PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3641199

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
ZHI ZHU	11/16/2015
XIAOHUA KONG	11/16/2015
NIR GERBER	11/15/2015
CHRISTIAN JOSEF WIESNER	11/17/2015

RECEIVING PARTY DATA

Name:	QUALCOMM INCORPORATED		
Street Address:	5775 MOREHOUSE DRIVE		
City:	SAN DIEGO		
State/Country:	CALIFORNIA		
Postal Code:	92121-1714		

PROPERTY NUMBERS Total: 2

Property Type	Number
Application Number:	14856978
Application Number:	62161080

CORRESPONDENCE DATA

Fax Number: (214)200-0853

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: 9727398641

Email: paula.cunningham@haynesboone.com

Correspondent Name: HAYNES AND BOONE LLP Address Line 1: 2323 VICTORY AVENUE

Address Line 2: SUITE 700

Address Line 4: DALLAS, TEXAS 75219

Total Attachments: 5		
DATE SIGNED:	12/03/2015	
SIGNATURE:	/Thomas Kelton/	
NAME OF SUBMITTER:	THOMAS KELTON	
ATTORNEY DOCKET NUMBER:	49606.296US01 (153120)	

Total Attachments: 5

PATENT REEL: 037199 FRAME: 0723

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ASSIGNMENT

WHEREAS, WE,

- 1. Zhi ZHU, a citizen of China, having a mailing address located at 5775 Morehouse Drive, San Diego, CA 92121 and a resident of San Diego, California,
- 2. Xiaohua KONG, a citizen of China, having a mailing address located at 5775 Morehouse Drive, San Diego, CA 92121 and a resident of San Diego, California,
- 3. Nir GERBER, a citizen of Israel, having a mailing address located at 5775 Morehouse Drive, San Diego, CA 92121 and a resident of Haifa, Israel,
- 4. Christian Josef WIESNER, a citizen of Canada, having a mailing address located at 5775 Morehouse Drive, San Diego, CA 92121 and a resident of Uxbridge Ontario, Canada,

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 APPARATUS AND METHODS FOR PROVIDING A RECONFIGURABLE BIDIRECTIONAL FRONT-END INTERFACE (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, I do hereby acknowledge that I 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). 14/856,978 filed September 17, 2015, Qualcomm Reference No. 153120, and all provisional applications relating thereto, together with U.S. Provisional Application No(s). 62/161,080, filed May 13, 2015, Qualcomm Reference No. 153120P1, and all provisional applications relating thereto, (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;

QUALCOMM Ref. No. 153120 Page 3 of 3

AND WE HEREBY	covenant that WE will	not execute any writing or do any act
whatsoever conflicting with th	ese presents.	
Done at <u>San Dieso</u> , or	1 11/16/2015	
LOCATION	DATE	Zhi ZHU
Done at San Dhego, or LOCATION	11/16/2015 DATE	Xiaohua KONG
Done at, or	1	
LOCATION	DATE	Nir GERBER
Done at, or	1	
LOCATION	DATE	Christian Josef WIESNER

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Done at		, on		
	LOCATION		DATE	Zhi ZHU
Done at _		_, on		
	LOCATION		DATE	Xiaohua KONG
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	DO OTT TOTAL		DALL	WI GERBER
Done at _	***************************************	, on		
	LOCATION		DATE	Christian Josef WIESNER

PATENT QUALCOMM Ref. No. 153120 Page 3 of 3

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Done at _	9	on		
	LOCATION	DATE	Zhi ZHU	*****
Done at _	······································	on		
	LOCATION	DATE	Xiaohua KONG	
Done at_		on		
	LOCATION	DATE	Nir GERBER	
Done at _	Mackham,	on <u>Nov. 17, 20</u> 15	Ma Milese	~
	LOCATION	DATE	Christian Josef WIESNED	٠٤.

PATENT REEL: 037199 FRAME: 0729

RECORDED: 12/03/2015