#### 503890952 06/27/2016

# PATENT ASSIGNMENT COVER SHEET

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| SUBMISSION TYPE:      | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT     |

#### **CONVEYING PARTY DATA**

| Name                  | Execution Date |
|-----------------------|----------------|
| CHANGHAN HOBIE YUN    | 06/20/2016     |
| DAEIK DANIEL KIM      | 06/23/2016     |
| MARIO FRANCISCO VELEZ | 06/20/2016     |
| CHENGJIE ZUO          | 06/20/2016     |
| DAVID FRANCIS BERDY   | 06/22/2016     |
| JONGHAE KIM           | 06/20/2016     |

### **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: | 15067106 |

#### **CORRESPONDENCE DATA**

Fax Number: (310)201-5219

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: 310.277.7200

Email: Qualcomm-USPTO@seyfarth.com

SEYFARTH SHAW LLP Correspondent Name:

Address Line 1: 2029 CENTURY PARK EAST, SUITE 3500

Address Line 4: LOS ANGELES, CALIFORNIA 90067

| ATTORNEY DOCKET NUMBER: | 160530   |
|-------------------------|--|
| NAME OF SUBMITTER:      | JOSEPH LUTZ  |
| SIGNATURE:              | /Joseph Lutz/  |
| DATE SIGNED:            | 06/27/2016   |
|                         | This document serves as an Oath/Declaration (37 CFR 1.63). |

**PATENT** REEL: 039022 FRAME: 0053

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## **Total Attachments: 3**

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PATENT REEL: 039022 FRAME: 0054

#### ASSIGNMENT

#### WHEREAS, WE,

- 1. Changhan Hobie YUN, a citizen of The United States of America, having a mailing address located at 5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A., and a resident of San Diego, California,
- 2. Daeik Daniel KIM, a citizen of South Korea, having a mailing address located at 5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A., and a resident of Del Mar, California.
- 3. Mario Francisco VELEZ, a citizen of The United States of America, having a mailing address located at 5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A., and a resident of San Diego, California,
- 4. **Chengjie ZUO,** a citizen of China, having a mailing address located at 5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A., and a resident of Santee, California,
- 5. David Francis BERDY, a citizen of The United States of America, having a mailing address located at 5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A., and a resident of San Diego, California,
- 6. **Jonghae KIM**, a citizen of The United States of America, having a mailing address located at 5775 Morehouse Drive, San Diego, California 92121-1714, U.S.A., 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 MULTIPLEXER DESIGN USING A 2D PASSIVE ON GLASS FILTER INTEGRATED WITH A 3D THROUGH GLASS VIA FILTER (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

PATENT REEL: 039022 FRAME: 0055 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). 15/067,106, filed March 10, 2016, Qualcomm Reference No. 160530, and all provisional applications relating thereto, together with U.S. Provisional Application No(s). 62/271,893, filed December 28, 2015, Qualcomm Reference No. 160530P1, (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

PATENT REEL: 039022 FRAME: 0056 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 Saw Dress, on 6/23/2016

Done at Saw Dress, on 6/23/2016

Done at Location, on Date

Done at L

Done at San Piego, on 6/22/16 David Francis BERDY

Done at Location, on 6/2/6

Location Date Jonghae KIM

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RECORDED: 06/27/2016