

**PATENT ASSIGNMENT**

Electronic Version v1.1  
 Stylesheet Version v1.1

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
Howard H. IRELAND	02/28/2003
Jeffery T. NICHOLS	02/28/2003
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	CIENA CORPORATION
<b>Street Address:</b>	1201 Winterson Road
<b>City:</b>	Linthicum
<b>State/Country:</b>	MARYLAND
<b>Postal Code:</b>	21090
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	10371298
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(704)366-9744
<i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>	
<b>Phone:</b>	704-790-3600
<b>Email:</b>	bbrown@worldpatents.com
<b>Correspondent Name:</b>	Clements Bernard PLLC
<b>Address Line 1:</b>	1901 Roxborough Road
<b>Address Line 2:</b>	Suite 250
<b>Address Line 4:</b>	Charlotte, NORTH CAROLINA 28211
<b>ATTORNEY DOCKET NUMBER:</b>	10.0000.CB - 10/371,298
<b>NAME OF SUBMITTER:</b>	Christopher L. Bernard
<b>Total Attachments: 3</b> source=10371298_Assignment_Correction#page1.tif source=10371298_Assignment_Correction#page2.tif	

OP \$40.00 10371298

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**PATENT  
 REEL: 023020 FRAME: 0677**



RECO

03-21-2003



Tab settings

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To the Honorable Commissioner of Patents and Trademarks: Please Record the attached original documents or copy thereof.

1. Name of conveying party(ies): IRELAND, Howard H. NICHOLS, Jeffery T.

3,1803

2. Name and address of receiving party(ies): Name: CIENA, Inc.

OFFICE OF PUBLIC RECORDS 2003 MAR 18 PM 3: 21 FINANCE SECTION

Additional name of conveying party(ies) attached?  Yes  No

3. Nature of conveyance:  Assignment  Merger  Security Agreement  Change of Name  Other

Internal Address:

Street Address: 1201 Winterson Road

City: Linthicum State: MD Zip: 21090

Execution Date: 02/28/2003

Additional Name(s) & address(es) attached?  Yes  No

4. Application number(s) or patent number(s): A. Patent Application No.(s) 10/371,298

B. Patent No.(s)

Additional numbers attached?  Yes  No

5. Name and address of party to whom correspondence concerning this document should be mailed:

Name: CIENA Corporation

Internal Address: Legal Department

Street Address: 1201 Winterson Road

City: Linthicum State: MD Zip: 21090

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 3.41) . . . . . \$ 40.00

Enclosed  Authorized to be charged to deposit account

8. Deposit account number:

(Attach duplicate copy of this page if paying by deposit account)

03/20/2003 DBYRNE 00000032 10371298

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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.

Daniel J. Santos Name of Person Signing

Daniel J. Santos Signature

Mar. 13, 03 Date

Total number of pages including cover sheet, attachments, and documents: 3

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

PATENT REEL: 013856 FRAME: 0230

PATENT REEL: 023020 FRAME: 0679

ASSIGNMENT

For good and valuable consideration, the receipt of which is hereby acknowledged, the person(s) named below (referred to as "INVENTOR" whether singular or plural) has sold, assigned, and transferred and does hereby sell, assign, and transfer to CIENA a Delaware corporation, having a place of business at **1201 Winterson Road, Linthicum, MD 21090-2205**, for itself and its successors, transferees, and assignees, the following:

The entire worldwide right, title, and interest in all inventions and improvements ("SUBJECT MATTER") that are disclosed in the provisional application filed under 35 U.S.C. §111(b) or non-provisional application filed under 35 U.S.C. §111(a) and entitled

**METHOD AND APPARATUS FOR EFFICIENTLY PERFORMING GALOIS FIELD MULTIPLICATION**

("APPLICATION") which:

- is to be filed herewith  
 was filed on February 21, 2003,  
now bearing U.S. application number: to be assigned; and

2. The entire worldwide right, title, and interest in and to:  
(a) the APPLICATION; (b) all applications claiming priority from the APPLICATION;  
(c) all utility, divisional, continuation, substitute, renewal, reissue, and other related applications thereto which have been or may be filed in the United States or elsewhere in the world; (d) all patents (including reissues and re-examinations) which may be granted on the applications set forth in (a), (b), (c) and (d) above; and (e) all right of priority in the APPLICATION, together with all rights to recover damages for infringement of provisional rights.

INVENTOR agrees that ASSIGNEE may apply for and receive patents for SUBJECT MATTER in ASSIGNEE's own name.

INVENTOR agrees to do the following, when requested, and without further consideration, in order to carry out the intent of this Assignment: (1) execute all oaths, assignments, powers of attorney, applications, and other papers necessary or desirable to fully secure to ASSIGNEE the rights, titles and interests herein conveyed; (2) communicate to ASSIGNEE all known facts relating to the SUBJECT MATTER; and (3) generally do all lawful acts that ASSIGNEE shall consider desirable for securing, maintaining, and enforcing worldwide patent protection relating to the SUBJECT MATTER and for vesting in ASSIGNEE the rights, titles, and interests herein conveyed. INVENTOR further agrees to provide any successor, assign, or legal representative of ASSIGNEE with the benefits and assistance provided to ASSIGNEE hereunder.

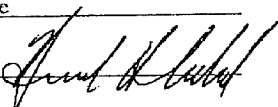
INVENTOR represents that INVENTOR has the rights, titles, and interests to convey as set forth herein, and covenants with ASSIGNEE that the INVENTOR has not made and will not hereafter make any assignment, grant, mortgage, license, or other agreement affecting the rights, titles, and interests herein conveyed.

PATENT  
REEL: 013856 FRAME: 0231

PATENT  
REEL: 023020 FRAME: 0680

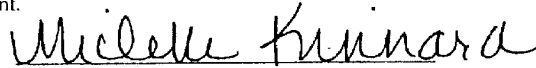
INVENTOR grants the attorney of record the power to insert on this Assignment any further identification that may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document.

This Assignment may be executed in one or more counterparts, each of which shall be deemed an original and all of which may be taken together as one and the same Assignment.

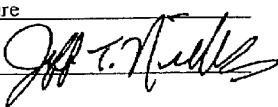
<u>Name and Signature</u>	<u>Date of Signature</u>	<u>Date Declaration Executed By This Person</u>
Howard H. Ireland 	2/28/2003	February 21, 2003

State of Georgia } S.S.  
County of Cherokee }  
On 2/28/2003 before me, Michelle Kinnard personally  
[DATE] [NOTARY PUBLIC]

appeared Howard H. Ireland personally known to me or proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

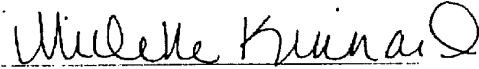


Notary Seal      Notary Public, Cherokee County, Georgia  
My Commission Expires April 30, 2006      Notary

<u>Name and Signature</u>	<u>Date of Signature</u>	<u>Date Declaration Executed By This Person</u>
Jeffery T. Nichols 	2/28/2003	February 21, 2003

State of Georgia } S.S.  
County of Cobb }  
On 2/28/2003 before me, Michelle Kinnard personally  
[DATE] [NOTARY PUBLIC]

appeared Jeffery T. Nichols personally known to me or proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.



Notary Seal      Notary Public, Cherokee County, Georgia  
My Commission Expires April 30, 2006      Notary

RECORDED: 03/18/2003

PATENT  
REEL: 013856 FRAME: 0232

RECORDED: 07/29/2009

PATENT  
REEL: 023020 FRAME: 0681