'.S. DEPARTMENT OF COMMERCE OMB No. 0651-0027 (exp. 6/30/2008) 12-31-2009 ted States Patent and Trademark Office RE(To the Director of the U.S. Patent and Tra-103585070 ints or the new address(es) below. 1. Name of conveying party(ies) 2. Name and address of receiving party(ies) **ALPHION CORPORATION** Name: New Jersey Economic Development Authority Internal Address: P.O. Box 990 Additional name(s) of conveying party(ies) attached? Yes No 3. Nature of conveyance/Execution Date(s): Street Address: 36 West State Street Execution Date(s) DECEMBER 17, 2009 Assignment Merger City: Trenton Security Agreement Change of Name Joint Research Agreement State: New Jersey Government Interest Assignment Country: USA Zip: 08625 Executive Order 9424, Confirmatory License Other Additional name(s) & address(es) attached? ☐ Yes ☑ No 4. Application or patent number(s): This document is being filed together with a new application A. Patent Application No.(s) B. Patent No.(s) See Schedule I attached 30 2009 Additional numbers attached? Yes No 5. Name and address to whom correspondence 6. Total number of applications and patents concerning document should be mailed: involved: 30 Name: New Jersey Economic Development Authority 7. Total fee (37 CFR 1.21(h) & 3.41) \$_1,200 Internal Address: P.O. Box 990 Authorized to be charged by credit card Attn: Alice Adi, Closing Officer Authorized to be charged to deposit account ✓ Enclosed Street Address:_ None required (government interest not affecting title) 8. Payment Information City: Trenton a. Credit Card Last 4 Numbers _____ **Zip**: 08625 State: New Jersey Expiration Date _____ Phone Number: 609-292-1800 b. Deposit Account Number Fax Number: Authorized # ser Mame_ 12**00.00** OP Email Address: aadi@njeda.com 9. Signature: 12/28/2009 Date Signature Total number of pages including cover Alice Adi, Closing Officer-Closing Services sheet, attachments, and documents:

Documents to be recorded (including cover sheet) should be faxed to (571) 273-0140, or malled to:
Mail Stop Assignment Recordation Services, Director of the USPTO, P.O.Box 1450, Alexandria, V.A. 22313-1450

Name of Person Signing

SCHEDULE I

to

PATENT, TRADEMARK AND COPYRIGHT SECURITY AGREEMENT

PART A: PATENTS

i) Issued US patents:

- 1. Bit-rate and format insensitive all-optical clock extraction circuit (US pat. No. 6,563,621)
- 2. Format insensitive and bit rate independent optical preprocessor (US pat. No. 6,570,697)
- 3. Bit-rate and format insensitive all-optical clock extraction circuit (US pat. No. 6,594,072)
- 4. Bit-rate and format insensitive all-optical clock extraction circuit (US pat. No. 6,624,924)
- 5. Bit-rate and format insensitive all-optical circuit for reshaping, regeneration, and retiming of optical pulse streams (US pat. No. 6,636,318)
- 6. Format insensitive and bit rate independent optical preprocessor (US pat. No. 6,646,794)
- 7. Bit-rate and format insensitive all-optical clock extraction circuit (US pat. No. 6,671,467)
- 8. Bit-rate and format insensitive all-optical clock extraction circuit (US pat. No. 6,678,086)
- 9. Format insensitive and bit rate independent optical preprocessor (US pat. No. 6,724,484)
- 10. Format insensitive and bit rate independent optical preprocessor (US pat. No. 6,727,991)
- 11. Method and apparatus for testing an individual lightwave chip on a wafer (US pat. No. 6,777,252)
- 12. Device and method for simultaneous reproduction of lightwave signals (US pat. No. 6,804,426)
- 13. Optical signal quality selection system (US pat. No. 6,856,767)
- 14. Restoration management system and method in a MPLS network (US pat. No. 6,956,822)
- 15. Method and apparatus for bit-rate and format insensitive performance monitoring of lightwave signals (US pat. No. 7,009,210)
- 16. Generation and detection of optical maintenance signals in optical networks (US pat. No. 7,190,909)
- 17. Redundant path all-optical regeneration, reshaping and wavelength conversion for enhanced yield (US pat. No. 7,203,427)
- 18. Photonic integrated circuit (US pat. No. 7,239,768)
- 19. Integrated performance monitoring, performance maintenance, and failure detection for photonic regenerators (US pat. No. 7,319,555)
- 20. SOA-MZI device fault isolation (US pat. No. 7,440,179)

b) Active patent applications:

- 1. Disjoint Shared Protection (Serial No. 10/118,595)
- 2. Bit-rate and format insensitive all-optical circuit for reshaping, regeneration, and retiming of optical pulse streams (JAPAN Serial No.2002-533480)
- 3. Bit-rate and format insensitive all-optical circuit for reshaping, regeneration, and retiming of optical pulse streams (EU Serial No. 01979509.5)
- 4. Bit-rate and format insensitive all-optical circuit for reshaping, regeneration, and retiming of optical pulse streams (CANADA Serial No.2,425,263)
- 5. Network and access protection in optical networks (Serial No. 10/172,370)
- 6. Optical Time Division Multiplexing (Serial No. 10/442,876)
- 7. An Efficient Class of Architectures for Reed Solomon Decoding of Inputs with Variable Input Data Rates (Serial No. 11/755,614)

- 8. System and Method for Avoiding Upstream Reassembly at the OLT in GPON (Serial No. 12/043,558)
- 9. System and Method for Optical Communication Using Polarization Filtering (Serial No. 12/043,496)
- 10. Optical Component and Method of Fabrication (Serial No. 12/054,121)

PART B: TRADEMARKS

None

PART C: COPYRIGHTS

None

EL: 023731 FRAME: 000

PATENT, TRADEMARK AND COPYRIGHT SECURITY AGREEMENT

THIS PATENT, TRADEMARK AND COPYRIGHT SECURITY AGREEMENT (together with all amendments, restatements, supplements and modifications, if any, from time to time hereto, this "Agreement"), dated as of December 17, 2009 is made by ALPHION CORPORATION, having an address at 196 Princeton Hightstown Road, Building 1A, Princeton Junction, New Jersey 08850, a Delaware corporation ("Grantor"), in favor of NEW JERSEY ECONOMIC DEVELOPMENT AUTHORITY, having an address at 36 West State Street, PO Box 990, Trenton, New Jersey 08625-0990 ("Lender").

INTRODUCTION

Pursuant to that certain Convertible Loan Agreement dated as of the date hereof by and among Grantor and Lender (including all annexes, exhibits and schedules thereto, as from time to time amended, restated, supplemented or otherwise modified, the "Agreement"), the Lender has, subject to certain terms and conditions, agreed to make certain loans (the "Loans") to Grantor. To induce Lender enter into the Agreement and other Transaction Documents (as defined in the Agreement) and to induce Lender to make the Loans as provided for in the Agreement, Grantor has agreed to grant a continuing security interest in the Collateral to secure the Obligations pursuant to the terms of the Security Agreement of this date between Grantor and Lender (including all annexes, exhibits and schedules thereto, as from time to time amended, restated, supplemented or otherwise modified, the "Security Agreement") and certain other Transaction Documents, including, without limitation, this Agreement. Grantor also desires to grant to Lender a continuing security interest in the Intellectual Property Collateral (as defined below) owned by Grantor to secure the Obligations. This Introduction shall be construed as part of this Agreement.

NOW, THEREFORE, in consideration of the premises and mutual covenants herein contained and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Grantor and Lender hereby agree as follows:

- 1. <u>Definitions</u>. Unless otherwise defined herein, capitalized terms or matters of construction defined or established in the Security Agreement shall be applied herein as defined or established therein. All other undefined terms contained in this Agreement, unless the context indicates otherwise, shall have the meanings provided for by the UCC to the extent the same are used or defined therein.
- 2. <u>Grant of Security Interest in Intellectual Property Collateral</u>. To secure the prompt and complete payment, performance and observance of all of the Obligations, Grantor hereby grants, assigns, conveys, mortgages, pledges, hypothecates and transfers to Lender a Lien upon all its right, title and interest in, to and under the following property, whether now owned by or owing to, or hereafter acquired by or arising in favor of, Grantor (including under any trade names, styles or divisions of Grantor), and regardless of where located (collectively, the "Intellectual Property Collateral"):
 - (a) all of Grantor's patents and patent applications (collectively, "Patents") and rights under Patent license agreements to which it is a party ("Patent Licenses"), including those referred to in Part A to Schedule I hereto;
 - (b) all of Grantor's trademarks, including those referred to in Part B to Schedule I hereto;

- (c) all of Grantor's copyrights, and rights under copyright license agreements to which it is a party ("Copyright Licenses"), including those referred to in Part C to Schedule I hereto;
- (d) all registrations for any of the foregoing, and all reissues, continuations or extensions of the foregoing, together with all rights to register and record all of the foregoing;
- (e) all goodwill, trade secrets, proprietary or confidential information, technical information, procedures, formulae, quality control standards, designs, operating and training manuals, customer lists, and other General Intangibles with respect to the foregoing; and
- (f) all Proceeds of the foregoing, including (i) any and all proceeds of any insurance, indemnity, warranty or guaranty payable to any Person (as defined in the Agreement) from time to time with respect to any of the foregoing, (ii) any and all payments (in any form whatsoever) made or due and payable to any Person from time to time in connection with any requisition, confiscation, condemnation, seizure or forfeiture of all or any part of the foregoing by any governmental authority (or any Person acting under color of governmental authority), (iii) any claim of any Person against third parties for (A) past, present or future infringement of any copyright or Copyright License, (B) past, present or future infringement of any trademark, or (D) injury to the goodwill associated with any trademark, (iv) any recoveries by any Person against third parties with respect to any litigation or dispute concerning any of the foregoing, and (v) any and all other amounts from time to time paid or payable under or in connection with any of the foregoing, upon disposition or otherwise.
- 3. <u>Security Agreement</u>. The Lien granted pursuant to this Agreement is granted in conjunction with the Liens granted to Lender pursuant to the Security Agreement, and shall be released as set forth in the Transaction Documents. Grantor hereby acknowledges and affirms that the rights and remedies of Lender with respect to the Liens granted under this Agreement are more fully set forth in the Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein.
- 4. Remedies Upon Default. (a) Anything herein contained to the contrary notwithstanding, if and while Grantor shall be in default hereunder or an Event of Default exists under the Security Agreement, Grantor hereby covenants and agrees that the Lender, as the holder of a security interest under the UCC, may take such action permitted under the Security Agreement or permitted by law, in its absolute discretion, to foreclose upon the Intellectual Property Collateral covered hereby.
- 5. <u>Counterparts.</u> This Agreement may be executed and delivered by telecopier, e-mail, PDF or other facsimile transmission all with the same force and effect as if the same were a fully executed and delivered original manual counterpart.

[SIGNATURE PAGE FOLLOWS]

Execution Copy

IN WITNESS WHEREOF, the parties hereto have executed this Patent, Trademark and Copyright Security Agreement as of the date first written above.

Grantor

CORPORATION, a Delaware **ALPHION** corporation

Name: Bharat P. Dave

Title: President & CEO

Lender

NEW JERSEY ECONOMIC DEVELOPMENT **AUTHORITY**

By:_

Name: Teri Dunlop

Title: Director-Closing Services

ACKNOWLEDGMENT

STATE OF NEW JERSEY

SS.:

COUNTY OF MONMOUTH

BE IT REMEMBERED, that on this 17th day of December, 2009, before me, the subscriber, personally appeared BHARAT P. DAVE, who, being by me duly sworn, did depose and make proof to my satisfaction that he is the PRESIDENT & CEO of ALPHION CORPORATION, the corporation mentioned in the within Instrument; that the execution, as well as the making of this Instrument, has been duly authorized by a proper resolution of the Board of Directors of said corporation; and said Instrument was signed and delivered by said officer as and for the voluntary act and deed of said corporation.

> **CHRISANNE MILKO NOTARY PUBLIC** STATE OF NEW JERSEY MY COMMISSION EXPIRES 12/17/2012

melin

PATENT

REEL: 023731 FRAME: 0007

ACKNOWLEDGMENT

STATE OF NEW JERSEY

SS.:

RECORDED: 12/30/2009

COUNTY OF MERCER

BE IT REMEMBERED, that on this 17th day of December, 2009, before me, the subscriber, personally appeared TERI DUNLOP, who, being by me duly sworn, did depose and make proof to my satisfaction that she is the DIRECTOR – CLOSING SERVICES of the NEW JERSEY ECONOMIC DEVELOPMENT AUTHORITY, the authority mentioned in the within Instrument; that the execution, as well as the making of this Instrument, has been duly authorized by a proper resolution of the Board of Members of said authority; and said Instrument was signed and delivered by said officer as and for the voluntary act and deed of said authority.