VMIMCN-5521L
Micro Channel-to-VMEbus Adapter

- Connects IBM RISC 6000 workstations to VMEbus-based systems
- Supports A32, A24, A16, D32, D16, D8 master(s) and slave(s) in the VMEbus chassis
- Software-controlled dynamic address mapping
- Generates all VMEbus signals required of a VMEbus master
- Supports a variety of cable lengths
- Link consists of one 6U VMEbus board, one Micro Channel interface board, and cable assembly
- Meets ANSI/IEEE STD 1014-1987

PRODUCT OVERVIEW — The VMIMCN-5521L is a high performance Micro Channel-to-VMEbus link. This link allows a RISC 6000 Series host, that supports a 32-bit Micro Channel Bus, to function as a VMEbus master controlling an external VMEbus chassis. The VMIMCN-5521L can function as a master in the remote VMEbus chassis; or if placed in slot one of the VMEbus, can function as the only master in the chassis.

CONFIGURATION — The VMIMCN-5521L consists of two boards and an interconnecting cable. One board is an interrupting Micro Channel Bus single-slot slave and the other board is a 6U form factor VMEbus master. Figure 1 is a block diagram of the VMIMCN-5521L.

OPERATION — All single Micro Channel Bus cycles to the memory area mapped by the Micro Channel Interface slave board are repeated to memory-mapped cycles in the VMEbus chassis. Micro Channel streaming data transfers and VMEbus block transfers are not supported. If the cycle addresses a VMEbus slave, the link completes the cycle. If no slave is addressed, cycle is completed and an Error Flag is set. VMEbus interrupts may be individually configured by the user for handling by the workstation CPU or by a local VMEbus CPU. 8-, 16-, and 32-bit data transfers are supported.

DYNAMIC ADDRESS MAPPING — The VMIMCN-5521L provides mapping registers for translating Micro Channel Bus address cycles into VMEbus address space cycles.

The VMIMCN-5521L occupies 128 Mbyte of contiguous Micro Channel memory space. This space may be mapped into any VMEbus address space (short I/O, standard, and extended, in either user or supervisory mode). A byte swapping Control Register greatly enhances transfer of floating-point numbers between little Endian and big Endian processors. All seven VMEbus interrupt levels may be monitored, and translated into up to seven Micro Channel interrupt requests as configured by software. Error conditions may be reported by a request on any chosen interrupt level.

PHOTO NOT AVAILABLE

Several operating system calls are required to initialize the host system for accessing the VMIMCN-5521. VMIC offers an AIX Driver, model number VMIMCN/SW-5521.

VMEbus BUS MASTER OPERATION — The VMIMCN-5521L operates in single cycle mode. Each access to the VMEbus may require the VMIMCN-5521L to arbitrate for VMEbus mastership. The VMIMCN-5521L is a Release-on-Request (ROR) VMEbus master, thus, arbitration may not be required every cycle. VMEbus arbitration will never be required when the VMIMCN-5521L is the only bus master in the VMEbus chassis.

Micro Channel TIMING CONSTRAINTS — The Micro Channel specification contains a very restrictive limit on the access time of any slave device. Full compliance with this specification requires the VMIMCN-5521L to be the only bus master in the VMEbus chassis and all VMEbus

Ordering Options

Feb. 18, 1994 800-705521-000 A		A	B	C	–	D	E	F
VMIMCN-5521L	–	0			–			

ABC = Cable Lengths
010 = 10-foot Cable
020 = 20-foot Cable
025 = 25-foot Cable

Note

VMIMCN-5521L-025 consists of a VMEbus Board, a Micro Channel Interface Board, and a 25-foot cable.

For Ordering Information, Call:
1-800-322-3616 or 1-256-880-0444 • FAX (256) 882-0859
E-mail: info@vmic.com Web Address: www.vmic.com

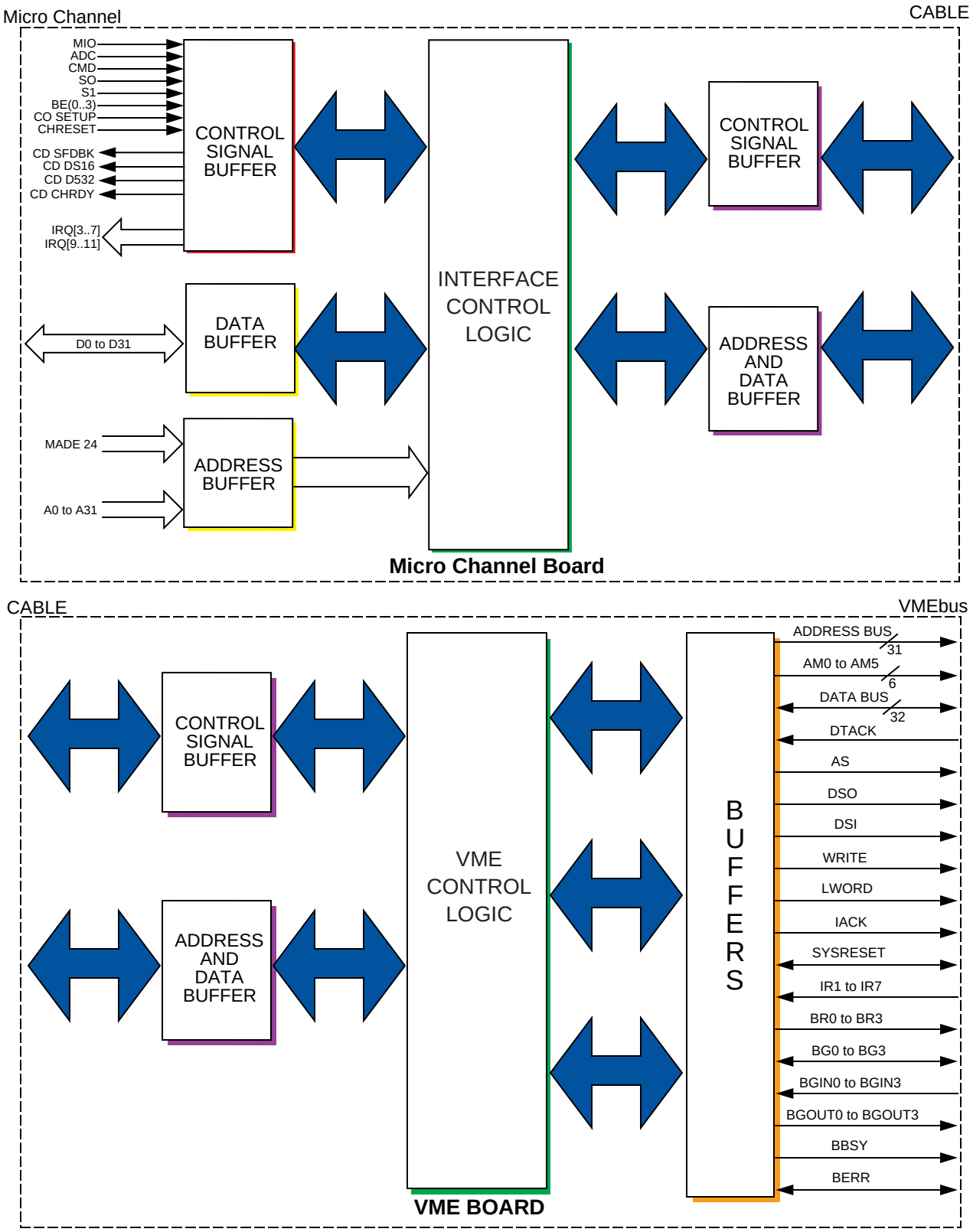

Figure 1. VMIMCN-5521L Block Diagram

slaves in the chassis must always access in less than 2.0 µs. Use of another VMEbus master and/or slower slaves will result in possible degradation of Micro Channel performance. In any case, all VMEbus slaves accessed by the VMIMCN-5521L must always access in less than 3.5 microseconds (excluding arbitration time).

PHYSICAL/ENVIRONMENTAL

Temperature Range:
10 to +35 °C, operating (Micro Channel)
-20 to +85 °C, storage

Relative Humidity Range: 20 to 80 percent, noncondensing

Cooling: Forced air convection

Size: Double Eurocard form factor (Slave Board)
Micro Channel board type 3 adapter form factor (Master Board)

POWER

Requirement: 5 V at 4.5 A (for VME board)
5 V at 1.5 A (for Micro Channel Interface board)

TIMING

Interface Overhead (25-foot cable):
AS (rd/wr): (780 ns/820 ns)
DS (rd/wr): (860 µs/900 ns)
DTACK (rd/wr): (520 ns/240 ns)

PERFORMANCE

Measure Transfer Rate (25-foot cable, SRAM 5; PS/2 70):

Read	Write
1.98 Mbyte/s	2.24 Mbyte/s

CONNECTION

Requirement: One 80-conductor round cable, up to 25 feet long

TRADEMARKS

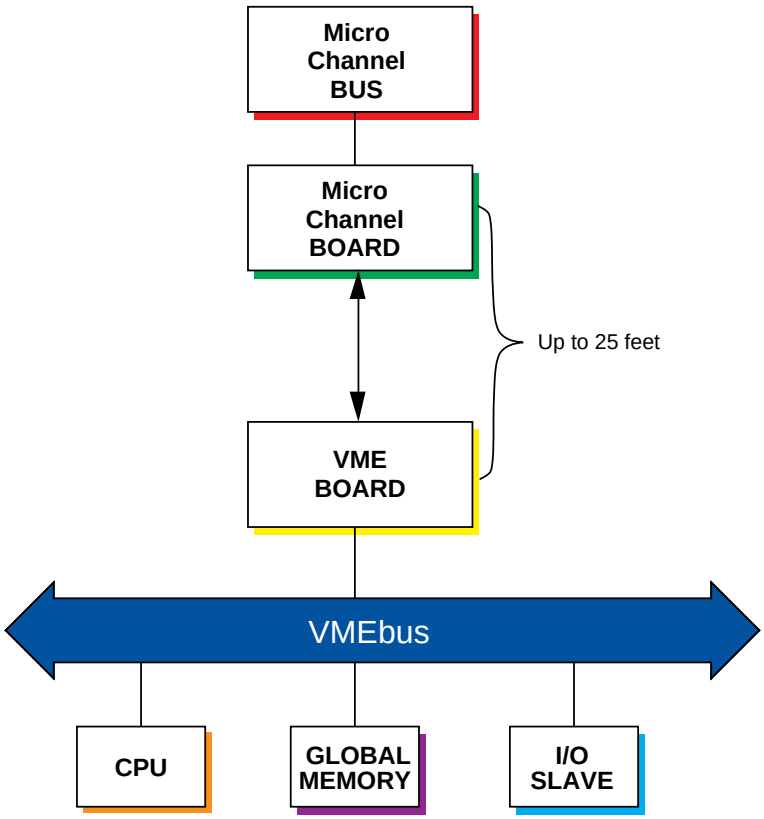

Figure 2. Typical Configuration Utilizing the VMIMCN-5521L Adapter Link