## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT6508336

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
YUANBIN GUO	04/25/2020
HONG JIK KIM	04/24/2020

### **RECEIVING PARTY DATA**

Name:	MARVELL SEMICONDUCTOR, INC.	
Street Address:	5488 MARVELL LANE	
City:	SANTA CLARA	
State/Country:	CALIFORNIA	
Postal Code:	95054	

### **PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	16236455

#### **CORRESPONDENCE DATA**

**Fax Number:** (408)222-2755

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: 408-222-2500
Email: sherir@marvell.com
Correspondent Name: KELVIN VIVIAN
Address Line 1: 5488 MARVELL LANE

Address Line 4: SANTA CLARA, CALIFORNIA 95054

ATTORNEY DOCKET NUMBER:	MP12835
NAME OF SUBMITTER:	KELVIN VIVIAN
SIGNATURE:	/Kelvin Vivian/
DATE SIGNED:	01/21/2021

### **Total Attachments: 4**

source=MP12835 Executed Assignment\_Y Guo-to-MSI (Accepted)#page1.tif source=MP12835 Executed Assignment\_Y Guo-to-MSI (Accepted)#page2.tif source=MP12835 Executed Assignment\_H Kim-to-MSI (Accepted)#page1.tif source=MP12835 Executed Assignment\_H Kim-to-MSI (Accepted)#page2.tif

PATENT 506461560 REEL: 054988 FRAME: 0494

### **ASSIGNMENT**

For good and valuable consideration, the receipt of which is hereby acknowledged, each of us, the undersigned inventors,

# Yuanbin Guo

### Hong Jik Kim

who have created a certain invention for which one or more patent applications identified below (hereinafter called "the Patent Application(s)") that have been, or are to be, filed:

Marvell Reference No.	Application No.	<u>Filing Date</u>	<u>Title</u>
MP12835	16/236,455	December 29, 2018	METHODS AND APPARATUS FOR SUB-BLOCK BASED ARCHITECTURE OF CHOLESKY DECOMPOSITION AND CHANNEL WHITENING
MP12835PR	62/665,271	May 1, 2018	Method and Apparatus for Sub-Block Based Architecture of Cholesky Decomposition and Channel Whitening

Does hereby sell, assign and transfer to Marvell Semiconductor, Inc., a corporation of California, having a place of business at 5488 Marvell Lane, Santa Clara, CA 95054, its successors, assigns, and legal representatives, the full and exclusive right to said invention and said Patent Application(s) and to any and all inventions described in said Patent Application(s), including applications for Letters Patent for the United States, its territorial possessions, and all foreign countries, and the entire right, title and interest in and to any and all Letters Patent which may be granted therefor in the United States, its territorial possessions, and all foreign countries; to any and all Letters Patent which may be entitled to the benefit thereof in the United States, its territorial possessions, and all foreign countries; and in and to any and all continuations-in-part, continuations, divisions, substitutes, reissues, extensions thereof, and all other applications for Letters Patent relating thereto which have been or shall be filed in the United States, its territorial possessions, and/or any foreign countries, and all rights, together with all priority rights, under any of the international conventions, unions, agreements, acts, and treaties, including all future conventions, unions, agreements, acts, and treaties:

Authorizes and requests that the attorneys of record in any of said Patent Application(s) insert in this assignment the filing date(s) and application number(s) of said Patent Application(s) when officially known;

Agrees that Marvell Semiconductor, Inc., hereinafter referred to as Assignee, may apply for and receive Letters Patent for said invention and said inventions, hereinafter referred to as said invention, in its own name, in the United States, its territorial possessions, and all foreign countries; and that, when requested to carry out in good faith the intent and purpose of this assignment, at the expense of said Assignee, its successors, assigns and legal representatives, the undersigned inventors will execute all continuations-in-part, continuations, divisions, substitutes, reissues, extensions thereof, execute all rightful oaths, assignments, powers of attorney and other papers, testify in any legal or quasi legal proceedings; communicate to said Assignee, its successors, assigns or legal representatives all facts known to the undersigned inventors relating to said invention and the history thereof; and generally do everything possible which said Assignee, its successors, assigns, or legal representatives shall consider desirable for aiding in securing, maintaining and enforcing proper patent protection for said invention and for vesting title to said invention and all applications for patents on said invention in said Assignee, its successors, assigns, or legal representatives; and

> **PATENT** REEL: 054988 FRAME: 0495

Covenants with said Assignee, its successors, assigns, or legal representatives that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned inventors, and that full right to convey the same as herein expressed is possessed by the undersigned inventors.

IN TESTIMONY WHEREOF we have hereunto set our signatures on the date(s) indicated below.

Full Name of First Inventor:	
Yuanbin Guo	
Inventor's Signature:	Date: Month/Day/Year
/Yuanbin Guo/	04/25/2020

Full Name of Second Inventor:	
Hong Jik Kim	
Inventor's Signature:	Date: Month/Day/Year

Assignees' undersigned representative is empowered to sign this certificate on behalf of Assignee. Assignees' undersigned representative Authorizes and requests that the attorneys of record in any of said Patent Application(s) insert in this assignment the filing date(s) and application number(s) of said Patent Application(s) when officially known.

Accepted on behalf of:

MARVELL SEMICONDUCTOR, INC.

By: Kelvin Vivian Street Special Speci

Name: Kelvin Vivian

Title: <u>Director, Assistant General Counsel, IP Development</u>

Date: April 27, 2020

PATENT
REEL: 054988 FRAME: 0496

### **ASSIGNMENT**

For good and valuable consideration, the receipt of which is hereby acknowledged, each of us, the undersigned inventors,

# Yuanbin Guo

### Hong Jik Kim

who have created a certain invention for which one or more patent applications identified below (hereinafter called "the Patent Application(s)") that have been, or are to be, filed:

Marvell Reference No.	Application No.	<u>Filing Date</u>	<u>Title</u>
MP12835	16/236,455	December 29, 2018	METHODS AND APPARATUS FOR SUB-BLOCK BASED ARCHITECTURE OF CHOLESKY DECOMPOSITION AND CHANNEL WHITENING
MP12835PR	62/665,271	May 1, 2018	Method and Apparatus for Sub-Block Based Architecture of Cholesky Decomposition and Channel Whitening

Does hereby sell, assign and transfer to Marvell Semiconductor, Inc., a corporation of California, having a place of business at 5488 Marvell Lane, Santa Clara, CA 95054, its successors, assigns, and legal representatives, the full and exclusive right to said invention and said Patent Application(s) and to any and all inventions described in said Patent Application(s), including applications for Letters Patent for the United States, its territorial possessions, and all foreign countries, and the entire right, title and interest in and to any and all Letters Patent which may be granted therefor in the United States, its territorial possessions, and all foreign countries; to any and all Letters Patent which may be entitled to the benefit thereof in the United States, its territorial possessions, and all foreign countries; and in and to any and all continuations-in-part, continuations, divisions, substitutes, reissues, extensions thereof, and all other applications for Letters Patent relating thereto which have been or shall be filed in the United States, its territorial possessions, and/or any foreign countries, and all rights, together with all priority rights, under any of the international conventions, unions, agreements, acts, and treaties, including all future conventions, unions, agreements, acts, and treaties:

Authorizes and requests that the attorneys of record in any of said Patent Application(s) insert in this assignment the filing date(s) and application number(s) of said Patent Application(s) when officially known;

Agrees that Marvell Semiconductor, Inc., hereinafter referred to as Assignee, may apply for and receive Letters Patent for said invention and said inventions, hereinafter referred to as said invention, in its own name, in the United States, its territorial possessions, and all foreign countries; and that, when requested to carry out in good faith the intent and purpose of this assignment, at the expense of said Assignee, its successors, assigns and legal representatives, the undersigned inventors will execute all continuations-in-part, continuations, divisions, substitutes, reissues, extensions thereof, execute all rightful oaths, assignments, powers of attorney and other papers, testify in any legal or quasi legal proceedings; communicate to said Assignee, its successors, assigns or legal representatives all facts known to the undersigned inventors relating to said invention and the history thereof; and generally do everything possible which said Assignee, its successors, assigns, or legal representatives shall consider desirable for aiding in securing, maintaining and enforcing proper patent protection for said invention and for vesting title to said invention and all applications for patents on said invention in said Assignee, its successors, assigns, or legal representatives; and

> **PATENT** REEL: 054988 FRAME: 0497

Covenants with said Assignee, its successors, assigns, or legal representatives that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned inventors, and that full right to convey the same as herein expressed is possessed by the undersigned inventors.

IN TESTIMONY WHEREOF we have hereunto set our signatures on the date(s) indicated below.

Full Name of First Inventor:		
Yuanbin Guo		
Inventor's Signature:	Date: Month/Day/Year	

Full Name of Second Inventor:	
Hong Jik Kim	
Inventor's Signature:	Date: Month/Day/Year
MAR	4/24/2024

Assignees' undersigned representative is empowered to sign this certificate on behalf of Assignee. Assignees' undersigned representative Authorizes and requests that the attorneys of record in any of said Patent Application(s) insert in this assignment the filing date(s) and application number(s) of said Patent Application(s) when officially known.

Accepted on behalf of:

MARVELL SEMICONDUCTOR, INC.

Kelvin Vivian By:

Name: Kelvin Vivian

RECORDED: 01/21/2021

Title: Director, Assistant General Counsel, IP Development

April 27, 2020 Date:

> Page 2 of 2 **PATENT** REEL: 054988 FRAME: 0498