PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT5431070

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
RENQIU WANG	01/03/2018
HAO XU	01/04/2018
JING JIANG	01/04/2018
YI HUANG	01/03/2018
WEI ZENG	01/08/2018
WANSHI CHEN	01/03/2018
TINGFANG JI	01/10/2018

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:	16228168

CORRESPONDENCE DATA

Fax Number:

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.

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:	030284.16992/171163C1C1
NAME OF SUBMITTER:	COLIN HARRINGTON
SIGNATURE:	/Colin Harrington/
DATE SIGNED:	03/20/2019

Total Attachments: 5
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ASSIGNMENT

WHEREAS, WE,

1. **Renqiu** WANG, a citizen of the **People's Republic of China**, having a mailing address located at **5775 Morehouse Drive; San Diego, CA 92121-1714** and a resident of **San Diego, CA**,

2. **Hao** XU, 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 **Beijing, China**,

3. **Jing** JIANG, a citizen of the **People's Republic of China**, having a mailing address located at **5775 Morehouse Drive; San Diego, CA 92121-1714** and a resident of **San Diego, CA**,

4. **Yi** HUANG, a citizen of the **People's Republic of China**, having a mailing address located at **5775 Morehouse Drive; San Diego, CA 92121-1714** and a resident of **San Diego, CA**,

5. **Wei** ZENG, a citizen of the **People's Republic of China**, having a mailing address located at **19999 Stevens Creek Blvd, Unit 119; Cupertino, CA, 95014** and a resident of **Cupertino, CA**,

6. **Wanshi** CHEN, a citizen of the **People's Republic of China**, having a mailing address located at **5775 Morehouse Drive; San Diego, CA 92121-1714** and a resident of **San Diego, CA**,

7. **Tingfang** JI, 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**,

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 **UPLINK TRANSMIT DIVERSITY AND PRECODING** (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). 15/851,180 filed December 21, 2017, Qualcomm Reference No. 171163C1, and all provisional applications relating thereto, together with U.S. Provisional Application No(s). 15/834,687 filed December 7, 2017, Qualcomm Reference No. 171163 and together with U.S. Provisional Application No(s). 62/432,390 filed December 9, 2016, Qualcomm Reference No. 171163P1 (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 01/03/2018 ______
LOCATION DATE **Renqiu WANG**

Done at ______, on ______ ______
LOCATION DATE **Hao XU**

Done at San Diego, on 1/4/2018 ______
LOCATION DATE **Jing JIANG**

Done at San Diego, on 1/3/2018 ______
LOCATION DATE **Yi HUANG**

Done at ______, on ______ ______
LOCATION DATE **Wei ZENG**

Done at San Diego, on 1/3/2018 ______
LOCATION DATE **Wanshi CHEN**

Done at San Diego, on 1/10/2018 ______
LOCATION DATE **Tingfang JI**

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 ____________, on ____________ ____________________
LOCATION DATE **Renqiu WANG**

Done at beijing, on 2018/1/16 ____________________
LOCATION DATE **Hao XU**

Done at ____________, on ____________ ____________________
LOCATION DATE **Jing JIANG**

Done at ____________, on ____________ ____________________
LOCATION DATE **Yi HUANG**

Done at ____________, on ____________ ____________________
LOCATION DATE **Wei ZENG**

Done at ____________, on ____________ ____________________
LOCATION DATE **Wanshi CHEN**

Done at ____________, on ____________ ____________________
LOCATION DATE **Tingfang JI**

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 ________________, on ________________ ________________________________
LOCATION DATE **Renqiu WANG**

Done at ________________, on ________________ ________________________________
LOCATION DATE **Hao XU**

Done at ________________, on ________________ ________________________________
LOCATION DATE **Jing JIANG**

Done at ________________, on ________________ ________________________________
LOCATION DATE **Yi HUANG**

Done at Cupertino, on 01/18/2018 ________________________________
LOCATION DATE **Wei ZENG**

Done at ________________, on ________________ ________________________________
LOCATION DATE **Wanshi CHEN**

Done at ________________, on ________________ ________________________________
LOCATION DATE **Tingfang JI**