

FORM PTO-1619A/B

U.S. Department of Commerce  
Patent and Trademark Office  
**PATENT****RECORDATION FORM COVER SHEET  
PATENTS ONLY****Attorney Docket No.: 050397**

TO: The Commissioner of Patents and Trademarks: Please record the attached original document(s) or copy(ies).

**Submission Type**

- ☒ New  
☐ Resubmission (Non-Recordation)  
 Document ID No.  
☐ Correction of PTO Error  
 Reel No. Frame No.  
☐ Corrective Document  
 Reel No. Frame No.

**Conveyance Type**

- ☒ Assignment  
☐ Change of Name  
☐ License  
☐ Merger  
☐ Security Agreement  
☐ Other: \_\_\_\_\_

**Conveying Party(ies)**☒ Mark if additional names are attached**NAME****EXECUTION DATE**

Month, Day, Year (MMDDYYYY)

1. Tingfang Ji
2. Ayman Fawzy Naguib
3. Arak Sutivong
4. Dhananjay Ashok Gore

10/10/2005  
 10/14/2005  
 10/09/2005  
 10/06/2005

**Receiving Party**☐ Mark if additional names are attached

**Name:** QUALCOMM Incorporated  
 A Delaware Corporation

**Address (Street number and name):** 5775 Morehouse Drive**Address (City, State, Zip Code):** San Diego, California, 92121-1714**Correspondent Name and Address**

**Name:** QUALCOMM Incorporated  
 Attn: Patent Department

**Address:** 5775 Morehouse Drive**Address:** San Diego, California 92121-1714**Telephone Number:** (858) 658-5787**Facsimile:** (858) 658-2502**Pages** (Enter the total number of pages of the attached conveyance document including any attachments)**Total number of pages:****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:** \_\_\_\_\_**Patent Application Number(s):**

1. 11/158,585
- 2.
- 3.
- 4.

**Patent Number(s):**

- 1.
- 2.
- 3.
- 4.

**Patent Cooperation Treaty (PCT)**(Enter only if a U.S. Application Number has not been assigned)

1. PCT/
2. PCT/

3. PCT/
4. PCT/

**Number of Properties** (Enter the total number of properties involved)**Total number of properties:****Fee Amount****Fee Amount for Properties Listed (37 CFR 3.41): \$**Method of Payment: ☐ Enclosed ☒ Deposit Account

(Enter for payment by deposit account or if additional fees can be charged to the account. A duplicate of this sheet is enclosed for fee processing)

Deposit Account Number: 17-0026

Authorization to charge additional fees: ☒ Yes ☐ No**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. Charges to deposit account are authorized, as indicated herein.

Date: October 31, 2005

Name: Dmitry R. Milikovsky & Reg. No.41,999  
 Phone No.858-845-0130

Signature: **FOR OFFICE USE ONLY**

Page 1 of 2

(TRANSA PATENT 07/30/03)

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REEL: 016959 FRAME: 0490

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FORM PTO-1619C

U.S. Department of Commerce  
Patent and Trademark Office  
PATENT**RECORDATION FORM COVER SHEET  
CONTINUATION  
PATENTS ONLY**

Attorney Docket No.: 050397

**ENTER ADDITIONAL CONVEYING PARTIES:**

NAME	EXECUTION DATE Month, Day, Year (MMDDYYYY)
5. Alexei Gorokhov	10/21/2005
6. Hemanth Sampath	10/11/2005
7. Min Dong	10/06/2005
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**Enter additional Receiving Party(ies):**

Name:

Address (Street number and name):

Address (City, State, Zip Code):

Name:

Address (Street number and name):

Address (City, State, Zip Code):

**Application Number(s) or Patent Number(s)**

Patent Application Number(s):

5.  
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Patent Number(s):

5.  
6.  
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## ASSIGNMENT

TO WHOM IT MAY CONCERN:

For the sum of One Dollar and other valuable consideration to us in hand paid, receipt of which is hereby acknowledged, be it known that we Tingfang Ji, a citizen of China P.R. having a place of residence at 15876 Windrose Way, San Diego, California 92127, and Ayman Fawzy Naguib, a citizen of the United States of America having a place of residence at 991 Cranberry Drive, Cupertino, California 95014, and Arak Sutivong, a citizen of the Thailand having a place of residence at 12 Soi Prasatsuk, Yen-A-Kat Road, Bangkok, Thailand 10120, and Dhananjay Ashok Gore, a citizen of India having a place of residence at 8465 Regents Road, San Diego, California 92122, and Alexei Gorokhov, a citizen of France having a place of residence at 12543 El Camino Real, San Diego, California 92130, and Hemanth Sampath, a citizen of India having a place of residence at 3745 Carmel View Road, San Diego, California 92130, and Min Dong, a citizen of China P.R. having a residence at 7154 Schilling Ave. #34, San Diego, California 92126 ; have sold, assigned and transferred and by these presents do sell, assign, transfer and set over unto **QUALCOMM Incorporated**, a Delaware corporation, having a place of business at 5775 Morehouse Drive, San Diego, California 92121-1714, its successors, legal representatives, or assigns, the whole right, title and interest in and to a certain invention relating to:

**LOW COMPLEXITY BEAMFORMING FOR MULTIPLE ANTENNA SYSTEMS**  
by us devised and the application for United States Patent therefore filed in the United States Patent and Trademark Office on **June 21, 2005**, as Serial No. 11/158,585 including, without limitation, all provisional patent applications, **including Serial No. 60/681,187, filed May 13, 2005**, and all original and reissue patents granted thereof, and all divisions, and continuations thereof, including the subject matter of any and all claims which may be obtained in every such patent, and all foreign rights to said invention, and covenant that we have full right to do so, and agree that we will communicate to said corporation or its

representatives all facts known to us respecting said invention, whenever requested, and testify in any legal proceedings, sign all lawful papers, make all rightful oaths and generally do everything possible to aid said corporation, its successors, assigns and nominees, to obtain and enforce proper patent protection for said invention in all countries.

The Commissioner of Patents and Trademarks is requested to issue the Letters Patent which may be granted for said invention or any part thereof unto said corporation in keeping with this Assignment.

Done at San Diego, California this 10 day of October, 2005.

  
Tingfang Ji

Done at Cupertino, California this 14 day of October, 2005.

  
Ayman Fawzy Naguib

Done at Bangkok, Thailand this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

\_\_\_\_\_  
Arak Sutivong

Done at San Diego, California this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

\_\_\_\_\_  
Dhananjay Ashok Gore

representatives all facts known to us respecting said invention, whenever requested, and testify in any legal proceedings, sign all lawful papers, make all rightful oaths and generally do everything possible to aid said corporation, its successors, assigns and nominees, to obtain and enforce proper patent protection for said invention in all countries.

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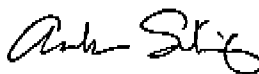
Done at San Diego, California this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

\_\_\_\_\_  
Tingfang Ji

Done at Cupertino, California this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

\_\_\_\_\_  
Ayman Fawzy Naguib

Done at Bangkok, Thailand this 9<sup>th</sup> day of October, 2005.



\_\_\_\_\_  
Arak Sutivong

Done at San Diego, California this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

\_\_\_\_\_  
Dhananjay Ashok Gore

ATTORNEY DOCKET NO. 050397

representatives all facts known to us respecting said invention, whenever requested, and testify in any legal proceedings, sign all lawful papers, make all rightful oaths and generally do everything possible to aid said corporation, its successors, assigns and nominees, to obtain and enforce proper patent protection for said invention in all countries.

The Commissioner of Patents and Trademarks is requested to issue the Letters Patent which may be granted for said invention or any part thereof unto said corporation in keeping with this Assignment.

Done at San Diego, California this \_\_\_\_ day of \_\_\_\_\_, 2005.

\_\_\_\_\_  
Tingfang Ji

Done at Cupertino, California this \_\_\_\_ day of \_\_\_\_\_, 2005.

\_\_\_\_\_  
Ayman Fawzy Naguib

Done at Bangkok, Thailand this \_\_\_\_ day of \_\_\_\_\_, 2005.

\_\_\_\_\_  
Arak Sutivong

Done at San Diego, California this 6<sup>th</sup> day of October, 2005.


  
\_\_\_\_\_  
Dhananjay Ashok Gore

ATTORNEY DOCKET NO. 050397

Done at San Diego, California this 21 day of Oct, 2005.

  
\_\_\_\_\_  
Alexei Gorokhov

Done at San Diego, California this 11 day of Oct, 2005.


  
\_\_\_\_\_  
Hemanth Sampath

Done at San Diego, California this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

\_\_\_\_\_  
Min Dong

ATTORNEY DOCKET NO. 050397

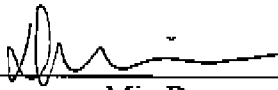
Done at San Diego, California this 21 day of Oct, 2005.

  
\_\_\_\_\_  
Alexei Gorokhov

Done at San Diego, California this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

\_\_\_\_\_  
Hemanth Sampath

Done at San Diego, California this 06 day of October, 2005.

  
\_\_\_\_\_  
Min Dong