigns, any and all acts relation	ig to the obtaining or to the:	asserting of sa	id patents, including any a	ınd all re	newals	, reissues
and prolongations thereof.						
AND said assistance on	thousand was to the Co		Smort over a Cms. 1			
said application, and on any ar	thorizes and requests the Cond all divisions and continue	ions thereof t	Patents and Trademarks t	o issue i	_etters .	Patent on
assigns, in accordance herewith		ions mercor, e	o said assignee, and said a	issignee s	s succe	ssors and
	•					
As an above-named in	iventor, I hereby declare tha	t the above-id	entified application was n	nade or a	authoria	zed to be
made by me, and that I am the c	riginal inventor or an origina	d joint invento	or of a claimed invention in	the appl	lication	
1 harely nathendades	Short mary will feel to be with a second		Na stanta and said			
by fine or imprisonment of not	that any willful false statements for the	ent mage in in	is declaration is punishabl	le under	18 U.S	.C. 1001
ay arms at amplication of the	non a contra to to (5) years, or or	oen.				
ASSIGNOR (INVENTOR)						
}	and James and the second			3		
	AMERICAN AND AND AND AND AND AND AND AND AND A		11/10/20	1/5		
Signature:		Date:	11/11/	James & Sant		
	Com		,			
Printed or Typed Name:	Naveen Kumar					

Page 3 of 4

Attorney Do	cket No.: I	16HS0023

#### ASSIGNMENT OF AND DECLARATION FOR APPLICATION FOR UNITED STATES LETTERS PATENT

WHEREAS Johnson Yen
hereinafter referred to collectively as the assignor and inventor, has invented a certain improvement relating to
DATA MAPPING SCHEME FOR GENERALIZED PRODUCT CODES [ X ] said application being attached hereto; [ ] said application having been filed in the United States Patent and Trademark Office on
AND WHEREAS SK Hynix Memory Solutions 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 benefitial 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: Date: 1//10/30/6
Printed or Typed Name:

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**RECORDED: 12/09/2016**