## 504499310 08/11/2017

## PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:		NEW ASSIGNMENT	
NATURE OF CONVEYANCE:		ASSIGNMENT	
CONVEYING PARTY	DATA		
		Name	Execution Date
ARUMUGAM CHENDAMARAI KANN		ANNAN	07/27/2017
CHIRAG SURESHBHAI PATEL			08/09/2017
TAO LUO			08/01/2017
TAMER ADEL KADOUS			07/31/2017
RECEIVING PARTY I	DATA		
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Postal Code:	92121-1	92121-1714	
PROPERTY NUMBE		Number	
Property Typ Application Number	9 <b>6</b>	<b>Number</b> 15617697	
Property Typ Application Number CORRESPONDENCE Fax Number: <i>Correspondence wil</i> <i>using a fax number,</i> Phone: Email: Correspondent Nam Address Line 1:	De DATA	15617697 <i>the e-mail address first; if that is unsucces</i> <i>I; if that is unsuccessful, it will be sent via L</i> 7036217140 meo.docket@mg-ip.com MUNCY, GEISSLER, OLDS & LOWE, P.C./QG 4000 LEGATO ROAD, SUITE 310	JS Mail.
Property Typ Application Number CORRESPONDENCE Fax Number: <i>Correspondence will</i> <i>using a fax number,</i> Phone: Email: Correspondent Nam Address Line 1: Address Line 4:	De DATA	15617697 the e-mail address first; if that is unsuccess i; if that is unsuccessful, it will be sent via L 7036217140 meo.docket@mg-ip.com MUNCY, GEISSLER, OLDS & LOWE, P.C./QC 4000 LEGATO ROAD, SUITE 310 FAIRFAX, VIRGINIA 22033	JS Mail.
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Property Typ Application Number CORRESPONDENCE Fax Number: <i>Correspondence will</i> <i>using a fax number,</i> Phone: Email: Correspondent Nam Address Line 1: Address Line 4: ATTORNEY DOCKET	De Sent to if provided	15617697 the e-mail address first; if that is unsuccess i; if that is unsuccessful, it will be sent via L 7036217140 meo.docket@mg-ip.com MUNCY, GEISSLER, OLDS & LOWE, P.C./QC 4000 LEGATO ROAD, SUITE 310 FAIRFAX, VIRGINIA 22033 QC163809 SAMANTHA PITTENGER	JS Mail.
Property Typ Application Number CORRESPONDENCE Fax Number: <i>Correspondence wil</i> <i>using a fax number,</i> Phone: Email: Correspondent Nam Address Line 1: Address Line 4:	De Sent to if provided	15617697 <b>The e-mail address first; if that is unsuccess</b> <b>I; if that is unsuccessful, it will be sent via L</b> 7036217140 meo.docket@mg-ip.com MUNCY, GEISSLER, OLDS & LOWE, P.C./QC 4000 LEGATO ROAD, SUITE 310 FAIRFAX, VIRGINIA 22033 QC163809	JS Mail.

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## ASSIGNMENT

## WHEREAS, WE,

1. Arumugam CHENDAMARAI KANNAN, a citizen of India, having a mailing address located at 5775 Morehouse Drive, San Diego, CA and a resident of San Diego, CA;

2. Chirag PATEL, a citizen of the United States of America, having a mailing address located at 5775 Morehouse Drive, San Diego, CA and a resident of San Diego, CA;

3. **Tao LUO**, a citizen of the United States of America, having a mailing address located at 5775 Morehouse Drive, San Diego, CA and a resident of San Diego, CA; and

4. **Tamer KADOUS**, a citizen of the United States of America, having a mailing address located at 5775 Morehouse Drive, San Diego, CA 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 PROCEDURES ON A SHARED COMMUNICATION MEDIUM** (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). 15/617,697 filed June 8, 2017, Qualcomm Reference No. 163809, and all provisional applications relating thereto, together with U.S. Provisional Application No(s). 62/348,715, filed June 10, 2016, Qualcomm Reference No. 163809P1, U.S. Provisional Application No(s). 62/349,599, filed June 13, 2016, Qualcomm Reference No. 163809P2, and U.S. Provisional Application No(s). 62/350,698, filed June 15, 2016, Qualcomm Reference No. 163809P3 (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 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;

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

