PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5009714

SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	

CONVEYING PARTY DATA

Name	Execution Date
NAVEEN KUMAR	05/16/2018
AMAN BHATIA	05/25/2018
CHENRONG XIONG	05/16/2018
YU CAI	05/16/2018
FAN ZHANG	05/16/2018

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:	16010026		

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: 5713275450

Email: ipntlaw@ipntlaw.com

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:	P17HS006
NAME OF SUBMITTER:	MYUNG SOO KIM
SIGNATURE:	/Myung Soo KIM/
DATE SIGNED:	06/15/2018
	This document serves as an Oath/Declaration (37 CFR 1.63).

PATENT REEL: 046103 FRAME: 0226

Total Attachments: 5 source=P17HS006-Assignment#page1.tif source=P17HS006-Assignment#page2.tif source=P17HS006-Assignment#page3.tif source=P17HS006-Assignment#page4.tif

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PATENT REEL: 046103 FRAME: 0227

Attorney	Docket No.:	P17HS006

WHEREAS Naveen KUMAR				
hereinafter referred to collectively as the assignor and inventor, has invented a certain improvement relating to				
MEMORY SYSTEM WITH LDPC DECODER AND METHOD OF OPERATING SUCH MEMORY SYSTEM AND LDPC DECODER				
[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 assigner, the receipt of which is hereby acknowledged, said assigner 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): Date: 05 16/2018				
Printed or Typed Name: Naveen KUMAR				

i trouting a contract to the c	Attorney	Docket No.:	P17HS006
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WHEREAS	Aman BHATIA		
hereinafter referred to c	ollectively as the assignor and invento	er, has invented a certain improvement	relating to
		ND METHOD OF OPERATING SUC	
AND LDPC DECODE			
	ving been filed in the United States Pa as Application Serial N	₹o.	, and was amended
CO the manifestion of	(if applied which was filed under the Patent Con	cable); peration Treaty on	.
Serial No.	the United States of Americ	a being designated.	·
hereinafter referred to a application, including a	any and all divisions and continuation	ons Inc. s of acquiring the entire right, title and i s thereof, and in and to said invention a ls, reissues and prolongations thereof;	interest in and to said nd any and all patents
consideration paid by assigns, sells and trans interest in and to said any and all patents wi assignee, and said assi all divisions and contincluding any and all anywise arising from	said assignee to said assignor, the sifers to said assignee, and said assign application, including any and all divided may be granted therefor, including gnee's successors and assigns, to have timustions thereof, and the said inversements, reissues and prolongations or appertaining thereto, for and during enemals, reissues and prolongations the said inverse and prolongations the said in as ample and beneficial a manner.	sideration of One Dollar (\$1.00), and receipt of which is hereby acknowled ee's successors and assigns, the full an issions and continuations thereof, and ing any and all renewals, reissues and per thold, exercise and enjoy the said application and any and all patents which thereof, with all the rights, powers, pring the term or terms of any and all supereof, for the use and benefit of said asser as the said assignor might or could be	ged, said assignor nereby dexclusive right, title and and to said invention and prolongations thereof; said lication, including any and may be granted therefor, vileges and advantages in ach patents when granted, signee, and said assignee's
AND said as assigns, any and all ac and prolongations then	ts relating to the obtaining or to the a	on the request of said assignee, or said asserting of said patents, including any	d assignee's successors or and all renewals, reissues
AND said ass said application, and o assigns, in accordance	m any and all divisions and continuat	mmissioner of Patents and Trademarks ions thereof, to said assignce, and said	to issue Letters Patent on assignee's successors and
As an above- made by me, and that I	named inventor, I hereby declare tha am the original inventor or an origina	t the above-identified application was I joint inventor of a claimed invention i	made or authorized to be n the application.
I hereby ackno fine or imprisonment of	owledge that any willful false statement f not more than five (5) years, or both.	nt made in this declaration is punishable	e under 18 U.S.C. 1001 by
ASSIGNOR (INVENT	OR):		
		. 1 . 1	
Signature:	u. Bhehe.		
Printed or Typed Name	Aman BHATIA		
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Attorney	Docket	No.:	P17HS006

WHEREAS Chemong XIONG ,
hereinafter referred to collectively as the assignor and inventor, has invented a certain improvement relating to
MEMORY SYSTEM WITH LDPC DECODER AND METHOD OF OPERATING SUCH MEMORY SYSTEM
AND LDPC DECODER
[X] said application being attached hereto; [] said application having been filed in the United States Patent and Trademark Office on
Serial No, the United States of America being designated.
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 assigner, the receipt of which is hereby acknowledged, said assigner 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:
Printed or Typed Name: Chenrong XIONG



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Attorney	Docket	No.:	P17HS006

WHEREAS	Yu CAI					
			invented a certain improven			
MEMORY SY AND LDPC DECODE	YSTEM WITH LDPC D R	ECODER AND ME	THOD OF OPERATING S	UCH MEMORY SY	STEM	
[X] said application b	eing anached heren; ving been filed in the Un	ited States Patent and	d Trademark Office on			
	, as Applic	ation Serial No.		, and was	amended	
OB	which was Glad under ti	(if applicable)	n Treaty on			
Serial No.	the United Sta	tes of America being	designated.			
AND WHEREAS	SK hynix n	nemory solutions Inc	·		andi	
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						
			of, and in and to said invention nies and prolongations there		itents	
NOW THIS	WITNESSETH that fo	r and in considerati	on of One Dollar (\$1.00)	and other oned and	valuable	
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						
			nd continuations thereof, an and all renewals, reissues ar			
			exercise and enjoy the said			
all divisions and cont	inuations thereof, and	the said invention a	nd any and all patents wh	ich may be granted	therefor,	
			with all the rights, powers			
			term or terms of any and a cof, for the use and benef			
assignee's successors a	and assigns, in as ample	and beneficial a m	anner as the said assignor r			
enjoyed the same, if the	is assignment had not be	en made.				
AND said ass	signor hereby agrees to	nerform unon the	remnest of said assionee or	said assignee's succ	essors or	
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 there	eof.					
			oner of Patents and Tradema			
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.						
			de in this declaration is pun	ishable under 18 U.S	S.C. 1001	
by tine or imprisonmen	nt of not more than five ((5) years, or both.				
ASSIGNOR (INVENT	TOR):					
. Journey Journey Land Commission of the Commiss	men de la composition della co		ate: 5//6/2			
Signature:		D	ate:	3. (Q		
Printed or Typed Nam	e: Yu CAI					

Attorney Docket No.:	P17HS006

WHEREAS Fan ZHANG,
hereinafter referred to collectively as the assignor and inventor, has invented a certain improvement relating to
MEMORY SYSTEM WITH LDPC DECODER AND METHOD OF OPERATING SUCH MEMORY SYSTEM AND LDPC DECODER
[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, bold, 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: Date: 5 //6 18
Printed or Typed Name: Fan ZHANG Page S of S

RECORDED: 06/15/2018