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To the Director of the United States Patent and Trademark Office. Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):  
Byung-Gil CHOI, Beak-Hyung CHO,  
Du-Eung KIM, Woo-Yeong CHO  
Yu-Hwan RO,  
Joon-Yong CHOI,  
Additional names(s) of conveying party(ies)  Yes  No

2. Name and address of receiving party(ies):  
Name: Samsung Electronics Co., Ltd.  
Address: 416, Maetan-dong, Yeongtong-gu, Suwon-si

3. Nature of conveyance:  
 Assignment  Merger  
 Security Agreement  Change of Name  
 Other  
Execution Date: March 15, 2007

City: Gyeonggi-do State/Prov.:  
Country: Republic of Korea ZIP:  
Additional name(s) & address(es)  Yes  No

4. Application number(s) or patent numbers(s):  
this document is being filed together with a new application, the execution date of the application is: March 15, 2007

A. Patent Application No. Filing date  
NEW March 19, 2007  
Additional numbers  Yes  No

B. Patent No.(s)

5. Name and address of party to whom correspondence concerning document should be mailed:  
Name: STEPHEN R. WHITT  
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Country: USA ZIP: 20190

6. Total number of applications and patents involved: 1  
7. Total fee (37 CFR 3.41): \$ 40.00  
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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.

STEPHEN R. WHITT  
Name of Person Signing

*Stephen R. Whitt*  
Signature

March 19, 2007  
Date

Total number of pages including cover sheet, attachments, and document: 3

**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. <u>Byung-Gil CHOI</u> | 5. <u>Beak-Hyung CHO</u> |
| 2. <u>Du-Eung KIM</u>    | 6. <u>Woo-Yeong CHO</u>  |
| 3. <u>Yu-Hwan RO</u>     | 7. _____                 |
| 4. <u>Joon-Yong CHOI</u> | 8. _____                 |

**Insert  
Name(s) of  
Assignee(s) &  
Address(es)**

the undersigned hereby sell(s) and assign(s) to

SAMSUNG ELECTRONICS CO., LTD.  
416, Maetan-dong, Yeongtong-gu,  
of Suwon-si, Gyeonggi-do, 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**

PHASE CHANGE MEMORY DEVICES AND PROGRAM METHODS

**Date of  
Signing of  
Application**

for which an application for patent in the United States of America has been executed by  
the undersigned on March 15, 2007

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 20987** 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 2007/07/14 Signature of Inventor Byung-Gil Choi  
Byung-Gil CHOI

Date 2007/07/14 Signature of Inventor Du-Eung Kim  
Du-Eung KIM

Date 2007/03/15 Signature of Inventor [Signature]  
Yu-Hwan RO

Date 2007/03/15 Signature of Inventor Joon-Yong Choi  
Joon-Yong CHOI

Date 2007/03/15 Signature of Inventor Beak-Hyung Cho  
Beak-Hyung CHO

Date 2007/03/15 Signature of Inventor Woo-Yeong Cho  
Woo-Yeong CHO

(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 it has not been witnessed.)

Witness \_\_\_\_\_

Witness \_\_\_\_\_

Applicant Reference No. ID16525-US