

<b>PATENT ASSIGNMENT COVER SHEET</b>
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Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT5710342

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
LIWEN CHU	07/23/2018
HONGYUAN ZHANG	07/23/2018
HUI-LING LOU	07/17/2019
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	MARVELL SEMICONDUCTOR, INC.
<b>Street Address:</b>	5488 MARVELL LANE
<b>City:</b>	SANTA CLARA
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	95054
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	16044234
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(408)222-2755
<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>	
<b>Phone:</b>	408-222-2500
<b>Email:</b>	sherir@marvell.com
<b>Correspondent Name:</b>	KELVIN VIVIAN
<b>Address Line 1:</b>	5488 MARVELL LANE
<b>Address Line 4:</b>	SANTA CLARA, CALIFORNIA 95054
<b>ATTORNEY DOCKET NUMBER:</b>	MP648511
<b>NAME OF SUBMITTER:</b>	KELVIN VIVIAN
<b>SIGNATURE:</b>	/Kelvin Vivian/
<b>DATE SIGNED:</b>	09/10/2019
<b>Total Attachments: 5</b>	
source=MP648511 Executed Assignment INVS-MSI (Accepted)#page1.tif	
source=MP648511 Executed Assignment INVS-MSI (Accepted)#page2.tif	
source=MP648511 Executed Assignment INVS-MSI (Accepted)#page3.tif	
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ASSIGNMENT

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

**Liwen Chu, Hongyuan Zhang, and Hui-Ling Lou**

who have created a certain invention for which an application for United States Letters Patent was executed by each of us concurrently herewith and entitled:

**SINGLE ACKNOWLEDGMENT POLICY FOR AGGREGATE MPDU**


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 application and to any and all inventions described in said application 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; 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;

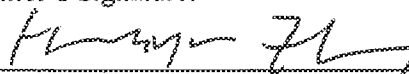
Does hereby further sell, assign and transfer to Marvell Semiconductor, Inc., its successors, assigns, and legal representatives, the full and exclusive right to United States Provisional Patent Application Nos. 62/536,380, filed July 24, 2017, entitled "Acknowledgment Data Unit for Multiple Uplink Data Units," and 62/560,495, filed September 19, 2017, entitled "Acknowledgment Data Unit for Multiple Uplink Data Units," and to any and all inventions described in said provisional patent application(s) 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 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;

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 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 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

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, and that full right to convey the same as herein expressed is possessed by the undersigned.

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

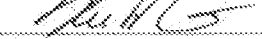
Full Name of First Inventor:	
Liwen Chu	
Inventor's Signature:	Date: Month/Day/Year
	07/23/18

Full Name of Second Inventor: Hongyuan Zhang	
Inventor's Signature: 	Date: Month/Day/Year 7/23/2018

Full Name of Third Inventor: Hui-Ling Lou	
Inventor's Signature:	Date: Month/Day/Year

Accepted on behalf of:

MARVELL SEMICONDUCTOR, INC.

By: 

Name: Kelvin Vivian

Title: Director, Assistant General Counsel, IP Development

Date: 18 July 2019

## ASSIGNMENT

For good and valuable consideration, the receipt and sufficiency for which is hereby acknowledged, I or We, the undersigned,

**Liwen Chu, Hongyuan Zhang and Hui-Ling Lou**

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

<u>Marvell Case No.</u>	<u>Application No.</u>	<u>Filing Date</u>	<u>Title</u>
MP10303PR	US 62/536,380	07/24/2017	Acknowledgment Data Unit for Multiple Uplink Data Units
MP10303PR2	US 62/560,495	09/19/2017	Acknowledgment Data Unit for Multiple Uplink Data Units
MP648511	US 16/044,234	07/24/2018	Single Acknowledgment Policy for Aggregate MPDU

Do hereby confirm any prior assignment, and to the extent that I have not already done so, agree to sell, assign, and transfer, and do 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, and its successors or assigns (hereinafter "Assignee"), the entire rights, title, and interest, including all priority rights, in or to any and all inventions described in the Patent Application(s), the Patent Application(s), and all continuations in whole or in part, divisions, and other applications claiming priority directly or indirectly from the Patent Application(s) which have been or are to be filed in the United States and/or any foreign countries including national stage applications, and any patents, including utility models and other similar registrations, in the United States and/or any foreign countries which may be granted thereon, including but not limited to reissues, renewals, and reexaminations thereof;

Authorize and request that the attorneys of record in any of the Patent Application(s) insert in this assignment the filing date(s) and application number(s) of the Patent Application(s) when officially known (the Assignee authorizes and requests the same);

Agree that Assignee may apply for and receive patents including utility models and other similar registrations for the foregoing rights, title and interest in its own name, in the United States and/or any foreign countries; and that, when requested to carry out in good faith the intent and purpose of this assignment, at the expense of the Assignee, and its successors or assigns, the undersigned will execute all rightful oaths, declarations, assignments, powers of attorney and other papers, testify in any legal or quasi legal proceedings; communicate to the Assignee, and its successors or assigns all facts known to the undersigned relating to the foregoing rights, title and interest; and generally do everything possible and reasonable which the Assignee, and its successors, or assigns consider necessary, desirable or expedient for aiding in securing, maintaining and enforcing proper protection for applicable patent rights and for vesting applicable title in the Assignee and its successors or assigns; and


Covenant with the Assignee, and its successors or assigns that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by the

undersigned, there are no outstanding encumbrances, liens or other obligations or restrictions on the rights, titles and interests herein assigned, and that full right to convey the same as herein expressed is possessed by the undersigned.

IN TESTIMONY WHEREOF I have hereunto set my signature or our signatures on the date indicated below.

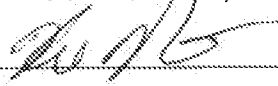
Full Name of First Inventor:	
Liwen Chu	
Inventor's Signature:	Date: Month/Day/Year

Full Name of Second Inventor:	
Hongyuan Zhang	
Inventor's Signature:	Date: Month/Day/Year

Full Name of Third Inventor:	
Hui-Ling Lou	
Inventor's Signature: 	Date: Month/Day/Year 7/17/19

Accepted by:

MARVELL SEMICONDUCTOR, INC.

By: 

Name: Kelvin M. Vivian

Title: Director, Assistant General Counsel, IP Development

Date: 18 JULY 2019