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Find the *Abaco Systems / VMIC VMIVME-5588DMA-210* at our website: ***Click HERE***

- *Shared memory support for all VMIC Reflective Memory (RM) products for VMEbus*
- *TCP/IP internetworking protocols supported for fiber-optic interfaces on some hosts*
- *Highly configurable to interoperate with legacy systems*
- *Device driver is a loadable module on some platforms*
- *Full C language source code provided*
- *Supports VMIVME-5550, -5576, -5588, and -5588DMA*

Introduction

The VMIVME/SW-RFM1 Network and Shared Memory Driver provides an applications program with three convenient methods for exchanging data among hosts connected to the same Reflective Memory network:

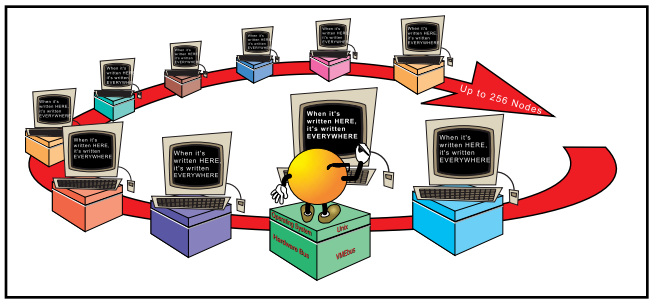
1) Programmed I/O (Peek and Poke)
   An applications program can treat the memory on the Reflective Memory device as ordinary memory in which the program can use ordinary load and store accesses.

2) Direct Memory Access (DMA - Some Configurations)
   On systems where the performance penalty for individual VMEbus accesses is unacceptably high, the driver utilizes the DMA feature available in order to transfer data in variable-sized blocks. On UNIX systems, an applications program uses the familiar lseek(2)/read(2)/write(2) system calls to perform the data movement, while on other operating systems a VMIC-provided Application Program Interface (API) is used for data movement.

3) TCP/IP Protocols (VxWorks Option Only)
   Full support for the internetworking TCP/IP protocols allows peer-to-peer communication between applications without the need to design and implement custom communications protocols. Standard programs such as FTP, TELNET, RLOGIN, and X-Windows can take advantage of the high data transfer rates of a Reflective Memory network to achieve impressive performance. Network management is simplified by the full support of the standard Address Resolution Protocol (ARP), Reverse Address Resolution Protocol (RARP), and Domain Name Service (DNS). User's applications programs benefit from the familiar client-server socket(2) interface. This driver only supports single installations of RM devices for TCP/IP protocol.

Reflective Memory Interrupts

Host computer platforms whose operating systems provide the `mmap(2)` system call, or those platforms which do not use virtual memory, often allow an applications program to access the Reflective Memory contents without requiring a special device driver for the Reflective Memory. Applications on these hosts can share data using the Reflective Memory hardware without using a device driver. Programs on these hosts can *originate* RM interrupts; that is, they can transmit an RM event interrupt to other computers on the RM network. Without an RM device driver, RM event interrupts cannot be *received*: even if another RM device attempts to



transmit the interrupt event to a host without an RM device driver, that RM interrupt event will be ignored. An RM device driver is necessary to *receive* notification of RM interrupt events. Unless TCP/IP networking support is enabled, there are three RM event interrupts available to an applications program. Generally, with TCP/IP networking enabled, one RM event interrupt is free for applications programs. However, when using TCP/IP on operating systems that do not allow multiple drivers to process Reflective Memory interrupts, all interrupts are, in effect, used by TCP/IP, leaving none for application programs.

Ordering Options

Jan. 23, 2002 820-000099-000 L		A	B	C	–	D	E	F
VMIVME/SW-RFM1	–	0			–			

A = 0 (Option reserved for future use)
BC = Delivery Media Type
- 00 = Reserved
- 01 = Reserved
- 02 = Reserved
- 03 = Reserved
- 04 = Reserved
- 05 = Tape, TK-50, 1/2-inch, UNIX tar
- 06 = Floppy, 3.5-inch, DSHD, MS-DOS®
- 07 = Floppy, 3.5-inch, DSHD, UNIX tar
- 08 = Tape, TK-50, 1/2-inch, VMS Backup
- 09 = Reserved
- 10 = Digital Audio Tape, 8 mm, UNIX tar
- 11 = Digital Audio Tape, 4 mm, UNIX tar
- 12 = Digital Audio Tape, 4 mm, VMS Backup
- 13 = CD-ROM, 640 M, ISO-9660
- 14 = Floppy, 3.5-inch DSHD, Windows NT® (NTFS) OS

DEF = Target Operating System
- 005 = Sun Solaris 2.x[3]
- 030 = VxWorks 5.4[2]
- 205 = Silicon Graphics IRIX 5.x[1]
- 210 = Silicon Graphics IRIX 6.x[1]
- 701 = HP-UX 10.x[3]
- 711 = HP-RT 3.x[3]
- 805 = DEC UNIX 4.0[3]

Notes

1. Challenge computer only.
2. Nominal target processor type is x86, but can also be compiled for Motorola 68k[3] or DEC Alpha[3]. Distribution includes optional makefile templates.
3. Unsupported. Source code is available.

For Ordering Information, Call:
1-800-322-3616 or 1-256-880-0444 • FAX (256) 882-0859
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RM Partitioning

The RM device driver is highly configurable to enable its use in a variety of situations. The available RM space is conceptually divided into three areas: a lower freely accessible partition, a TCP/IP communications area used only by the device driver, and an upper freely accessible partition. By changing the relative sizes of these areas in the driver source code, the RM device driver should be able to share the Reflective Memory resource with existing RM network applications.

Supported Configurations

The following table shows the features available on each supported platform.

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Available Features

RFM1 Driver Product	Host OS	Compatible Boards	DMA Support	TCP/IP Support	User Interrupts
VMIVME/SW-RFM1-ABC-005	Solaris 2.x*	VMIVME-5550 VMIVME-5576 VMIVME-5588	No No No	No No No	Yes Yes Yes
VMIVME/SW-RFM1-ABC-030	VxWorks	VMIVME-5550 VMIVME-5576 VMIVME-5588 VMIVME-5588DMA	Yes Yes No Yes	No Yes Yes Yes	Yes Yes Yes Yes
VMIVME/SW-RFM1-ABC-205	IRIX 5.x	VMIVME-5550 VMIVME-5576 VMIVME-5588 VMIVME-5588DMA	Yes Yes No Yes	No No No No	Yes Yes Yes Yes
VMIVME/SW-RFM1-ABC-210	IRIX 6.x	VMIVME-5550 VMIVME-5576 VMIVME-5588 VMIVME-5588DMA	Yes Yes No Yes	No No No No	Yes Yes Yes Yes
VMIVME/SW-RFM1-ABC-701	HP-UX 10.x*	VMIVME-5550 VMIVME-5576 VMIVME-5588	No No No	No No No	Yes Yes Yes
VMIVME/SW-RFM1-ABC-711	HP-RT 3.01*	VMIVME-5550 VMIVME-5576 VMIVME-5588	No No No	No No No	Yes Yes Yes
VMIVME/SW-RFM1-ABC-805	DEC UNIX 4.x*	VMIVME-5550 VMIVME-5576 VMIVME-5588 VMIVME-5588DMA	Yes Yes No Yes	No No No No	Yes Yes Yes Yes

*Unsupported. Source coded is unavailable.

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