



11-14-2007

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To the Honorable Commissioner of Patents and Trademarks:
Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

- 1. **Joung-Yeal KIM**
- 2. **Jeong-Don KIM**
- 3. **Sung-Hoon KIM**
- 4. **Woo-Jin LEE**

Additional name(s) of conveying party(ies) attached?
 YES NO

2. Name and address of receiving party(ies)

Name: **SAMSUNG ELECTRONICS CO., LTD.**
Street Address: **416 Maetan-Dong, Yeongtong-Gu, Suwon-si**
City: **Gyeonggi-do**
Country: **Republic of Korea** Postal Code:

Additional name(s) & address(es) attached? YES NO

3. Nature of conveyance:

- Assignment Merger Security Agreement
- Change of Name Other:

Execution Date: **1. September 24, 2007; 2. September 24, 2007; 3. September 24, 2007; 4. September 24, 2007**

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is:

A. Patent Application No(s).

11/896,722

B. Patent No.(s).

Additional numbers attached? YES NO

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: **HARNESS, DICKEY & PIERCE, P.L.C.**
Street Address: **P.O. BOX 8910**
City: **RESTON** State: **VA** ZIP: **20195**
Country: **USA**

6. Total No. of applications/patents involved: **One (1)**

7. Total fee (37 C.F.R. § 3.41): **\$40.00**

- Enclosed
- Authorized to be charged to deposit account, **if no fee attached.**

8. Deposit account number: **08-0750**

(Attach triplicate copy of this page if paying by deposit account)

DO NOT USE THIS SPACE

9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

John A. Castellano/35,094
Name of Person Signing/Reg. No.

Signature

November 8, 2007
Date

Total number of pages including cover sheet, attachments, and document: **Three (3)**

11/13/2007 REGISTRATION 00000000 11896722
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JAC/blg

ASSIGNMENT

WHEREAS, the undersigned, hereinafter referred to collectively as Assignor, has invented:

SEMICONDUCTOR MEMORY DEVICE AND METHOD OF INPUTTING/OUTPUTTING DATA

- (a) executed on even date preparatory to filing (each inventor should sign this Assignment on the same day as he/she signs the Declaration and Power of Attorney);
- (b) executed on _____, _____, _____; or
- (c) filed on September 5, 2007, and assigned Serial No. 11/896,722;
- (d) U.S. Patent No. _____, issued _____; and

WHEREAS, **Samsung Electronics Co., Ltd.**, 416, Maetan-Dong, Yeongtong-Gu, Suwon-si, Gyeonggi-do, Republic of Korea, hereinafter referred to as Assignee, is desirous of acquiring an interest therein:

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy whereof is hereby acknowledged, Assignor by these presents does sell, assign and transfer unto Assignee and its successors in interest, the full and exclusive right, title and interest in the United States of America and all foreign countries, including the right to claim priority under the laws of the United States, the Paris Convention, and any foreign countries, to the said invention as described in the aforesaid application, said application for patent and all Letters Patent therefor to be held and enjoyed by Assignee to the full end of the term for which said Letters Patent are granted and any extensions thereof as fully and entirely as the same would have been held by Assignor had this assignment and sale not been made, and the right to recover for past infringements of, or liabilities for, any of the rights relating to any of said applications or patents resulting therefrom;

Assignor hereby covenants and agrees to execute all instruments or documents required or requested for the making and prosecution of any applications of any type for patent in the United States and in all foreign countries including, but not limited to, any provisional, continuation, continuation-in-part, divisional, renewal or substitute thereof, and as to letters patent any reissue, re-examination, or extension thereof, and for litigation regarding, or for the purpose of protecting title and to the said invention, the United States application for patent, or Letters Patent therefor, and to testify in support thereof, for the benefit of Assignee without further or other compensation than that above set forth;

Assignor hereby covenants that no assignment, sale or agreement or encumbrance has been or will be entered into which would conflict with this Assignment; and

Assignor hereby requests the Commissioner of Patents and Trademarks to issue said Letters Patent of the United States of America to Assignee, and requests that any official of any country or countries foreign to the United States, whose duty it is to issue or grant patents and applications as aforesaid, to issue said Letters Patent, Utility Model Registration or Inventor's Certificate to Assignee.

The undersigned hereby grant(s) the law firm of Harness, Dickey & Pierce, P.L.C. 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 U.S. Patent and Trademark Office for recordation of this document.

ASSIGNMENT

Joung - Yeal KIM

Joung-Yeal KIM

Sep 24th. 2007
Dated

Jeong-Don KIM
Jeong-Don KIM

Dated

Sung-Hoon KIM
Sung-Hoon KIM

Dated

Woo-Jin LEE
Woo-Jin LEE

Dated

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Assignor hereby covenants and agrees to execute all instruments or documents required or requested for the making and prosecution of any applications of any type for patent in the United States and in all foreign countries including, but not limited to, any provisional, continuation, continuation-in-part, divisional, renewal or substitute thereof, and as to letters patent any reissue, re-examination, or extension thereof, and for litigation regarding, or for the purpose of protecting title and to the said invention, the United States application for patent, or Letters Patent therefor, and to testify in support thereof, for the benefit of Assignee without further or other compensation than that above set forth;

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ASSIGNMENT

Joung-Yeal KIM

Dated

Jeong-Don LIM



Dated 24. Sep. 2007

Sung Hoon Kim

Sung-Hoon KIM

24. Sep. 2007

Dated

Woo-Jin LEE

Dated

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ASSIGNMENT

Joung-Yeal KIM

Dated

Jeong-Don LIM

Dated

Sung-Hoon KIM

Dated

Woojin Lee

Woo-Jin LEE

22 Sep 2007.

Dated