

PATENT ASSIGNMENT

Electronic Version v1.1
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| SUBMISSION TYPE: | NEW ASSIGNMENT |
| NATURE OF CONVEYANCE: | ASSIGNMENT |
| CONVEYING PARTY DATA | |
| Name | Execution Date |
| CIENA LUXEMBOURG S.A.R.L. | 05/27/2011 |
| RECEIVING PARTY DATA | |
| Name: | CIENA CORPORATION |
| Street Address: | 1201 Winterson Road |
| City: | Linthicum |
| State/Country: | MARYLAND |
| Postal Code: | 21090 |
| PROPERTY NUMBERS Total: 1 | |
| Property Type | Number |
| Application Number: | 13264764 |
| CORRESPONDENCE DATA | |
| Fax Number: | (613)788-2247 |
| Phone: | 613-788-2200 |
| Email: | sharon.mattocks@blakes.com |
| <i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via US Mail.</i> | |
| Correspondent Name: | BLAKE, CASSELS & GRAYDON LLP |
| Address Line 1: | 45 O'CONNOR STREET, SUITE 2000 |
| Address Line 4: | OTTAWA, CANADA K1P 1A4 |
| ATTORNEY DOCKET NUMBER: | 102831/00457 |
| NAME OF SUBMITTER: | Kent Daniels |
| Total Attachments: 11 source=Ciena_Lux_to_Ciena_Corp_Assignment_Recordal#page1.tif source=Ciena_Lux_to_Ciena_Corp_Assignment_Recordal#page2.tif source=Ciena_Lux_to_Ciena_Corp_Assignment_Recordal#page3.tif source=Ciena_Lux_to_Ciena_Corp_Assignment_Recordal#page4.tif | |

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UNITED STATES PATENT AND TRADEMARK OFFICE

Facsimile Transmission

To: Name: BLAKE, CASSELS & GRAYDON LLP
 Company: 45 O'CONNOR STREET, SUITE 2000
 Fax Number: 16137882247
 Voice Phone:

From: Name: ASSIGNMENT RECORDATION SERVICES
 Voice Phone: 571-272-3350

37 C.F.R. 1.6 sets forth the types of correspondence that can be communicated to the Patent and Trademark Office via facsimile transmissions. Applicants are advised to use the certificate of facsimile transmission procedures when submitting a reply to a non-final or final Office action by facsimile (37 CFR 1.8(a)).

Fax Notes:

| Pg# | Description |
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| 1 | Cover Page |
| 2 | Notice |
| 6 | Batch 2486218 Document 1 |

USPTO ASSIGNMENT SYSTEM PROCESSING

Date and time of transmission: Wednesday, June 01, 2011 2:06:02 PM
Number of pages including this cover sheet: 07



UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

JUNE 01, 2011

PTAS

BLAKE, CASSELS & GRAYDON LLP
45 O'CONNOR STREET, SUITE 2000
OTTAWA, K1P 1A4 CANADA



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UNITED STATES PATENT AND TRADEMARK OFFICE
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 571-272-3350. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, MAIL STOP: ASSIGNMENT SERVICES BRANCH, P.O. BOX 1450, ALEXANDRIA, VA 22313.

RECORDATION DATE: 06/01/2011

REEL/FRAME: 026368/0715

NUMBER OF PAGES: 6

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).
DOCKET NUMBER: 102831/00001

ASSIGNOR:

CIENA LUXEMBOURG S.A.R.L.

DOC DATE: 05/27/2011

ASSIGNEE:

CIENA CORPORATION
1201 WINTERSON ROAD
LINTHICUM, MARYLAND 21090

026368/0715 PAGE 2

APPLICATION NUMBER: 12419368 FILING DATE: 04/07/2009
PATENT NUMBER: ISSUE DATE:
TITLE: CLOCK RECOVERY WITH CHANNEL COEFFICIENTS

APPLICATION NUMBER: 12420970 FILING DATE: 04/09/2009
PATENT NUMBER: ISSUE DATE:
TITLE: ENABLING AN ETHERNET RING NETWORK TO SCALABLY SUPPORT A HUB-
AND-SPOKE CONNECTIVITY MODEL

APPLICATION NUMBER: 12421227 FILING DATE: 04/09/2009
PATENT NUMBER: ISSUE DATE:
TITLE: IN-BAND SIGNALING FOR POINT-MULTIPOINT PACKET PROTECTION
SWITCHING

APPLICATION NUMBER: 12430671 FILING DATE: 04/27/2009
PATENT NUMBER: ISSUE DATE:
TITLE: VIRTUAL LINKS IN A ROUTED ETHERNET MESH NETWORK

APPLICATION NUMBER: 12431493 FILING DATE: 04/28/2009
PATENT NUMBER: ISSUE DATE:
TITLE: PRE-COMPUTING ALTERNATE FORWARDING STATE IN A ROUTED
ETHERNET MESH NETWORK

APPLICATION NUMBER: 12433316 FILING DATE: 04/30/2009
PATENT NUMBER: ISSUE DATE:
TITLE: METHOD AND APPARATUS FOR SUB-CARRIER FREQUENCY CONTROL

APPLICATION NUMBER: 12435973 FILING DATE: 05/05/2009
PATENT NUMBER: ISSUE DATE:
TITLE: METHOD AND APPARATUS FOR MULTICAST IMPLEMENTATION IN A
ROUTED ETHERNET MESH NETWORK

APPLICATION NUMBER: 12436470 FILING DATE: 05/06/2009
PATENT NUMBER: ISSUE DATE:
TITLE: OPTICAL ROUTING DEVICE AND OPTICAL NETWORK USING SAME

APPLICATION NUMBER: 12463827 FILING DATE: 05/11/2009
PATENT NUMBER: ISSUE DATE:
TITLE: DUAL HOMED E-SPRING PROTECTION FOR NETWORK DOMAIN
INTERWORKING

APPLICATION NUMBER: 12485375 FILING DATE: 06/16/2009
PATENT NUMBER: ISSUE DATE:
TITLE: METHOD FOR ASSURING COUNTERBORE DEPTH OF VIAS ON PRINTED
CIRCUIT BOARDS AND PRINTED CIRCUIT BOARDS MADE ACCORDINGLY

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APPLICATION NUMBER: 12571722 FILING DATE: 10/01/2009
PATENT NUMBER: ISSUE DATE:
TITLE: METHOD AND APPARATUS FOR PROVIDING BYPASS CONNECTIVITY
BETWEEN ROUTERS

APPLICATION NUMBER: 12608022 FILING DATE: 10/29/2009
PATENT NUMBER: ISSUE DATE:
TITLE: SOFT DECODING OF DATA IN A COHERENT OPTICAL RECEIVER

APPLICATION NUMBER: 12644409 FILING DATE: 12/22/2009
PATENT NUMBER: ISSUE DATE:
TITLE: ZERO MEAN CARRIER RECOVERY

APPLICATION NUMBER: 12696089 FILING DATE: 01/29/2010
PATENT NUMBER: ISSUE DATE:
TITLE: REDUCING OPTICAL SERVICE CHANNEL INTERFERENCE IN PHASE
MODULATED WAVELENGTH DIVISION MULTIPLEXED (WDM)
COMMUNICATION SYSTEMS

APPLICATION NUMBER: 12699927 FILING DATE: 02/04/2010
PATENT NUMBER: ISSUE DATE:
TITLE: METHOD FOR RAPID DETERMINATION OF LOWEST COST WAVELENGTH
ROUTES THROUGH A PHOTONIC NETWORK BASED ON PRE-VALIDATED
PATHS

APPLICATION NUMBER: 12718733 FILING DATE: 03/05/2010
PATENT NUMBER: ISSUE DATE:
TITLE: FAST VIRTUAL CONCATENATION SETUP

APPLICATION NUMBER: 12721802 FILING DATE: 03/11/2010
PATENT NUMBER: ISSUE DATE:
TITLE: SELF TEST OF A DUAL POLARIZATION TRANSMITTER

APPLICATION NUMBER: 12721876 FILING DATE: 03/11/2010
PATENT NUMBER: ISSUE DATE:
TITLE: INTEGRATED TRANSMIT AND RECEIVE MODULES FOR A COHERENT
OPTICAL TRANSMISSION SYSTEM

APPLICATION NUMBER: 12722841 FILING DATE: 03/12/2010
PATENT NUMBER: ISSUE DATE:
TITLE: METHOD TO TRANSFORM A DYNAMIC ANALOG OPTICAL NETWORK TO A
DIGITAL REPRESENTATION

026368/0715 PAGE 4

APPLICATION NUMBER: 12753381 FILING DATE: 04/02/2010
PATENT NUMBER: ISSUE DATE:
TITLE: HIGH DENSITY SWITCHING PLATFORM WITH INTERBAY CONNECTIONS
ARRANGEMENT

APPLICATION NUMBER: 12892959 FILING DATE: 09/29/2010
PATENT NUMBER: ISSUE DATE:
TITLE: E-SPRING (G.8032) INTERWORKING TO PROVIDE ACCESS PROTECTION

APPLICATION NUMBER: 13028475 FILING DATE: 02/16/2011
PATENT NUMBER: ISSUE DATE:
TITLE: METHOD AND SYSTEM FOR OPTICAL CONNECTION VALIDATION

APPLICATION NUMBER: 12966245 FILING DATE: 12/13/2010
PATENT NUMBER: ISSUE DATE:
TITLE: FABRIC EXTRA TRAFFIC

APPLICATION NUMBER: 13040590 FILING DATE: 03/04/2011
PATENT NUMBER: ISSUE DATE:
TITLE: MAKE BEFORE BREAK OPTICAL MESH NETWORK ELEMENT

APPLICATION NUMBER: 13047411 FILING DATE: 03/14/2011
PATENT NUMBER: ISSUE DATE:
TITLE: SHARED PHOTONIC MESH

APPLICATION NUMBER: 13047356 FILING DATE: 03/14/2011
PATENT NUMBER: ISSUE DATE:
TITLE: COHERENT OPTICAL HUBBING

APPLICATION NUMBER: 61140265 FILING DATE: 12/23/2008
PATENT NUMBER: ISSUE DATE:
TITLE: INTEGRATED TRANSMIT AND RECEIVE MODULES FOR A COHERENT
OPTICAL TRANSMISSION SYSTEM

ASSIGNMENT SERVICES BRANCH
PUBLIC RECORDS DIVISION

PATENT ASSIGNMENT

Electronic Version v1.1
Stylesheet Version v1.1

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| SUBMISSION TYPE: | NEW ASSIGNMENT |
| NATURE OF CONVEYANCE: | ASSIGNMENT |
| CONVEYING PARTY DATA | |
| Name | Execution Date |
| Ciena Luxembourg S.a.r.l. | 05/27/2011 |
| RECEIVING PARTY DATA | |
| Name: | CIENA CORPORATION |
| Street Address: | 1201 Winterson Road |
| City: | Linthicum |
| State/Country: | MARYLAND |
| Postal Code: | 21090 |
| PROPERTY NUMBERS Total: 27 | |
| Property Type | Number |
| Application Number: | 12419368 |
| Application Number: | 12420970 |
| Application Number: | 12421227 |
| Application Number: | 12430671 |
| Application Number: | 12431493 |
| Application Number: | 12433316 |
| Application Number: | 12435973 |
| Application Number: | 12436470 |
| Application Number: | 12463827 |
| Application Number: | 12485375 |
| Application Number: | 12571722 |
| Application Number: | 12608022 |
| Application Number: | 12644409 |
| Application Number: | 12696089 |
| Application Number: | 12699927 |

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| Application Number: | 12718733 |
| Application Number: | 12721802 |
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| Application Number: | 12753381 |
| Application Number: | 12892959 |
| Application Number: | 13028475 |
| Application Number: | 12966245 |
| Application Number: | 13040590 |
| Application Number: | 13047411 |
| Application Number: | 13047356 |
| Application Number: | 61140265 |

CORRESPONDENCE DATA

Fax Number: (613)788-2247
Correspondence will be sent via US Mail when the fax attempt is unsuccessful.
Phone: 613-788-2200
Email: sharon.mattocks@blakes.com
Correspondent Name: BLAKE, CASSELS & GRAYDON LLP
Address Line 1: 45 O'CONNOR STREET, SUITE 2000
Address Line 4: OTTAWA, CANADA K1P 1A4

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|-------------------------|--------------|
| ATTORNEY DOCKET NUMBER: | 102831/00001 |
|-------------------------|--------------|

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| NAME OF SUBMITTER: | Kent Daniels |
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Total Attachments: 4
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ASSIGNMENT OF PATENT RIGHTS

THIS PATENT ASSIGNMENT (this "**Patent Assignment**") is made and entered into as of March 19, 2010 ("**Effective Date**") by and between Ciena Luxembourg S.a.r.l., a Société à responsabilité limitée organized under the laws of the Grand Duchy of Luxembourg having a share capital of USD 20,000 having its registered office at 560A, rue de Neudorf, L-2220, Luxembourg, Grand-Duchy of Luxembourg, registered with the Luxembourg Trade and Companies Register under number B 150984. ("**Assignor**"), and Ciena Corporation, a corporation incorporated under the laws of the State of Delaware having its executive offices at 1201 Winterson Road, Linthicum, Maryland 21090 ("**Assignee**").

WHEREAS, Nortel Networks Limited, a corporation incorporated under the laws of Canada ("**NNL**") and certain of its affiliates, on the one hand, and Assignee and certain of its affiliates, including Assignor, on the other hand, entered into an amended and restated asset sale agreement dated as of November 24, 2009, as amended from time to time (the "**Asset Sale Agreement**") and certain ancillary agreements pursuant to which, among other things, NNL assigned to Assignor, among other assets, NNL's entire right, title and interest in and to the United States patents and patent applications set forth on Schedule A attached hereto (collectively, the "**United States Assigned Patents**"), as well as certain other patents and patent applications issued by or registered with other countries and jurisdictions;

WHEREAS, Assignor and Assignee entered into an Intellectual Property Sale and Assignment Agreement as of the Effective Date pursuant to which Assignor sold, assigned, transferred and set over to Assignee, and Assignee assumed, all of Assignor's right, title and interest in and to the United States Assigned Patents and certain other intellectual property; and

WHEREAS, Assignor and Assignee wish to document such assignment of the United States Assigned Patents in a form that is suitable for recordation with the United States Patent and Trademark Office.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor does hereby sell, assign, transfer and set over to Assignee, Assignor's entire right, title and interest in and to the United States Assigned Patents, including any continuations, divisions, continuations-in-part, reissues, reexaminations, extensions thereof, and including the subject matter of all claims which may be obtained therefrom for its own use and enjoyment, and for the use and enjoyment of its successors, assigns or other legal representatives, as fully and entirely as the same would have been held and enjoyed by Assignor if this Patent Assignment and sale had not been made, together with the right to sue and collect for past and future infringement or other unauthorized use thereof, any and all corresponding rights that, now or hereafter, may be secured in the United States and the physical patent prosecution files in Assignor's possession or under Assignor's control of any of the foregoing.

Assignor authorizes and requests the United States Patent and Trademark Office to record Assignee as owner of the United States Assigned Patents, including any continuations, divisions, continuations-in-part, reissues, reexaminations or extensions thereof, and to issue any and all letters patent of the United States thereon to Assignee, as assignee of the entire right, title and

interest in, to and under the same, for the sole use and enjoyment of Assignee, its successors, assigns or other legal representatives.

Assignor shall take all actions and execute and deliver such other documents that Assignee may reasonably request to effect the terms of this Patent Assignment and to perfect Assignee's title in and to those United States Assigned Patents assigned to it hereunder.

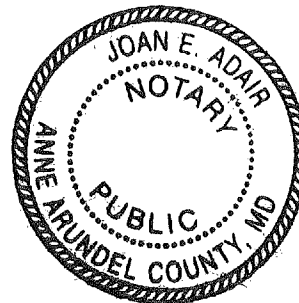
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SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, Assignor has caused this Patent Assignment to be executed by its duly authorized representatives as of the Effective Date.

CIENA LUXEMBOURG S.A.R.L.

By: [Signature]
Name:
Title:

STATE/PROVINCE MARYLAND)
COUNTY OF Anne Arundel)
(if applicable)) ss.:



On this 27th day of MAY 2011, before me personally appeared DAVID M. Rothenschein
and _____, both known to me, who being duly sworn, did
depose and say that the foregoing Patent Assignment was made for the purposes and
considerations so stated, and that they were authorized to act of behalf of Ciena Luxembourg
S.a.r.l. in entering into such Patent Assignment.

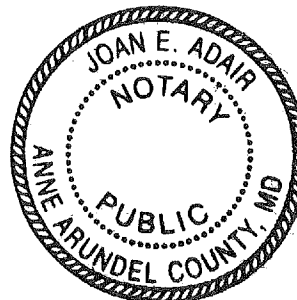
Joan E. Adair
Notary Public:
My Commission Expires: 10/7/2012

ACKNOWLEDGED BY:

CIENA CORPORATION

By: [Signature]
Name: DAVID M. Rothenschein
Title: Sr. VP, General Counsel

State of _____)
City of _____) ss.



SCHEDULE A

| App Filed Country Code | App Serial Number |
|------------------------|-------------------|
| US | 12/419,368 |
| US | 12/420,970 |
| US | 12/421,227 |
| US | 12/430,671 |
| US | 12/431,493 |
| US | 12/433,316 |
| US | 12/435,973 |
| US | 12/436,470 |
| US | 12/463,827 |
| US | 12/485,375 |
| US | 12/571,722 |
| US | 12/608,022 |
| US | 12/644,409 |
| US | 12/696,089 |
| US | 12/699,927 |
| US | 12/718,733 |
| US | 12/721,802 |
| US | 12/721,876 |
| US | 12/722,841 |
| US | 12/753,381 |
| US | 61/140,265 |
| US | 61/246,576 |
| US | 61/286,316 |
| US | 61/305,026 |
| US | 61/312,499 |
| US | 61/312,726 |
| US | 61/313,147 |
| US | 61/313,172 |
| US | 61/313,330 |
| WO | PCT/CA2009/000594 |
| WO | PCT/CA2009/001068 |
| WO | PCT/CA2010/000291 |
| WO | PCT/CA2010/000321 |
| WO | PCT/CA2010/000461 |
| WO | PCT/CA2010/000529 |
| WO | PCT/CA2010/000609 |
| WO | PCT/CA2010/000611 |
| WO | PCT/CA2010/000616 |
| WO | PCT/CA2010/000625 |