

PATENT ASSIGNMENT

Electronic Version v1.1
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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>Xiaoxia Zhang</td> <td>04/27/2012</td> </tr> <tr> <td>Peter Gaal</td> <td>05/09/2012</td> </tr> <tr> <td>Andrea Garavaglia</td> <td>05/18/2012</td> </tr> <tr> <td>Jun Wang</td> <td>05/01/2012</td> </tr> <tr> <td>Gordon Kent Walker</td> <td>05/24/2012</td> </tr> </tbody> </table>		Name	Execution Date	Xiaoxia Zhang	04/27/2012	Peter Gaal	05/09/2012	Andrea Garavaglia	05/18/2012	Jun Wang	05/01/2012	Gordon Kent Walker	05/24/2012
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<table border="1"> <tr> <td>Name:</td> <td>QUALCOMM Incorporated</td> </tr> <tr> <td>Street Address:</td> <td>5775 Morehouse Drive</td> </tr> <tr> <td>City:</td> <td>San Diego</td> </tr> <tr> <td>State/Country:</td> <td>CALIFORNIA</td> </tr> <tr> <td>Postal Code:</td> <td>92121-1714</td> </tr> </table>		Name:	QUALCOMM Incorporated	Street Address:	5775 Morehouse Drive	City:	San Diego	State/Country:	CALIFORNIA	Postal Code:	92121-1714		
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PROPERTY NUMBERS Total: 2													
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CORRESPONDENCE DATA													
<p>Fax Number: (213)687-0498 Phone: (213) 787-2500 Email: DEDocketing@cblh.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: Grant T. Langton Address Line 1: 333 S. Grand Ave. Address Line 2: Suite 2300 Address Line 4: Los Angeles, CALIFORNIA 90071</p>													
ATTORNEY DOCKET NUMBER:	32716-00067/111645												

OP \$80.00 13457370

NAME OF SUBMITTER:

Grant T. Langton

Total Attachments: 7

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ASSIGNMENT

WHEREAS, WE,

1. **Xiaoxia Zhang**, a citizen of **China**, having a mailing address located at 5775 Morehouse Drive San Diego, CA 92121 and a resident of **San Diego, CA**,
2. **Peter Gaal**, a citizen of **United States of America**, having a mailing address located at 5775 Morehouse Drive San Diego, CA 92121 and a resident of **San Diego, CA**,
3. **Andrea Garavaglia**, a citizen of **Italy**, having a mailing address located at 5775 Morehouse Drive San Diego, CA 92121 and a resident of **Nuernberg, Bavaria**,
4. **Jun Wang**, a citizen of **United States of America**, having a mailing address located at 5775 Morehouse Drive San Diego, CA 92121 and a resident of **San Diego, CA**,
5. **Gordon Kent Walker**, a citizen of **United States of America**, having a mailing address located at 5775 Morehouse Drive San Diego, CA 92121 and a resident of **Poway, CA**,

have conceived of one or more processes, methods, machines, articles of manufacture, designs, compositions of matter, inventions, discoveries or new or useful improvements relating to **METHODS AND APPARATUSES FOR MANAGING SIMULTANEOUS UNICAST AND MULTICAST/BROADCAST SERVICES IN A WIRELESS COMMUNICATION SYSTEM** (collectively the "**INVENTIONS**") for which WE have executed and/or may execute one or more patent applications therefor; and

WHEREAS, QUALCOMM Incorporated (hereinafter "**ASSIGNEE**"), a Delaware corporation, having a place of business at 5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A., desires to acquire or otherwise obtain the entire right, title, and interest in and to said **INVENTIONS**, including all inventions related thereto or thereof, all patent applications therefor, and all patents that have granted or may be granted hereafter thereon, including but not limited to those identified below.

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, WE do hereby acknowledge that WE have sold, assigned, conveyed, and transferred, and by these presents do hereby sell, assign, convey, and transfer, unto **ASSIGNEE**, its successors, its legal representatives, and its assigns, the entire right, title, and interest throughout the world in and to said **INVENTIONS**, including all patent applications therefor that may have been filed or may be filed hereafter for said **INVENTIONS** in the United States, including but not limited to U.S. Application No(s). **13/457,370** filed **April 26, 2012** Qualcomm Reference No. **111645**, and all provisional applications relating thereto, together with U.S. Provisional Application No(s). **61/481,064**, filed **April 29, 2011** Qualcomm Reference No. **111645P1**, (and do hereby authorize **ASSIGNEE** and its representative to hereafter add herein such application number(s) and/or filing date(s) when known), and all divisional

applications, renewal applications, continuation applications, continuation-in-part applications, and design applications thereof, and all issued patents of the United States which may have granted or may be granted hereafter thereon and all reissues, renewals, reexaminations, and extensions to any of the foregoing and all patents issuing thereon in the United States;

AND WE further do acknowledge and agree that WE have sold, assigned, conveyed, and transferred, and by these presents do hereby sell, assign, convey, and transfer, unto ASSIGNEE, its successors, its legal representatives, and its assigns, all rights of priority under International Conventions, Treaties, or Agreements, and the entire right, title, and interest throughout the world in said INVENTIONS, including all inventions related thereto or thereof, and all patent applications therefor that may have been filed or may be filed hereafter for said INVENTIONS in any foreign country, countries, or treaty/union organizations, and all divisional applications, renewal applications, continuation applications, continuation-in-part applications, patent of addition applications, confirmation applications, validation applications, utility model applications, and design applications thereof, and all issued patents which may have granted or may be granted hereafter for said INVENTIONS in any country or countries foreign to the United States, and all reissues, renewals, reexaminations, and extensions thereof;

AND WE DO HEREBY authorize and request the Commissioner of 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 or registrations, to issue all patents for said INVENTIONS to said ASSIGNEE, its successors, its legal representatives and its assigns, in accordance with the terms of this instrument;

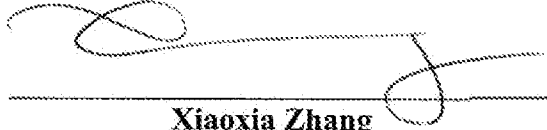
AND WE DO HEREBY sell, assign, transfer, and convey to said ASSIGNEE, its successors, its legal representatives, and its assigns all claims for damages and all remedies arising out of or relating to any violation(s) of any of the rights assigned hereby that have or may have accrued prior to the date of assignment to said ASSIGNEE, or may accrue hereafter, including, but not limited to the right to sue for, seek, obtain, collect, recover, and retain damages and any ongoing or prospective royalties to which WE may be entitled, or that WE may collect for any infringement or from any settlement or agreement related to any of said patents before or after issuance;

AND WE HEREBY covenant and agree that WE will communicate promptly to said ASSIGNEE, its successors, its legal representatives, and its assigns, any facts known to us respecting said INVENTIONS, and will testify in any legal proceeding, sign all lawful papers, execute all applications and certificates, make all rightful declarations and/or oaths, and provide all lawful assistance to said ASSIGNEE, its successors, its legal representatives and its assigns, to obtain and enforce patent protection for said INVENTIONS in all countries;

AND WE HEREBY represent that WE have full and exclusive, unencumbered right to sell, assign, convey and transfer all subject matter herein, and hereby covenant that WE have not and will not execute any writing or do any act whatsoever conflicting with these presents.

AND WE HEREBY represent that WE have full and exclusive, unencumbered right to sell, assign, convey and transfer all subject matter herein, and hereby covenant that WE have not and will not execute any writing or do any act whatsoever conflicting with these presents.

Done at San Diego, on 04/27/2012
LOCATION DATE


Xiaoxia Zhang

Done at _____, on _____
LOCATION DATE

Peter Gaal

Done at _____, on _____
LOCATION DATE

Andrea Garavaglia

Done at _____, on _____
LOCATION DATE

Jun Wang

Done at _____, on _____
LOCATION DATE

Gordon Kent Walker

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Done at _____, on _____
LOCATION DATE

Xiaoxia Zhang

Done at San Diego, on May 9, 2012
LOCATION DATE

Peter Gaal

Done at _____, on _____
LOCATION DATE

Andrea Garavaglia

Done at _____, on _____
LOCATION DATE

Jun Wang

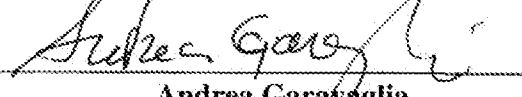
Done at _____, on _____
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Gordon Kent Walker

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Done at _____, on _____
LOCATION DATE Xiaoxia Zhang

Done at _____, on _____
LOCATION DATE Peter Gaal

Done at NÜRNBERG, on 8/05/2012
LOCATION DATE 
Andrea Garavaglia

Done at _____, on _____
LOCATION DATE Jun Wang

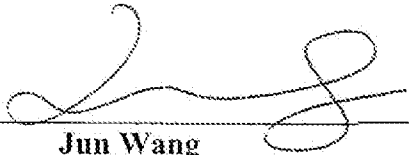
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Done at _____, on _____
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Done at _____, on _____
LOCATION DATE Peter Gaal

Done at _____, on _____
LOCATION DATE Andrea Garavaglia

Done at San Diego, on 5/1/2012
LOCATION DATE  Jun Wang

Done at _____, on _____
LOCATION DATE Gordon Kent Walker

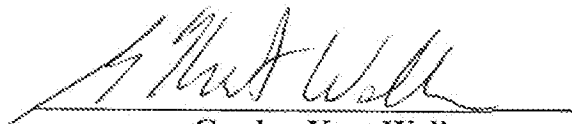
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Done at _____, on _____
LOCATION DATE Peter Gaal

Done at _____, on _____
LOCATION DATE Andrea Garavaglia

Done at _____, on _____
LOCATION DATE Jun Wang

Done at San Diego, CA, on 5/24/12
LOCATION DATE  Gordon Kent Walker