AD-A192 779 OPTICAL BUS EXTENDERS FOR HIGH SPEED COMPUTERS(U) 1/1
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N00014-87-C-0869

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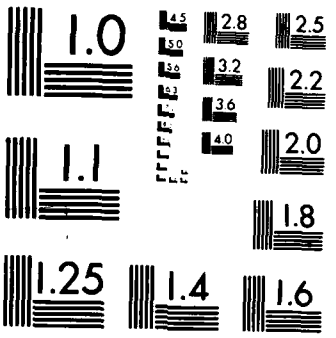
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OPTIVISION, INC.

2655 PORTAGE BAY AVENUE DAVIS, CALIFORNIA 95616 (916) 756-4429

February 10, 1988

SCIENTIFIC OFFICER
Mathematical Sciences Division
Office of Naval Research

Attn: Dr. William Miceli (Code 1111)
800 North Quincy Street
Arlington, Virginia 22217-5000

Ref: Contract N00014-87-C-0869
Deliverable item 0001AA

Dear Dr. Miceli:

Enclosed please find three copies of the Initial Technical Abstract that was mailed to the SDIO by Dr. Sawchuk, the contract PI on September 30, 1987.

The DCASMA office in San Francisco informs us that apparently the abstract has not reached you. We are enclosing the three copies to you and also distributing it to others on the contract distribution list.

Your acceptance and approval of this item will be most appreciated.

Sincerely,

Anil Jain

Anil Jain
President

Enclosures
AJ:mb

Copy: Mr. Doug Collins

: Director, NRL

: DTIC

OPTIVISION, INC.

2655 PORTAGE BAY AVENUE DAVIS, CALIFORNIA 95616 (916) 756-4429

OPTICAL BUS EXTENDERS FOR HIGH SPEED COMPUTERS

Initial Technical Abstract

Contract N00014-87-C-0869

Item 0001AA
(Sept.30,1987)

Delivered to:

1. Dr. William Miceli, (Code 1111)
   Scientific Officer,
   Mathematical Sciences Division
   Office of Naval Research
   800 North Quincy Street
   Arlington, VA 22217-5000

2. Director Naval Research Lab,
   ATTN: Code 2627
   Washington, DC 20375

3. Mr. Douglas Collins, (Code 1511)
   Administrative Contracting Officer
   Office of Naval Research
   800 North Quincy Street
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   Alexandria, Virginia 22314

SDIO SBIR FY87 Phase 1 Efforts

TOPIC: 11 - Optical Computing and Optical Signal Processing

Optical Bus Extenders for High Speed Computers

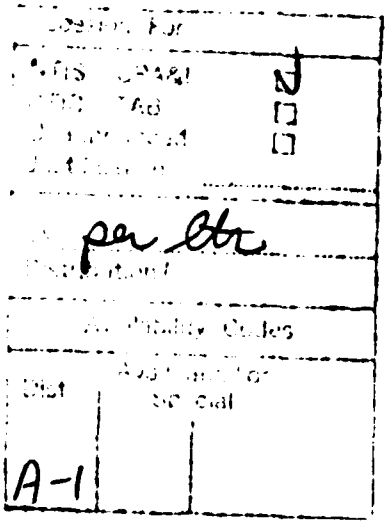
Alexander A. Sawchuk
Optivision, Inc.
744 San Antonio Rd., Suite 10
Palo Alto, CA 94303

Mr. Sawchuk
415/852-9931
ONR-B / WM
6

Abstract

A bus extender is a means for high-speed interconnection of a multitude of individual computing modules comprising a distributed computing system. When the elements to be interconnected are spaced by distances of more than a very few meters, there are significant advantages to the use of optics for providing the interconnects. The feasibility is being examined of using optical bus extenders in a strategic defense system. The advantages and limitations of both free-space communication and fiber communication over short distances are being determined. Critical issues are the bulk and cost of components, and the efficiency with which light can be detected at the end of the various links. Optimization of certain parameters of the extender are being explored with respect to both cost and performance. The general results obtained are being applied to the special case of the VME bus. Protocols to control activity on the extender are being considered and a preferred solution is being proposed. As issues arise that can be resolved only by breadboarding a collection of components or a small subsystem, then such breadboarding is being undertaken. The problem of simultaneously mapping the state of the bus to several remote locations is being examined. Various methods for tapping the optical energy for multiple destinations are being considered and the optical efficiency and cost of these solutions are being determined.

OK!
AA Sawchuk
9/30/87



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