

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT3218785

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
KWOK WAH YEUNG	05/06/2014
MARCUS MARROW	01/05/2015
ADITI R. GANESAN	12/19/2014
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	SK HYNIX MEMORY SOLUTIONS INC.
<b>Street Address:</b>	3103 NORTH FIRST STREET
<b>City:</b>	SAN JOSE
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	95134
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	14550522
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(408)973-2595
<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>	408-973-2585
<b>Email:</b>	mgreen@ip-patent.com
<b>Correspondent Name:</b>	VAN PELT, YI & JAMES LLP
<b>Address Line 1:</b>	10050 N. FOOTHILL BLVD #200
<b>Address Line 4:</b>	CUPERTINO, CALIFORNIA 95014
<b>ATTORNEY DOCKET NUMBER:</b>	SKHYP024
<b>NAME OF SUBMITTER:</b>	LAURA ING
<b>SIGNATURE:</b>	/Laura Ing/
<b>DATE SIGNED:</b>	02/09/2015
<b>Total Attachments: 3</b>	
source=SKHYP024+ Executed Assignment Kwok W Yeung#page1.tif	
source=SKHYP024 Executed Assignment#page1.tif	
source=SKHYP024 Executed Assignment#page2.tif	

## ASSIGNMENT OF PATENT APPLICATION

Whereas I/we the undersigned inventor(s) have invented certain new and useful improvements as set forth in the patent application entitled:

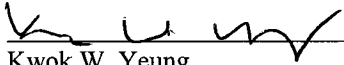
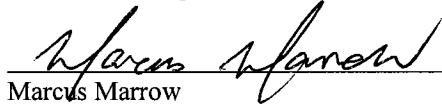
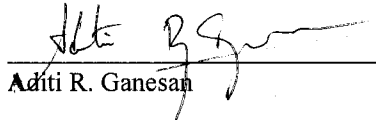
### KEYS FOR ERROR DETECTION

for which I (we) have executed an application for a United States Letters Patent which was filed in the U.S. Patent and Trademark Office on March 25, 2014, and which bears the Application No. 61/970,228 (the "Application");

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I/we the undersigned inventor(s) hereby:

- 1) Sell, assign, and transfer to SK hynix memory solutions inc., a Delaware corporation having a place of business at 3103 North First Street, San Jose, CA 95134, (hereinafter referred to as "ASSIGNEE"), the entire right title and interest in any and all improvements and inventions disclosed in, application(s) (including foreign applications) based upon, and Patent(s) (including foreign patents) granted upon the information which is disclosed in the above referenced application and/or in any provisional application to which the above referenced application claims priority.
- 2) Authorize and request the Commissioner of Patents to issue any and all Letters Patents resulting from said application or any division(s), continuation(s), substitutes(s) or reissue(s) thereof to the ASSIGNEE.
- 3) Agree to execute all papers and documents and, entirely at the ASSIGNEE's expense, perform any acts which are reasonably necessary in connection with the prosecution of said application, as well as any derivative applications thereof, foreign applications based thereon, and/or the enforcement of patents resulting from such applications.
- 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 the inventor(s), as well as the inventor's heirs, legal representatives and assigns.
- 5) Warrant and represent that I/we have not entered, and will not enter into any assignment, contract, or understanding that conflicts with this assignment.

Signed on the date(s) indicated beside my (our) signature(s).

- |    |  |                 |
|----|--|-----------------|
| 1) | Signature:  | Date: 5/6/14    |
|    | Typed Name: Kwok W. Yeung  |                 |
| 2) | Signature:  | Date: 5/6/14    |
|    | Typed Name: Marcus Marrow  |                 |
| 3) | Signature:  | Date: 5/28/2014 |
|    | Typed Name: Aditi R. Ganesan   |                 |

## ASSIGNMENT OF PATENT APPLICATION

Whereas I/we the undersigned inventor(s) have invented certain new and useful improvements as set forth in the patent application entitled:

### ERROR DETECTION USING A LOGICAL ADDRESS KEY

for which I (we) have executed an application for a United States Letters Patent which was filed in the U.S. Patent and Trademark Office on November 21, 2014, and which bears the Application No. 14/550,522 (the "Application");

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I/we the undersigned inventor(s) hereby:

- 1) Sell, assign, and transfer to SK hynix memory solutions inc., a Delaware corporation having a place of business at 3103 North First Street, San Jose, CA 95134, (hereinafter referred to as "ASSIGNEE"), the entire right title and interest in any and all improvements and inventions disclosed in, application(s) (including foreign applications) based upon, and Patent(s) (including foreign patents) granted upon the information which is disclosed in the above referenced application and/or in any provisional application to which the above referenced application claims priority.
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Signed on the date(s) indicated beside my (our) signature(s).

- |    |   |                     |
|----|---|---------------------|
| 1) | Signature: _____<br>Typed Name: Kwok Wah Yeung                      | Date: _____         |
| 2) | Signature: <u><i>Marcus Marrow</i></u><br>Typed Name: Marcus Marrow | Date: <u>1/5/15</u> |
| 3) | Signature: _____<br>Typed Name: Aditi R. Ganesan                    | Date: _____         |

## ASSIGNMENT OF PATENT APPLICATION

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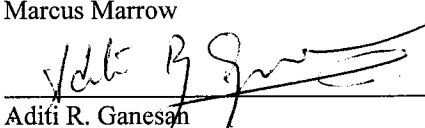
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for which I (we) have executed an application for a United States Letters Patent which was filed in the U.S. Patent and Trademark Office on November 21, 2014, and which bears the Application No. 14/550,522 (the "Application");

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- 1) Sell, assign, and transfer to SK hynix memory solutions inc., a Delaware corporation having a place of business at 3103 North First Street, San Jose, CA 95134, (hereinafter referred to as "ASSIGNEE"), the entire right title and interest in any and all improvements and inventions disclosed in, application(s) (including foreign applications) based upon, and Patent(s) (including foreign patents) granted upon the information which is disclosed in the above referenced application and/or in any provisional application to which the above referenced application claims priority.
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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 the inventor(s), as well as the inventor's heirs, legal representatives and assigns.
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Signed on the date(s) indicated beside my (our) signature(s).

- |    |  |                  |
|----|--|------------------|
| 1) | Signature: _____   | Date: _____      |
|    | Typed Name: Kwok Wah Yeung   |                  |
| 2) | Signature: _____   | Date: _____      |
|    | Typed Name: Marcus Marrow  |                  |
| 3) | Signature:  _____ | Date: 12/19/2014 |
|    | Typed Name: Aditi R. Ganesan   |                  |