

PATENT ASSIGNMENT

Electronic Version v1.1
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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Sung-Woo PARK	07/14/2011
In-Seok HWANG	07/14/2011
InKyu LEE	07/14/2011
Jin-Sung KIM	07/14/2011
Chung-Gu KANG	07/14/2011
Jun HEO	07/14/2011

RECEIVING PARTY DATA

Name:	SAMSUNG ELECTRONICS CO., LTD.
Street Address:	416, Maetan-dong, Yeongtong-gu
City:	Suwon-si, Gyeonggi-do
State/Country:	REPUBLIC OF KOREA

Name:	Korea University Research and Business Foundation
Street Address:	Korea Univ, Anam-dong 5-ga 1, Seongbuk-gu
City:	Seoul
State/Country:	REPUBLIC OF KOREA

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	13182697

CORRESPONDENCE DATA

Fax Number: (202)403-3587
Correspondence will be sent via US Mail when the fax attempt is unsuccessful.
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OP \$40.00 13182697

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Address Line 4: Washington, DISTRICT OF COLUMBIA 20036

ATTORNEY DOCKET NUMBER:	0202-0607
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NAME OF SUBMITTER:	Soo Oh
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Total Attachments: 5 source=0202-0607AssignmentAsFiled#page1.tif source=0202-0607AssignmentAsFiled#page2.tif source=0202-0607AssignmentAsFiled#page3.tif source=0202-0607AssignmentAsFiled#page4.tif source=0202-0607AssignmentAsFiled#page5.tif

RECORDATION FORM COVER SHEET PATENTS ONLY

To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.

1. Name of conveying party(ies)
 1) Sung-Woo PARK, 2) In-Seok HWANG, 3) InKyu LEE, and
 4) Jin-Sung KIM

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

2. 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
 State: _____
 Country: Republic of Korea Zip: _____
 Additional name(s) & address(es) attached? Yes No

3. Nature of conveyance/Execution Date(s):
 Execution Date(s) July 14, 2011

Assignment Merger
 Security Agreement Change of Name
 Joint Research Agreement
 Government Interest Assignment
 Executive Order 9424, Confirmatory License
 Other _____

4. Application or patent number(s): This document is being filed together with a new application.

A. Patent Application No.(s)
13/182,697

B. Patent No.(s)

Additional numbers attached? Yes No

5. Name and address to whom correspondence concerning document should be mailed:
 Name: Jefferson IP Law, LLP
 Internal Address: Raymond B. Persino

 Street Address: 1130 Connecticut Ave., NW, Suite 420

 City: Washington
 State: DC Zip: 20036
 Phone Number: 202-293-0804
 Fax Number: 202-403-3587
 Email Address: usdocketing@jeffersonip.com

6. Total number of applications and patents involved: One

7. Total fee (37 CFR 1.21(h) & 3.41) \$ _____

Authorized to be charged by credit card
 Authorized to be charged to deposit account
 Enclosed
 None required (government interest not affecting title)

8. Payment Information

a. Credit Card Last 4 Numbers _____
 Expiration Date _____

b. Deposit Account Number _____
 Authorized User Name _____

9. Signature: _____ /Raymond B. PERSINO/ Reg. No. 58,082 _____ July 14, 2011 _____
 Signature Date

Raymond B. Persino
 Name of Person Signing

Total number of pages including cover sheet, attachments, and documents: 5

Additional name and address of receiving parties:

Name: Korea University Research and Business Foundation
Address: Korea Univ, Anam-dong 5-ga 1, Seongbuk-gu,
Seoul, Republic of Korea

Assignment

WHEREAS, the following inventors, namely 1) **Sung-Woo PARK**, 2) **In-Seok HWANG**, 3) **InKyu LEE**, 4) **Jin-Sung KIM**, 5) **Chung-Gu KANG**, and 6) **Jun HEO**, all citizens of the Republic of Korea and residing respectfully at 1) #207-1305, Seonghyeon Maeul Urni Innosville 2Cha Apt., Jukjeon 1-dong, Suji-gu, Yongin-si, Gyeonggi-do, Republic of Korea, 2) #101-705, Donga Apt., Munjeong-dong 15, Songpa-gu, Seoul, Republic of Korea, 3) #302-1201, Dogok Rexie Apt., Dogok-dong, Gangnam-gu, Seoul, Republic of Korea, 4) #202, Seongchang Apt., Jeomchon-dong 177-17, Mungyeong-si, Gyeongsangbuk-do, Republic of Korea, 5) #110-802, Raemian Apt., Anam-dong, Sungbuk-gu, Seoul, Republic of Korea, and 6) #210-204, Sangnoksu Apt., Irwon-dong, Gangnam-gu, Seoul, Republic of Korea (hereinafter called "Assignors"), having made or discovered certain new, useful and non-obvious improvements in an invention having a working title of:

APPARATUS AND METHOD FOR PRECODING USING CHANNEL ORTHOGONALIZATION IN MULTI-USER MULTI-ANTENNA SYSTEM,

for which a United States Patent Application is being filed concurrently herewith or, if not being concurrently filed, was filed on July 14, 2011, and assigned Serial No. 13/182,697; and,

WHEREAS, **Samsung Electronics Co., Ltd.**, a corporation duly organized under the laws of the Republic of Korea, located and doing business at 416, Maetan-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea and **Korea University Research and Business Foundation**, a corporation duly organized under the laws of the Republic of Korea, located and doing business at Korea Univ, Anam-dong 5-ga 1, Seongbuk-gu, Seoul, Republic of Korea (hereinafter called "Assignees"), are desirous of acquiring the entire right, title and interest therein;

NOW, THEREFORE, BE IT KNOWN that for and in good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignors do hereby sell, assign and transfer unto said Assignee the entire and exclusive worldwide right, title and interest in and to all said inventions and discoveries disclosed in said application, and in and to said application, any and all substitutions, divisions, provisionals, conversions of provisionals and continuations thereof, and in and to all Letters Patent, United States and foreign, that may be granted for said inventions and discoveries, and in and to all extensions, renewals and reissues thereof; and the right to file any foreign application and/or claim priority under the provisions of any international treaty or convention arising from this application or any divisional, continuing, substitute or reissue application therefrom. The aforesaid assignment includes the right in and to all income, royalties, damages and payments, now or hereafter due or payable with respect to any Letters Patent which may be granted, and in and to all causes of action (either in law or in equity), and the right to sue, counterclaim, and recover for past, present and future infringement of the rights assigned or to be assigned under this Assignment, as fully and entirely as the same would have been held and enjoyed by Assignors if this sale, assignment and transfer had not been made.

Assignors covenant and agree, without further compensation to said Assignors but at Assignee's expense:

- a. to execute:
 - i. all papers to be used in connection with this application and any divisional, continuing, substitute or reissue application thereof, as the Assignee may deem necessary or expedient, and
 - ii. all papers in connection with any interference, litigation, mediation, arbitration or other proceeding relating to this application or any divisional, continuing, substitute or reissue application thereof, as may be necessary or expedient;

- b. to cooperate with the Assignee in every way possible in obtaining evidence and going forward in any interference, litigation, mediation, arbitration or other proceeding relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof;
- c. to communicate to the Assignee any facts relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof, including evidence for any interference, litigation, mediation, arbitration or other proceeding relating to said invention, whenever requested;
- d. to testify in any interference, litigation, mediation, arbitration or other proceeding relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof whenever requested; and
- e. to perform all other affirmative acts which may be necessary or desirable to secure full and complete protection of the inventions and discoveries or that may be necessary or desirable to vest in Assignee the complete title to the inventions and discoveries and Letters Patent hereby conveyed and to enable Assignee to record title.

Assignors hereby authorize and request the United States Patent and Trademark Office or any other issuing authority to issue any and all Letters Patent that may be granted upon this invention and/or this application or any divisional, continuing, substitute or reissue application thereof to the Assignee, its legal representatives, successors and assigns.

Assignors each hereby represent, covenant and warrant that he or she has the full right to convey the entire right, title and interest by this instrument, free of any encumbrances and that no other agreement has been or will be executed in conflict herewith.

The provisions of this Assignment are binding upon each Assignor's heirs, legal representatives and/or administrators and assigns.

Assignors hereby grant to the law firm of Jefferson IP Law, LLP of Washington, DC and its attorneys and agents as associated with Customer No. 68103 the authority and power to insert on this instrument any further identification which may be necessary or desirable for purposes of recordation in the United States Patent and Trademark Office or a Patent Office of any foreign country.

Signature of First Inventor:

Sungwoo Park

Sung-Woo PARK

2011. 7. 14

Date

Signature of Second Inventor:

In-Seok Hwang

In-Seok HWANG

2011. 7. 14

Date

Signature of Third Inventor:

InKyu Lee

InKyu LEE

2011. 7. 14

Date

Signature of Fourth Inventor:

Jin-Sung Kim

Jin-Sung KIM

2011. 7. 14


Date

PATENT

REEL: 026592 FRAME: 0039


Attorney Docket No.: 0202-0607
Client Docket No.: SP11206-US_DMC

Signature of Fifth Inventor:



Chung-Gu KANG Date 2011.7.14

Signature of Sixth Inventor:



Jun HEO Date 2011.7.14