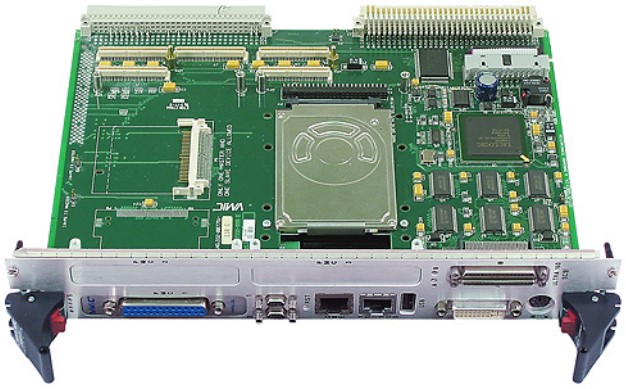
GE Fanuc Automation

VMIVME-7851 Specifications



Intel® Pentium® 4 Processor - M-Based VME Single Board Computer

Features:

- Up to 2.20 GHz Pentium® 4 Processor - M with 512 Kbyte advanced transfer cache
- Up to 1 Gbyte PC1600 DDR SDRAM using one SODIMM
- Internal SVGA and DVI controller
- 400 MHz system bus via Intel® 852GM chipset
- One Ethernet controller supporting 10BaseT and 100BaseTX interfaces
- One Ethernet controller supporting 10BaseT, 100BaseTX and 1000BaseT interfaces
- Front panel Universal Serial Bus (USB) connection Rev. 2.0
- Up to 1 Gbyte bootable CompactFlash on secondary IDE
- Up to three PMC expansion sites
- Optional dual channel Ultra160 SCSI controller
- Operating system support for Windows® XP, Windows 2000, VxWorks®, QNX®, LynxOS® and Linux®

FANUC Embedded Systems

Ordering Options							
April 27, 2005 800-007851-000 B		A	B	C	D	E	F
VMIVME-7851	–						

A = Processor
1 = 1.7 GHz (Extended Temperature Range: 0 to 60° C)
2 = 2.2 GHz
B = SDRAM Memory
1 = 256 Mbyte
2 = 512 Mbyte
3 = 1 Gbyte
C = CompactFlash
0 = No CompactFlash
1 = 128 Mbyte CompactFlash
2 = 256 Mbyte CompactFlash
3 = 512 Mbyte CompactFlash
4 = 1 Gbyte CompactFlash
D = SCSI Interface
0 = No SCSI
1 = Dual Channel Ultra160 SCSI
E = IDE Hard Disk
0 = No Hard Disk
1 = 20 Gbyte, 1.8-inch Drive[1] (Extended Temperature Range: 0 to 60° C)
2 = 40 Gbyte, 2.5-inch Drive[2]
3 = 60 Gbyte, 2.5-inch Drive[2,3]
F = Special Sales Order[4]
0 = VME Standard Front Panel
1 = 1101.10 Front Panel
2 = VMEbus Standard Front Panel with Conformal Coating
3 = 1101.10 Front Panel with Conformal Coating

Notes

1. For option E = 0 or E = 1, operating temperature range: 0 to 60° C
2. For option E = 2 or E = 3, operating temperature range: 0 to 50° C
3. Option E = 2 or E = 3 cannot utilize PMC site #3.
4. All VME single board computer products come standard with a VMEbus specification compliant front panel.

Cable Specification

6 ft .8 mm Ultra SCSI to Standard Wide 68, 132 ¾ External Cable
VMICBL-001-68-006, CS Electronics PN# - .88 mm-HD68T/6FT-132U

Micro-DB9 to standard DB9 adapters, GE Fanuc P/N 360-010050-001.

For Ordering Information, Call:
1-800-322-3616 or 1-256-880-0444 • FAX (256) 882-0859
Email: info.embeddedsystems@gefanuc.com
Web Address: www.gefanuc.com/embedded

Functional Characteristics

Microprocessor: The VMIVME-7851 brings the Intel Pentium 4 Processor - M to VME, offering processor speeds up to 2.2 GHz. The Intel Pentium 4 Processor - M is the first Intel mobile processor with the Intel NetBurst™ micro-architecture. The Intel Pentium 4 Processor - M utilizes a 478-pin, Micro Flip-Chip Pin Grid Array (Micro-FCPGA) package, and plugs into a surface-mount, Zero Insertion Force (ZIF) socket. The Intel Pentium 4 Processor - M maintains full compatibility with IA32 software.

The Intel NetBurst micro-architecture features include hyper-pipelined technology, a rapid execution engine, a 400 MHz system bus, and an execution trace cache. The hyper-pipelined technology doubles the pipeline depth in the Intel Pentium 4 Processor - M allowing the processor to reach much higher core frequencies. The rapid execution engine allows the two integer ALUs in the processor to run at twice the core frequency, which allows many integer instructions to execute in 1/2 clock tick. The 400 MHz system bus is a quad-pumped bus running off a 100 MHz system clock, making 3.2 Gbyte/s data transfer rates possible. The execution trace cache is a first level cache that stores approximately 12 Kbyte decoded micro-operations, which removes the instruction decoding logic from the main execution path, thereby increasing performance.

Table 1. Partial List of Display Modes Supported

Resolution	Bits Per Pixel (Frequency in Hz)		
	8-bit Indexed	16-bit	24-bit
320 x 200	70	70	70
320 x 240	70	70	70
352 x 480	70	70	70
352 x 576	70	70	70
400 x 300	70	70	70
512 x 384	70	70	70
640 x 400	70	70	70
640 x 480	60, 70, 72, 75, 85	60, 70, 72, 75, 85	60, 70, 72, 75, 85
720 x 480	75, 85	75, 85	75, 85
720 x 576	60, 75, 85	60, 75, 85	60, 75, 85
800 x 600	60, 70, 72, 75, 85	60, 70, 72, 75, 85	60, 70, 72, 75, 85
1,024 x 768	60, 70, 72, 75, 85	60, 70, 72, 75, 85	60, 70, 72, 75, 85
1,152 x 864	60, 70, 72, 75, 85	60, 70, 72, 75, 85	60, 70, 72, 75, 85
1,280 x 720	60, 75, 85	60, 75, 85	60, 75, 85
1,280 x 960	60, 75, 85	60, 75, 85	60, 75, 85
1,280 x 1,024	60, 70, 72, 75, 85	60, 70, 72, 75, 85	60, 70, 72, 75, 85
1,600 x 900	60, 75, 85	60, 75, 85	
1,600 x 1,200	60, 70, 72, 75		

Additional features within the Intel NetBurst micro-architecture include advanced dynamic execution, advanced transfer cache, enhanced floating point and multimedia unit, and Streaming SIMD Extensions 2 (SSE2). The advanced dynamic execution improves speculative execution and branch prediction internal to the processor. The advanced transfer cache is a 512 Kbyte on-die level 2 (L2) cache. A new floating point and multimedia unit provides superior performance for multimedia and mathematically intensive applications.

Finally, SSE2 adds 144 new instructions for double-precision floating point, SIMD integer and memory management. Power management capabilities such as AutoHALT, Stop-Grant, Sleep, Deep Sleep and Deeper Sleep have been incorporated. The processor includes an address bus powerdown capability which removes power from the address and data pins when the

system bus is not in use. This feature is always enabled on the processor.

Super VGA Controller: High-resolution graphics and multimedia-quality video are supported on the VMIVME-7851 using the 852GM chipset internal graphics controller. Screen resolutions up to 1,600 x 1,200 x 256 colors (single view mode) are supported by the graphics adapter.

Digital Visual Interface (DVI): The VMIVME-7851 has a digital visual interface that provides a high speed digital connection for visual data types that are display technology independent. DVI is a display interface developed in response to the proliferation of digital flat-panel displays. For the most part, these displays are currently connected to an analog video graphics array (VGA) interface and, thus, require a double conversion. The digital signal from the computer must be converted to an analog signal for the analog VGA interface, then converted back to a digital signal for processing by the flat-panel display. This inherently inefficient process takes a toll on performance and video quality and adds cost. In contrast, when a flat-panel display is connected to a digital interface, no digital-to-analog conversion is required.

DVI-I uses Silicon Image's PanelLink, a high speed serial interface that uses transition minimized differential signaling (TMDS) to send data to the monitor. The DFP and VESA plug and display interfaces also use PanelLink. For this reason, DVI can work with these previous interfaces by using adapter cables (depending on the signal quality of the adapter.)

TMDS conveys data by transitioning between "on" and "off" states. An advanced encoding algorithm that uses Boolean exclusive OR (XOR) or exclusive NOR (XNOR) operations is applied to minimize the transitions. Minimizing transitions avoids excessive electromagnetic interference (EMI) levels on the cable. An additional operation is performed to balance the DC signal.

DVI also supports the VESA display data channel (DDC) and the extended display identification data (EDID) specifications. DDC is a standard communications channel between the display adapter and monitor. EDID is a standard data format containing monitor information such as vendor information, monitor timing, maximum image size, and color characteristics. EDID information is stored in the display and is communicated over the DDC. EDID and DDC enable the system, display and graphics adapter to communicate so that the system can be configured to support specific features available in the display.

DVI Connectors: The digital DVI connector has 24 pins that can accommodate up to two TMDS links and the VESA DDC and EDID services. The DVI specification defines two types of connectors (see Figure 1):

- DVI-Digital (DVI-D) supports digital displays only (not supported)
- DVI-Integrated (DVI-I) supports digital displays and is backward compatible with analog displays (used on the VMIVME-7851)

The VMIVME-7851 uses the DVI-I connector with a single TMDS link. The DVI-I interface accommodates a 12- or 24-pin DVI plug connector or a new type of analog plug connector that uses four additional pins, plus a ground plane plug to maintain a constant impedance for the analog RGB signals. The DVI-I adapter is supplied by GE Fanuc Embedded Systems.

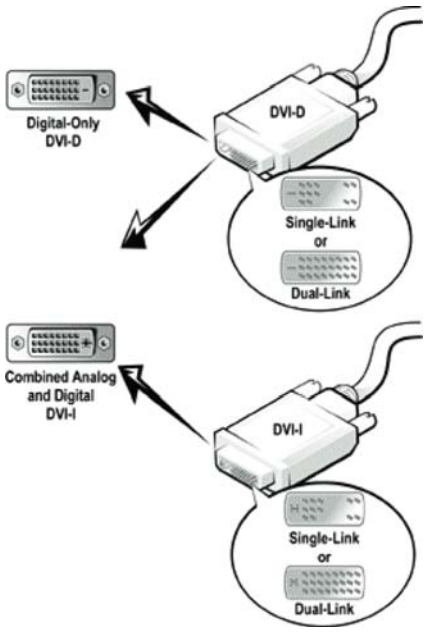


Figure 1. DVI-D and DVI-I Connectors

DRAM Memory: The VMIVME-7851 accepts one PC1600 DDR SDRAM SODIMM for a maximum memory capacity of 1 Gbyte. The SDRAM is dual ported to the VME.

BIOS: System and video BIOS are provided in reprogrammable memory.

PCI Dual Channel Ultra160 SCSI Controller: A PCI Ultra160 SCSI controller is available as an option, which provides two independent differential channels. Both differential channels are capable of operating up to 160 Mbyte/s. High speed connection is provided through two high-density connectors on the front panel. For applications requiring connection through the backplane, one channel is routed through the user-defined VME and supports single-ended SCSI-2. The backplane connection is compatible with existing installations that use the VMIVME-7696, -7697, and -7697A SBCs and requires the VMIACC-0561 accessory.

Ethernet Controller: The VMIVME-7851 supports Ethernet LANs with two Intel Ethernet controllers (one 82540EM Gigabit Ethernet controller and the other internal to Intel's chipset ICH4-M). 10BaseT, 100BaseTX and Gigabit Ethernet options are supported via one RJ45 connector. 10BaseT and 100BaseTX are supported via a second RJ45 connector. Remote LAN booting is supported.

Remote Ethernet Booting: The VMIVME-7851 utilizes a ROM BIOS that provides the ability to remotely boot the VMIVME-7851 using NetWare, TCP/IP or RPL network protocols. Remote booting is only available with the 10/100 RJ45 connector.

Remote Ethernet Features:

- NetWare, TCP/IP, RPL network protocol support
- Unparalleled boot sector virus protection

- Detailed boot configuration screens
- Comprehensive diagnostics
- Optional disabling of local boots
- Dual-boot option lets users select network or local booting

Serial Ports: Two 16550-compatible serial ports are featured on the VMIVME-7851 front panel. The serial channel has a 16-byte FIFO to support baud rates up to 115 Kbaud. Requires two micro-DB9 to standard DB9 adapters, GE Fanuc P/N 360-010050-001 (not included).

Enhanced Parallel Port: The VMIVME-7851 provides a Centronics-compatible, fully bidirectional parallel port meeting all IEEE-1284 standards (Compatibility, Nibble, EPP, and ECP). The parallel port contains a 16-byte FIFO to allow data rates up to 2 Mbyte/s in ECP mode. For VMIVME-7851 configurations with Ultra160 SCSI option, the parallel port connector is mounted on a PMC bezel and is installed at the factory in one of the PMC sites. This consumes one of the three PMC sites available on the assembly. If a 2.5-inch IDE hard drive (options E=2 or E=3) is installed, the parallel port connector is installed at the PMC site which was lost to the hard drive. This keeps two PMC sites available for expansion devices. This parallel port bezel may be removed in the field for applications requiring more PMC sites and no parallel port. For VMIVME-7851 configurations without the Ultra160 SCSI option, the parallel port connector is mounted on the front panel and does not occupy any of the available PMC expansion sites.

Keyboard and Mouse Ports: The VMIVME-7851 has a combined PS/2 keyboard and mouse connector. A **Y**-adapter cable is included.

CompactFlash: The VMIVME-7851 provides up to 1 Gbyte of IDE CompactFlash memory accessible through the secondary IDE port. The VMIVME-7851 BIOS includes an option to allow the board to boot from the Flash memory.

Timers: The VMIVME-7851 provides the user with two 16-bit timers and two 32-bit timers (in addition to system timers). These timers are mapped in I/O space, and are completely software programmable.

Watchdog Timer: The VMIVME-7851 provides a software-programmable watchdog timer. The watchdog timer is enabled under software control. Once the watchdog timer is enabled, software must access the timer within the specified timer period or a timeout will occur. A user jumper allows the timeout to cause a reset. Independent of the jumper, software can enable the watchdog timer to cause a nonmaskable interrupt (NMI) or a VMEbus SYSFAIL.

Nonvolatile SRAM: The VMIVME-7851 provides 32 Kbyte of nonvolatile SRAM. The contents of the SRAM are preserved when +5V power is interrupted or removed from the unit.

PMC Expansion Site: The VMIVME-7851 supports IEEE-1386 common mezzanine card specification with up to three 5V PCI mezzanine card (PMC) expansion sites. The PMC sites provide for standard I/O out of the VMEbus front panel. An optional I/O connection to the VMEbus P2 connection can be provided.

Contact GE Fanuc for more information concerning PMC modules and compatibility.

IDE Disk Drive: A location for either 2.5-inch or 1.8-inch IDE hard disk drive on the secondary bus is available as an option. The 2.5-inch hard disk consumes one PMC site, thereby limiting the SBC to two PMC sites. However, the 1.8-inch IDE disk drive physical envelope is such that it does not consume a PMC site, and all three sites are available for user application.

Universal Serial Bus (USB): The VMIVME-7851 provides a single front panel connection hub host controller for the USB, capable of USB 2.0 speeds. Supported USB features include isochronous data transfers, asynchronous messaging, self-identification and configuration of peripherals, and dynamic (hot) attachment. AMI BIOS supports USB booting.

VMEbus Interface: The VMIVME-7851 VMEbus interface is based on the Universe IIB high performance PCI-to-VME interface from Newbridge/Tundra.

System Controller: The VMEbus system controller capabilities allow the board to operate as a slot 1 controller, or it can be disabled when another board is acting as the system controller. The system controller may be programmed to provide the following modes of arbitration:

Round Robin (RRS)
Single Level (SGL)
Priority (PRI)

The system controller provides a SYSCLK driver, IACK* daisy-chain driver, and a VMEbus access timeout timer. The system controller also provides an arbitration timeout if BBSY* is not seen within a specified period after a BGOUT* signal is issued. This period is programmable for 16 or 256 µs.

VMEbus Requester: The microprocessor can request and gain control of the bus using any of the VMEbus request lines (BR3* to BR0*) under software control. The requester can be programmed to operate in any of the following modes:

Release-On-Request (ROR)
Release-When-Done (RWD)
VMEbus Capture and Hold (VCAP)

Mailboxes: The VMEbus interface provides four 32-bit mailboxes, which are accessible from both the microprocessor and the VMEbus providing interprocessor communication. The mailboxes have the ability to interrupt the microprocessor when accessed by the VMEbus.

Interrupt Handler: The interrupt handler monitors, and can be programmed to respond to any or all VMEbus IRQ* lines. All normal process VMEbus-related interrupts can be mapped to PCI INTA# or SERR# interrupts. These include:

Mailbox interrupts
VMEbus interrupts
VMEbus interrupter IACK cycle (acknowledgment of VMIVME-7851 VMEbus-issued interrupts)

All error processing VMEbus-related interrupts can be mapped to PCI INTA# or SERR#. Note: PCI SERR# initiates an SBC NMI. These include:

ACFAIL* interrupt
BERR* interrupt
SYSFAIL* interrupt

The interrupt handler has a corresponding STATUS/ID register for each IRQ* interrupt. Once the handler receives an IRQ*, it requests the VMEbus and, once granted, it performs an IACK cycle for that level. Once the IACK cycle is complete and the STATUS/ID is stored in the corresponding ID register, an appropriate interrupt status bit is set in an internal status register, and a PCI interrupt is generated. The PCI interrupt can be mapped to PCI INTA# or SERR#.

Interrupter: Interrupts can be issued under software control on any or all of the seven VMEbus interrupt lines (IRQ7* to IRQ1*). A common ID register is associated with all interrupt lines. During the interrupt acknowledge cycle, the interrupter issues the ID to the interrupt handler.

The interrupter can be programmed to generate a PCI INTA# or SERR# interrupt when a VMEbus interrupt handler acknowledges a software-generated VMEbus interrupt.

Byte Swapping: The Intel 80x86 family of processors uses little-endian format. To accommodate other VMEbus modules that transfer data in big-endian format (such as the 680x0 processor family), the VMIVME-7851 incorporates byte-swapping hardware. This provides independent byte swapping for both the master and slave interfaces. Both master and slave interface byte swapping are under software control.

The VMIVME-7851 supports high throughput DMA transfers of bytes, words and longwords in both master and slave configurations.

If endian conversion is not needed, we offer a special "bypass" mode that can be used to further enhance throughput. (Not available for byte transfers.)

Master Interface: MA32:MBLT32:MBLT64
(A32:A24:A16:D32:D16:D8 (EO):BLT32)

The VMEbus master interface provides nine separate memory windows into VMEbus resources. Each window has separate configuration registers for mapping PCI transfers to the VMEbus (that is, PCI base address, window size, VMEbus base address, VMEbus access type, VMEbus address/data size, etc.). The maximum/minimum window sizes for the nine windows are as follows:

Window	Minimum Size	Maximum Size
0, 4	4 Kbyte	4 Gbyte
1 to 3, 5 to 7	64 Kbyte	4 Gbyte
Special Cycle	64 Mbyte	64 Mbyte

Slave Interface: Memory Access
SAD032:SD32:SBLT32:SBLT64
(A32:A24:A16:D32:D16:D8 (EO): BLT32)

The VMEbus slave interface provides eight separate memory windows into PCI resources. Each window has separate configuration registers for mapping VMEbus transfers to the PCI bus (that is, VMEbus base address, window size, PCI base address, VMEbus access type, VMEbus address/data size, etc.).

The maximum/minimum window sizes for the eight windows are as follows:

Window	Minimum Size	Maximum Size
0, 4	4 Kbyte	4 Gbyte
1 to 3, 5 to 7	64 Kbyte	4 Gbyte

In addition, each window can be programmed to operate in coupled or decoupled mode. In decoupled mode, the window utilizes a write-posting FIFO and/or a read prefetching FIFO for increased system performance. In coupled mode, the FIFOs are bypassed and VMEbus transactions are directly coupled to the PCI bus (that is, transfers on VMEbus are not completed until they are completed on the PCI bus).

Enhanced Bus Error Handling: Enhancements over the Universe chip's bus error handling features are provided. A latch and register are provided to allow the SBC to read the VMEbus address that caused the bus error in all modes. The Universe chip's support is limited to decoupled mode. Support for bus cycle timeout and assertion of bus error is provided. The board may be configured to assert bus error upon timeout regardless of its status as system controller. The Universe chip asserts bus error only if it is system controller. In addition, this board may be configured to assert an interrupt upon bus cycle timeout.

Operating System and Software Support

The VMIVME-7851 provides embedded features beyond PC/AT functionality. These features are supported by GE Fanuc software products aimed at developers who are incorporating GE Fanuc SBCs, I/O boards, and workstations into systems. Windows XP/Windows 2000 and VxWorks are the most common operating systems supported by GE Fanuc software products.

Windows XP/Windows 2000: The IOWorks® software family is a set of software components that can work together or separately to provide a total development environment for any application in a Windows XP/Windows 2000 OS.

VMISFT-9420 VMEbus Access™ for Windows XP/ Windows 2000: The VMEbus Access product is specifically designed for accessing the advanced VMEbus Access architecture of the VMIVME-7851. Running on Windows XP/Windows 2000, VMEbus Access is both sophisticated and easy to use.

The function library, VMEbus toolset and open architecture VMEbus Access offers make it one of the most powerful products on the market today. It provides compatibility with both existing GE Fanuc VME PC platforms and within future GE Fanuc VME PC platforms.

The VMEbus Access development package gives you everything you need to develop applications for your VMEbus operations. This package includes the VMEmanager™ function library and four utilities that enable you to easily configure a VMEbus, dynamically monitor VMEbus activities, manage VMEbus data, and use DDE-client applications. VMEbus Access provides

powerful tools for developing, debugging and monitoring VMEbus applications and increasing VMEbus performance. The flexible design of VMEbus Access enables you to incorporate it as a stand-alone solution, or use it to open your VMEbus operations to the IOWorks product suite. VMEbus Access manipulates the hardware behind the scenes. With VMEbus Access, you can develop applications in or use existing applications developed in most programming environments. For example, VMEbus Access enables your VMEbus to recognize applications developed in these popular programming environments:

- IOWorks Manager™
- LabVIEW
- Citect
- Wonderware InTouch
- Visual IOWorks®
- Visual Basic®
- Visual C++®

VxWorks OS Support — VMISFT-7418 Board Support Package: The VMISFT-7418 is Wind River Systems, Inc.'s certified board support package (BSP) for GE Fanuc series of VME Pentium processor-based computers, which is required to run the VxWorks OS. With the SBC, VxWorks, the BSP, and other VME equipment from GE Fanuc, implementations can be created for a wide variety of applications including real time factory automation, simulation, instrumentation and control, and process control and monitoring.

The BSP is linked with VxWorks OS, thus allowing software applications created with Wind River Systems, Inc.'s development system to load and run on the particular GE Fanuc SBC hardware being used. Serial ports, parallel ports, keyboard, text mode video and Ethernet transceivers are all supported, as well as floppy and IDE hard disk drives that can be connected to the computer boards. The BSP provides Flash boot, NVRAM and timer support.

The BSP allows VxWorks applications to have access to the VMEbus. When hardware includes single cycle and block transfers using DMA devices, they are supported by the BSP, as are interprocessor communications with mailbox registers. VMEbus interrupt handling and error handling are supported. Since the VMEbus environment often contains a mixture of devices from various manufacturers, the byte-swapping feature is provided to allow big-endian and little-endian devices to share data correctly.

QNX OS Support — VMISFT-7417 Board Support Package: The VMISFT-7417 BSP provides QNX support and includes a VMEbus manager, user API, and configuration files needed to run the QNX BSP on GE Fanuc's VMIVME-7xxx SBC products. This BSP provides customizable VMEbus access. Using the QNX OS on the VMIVME-7xxx SBCs provides a computing platform suitable for real time applications. QNX provides the applications programmer with a real time extensible POSIX OS. GE Fanuc's VMISFT-7417 is designed to tailor QNX's x86 OS to the VMIVME-7xxx platform. This combination provides a self-hosted development environment which runs entirely on the VMIVME-7xxx SBC boards without requiring any external host systems.

Solaris OS Support — VMISFT-7416 Board Support Package: The VMISFT-7416 BSP includes everything necessary to allow installation of the Solaris Intel edition OS (available separately from Sun Microsystems, Inc.) onto VMIVME-7851 SBC. This BSP includes a nexus driver for VMEbus access. It allows military and telecommunications and other applications to take advantage of Sun Microsystems, Inc.'s Solaris OS on a VME-based Intel SBC. This BSP and the Solaris OS provides POSIX-compliant real time characteristics.

LynxOS x86 Support — VMISFT-7419 Board Support Package: The VMISFT-7419 BSP includes all of the device drivers and configuration tables needed to install the LynxOS x86 development system (available separately from Lynx Real-Time Systems, Inc.) onto GE Fanuc's VMIVME-7851.

Using LynxOS on the GE Fanuc SBCs provides a computing platform suitable for hard real time applications. LynxOS provides the applications programmer with a stable development environment based on industry-wide standards such as POSIX and Motif.

I/O Support — VMISFT-9450 IOWorks Board Drivers: This driver supports GE Fanuc's extensive line of VME I/O boards, and is available for Windows XP/Windows 2000 and VxWorks. IOWorks board drivers take advantage of all the key benefits and features of each supported I/O board and new I/O boards are constantly being added.

IOWorks board drivers contain both a C++ class library and a C function library that provide a common interface to GE Fanuc I/O products for reading, writing and configuring. You do not need to know the details of how an individual board is programmed. For instance, you can use the SetAttributes function on any supported GE Fanuc board; the WriteAnalog function controls the output from any GE Fanuc analog output board; or the GetScanMode function retrieves the scan mode for any GE Fanuc analog board.

Physical/Environmental Specifications

Dimensions: 6U double slot Eurocard format

Height	9.2 in. (233.4mm)
Depth	6.3 in. (160mm)
Thickness	1.6 in. (20.3mm)

Power Requirements:
+5VDC (±5 percent), 4.0A (typical), 12.5A maximum

Temperature:
Operating: 0 to +50° C
(Air flow requirement as measured at outside of heatsink is to be greater than 350 LFM)
0 to 60° C (Option A = 1)
Note: Use of on-board 2.5-inch hard drive limits operation to 50°C
Storage: -25 to +80° C

Relative Humidity: 10% to 90%, noncondensing

VMEbus Interface:
DTB Master: BLT32/BLT64, A32/D32, A24/D32, A16/D32
DTB Slave: BLT32/BLT64, A32/D32, A24/D32, A16/D32
Requester: Programmable, BR(3 to 0), ROR, RWD, BCAP
Interrupt Handler: IH(1 to 7) D8(O)
Interrupter: Programmable, IRQ7* to IRQ1*
Arbiter: SGL, PRI, RRS
BTO: Programmable (4 to 1,024 µs)
Compliance: Rev. C.1

PMC Expansion Site Connector: 5V signaling, types 1 and 2 32-bit PCI bus, 33 MHz maximum

MTBF: 138,472 hours

Compatible Products

The VMIVME-7851 can be used with a number of GE Fanuc PMC bus and VME products.

Floppy/Hard Disk: GE Fanuc produces floppy/hard drive modules to support the built-in IDE and floppy controller ports. The VMIVME-7452 provides hard disk storage (contact Sales for available size) and a 3.5-inch 1.44 Mbyte floppy drive. The unit fits into a standard VME 6U single slot form factor. The VMIACC-0562 converts P2 IDE/floppy signals to 40- and 34-pin headers for use at the rear of the VME backplane.

PMC Capability: GE Fanuc supports PMC via the PMC expansion sites. These expansion sites allow the VMIVME-7851 to take advantage of the many PMC boards commercially available from third-party sources.

CD-ROM Support: Since much of today's advanced software is delivered on CD-ROM, the VMIVME-7455 provides CD-ROM capability within a single 6U VME slot.

VME: The VMIVME-7851 enables access to GE Fanuc's wealth of VME products. If you have real world control, monitoring and real time networking requirements, GE Fanuc has a solution for you. Today's system requirements demand state of the art solutions. Our advanced I/O features such as built-in-test, self-test, isolation, digital autocalibration, and intelligent DSP processing give our customers those solutions.

The I/O Solution for Your I/O Problem: GE Fanuc's experience in supplying high performance deterministic controllers for multiple markets has led to the development of IOWorks software with features, benefits, and capabilities to solve nearly any I/O problem. From PLC alternatives to data servers that support the seamless interconnection of dissimilar systems, GE Fanuc has the solution for simple to complex, high speed, deterministic requirements. IOWorks PC platforms, target, OS and I/O independency provide the flexibility for solutions shown in Figure 2.

Trademarks

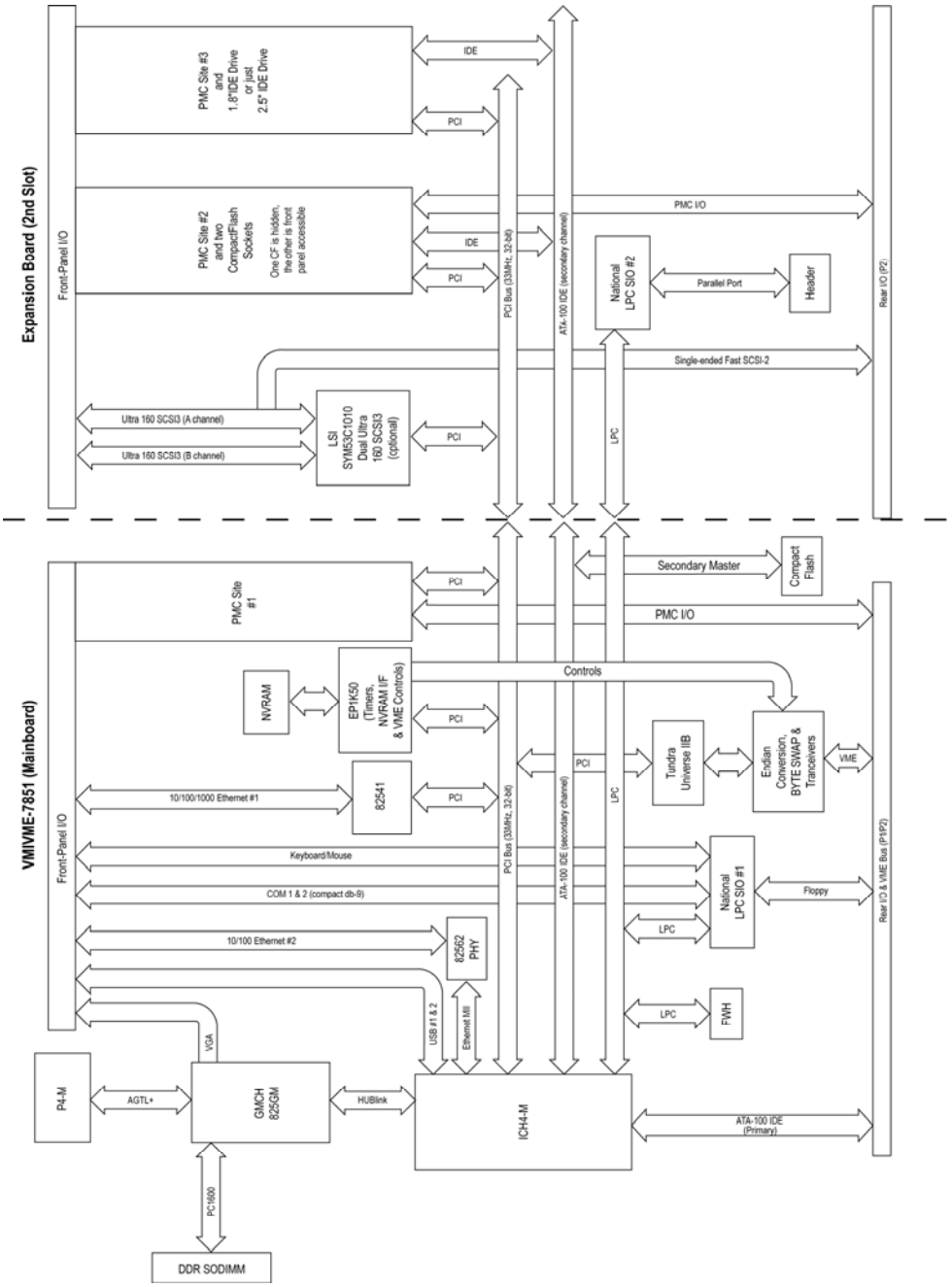


Figure 2. VMIVME-7851 Block Diagram

Embedded Systems

GE Fanuc Embedded Systems Information Centers

Americas:
Huntsville, AL 1 800 322-3616
1 (256) 880-0444
Camarillo, CA 1 (805) 987-9300
Greenville, SC 1 (864) 627-8800

Europe, Middle East and Africa:
Edinburgh, UK 44 (131) 561-3520
Paris, France 33 (1) 4324 6007

Additional Resources

For more information, please visit the GE Fanuc Embedded Systems web site at:
www.gefanuc.com/embedded