

PATENT ASSIGNMENT

Electronic Version v1.1
 Stylesheet Version v1.1

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>Min-Wook AHN</td> <td>08/07/2012</td> </tr> <tr> <td>Won-Sub KIM</td> <td>08/07/2012</td> </tr> <tr> <td>Dong-Hoon YOO</td> <td>08/07/2012</td> </tr> </tbody> </table>		Name	Execution Date	Min-Wook AHN	08/07/2012	Won-Sub KIM	08/07/2012	Dong-Hoon YOO	08/07/2012
Name	Execution Date								
Min-Wook AHN	08/07/2012								
Won-Sub KIM	08/07/2012								
Dong-Hoon YOO	08/07/2012								
RECEIVING PARTY DATA									
<table border="1"> <tr> <td>Name:</td> <td>Samsung Electronics Co., Ltd.</td> </tr> <tr> <td>Street Address:</td> <td>416 Maetan-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, 443-742</td> </tr> <tr> <td>City:</td> <td>Suwon-si</td> </tr> <tr> <td>State/Country:</td> <td>KOREA, REPUBLIC OF</td> </tr> </table>		Name:	Samsung Electronics Co., Ltd.	Street Address:	416 Maetan-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, 443-742	City:	Suwon-si	State/Country:	KOREA, REPUBLIC OF
Name:	Samsung Electronics Co., Ltd.								
Street Address:	416 Maetan-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, 443-742								
City:	Suwon-si								
State/Country:	KOREA, REPUBLIC OF								
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>13585221</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	13585221				
Property Type	Number								
Application Number:	13585221								
CORRESPONDENCE DATA									
Fax Number: 2023153758 Phone: 202-429-0020 Email: info@nsiplaw.com <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: NSIP LAW Address Line 1: P.O. Box 34688 Address Line 4: Washington, DISTRICT OF COLUMBIA 20043									
ATTORNEY DOCKET NUMBER:	012053.0039								
NAME OF SUBMITTER:	Nicholas M. Stabler								
Total Attachments: 2 source=NewApp_0120530039_AssignmentExecuted#page1.tif source=NewApp_0120530039_AssignmentExecuted#page2.tif									

OP \$40.00 13585221

ASSIGNMENT

For valuable consideration, we,

Min-Wook AHN 5-801 Daelim Apt., Garakbon-dong, Songpa-gu,
Seoul, Republic of Korea

Won-Sub KIM 201-201 Indeokwon Daelim 2cha Apt., Pyeongchon-dong,
Dongan-gu, Anyang-si, Gyeonggi-do, Republic of Korea

Dong-Hoon YOO C-202 Hanyang Villa, 759-36 Mia 8-dong, Gangbuk-gu,
Seoul, Republic of Korea

hereby assign to:

SAMSUNG ELECTRONICS CO., LTD., a Republic of Korea corporation/institution/foundation/institute having principal executive office(s) or place of business at: 416 Maetan-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, 443-742 Republic of Korea; and

its successors and assigns (collectively hereinafter called "the Assignee"), the entire right, title and interest throughout the world in the inventions and improvements which are subject of U.S. Patent Application Number 13/585,221 filed August 14, 2012 at the U.S. Patent & Trademark Office signed by us, with title **APPARATUS AND METHOD FOR EXECUTING EXTERNAL OPERATIONS IN PROLOGUE OR EPILOGUE OF A SOFTWARE-PIPELINED LOOP**, and we authorize and request the attorneys appointed in said application to hereafter complete this assignment by inserting above the filing date and application serial number of said application when known; this Assignment including said application, any and all United States and foreign patents, utility models, and design registrations granted for any of said inventions or improvements, and the right to claim priority based on the filing date of said application under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes; and we authorize the Assignee to apply in all countries in our name or in its own name for patents, utility models, design registrations and like rights of exclusion and for inventors' certificates for said inventions and improvements; and we agree for ourselves and our respective heirs, legal representatives and assigns, without further compensation to perform such

lawful acts and to sign such further applications, assignments, preliminary statements and other lawful documents as the Assignee may reasonably request to effectuate fully this Assignment.

IN TESTIMONY/WITNESS WHEREOF, we, undersigned inventors (Assignors) intending to be legally bound, have hereto affixed our signatures.

This 7th day of August, 2012

Signature: Min-Wook AHN

This 7th day of August, 2012

Signature: Won-Sub KIM

This 7th day of August, 2012


Signature: Dong-Hoon YOO