Form PTO-1594
(Rev. 03/01)
OMB No. 0651-0027 (exp. 5/31/2002)

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U.S. DEPARTMENT OF COMMERCE
U.S. Patent and Trademark Office

▼ ▼ ▼

To the Honorable Commissioner of Pa... ...rademarks: Please record the attached original documents or copy thereof.

OIPE
AUG 27 2001
PATENT & TRADEMARK OFFICE

1. Name of conveying party(ies):	2. Name and address of receiving party(ies)
RiverDelta Networks, Inc. 08/27/01	Name: Silicon Valley Bank
	DBA: Silicon Valey East
	Internal Address:
☐ Individual(s)　☐ Association	Street Address: 3003 Tasman Drive
☐ General Partnership　☐ Limited Partnership	City: Santa Clara State: CA Zip: 95054
☒ Corporation-State　DE	☐ Individual(s) citizenship
☐ Other	☐ Association
	☐ General Partnership
Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No	☐ Limited Partnership

3. Nature of conveyance:

☐ Assignment　☐ Merger
☒ Security Agreement　☐ Change of Name
☐ Other _____

Execution Date: July 11, 2001

☐ Corporation-State
☒ Other　CA-Chartered Bank

If assignee is not domiciled in the United States, a domestic representative designation is attached: ☐ Yes ☐ No
(Designations must be a separate document from assignment)
Additional name(s) & address(es) attached? ☐ Yes ☒ No

4. Application number(s) or registration number(s):

A. Trademark Application No.(s)　　　　　B. Trademark Registration No.(s)

Additional number(s) attached ☒ Yes ☐ No

5. Name and address of party to whom correspondence concerning document should be mailed:	6. Total number of applications and registrations involved: 9
Name: Christopher E. Kondracki	7. Total fee (37 CFR 3.41)............$ 240.00
Internal Address:	☒ Enclosed
	☐ Authorized to be charged to deposit account
Street Address: 2001 Jefferson Davis, Hwy., Suite 505	8. Deposit account number:
City: Arlington State: VA Zip: 22202	(Attach duplicate copy of this page if paying by deposit account)

DO NOT USE THIS SPACE

9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Christopher E. Kondracki	_(signature)_	8/27/01
Name of Person Signing	Signature	Date

Total number of pages including cover sheet, attachments, and document: 54

Mail documents to be recorded with required cover sheet information to:
Commissioner of Patent & Trademarks, Box Assignments
Washington, D.C. 20231

08/29/2001 TDIAZ1   00000158 76190566

01 FC:481　　　　　　40.00 OP
02 FC:482　　　　　　200.00 OP

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TRADEMARK
REEL: 002358 FRAME: 0739

Trademark	Owner	Application No.	Filing Date	Classes
BSR	RiverDelta Networks, Inc.	76/190,566	January 5, 2001	9, 42
BSR	RiverDelta Networks, Inc.	75/935,978	March 3, 2000	9, 37, 42
Misc. Design (Logo)	RiverDelta Networks, Inc.	75/933,388	March 2, 2000	9, 37, 42
RDN	RiverDelta Networks, Inc.	75/935,672	March 3, 2000	9, 37, 42
RDN	RiverDelta Networks, Inc.	76/191,770	January 5, 2001	9, 42
RIVERDELTA	RiverDelta Networks, Inc.	75/933,602	March 1, 2000	9, 37, 42
RIVERDELTA	RiverDelta Networks, Inc.	76/190,567	January 5, 2001	9, 42
RIVERGUIDE	RiverDelta Networks, Inc.	76/193,847	January 15, 2001	9, 37, 42
SMARTFLOW	RiverDelta Networks, Inc.	75/935,754	March 3, 2000	9, 37, 42

INTELLECTUAL PROPERTY SECURITY AGREEMENT

This Intellectual Property Security Agreement (this "IP Agreement") is made as of the *11 th* day of *July*, 2001 by and between **RIVERDELTA NETWORKS, INC.**, a Delaware corporation with its principal place of business at 3 Highwood Drive East, Tewksbury, Massachusetts 01876 ("Grantor"), and **SILICON VALLEY BANK**, a California-chartered bank, with its principal place of business at 3003 Tasman Drive, Santa Clara, California 95054 and with a loan production office located at One Newton Executive Park, Suite 200, 2221 Washington Street, Newton, Massachusetts 02462, doing business under the name "Silicon Valley East" ("Lender").

RECITALS

A.   Lender has agreed to make advances of money and to extend certain financial accommodations to Grantor (the "Loan"), pursuant to a certain Loan and Security Agreement dated as of June 30, 2000, as amended by a certain Loan Modification Agreement dated as of November 29, 2000, as further amended by a certain Second Loan Modification Agreement dated as of May 31, 2001between Grantor and Lender, as amended from time to time (as amended, the "Loan Agreement"). The Loan is secured pursuant to the terms of the Loan Agreement. Lender is willing to enter into certain financial accommodations with Grantor, but only upon the condition, among others, that Grantor shall grant to Lender a security interest in certain Copyrights, Trademarks, Patents, and Mask Works, and other assets, to secure the obligations of Grantor under the Loan Agreement. Defined terms used but not defined herein shall have the same meanings as in the Loan Agreement.

B.   Pursuant to the terms of the Loan Agreement, Grantor has granted to Lender a security interest in all of Grantor's right title and interest, whether presently existing or hereafter acquired in, to and under all of the Collateral (as defined therein).

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged and intending to be legally bound, as collateral security for the prompt and complete payment when due of Grantor's Indebtedness (as defined below), Grantor hereby represents, warrants, covenants and agrees as follows:

1.   Grant of Security Interest. As collateral security for the prompt and complete payment and performance of all of Grantor's present or future indebtedness, obligations and liabilities to Lender (hereinafter, the "Indebtedness"), including, without limitation, under the Loan Agreement, Grantor hereby grants a security interest in all of Grantor's right, title and interest in, to and under its registered and unregistered intellectual property collateral (all of which shall collectively be called the "Intellectual Property Collateral"), including, without limitation, the following:

(a)   Any and all copyright rights, copyright applications, copyright registrations and like protections in each work or authorship and derivative work thereof, whether published or unpublished and whether or not the same also constitutes a trade secret, now or hereafter existing, created, acquired or held, including without limitation those set forth on **EXHIBIT A** attached hereto (collectively, the "Copyrights");

(b)   Any and all trade secrets, and any and all intellectual property rights in computer software and computer software products now or hereafter existing, created, acquired or held;

(c)   Any and all design rights which may be available to Grantor now or hereafter existing, created, acquired or held;

(d)   All patents, patent applications and like protections including, without limitation, improvements, divisions, continuations, renewals, reissues, extensions and continuations-in-part of the same, including without limitation the patents and patent applications set forth on **EXHIBIT A** attached hereto (collectively, the "Patents");

(e)   Any trademark and service mark rights, slogans, trade dress, and tradenames, whether registered or not, applications to register and registrations of the same and like protections, and the entire goodwill of the business of Grantor connected with and symbolized by such trademarks, including without limitation those set forth on **EXHIBIT A** attached hereto (collectively, the "Trademarks");

(f)   All mask works or similar rights available for the protection of semiconductor chips, now owned or hereafter acquired, including, without limitation those set forth on **EXHIBIT A** attached hereto (collectively, the "Mask Works");

(g)   Any and all claims for damages by way of past, present and future infringements of any of the rights included above, with the right, but not the obligation, to sue for and collect such damages for said use or infringement of the intellectual property rights identified above;

(h)   All licenses or other rights to use any of the Copyrights, Patents, Trademarks, or Mask Works and all license fees and royalties arising from such use to the extent permitted by such license or rights, including, without limitation those set forth on **EXHIBIT A** attached hereto; and

(i)   All amendments, extensions, renewals and extensions of any of the Copyrights, Trademarks, Patents, or Mask Works; and

(j)   All proceeds and products of the foregoing, including without limitation all payments under insurance or any indemnity or warranty payable in respect of any of the foregoing.

2.   <u>Authorization and Request.</u>   Grantor authorizes and requests that the Register of Copyrights and the Commissioner of Patents and Trademarks record this IP Agreement.

3.   <u>Covenants and Warranties.</u>   Grantor represents, warrants, covenants and agrees as follows:

(a)   Grantor is now the sole owner of the Intellectual Property Collateral, except for non-exclusive licenses granted by Grantor to its customers in the ordinary course of business, and except as set forth on Exhibit A.

(b)   Performance of this IP Agreement does not conflict with or result in a breach of any IP Agreement to which Grantor is bound.

(c)   During the term of this IP Agreement, Grantor will not transfer or otherwise encumber any interest in the Intellectual Property Collateral, except for non-exclusive licenses granted by Grantor in the ordinary course of business or as set forth in this IP Agreement. Notwithstanding the foregoing, Grantor has granted to Motorola, Inc. a security interest in the Grantor's Intellectual Property. The Lender hereby consents to such grant, provided, however, that such grant shall be at all times junior and subordinate to the grant of a security interest set forth herein;

(d)   To its knowledge, each of the Patents is valid and enforceable, and no part of the Intellectual Property Collateral has been judged invalid or unenforceable, in whole or in part, and no claim has been made that any part of the Intellectual Property Collateral violates the rights of any third party;

(e)   Grantor shall promptly advise Lender of any material adverse change in the composition of the Collateral, including but not limited to any subsequent ownership right of the Grantor in or to any Trademark, Patent, Copyright, or Mask Work specified in this IP Agreement;

(f)   Grantor shall (i) protect, defend and maintain the validity and enforceability of the Trademarks, Patents, Copyrights, and Mask Works, (ii) use its best efforts to detect infringements of the Trademarks, Patents, Copyrights, and Mask Works and promptly advise Lender in writing of material infringements detected and (iii) not allow any Trademarks, Patents, Copyrights, or Mask Works to be abandoned, forfeited or dedicated to the public without the written consent of Lender, which shall not be

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unreasonably withheld, unless Grantor determines that reasonable business practices suggest that abandonment is appropriate.

(g)   Grantor shall promptly register the most recent version of any of Grantor's Copyrights, if not so already registered, and shall, from time to time, execute and file such other instruments, and take such further actions as Lender may reasonably request from time to time to perfect or continue the perfection of Lender's interest in the Intellectual Property Collateral;

(h)   This IP Agreement creates, and in the case of after acquired Intellectual Property Collateral, this IP Agreement will create at the time Grantor first has rights in such after acquired Intellectual Property Collateral, in favor of Lender a valid and perfected first priority security interest and collateral assignment in the Intellectual Property Collateral in the United States securing the payment and performance of the obligations evidenced by the Loan Agreement upon making the filings referred to in clause (i) below;

(i)   To its knowledge, except for, and upon, the filing with the United States Patent and Trademark office with respect to the Patents and Trademarks and the Register of Copyrights with respect to the Copyrights and Mask Works necessary to perfect the security interests created hereunder and except as has been already made or obtained, no authorization, approval or other action by, and no notice to or filing with, any U.S. governmental authority or U.S. regulatory body is required either (i) for the grant by Grantor of the security interest granted hereby, or for the execution, delivery or performance of this IP Agreement by Grantor in the U.S. or (ii) for the perfection in the United States or the exercise by Lender of its rights and remedies thereunder;

(j)   All information heretofore, herein or hereafter supplied to Lender by or on behalf of Grantor with respect to the Intellectual Property Collateral is accurate and complete in all material respects.

(k)   Grantor shall not enter into any agreement that would materially impair or conflict with Grantor's obligations hereunder without Lender's prior written consent, which consent shall not be unreasonably withheld. Grantor shall not permit the inclusion in any material contract to which it becomes a party of any provisions that could or might in any way prevent the creation of a security interest in Grantor's rights and interest in any property included within the definition of the Intellectual property Collateral acquired under such contracts.

(l)   Upon any executive officer of Grantor obtaining actual knowledge thereof, Grantor will promptly notify Lender in writing of any event that materially adversely affects the value of any material Intellectual Property Collateral, the ability of Grantor to dispose of any material Intellectual Property Collateral of the rights and remedies of Lender in relation thereto, including the levy of any legal process against any of the Intellectual Property Collateral.

4.   Lender's Rights. Lender shall have the right, but not the obligation, to take, at Grantor's sole expense, any actions that Grantor is required under this IP Agreement to take but which Grantor fails to take, after fifteen (15) days' notice to Grantor. Grantor shall reimburse and indemnify Lender for all reasonable costs and reasonable expenses incurred in the reasonable exercise of its rights under this section 4.

5.   Inspection Rights. Grantor hereby grants to Lender and its employees, representatives and agents the right to visit, during reasonable hours upon prior reasonable written notice to Grantor, any of Grantor's plants and facilities that manufacture, install or store products (or that have done so during the prior six-month period) that are sold utilizing any of the Intellectual Property Collateral, and to inspect the products and quality control records relating thereto upon reasonable written notice to Grantor and as often as may be reasonably requested, but not more than once in every six (6) months; provided, however, nothing herein shall entitle Lender access to Grantor's trade secrets and other proprietary information.

6.   Further Assurances; Attorney in Fact.

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(a)   On a continuing basis, Grantor will, subject to any prior licenses, encumbrances and restrictions and prospective licenses, make, execute, acknowledge and deliver, and file and record in the proper filing and recording places in the United States, all such instruments, including appropriate financing and continuation statements and collateral agreements and filings with the United States Patent and Trademarks Office and the Register of Copyrights, and take all such action as may reasonably be deemed necessary or advisable, or as requested by Lender, to perfect Lender's security interest in all Copyrights, Patents, Trademarks, and Mask Works and otherwise to carry out the intent and purposes of this IP Agreement, or for assuring and confirming to Lender the grant or perfection of a security interest in all Intellectual Property Collateral.

(b)   Grantor hereby irrevocably appoints Lender as Grantor's attorney-in-fact, with full authority in the place and stead of Grantor and in the name of Grantor, Lender or otherwise, from time to time in Lender's discretion, upon Grantor's failure or inability to do so, to take any action and to execute any instrument which Lender may deem necessary or advisable to accomplish the purposes of this IP Agreement, including:

(i)   To modify, in its sole discretion, this IP Agreement without first obtaining Grantor's approval of or signature to such modification by amending Exhibit A, Exhibit B, Exhibit C, and Exhibit D hereof, as appropriate, to include reference to any right, title or interest in any Copyrights, Patents, Trademarks or Mask Works acquired by Grantor after the execution hereof or to delete any reference to any right, title or interest in any Copyrights, Patents, Trademarks, or Mask Works in which Grantor no longer has or claims any right, title or interest; and

(ii)   To file, in its sole discretion, one or more financing or continuation statements and amendments thereto, relative to any of the Intellectual Property Collateral without the signature of Grantor where permitted by law.

7.   Events of Default. The occurrence of any of the following shall constitute an Event of Default under this IP Agreement:

(a)   An Event of Default occurs under the Loan Agreement; or any document from Grantor to Lender; or

(b)   Grantor breaches any warranty or agreement made by Grantor in this IP Agreement.

8.   Remedies. Upon the occurrence and continuance of an Event of Default, Lender shall have the right to exercise all the remedies of a secured party under the Massachusetts Uniform Commercial Code, including without limitation the right to require Grantor to assemble the Intellectual Property Collateral and any tangible property in which Lender has a security interest and to make it available to Lender at a place designated by Lender. Lender shall have a nonexclusive, royalty free license to use the Copyrights, Patents, Trademarks, and Mask Works to the extent reasonably necessary to permit Lender to exercise its rights and remedies upon the occurrence of an Event of Default. Grantor will pay any expenses (including reasonable attorney's fees) incurred by Lender in connection with the exercise of any of Lender's rights hereunder, including without limitation any expense incurred in disposing of the Intellectual Property Collateral. All of Lender's rights and remedies with respect to the Intellectual Property Collateral shall be cumulative.

9   Indemnity. Grantor agrees to defend, indemnify and hold harmless Lender and its officers, employees, and agents against: (a) all obligations, demands, claims, and liabilities claimed or asserted by any other party in connection with the transactions contemplated by this IP Agreement, and (b) all losses or expenses in any way suffered, incurred, or paid by Lender as a result of or in any way arising out of, following or consequential to transactions between Lender and Grantor, whether under this IP Agreement or otherwise (including without limitation, reasonable attorneys fees and reasonable expenses), except for losses arising from or out of Lender's gross negligence or willful misconduct.

10.   Reassignment. At such time as Grantor shall completely satisfy all of the obligations secured hereunder, Lender shall execute and deliver to Grantor all deeds, assignments, and other instruments as may be

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necessary or proper to reinvest in Grantor full title to the property assigned hereunder, subject to any disposition thereof which may have been made by Lender pursuant hereto.

11. Course of Dealing. No course of dealing, nor any failure to exercise, nor any delay in exercising any right, power or privilege hereunder shall operate as a waiver thereof.

12. Amendments. This IP Agreement may be amended only by a written instrument signed by both parties hereto.

13. Counterparts. This IP Agreement may be executed in two or more counterparts, each of which shall be deemed an original but all of which together shall constitute the same instrument.

14. Law and Jurisdiction. This IP Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Massachusetts. GRANTOR ACCEPTS FOR ITSELF AND IN CONNECTION WITH ITS PROPERTIES, UNCONDITIONALLY, THE NON-EXCLUSIVE JURISDICTION OF ANY STATE OR FEDERAL COURT OF COMPETENT JURISDICTION IN THE COMMONWEALTH OF MASSACHUSETTS IN ANY ACTION, SUIT, OR PROCEEDING OF ANY KIND, AGAINST IT WHICH ARISES OUT OF OR BY REASON OF THIS AGREEMENT; PROVIDED, HOWEVER, THAT IF FOR ANY REASON LENDER CANNOT AVAIL ITSELF OF THE COURTS OF THE COMMONWEALTH OF MASSACHUSETTS, GRANTOR ACCEPTS JURISDICTION OF THE COURTS AND VENUE IN SANTA CLARA COUNTY, CALIFORNIA. NOTWITHSTANDING THE FOREGOING, THE BANK SHALL HAVE THE RIGHT TO BRING ANY ACTION OR PROCEEDING AGAINST THE GRANTOR OR ITS PROPERTY IN THE COURTS OF ANY OTHER JURISDICTION WHICH THE BANK DEEMS NECESSARY OR APPROPRIATE IN ORDER TO REALIZE ON THE COLLATERAL OR TO OTHERWISE ENFORCE THE BANK'S RIGHTS AGAINST THE GRANTOR OR ITS PROPERTY.

GRANTOR AND LENDER EACH HEREBY WAIVE THEIR RESPECTIVE RIGHTS TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION BASED UPON OR ARISING OUT OF ANY OF THE LOAN DOCUMENTS OR ANY OF THE TRANSACTIONS CONTEMPLATED THEREIN, INCLUDING CONTRACT CLAIMS, TORT CLAIMS, BREACH OF DUTY CLAIMS, AND ALL OTHER COMMON LAW OR STATUTORY CLAIMS. EACH PARTY RECOGNIZES AND AGREES THAT THE FOREGOING WAIVER CONSTITUTES A MATERIAL INDUCEMENT FOR IT TO ENTER INTO THIS AGREEMENT. EACH PARTY REPRESENTS AND WARRANTS THAT IT HAS REVIEWED THIS WAIVER WITH ITS LEGAL COUNSEL AND THAT IT KNOWINGLY AND VOLUNTARILY WAIVES ITS JURY TRIAL RIGHTS FOLLOWING CONSULTATION WITH LEGAL COUNSEL.

15. Confidentiality. In handling any confidential information, Lender shall exercise the same degree of care that it exercises for its own proprietary information, but disclosure of information may be made: (i) to Lender's subsidiaries or affiliates in connection with their present or prospective business relations with Grantor; (ii) to prospective transferees or purchasers of any interest in the Loans; (iii) as required by law, regulation, subpoena, or other order; (iv) as required in connection with Lender's examination or audit; and (v) as Lender considers appropriate in exercising remedies under this Agreement. Confidential information does not include information that either: (a) is in the public domain or in Lender's possession when disclosed to Lender, or becomes part of the public domain after disclosure to Lender; or (b) is disclosed to Lender by a third party, if Lender reasonably does not know that the third party is prohibited from disclosing the information.

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EXECUTED as a sealed instrument under the laws of the Commonwealth of Massachusetts on the day and year first written above.

Address of Grantor:

3 Highwood Drive East
Tewksbury, Massachusetts 01876

GRANTOR:

RIVERDELTA NETWORKS, INC.

By: _____

Name: _David F. Chlon_

Title: _President_

SILICON VALLEY BANK

By: _Doug_____

Name: _Douglas Marshall_

Title: _Vice President_

PATENTS, TRADEMARKS AND
TRADE NAMES, COPYRIGHTS AND LICENSES

United States Patent Applications

Title	Inventor(s)	Filing Date/ Serial No.	Owner	Related Cases
Data Rate Limiting	Zhao Liu Jerry Zhiyi Guo	March 13, 2001 09/804,857	RiverDelta Networks, Inc.	Utility Conversion of Serial No. 60/189,640, filed March 14, 2001
Radio Frequency Communications Redundancy	Gerard White Patrick A. Gerber	April 18, 2001 09/836,761	RiverDelta Networks, Inc.	Utility Conversion of Serial No. 60/198,294, filed April 19, 2000
Data Packet Discarding	Jon C.R. Bennett	April 30, 2001 09/844,216	RiverDelta Networks, Inc.	Utility Conversion of Serial No. 60/201,010, filed May 1, 2000
Packetized Data Discard	Jon C.R. Bennett	April 30, 2001 09/845,541	RiverDelta Networks, Inc.	Utility Conversion of Serial No. 60/201,059, filed May 1, 2000

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Pending Trademark Applications

United States of America

Trademark	Owner	Application No.	Filing Date	Classes
BSR	RiverDelta Networks, Inc.	76/190,566	January 5, 2001	9, 42
BSR	RiverDelta Networks, Inc.	75/935,978	March 3, 2000	9, 37, 42
Misc. Design (Logo)	RiverDelta Networks, Inc.	75/933,388	March 2, 2000	9, 37, 42
RDN	RiverDelta Networks, Inc.	75/935,672	March 3, 2000	9, 37, 42
RDN	RiverDelta Networks, Inc.	76/191,770	January 5, 2001	9, 42
RIVERDELTA	RiverDelta Networks, Inc.	75/933,602	March 1, 2000	9, 37, 42
RIVERDELTA	RiverDelta Networks, Inc.	76/190,567	January 5, 2001	9, 42
RIVERGUIDE	RiverDelta Networks, Inc.	76/193,847	January 15, 2001	9, 37, 42
SMARTFLOW	RiverDelta Networks, Inc.	75/935,754	March 3, 2000	9, 37, 42

European Community

Trademark	Owner	Application No.	Filing Date	Classes
BSR	RiverDelta Networks, Inc.	1,678,564	May 26, 2000	9, 37, 42
Misc. Design (Logo)	RiverDelta Networks, Inc.	1,677,608	May 26, 2000	9, 16, 37, 42
RDN	RiverDelta Networks, Inc.	1,677,582	May 26, 2000	9, 16, 37, 42
RIVERDELTA	RiverDelta Networks, Inc.	1,678,218	May 26, 2000	9, 16, 37, 42
SMARTFLOW	RiverDelta Networks, Inc.	1,765,973	July 20, 2000	9, 16, 37, 42

Registered Internet Domain Names

Domain Name	Owner	Registration Renewal Date
riverdelta.org	RiverDelta Networks, Inc.	June 23, 2003
riverdeltanetworks.org	RiverDelta Networks, Inc.	June 23, 2003
riverdeltanetworks.com	RiverDelta Networks, Inc.	June 23, 2003
riverdeltanetworks.net	RiverDelta Networks, Inc.	June 23, 2003
riverdelta.com	RiverDelta Networks, Inc.	June 23, 2003
riverdelta.net	RiverDelta Networks, Inc.	July 7, 2003

Unregistered Intellectual Property

(i) Invention Disclosures

Invention Disclosed	Inventor
Integrated Rate Limiting with Hierarchical Deficit Weighted Round Robin Scheduler	Zhao Liu
A Mechanism to Implement a Highly Available CMTS using a combination of Redundant components, RF and IF Relays	Gerry White
Hierarchical Packet Discard Mechanism	Jon C.R. Bennett
Efficient Buffer Accounting for Performing Longest Queue Discard	Jon C.R. Bennett
Method for Writing Network Packet Decoders	Raj Duggal

(ii) – Proprietary Information

Area	Title	Author	Version
System Architecture	BSR 64000 System Architecture	P. Gerber	12
Market Requirements	BSR 64000 Market Requirements Specification	P. Gerber	7
	ATM Network Interface Module Market Requirements	P. DeMello	1
	BSR 64000 10/100 Module Market Requirements	P. DeMello	1
Routing SW	Virtual Routing Functional Specification and Design Framework	A. Lau	1
	Routing Software Architecture	S. Sahoo	1
	Virtual Routing Redundancy Protocol Design Specification	S. Sahoo	1
	IS-IS Design Specification	S. Sahoo	1
	Cable Bundling Design Specification	S. Sahoo	1
	PIM Sparse Mode Design Specification	S. Sahoo	1

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IP Multicast Routing Architecture	S. Sahoo	1
Tunnel Interface Design Specification	S. Sahoo	1
Interface Manager Design Specification	S. Sahoo	1
Routing Policy Functional Specification	S. Sahoo	1
Carrier Class Routing Software Requirements	S. Sahoo	1
CLI Command List	S. Sahoo	1
CLI Functional Requirements Specification	S. Sahoo	2
System Logger API Specification	S. Sahoo	2
Tachyon SRM Software Requirements	R. Duggal	1
Resource Manager Functional Specification	K. Sheth	2
Statistics Manager	K. Sheth	3
Interslot Communications Protocol (ICP)	K. Sheth	2
MPLS Functional Specification	K. Sheth	2
Fastpath Programming API	K. Sheth	2
RiverDelta Build Procedure	K. Sheth	1
Fastpath Entry Format in HW	K. Sheth	2
Switch Fabric Header Document	K. Sheth	2
Buffer Manager Memory Requirements	K. Sheth	1
Automatic Protection Switching	K. Sheth	1
Tachyon BootROM Specification	S. Fang	2
CMTS SW	Transparent Bridge Design for RDN Stand-alone CMTS	Z. Liu	1
	Tachyon CMTS Data Path Architecture (Software)	Z. Liu	1
	Tachyon Baseline Manager Software Design	J. Chang	1
	Tachyon Resource Manager	Wei Chen	1
	SmartSpectrum Spectrum Management	W. Chen	2
	MAC Manager	W. Chen	1
	Upstream Bandwidth Manager	W. Chen	1

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CMTS HW	Hardware Layer-2 Forwarding Engine Design for BSR1000	Z. Liu	1
	Tachyon CMTS Data Path Architecture (Hardware)	Z. Liu	1
	Topgun CMTS Module Data-path Architecture	Z. Liu	1
	Tachyon CMTS Data Path Architecture (Hardware)	Z. Liu	1
RiverGuide	Automated Subscriber Management System	R. Ramamirtham	1
	Tachyon Subscriber Management and Provisioning System Architecture	R. Ramamirtham	1
	XML Interfaces	R. Ramamirtham	1
	Service Management System	R. Ramamirtham	1
	SMS API	R. Ramamirtham	1
	DHCP Relay Agent	R. Ramamirtham	1
	LDAP Schema	R. Ramamirtham	1
	RiverGuide LDAP Schema	R. Ramamirtham	3
	RiverGuide Dynamic Quality of Service MIB Definition	R. Ramamirtham	4
	RiverGuide Overview	R. Ramamirtham	2
	RiverGuide Scheduler Design	R. Ramamirtham	2
	RiverGuide Service Management Test Plan	R. Ramamirtham	4
	RiverGuide Report Generator Test Plan	R. Ramamirtham	2
	RiverGuide Functional Specification	R. Ramamirtham	2
	RiverGuide GUI Design	R. Ramamirtham	2
	RiverGuide CLI Parser	R. Ramamirtham	3
	RiverGuide Coding Guidelines	R. Ramamirtham	1
	RiverGuide Flap List Design	R. Ramamirtham	1
	RiverGuide Interface for Third Party Provisioning/Mediation Systems	R. Ramamirtham	1
	RiverGuide Cable Modem Configuration File	R. Ramamirtham	1

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Editor

	RiverGuide Policy Schedular Algorithm Design	R. Ramamirtham	2
	RiverGuide Server Design	R. Ramamirtham	1
FPGA/ASIC	Switch Fabric Bridge	D. Pattnaik	3
	Tachyon Buffer Management FPGA	M. Kiernicki	6
	Fast Path Forwarding Engine	D. Chen	17
	SRM Test Plan	D. Pattnaik	2
	Buffer Manager MAC Interface Functional Specification	D. Chen	8
	Buffer Manager Switch Fabric Interface	T. Ray	1
	Generation 2 Chip Architecture Rev. 1	D. Chen	1
	Generation 2 Chip Architecture	D. Chen	4
	BM1.2 Test Plan	J. Murphy	3
	Tests1_2.xls	J. Murphy	14
	Buffer Manager 1.3 FPGA Gigabit Mac Design Specification	F. Booth	11
	Generation2 Buffer Manager I/O Interface	M. Kaiser	2
	QoS Functional Specification	J. Bennett	1
	Trunk Motherboard and QoS Daughterboard Interface	M. Holjo	4
	Gen2 I/O FPGA Specification	M. Kaiser	4
	CMTS Lockup Prevention (Abort)	M. Holjo	1
	POS, GIGe, ATM and OC48 FPGA Logic Verification Test Plan	R. Abato	1
	Buffer Manager 1.6 FPGA Eight Port Ethernet Design Specification	F. Booth	17
	QoS Statistics FPGA Design Specification	F. Booth	7
	QoS Policer FPGA Design Specification	M. Holjo	4
	Buffer Manager 1.7 Funcational Specification	P. Stropparo	1
	MPLS Processing Hardware Functional Specification	M. Kiernicki	5

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	Buffer Manager Design Spec., Appendix for Rate Limiting	M. Holjo	1
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	OC48 ADM Trunk Interface Module Architecture	M. Bagherzadeh	1
	Gigabit Ethernet Trunk Module Architecture	M. Bagherzadeh	1
	OSR2000- Dual OC48/Dual Gig Ethernet	M. Bagherzadeh	1
	OSR2000- OC3/OC12	M. Bagherzadeh	1
	OSR-2000 Dual Gig and OC3/OC12	D. Alleyne	1
	8-Port Fast Ethernet Switch Module	D. Alleyne	1
	ATM Hardware Specification	D. Alleyne	1
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Regulatory	Tachyon Regulatory Requirements	M. Campanella	1
	BSR 64000 Release 1.0 FCC Certificate	M. Campanella	1
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	BSR 64000 Release 1.0 EN 300 386 Certificate	M. Campanella	1
	BSR 64000 Demko Certificate 129604-01	M. Campanella	1
	BSR 64000 CB Certificate US-4793-UL	M. Campanella	1
	BSR 1000 FCC Certificate of Conformity 000515	M. Campanella	1
	BSR 1000 FCC Test Report 000515	M. Campanella	1
White Papers	Multiple Service Provider Access for HFC Networks	G. White	1
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	Carrier-Class, Intelligent Edge Routing Required for Next Generation Cable Services	J. Walker	
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	Network Interface Module	J. Walker	1
	BSR 1000	J. Walker	1
	RiverGuide Service Creation System	J. Walker	1
	RiverDelta Corporate Overview	J. Walker	1
System Documentation	BSR 64000 Quick Start Guide (Release 1.0)	D. McAlpine	1
	BSR 64000 Installation Guide (Release 1.0)	T. Bizzarro	1
	BSR 64000 Configuration and Management Guide (Release 1.0)	P. Laramee	1
	BSR 64000 Command Reference Guide (Release 1.0)	J. Spaulding	1
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BSR 1000 Quick Start Guide (Release 1.0)	D. McAlpine	1
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BSR 1000 SNMP MIB Reference Guide (Release 1.0)	R. Lindberg	1
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BSR 64000 SNMP Checklist	P. Tangirala	1
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	Module 2- Introduction to the BSR 1000	A. Konar	l
	Module 3 – Electronic Communications	A. Konar	l
	Module 4- Introduction to Internetworking	A. Konar	l
	Module 5 – Introduction to DOCSIS	A. Konar	l
	Module 6 – CATV Systems	A. Konar	l
	Module 7 – CM to CMTS Operation	A. Konar	l
	Module 8 – Internetworks	A. Konar	l
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	Lab Guide	A. Konar	l
	Lab Diagrams	A. Konar	l
	Module 0 – Introduction	H. Miller	l
	Module 1 – Install	H. Miller	l
	Module 2 – Initial Config	H. Miller	l
	Module 3 – Routing Basics	H. Miller	l
	Module 4 – CMTS Configuration	H. Miller	l
	Module 5 – Dynamic Routing (RIP)	H. Miller	l
	Module 6 – OSPF	H. Miller	l
	Module 7 – BGP	H. Miller	l
	Module 8 – Appendix A – Labs	H. Miller	l
	Module 9 – Appendix B – Maps and addresses	H. Miller	l
	Module 10 – Appendix C – Supplementary Materials	H. Miller	l
	Lab Diagrams and Addressing Scheme	H. Miller	l

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Fabrication Family Data for RDN PCAs

PCB number	Board Description	Schematic	Layout File	Assembly Drawing	Fabrication Drawing	Outline Drawing	Mechanical Assembly	Reports to PCAs	
PCB-0007-05	CMTS 1x4 Dual 4 Meg flash BSR 1K Components	SCH-0007-05_revA.pdf	PCB-0007-05_rev01.brd	DWG-0011-05_revA.pdf	DWG-0010-05_revA.pdf	DWG-0168-01_revA.pdf	DWG-0164-01_revA.pdf	PCA-0007-05	BSR64
								PCA-0027-03	BSR1
PCB-0012-01	CMTS 1x4 I/O	SCH-0012-01_revA.pdf	PCB-0012-01_revA.brd	DWG-0035-01_revA.pdf	DWG-0034-01_revA.pdf	DWG-0033-01_revA.pdf	N/A	PCA-0012-01	
PCB-0020-01	CMTS 2x8 Downstream (Analog Upconverter)	SCH-0020-02_rev01.pdf	PCB-0020-02_rev01.brd	DWG-0078-01_rev01.pdf	DWG-0077-01_rev01.pdf	DWG-0076-01_rev01.pdf	N/A	PCA-0020-02	
PCB-0029-01	CMTS 2x8 TI	SCH-0029-01_rev01.pdf	PCB-0029-01_rev01.brd	DWG-0192-01_rev01.pdf	DWG-0191-01_rev01.pdf	DWG-0190-01_rev01.pdf	N/A	PCA-0029-01	
PCB-0033-01	Digital Upconverter	SCH-0033-01_rev01.pdf	PCB-0033-01_rev01.brd	DWG-0243-01_rev01.pdf	DWG-0242-01_rev01.pdf	DWG-0241-01_rev01.pdf	N/A	PCA-0033-01	
PCA-0042-02	CMTS Protected I/O 1X4	SCH-0042-02_rev01.pdf	PCB-0042-02_rev01.brd	DWG-0249-02_rev01.pdf	DWG-0248-02_rev01.pdf	DWG-0247-02_rev01.pdf	N/A	PCA-0042-02	
PCA-0043-02	CMTS Spare I/O 1X4	SCH-0043-02_rev01.pdf	PCB-0043-02_rev01.brd	DWG-0252-02_rev01.pdf	DWG-0251-02_rev01.pdf	DWG-0250-01_rev01.pdf	N/A	PCA-0043-02	
PCB-0045-02	CMTS 2x8 Broadcom	SCH-0045-02_rev01.pdf	PCB-0045-02_rev01.brd	DWG-0262-01_rev01.pdf	DWG-0261-01_rev01.pdf	DWG-0260-01_rev01.pdf	N/A	PCA-0045-02	BSR64 2x8
								PCA-0065-02	BSR2
PCB-0044-01	CMTS GigE Daughter Card	SCH-0044-01_rev01.pdf	PCB-0044-01_rev01.brd	DWG-0259-01_rev01.pdf	DWG-0258-01_rev01.pdf	DWG-0259-01_rev01.pdf	N/A	PCA-0044-01	
PCB-0024-02	BSR1000 RJ45 adapter	SCH-0024-02_revA.pdf	PCB-0024-02_revA.brd	DWG-0131-01_revA.pdf	DWG-0130-01_revA.pdf	DWG-0129-01_revA.pdf	N/A	PCA-0024-02	
PCB-0049-01	RF Backplane 1x4 50A	SCH-0049-01_rev01.pdf (rfbp1x4_sch-0049-01.pdf)	PCB-0049-01_rev01.brd	DWG-0275-01_rev01.pdf	DWG-0274-01_rev01.pdf	DWG-0273-01_rev01.pdf	N/A	PCA-0049-01	
PCB-0053-01	Midplane 2x8 / 1x4 50A	SCH-0053-01_rev01.pdf	PCB-0053-01_rev01.brd	DWG-0288-01_rev01.pdf	DWG-0287-01_rev01.pdf	DWG-0286-01_rev01.pdf	N/A		
PCB-0055-02	CMTS 1x4 US/Euro	SCH-0055-02_rev01.pdf	PCB-0055-02_rev01.brd	DWG-301-02_rev01.pdf	DWG-300-02_rev01.pdf	DWG-302-01_rev01.pdf	DWG-0365-01_rev01.pdf	PCA-0055-02	BSR1 US
							BSR1K	PCA-0056-02	BSR1 Euro
PCA-0005-03	SRM	SCH-0002-3_revA.pdf	PCB-0006-03_revA_deliverables.zip	bundled in Zip file	bundled in Zip file	bundled in Zip file	DWG-0364-01_rev03.pdf	PCA-0057-02	BSR64 US
							BSR64K	PCA-0058-02	BSR64 Euro
PCA-0011-03	SRM I/O	SCH-0011-03_revA.pdf	PCB-0011-03_rev1_deliverables.z	bundled in Zip file	bundled in Zip file	bundled in Zip file			

PCB number	Board Description	Schematic	Layout File ip	Assembly Drawing	Fabrication Drawing	Outline Drawing	Mechanical Assembly	Reports to PCAs
PCA-0025-03	Gigabit Ethernet (1 Port)	SCH-0025-3_rev01.pdf	PCB-0025-03_rev01_deliverables.zip	bundled in Zip file	bundled in Zip file	bundled in Zip file		
PCA-0013-02	Optical I/O	SCH-0013-02_revA.pdf	PCB-0013-02_rev01_deliverables.zip	bundled in Zip file	bundled in Zip file	bundled in Zip file		
PCA-0014-01	Fast Ethernet (8 Port)	SCH-0014-01_rev02.pdf	PCB-0014-01_deliverables.zip	bundled in Zip file	bundled in Zip file	bundled in Zip file		
PCA-0015-01	Fast Ethernet I/O	SCH-0015-01_latest.pdf	PCB-0015-01_rev01_deliverables.zip	bundled in Zip file	bundled in Zip file	bundled in Zip file		
PCA-0010-06	POS (1 Port) + FastE (1 Port)	SCH-0010-06_rev_C.pdf	PCB-0010-02_rev01_deliverables.zip	bundled in Zip file	bundled in Zip file	bundled in Zip file		
PCA-0010-06	POS (2 Port)	SCH-0010-06_rev_C.pdf	PCB-0010-02_rev01_deliverables.zip	bundled in Zip file	bundled in Zip file	bundled in Zip file		
PCA-0026-01	OC-48 ADM	SCH-0026-01.pdf	PCB-0026_01_deliverables.zip	bundled in Zip file	bundled in Zip file	bundled in Zip file		
PCA-0035-01	ATM (2 Port)	SCH-0035-01_rev01.pdf	PCB-0035-01_rev01_deliverables.zip	bundled in Zip file	bundled in Zip file	bundled in Zip file		
PCB-0059-01	CMTS Quad Ethernet Daughter Card	SCH-0059-01_rev01.pdf	PCB-0059-01_rev01.brd	DWG-0310-01_rev01.pdf	DWG-309-01_rev01.pdf	DWG-308-01_rev01.pdf	N/A	PCA-0059-01
PCB-0073-01	Active I/O CMTS 2X8	SCH-0073-01_rev01.pdf	PCB-0073-01_rev01.brd	DWG-0353-01_rev01.pdf	DWG-0352-01_rev01.pdf	DWG-0351-01_rev01.pdf	N/A	PCA-0073-01
PCB-0074-01	Spare I/O CMTS 2x8	SCH-0074-01_rev01.pdf	PCB-0074-01_rev01.brd	DWG-0356-01_rev01.pdf	DWG-0355-01_rev01.pdf	DWG-0354-01_rev01.pdf	N/A	PCA-0074-01
PCB-0075-01	Spare RF Backplane 2x8	SCH-0075-01_rev01.pdf	PCB-0075-01_rev01.brd	DWG-0359-01_rev01.pdf	DWG-0358-01_rev01.pdf	DWG-0357-01_rev01.pdf	N/A	PCA-0075-01
PCB-0079-01	Midplane, 60A	SCH-0079-01_rev01.pdf	PCB-0079-01_rev01.brd	DWG-0381-01_rev01.pdf	DWG-0380-01_rev01.pdf	DWG-0379-01_rev01.pdf	N/A	PCA-0079-01
PCB-0080-01	RF Backplane 60A	SCH-0080-01_rev01.pdf	PCB-0080-01_rev01.brd	DWG-0384-01_rev01.pdf	DWG-0383-01_rev01.pdf	DWG-0382-01_rev01.pdf	N/A	PCA-0080-01

Chassis Number	Description	Mechanical Assembly	Base Unit Assembly	Other	Sheetmetal Subassembly	CMTS PCAs used
CHS-0002-04	1U CMTS BSR1000	N/A	DWG-0232-01_revF.pdf	DWG-0203-01_revB.pdf	N/A	PCA-0027-03
CHS-0007-01	1U CMTS BSR1000	N/A	DWG-0366-01_rev02.pdf	DWG-0203-01_revB.pdf	N/A	PCA-0055-02

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PCB number	Board Description US	Schematic	Layout File	Assembly Drawing	Fabrication Drawing	Outline Drawing	Mechanical Assembly	Reports to PCAs
CHS-0008-01	1U CMTS BSR1000 Euro	N/A	DWG-0366-01_rev02.pdf	DWG-0203-01_revB.pdf	N/A	PCA-0056-02		
CHS-0015-01	14U Redundant 1X4, 50A BSR64K Chassis	DWG-0051-03_rev03.pdf	DWG-0362-01_rev01.pdf	none	SUB-0017-03	PCA-0057-02 + I/O PCA-0058-02 + I/O		
CHS-0006-01	14U Redundant 2X8, 60A BSR64K Chassis	TBD	TBD	TBD	TBD	PCA-0045-02 + I/O		
CHS-0017-01	BSR 2000, CMTS 2X8 with Ethernet	TBD	TBD	TBD	TBD	PCA-0065-02 + I/O		

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Unfiled Trademarks

Trademark	Country
BSR	Australia
	China
	Japan
	Republic of Korea
	Singapore
RDN	Australia
	China
	Japan
	Republic of Korea
	Singapore
RIVERDELTA	Australia
	China
	Japan
	Republic of Korea
	Singapore
RIVERGUIDE	Australia
	China
	Japan
	Republic of Korea
	Singapore
SMARTFLOW	Australia
	China
	Japan
	Republic of Korea
	Singapore

Other Agreements

NAME	PARTIES
RSVPD ReSerVation Protocol Daemon	University of Southern California
Xilinx Annual Software Support Agreement	RiverDelta Xilinx, Inc.
RSA Receipt of Services	RiverDelta RSA Data Security, Inc.
Software License Agreement, Addendum and Purchase Orders	Packet Technologies phase2
Purchase Order #506	RiverDelta Wind River Systems, Inc.
Emperative, Inc. Relationship Agreement	RiverDelta Networks Emperative, Inc.
Preferred Provider Agreement -- RiverDelta Networks, Inc.	RiverDelta Networks Compath, Inc.
Employment Letter w/NDA, Non-compete Agreement, Developments Agreement	RiverDelta Networks, Inc. F. Dennis Periquet
@Home Network -- @Home Testing and Approval Agreement	RiverDelta Networks, Inc. At Home Corp.
OEM Program License Agreement	RiverDelta Networks Virata Corp.
EMWEB Evaluation License Agreement	RiverDelta Networks Agranat Systems, Inc.
Software Evaluation License and Agreement	RiverDelta Networks ClearBand, LLC
Memorandum of Understanding	RiverDelta Networks MindTree Consulting Pvt. Ltd.
RSA Security Inc. Professional Services Agreement	RiverDelta Networks, Inc. RSA Security, Inc.
Open Source Licenses	
RiverGuide Licenses	n/a
Netscape Public License	Netscape Corp.
Project Agreement No. A3A55 Revision A	RiverDelta Networks Agilent Technologies

Company Software

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Area	Title	Author	Version
System Architecture	BSR 64000 System Architecture	P. Gerber	12
Market Requirements	BSR 64000 Market Requirements Specification	P. Gerber	7
	ATM Network Interface Module Market Requirements	P. DeMello	1
	BSR 64000 10/100 Module Market Requirements	P. DeMello	1
Routing SW	Virtual Routing Functional Specification and Design Framework	A. Lau	1
	Routing Software Architecture	S. Sahoo	1
	Virtual Routing Redundancy Protocol Design Specification	S. Sahoo	1
	IS-IS Design Specification	S. Sahoo	1
	Cable Bundling Design Specification	S. Sahoo	1
	PIM Sparse Mode Design Specification	S. Sahoo	1
	IP Multicast Routing Architecture	S. Sahoo	1
	Tunnel Interface Design Specification	S. Sahoo	1
	Interface Manager Design Specification	S. Sahoo	1
	Routing Policy Functional Specification	S. Sahoo	1
	Carrier Class Routing Software Requirements	S. Sahoo	1
	CLI Command List	S. Sahoo	1
	CLI Functional Requirements Specification	S. Sahoo	2
	System Logger API Specification	S. Sahoo	2
	Tachyon SRM Software Requirements	R. Duggal	1
	Resource Manager Functional Specification	K. Sheth	2
	Statistics Manager	K. Sheth	3

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	Interslot Communications Protocol (ICP)	K. Sheth	2
	MPLS Functional Specification	K. Sheth	2
	Fastpath Programming API	K. Sheth	2
	RiverDelta Build Procedure	K. Sheth	1
	Fastpath Entry Format in HW	K. Sheth	2
	Switch Fabric Header Document	K. Sheth	2
	Buffer Manager Memory Requirements	K. Sheth	1
	Automatic Protection Switching	K. Sheth	1
	Tachyon BootROM Specification	S. Fang	2
CMTS SW	Transparent Bridge Design for RDN Stand-alone CMTS	Z. Liu	1
	Tachyon CMTS Data Path Architecture (Software)	Z. Liu	1
	Tachyon Baseline Manager Software Design	J. Chang	1
	Tachyon Resource Manager	Wei Chen	1
	SmartSpectrum Spectrum Management	W. Chen	2
	MAC Manager	W. Chen	1
	Upstream Bandwidth Manager	W. Chen	1
CMTS HW	Hardware Layer-2 Forwarding Engine Design for BSR1000	Z. Liu	1
	Tachyon CMTS Data Path Architecture (Hardware)	Z. Liu	1
	Topgun CMTS Module Data-path Architecture	Z. Liu	1
	Tachyon CMTS Data Path Architecture (Hardware)	Z. Liu	1
RiverGuide	Automated Subscriber Management System	R. Ramamirtham	1
	Tachyon Subscriber Management and Provisioning System Architecture	R. Ramamirtham	1
	XML Interfaces	R. Ramamirtham	1

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	Service Management System	R. Ramamirtham	1
	SMS API	R. Ramamirtham	1
	DHCP Relay Agent	R. Ramamirtham	1
	LDAP Schema	R. Ramamirtham	1
	RiverGUide LDAP Schema	R. Ramamirtham	3
	RiverGuide Dynamic Quality of Service MIB Definition	R. Ramamirtham	4
	RiverGuide Overview	R. Ramamirtham	2
	RiverGuide Scheduler Design	R. Ramamirtham	2
	RiverGuide Service Management Test Plan	R. Ramamirtham	4
	RiverGuide Report Generator Test Plan	R. Ramamirtham	2
	RiverGuide Functional Specification	R. Ramamirtham	2
	RiverGuide GUI Design	R. Ramamirtham	2
	RiverGuide CLI Parser	R. Ramamirtham	3
	RiverGuide Coding Guidelines	R. Ramamirtham	1
	RiverGuide Flap List Design	R. Ramamirtham	1
	RiverGuide Interface for Third Party Provisioning/Mediation Systems	R. Ramamirtham	1
	RiverGuide Cable Modem Configuration File Editor	R. Ramamirtham	1
	RiverGuide Policy Schedular Algorithm Design	R. Ramamirtham	2
	RiverGuide Server Design	R. Ramamirtham	1
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	Fast Path Forwarding Engine	D. Chen	17
	SRM Test Plan	D. Pattnaik	2
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QoS Functional Specification	J. Bennett	1
Trunk Motherboard and QoS Daughterboard Interface	M. Holjo	4
Gen2 I/O FPGA Specification	M. Kaiser	4
CMTS Lockup Prevention (Abort)	M. Holjo	1
POS, GIGe, ATM and OC48 FPGA Logic Verification Test Plan	R. Abato	1
Buffer Manager 1.6 FPGA Eight Port Ethernet Design Specification	F. Booth	17
QoS Statistics FPGA Design Specification	F. Booth	7
QoS Policer FPGA Design Specification	M. Holjo	4
Buffer Manager 1.7 Funcational Specification	P. Stropparo	1
MPLS Processing Hardware Functional Specification	M. Kiernicki	5
Buffer Manager Design Spec., Appendix for Rate Limiting	M. Holjo	1
Buffer Manager Design Spec., Appendix for Tunneling	M. Holjo	1
Tachyon Supervisor Resource Module and Switch Fabric Functional Specification	D. Merriman	4
OC3/OC12 POS Trunk Module Architecture	M. Bagherzadeh	1
High Speed I/O Module Architecture	M. Bagherzadeh	2
OC48 ADM Trunk Interface Module Architecture	M. Bagherzadeh	1

Hardware

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	OSR2000- Dual OC48/Dual Gig Ethernet	M. Bagherzadeh	1
	OSR2000- OC3/OC12	M. Bagherzadeh	1
	OSR-2000 Dual Gig and OC3/OC12	D. Alleyne	1
	8-Port Fast Ethernet Switch Module	D. Alleyne	1
	ATM Hardware Specification	D. Alleyne	1
	ATM Timing Margins	D. Alleyne	1
	ATM Power Dissipation	D. Alleyne	1
Diagnostics	TIM Diagnostics Specification	C. Hacker	3
	HSIM/SRM2/3 Bring ip and Vision Click Usage	C. Hacker	7
	Quick Reference, HSIM Bring Up	C. Hacker	6
	Quick Reference, SRM2 Board Bring Up	C. Hacker	7
	Quick Reference, SRM3 Board Bring Up	C. Hacker	5
	Diagnostic System Test	C. Hacker	5
	Diag. Packet Generator	C. Hacker	2
Regulatory	Tachyon Regulatory Requirements	M. Campanella	1
	BSR 64000 Release 1.0 FCC Certificate	M. Campanella	1
	BSR 64000 Release 1.0 ICES-0003 Certificate	M. Campanella	1
	BSR 64000 Release 1.0 GR-1089 EMC Certificate	M. Campanella	1
	BSR 64000 Release 1.0 EN 300 386 Certificate	M. Campanella	1
	BSR 64000 Demko Certificate 129604-01	M. Campanella	1
	BSR 64000 CB Certificate US-4793-UL	M. Campanella	1
	BSR 1000 FCC Certificate of Conformity 000515	M. Campanella	1
	BSR 1000 FCC Test Report 000515	M. Campanella	1

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White Papers	Multiple Service Provider Access for HFC Networks	G. White	1
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	Eliminating Open Access Technology Barriers	J. Walker	1
	QoS: One HFC Network, Multiple Revenue Streams	J. Walker	2
	Subscriber Management Whitepaper	J. Walker	2
	Carrier-Class, Intelligent Edge Routing Required for Next Generation Cable Services	J. Walker	
Datasheets	BSR 64000 System Overview	J. Walker	2
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	Network Interface Module	J. Walker	1
	BSR 1000	J. Walker	1
	RiverGuide Service Creation System	J. Walker	1
	RiverDelta Corporate Overview	J. Walker	1
System Documentation	BSR 64000 Quick Start Guide (Release 1.0)	D. McAlpine	1
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	BSR 64000 Command Reference Guide (Release 1.0)	J. Spaulding	1
	BSR 64000 SNMP MIB Reference Guide (Release 1.0)	R. Lindberg	1
	BSR Troubleshooting Guide (Release 1.0)	D. McAlpine	1
	Release Notes - BSR 64000 Release 1.0	R. Lindberg	1
	Release Notes – BSR 64000 Release 1.0.2	T. Bizzarro	1
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Release Notes – BSR 1000 Release 1.0	T. Bizzarro	1

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RIP and OSPF Functionality Test Plan	H. Kim	1
BSR 64000 System Test Plan for CMTS System Testing	A. Donati	9
BSR 64000 System Test Plan Checklist for CMTS	A. Donati	9
BSR 64000 SNMP Traps	A. Donati	3
BSR 64000 SNMP MIB Checklist	A. Donati	1
BSR 64000 SMS Test Plan	P. Tangirala	2
BSR 64000 SNMP Checklist	P. Tangirala	1
CATV Plant Diagram A	M. Belland	1
CATV Plant Diagram B	M. Belland	1
CMTS Center Frequency Chart – North America	M. Belland	1
RF Test Plan Outline	M. Belland	5
RF System Test Plan for BSR 1000	M. Belland	1

Training

Module 0 – Introduction	A. Konar	1
Module 1- Evolution of R/F	A. Konar	1
Module 2- Introduction to the BSR 1000	A. Konar	1
Module 3 – Electronic Communications	A. Konar	1
Module 4- Introduction to Internetworking	A. Konar	1

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Module 5 – Introduction to DOCSIS	A. Konar	1
Module 6 – CATV Systems	A. Konar	1
Module 7 – CM to CMTS Operation	A. Konar	1
Module 8 – Internetworks	A. Konar	1
Module 9 – RIP	A. Konar	1
Module 10 – Appendix A	A. Konar	1
Module 11 – Appendix B	A. Konar	1
Module 12 – Appendix C	A. Konar	1
Lab Guide	A. Konar	1
Lab Diagrams	A. Konar	1
Module 0 – Introduction	H. Miller	1
Module 1 – Install	H. Miller	1
Module 2 – Initial Config	H. Miller	1
Module 3 – Routing Basics	H. Miller	1
Module 4 – CMTS Configuration	H. Miller	1
Module 5 – Dynamic Routing (RIP)	H. Miller	1
Module 6 – OSPF	H. Miller	1
Module 7 – BGP	H. Miller	1
Module 8 – Appendix A – Labs	H. Miller	1
Module 9 – Appendix B – Maps and addresses	H. Miller	1
Module 10 – Appendix C – Supplementary Materials	H. Miller	1
Lab Diagrams and Addressing Scheme	H. Miller	1
Cisco Network Registrar – Self-study Guide	H. Miller	1
Lab Guide	H. Miller	1

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Third-Party Software

Item	Description	Source Vendor
Software Tools	Clear-Case software source control system	Rational Software, Inc.
	Vision-Click	WindRiver
	VxWorks Tornado for PowerPC and StongARM	WindRiver
	VxWorks Memory Protection Device	WindRiver
	VxSIM	WindRiver
	WindView	WindRiver
	ProfileScope	WindRiver
	MemScope	WindRiver
	IXP1200 Microcode Development Workbench	Intel
	SDS Debugger	SDS
	HP Probe	HP
	emacs	GNV
	C-Scope	Public Domain
	Visual C++	Microsoft
	SWMP Tool	Silver Creek

SYSTEM CODE

BSR Release
1.0

Board Level Support

Boot-Rom		RiverDelta
Switch Fabric Driver		RiverDelta
Flash File System		WindRiver

TCP/IP Stack

TCP/UDP/IP/ICMP/IRDP	WindRiver + River Delta

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ARP/RARP/Proxy ARP	WindRiver + River Delta

Routing Protocols

RIPv1	WindRiver
RIPv2	RiverDelta
OSPFv2 (Carrier Class)	Phase2 + River Delta
BGPv4 (Carrier Class)	Phase2 + River Delta
Routing Policy Support (Carrier Class)	RiverDelta
IGMPv2	RiverDelta
DVMRPv3	Phase2 + River Delta

System Management & Control

DHCP Relay	RiverDelta
BOOTP Relay	RiverDelta
DNS Client	WindRiver + RDN
SNTP	RiverDelta + Wind River
FTP/TFTP	WindRiver + RDN
Access List	RiverDelta
Routing Table Management	WindRiver + River Delta
Interface Manager	RiverDelta
Cisco CLI support	RiverDelta
CLI Scripting and Config Save Support	RiverDelta
LDAPv3 Client Support	Netscape
SNMPv1/v3 Agent	Epilogue (WindRiver)
SNMP Trap & Error Logging	Epilogue (WindRiver)
Flexible Packet Tracing Support	RiverDelta
Protocol Debug mode	RiverDelta
Sys Log support	WindRiver + River Delta

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Standard Mib Support	RiverDelta
DOCSIS 1.0 & DOCSIS 1.1 CMTS MIBs	RiverDelta
Show cable modem with 3 states	RiverDelta
CM reset	RiverDelta
Debug CM details	RiverDelta
Trace Route	Public Domain
Extended Ping	RiverDelta
Board-Level Diags	RiverDelta
Run-Time Debug Support	RiverDelta
ICP	Resonance Manager - River Delta

High Speed Network Interface Modules

PPP	WindRiver + River Delta
Packet-over-Sonet (POS)	RiverDelta
Fast-E, Gig Mac, Pos Drivers	RiverDelta
Fast-Path FPGA Drivers	RDN

DOCSIS Support

Registration with either DOCSIS 1.0 or DOCSIS 1.1 CM configuration.	RiverDelta
BPI and BPI+.	RiverDelta + RSA
Broadcom Reference Design-Modification of Drivers	Broadcom
Dynamic and static multicast SAID.	RiverDelta
CM initiated DSA, DSC, and DSD.	RiverDelta
CMTS initialed DSA, DSC, and DSD.	RiverDelta
Upstream Channel Change (UCC).	RiverDelta
Layer-3 classification.	RiverDelta
Concatenation.	RiverDelta
Piggy-back fragmentation.	RiverDelta

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Payload header suppression.	RiverDelta
UGS, UGS-AD, rtPS, and nrtPS.	RiverDelta
RFC-2670 (DOCSIS IF mib)	RiverDelta
RFC-2669 (DOCSIS Cable Device mib).	RiverDelta
BPI+ MIB.	RiverDelta
QoS MIB.	RiverDelta
DHCP option 82.	RiverDelta
Maximum CPE enforcement.	RiverDelta
Rate limiting.	RiverDelta
Minimum guaranteed traffic rate.	RiverDelta

Upstream Scheduling

Two-level hierarchical scheduling.	RiverDelta
Scheduled time scheduling for periodical grants and station maintenance grants.	RiverDelta
Deficit round robin scheduling for best effort services.	RiverDelta
Flexible MAP size with maximum length control.	RiverDelta
Leaky-bucket access control for traffic shaping.	RiverDelta
Backlog detection.	RiverDelta
Initial maintenance synchronization.	RiverDelta
Dynamic MAP lead-time.	RiverDelta
Synchronized UCD change.	RiverDelta
Zero-jitter admission for UGS, UGS-AD, and rtPS.	RiverDelta

Data Forwarding

Three-level hierarchical per-flow scheduling with 8000 queues per direction.	RiverDelta
Leaky-bucket traffic policing.	RiverDelta

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Longest queue push-out buffer management.	RiverDelta
Proxy ARP.	RiverDelta
Up to 8 subnets per interface.	RiverDelta

**BSR Release
1.1**

SYSTEM CODE

Routing

Policy Based Routing	RiverDelta
IS-IS	Phase 2 + River Delta
PIM-Sparse Mode	RiverDelta
Multicast Routing Table	RiverDelta
VRRP	RiverDelta

System Management and Control

SNMP Informs	Epilogue (WindRiver)
Entity Mib Support	RiverDelta
Telnet Client	Public Domain + River Delta
Mtrace	Public Domain + River Delta
Show cable modem with 20 CM states	RiverDelta
Ping DOCSIS	RiverDelta
Flap list	RiverDelta
Persistent CM States	RiverDelta
Show CPEs behind CM	RiverDelta
Disable CM	RiverDelta

**High Speed Network Interface
Modules**

Qos DRR	RiverDelta

CMTS Interface Bundling   RiverDelta

DOCSIS Support

Upstream transmitter disable message.	RiverDelta
Device class information message.	RiverDelta
Multi-grant fragmentation support.	RiverDelta
Pre-equalization with adjustable length equalization training sequence.	RiverDelta
Upstream channel signal to noise measurement.	RiverDelta
Subscriber mib.	RiverDelta

Upstream Scheduler

Jitter sensitive grant placement.	RiverDelta
Flexible MAP size with lead-time reduction.	RiverDelta
Synchronized spectrum sampling.	RiverDelta

Data Forwarding

CM and CPE authorization through DHCP.	RiverDelta
Static ARP entry.	RiverDelta
Traffic filtering.	RiverDelta
Two level longest queue push out.	RiverDelta

Spectrum Management

Spectrum Analysis.	RiverDelta
In-band power monitoring.	RiverDelta
Spectrum hopping triggered by error rate.	RiverDelta
Frequency hopping.	RiverDelta
Dynamic modulations, including modulation profile, channel width, and power-level.	RiverDelta
Fully configurable spectrum hopping sequence.	RiverDelta

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Rollback support.   RiverDelta

Scheduled band availability.   RiverDelta

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RiverGuide 1.0	*RiverGuide Client/Server*	
	RiverGuide Client	RiverDelta
	RiverGuide Server	RiverDelta
	Java Runtime Environment	Sun Microsystems
	Java API for XML Processing	Sun Microsystems
	SNMP Libraries	Adventnet
	Java Plug-in	Sun Microsystems
	Java Help	Sun Microsystems
	IBM Task Guide Library	IBM
	Java Cryptology Extensions	Sun Microsystems
	Netscape LDAP Library	Netscape
	Apache Web Server	Apache
	Vera Developer Kit	Synopsis
FPGA/Board Design Tools		
	Vera Runtime	Synopsis
	VCS	Synopsis
	HDL Compiler	Synopsis
	DC-Expert	Synopsis
	Analyzer	Synopsis
	Covermeter	Synopsis
	SynplifyPro	Synopsis
	Verlog-XL	Cadence
	NCSim	Cadence
	Allegro Studio	Cadence
	Allegro Performance	Cadence
	CCT Performance	Cadence
	Modeltech hdlsim	Mentor Graphics
	Leonardo	Mentor Graphics
	ViewDraw	Viewlogic
	DxDataBook	Viewlogic
	Allegro Interface	Viewlogic
	Viewdraw	Viewlogic
	Alliance	Xylinx
FPGAs	*SRM Switch Fabric FPGA*	RiverDelta
	sfb_top_1012.mcs	
	sfb_top_1012.bit	
	SRM Redundancy PLD	RiverDelta

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srm3_cpldV4.xeb
srm3_cpldV4.jed

Gigabit Ethernet   RiverDelta
bm_gig_top_chipF3_rev80.bit

Fast Ethernet (8-Port)   RiverDelta
bm_8pe_top_revE6.bit

Pos (1-Port) + Fast Ethernet (1 Port)   RiverDelta
bm_1e1s_top_rev76.bit

Pos (2-Port)   RiverDelta
bm_sonet_top_revDA.bit

OC-48 ADM   RiverDelta
bm_oc48_top_revA2.bit

ATM (2-Port)

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Fabrication Family Data for RDN PCAs

PCB number	Board Description	Schematic	Layout File	Assembly Drawing	Fabrication Drawing	Outline Drawing	Mechanical Assembly	Reports to PCAs
PCB-0007-05	CMTS 1x4 Dual 4 Meg flash BSR 1K Components	SCH-0007-05_revA.pdf	PCB-0007-05_rev01.brd	DWG-0011-05_revA.pdf	DWG-0010-05_revA.pdf	DWG-0168-01_revA.pdf	DWG-0164-01_revA.pdf	PCA-0007-05, PCA-0027-03 — BSR64K, BSR1K
PCB-0012-01	CMTS 1x4 I/O	SCH-0012-01_revA.pdf	PCB-0012-01_revA.brd	DWG-0035-01_revA.pdf	DWG-0034-01_revA.pdf	DWG-0033-01_revA.pdf	N/A	PCA-0012-01
PCB-0020-01	CMTS 2x8 Downstream (Analog Upconverter)	SCH-0020-02_rev01.pdf	PCB-0020-02_rev01.brd	DWG-0078-01_rev01.pdf	DWG-0077-01_rev01.pdf	DWG-0076-01_rev01.pdf	N/A	PCA-0020-02
PCB-0029-01	CMTS 2x8 TI	SCH-0029-01_rev01.pdf	PCB-0029-01_rev01.brd	DWG-0192-01_rev01.pdf	DWG-0191-01_rev01.pdf	DWG-0190-01_rev01.pdf	N/A	PCA-0029-01
PCB-0033-01	Digial Upconverter	SCH-0033-01_rev01.pdf	PCB-0033-01_rev01.brd	DWG-0243-01_rev01.pdf	DWG-0242-01_rev01.pdf	DWG-0241-01_rev01.pdf	N/A	PCA-0033-01
PCA-0042-02	CMTS Protected I/O 1X4	SCH-0042-02_rev01.pdf	PCB-0042-02_rev01.brd	DWG-0249-02_rev01.pdf	DWG-0248-02_rev01.pdf	DWG-0247-02_rev01.pdf	N/A	PCA-0042-02
PCA-0043-02	CMTS Spare I/O 1X4	SCH-0043-02_rev01.pdf	PCB-0043-02_rev01.brd	DWG-0252-02_rev01.pdf	DWG-0251-02_rev01.pdf	DWG-0250-01_rev01.pdf	N/A	PCA-0043-02
PCB-0045-02	CMTS 2x8 Broadcom	SCH-0045-02_rev01.pdf	PCB-0045-02_rev01.brd	DWG-0262-01_rev01.pdf	DWG-0261-01_rev01.pdf	DWG-0260-01_rev01.pdf	N/A	PCA-0045-02, PCA-0065-02 — BSR64K 2x8, BSR2K
PCB-0044-01	CMTS GigE Daughter Card	SCH-0044-01_rev01.pdf	PCB-0044-01_rev01.brd	DWG-0259-01_rev01.pdf	DWG-0258-01_rev01.pdf	DWG-0259-01_rev01.pdf	N/A	PCA-0044-01
PCB-0024-02	BSR1000 RJ45 adapter	SCH-0024-02_revA.pdf	PCB-0024-02_revA.brd	DWG-0131-01_revA.pdf	DWG-0130-01_revA.pdf	DWG-0129-01_revA.pdf	N/A	PCA-0024-02
PCB-0049-01	RF Backplane 1x4 50A	SCH-0049-01_rev01.pdf (rfbp1x4_sch-0049.	PCB-0049-01_rev01.brd	DWG-0275-01_rev01.pdf	DWG-0274-01_rev01.pdf	DWG-0273-01_rev01.pdf	N/A	PCA-0049-01

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PCB number	Board Description	Schematic (01.pdf)	Layout File	Assembly Drawing	Fabrication Drawing	Outline Drawing	Mechanical Assembly	Reports to PCAs
PCB-0053-01	Midplane 2x8 / 1x4 50A	SCH-0053-01_rev01.pdf	PCB-0053-01_rev01.brd	DWG-0288-01_rev01.pdf	DWG-0287-01_rev01.pdf	DWG-0286-01_rev01.pdf	N/A	
PCB-0055-02	CMTS 1x4 US/Euro	SCH-0055-02_rev01.pdf	PCB-0055-02_rev01.brd	DWG-301-02_rev01.pdf	DWG-300-02_rev01.pdf	DWG-302-01_rev01.pdf	DWG-0365-01_rev01.pdf BSR1K	PCA-0055-02 BSR1K US, PCA-0056-02 BSR1K Euro, PCA-0057-02 BSR64K US, PCA-0058-02 BSR64K Euro
PCA-0005-03	SRM	SCH-0002-3_revA.pdf	PCB-0006-03_revA_deliverables.zip	bundled in Zip file	bundled in Zip file	bundled in Zip file	DWG-0364-01_rev03.pdf BSR64K	
PCA-0011-03	SRM I/O	SCH-0011-03_revA.pdf	PCB-0011-03_rev1_deliverables.zip	bundled in Zip file	bundled in Zip file	bundled in Zip file		
PCA-0025-03	Gigabit Ethernet (1 Port)	SCH-0025-3_rev01.pdf	PCB-0025-03_rev01_deliverables.zip	bundled in Zip file	bundled in Zip file	bundled in Zip file		
PCA-0013-02	Optical I/O	SCH-0013-02_revA.pdf	PCB-0013-02_rev01_deliverables.zip	bundled in Zip file	bundled in Zip file	bundled in Zip file		
PCA-0014-01	Fast Ethernet (8 Port)	SCH-0014-01_rev02.pdf	PCB-0014-01_deliverables.zip	bundled in Zip file	bundled in Zip file	bundled in Zip file		
PCA-0015-01	Fast Ethernet I/O	SCH-0015-01_latest.pdf	PCB-0015-01_rev01_deliverables.zip	bundled in Zip file	bundled in Zip file	bundled in Zip file		
PCA-0010-06	POS (1 Port) + FastE (1 Port)	SCH-0010-06_rev_C.pdf	PCB-0010-02_rev01_deliverables.zip	bundled in Zip file	bundled in Zip file	bundled in Zip file		
PCA-0010-06	POS (2 Port)	SCH-0010-06_rev_C.pdf	PCB-0010-02_rev01_deliverables.zip	bundled in Zip file	bundled in Zip file	bundled in Zip file		
PCA-0026-01	OC-48 ADM	SCH-0026-01.pdf	PCB-0026_01_deliverables.zip	bundled in Zip file	bundled in Zip file	bundled in Zip file		
PCA-0035-01	ATM (2 Port)	SCH-0035-01_rev01.pdf	PCB-0035-01_rev01_deliverables.zip	bundled in Zip file	bundled in Zip file	bundled in Zip file		
PCB-0059-01	CMTS Quad Ethernet Daughter Card	SCH-0059-01_rev01.pdf	PCB-0059-01_rev01.brd	DWG-0310-01_rev01.pdf	DWG-309-01_rev01.pdf	DWG-308-01_rev01.pdf	N/A	PCA-0059-01

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PCB number	Board Description	Schematic	Layout File	Assembly Drawing	Fabrication Drawing	Outline Drawing	Mechanical Assembly	Reports to PCAs
PCB-0073-01	Active I/O CMTS 2X8	SCH-0073-01_rev01.pdf	PCB-0073-01_rev01.brd	DWG-0353-01_rev01.pdf	DWG-0352-01_rev01.pdf	DWG-0351-01_rev01.pdf	N/A	PCA-0073-01
PCB-0074-01	Spare I/O CMTS 2x8	SCH-0074-01_rev01.pdf	PCB-0074-01_rev01.brd	DWG-0356-01_rev01.pdf	DWG-0355-01_rev01.pdf	DWG-0354-01_rev01.pdf	N/A	PCA-0074-01
PCB-0075-01	Spare RF Backplane 2x8	SCH-0075-01_rev01.pdf	PCB-0075-01_rev01.brd	DWG-0359-01_rev01.pdf	DWG-0358-01_rev01.pdf	DWG-0357-01_rev01.pdf	N/A	PCA-0075-01
PCB-0079-01	Midplane, 60A	SCH-0079-01_rev01.pdf	PCB-0079-01_rev01.brd	DWG-0381-01_rev01.pdf	DWG-0380-01_rev01.pdf	DWG-0379-01_rev01.pdf	N/A	PCA-0079-01
PCB-0080-01	RF Backplane 60A	SCH-0080-01_rev01.pdf	PCB-0080-01_rev01.brd	DWG-0384-01_rev01.pdf	DWG-0383-01_rev01.pdf	DWG-0382-01_rev01.pdf	N/A	PCA-0080-01

Chassis Number	Description	Mechanical Assembly	Base Unit Assembly	Other	Sheetmetal Subassembly	CMTS PCAs used
CHS-0002-04	1U CMTS BSR1000	N/A	DWG-0232-01_revF.pdf	DWG-0203-01_revB.pdf	N/A	PCA-0027-03
CHS-0007-01	1U CMTS BSR1000 US	N/A	DWG-0366-01_rev02.pdf	DWG-0203-01_revB.pdf	N/A	PCA-0055-02
CHS-0008-01	1U CMTS BSR1000 Euro	N/A	DWG-0366-01_rev02.pdf	DWG-0203-01_revB.pdf	N/A	PCA-0056-02
CHS-0015-01	14U Redundant 1X4, 50A BSR64K Chassis	DWG-0051-03_rev03.pdf	DWG-0362-01_rev01.pdf	none	SUB-0017-03	PCA-0057-02 + I/O PCA-0058-02 + I/O
CHS-0006-01	14U Redundant 2X8, 60A BSR64K Chassis	TBD	TBD	TBD	TBD	PCA-0045-02 + I/O
CHS-0017-01	BSR 2000, CMTS 2X8 with Ethernet	TBD	TBD	TBD	TBD	PCA-0065-02 + I/O

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Company Licenses

NAME	PARTIES
RSA Receipt of Services	River Delta RSA Data Security, Inc.
Software License Agreement, Addendum and Purchase Orders	Packet Technologies phase2
Memorandum of Understanding	River Delta Viasat
Purchase Order #506	River Delta Wind River Systems, Inc.
Purchase Order #107-991604	Packet Technologies, Inc. WindRiver
Emperative, Inc. Relationship Agreement	RiverDelta Networks Emperative, Inc.
Employment Letter w/NDA, Non-compete Agreement, Developments Agreement	RiverDelta Networks, Inc. F. Dennis Periquet
OEM Program License Agreement	RiverDelta Networks Virata Corp.
Employment Letter w/NDA, Non-compete Agreement, Developments Agreement	Packet Technologies, Inc. Jon C.R. Bennett
Employment Letter w/NDA, Non-compete Agreement, Developments Agreement	Packet Technologies, Inc. Swarup Sahoo
Executive Agreement w/Developments Agreement	RiverDelta Networks, Inc. Weidong Chen
Executive Agreement w/ Developments Agreement	RiverDelta Networks, Inc. Zhao Liu
Executive Agreement w/Developments Agreement	RiverDelta Networks, Inc. Doug Wood
Executive Agreement w/Developments Agreement	RiverDelta Networks, Inc. Jeffrey Walker
Executive Agreement w/Developments Agreement	RiverDelta Networks, Inc. Joseph A. Cozzolino
Executive Agreement	Packet Technologies, Inc. Raj K. Duggal

NAME	PARTIES
Executive Agreement w/Developments Agreement	RiverDelta Networks, Inc. Jerry Z.Y. Guo
Employment Letter w/NDA, Non-compete Agreement, Developments Agreement	Packet Technologies, Inc. Robert Kelly
Jacobs Rimell-RiverDelta Networks Co-Marketing Partnership Agreement	RiverDelta Networks, Inc. Jacobs Rimell
Marketing and Referral Agreement	RiverDelta Networks, Inc. Unisphere Networks, Inc.
Manufacturing Services Agreement	RiverDelta Networks, Inc. IEC Electronics Corp.
Letter Agreement	RiverDelta Networks, Inc. ViaSat, Inc.
DRAFT -- ViaSat-RiverDelta Broadband Series Router Term Sheet May 14, 2001	RiverDelta Networks, Inc. ViaSat
RiverDelta Networks, Inc. International Distribution Agreement	RiverDelta Networks, Inc. KabelKON Trading & Consultancy Ltd.
RiverDelta Networks, Inc. International Distribution Agreement	RiverDelta Networks, Inc. GENO Trading s.r.o.
RiverDelta Networks, Inc. International Distribution Agreement	RiverDelta Networks, Inc. Teleste Corp.
RiverDelta Networks, Inc. International Distribution Agreement	RiverDelta Networks, Inc. [template]
RiverDelta Networks, Inc. Distribution Agreement	RiverDelta Networks, Inc.
Employment Offer Letter	RiverDelta Networks, Inc. and Gerard White
Executive Agreement w/ Developments Agreement	RiverDelta Networks, Inc. and Gerard White
Correspondence re Domain Name Registration and Invoices	RiverDelta Networks, Inc.
Receipt relating to Domain Name Payments	RiverDelta Networks, Inc.
Web Address Registration Invoice	RiverDeltaNetworks.org
Web Address Registration Invoice	RiverDeltaNetworks.net

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NAME	PARTIES
Web Address Registration Invoice	RiverDeltaNetworks.com
Web Address Registration Invoice	RiverDelta.org
Web Address Registration Confirmation	RiverDeltaNetworks.org
Web Address Registration Confirmation	RiverDeltaNetworks.net
Web Address Registration Confirmation	RiverDeltaNetworks.com
Web Address Registration Confirmation	RiverDelta.org
Statement of Work	RiverDelta Networks, Inc. RSA Security, Inc.
RSA Security Inc. Professional Services Agreement	RiverDelta Networks, Inc. RSA Security, Inc.
Price Quote	RiverDelta Networks, Inc. Insight Electronics, Inc.
Invention Disclosure – A Mechanism to Implement a Highly Available CMTS using a combination of Redundant components, RF and IF Relays	Gerry White
RDN Patent Disclosure – Hierarchical Packet Discard Mechanism	Jon C.R. Bennett
U.S. PTO Transmittal Papers For Data Rate Limiting	Inventor Zhao Liu, et al
U.S. PTO Transmittal Papers For Radio Frequency Communications Redundancy	Gerard White, et al
U.S. PTO Transmittal Papers For Data Packet Discarding	Jon C. R. Bennett
U.S. PTO Transmittal Papers For Packetized Data Discard	Jon C. R. Bennett
PCT General Power of Attorney	RiverDelta Networks Mintz, Levin et al.
Power of Attorney	RiverDelta Networks TIPLO Attorneys-at-Law
Netscape Public License	Netscape Corp.
Project Agreement No. A3A55 Revision A	RiverDelta Networks Agilent Technologies

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Licenses

NAME	PARTIES
RSA Receipt of Services	RiveDelta RSA Data Security, Inc.
Software License Agreement, Addendum and Purchase Orders	Packet Technologies phase2
Memorandum of Understanding	River Delta Viasat
Purchase Order #506	RiverDelta Wind River Systems, Inc.
Purchase Order #107-991604	Packet Technologies, Inc. WindRiver
,perative, Inc. Relationship Agreement	RiverDelta Networks Emperative, Inc.
Employment Letter w/NDA, Non-compete Agreement, Developments Agreement	RiverDelta Networks, Inc. F. Dennis Periquet
OEM Program License Agreement	RiverDelta Networks Virata Corp.
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Executive Agreement w/ Developments Agreement	RiverDelta Networks, Inc. Zhao Liu
Executive Agreement w/Developments Agreement	RiverDelta Networks, Inc. Doug Wood
Executive Agreement w/Developments Agreement	RiverDelta Networks, Inc. Jeffrey Walker
Executive Agreement w/Developments Agreement	RiverDelta Networks, Inc. Joseph A. Cozzolino
Executive Agreement	Packet Technologies, Inc. Raj K. Duggal

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NAME	PARTIES
Executive Agreement w/Developments Agreement	RiverDelta Networks, Inc. Jerry Z.Y. Guo
Employment Letter w/NDA, Non-compete Agreement, Developments Agreement	Packet Technologies, Inc. Robert Kelly
Jacobs Rimell-RiverDelta Networks Co-Marketing Partnership Agreement	RiverDelta Networks, Inc. Jacobs Rimell
Marketing and Referral Agreement	RiverDelta Networks, Inc. Unisphere Networks, Inc.
Manufacturing Services Agreement	RiverDelta Networks, Inc. IEC Electronics Corp.
Letter Agreement	RiverDelta Networks, Inc. ViaSat, Inc.
DRAFT -- ViaSat-RiverDelta Broadband Series Router Term Sheet May 14, 2001	RiverDelta Networks, Inc. ViaSat
RiverDelta Networks, Inc. International Distribution Agreement	RiverDelta Networks, Inc. KabelKON Trading & Consultancy Ltd.
RiverDelta Networks, Inc. International Distribution Agreement	RiverDelta Networks, Inc. GENO Trading s.r.o.
RiverDelta Networks, Inc. International Distribution Agreement	RiverDelta Networks, Inc. Teleste Corp.
RiverDelta Networks, Inc. International Distribution Agreement	RiverDelta Networks, Inc. [template]
RiverDelta Networks, Inc. Distribution Agreement	RiverDelta Networks, Inc.
Employment Offer Letter	RiverDelta Networks, Inc. Gerard White
Executive Agreement w/ Developments Agreement	RiverDelta Networks, Inc. Gerard White
Correspondence re Domain Name Registration and Invoices	RiverDelta Networks, Inc.
Receipt relating to Domain Name Payments	RiverDelta Networks, Inc.
Web Address Registration Invoice	RiverDeltaNetworks.org
Web Address Registration Invoice	RiverDeltaNetworks.net

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NAME	PARTIES
Web Address Registration Invoice	RiverDeltaNetworks.com
Web Address Registration Invoice	RiverDelta.org
Web Address Registration Confirmation	RiverDeltaNetworks.org
Web Address Registration Confirmation	RiverDeltaNetworks.net
Web Address Registration Confirmation	RiverDeltaNetworks.com
Web Address Registration Confirmation	RiverDelta.org
Statement of Work	RiverDelta Networks, Inc. RSA Security, Inc.
RSA Security Inc. Professional Services Agreement	RiverDelta Networks, Inc. RSA Security, Inc.
Price Quote	RiverDelta Networks, Inc. Insight Electronics, Inc.
Invention Disclosure – A Mechanism to Implement a Highly Available CMTS using a combination of Redundant components, RF and IF Relays	Gerry White
RDN Patent Disclosure – Hierarchical Packet Discard Mechanism	Jon C.R. Bennett
U.S. PTO Transmittal Papers For Data Rate Limiting	Inventor Zhao Liu, et al
U.S. PTO Transmittal Papers For Radio Frequency Communications Redundancy	Gerard White, et al
U.S. PTO Transmittal Papers For Data Packet Discarding	Jon C. R. Bennett
U.S. PTO Transmittal Papers For Packetized Data Discard	Jon C. R. Bennett
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