## 503884198 06/22/2016

# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3930847

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

### **CONVEYING PARTY DATA**

Name	Execution Date
BRIAN S. LEIBOWITZ	11/23/2009
HAE-CHANG LEE	12/17/2009
JIHONG REN	12/01/2009
RUWAN RATNAYAKE	12/10/2009

### **RECEIVING PARTY DATA**

Name:	Rambus Inc.
Street Address:	1050 Enterprise Way, Suite 700
City:	Sunnyvale
State/Country:	CALIFORNIA
Postal Code:	94089

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

Property Type	Number
Application Number:	15178493

## **CORRESPONDENCE DATA**

Fax Number:

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: 408-462-8000
Email: twain@rambus.com
Correspondent Name: TARISA WAIN

Address Line 1: 1050 ENTERPRISE WAY #700
Address Line 4: SUNNYVALE, CALIFORNIA 94089

ATTORNEY DOCKET NUMBER:	RA509.PCT.C1C1C1.US
NAME OF SUBMITTER:	TARISA WAIN
SIGNATURE:	/Tarisa Wain/
DATE SIGNED:	06/22/2016

**Total Attachments: 4** 

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former PTO/SB/15 (8-00) Modified LCLK&M

X MANA MAR ROMAN MANA RAMON COMO MONO CAMA A AMARINA	Docket Number (Optional)	
ASSIGNMENT OF UTILITY APPLICATION	RAMBÚS 3.3-022	
Whereas, I, Brian S. Leibowitz		
425 14th Street, #4; San Francisco, California 94103	of	
hereafter referred to as assignor, have with others invented certi-	ain new and useful improvements in	
EDGE BASED PARTIAL RESPONSE EQUALIZATIO	·	
X for which an application for a United States Letters Pate		
Application Number 12/513,898		
for which an application for a United States Letters Pater	nt was executed by me on	
x for which an International Application was filed on	November 9, 2007 , as	
PCT/US2007/023600 , designating the United	States.	
Whereas, Rambus, Inc.		
a corporation of <u>Delaware</u> herein referred to as "assignee" whos	se mailing address is	
4440 El Camino Real; Los Altos, California 94022	training address to	
is desirous of acquiring the entire right, title and interest in the sa	ame;	
NOW, THEREFORE, in consideration of the sum of one dollars (\$ 1.00 ), the receipt whereof is acknowledged, and other good and valuable consideration, I as assignor hereby sell, assign and set over to said assignee my entire right, title and interest for the United States of America and all other countries in and to said invention and the aforesaid utility patent application and all original, divisional, continuation, substitute or reissue applications and patents applied for or granted therefor in the United States of America and all other countries, for said invention, including without limitation all applications and patents for said invention claiming priority or benefit of the aforesaid utility application pursuant to any law or treaty, and including all claims for damages by reason of past infringement with the right to sue for and collect the same for its own use and the use of its successors, assigns and legal representatives, and including the right to claim such priority or benefit and the Commissioner of Patents and Trademarks is hereby authorized and requested to issue all patents on said improvements or resulting therefrom to said assignee herein, as assignee of the entire interest therein; and the undersigned for me and my legal representatives, heirs and assigns do hereby agree and covenant without further remuneration, to execute and deliver all original, divisional, continuation, reissue and other applications for Letters Patent on said improvements and all assignments thereof to said assignee or its assigns, to communicate to said assignee or its representatives all facts known to the undersigned respecting said improvements, whenever requested, to testify in any interferences or other legal proceedings in which any of said applications or patents may become involved, to sign all lawful papers, make all rightful oaths, and to do generally everything necessary to aid assignee, its successors, assigns and nominees to obtain patent protection for said improvements in all countries, the expenses in		
And I do hereby authorize my attorneys to insert on this deed the when known	e filing date and application number of said application	
11/23/03 (Date)	Brian SŁeibowitz	
State of California ) SS:	DUGITALEDOMIC	
County of SAME CLARA )		
On Associated by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.		
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.		
WITNESS my hand and official seal:  (Notary Public)	DOROTHY L. LEVRI  Commission # 1835908  Notary Public - California	
(Notary Public)	(MESMAS CASALS Ounly My Comm. Expires Mar 10, 2013	
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Rambus 3 3-022 - Assignment

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A AND AND A DOLL OF A DOLL	Docket Number (Optional)		
ASSIGNMENT OF UTILITY APPLICATION	RAMBUS 3.3-022		
Whereas, I, Hae-Chang Lee			
971 Seena Avenue; Los Altos, California 94024			
hereafter referred to as assignor, have with others invented cert	ain new and useful improvements in		
EDGE BASED PARTIAL RESPONSE EQUALIZATIO	N		
X for which an application for a United States Letters Pat	ent was filed onMay 7, 2009		
Application Number 12/513,898			
x for which an application for a United States Letters Pater	nt was executed by me on,		
x for which an International Application was filed on	November 9, 2007 , as		
PCT/US2007/023600 , designating the United	States.		
Whereas, Rambus, Inc.	Carlos (Maior and Ariana Ba		
a corporation of <u>Delaware</u> herein referred to as "assignee" whose 4440 El Camino Real; Los Altos, California 94022	se mailing address is		
is desirous of acquiring the entire right, title and interest in the si	arne:		
	dollars (\$ <u>1.00</u> ), the receipt whereof		
is acknowledged, and other good and valuable consideration,	as assignor hereby sell, assign and set over to said		
assignee my entire right, tille and interest for the United Stat invention and the aforesaid utility patent application and all or			
applications and patents applied for or granted therefor in the	United States of America and all other countries, for		
said invention, including without limitation all applications and put the aforesaid utility application pursuant to any law or treaty, a			
infringement with the right to sue for and collect the same for it	s own use and the use of its successors, assigns and		
legal representatives, and including the right to claim such pri	ority or benefit and the Commissioner of Patents and		
Trademarks is hereby authorized and requested to issue all particles are the entire interest to assignee of the entire interest to	herein; and the undersigned for me and my legal		
representatives, heirs and assigns do hereby agree and covena	nt without further remuneration, to execute and deliver		
all original, divisional, continuation, reissue and other applicat assignments thereof to said assignee or its assigns, to commu			
known to the undersigned respecting said improvements, when	ever requested, to testify in any interferences or other		
legal proceedings in which any of said applications or patents all rightful oaths, and to do generally everything necessary to a			
obtain patent protection for said improvements in all countries,			
and paid by said assignee.  And I do hereby authorize my attorneys to insert on this deed th	a filing data and ambling biseries		
turban lengum	e ming date and application number of said application		
when known.			
(Date) State of California State of California	Hae-Chang Lee		
State of California ) SS:  County of Santa Classes )			
and the second s			
On <u>/ No. 1 / No. 10 </u>			
subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized			
capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.			
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.			
WITNESS my hand and official seal .			
	DOROTHY L. LEVIN Commission # 1835908		
(Notary Public)			
s	Santa Clara County		
X *Total of 4 forms are submitted.	"The transmitted that the transmitted that the state of t		

	Docket Number (Optional)		
ASSIGNMENT OF UTILITY APPLICATION	RAMBUS 3.3-022		
Whereas, I, Jihong Ren			
1185 Kent Avenue, Sunnyvale, CA 94087			
hereafter referred to as assignor, have with others invented certi-	ain new and useful improvements in		
EDGE BASED PARTIAL RESPONSE EQUALIZATIO	N		
x for which an application for a United States Letters Pate	ent was filed on May 7, 2009		
Application Number 12/513,898			
x for which an application for a United States Letters Pater	nt was executed by me on,		
x for which an International Application was filed on November 9, 2007 , as			
PCT/US2007/023600 , designating the United And	States.		
Whereas, Rambus, Inc.			
a corporation of Delaware herein referred to as "assignee" whose	se mailing address is		
4440 El Camíno Real; Los Altos, California 94022			
is desirous of acquiring the entire right, title and interest in the sa	ame;		
NOW, THEREFORE, in consideration of the sum of one dollars (\$ 1.00 ), the receipt whereof is acknowledged, and other good and valuable consideration, I as assignor hereby sell, assign and set over to said assignee my entire right, title and interest for the United States of America and all other countries in and to said invention and the aforesaid utility patent application and all original, divisional, continuation, substitute or reissue applications and patents applied for or granted therefor in the United States of America and all other countries, for said invention, including without limitation all applications and patents for said invention claiming priority or benefit of the aforesaid utility application pursuant to any law or treaty, and including all claims for damages by reason of past infringement with the right to sue for and collect the same for its own use and the use of its successors, assigns and legal representatives, and including the right to claim such priority or benefit and the Commissioner of Patents and Trademarks is hereby authorized and requested to issue all patents on said improvements or resulting therefrom to said assignee herein, as assignee of the entire interest therein; and the undersigned for me and my legal representatives, heirs and assigns do hereby agree and covenant without further remuneration, to execute and deliver all original, divisional, continuation, reissue and other applications for Letters Patent on said improvements and all assignments thereof to said assignee or its assigns, to communicate to said assignee or its representatives all facts known to the undersigned respecting said improvements, whenever requested, to testify in any interferences or other legal proceedings in which any of said applications or patents may become involved, to sign all lawful papers, make all rightful oaths, and to do generally everything necessary to aid assignee, its successors, assigns and nominees to obtain patent protection for said improvements in all countries, the expenses in			
And I do hereby authorize my attorneys to insert on this deed the when known.	e tiling date and application number of said application		
(Date)	libora Pan		
State of California ) SS:	Jihong Ren		
County of Salary for Confidence )			
**************************************	and a second of the contract o		
On	d to me that he/she executed the same in his/her		
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.			
WITNESS my hand and official seal. (Notary Public)	OOROTHY L. LEVIN Commission # 1835908 (NOMB/SFAbbic - Californis Santa Clara County		
x *Total of 4 forms are submitted.	By Comm. Expires Mar 10, 2013 &		

# former PTO/SB/15 (8-00) Modified LDLK&M Docket Number (Optional) ASSIGNMENT OF UTILITY APPLICATION **RAMBUS 3.3-022** Whereas, I, Ruwan Ratnayake 305 Elan Village Lane, Apt. 304, San Jose, CA 95134 hereafter referred to as assignor, have with others invented certain new and useful improvements in EDGE BASED PARTIAL RESPONSE EQUALIZATION x for which an application for a United States Letters Patent was filed on May 7, 2009 Application Number 12/513,898 for which an application for a United States Letters Patent was executed by me on for which an International Application was filed on November 9, 2007 PCT/US2007/023600 , designating the United States. And Whereas, Rambus, Inc. a corporation of Delaware herein referred to as "assignee" whose mailing address is 4440 El Camino Real; Los Altos, California 94022 is desirous of acquiring the entire right, title and interest in the same; one NOW, THEREFORE, in consideration of the sum of dollars (\$ 1.00 ), the receipt whereof is acknowledged, and other good and valuable consideration. I as assignor hereby sell, assign and set over to said assignee my entire right, title and interest for the United States of America and all other countries in and to said invention and the aforesaid utility patent application and all original, divisional, continuation, substitute or reissue applications and patents applied for or granted therefor in the United States of America and all other countries, for said invention, including without limitation all applications and patents for said invention claiming priority or benefit of the aforesaid utility application pursuant to any law or treaty, and including all claims for damages by reason of past infringement with the right to sue for and collect the same for its own use and the use of its successors, assigns and legal representatives, and including the right to claim such priority or benefit and the Commissioner of Patents and Trademarks is hereby authorized and requested to issue all patents on said improvements or resulting therefrom to said assignee herein, as assignee of the entire interest therein; and the undersigned for me and my legal representatives, heirs and assigns do hereby agree and covenant without further remuneration, to execute and deliver all original, divisional, continuation, reissue and other applications for Letters Patent on said improvements and all assignments thereof to said assignee or its assigns, to communicate to said assignee or its representatives all facts known to the undersigned respecting said improvements, whenever requested, to testify in any interferences or other legal proceedings in which any of said applications or patents may become involved, to sign all lawful papers, make all rightful oaths, and to do generally everything necessary to aid assignee, its successors, assigns and nominees to obtain patent protection for said improvements in all countries, the expenses incident to said applications to be borne and paid by said assignee. And I do hereby authorize my attorneys to insert on this deed the filing date and application number of said application when known. Ruwan Ratnayake State of California County of \_\_\_\_, before me, <u>Obic X-log Co. Legalor</u> Ab Holling Abdulate personally appeared Ruwan Ratnayake, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument. I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct. WITNESS my hand and official seal.

(Notary Public)

DOROTHY L. LEVIN Commission # 1835908 N**(NOTARNOGE**AL\$ alliothis Santa Clara County My Comm. Expires May 10, 2015

\*Total of forms are submitted.

> **PATENT REEL: 038987 FRAME: 0738**

RECORDED: 06/22/2016