

<b>PATENT ASSIGNMENT COVER SHEET</b>
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Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT6268224

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
SK HYNIX MEMORY SOLUTION AMERICA INC.	12/18/2019
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	SK HYNIX INC.
<b>Street Address:</b>	2091, GYEONGCHUNG-DAERO BUBAL-EUB, ICHEON-SI
<b>City:</b>	GYEONGGI-DO
<b>State/Country:</b>	KOREA, REPUBLIC OF
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	16151064
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	
<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>	
<b>Phone:</b>	650-326-2400
<b>Email:</b>	mvera@kilpatricktownsend.com
<b>Correspondent Name:</b>	KILPATRICK TOWNSEND & STOCKTON LLP
<b>Address Line 1:</b>	TWO EMBARCADERO CENTER
<b>Address Line 2:</b>	SUITE 1900
<b>Address Line 4:</b>	SAN FRANCISCO, CALIFORNIA 94111
<b>ATTORNEY DOCKET NUMBER:</b>	098645-1068189-SK052-N
<b>NAME OF SUBMITTER:</b>	MARCOS VERA
<b>SIGNATURE:</b>	/Marcos Vera/
<b>DATE SIGNED:</b>	08/26/2020
<b>Total Attachments: 4</b>	
source=Signed Assignment SKHMSA to SK Hynix SK047 through SK067#page1.tif	
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**ASSIGNMENT**  
(Patent Application)

WHEREAS, SK HYNIX MEMORY SOLUTIONS AMERICA INC., a Delaware corporation, hereinafter referred to as "Assignor," owned the following patents and/or patent applications listed on the attached Schedule A.

For other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged:

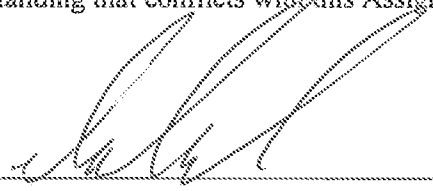
1. Agree to assign, transfer, convey, and sell, hereby assign, transfer, convey, and sell and have assigned, transferred, conveyed, and sold to SK hynix Inc., a corporation under the laws of Korea with a place of business at 2091, Gyeongchung-daero, Bubal-eub, Icheon-si, Gyeonggi-do, Korea ("Assignee"), the entire right, title, and interest in and to:
  - (a) all intellectual property (including, without limitation, any innovation, information, invention, discovery, product, process, work or design) disclosed, embodied, shown, or claimed in the above-referenced patent application, implicitly or explicitly;
  - (b) the above-referenced patent application, and all applications based in whole or in part upon the above-referenced patent application, including, without limitation, all applications that are a provisional, non-provisional, design, divisional, continuation, continuation-in-part, registration, utility model, industrial design, reissue, renewal, substitute, extension, reexamination, post-grant review, inter partes review, supplemental examination or non-U.S. patent application or application for other rights based in whole or in part on the above-referenced patent application;
  - (c) the right to claim priority to the above-referenced patent application, and any and all applications referenced in subsection (b); and
  - (d) all patents (including, without limitation, all U.S. and non-U.S. patents, registrations, utility models, industrial designs, design patents, counterparts, continuations, continuations-in-part, divisionals, reissues, renewals, substitutes, extensions, reexaminations, post-grant reviews, inter partes reviews and supplemental examinations) that are granted or issued upon, or that claim priority to, any and all applications described in (b) of this paragraph or that disclose or claim intellectual property described in (a) of this paragraph, in whole or in part; and
  - (e) all claims for damages by reason of past infringement of any rights under the applications or patents described in (a), (b) or (c) of this paragraph (including provisional rights to reasonable royalties pursuant to 35 U.S.C. §154(d)) and the right to sue for and collect such damages and royalties for Assignee's own use.
2. Authorize and request the U.S. Patent and Trademark Office or any other U.S. or non-U.S. agency to issue to the Assignee any and all patent(s), or other rights or documents, resulting from the intellectual property, patent application(s) and patents described in paragraph 1 of this Assignment.

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3. Agree to sign all papers and documents, including without limitation, applications, declarations, oaths and petitions, and, at the Assignee's expense, perform any other acts that are necessary in connection with prosecution of patent application(s) or intellectual property described in paragraph 1 of this Assignment and the enforcement of patent(s) or other rights resulting from such patent application(s) or intellectual property.
4. Agree that the terms, covenants, and conditions of this Assignment shall inure to the benefit of the Assignee, its successors, assigns and other legal representative, and shall be binding upon us the Assignee, as well as heirs, legal representatives, and assigns.
5. Promise and affirm that the Assignee has not entered, and will not enter, into any assignment, contract, or understanding that conflicts with this Assignment.

Signature: \_\_\_\_\_



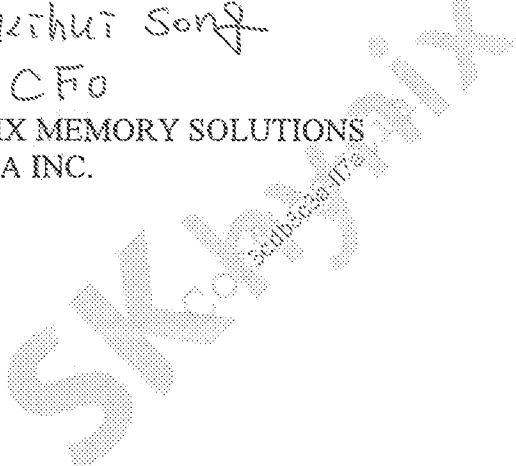
Date: \_\_\_\_\_

12/18/2019

Name: Kihui Song

Title: CFO

SK HYNIX MEMORY SOLUTIONS  
AMERICA INC.



## Schedule A

Attorney Docket	Title	Application No.	Filing Date
098645-1060212-SK047-N	BIT-FLIPPING DECODER FOR G-LDPC CODES WITH SYNDROME-DECODING FOR COMPONENT CODES	15/917,222	3/9/18
098645-1060210-SK048-N	READ DISTURB DETECTION AND RECOVERY WITH ADAPTIVE THRESHOLDING FOR 3-D NAND STORAGE	15/835,246	12/7/17
098645-1062494-SK049-N	IMPROVED MIN-SUM DECODING FOR LDPC CODES	15/903,604	2/23/18
098645-1062492-SK050-N	A METHOD TO SELECT FLASH MEMORY BLOCKS FOR REFRESH AFTER READ OPERATIONS	15/981,648	5/16/18
098645-1068191-SK051-N	SOFT CHIP-KILL RECOVERY FOR MULTIPLE WORDLINES FAILURE	16/151,053	10/3/18
098645-1068189-SK052-N	SOFT CHIP-KILL RECOVERY USING CONCATENATED CODES	16/151,064	10/3/18
098645-1073357-SK053-N	RETENTION AWARE BLOCK MAPPING IN FLASH-BASED SOLID STATE DRIVES	16/136,989	9/20/18
098645-1082442-SK054-N	EYE OPENING HARDWARE OFFLOADING	16/264,305	1/31/19
098645-1082446-SK055-N	CONFIGURABLE INTERFACE CARD	16/264,320	1/31/19
098645-1082449-SK056-N	ADDRESSING SWITCH SOLUTION	16/264,358	1/31/19
098645-1083260-SK057-N	MEMORY SYSTEM AND METHOD FOR BAD BLOCK MANAGEMENT	16/022,451	6/28/18
098645-1083265-SK058-N	DYNAMIC INTERLEAVER CHANGE FOR BIT LINE FAILURES IN NAND FLASH STORAGE	16/100,952	8/10/18
098645-1097186-SK059-N	DYNAMIC NEIGHBOR AND BITLINE ASSISTED CORRECTION FOR NAND FLASH STORAGE	16/421,204	5/23/19
098645-1097201-SK060-N	NAND FLASH MEMORY WITH RECONFIGURABLE NEIGHBOR ASSISTED LLR CORRECTION WITH DOWNSAMPLING AND PIPELINING	16/528,321	7/31/19

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098645-1135943-SK061-N	QUALITY OF SERVICE (QOS) AWARE DATA STORAGE DECODER	16/450,722	6/24/19
098645-1135944-SK062-N	ERROR CHARACTERISTIC ESTIMATION FOR NAND FLASH	16/450,724	6/24/19
098645-1137532-SK063-N	DEEP LEARNING BASED REGRESSION FRAMEWORK FOR READ THRESHOLDS IN A NAND FLASH MEMORY	16/450,729	6/24/19
098645-1138828-SK064-N	ELECTRONIC DEVICE FASTENER	16/520,271	7/23/19
098645-1138834-SK065-N	READ RETRY THRESHOLD VOLTAGE SELECTION	16/520,274	7/23/19
098645-1148739-SK066-N	HEALTH MONITORING FOR CAPACITOR ARRAY IN STORAGE DEVICES	16/570,000	9/13/19
098645-1154231-SK067-N	ELECTRONIC DEVICE FASTENER	16/688,909	11/19/19



KILPATRICK TOWNSEND 72803296 I