

FORM PTO-1619A  
Expires 06/30/99  
OMB 0651-0027

U.S. Department of Commerce  
Patent and Trademark Office  
**PATENT**

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Name (line 2) \_\_\_\_\_

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Name (line 1) Government of the United States of America, as

Name (line 2) represented by the Department of the Army, The

Address (line 1) 106 Wynn Drive

Address (line 2) ATTN: SMDC-LC-H (C. Green)

Address (line 3) Huntsville AL 35805  
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U.S. Department of Commerce  
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**PATENT**

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**Pages** Enter the total number of pages of the attached conveyance document including any attachments. #

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Enter either the Patent Application Number or the Patent Number (DO NOT ENTER BOTH numbers for the same property).

| Patent Application Number(s)            |                      |                      | Patent Number(s)     |                      |                      |
|---|----------------------|----------------------|----------------------|----------------------|----------------------|
| <input type="text" value="09/546,645"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| <input type="text"/>                    | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
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If this document is being filed together with a new Patent Application, enter the date the patent application was signed by the first named executing inventor. Month Day Year

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Enter PCT application number only if a U.S. Application Number has not been assigned.

PCT  PCT  PCT

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**Number of Properties** Enter the total number of properties involved. #

**Fee Amount** Fee Amount for Properties Listed (37 CFR 3.41): \$

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Authorization to charge additional fees: Yes  No

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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. Charges to deposit account are authorized, as indicated herein.

Christella M. Green

Name of Person Signing Signature Date

**CONFIRMATORY INSTRUMENT**

APPLICATION FOR (TITLE OF INVENTION)

NxM Digitally Programmable Optical Routing Switch

INVENTORS(S)

Kuang-Yi Wu and Jian-Yu Liu

SERIAL NO.

09/546,645

FILING DATE

April 10, 2000

CONTRACTOR

Chorum Technologies L.P.\*

CONTRACT NO.

DASG60-97-M-0081

The Invention identified above is a "Subject Invention" under Patent Rights Clause 52.227-11 June 1997  
 (identify clause by title and date)

Included in Contract No. DASG60-97-M-0081 with

U.S. Army Space & Strategic Defense Command.  
 (specify government agency)

This document confirms the paid-up license granted to the government under this contract in this invention, patent application, and any resulting patent, and all other rights acquired by the government through the referenced clause.

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Signed this 24th day of January, 2001

ATTEST:

(Seal)

Chorum Technologies L.P.  
 CONTRACTOR

BY:

  
 CONTRACTOR'S OFFICIAL AND TITLE

Daniel W. Rabun,  
 Vice President and General Counsel  
 1303 E. Arapaho Road  
 Richardson, TX 75081

\_\_\_\_\_  
 BUSINESS ADDRESS

\* formerly, Macro-Vision Communications, LLC and Chorum Technologies Inc.

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**PATENT**  
**REEL: 011392 FRAME: 0620**

Please type a plus sign (+) inside this box →

PTO/SB/21 (08-00)

Approved for use through 10/31/2002, OMB 0651-0031

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

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|   |                      |                        |  |
|---|----------------------|------------------------|--|
| <h1>TRANSMITTAL FORM</h1> <p>(to be used for all correspondence after initial filing)</p> | Application Number   | 09/546,645             |  |
|   | Filing Date          | 04/10/98               |  |
|   | First Named Inventor | Kuang-Yi Wu            |  |
|   | Group Art Unit       |                        |  |
|   | Examiner Name        |                        |  |
| Total Number of Pages in This Submission  | 4                    | Attorney Docket Number |  |

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### SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

|                         |  |
|-------------------------|--|
| Firm or Individual name | U.S. Army Space and Missile Defense Command (BMDO) |
| Signature               | Christella M. Green <i>Christella M. Green</i>     |
| Date                    | 12 Mar 01  |

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| Date                  | 12 Mar 01                  |

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