

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT4224544

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
PETER GAAL	10/05/2016
SRINIVAS YERRAMALLI	10/05/2016
DURGA PRASAD MALLADI	10/10/2016
YONGBIN WEI	10/10/2016
ALEXEI YURIEVITCH GOROKHOV	10/10/2016
BRIAN BANISTER	09/30/2016
MICHAEL LEE MCCLOUD	11/15/2016
TAO LUO	09/30/2016
SUPRATIK BHATTACHARJEE	11/17/2016
CHENGJIN ZHANG	11/15/2016
RAVI TEJA SUKHAVASI	11/17/2016
RECEIVING PARTY DATA	
Name:	QUALCOMM INCORPORATED
Street Address:	5775 MOREHOUSE DRIVE
City:	SAN DIEGO
State/Country:	CALIFORNIA
Postal Code:	92121-1714
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	15232672
CORRESPONDENCE DATA	
Fax Number:	(202)857-6395
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
Phone:	2028576000
Email:	patentdocket@arentfox.com
Correspondent Name:	ARENT FOX LLP
Address Line 1:	1717 K STREET, NW
Address Line 4:	WASHINGTON, D.C. 20006

ATTORNEY DOCKET NUMBER:	030284.12619/155257
NAME OF SUBMITTER:	NATASHA BROWN
SIGNATURE:	/Natasha Brown/
DATE SIGNED:	01/13/2017

Total Attachments: 10

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ASSIGNMENT

WHEREAS, WE,

1. **Peter GAAL**, a citizen of the **United States of America**, having a mailing address located at 5775 Morehouse Drive San Diego, CA 92121-1714 and a resident of **San Diego, CA**,
2. **Srinivas YERRAMALLI**, a citizen of **India**, having a mailing address located at 5775 Morehouse Drive San Diego, CA 92121-1714 and a resident of **San Diego, CA**,
3. **Durga Prasad MALLADI**, a citizen of the **United States of America**, having a mailing address located at 5775 Morehouse Drive San Diego, CA 92121-1714 and a resident of **San Diego, CA**,
4. **Yongbin WEI**, a citizen of the **United States of America**, having a mailing address located at 5775 Morehouse Drive San Diego, CA 92121-1714 and a resident of **La Jolla, CA**,
5. **Alexei Yurievitch GOROKHOV**, a citizen of **France**, having a mailing address located at 5775 Morehouse Drive San Diego, CA 92121-1714 and a resident of **San Diego, CA**,
6. **Brian BANISTER**, a citizen of the **United States of America**, having a mailing address located at 5775 Morehouse Drive San Diego, CA 92121-1714 and a resident of **San Diego, CA**,
7. **Michael Lee MCCLOUD**, a citizen of the **United States of America**, having a mailing address located at 5775 Morehouse Drive San Diego, CA 92121-1714 and a resident of **San Diego, CA**,
8. **Tao LUO**, a citizen of the **United States of America**, having a mailing address located at 5775 Morehouse Drive San Diego, CA 92121-1714 and a resident of **San Diego, CA**,
9. **Supratik BHATTACHARJEE**, a citizen of the **United States of America**, having a mailing address located at 5775 Morehouse Drive San Diego, CA 92121-1714 and a resident of **San Diego, CA**,
10. **Chengjin ZHANG**, a citizen of **China**, having a mailing address located at 5775 Morehouse Drive San Diego, CA 92121-1714 and a resident of **San Diego, CA**,
11. **Ravi Teja SUKHAVASI**, a citizen of **India**, having a mailing address located at 5775 Morehouse Drive San Diego, CA 92121-1714 and a resident of **San Diego, 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 TECHNIQUES FOR HARMONIZATION BETWEEN CRS AND DM-RS BASED TRANSMISSION MODES IN UNLICENSED SPECTRUM (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, including but not limited to, U.S. Application No(s). 15/232,672 filed August 09, 2016, Qualcomm Reference No. 155257, and all provisional applications relating thereto, together with U.S. Provisional Application No(s). 62/203,295 filed August 10, 2015, Qualcomm Reference No. 155257P1 (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 nonprovisional applications, national phase applications, 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;

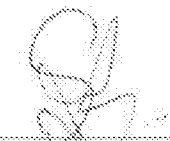
AND WE HEREBY covenant and agree that WE will communicate promptly to said ASSIGNEE, its successors, its legal representatives, and its assigns, any facts known to us respecting said INVENTIONS, and will testify in any legal proceeding, sign all lawful papers, execute all applications and certificates, 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 covenant that WE will not execute any writing or do any act whatsoever conflicting with these presents.

Done at San Diego, on 10/05/2016
LOCATION DATE


Peter GAAL

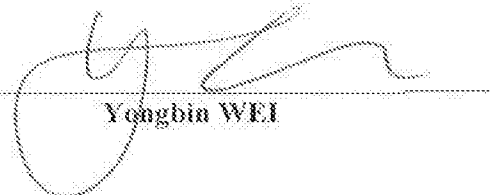
Done at San Diego, on 10/05/2016
LOCATION DATE


Srinivas YERRAMALLI

Done at San Diego, on 10/10/2016
LOCATION DATE


Durga Prasad MALLADI

Done at San Diego, on 10/10/16
LOCATION DATE


Yongbin WEI

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 covenant that WE will not execute any writing or do any act whatsoever conflicting with these presents.

Done at SAN DIEGO, on 10/10/2016
LOCATION DATE


Alexei Yurievitch
GOROKHOV

Done at _____, on _____
LOCATION DATE

Brian BANISTER

Done at _____, on _____
LOCATION DATE

Michael Lee MCCLLOUD

Done at _____, on _____
LOCATION DATE

Tao LUO

Done at _____, on _____
LOCATION DATE

Supratik BHATTACHARJEE

Done at _____, on _____
LOCATION DATE

Chengjin ZHANG

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AND WE HEREBY covenant that WE will not execute any writing or do any act whatsoever conflicting with these presents.

Done at _____, on _____
LOCATION DATE

Alexei Yurievitch
GOROKHOV

Done at San Diego, on 9/30/2016
LOCATION DATE

Brian BANISTER

Done at _____, on _____
LOCATION DATE

Michael Lee MCCLLOUD

Done at _____, on _____
LOCATION DATE

Tao LUO

Done at _____, on _____
LOCATION DATE

Supratik BHATTACHARJEE

Done at _____, on _____
LOCATION DATE

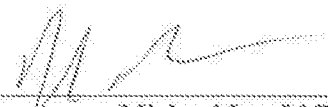
Chengjin ZHANG

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AND WE HEREBY covenant that WE will not execute any writing or do any act whatsoever conflicting with these presents.

Done at _____, on _____
LOCATION DATE
Alexei Yurievitch
GOROKHOV

Done at _____, on _____
LOCATION DATE
Brian BANISTER

Done at San Diego, on Nov 15 2016
LOCATION DATE

Michael Lee MCCLOUD

Done at _____, on _____
LOCATION DATE
Tao LUO

Done at _____, on _____
LOCATION DATE
Supratik BHATTACHARJEE

Done at _____, on _____
LOCATION DATE
Chengjin ZHANG

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Done at _____, on _____
LOCATION DATE

Alexei Yurievitch
GOROKHOV

Done at _____, on _____
LOCATION DATE

Brian BANISTER

Done at _____, on _____
LOCATION DATE

Michael Lee MCCLLOUD

Done at San Diego, on 09/30/2006
LOCATION DATE

Tao LUO

Done at _____, on _____
LOCATION DATE

Supratik BHATTACHARJEE

Done at _____, on _____
LOCATION DATE

Chengjin ZHANG

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AND WE HEREBY covenant that WE will not execute any writing or do any act whatsoever conflicting with these presents.

Done at _____, on _____
LOCATION DATE
Alexei Yurievitch
GOROKHOV

Done at _____, on _____
LOCATION DATE
Brian BANISTER

Done at _____, on _____
LOCATION DATE
Michael Lee MCCLOUD

Done at _____, on _____
LOCATION DATE
Tao LUO

Done at SAN DIEGO, on 11/17/16
LOCATION DATE

Supratik BHATTACHARJEE

Done at _____, on _____
LOCATION DATE
Chengjin ZHANG

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;

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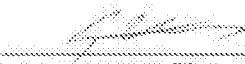
Done at _____, on _____
LOCATION DATE
Alexei Yurievitch
GOROKHOV

Done at _____, on _____
LOCATION DATE
Brian BANISTER

Done at _____, on _____
LOCATION DATE
Michael Lee MCCLOUD

Done at _____, on _____
LOCATION DATE
Tao LUO

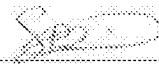
Done at _____, on _____
LOCATION DATE
Supratik BHATTACHARJEE

Done at San Diego, on Nov 15, 2016
LOCATION DATE

Chengjin ZHANG

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 covenant that WE will not execute any writing or do any act whatsoever conflicting with these presents.

Done at San Jose, on 11/17/2016
LOCATION DATE


Ravi Teja SUKHAVASI