


Client Code: QCO.259A/081043

**RECORDATION FORM COVER SHEET
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To the Director, U.S. Patent and Trademark Office: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies): 1. Russell Wayne Gruhlke 2. Marek Mienko Additional name(s) of conveying party(ies) attached? () Yes (X) No	2. Name and address of receiving party(ies): Name: QUALCOMM MEMS Technologies, Inc. Internal Address: Street Address: 5775 Morehouse Drive City: San Diego State: CA ZIP: 92121 Additional name(s) of receiving party(ies) attached? () Yes (X) No
3. Nature of conveyance: (X) Assignment () Security Agreement () Merger () Change of Name () Other: Execution Date: 1 and 2: April 8, 2009	4. US or PCT Application number(s) or US Patent number(s): (X) Patent Application No.: 12/423,354 Filing Date: April 14, 2009 Additional numbers attached? () Yes (X) No
5. Party to whom correspondence concerning document should be mailed: Customer No. 59,747 Address: Knobbe, Martens, Olson & Bear, LLP 2040 Main Street, 14 th Floor Irvine, CA 92614 Return Fax: (949) 760-9502 Attorney's Docket No.: QCO.259A/081043	6. Total number of applications and patents involved: 1
7. Total fee (37 CFR 1.21(h)): \$40 (X) Authorized to be charged to deposit account	8. Deposit account number: 11-1410 Please charge this account for any additional fees which may be required, or credit any overpayment to this account.
9. 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. <div style="display: flex; justify-content: space-between;"> <div> <u>Gregory A. Hermanson</u> Name of Person Signing 53,018 Registration No. </div> <div style="text-align: center;">  Signature </div> <div style="text-align: right;"> <u>June 8, 2009</u> Date </div> </div> <div style="text-align: right; margin-top: 20px;"> Total number of pages including cover sheet, attachments and document: 3 </div>	

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**PATENT
REEL: 022796 FRAME: 0853**

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PATENT

Application No.: Unassigned
Filing Date: Herewith

Attorney Docket: QCO.259A/081043
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ASSIGNMENT

WHEREAS, we, Russell Wayne Gruhlke, a U.S. citizen, residing at 1820 View Drive, Milpitas, CA 95035 and Marek Mienko, a U.S. citizen, residing at 185 Estancia Drive, # 316, San Jose, CA 95134, have invented certain new and useful improvements in a LIGHT WITH BI-DIRECTIONAL PROPAGATION for which we have caused to be filed an application for Letters Patent in the United States; and we hereby authorize and request the attorneys of Knobbe, Martens, Olson & Bear, LLP, Customer No. 59,747, to insert here in parentheses (Application Number 12/423,354, filed April 14, 2009) the filing date and application number of said application when known;

AND WHEREAS, QUALCOMM MEMS Technologies, Inc. (hereinafter "ASSIGNEE"), a Delaware corporation, with its principal place of business at 5775 Morehouse Drive, San Diego, California 92121, desires to acquire the entire right, title, and interest in and to said improvements and said Application;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, we, the inventors, do hereby sell, assign, transfer and set over, unto the ASSIGNEE, its successors, legal representatives and assigns, the entire right, title, and interest throughout the world in said improvements, including the Application, any improvements made thereto, and any utility (non-provisional) application(s) claiming priority thereto that have been or may hereafter be filed; such filings including divisions, renewals and continuations thereof, and all Letters Patent of the United States which may be granted thereon and all reissues and extensions thereof, and all rights of priority under International Conventions and applications for Letters Patent which may hereafter be filed for said improvements in any country or countries foreign to the United States, and all Letters Patent which may be granted for said improvements in any country or countries foreign to the United States and all extensions, renewals and reissues thereof; and we hereby authorize and request the Commissioner for Patents of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents on applications as aforesaid, to issue all Letters Patent for said improvements to the ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE DO HEREBY sell, assign, transfer, and convey to ASSIGNEE, its successors, legal representatives, and assigns all claims for damages and all remedies arising out of any violation of the rights assigned hereby that may have accrued prior to the date of assignment to ASSIGNEE, or may accrue hereafter, including, but not limited to, the right to sue for, collect, and retain damages for past infringements of the said Letters Patent, before or after issuance.

AND WE HEREBY covenant and agree that we will communicate to the ASSIGNEE, its successors, legal representatives and assigns, any facts known to us respecting said improvements, and testify in any legal proceeding, assist in the preparation of any other provisional or non-provisional applications relating to the improvements, sign all lawful papers,

PATENT**REEL: 022796 FRAME: 0854**

PATENT

Application No.: Unassigned
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execute and make all rightful oaths and/or declarations in connection with the Application including any improvements made thereto, any utility (non-provisional) application(s) filed therefrom, and any continuing application(s) filed from aforementioned utility application(s), and generally do everything possible to aid the ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper patent protection for said improvements in all countries.

IN TESTIMONY WHEREOF, I hereunto set my hand and seal this 8th day of April, 2009

Russell Wayne Gruhlke
Russell Wayne Gruhlke

IN TESTIMONY WHEREOF, I hereunto set my hand and seal this 8th day of April, 2009

Mark Mienko
Mark Mienko

IN TESTIMONY WHEREOF, acknowledged by QUALCOMM MEMS Technologies, Inc. this _____ day of _____, 20__.

QUALCOMM MEMS Technologies, Inc.

Name:
Title:

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