

## PATENT ASSIGNMENT

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| SUBMISSION TYPE:  | NEW ASSIGNMENT                         |               |                |                     |            |             |            |                 |            |
|---|--|---------------|----------------|---------------------|------------|-------------|------------|-----------------|------------|
| NATURE OF CONVEYANCE:   | ASSIGNMENT                             |               |                |                     |            |             |            |                 |            |
| CONVEYING PARTY DATA  |  |               |                |                     |            |             |            |                 |            |
| <table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>SANG-YONG YOON</td> <td>07/25/2012</td> </tr> <tr> <td>BO-GEUN KIM</td> <td>07/26/2012</td> </tr> <tr> <td>SEUNG-HWAN SHIN</td> <td>07/25/2012</td> </tr> </tbody> </table> |  | Name          | Execution Date | SANG-YONG YOON      | 07/25/2012 | BO-GEUN KIM | 07/26/2012 | SEUNG-HWAN SHIN | 07/25/2012 |
| Name  | Execution Date                         |               |                |                     |            |             |            |                 |            |
| SANG-YONG YOON  | 07/25/2012                             |               |                |                     |            |             |            |                 |            |
| BO-GEUN KIM   | 07/26/2012                             |               |                |                     |            |             |            |                 |            |
| SEUNG-HWAN SHIN   | 07/25/2012                             |               |                |                     |            |             |            |                 |            |
| RECEIVING PARTY DATA  |  |               |                |                     |            |             |            |                 |            |
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| City:   | SUWON-SI, GYEONGGI-DO                  |               |                |                     |            |             |            |                 |            |
| State/Country:  | KOREA, DEMOCRATIC PEOPLE'S REPUBLIC OF |               |                |                     |            |             |            |                 |            |
| Postal Code:  | 443-742                                |               |                |                     |            |             |            |                 |            |
| PROPERTY NUMBERS Total: 1   |  |               |                |                     |            |             |            |                 |            |
| <table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>13598926</td> </tr> </tbody> </table>   |  | Property Type | Number         | Application Number: | 13598926   |             |            |                 |            |
| Property Type   | Number                                 |               |                |                     |            |             |            |                 |            |
| Application Number:   | 13598926                               |               |                |                     |            |             |            |                 |            |
| CORRESPONDENCE DATA   |  |               |                |                     |            |             |            |                 |            |
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| <i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via US Mail.</i>   |  |               |                |                     |            |             |            |                 |            |
| Correspondent Name:   | VOLENTINE & WHITT, PLLC                |               |                |                     |            |             |            |                 |            |
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| ATTORNEY DOCKET NUMBER:   | SEC.3177                               |               |                |                     |            |             |            |                 |            |
| NAME OF SUBMITTER:  | ADAM C. VOLENTINE                      |               |                |                     |            |             |            |                 |            |
| Total Attachments: 2<br>source=Assignment#page1.tif<br>source=Assignment#page2.tif  |  |               |                |                     |            |             |            |                 |            |

CH \$40.00 13598926

# ASSIGNMENT

In consideration of the sum of One Dollar (\$1.00) and other good and valuable consideration paid to each of the undersigned

- Insert Name(s) of Inventor(s)
1. Sang-Yong YOON
  2. Bo-Geun KIM
  3. Seung-Nyan SHIN
  4. \_\_\_\_\_
  5. \_\_\_\_\_
  6. \_\_\_\_\_
  7. \_\_\_\_\_
  8. \_\_\_\_\_
  9. \_\_\_\_\_
  10. \_\_\_\_\_
  11. \_\_\_\_\_
  12. \_\_\_\_\_

Insert Name(s) of Assignee(s) & Address(es) of \_\_\_\_\_  
 the undersigned hereby sell(s) and assign(s) to  
 \_\_\_\_\_ SAMSUNG ELECTRONICS CO., LTD.  
 129, Samsung-ro, Yeongtong-gu,  
 Suwon-si, Gyeonggi-do 443-742, Republic of Korea

(hereinafter designated as the Assignee) the entire right, title and interest for the United States as defined in 35 USC 100, in the invention known as

Title of Invention \_\_\_\_\_  
 METHOD OF OPERATING NONVOLATILE MEMORY DEVICES STORING  
 \_\_\_\_\_  
 RANDOMIZED DATA GENERATED BY COPYBACK OPERATION

Date of Signing of Application for which an application for patent in the United States of America has been executed by the undersigned on July 25, 26, & 25, 2012

The undersigned agree(s) to execute all papers necessary in connection with this application and any continuing, divisional or reissue applications thereof and also to execute separate assignments in connection with such applications as the Assignee may deem necessary or expedient.

The undersigned agree(s) to execute all papers necessary in connection with any interference which may be declared concerning this application or continuing, division or reissue thereof and to cooperate with the Assignee in every way possible in obtaining evidence and going forward with such interference.

The undersigned agree(s) to execute all papers and documents and perform any act which may be necessary in connection with claims or provisions of the International Convention for Protection of Industrial Property or similar agreements.

The undersigned agree(s) to perform all affirmative acts which may be necessary to obtain a grant of a valid United States patent to the Assignee.

The undersigned hereby grant(s) the practitioners associated with the CUSTOMER NUMBER 20887 the power to insert on this assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent Office for recordation of this document.

The undersigned hereby authorize(s) and request(s) the Commissioner of Patents to issue any and all Letters Patents of the United States resulting from said application or any division or divisions or continuing or reissue applications thereof to the said Assignee, as Assignee of the entire interest, and hereby covenants that he has (they have) full right to convey the entire interest herein assigned, and that he has (they have) not executed, and will not execute, any agreement in conflict herewith.

In witness whereof, executed by the undersigned on the date(s) opposite the undersigned name(s).

Date 25, July, 2012 Signature of Inventor [Signature]  
Sang-Yong YOUNG

Date 26, July, 2012 Signature of Inventor [Signature]  
So-Seon KIM

Date 25, July, 2012 Signature of Inventor [Signature]  
Seung-Hwan HAN

Date \_\_\_\_\_ Signature of Inventor \_\_\_\_\_

Date \_\_\_\_\_ Signature of Inventor \_\_\_\_\_

Date \_\_\_\_\_ Signature of Inventor \_\_\_\_\_

(Note regarding Witnessing: It is recommended that the execution by the Inventor(s) be witnessed by at least two witnesses who sign here. However, the current practice of the U.S. Patent and Trademark Office is to record an Assignment even if it has not been witnessed.)

Witness.....

Witness.....

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Applicant Reference No. CX804405/KI