

07-16-2002

Form PTO-1595  
(Rev. 03/01)

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

OMB No. 0651-0027 (exp. 5/31/2002)

102156284

Tab settings

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

1. Name of conveying party(ies):

Jun Ohama  
Navin Sharma  
Douglas Sullivan

6-28-02

2. Name and address of receiving party(ies)

Name: EMC Corporation

Internal Address:

Street Address: 35 Parkwood Drive

City: Hopkinton State: MA Zip: 01749

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

3. Nature of conveyance:

- Assignment  Merger
- Security Agreement  Change of Name
- Other

Execution Date: June 26, 2002

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

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

10185898

If this document is being filed together with a new application, the execution date of the application is: June 26, 2002

A. Patent Application No.(s)

B. Patent No.(s)

Additional numbers attached?  Yes  No

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

Name: Mary Steubing

Internal Address:

Street Address: 41 Jewett Street

City: Pepperell State: MA Zip: 01463

6. Total number of applications and patents involved:

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

- Enclosed
- Authorized to be charged to deposit account

8. Deposit account number:

05-0889

DO NOT USE THIS SPACE

9. Signature.

07/15/2002 BYRNE 00000104 050689 10185898

01 FC:58

Mary Steubing

Name of Person Signing

Mary Steubing  
Signature

05/27/2002

Date

Total number of pages including cover sheet, attachments, and documents: 11

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

## ASSIGNMENT

**WHEREAS**, we, Jun Ohama, Navin Sharma, and Douglas Sullivan, have invented an invention comprising and/or embodying certain improvements or discoveries or both as described in an application for Letters Patent of the United States entitled **LARGE HIGH BANDWIDTH MEMORY SYSTEM**, the specification of which:

- is being executed on even date herewith and is about to be filed in the United States Patent Office;
- was filed on \_\_\_\_\_ as U.S. Application No. \_\_\_\_\_;
- was patented under U.S. Patent No. \_\_\_\_\_ on \_\_\_\_\_.

**WHEREAS**, EMC Corporation (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts and having a usual place of business at 35 Parkwood Drive, Hopkinton, Massachusetts 01748 desires to acquire an interest therein in accordance with agreements duly entered into with us;

**NOW, THEREFORE**, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey to ASSIGNEE all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

**AND**, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including

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the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

**AND**, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

**IN TESTIMONY WHEREOF**, we have hereunto set our hands and affixed our seals as set forth below:

-3-

Date: 6/26/2002

Navin Sharma  
Inventor's Signature

Print full name of first inventor: **Navin Sharma**  
Residence: 384 Sunderland Road, Apt. No. 19B, Worcester,  
MA 01604  
Citizenship: Nepal  
Mailing Address: 384 Sunderland Road, Apt. No. 19B, Worcester,  
MA 01604

STATE/Commonwealth of  
COUNTY OF

Massachusetts  
Sunderland

Then personally appeared before me the above-named Navin Sharma and acknowledged that he executed the foregoing instrument as his free act and deed this 26 day of June, 2002.

[Signature]  
Notary Public  
Print Name: \_\_\_\_\_  
My Commission expires \_\_\_\_\_

JULIA-ANNA M. WALECKI, Notary Public  
My Commission Expires July 12, 2002

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Date:

---

Inventor's Signature

Print full name of second inventor:

**Jun Ohama**

Residence:

127 Blackstone Street, Mendon, MA 01756 USA

Citizenship:

Japan

Mailing Address:

127 Blackstone Street, Mendon, MA 01756 USA

STATE/Commonwealth of \_\_\_\_\_

COUNTY OF \_\_\_\_\_

Then personally appeared before me the above-named Jun Ohama and acknowledged that he executed the foregoing instrument as his free act and deed this \_\_\_\_\_ day of \_\_\_\_\_, 2002.

---

Notary Public

Print Name: \_\_\_\_\_

My Commission expires \_\_\_ / \_\_\_ / \_\_\_

-5-

Date: 6/26/02

  
\_\_\_\_\_  
Inventor's Signature

Print full name of third inventor:

**Douglas Sullivan**

Residence:

34 Salvia Road, Milford, MA 01757

Citizenship:

USA

Mailing Address:

34 Salvia Road, Milford, MA 01757

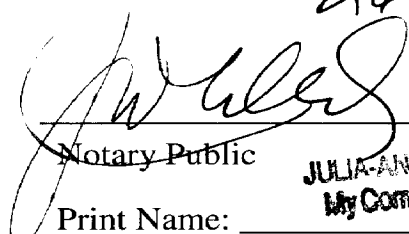
STATE/Commonwealth of

*Massachusetts*

COUNTY OF

*Middlesex*

Then personally appeared before me the above-named Douglas Sullivan and acknowledged that he executed the foregoing instrument as his free act and deed this 26 day of June, 2002.

  
\_\_\_\_\_  
Notary Public

JULIA-ANNA M. VALECKI, Notary Public  
My Commission Expires July 12, 2002

Print Name: \_\_\_\_\_

My Commission expires \_\_\_ / \_\_\_ / \_\_\_

**ASSIGNMENT**

**WHEREAS**, we, Navin Sharma, Jun Ohama, and Douglas Sullivan, have invented an invention comprising and/or embodying certain improvements or discoveries or both as described in an application for Letters Patent of the United States entitled **LARGE HIGH BANDWIDTH MEMORY SYSTEM**, the specification of which:

- is being executed on even date herewith and is about to be filed in the United States Patent Office;
- was filed on \_\_\_\_\_ as U.S. Application No. \_\_\_\_\_;
- was patented under U.S. Patent No. \_\_\_\_\_ on \_\_\_\_\_.

**WHEREAS**, EMC Corporation (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts and having a usual place of business at 35 Parkwood Drive, Hopkinton, Massachusetts 01748 desires to acquire an interest therein in accordance with agreements duly entered into with us;

**NOW, THEREFORE**, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey to ASSIGNEE all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

**AND**, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including

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the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

**AND**, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

**IN TESTIMONY WHEREOF**, we have hereunto set our hands and affixed our seals as set forth below:



-3-

Date:

---

Inventor's Signature

Print full name of first inventor:

**Navin Sharma**

Residence:

384 Sunderland Road, Apt. No. 19B, Worcester,  
MA 01604

Citizenship:

Nepal

Mailing Address:

384 Sunderland Road, Apt. No. 19B, Worcester,  
MA 01604

STATE/Commonwealth of \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

Then personally appeared before me the above-named Navin Sharma and acknowledged that he executed the foregoing instrument as his free act and deed this \_\_\_\_\_ day of \_\_\_\_\_, 2002.

---

Notary Public

Print Name: \_\_\_\_\_

My Commission expires \_\_\_ / \_\_\_ / \_\_\_

-4-

Date:

\_\_\_\_\_  
Inventor's Signature

Print full name of second inventor:

**Jun Ohama**

Residence:

127 Blackstone Street, Mendon, MA 01756 USA

Citizenship:

Japan

Mailing Address:

127 Blackstone Street, Mendon, MA 01756 USA

STATE/Commonwealth OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

Then personally appeared before me the above-named Jun Ohama and acknowledged that he executed the foregoing instrument as his free act and deed this \_\_\_\_\_ day of \_\_\_\_\_, 2002.

\_\_\_\_\_  
Notary Public

Print Name: \_\_\_\_\_

My Commission expires \_\_\_ / \_\_\_ / \_\_\_

-5-

Date:

\_\_\_\_\_  
Inventor's Signature

Print full name of third inventor:

**Douglas Sullivan**

Residence:

34 Salvia Road, Milford, MA 01757

Citizenship:

USA

Mailing Address:

34 Salvia Road, Milford, MA 01757

STATE/Commonwealth of \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

Then personally appeared before me the above-named Douglas Sullivan and acknowledged that he executed the foregoing instrument as his free act and deed this \_\_\_\_\_ day of \_\_\_\_\_, 2002.

\_\_\_\_\_  
Notary Public

Print Name: \_\_\_\_\_

My Commission expires \_\_\_ / \_\_\_ / \_\_\_