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PATENT ASSIGNMENT COVER SHEET

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ersion v1.1 EPAS ID: PAT4556010

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
MATTHEW LEWIS CALL	12/24/2016
FREDERICK K.H. LEE	01/04/2017
JOHNNY LAM	11/11/2016
STEPHEN SILVA	01/09/2017

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:	15411786

CORRESPONDENCE DATA

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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.

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Email: mvera@kilpatricktownsend.com

Correspondent Name: KILPATRICK TOWNSEND & STOCKTON LLP

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Address Line 2: EIGHT FLOOR

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ATTORNEY DOCKET NUMBER:	098645-1002589-SK013-N
NAME OF SUBMITTER:	CIARA MCDERMOTT
SIGNATURE:	/Ciara McDermott/
DATE SIGNED:	08/17/2017

Total Attachments: 6

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ASSIGNMENT

(Patent Application)

We, the undersigned, have invented certain inventions and improvements disclosed in a utility (provisional or non-provisional) or design patent application entitled

"WINDOW BASED MAPPING,"

the specification of which is provided with this Assignment and identified by the Attorney Docket No. above. (Serial No. 15/411,786 filed on January 20, 2017)

For other good and valuable consideration, the receipt and sufficiency of which we acknowledge, we:

- 1. Agree to assign, transfer, convey, and sell, hereby assign, transfer, convey, and sell and have assigned, transferred, conveyed, and sold to SK HYNIX MEMORY SOLUTIONS INC., a corporation of the State of Delaware having a principal place of business at 3103 North First Street, San Jose, California 95134, U.S.A. ("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, the right to claim priority to the above-referenced patent application, 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) 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

ASSIGNMENT WINDOW BASED MAPPING Attorney Docket No. 098645-1002589-SK013-N Page 2 of 3

- (d) 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.
- 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, as well as our heirs, legal representatives, and assigns.
- 5. Promise and affirm that we have not entered, and will not enter, into any assignment, contract, or understanding that conflicts with this Assignment.
- 6. Authorize Kilpatrick Townsend & Stockton to insert above the application number and filing date of the above-described patent application when known.

Signed on the dates indicated beside our signatures.

Signature:		Date:	
	Matthew Lewis Call		
Signature:		Date:	
-	Frederick K.H. Lee		

ASSIGNMENT WINDOW BASED MAPPING Attorney Docket No. 098645-1002589-SK013-N Page 2 of 3

- (d) 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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- 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, as well as our heirs, legal representatives, and assigns.
- Promise and affirm that we have not entered, and will not enter, into any assignment, contract, or understanding that conflicts with this Assignment.
- Authorize Kilpatrick Townsend & Stockton to insert above the application number and filing date of the above-described patent application when known.

Signed on the dates indicated beside our signatures.

Signature:	Notte San Gle	Date: 24 Azc 2016
	Matthew Lewis Call	
Signature:	Yang and Water	Date:

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ASSIGNMENT WINDOW BASED MAPPING Attorney Docket No. 098645-1002589-SK013-N Page 3 of 3

Signature:	Johnny A Lam	Date: 11/11/2016	
	Johnny Lam		
Signature:		Date:	
	Stephen Silva		

ASSIGNMENT WINDOW BASED MAPPING Attorney Docket No. 098645-1002589-SK013-N Page 3 of 3

Johnny Lam

Signature: VY JAHA

Date: 1/9/2017

KILPATRICK TOWNSEND 68889431 1

PATENT REEL: 043330 FRAME: 0927

RECORDED: 08/17/2017