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To the Honorable Comme 1. Name of conveying party(ies):

SEUNGJUN BAE, YOUNG-SIK KIM, SANGHYUP KWAK

Additional name(s) of conveying party(ies) attached? No

Name and address of receiving party(ies): Name: Samsung Electronics Co., Ltd.

Internal Address:

Street Address: 416 Maetan-dong, Yeongtong-gu,

City: Suwon-si, Gyeonggi-do, REPUBLIC OF KOREA

Nature of conveyance:

Other

Assignment Security Agreement

Merger Change of Name Additional name(s) & address(es) attached? No

Execution Date: November 18, 2009

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: November 18, 2009

A. Patent Application No.(s)

Additional numbers attached? No

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

Name: Eugene M. Lee

Internal Address: LEE & MORSE, P.C.

Street Address: 3141 Fairview Park Drive, Suite 500

City: Falls Church, State: VA ZIP: 22042

6. Total number of applications and patents involved: One

7. Total fee (37 C.F.R., 3.41).....\$40.00

Enclosed (PTO-2038)

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B. Patent No.(s)

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Attorney Docket No. 239/272

Total number of pages including cover sheet, attachments, and document: 2 pages attached, incl. cover

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PATENT REEL: 023583 FRAME: 0424

239/272

U.S. Rights-Sole or Joint

ASSIGNMENT

Name and Address of Assignee	For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, each undersigned inventor has sold and assigned, and by these presents hereby sells and assigns, unto SAMSUNG ELECTRONICS CO., LTD., 416, Maetan-dong, Yeongtong-gu Suwon-si, Gyeonggi-do, Republic of Korea
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Title of Invention	PHASE LOCKED LOOP CIRCUIT, METHOD OF OPERATING PHASE LOCKED LOOP CIRCUIT AND SEMICONDUCTOR MEMORY DEVICE INCLUDING PHASE LOCKED LOOP CIRCUIT as set forth in this United States Patent Application
Check One	cxecuted concurrently herewith cxecuted on Serial No. Filed

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Each of the undersigned warrants and covenants that he has the full and unencumbered right to sell and assign the interests herein sold and assigned and that he has not executed and will not execute any document or instrument in conflict herewith;

Each of the undersigned further covenants and agrees he will communicate to said ASSIGNEE, its successors, legal representatives or assigns all information known to him relating to said invention or patent application and that he will execute and deliver any papers, make all rightful oaths, testify in any legal proceedings and perform all other lawful acts deemed necessary or desirable by said ASSIGNEE, its successors, legal representatives or assigns to perfect title to said invention, to said application including divisions and continuations thereof and to any and all Letters Patent which may be granted therefore or thereon, including reissues or extensions, in said ASSIGNEE, its successors, or assigns or to assist said ASSIGNEE, its successors, legal representatives or assigns in obtaining, reissuing or enforcing Letters Patent of the United States for said invention;

Each of the undersigned hereby grants the firm of LEE & MORSE, P.C. the power to insert in this Assignment any further identification which may be necessary or desirable to comply with the rules of the U.S. Patent and Trademark Office for recordation of this Assignment.

NAMES AND SIGNATURES OF INVENTORS			
Name: Seungjun BAE	Signature: Sound I un BAE	Date: 1] /18 /200	
Name: Young-Sik KIM	Signature: YOUNA SIK Kim	Date: 11/1 / 1/20-5	
Name: Sanghyup KWAK	Signature:	Date: ///8/2009	
NAMES AND SIGNATURES OF WITNESSES			
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