

PATENT ASSIGNMENT COVER SHEET

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| SUBMISSION TYPE: | NEW ASSIGNMENT |
| NATURE OF CONVEYANCE: | ASSIGNMENT |
| CONVEYING PARTY DATA | |
| Name | Execution Date |
| HONGQI LI | 09/28/2015 |
| GOWRISANKAR DAMARLA | 10/05/2015 |
| ROGER LINDSAY | 05/25/2017 |
| ZAILONG BIAN | 05/25/2017 |
| JIN LU | 05/26/2017 |
| SHYAM RAMALINGAM | 09/29/2015 |
| PRASANNA SRINIVASAN | 10/26/2015 |
| RECEIVING PARTY DATA | |
| Name: | INTEL CORPORATION |
| Street Address: | 2200 MISSION COLLEGE BLVD |
| City: | SANTA CLARA |
| State/Country: | CALIFORNIA |
| Postal Code: | 95054 |
| PROPERTY NUMBERS Total: 1 | |
| Property Type | Number |
| Application Number: | 14498673 |
| CORRESPONDENCE DATA | |
| Fax Number: | |
| <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> | |
| Phone: | 503-730-8937 |
| Email: | annie@compassiplaw.com, bob@compassiplaw.com |
| Correspondent Name: | VINCENT H. ANDERSON |
| Address Line 1: | 4804 NW BETHANY BLVD, STE. I-2 #237 |
| Address Line 4: | PORTLAND, OREGON 97229 |
| ATTORNEY DOCKET NUMBER: | P70039 |
| NAME OF SUBMITTER: | ANNIE PEARSON |
| SIGNATURE: | /Annie Pearson/ |
| DATE SIGNED: | 05/29/2017 |

Total Attachments: 14

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ASSIGNMENT

In consideration of good and valuable consideration, the receipt of which is hereby acknowledged, we, the undersigned inventor(s):

HONGQI LI; GOWRISANKAR DAMARLA; ROGER LINDSAY; ZAILONG BIAN; JIN LU; SHYAM RAMALINGAM; PRASANNA SRINIVASAN

hereby sell, assign, and transfer to:

Intel Corporation

a corporation of Delaware, having a principal place of business at 2200 Mission College Boulevard, Santa Clara, California, 95054 USA ("Assignee"), and its successors, assigns, and legal representatives, the entire right, title, and interest for the United States and all other countries, in and to any and all inventions and improvements that are disclosed in the application for the patent entitled:

CAPPING POLY CHANNEL PILLARS IN STACKED CIRCUITS

(I hereby authorize and request any attorney having appropriate authority from the assignee to insert on the designated lines below, the filing date and application number of said application when known.)

which was filed on September 26, 2014 as

US Application Number 14/498,673 and
COUNTRY or International Office

which has been executed by the undersigned prior hereto or concurrently herewith on the date(s) indicated below,

and in and to said application and all Additional Applications, and all other patent applications that have been or shall be filed in the United States and all other countries and international filing offices on any of said inventions and improvements; and in and to all original and reissued patents that have been or shall be issued in the United States and all other countries and international filing offices on said inventions and improvements; and in and to all rights of priority resulting from the filing of said applications; as used herein "Additional Applications" includes but is not limited to design, utility, utility model, divisional, continuing, continuation-in-part, substitute, renewal, reissue, and national phase applications on said inventions and improvements;

and agree that said Assignee may apply for and receive a patent or patents for said inventions and improvements in its own name; and that, when requested, without charge to, but at the expense of, said Assignee, its successors, assigns, and legal representatives, to carry out in good faith the intent and purpose of this Assignment, the undersigned will execute all Additional Applications, and all other patent applications on any and all said inventions and improvements; execute all rightful oaths, assignments, powers of attorney, and other papers; communicate to said Assignee, its successors, assigns, and legal representatives all facts known to the undersigned relating to said inventions and improvements and

the history thereof; and generally assist said Assignee, its successors, assigns, or legal representatives in securing and maintaining proper patent protection for said inventions and improvements and for vesting title to said inventions and improvements, and all applications for patents and all patents on said improvements, in said Assignee, its successors, assigns, and legal representatives; and

covenant with said Assignee, its successors, assigns, and 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.

Hongqi Li

Hongqi Li

09/28/2015

Date signed

Gowrisankar Damarla

Date signed

Roger Lindsay

Date signed

Zailong Bian

Date signed

Jin Lu

Date signed

Shyam Ramalingam

Date signed

Prasanna Srinivasan

Date signed

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| | |
|---|---|
| Hongqi Li  Gowrisankar Damarla | Date signed 10/5/2015 Date signed |
| Roger Lindsay | Date signed |
| Zailong Bian | Date signed |
| Jin Lu | Date signed |
| Shyam Ramalingam | Date signed |
| Prasanna Srinivasan | Date signed |

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HONGQI LI

Date signed

GOWRISANKAR DAMARLA

Date signed



ROGER LINDSAY

5-25-17
Date signed

ZAILONG BIAN

Date signed

JIN LU

Date signed

SHYAM RAMALINGAM

Date signed

PRASANNA SRINIVASAN

Date signed

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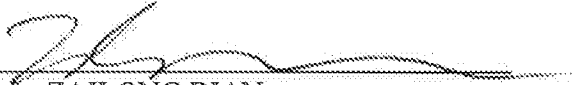
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| _____ ROGER LINDSAY | _____ Date signed |
|  _____ ZAILONG BIAN | <u>5/25/2017</u> _____ Date signed |
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Date signed

ZAILONG BIAN

Date signed

Jin Lu

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5/26/2017

Date signed

SHYAM RAMALINGAM

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| _____ Zailong Bian | _____ Date signed |
| _____ Jin Lu | _____ Date signed |
|  _____ Shyam Ramalingam | SEP 29, 2015 _____ Date signed |
| _____ Prasanna Srinivasan | _____ Date signed |

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