

## PATENT ASSIGNMENT

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| 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>Shichang ZHANG</td> <td>01/18/2013</td> </tr> <tr> <td>Jingxing FU</td> <td>01/18/2013</td> </tr> <tr> <td>Chengjun SUN</td> <td>01/18/2012</td> </tr> </tbody> </table>  |                               | Name          | Execution Date | Shichang ZHANG      | 01/18/2013 | Jingxing FU | 01/18/2013 | Chengjun SUN | 01/18/2012 |
| Name  | Execution Date                |               |                |                     |            |             |            |              |            |
| Shichang ZHANG  | 01/18/2013                    |               |                |                     |            |             |            |              |            |
| Jingxing FU   | 01/18/2013                    |               |                |                     |            |             |            |              |            |
| Chengjun SUN  | 01/18/2012                    |               |                |                     |            |             |            |              |            |
| RECEIVING PARTY DATA  |                               |               |                |                     |            |             |            |              |            |
| Name:   | Samsung Electronics Co., Ltd. |               |                |                     |            |             |            |              |            |
| Street Address:   | 129, Samsung-ro, Yeongtong-gu |               |                |                     |            |             |            |              |            |
| City:   | Suwon-si, Gyeonggi-do         |               |                |                     |            |             |            |              |            |
| 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>13745113</td> </tr> </tbody> </table>   |                               | Property Type | Number         | Application Number: | 13745113   |             |            |              |            |
| Property Type   | Number                        |               |                |                     |            |             |            |              |            |
| Application Number:   | 13745113                      |               |                |                     |            |             |            |              |            |
| CORRESPONDENCE DATA   |                               |               |                |                     |            |             |            |              |            |
| <p>Fax Number:<br/> <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i></p> <p>Phone: 202-293-0804<br/>       Email: usdocketing@jeffersonip.com<br/>       Correspondent Name: Jefferson IP Law<br/>       Address Line 1: 1130 Connecticut Ave., NW<br/>       Address Line 2: Suite 420<br/>       Address Line 4: Washington, DISTRICT OF COLUMBIA 20036</p> |                               |               |                |                     |            |             |            |              |            |
| ATTORNEY DOCKET NUMBER:   | 0201-0633                     |               |                |                     |            |             |            |              |            |
| NAME OF SUBMITTER:  | Raymond B. Persino            |               |                |                     |            |             |            |              |            |
| <p>Total Attachments: 4<br/>       source=0201-0633AssignmentAsFiled#page1.tif<br/>       source=0201-0633AssignmentAsFiled#page2.tif<br/>       source=0201-0633AssignmentAsFiled#page3.tif<br/>       source=0201-0633AssignmentAsFiled#page4.tif</p>   |                               |               |                |                     |            |             |            |              |            |

OP \$40.00 13745113

# 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) Shichang ZHANG, 2) Jingxing FU, and 3) Chengjun SUN

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: 129, Samsung-ro, 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) January 18, 2013

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)  
13/745,113

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 \_\_\_\_\_ January 18, 2013 \_\_\_\_\_  
 Signature Date

Raymond B. Persino  
 Name of Person Signing

Total number of pages including cover sheet, attachments, and documents: 4

**Assignment**

**WHEREAS**, the following inventors, namely 1) Shichang ZHANG, 2) Jingxing FU, and 3) Chengjun SUN, all, citizens of China (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 TRANSMITTING/RECEIVING PHYSICAL UPLINK SHARED CHANNEL SIGNAL IN CELLULAR RADIO COMMUNICATION SYSTEM SUPPORTING CARRIER AGGREGATION SCHEME,**

for which a United States Patent Application is being filed concurrently herewith or, if not being concurrently filed, was filed on January 18, 2013, and assigned Serial No. 13/745,113; and,

**WHEREAS**, Samsung Electronics Co., Ltd., a corporation duly organized under the laws of the Republic of Korea, located and doing business at 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea, 443-742 (hereinafter called "Assignee"), is 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 represents, covenants and warrants 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 Assignors' 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 Inventor:

Shichang ZHANG  
Shichang ZHANG

January 18, 2013  
Date

DOCKET NO.: 0201-0633

CLIENT DOCKET NO.: P19782-US/DMC

Signature of Inventor:

Jingxing Fu  
Jingxing FU

January 18, 2013  
Date

Signature of Inventor:

Chengjun Sun  
Chengjun SUN

January 18, 2013  
Date