

## PATENT ASSIGNMENT COVER SHEET

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 Stylesheet Version v1.2

EPAS ID: PAT6038868

<b>SUBMISSION TYPE:</b>	CORRECTIVE ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	Corrective Assignment to correct the CONVEYING PARTY DATA IN EPAS RECEIPT; INVENTOR 2 NAME SHOULD BE ALBERTO RICO ALVARINO. previously recorded on Reel 044805 Frame 0325. Assignor(s) hereby confirms the NAME OF INVENTOR 2 IS ALBERTO RICO ALVARINO..
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
SEYEDKIANOUSH HOSSEINI	01/29/2018
ALBERTO RICO ALVARINO	01/29/2018
WANSHI CHEN	01/29/2018
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	QUALCOMM INCORPORATED
<b>Street Address:</b>	5775 MOREHOUSE DRIVE
<b>City:</b>	SAN DIEGO
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	92121-1714
<b>PROPERTY NUMBERS Total: 2</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	15874804
Application Number:	62448930
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(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>	
<b>Phone:</b>	2136297400
<b>Email:</b>	patentdocket@arentfox.com, rachele.wittwer@arentfox.com
<b>Correspondent Name:</b>	ARENT FOX LLP AND QUALCOMM INCORPORATED
<b>Address Line 1:</b>	1717 K STREET, NW
<b>Address Line 4:</b>	WASHINGTON, D.C. 20006-5344
<b>ATTORNEY DOCKET NUMBER:</b>	030284.15845/171769
<b>NAME OF SUBMITTER:</b>	RACHELE WITTWER
<b>SIGNATURE:</b>	/Rachele Wittwer/
<b>DATE SIGNED:</b>	03/31/2020

**Total Attachments: 7**

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## UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND  
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

FEBRUARY 2, 2018

PTAS

ARENT FOX, LLP AND QUALCOMM,  
INCORPORATE  
1717 K STREET, NW  
WASHINGTON, DC 20006-5344

**504759405**

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RECORDATION DATE: 02/01/2018

REEL/FRAME: 044805/0325  
NUMBER OF PAGES: 4

BRIEF: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).

DOCKET NUMBER: 030284.15845/171769

ASSIGNOR:

HOSSEINI, SEYEDKIANOUSH

DOC DATE: 01/29/2018

ASSIGNOR:

RICO ALVARINO, ALBERTO ~~RICO ALVARINO~~ DOC DATE: 01/29/2018

ASSIGNOR:

CHEN, WANSHI

DOC DATE: 01/29/2018

ASSIGNEE:

QUALCOMM INCORPORATED  
5775 MOREHOUSE DRIVE  
SAN DIEGO, CALIFORNIA 92121-1714

APPLICATION NUMBER: 15874804

FILING DATE:

PATENT NUMBER:

ISSUE DATE:

TITLE: METHODS AND APPARATUS FOR ACHIEVING LOW CODING RATES

APPLICATION NUMBER: 62448930

FILING DATE: 01/20/2017

PATENT NUMBER:

ISSUE DATE:

TITLE: METHODS AND APPARATUS FOR ACHIEVING LOW CODING RATES

ASSIGNMENT RECORDATION BRANCH  
PUBLIC RECORDS DIVISION



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## Electronic Patent Assignment System

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**PATENT ASSIGNMENT COVER SHEET**

Electronic Version v1.1

Stylesheet Version v1.2

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT										
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT										
<b>CONVEYING PARTY DATA</b>											
<table border="1"><thead><tr><th>Name</th><th>Execution Date</th></tr></thead><tbody><tr><td>SEYEDKIANOUSH HOSSEINI</td><td>01/29/2018</td></tr><tr><td>ALBERTO RICO ALVARINO <del>RICO ALVARINO</del></td><td>01/29/2018</td></tr><tr><td>WANSHI CHEN</td><td>01/29/2018</td></tr></tbody></table>	Name	Execution Date	SEYEDKIANOUSH HOSSEINI	01/29/2018	ALBERTO RICO ALVARINO <del>RICO ALVARINO</del>	01/29/2018	WANSHI CHEN	01/29/2018			
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**Phone:** 213-629-7400  
**Email:** patentdocket@arentfox.com, rachele.wittwer@arentfox.com  
**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.**  
**Correspondent Name:** ARENT FOX, LLP AND QUALCOMM, INCORPORATE  
**Address Line 1:** 1717 K STREET, NW  
**Address Line 4:** WASHINGTON, D.C. 20006-5344

**ATTORNEY DOCKET  
NUMBER:**

030284.15845/171769

**NAME OF SUBMITTER:**

RACHELE WITTWER

**Signature:**

/Rachele Wittwer/

**Date:**

02/01/2018

**Total Attachments: 3**

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**RECEIPT INFORMATION****EPAS ID:** PAT4806133**Receipt Date:** 02/01/2018

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**ASSIGNMENT**

WHEREAS, WE,

1. **Seyedkianoush HOSSEINI**, a citizen of **Iran**, having a mailing address located at **5775 Morehouse Drive, San Diego, CA 92121-1714**, and a resident of **San Diego, California**,
2. **Alberto RICO ALVARINO**, a citizen of **Spain**, having a mailing address located at **5775 Morehouse Drive, San Diego, CA 92121-1714**, and a resident of **San Diego, California**,
3. **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, California**,

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 APPARATUS FOR ACHIEVING LOW CODING RATES** (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). **15/874,804** filed **January 18, 2018**, Qualcomm Reference No. **171769**, and all provisional applications relating thereto, together with U.S. Provisional Application No(s). **62/448,930**, filed **January 20, 2017**, Qualcomm Reference No. **171769P1**, (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;

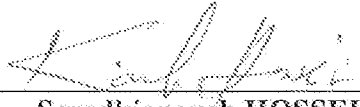
AND WE DO HEREBY authorize and request the Commissioner of Patents of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents on applications or registrations, to issue all patents for said INVENTIONS to said ASSIGNEE, its successors, 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;

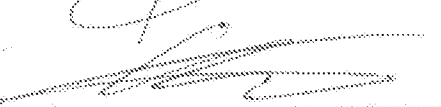
AND WE HEREBY covenant and agree that WE will communicate promptly to said ASSIGNEE, its successors, its legal representatives, and its assigns, any facts known to us respecting said INVENTIONS, and will testify in any legal proceeding, sign all lawful papers, execute all applications and certificates,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

Done at San Diego, on 01/29/2018   
LOCATION DATE Seyedkianoush HOSSEINI

Done at San Diego, on 1/29/2018   
LOCATION DATE Alberto RICO ALVARINO

Done at San Diego CA, on 1/29/2018   
LOCATION DATE Wanshi CHEN