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- Single-wide PMC mezzanine with front panel bezel and mounting hardware
- 4 Mbyte of bootable flash memory
- 128 Kbyte of nonvolatile SRAM
- Three independent 32-bit timers
- Lower 1 Mbyte of flash memory write-protected via jumper
- Each timer can be software selected to provide a periodic PCI interrupt
- Each timer has 1 μ s resolution
- NVRAM power-off data retention of more than two years
- DOS-based flash-in utility provided
- Designed to work with board support packages for a variety of VMIC CPU products

INTRODUCTION — The VMIPMC-7441 is a PCI Mezzanine Card (PMC) specifically designed to support embedded real-time operating system (OS) requirements. The VMIPMC-7441 features include independent 32-bit timers, 128 Kbyte of battery-backed SRAM, and 4 Mbyte of bootable flash memory.

The VMIPMC-7441 provides three independent 32-bit software-configurable timers. The timers can be used to provide accurate timing interrupts freeing the OS from burdensome software timing loops.

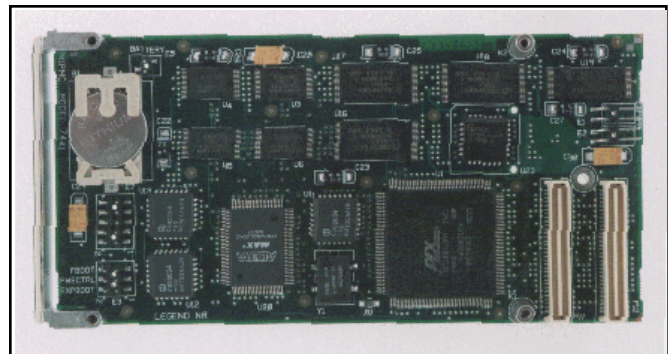
The VMIPMC-7441 has 128 Kbyte of battery-backed SRAM. This memory is provided to maintain system critical data even when power is lost. When host power is removed, the data can be retained for more than two years. This feature minimizes the down times required to reinitialize the system to its preshutdown state.

The VMIPMC-7441 has 4 Mbyte of flash memory. The flash memory allows maximum flexibility for applications which require bootable operation. The flash memory coupled with the bootable feature provides CPU diskless operation required by many embedded applications.

The VMIPMC-7441 is designed to meet all requirements, both physical and electrical, of the IEEE P1386.1 PCI Mezzanine Card (PMC) specification and the IEEE P1386 Common Mezzanine Card (CMC) specification allowing users to connect this board to any processor board configured to receive a PMC-type card. The VMIPMC-7441 also conforms to Revision 2.1 of the PCI Local Bus Specification.

PCI INTERFACE — The VMIPMC-7441 is a slave-only device which ties directly to the CPU PCI bus. The SRAM, flash memory, and timers are accessed via its own PCI memory address windows.

NONVOLATILE STATIC RANDOM ACCESS MEMORY (SRAM) — The VMIPMC-7441 has 128 Kbyte of battery-backed SRAM on-board which can



be accessed with 32-, 16-, or 8-bit read and writes. The power-off data retention time is more than two years.

TIMERS — There are three independently controlled and configurable timers on-board the VMIPMC-7441. Each are 32 bits wide, allowing for timer rates as fast as 3 μ s to as slow as 71.5 minutes.

The timers are designed to provide an interrupt at intervals based on the value placed in the timer. A value of x placed in the timer will generate an interrupt every $(x+2) * 1.0 \mu$ s. Each timer's interrupt is independently maskable, allowing for versatility in how a user chooses to utilize the timers.

BOOTABLE FLASH MEMORY — The VMIPMC-7441 has 4 Mbyte of OS and/or user application flash memory. The VMIPMC-7441 was designed with features to boot an installed flash resident OS. A bootable OS, such as VxWorks, can reside in the lower portion of the flash, while the remaining portion of the flash not used by the OS would then be available for user applications. The lower 1 Mbyte of the flash memory is write protectable.

ORDERING INFORMATION								
Sept. 17, 1997	800-757441-000	A	B	C	-	D	E	F
VMIPMC-7441	-	O	O	O	-			
ABC = 000 (Options reserved for future use)								
For Ordering Information, Call: 1-800-322-3616 or 1-205-880-0444 • FAX (205) 882-0859 E-mail: info@vmic.com Web Address: www.vmic.com Copyright © April 1997 by VMIC Specifications subject to change without notice.								

OPERATING SYSTEM AND SOFTWARE

SUPPORT — The VMIPMC-7441 was designed to support embedded OS operation. The bootup process will allow an OS to boot from the first 2 Mbyte of the flash. The only requirement is that the first 2 Mbyte of the flash be programmed, using the provided utilities, as though it is a DOS-formatted boot floppy disk. The use of the remaining 2 Mbyte is user definable. With an OS such as VxWorks, the use of the upper 2 Mbyte can be added to the Board Support Package (BSP). If using a VMIC Pentium® processor-based board with the appropriate VxWorks BSP, this added flash/SRAM support will be included. (Reference VMIC VMISFT-7418.)

SPECIFICATIONS

Nonvolatile Memory Size: 128 Kbyte

Battery: Type 3.0 V, 195 mA hr, 20 mm x 3.2 coin cell

Bootable Flash Memory Size: 4 Mbyte

Timers: Three independent 32-bit

COMPATIBILITY

THE VMIPMC-7441 is an IEEE P1386.1 PCI Mezzanine Card specification and the IEEE P1386 Common Mezzanine Card specification-compliant part.

PHYSICAL/ENVIRONMENTAL

Temperature Range: 0 to 60 °C, operating, forced air cooling, -20 to 85 °C, storage

Relative Humidity Range: 20 to 80 percent, noncondensing

Power Requirements: 0.5 A maximum at +5 VDC, 0.25 A maximum at +12 VDC

TRADEMARKS

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