506440632 01/08/2021

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT6487400

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
ALEXANDROS MANOLAKOS	11/24/2020
SONY AKKARAKARAN	11/24/2020
GUTTORM RINGSTAD OPSHAUG	12/30/2020
SVEN FISCHER	12/18/2020

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:	16990609

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: 7036217140

Email: meo.docket@mg-ip.com

Correspondent Name: MUNCY, GEISSLER, OLDS & LOWE, P.C./QC

Address Line 1: 4000 LEGATO ROAD, SUITE 310

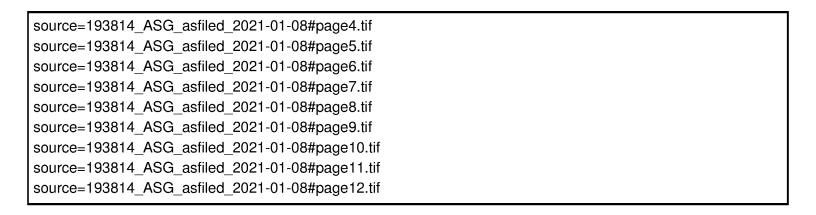
Address Line 4: FAIRFAX, VIRGINIA 22033

ATTORNEY DOCKET NUMBER:	QC193814
NAME OF SUBMITTER:	RENEE ELDER
SIGNATURE:	/RENEE ELDER/
DATE SIGNED:	01/08/2021

Total Attachments: 12

source=193814_ASG_asfiled_2021-01-08#page1.tif source=193814_ASG_asfiled_2021-01-08#page2.tif source=193814_ASG_asfiled_2021-01-08#page3.tif

PATENT 506440632 REEL: 054862 FRAME: 0625



WHEREAS, WE,

- 1. Alexandros MANOLAKOS, having a mailing address located at 5775 Morehouse Drive, San Diego, CA 92121-1714,
- 2. Sony AKKARAKARAN, having a mailing address located at 5775 Morehouse Drive, San Diego, CA 92121-1714,
- 3. Guttorm Ringstad OPSHAUG, having a mailing address located at 5775 Morehouse Drive, San Diego, CA 92121-1714,
- 4. Sven FISCHER, having a mailing address located at 5775 Morehouse Drive, San Diego, CA 92121-1714,

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 MUTING PATTERN CONFIGURATION OPTIONS FOR DOWNLINK POSITIONING REFERENCE SIGNALS (PRS) (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). 16/990,609, filed August 11, 2020, Qualcomm Reference Number 193814, and all provisional applications relating thereto, together with Greek Application No(s). 20190100347, filed August 12, 2019, Qualcomm Reference Number 193814GRI, (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;

PATENT

Qualcomm Reference Number: 193814

Page 3 of 3

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

Done at	Espandido (City, State	H, on 11/24/76	Al Dandros MANOLAKOS
Done at_		, on	
	City. State	Date	Sony AKKARAKARAN
Done at		, oo	
	City, State	Date	Guttorm Ringstad OPSHAUG
Done at		, on	
	City State	Date	Sven FISCHER

WHEREAS, WE,

- 1. Alexandros MANOLAKOS, having a mailing address located at 5775 Morehouse Drive, San Diego, CA 92121-1714,
- 2. Sony AKKARAKARAN, having a mailing address located at 5775 Morehouse Drive, San Diego, CA 92121-1714,
- 3. Guttorm Ringstad OPSHAUG, having a mailing address located at 5775 Morehouse Drive, San Diego, CA 92121-1714,
- 4. Sven FISCHER, having a mailing address located at 5775 Morehouse Drive, San Diego, CA 92121-1714,

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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.

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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	, on		
	City, State	Date	Alexandros MANOLAKOS
Done at	Poway, CA	on 11/24/2020	en/h
	City, State	Date	Sony AKKARAKARAN
Done at		, on	
	City, State	Date	Guttorm Ringstad OPSHAUG
Done at		, on	
•	City, State	Date	Sven FISCHER

WHEREAS, WE,

- 1. Alexandros MANOLAKOS, having a mailing address located at 5775 Morehouse Drive, San Diego, CA 92121-1714,
- 2. Sony AKKARAKARAN, having a mailing address located at 5775 Morehouse Drive, San Diego, CA 92121-1714,
- 3. Guttorm Ringstad OPSHAUG, having a mailing address located at 5775 Morehouse Drive, San Diego, CA 92121-1714,
- 4. Sven FISCHER, having a mailing address located at 5775 Morehouse Drive, San Diego, CA 92121-1714,

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Done at _	, on		5
	City, State	Date	Alexandros MANOLAKOS
Done at _		on	
	City, State	Date	Sony AKKARAKARAN
Done at∕{	30 00 000 Ciry (4.	on 12/30/20	With K. Opphang
	City, State	Date	Guttorm Ringstad OPSHADG
Done at		, on	
	City, State	Date	Sven FISCHER

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- 1. Alexandros MANOLAKOS, having a mailing address located at 5775 Morehouse Drive, San Diego, CA 92121-1714,
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PATENT
Qualcomm Reference Number: 193814
Page 3 of 3

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

Done at		, on	
~~~	City, State	Date	Alexandros MANOLAKOS
Done at _		, on	
	City, State	Date	Sony AKKARAKARAN
Done at _	2004 - 00-4-	, on	C. A. Direct JOBOHANG
	City, State	Date	Guttorm Ringstad OPSHAUG
Done at /	Wiembera	, on <u>Dec. 18, 20</u> 20	S. Frade
	City, State	Date	Sven FISCHER

PATENT REEL: 054862 FRAME: 0638

RECORDED: 01/08/2021