

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT5451705

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
SEONG-OOK JUNG	03/26/2019
BYUNGKYU SONG	03/26/2019
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	YONSEI UNIVERSITY, UNIVERSITY-INDUSTRY FOUNDATION
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<b>State/Country:</b>	KOREA, REPUBLIC OF
<b>Postal Code:</b>	03722
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	15939514
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	
<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>	
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<b>ATTORNEY DOCKET NUMBER:</b>	174321/1173-508
<b>NAME OF SUBMITTER:</b>	DAVID M. SMITH
<b>SIGNATURE:</b>	/David M. Smith/
<b>DATE SIGNED:</b>	04/01/2019
<b>Total Attachments: 3</b>	
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## ASSIGNMENT

WHEREAS, WE,

1. **Seong-Ook JUNG**, having a mailing address located at **Engineering Bldg-2, 725, 50 Yonsei-ro, Seodaemun-gu, Seoul 120-749 Korea**,
2. **Byungkyu SONG**, having a mailing address located at **Engineering Bldg-2, 50 Yonsei-ro, Seodaemun-gu, Seoul 120-749 Korea**,

(collectively referred to herein as the “**INVENTORS**”), have jointly conceived of one or more processes, methods, machines, articles of manufacture, designs, compositions of matter, inventions, discoveries or new or useful improvements relating to **OFFSET-CANCELLATION SENSING CIRCUIT (OCSC)-BASED NON-VOLATILE (NV) MEMORY CIRCUITS** (collectively the “**INVENTION**”) for which they have executed and/or may execute one or more patent applications therefor; and

WHEREAS, the **INVENTORS** and **ASSIGNEE** (as defined below) acknowledge that Qualcomm Technologies, Inc. possesses a joint ownership interest in and to the **INVENTION** and all intellectual property rights related to the **INVENTION** as a result of the **INVENTORS**’ collaboration with and/or the contributions of one or more co-inventors affiliated with Qualcomm Technologies, Inc.; and

WHEREAS, **YONSEI UNIVERSITY, UNIVERSITY-INDUSTRY FOUNDATION** (hereinafter “**ASSIGNEE**”), an academic institution organized under the laws of the Republic of Korea , having a place of business at **50 Yonsei-ro, Seodaemun-gu Seoul 03722, Korea**, desires to acquire or otherwise obtain the **INVENTORS**’ entire right, title, and interest in and to said **INVENTION**, including the **INVENTORS**’ entire right, title, and interest in and to 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, the **INVENTORS** do hereby acknowledge that they 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 **INVENTORS**’ 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). **15/939,514** filed **March 29, 2018**, 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 the INVENTORS further do acknowledge and agree that they 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 of the INVENTORS' rights of priority under International Conventions, Treaties, or Agreements, and the INVENTORS' 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 application 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 the INVENTORS 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 the INVENTORS DO HEREBY sell, assign, transfer, and convey to said ASSIGNEE, its successors, its legal representatives, and its assigns all of the INVENTORS' interest in any 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 the INVENTORS may be entitled, or that the INVENTORS may collect for any infringement or from any settlement or agreement related to any of said patents before or after issuance;

AND the INVENTORS HEREBY covenant and agree that they 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 the INVENTORS HEREBY covenant that they will not execute any writing or do any act whatsoever conflicting with these presents.

Done at Seoul, on Mar 26, 2019  
City, State Date

Jung Seong-Ook  
Seong-Ook JUNG

Done at Seoul, on Mar 26, 2019  
City, State Date

Byungkyu SONG  
Byungkyu SONG