

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT5177836

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
THOMAS J. GIOVANNINI	07/18/2011
SCOTT C. BEST	07/14/2011
LEI LUO	07/19/2011
IAN SHAEFFER	07/21/2011
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	RAMBUS INC
<b>Street Address:</b>	1050 ENTERPRISE WAY #700
<b>City:</b>	SUNNYVALE
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	94089
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15794177
<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>	
<b>Phone:</b>	408-462-8000
<b>Email:</b>	tfriedman@rambus.com
<b>Correspondent Name:</b>	TAMMY FRIEDMAN
<b>Address Line 1:</b>	1050 ENTERPRISE WAY #700
<b>Address Line 4:</b>	SUNNYVALE, CALIFORNIA 94089
<b>ATTORNEY DOCKET NUMBER:</b>	RA908.PCT.C1C1.US
<b>NAME OF SUBMITTER:</b>	TAMMY FRIEDMAN
<b>SIGNATURE:</b>	/TAMMY FRIEDMAN/
<b>DATE SIGNED:</b>	10/08/2018
<b>Total Attachments: 6</b>	
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**ASSIGNMENT  
OF PATENT APPLICATION**

WHEREAS, the following parties:

<u>Name</u>	<u>Address</u>
Thomas J. Giovannini	3614 Deedham Drive San Jose, CA 95148
Scott C. Best	4283 Ponce Drive Palo Alto, CA 94306
Lei Luo	1048 Bellenden Dr. Durham, NC 27713
Ian Shaeffer	23 Jackson Street Los Gatos, CA 95030

hereinafter referred to as ASSIGNOR, has/have invented certain new and useful improvements ("invention(s)") as described and set forth in the below-identified utility or provisional application entitled:

**MEMORY COMPONENTS AND CONTROLLERS THAT CALIBRATE  
MULTIPHASE SYNCHRONOUS TIMING REFERENCES**

which was:

- executed on even date herewith,
- filed with the United States Patent and Trademark Office (USPTO) on April 22, 2011 and assigned Serial No. 61/478,132, and
- further described in U.S. Provisional application entitled \_\_\_\_\_, filed with the USPTO on \_\_\_\_\_, and assigned Serial No. \_\_\_\_\_.

*Note: Only one of the first two checkboxes will be checked. The additional checkbox(s) will be checked, only if appropriate.*

WHEREAS, Rambus Inc., having a place of business at 1050 Enterprise Way, Suite 700, Sunnyvale, California 94089, hereinafter referred to as ASSIGNEE, is desirous of acquiring ASSIGNOR'S interest in and to said invention(s), said utility application, said provisional application, and any U.S. and foreign patents which are related to the same.

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN: Be it known that, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged by ASSIGNOR, ASSIGNOR has sold, assigned and transferred and does hereby sell, assign and transfer unto ASSIGNEE, and ASSIGNEE'S successors and assigns, (a) the entire right, title and interest, for the United States of America, in and to said invention(s), said utility application, and said provisional application, and all the rights and privileges in any application and under any and all patents that may be granted in the U.S. for said inventions, including all corresponding provisional, continuation, continuation-in-part, divisional, reissue, and reexamination applications; and (b) the entire right, title and interest in and to said inventions(s), said utility application, and said provisional application, for all countries foreign to the U.S., including all rights of priority arising from them, and all the rights and privileges under any and all forms of protection, including patents, that may be granted in said countries foreign to the U.S. for them.

ASSIGNOR authorizes ASSIGNEE to make application for such protection in its own name and maintain such protection in any and all countries foreign to the U.S., and to invoke and claim for any application for patent or other form of protection for said Inventions, without further authorization from ASSIGNOR, any and all benefits, including the right of priority provided by any and all treaties, conventions, or agreements.

ASSIGNOR hereby consents that a copy of this assignment shall be deemed a full legal and formal equivalent of any document which may be required in any country in proof of the right of ASSIGNEE to apply for patent or other form of protection for said Inventions, said utility application, or said provisional application and to claim the aforesaid benefit of the right of priority.

ASSIGNOR requests that any and all patents for said inventions be issued to ASSIGNEE in the U.S. and to ASSIGNEE in all countries foreign to the U.S., or to such nominee as ASSIGNEE may designate.

ASSIGNOR covenants and agrees that, when requested, ASSIGNOR shall, without charge to ASSIGNEE but at ASSIGNEE'S expense, sign all papers, take all rightful oaths, and do all acts which may be necessary, desirable, or convenient in connection with the patent applications, patents, or other forms of protection of said invention(s), and for the defense and protection thereof if challenged in the court of law.

ASSIGNOR authorizes ASSIGNEE or its agents to insert, on ASSIGNOR'S behalf, the filing date and/or serial number above pertaining to the utility application and/or the provisional application, if not known as of the date of execution of this document.

IN WITNESS WHEREOF, we have hereunto signed our names on the day and year set forth below.

*Thomas J. Giovannini*  
Inventor's Signature

Date: 7/18/11

Thomas J. Giovannini  
Inventor's Printed Name

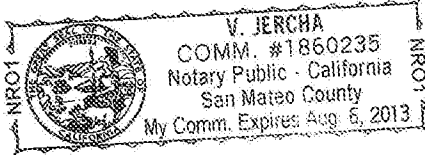
STATE OF CALIFORNIA        )  
  ) SS  
COUNTY OF SANTA CLARA    )

On this 18<sup>th</sup> day of July, 2011, before me, personally appeared the above named who proved to me on the basis of satisfactory evidence to be the person(s) whose names(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY of PERJURY that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

*V. Jercha*  
NOTARY PUBLIC



My Commission Expires Aug 6, 2013

[Signature]  
Inventor's Signature

Date: 14 July 11

Scott C. Best  
Inventor's Printed Name

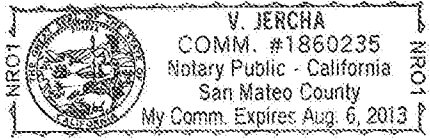
STATE OF CALIFORNIA        )  
  ) SS  
COUNTY OF SANTA CLARA    )

On this 14<sup>th</sup> day of July, 2011, before me, personally appeared the above named who proved to me on the basis of satisfactory evidence to be the person(s) whose names(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY of PERJURY that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

[Signature]  
NOTARY PUBLIC



My Commission Expires Aug 6, 2013

*Lei Luo*  
*7/19/2011*

Attorney Docket No. 765.0017P

Date: 7/19/2011

\_\_\_\_\_  
Inventor's Signature

Lei Luo  
\_\_\_\_\_  
Inventor's Printed Name

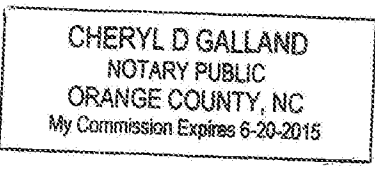
STATE OF North Carolina )  
  ) SS  
COUNTY OF Orange )

On this 19 day of July, 2010, before me, personally appeared the above named who proved to me on the basis of satisfactory evidence to be the person(s) whose names(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s),or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY of PERJURY that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

*Cheryl D Galland*  
\_\_\_\_\_  
NOTARY PUBLIC



My Commission Expires 6/20/2015

[Signature]  
Inventor's Signature

Date: 7/21/11

Ian Shaeffer  
Inventor's Printed Name

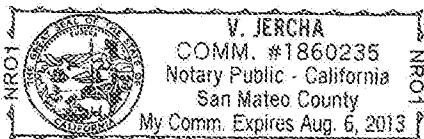
STATE OF CALIFORNIA            )  
  ) SS  
COUNTY OF SANTA CLARA       )

On this 21st day of July, 2011, before me, personally appeared the above named who proved to me on the basis of satisfactory evidence to be the person(s) whose names(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY of PERJURY that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

[Signature]  
NOTARY PUBLIC



My Commission Expires Aug 6, 2013