

PATENT ASSIGNMENT COVER SHEET

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Stylesheet Version v1.2

EPAS ID: PAT4941333

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| SUBMISSION TYPE: | NEW ASSIGNMENT |
| NATURE OF CONVEYANCE: | ASSIGNMENT |
| CONVEYING PARTY DATA | |
| Name | Execution Date |
| FREESCALE SEMICONDUCTOR, INC. | 07/29/2011 |
| RECEIVING PARTY DATA | |
| Name: | RAMBUS INC. |
| Street Address: | 1050 ENTERPRISE WAY |
| Internal Address: | SUITE 700 |
| City: | SUNNYVALE |
| State/Country: | CALIFORNIA |
| Postal Code: | 94089 |
| PROPERTY NUMBERS Total: 1 | |
| Property Type | Number |
| Application Number: | 14852200 |
| CORRESPONDENCE DATA | |
| Fax Number: | (617)646-1666 |
| <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: | 617-646-1600 |
| Email: | james.charlesworth@finnegan.com |
| Correspondent Name: | FINNEGAN HENDERSON FARABOW GARRETT & DUN |
| Address Line 1: | 2 SEAPORT LANE |
| Address Line 2: | 6TH FLOOR |
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| ATTORNEY DOCKET NUMBER: | 10314.0067-04000 |
| NAME OF SUBMITTER: | GABRIEL V. SIKAROV, REG. NO. 73,558 |
| SIGNATURE: | /Gabriel V. Sikarov/ |
| DATE SIGNED: | 05/01/2018 |
| Total Attachments: 5 | |
| source=10314.0067-00000 Assignment to Rambus#page1.tif | |
| source=10314.0067-00000 Assignment to Rambus#page2.tif | |
| source=10314.0067-00000 Assignment to Rambus#page3.tif | |
| source=10314.0067-00000 Assignment to Rambus#page4.tif | |

ATTACHMENT TO RECORDATION FORM COVER SHEET

PATENT NUMBERS

7,237,149

7,649,782

7,400,545

7,453,756

7,853,834

7,831,862

7,376,807

7,555,605

7,447,944

7,809,936

7,870,434

7,870,430

7,292,473

7,433,803

7,779,284

7,689,815

6,954,826

7,185,148

7,814,300

PATENT ASSIGNMENT

WHEREAS, **Freescale Semiconductor, Inc.** ("Seller") is the owner of certain United States and/or foreign patents and/or patent applications listed in Exhibit A annexed hereto (collectively referred to as the "Patents"); and

WHEREAS, **Rambus Inc.**, ("Rambus") is desirous of acquiring Seller's right, title and interest in, to and under the said Patents (and all foreign counterparts and related foreign patents).

Now, Therefore,

For good and valuable consideration, the receipt of which is hereby acknowledged, Seller hereby sells, assigns, transfers and sets over to Rambus all rights, title, and interest in and to the Patents aforesaid, any inventions disclosed in said Patents, any reissue or reissues of said Patents already granted or which may be granted, any certificates of reexamination already granted or which may be granted the same to be held and enjoyed by Rambus as fully and entirely as the same would have been held and enjoyed by Seller, if this assignment had not been made; such rights, title, and interest include, without limitation, the right to file, prosecute, and maintain patents on said inventions, an assignment of all claims for equitable relief and damages by reason of past, current, and future infringement and/or provisional rights under said Patents, with the right to sue for, and collect the same for its own use and behalf, and for the use and behalf of its successors, assigns or other legal representatives.

Seller assigns and empowers Rambus, its successors, assigns, or other legal representatives all rights to make applications for patents or other forms of protection for said inventions and to prosecute such applications and the Patents, as well as to claim and receive the benefit of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by any convention which may henceforth be substituted for it, and the right to invoke and claim such right of priority without further written or oral authorization.

And, Seller hereby authorizes and requests the respective patent office or governmental agency in each jurisdiction to issue any and all patents, certificates of invention, utility models or other governmental grants or issuances that may be granted upon any of the Patents in the name of Rambus.

In Witness Whereof, Seller has executed this Assignment by its duly authorized representative effective as of July 31, 2011.

Freescale Semiconductor, Inc.

By: [Signature]
Name: Jennifer B. Wharmett
Title: VP & Chief IP Counsel
Date: July 29, 2011

State of Texas

County of Williamson/Travis

On this 29th day of JULY, 2011 before me personally appeared JENNIFER WHARMETT to me known to be the person described herein and who executed the foregoing instrument, and acknowledged that he executed the same knowingly and willingly and for the purposes therein contained.

Witness my hand and Notarial seal the day and year immediately above written.

[Signature]
Notary Public

My Commission Expires:

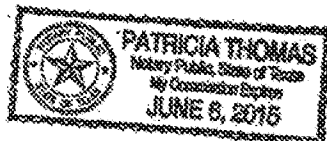


Exhibit A

| Patent # | Doctype | Class | Pub No | Pub Date | Pub Type | Inventor 1 | Title |
|----------|-----------|-------|----------------|------------------|----------|------------------------|---|
| 1 | SC13886TH | PCT | | PCTUS05/46520 | INACTIVE | MOYER, WILLIAM C. | METHOD AND APPARATUS FOR QUALIFYING DEBUG OPERATION USING SOURCE INFORMATION |
| | SC13886TH | TAMW | | NA | INACTIVE | MOYER, WILLIAM C. | METHOD AND APPARATUS FOR QUALIFYING DEBUG OPERATION USING SOURCE INFORMATION |
| | SC13886TH | USA | 7237149 | 11/085398 | GRANTED | MOYER, WILLIAM C. | METHOD AND APPARATUS FOR QUALIFYING DEBUG OPERATION USING SOURCE INFORMATION |
| 2 | NT10751TS | JAPA | | 2510-520016 | FILED | EGUCHI, RICHARD KAZUKI | NON-VOLATILE MEMORY HAVING A DYNAMICALLY ADJUSTABLE SOFT PROGRAM VERIFY VOLTAGE LEVEL AND METHOD THEREFOR |
| | NT10751TS | KORS | | 10-0010-7092351 | FILED | EGUCHI, RICHARD KAZUKI | NON-VOLATILE MEMORY HAVING A DYNAMICALLY ADJUSTABLE SOFT PROGRAM VERIFY VOLTAGE LEVEL AND METHOD THEREFOR |
| | NT10751TS | PCT | | PCTRU0205/057222 | INACTIVE | EGUCHI, RICHARD KAZUKI | NON-VOLATILE MEMORY HAVING A DYNAMICALLY ADJUSTABLE SOFT PROGRAM VERIFY VOLTAGE LEVEL AND METHOD THEREFOR |
| | NT10751TS | TAMW | | 097125121 | FILED | EGUCHI, RICHARD KAZUKI | NON-VOLATILE MEMORY HAVING A DYNAMICALLY ADJUSTABLE SOFT PROGRAM VERIFY VOLTAGE LEVEL AND METHOD THEREFOR |
| | NT10751TS | USA | 7649782 | 11/631168 | GRANTED | EGUCHI, RICHARD KAZUKI | NON-VOLATILE MEMORY HAVING A DYNAMICALLY ADJUSTABLE SOFT PROGRAM VERIFY VOLTAGE LEVEL AND METHOD THEREFOR |
| 3 | HC10083TC | USA | 7405746 | 11/489074 | GRANTED | RAMARAJU, RAMKRISHNA | STORAGE CIRCUIT WITH EFFICIENT SLEEP MODE AND METHOD |
| | HC10405TH | USA | 7453755 | 11/489084 | GRANTED | MOYER, WILLIAM C. | METHOD FOR POWERING AN ELECTRONIC DEVICE AND CIRCUIT |
| 4 | HC45128TH | USA | 7853834 | 11/668789 | GRANTED | MOYER, WILLIAM C. | INSTRUCTION-BASED TIMER CONTROL DURING DEBUG |
| 5 | HC48222TH | USA | 7831882 | 11/668787 | GRANTED | MOYER, WILLIAM C. | SELECTIVE TIMER CONTROL DURING SINGLE-STEP INSTRUCTION EXECUTION |
| 6 | SC15144TH | CHN | 200780006345.G | 200780006345.G | GRANTED | MOYER, WILLIAM C. | DATA PROCESSING SYSTEM HAVING ADDRESS TRANSLATION BYPASS AND METHOD THEREFOR |
| | SC15144TH | JAPA | | 2008-066490 | FILED | MOYER, WILLIAM C. | DATA PROCESSING SYSTEM HAVING ADDRESS TRANSLATION BYPASS AND METHOD THEREFOR |
| | SC15144TH | PCT | | PCTUS0207081191 | INACTIVE | MOYER, WILLIAM C. | DATA PROCESSING SYSTEM HAVING ADDRESS TRANSLATION BYPASS AND METHOD THEREFOR |
| | SC15144TH | TAMW | | 080103283 | FILED | MOYER, WILLIAM C. | DATA PROCESSING SYSTEM HAVING ADDRESS TRANSLATION BYPASS AND METHOD THEREFOR |
| | SC15144TH | USA | 7378807 | 11/360926 | GRANTED | MOYER, WILLIAM C. | DATA PROCESSING SYSTEM HAVING ADDRESS TRANSLATION BYPASS AND METHOD THEREFOR |
| 7 | NC18117TH | EPC | | 07840437.3 | FILED | MOYER, WILLIAM C. | DATA PROCESSING SYSTEM HAVING CACHE MEMORY DEBUGGING SUPPORT AND METHOD THEREFOR |
| | NC18117TH | JAPA | | 2008-430482 | FILED | MOYER, WILLIAM C. | DATA PROCESSING SYSTEM HAVING CACHE MEMORY DEBUGGING SUPPORT AND METHOD THEREFOR |
| | NC18117TH | PCT | | PCTUS0207/073830 | INACTIVE | MOYER, WILLIAM C. | DATA PROCESSING SYSTEM HAVING CACHE MEMORY DEBUGGING SUPPORT AND METHOD THEREFOR |
| | NC18117TH | USA | 7555805 | 11/636685 | GRANTED | MOYER, WILLIAM C. | DATA PROCESSING SYSTEM HAVING CACHE MEMORY DEBUGGING SUPPORT AND METHOD THEREFOR |
| 8 | SC13558TH | EPC | | 08730442.2 | INACTIVE | HU, CARL C. | PREDICTIVE METHODS AND APPARATUS FOR NON-VOLATILE MEMORY |
| | SC13558TH | JAPA | | 2008-508837 | FILED | HU, CARL C. | PREDICTIVE METHODS AND APPARATUS FOR NON-VOLATILE MEMORY |
| | SC13558TH | PCT | | PCTUS0206/7123 | INACTIVE | HU, CARL C. | PREDICTIVE METHODS AND APPARATUS FOR NON-VOLATILE MEMORY |
| | SC13558TH | USA | 7447344 | 11/118827 | GRANTED | HU, CARL C. | PREDICTIVE METHODS AND APPARATUS FOR NON-VOLATILE MEMORY |
| 9 | SC14886TH | USA | 7808938 | 11/481611 | GRANTED | ENLOTH, BRIAN W. | METHOD AND APPARATUS FOR RECONFIGURING A REMOTE DEVICE |
| 10 | TS48235TH | USA | 7870434 | 12/040221 | GRANTED | MOYER, WILLIAM C. | METHOD AND APPARATUS FOR MASKING DEBUG RESOURCES |

| Family # | Applet # | Class | Patent # | App # | Status | Inventor | Title | |
|-----------|------------|---------|----------------|-------------------|-------------------|------------------------|---|---|
| 11 | TS48241TH | CHN | | 200802105425.8 | FILED | ROBERTSON, ALISTAIR P. | METHOD AND APPARATUS FOR SHARING DEBUG RESOURCES | |
| | TS48241TH | JAPA | | 2010-548758 | FILED | ROBERTSON, ALISTAIR P. | METHOD AND APPARATUS FOR SHARING DEBUG RESOURCES | |
| | TS48241TH | PCT | | PCT/US2008/031769 | INACTIVE | ROBERTSON, ALISTAIR P. | METHOD AND APPARATUS FOR SHARING DEBUG RESOURCES | |
| | TS48241TH | TAMW | | 098104526 | FILED | ROBERTSON, ALISTAIR P. | METHOD AND APPARATUS FOR SHARING DEBUG RESOURCES | |
| | TS48241TH | USA | 7870430 | | 12040215 | GRANTED | ROBERTSON, ALISTAIR P. | METHOD AND APPARATUS FOR SHARING DEBUG RESOURCES |
| 12 | SC14228TP | CHN | | 200805032778.4 | FILED | NISET, MARTIN L. | METHOD AND APPARATUS FOR PROGRAMMING/ERASING A NON-VOLATILE MEMORY | |
| | SC14228TP | EPC | | 06802845.3 | FILED | NISET, MARTIN L. | METHOD AND APPARATUS FOR PROGRAMMING/ERASING A NON-VOLATILE MEMORY | |
| | SC14228TP | INDI | | 11203DELNP02008 | FILED | NISET, MARTIN L. | METHOD AND APPARATUS FOR PROGRAMMING/ERASING A NON-VOLATILE MEMORY | |
| | SC14228TP | JAPA | | 2008-520122 | FILED | NISET, MARTIN L. | METHOD AND APPARATUS FOR PROGRAMMING/ERASING A NON-VOLATILE MEMORY | |
| | SC14228TP | KORS | | 10-2008-7005633 | FILED | NISET, MARTIN L. | METHOD AND APPARATUS FOR PROGRAMMING/ERASING A NON-VOLATILE MEMORY | |
| | SC14228TP | PCT | | PCT/US2008/004318 | INACTIVE | NISET, MARTIN L. | METHOD AND APPARATUS FOR PROGRAMMING/ERASING A NON-VOLATILE MEMORY | |
| | SC14228TP | TAMW | | 098131909 | FILED | NISET, MARTIN L. | METHOD AND APPARATUS FOR PROGRAMMING/ERASING A NON-VOLATILE MEMORY | |
| | SC14228TP | USA | 7892473 | | 11220730 | GRANTED | NISET, MARTIN L. | METHOD AND APPARATUS FOR PROGRAMMING/ERASING A NON-VOLATILE MEMORY |
| 13 | SC138002C | USA | 7433203 | | 18116872 | GRANTED | CIRCELLO, JOSEPH C. | PERFORMANCE MONITOR WITH PRECISE START/STOP CONTROL |
| 14 | YSM10145TH | USA | 7778284 | | 11878440 | GRANTED | KUMAR, SMOODEV | TECHNIQUES FOR OPERATING A PROCESSOR SUBSYSTEM |
| 15 | NC48313TH | CHN | | 200800114282.5 | FILED | MOYER, WILLIAM C. | DEBUG INSTRUCTIONS FOR USE IN A DATA PROCESSING SYSTEM | |
| | NC48313TH | JAPA | | 2010-528918 | FILED | MOYER, WILLIAM C. | DEBUG INSTRUCTIONS FOR USE IN A DATA PROCESSING SYSTEM | |
| | NC48313TH | PCT | | PCT/US2008/075681 | INACTIVE | MOYER, WILLIAM C. | DEBUG INSTRUCTIONS FOR USE IN A DATA PROCESSING SYSTEM | |
| | NC48313TH | TAMW | | 097135379 | FILED | MOYER, WILLIAM C. | DEBUG INSTRUCTIONS FOR USE IN A DATA PROCESSING SYSTEM | |
| | NC48313TH | USA | 7888815 | | 11871847 | GRANTED | MOYER, WILLIAM C. | DEBUG INSTRUCTIONS FOR USE IN A DATA PROCESSING SYSTEM |
| 16 | SC12820TH | CHN | 200480913704.7 | | 200480013704.7 | GRANTED | MOYER, WILLIAM C. | READ ACCESS AND STORAGE CIRCUITRY READ ALLOCATION APPLICABLE TO A CACHE |
| | SC12820TH | EPC | | | 04785623.2 | INACTIVE | MOYER, WILLIAM C. | READ ACCESS AND STORAGE CIRCUITRY READ ALLOCATION APPLICABLE TO A CACHE |
| | SC12820TH | JAPA | | | 2008-532517 | FILED | MOYER, WILLIAM C. | READ ACCESS AND STORAGE CIRCUITRY READ ALLOCATION APPLICABLE TO A CACHE |
| | SC12820TH | KORS | | | 10-2008-7022289 | FILED | MOYER, WILLIAM C. | READ ACCESS AND STORAGE CIRCUITRY READ ALLOCATION APPLICABLE TO A CACHE |
| | SC12820TH | PCT | | | PCT/US04/12372 | INACTIVE | MOYER, WILLIAM C. | READ ACCESS AND STORAGE CIRCUITRY READ ALLOCATION APPLICABLE TO A CACHE |
| | SC12820TH | TAMW | | | 093112640 | INACTIVE | MOYER, WILLIAM C. | READ ACCESS AND STORAGE CIRCUITRY READ ALLOCATION APPLICABLE TO A CACHE |
| | SC12820TH | USA | 6954828 | | 10442718 | GRANTED | MOYER, WILLIAM C. | READ ACCESS AND STORAGE CIRCUITRY READ ALLOCATION APPLICABLE TO A CACHE |
| SC12820TH | USA | 7185148 | | 11197836 | GRANTED | MOYER, WILLIAM C. | READ ACCESS AND STORAGE CIRCUITRY READ ALLOCATION APPLICABLE TO A CACHE | |
| 17 | NC45368TH | USA | | | 12/872771 | FILED | MOYER, WILLIAM C. | CONFIGURABLE PIPELINE BASED ON ERROR DETECTION MODE IN A DATA PROCESSING SYSTEM |
| | NC45368TH | USA | 7814300 | | 12/112582 | GRANTED | MOYER, WILLIAM C. | CONFIGURABLE PIPELINE TO PROCESS AN OPERATION AT ALTERNATE PIPELINE STAGES DEPENDING ON ECC/PARITY PROTECTION MODE OF MEMORY ACCESS |
| 18 | NC45338TH | CHN | | | 200902121422.1 | FILED | MOYER, WILLIAM C. | SELECTIVELY PERFORMING A SINGLE CYCLE WRITE OPERATION WITH ECC IN A DATA PROCESSING SYSTEM |
| | NC45338TH | KORS | | | 10-2010-7025795 | FILED | MOYER, WILLIAM C. | SELECTIVELY PERFORMING A SINGLE CYCLE WRITE OPERATION WITH ECC IN A DATA PROCESSING SYSTEM |
| | NC45338TH | PCT | | | PCT/US2008/004871 | INACTIVE | MOYER, WILLIAM C. | SELECTIVELY PERFORMING A SINGLE CYCLE WRITE OPERATION WITH ECC IN A DATA PROCESSING SYSTEM |
| | NC45338TH | TAMW | | | 098107903 | FILED | MOYER, WILLIAM C. | SELECTIVELY PERFORMING A SINGLE CYCLE WRITE OPERATION WITH ECC IN A DATA PROCESSING SYSTEM |
| | NC45338TH | USA | | | 12/112589 | FILED | MOYER, WILLIAM C. | SELECTIVELY PERFORMING A SINGLE CYCLE WRITE OPERATION WITH ECC IN A DATA PROCESSING SYSTEM |