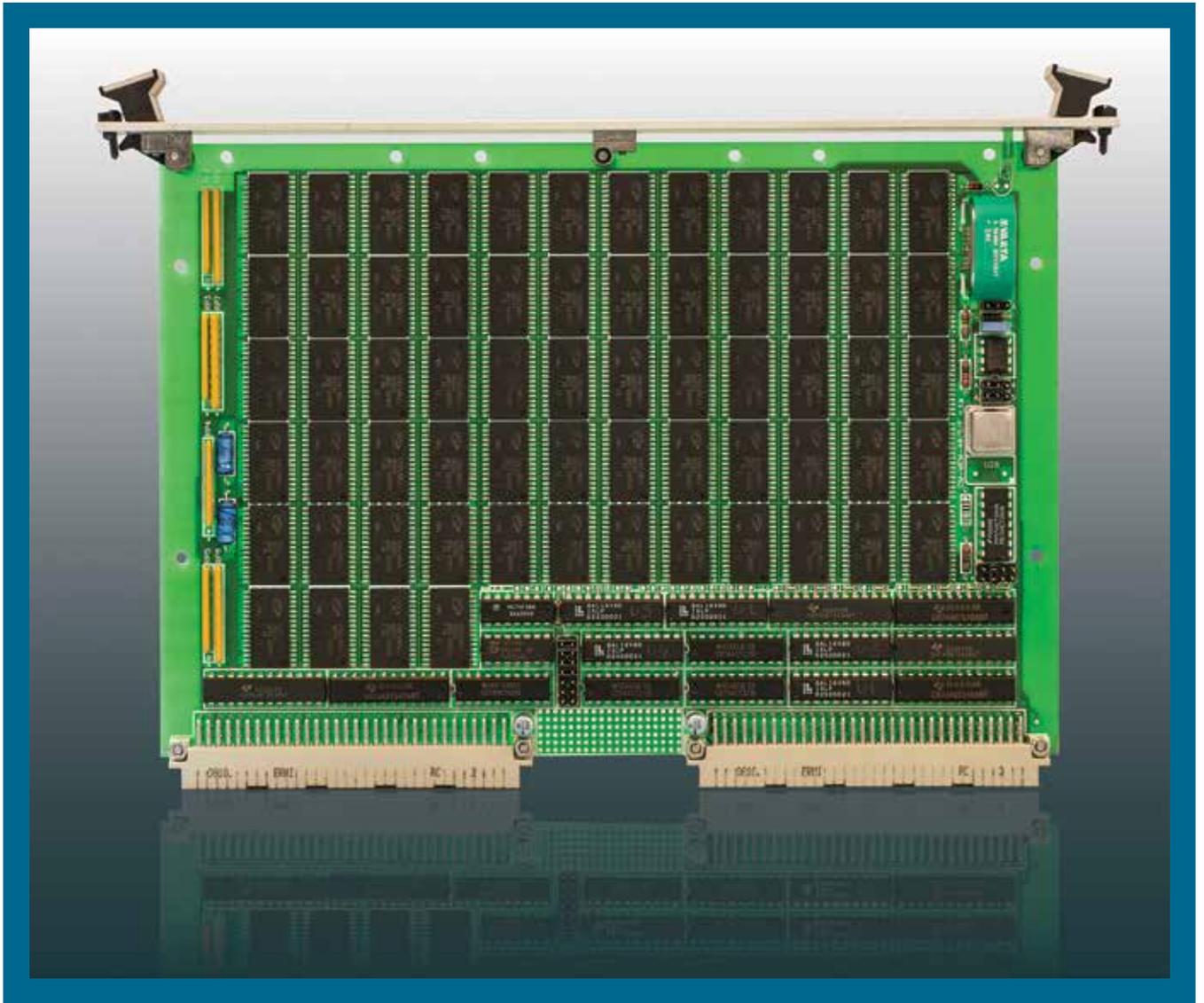




Computer

6U VMEbus Series

CM-MEM-40

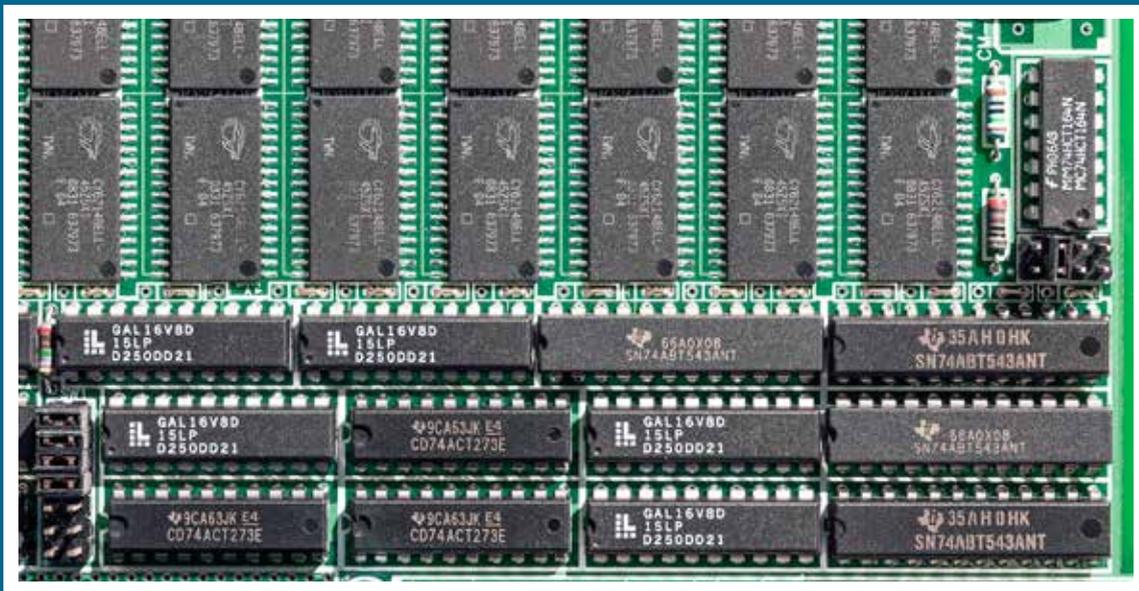


32MB FLASH / SRAM / EPROM Expansion Module

Commercial, Industrial, MIL-Rugged & MIL-STD-883 Versions

FEATURES

- ❑ On-board memory capacity up to 32 MB.
- ❑ Flexible memory chip insertion; SRAM, EPROM or FLASH.
- ❑ 16 memory banks with four 32 pin JEDEC devices of 512KB capacity.
- ❑ Fast CMOS low heat design (3 Watts).
- ❑ On-board programming with +5VDC only.
- ❑ Extremely fast access time.
- ❑ Supports all standard JEDEC chips.
- ❑ Variable wait-state generator.
- ❑ Module mapping to any 128 memory blocks, 32 MB size.
- ❑ Watch-dog timer & Stand-by rechargeable battery incorporated.
- ❑ Module assert DTRACK* in 100ns.
- ❑ Up to 64 chips in CM-MEM-40/F versions.
- ❑ EPROM type 27C400 supported.
- ❑ CM-MEM-40/S/F allows FLASH & SRAM combinations up to 16 MB.
- ❑ Commercial, Industrial, Rugged & 883 versions.
- ❑ IEC-297 mechanics with I/O via front panel and military P1101.2 wedge-lock mechanics.
- ❑ Conduction cooled PCB with thermal overlay in MIL-Rugged and 883 versions.
- ❑ Extensive software support.
- ❑ Excellent price/performance ratio.
- ❑ Low power CMOS design (3 Watts).
- ❑ Two year guarantee.



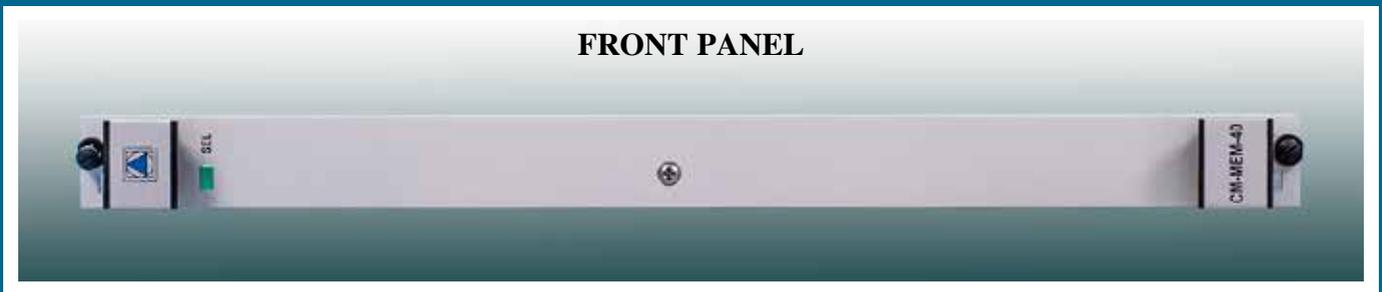
MILITARY DESIGN

- ❑ -55 to +125 °C ceramic military ICs.
- ❑ MIL-STD-883 TTL chips.
- ❑ MIL-C-55302 Class I Connectors.
- ❑ High Stability MIL-STD-883 SRAMs.
- ❑ No signal PCB tracks in external layers.
- ❑ MIL-E-5400 for avionics equipment class 1B (Temperature and Altitude).
- ❑ MIL-STD-810 E Temperature (Methods 501.3 & 502.3).
- ❑ MIL-STD-810 E Shock and Vibration (Methods 516.4 & 514.4).
- ❑ MIL-STD-810 E Humidity & Salt Fog (Methods 507.3 & 509.3).
- ❑ Military Class V Printed Circuit Board.

DESCRIPTION

- ❑ The **CM-MEM-40** is a 32 bit general purpose Memory Expansion Board that incorporates features demanded in military & industrial applications.
- ❑ Memory chips of SRAM, EPROM or FLASH may be installed in a flexible way. A versatile, high performance unit with low heat CMOS technology.
- ❑ Maximum on-board capacity is 32 MB, distributed in 16 banks, each one populated with four 32 pin JEDEC devices of 512KB of capacity.
- ❑ FLASH or EPROM versions (CM-MEM-40/F) can install up to 64 chips. These 512KB FLASH devices feature on-board programming with +5 VDC only.
- ❑ The 32 MB SRAM version (CM-MEM-40/S) incorporates a Watch-dog & stand-by rechargeable battery, allowing for use as a solid state hard disk (RAM disk).
- ❑ Jumpers allow mapping the board in any of the 128 memory blocks, 32 MB size, available in the Extended A32/D32 addressing range.
- ❑ Military versions are provided with conduction cooled thermal overlay, greatly improving capability to withstand shock and vibration.
- ❑ The metallic layer in the PCB also benefits heat dissipation and allows all components to work within homogeneous temperatures, thus greatly increasing component longevity and module MTBF.
- ❑ All **CM-MEM-40** versions are 100% compatible at the functional level, allowing software development to proceed with low cost Industrial versions.

FRONT PANEL



TECHNICAL SPECIFICATIONS

- | | | | |
|--------------------------|--|------------------------------|---|
| Capacity: | Up to 32 MB in steps of 2MB. The board incorporates 16 independent memory banks of 2MB & 32 bit wide. A bank is composed by 4 JEDEC chips of 512 KB capacity. | Wait-state Generator: | Adequates the VMEbus access time versus the speed of installed devices. A jumper allows 0, 1, 2 or 3 wait states for chips from 35 to 120 ns. |
| SRAM Memory: | The CM-MEM-40/S allows up to 32 MB of SRAM. Accepted chips are rated from 35 to 12 ns of access time. The total amount of SRAM can operate in "stand-by". | Back-up Battery: | A Ni/Cd rechargeable battery (100 mA/h) supplies the stand-by voltage. |
| Flash Memory: | Up to 32 MB. The board supports new generation Am-29F040 devices requiring only +5V for its on-board erase or programming. | Watch-dog: | A MAX-690 monitors the +5VDC and administrates the back-up battery. |
| EPROM Memory: | Up to 32 MB. To allow external programming the board offers 64 sockets for 27C4000 devices. | Front panel LED: | 1 LED that indicates when module is active. |
| VME Decoder: | Allows to map the board in the VME range in a flexible manner. There are 128 positions, 32 MB size each. | VME Addressing: | Two jumper blocks provide 256 mapping options in the A24 range. |
| VME Access Time: | The board responds to VMEbus data transfers in 100 ns (0 wait state). | Power consumption: | +5VDC @ 600 mA (3 Watts). |
| VMEbus Interface: | According to the IEEE 1014 rev. C. The board responds to VMEbus Extended transfers type A32/D32/D16/D8(EO) | Weight: | 405 gr. C & I ver.; 510 gr. R+ & 883ver. |
| | | Mechanical size: | Single slot 6U (233x160 mm). |
| | | Mechanical format: | |
| | | CM-MEM-40/A | Classic IEC-297 mechanics for 19 inch racks with I/O on front panel. |
| | | CM-MEM-40/B | Military IEEE P1101.2 wedge-lock mechanics for ATR enclosures. |
| | | Humidity: | Up to 95% RH non-condensing. |
| | | Altitude: | Sea level up to 15 Km (50,000 ft.). |



BOARD RANGE



COMMERCIAL (C):

Implements low cost commercial plastic IC's rated for 0 to +70 °C. Continuous board operation range from 0 to +60 °C. Class II industrial quality connectors.

INDUSTRIAL (I):

Manufactured with Industrial range plastic or ceramic IC's rated for -40 (-25) to +85 °C. Continuous module operation from -20 to +70 °C. Class II industrial quality connectors.



MILITARY-RUGGED (R+):

Implements ceramic IC's rated from -55 to +125 °C. Class I MIL-C-55302 connectors. Conduction cooled PCB. Board operation from -40 to +85 °C. Storage from -55 to +125 °C.

MILITARY-STD-883 (883):

Manufactured with conduction cooled PCB and MIL-STD-883 B/C qualified military ceramic parts (-55 to +125 °C). Class I MIL-C-55302 military connectors. MIL-R-39016 BIT Relays. Continuous board operation from -50 to +90 °C. Storage from -55 to +125 °C.



SOFTWARE SUPPORT



Wind River Systems VxWorks Tornado

The CM-MEM-40 is supported by VxWorks Tornado. This Operating System is ideal for developing real time software in UNIX environments. A complete "C" language driver in source code is available at low cost. Drivers include a floppy disk and user's manual.

Microware Systems OS-9

Drivers for the real time OS-9 Operating System are available in "C" language. This driver is supplied with user's manual & source code floppy-disk.

Note: Drivers for other leading operating systems can be optionally supplied upon request.



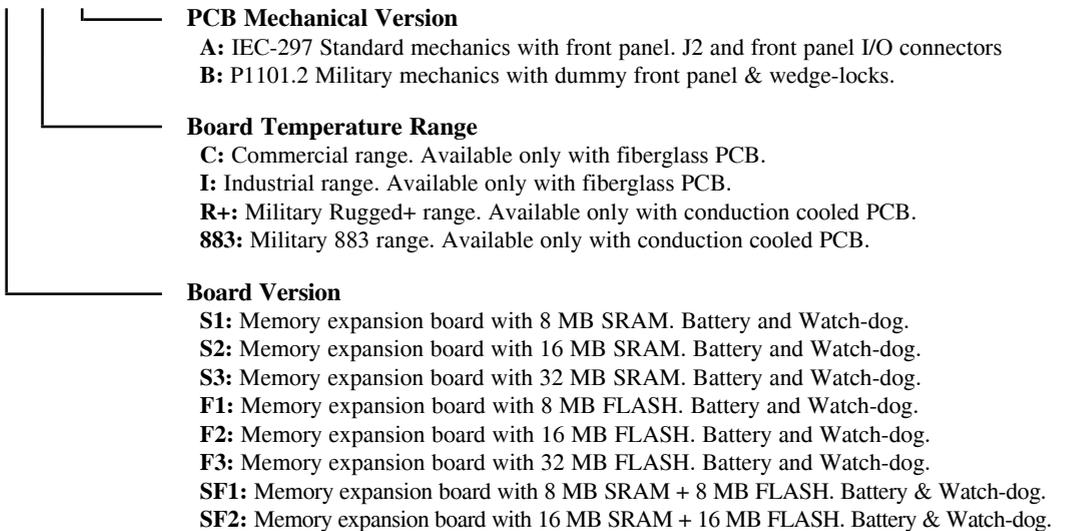
DOCUMENTATION

- LEVEL 1, CM-MEM-40 MAP:** User's manual. Module hardware functional description oriented toward software development.
- LEVEL 2, CM-MEM-40 MMT:** Maintenance manual with BIT scope, test point wave forms, logic analyzer diagrams, etc.
- LEVEL 3, CM-MEM-40 NAT:** Maintenance manual according to NATO forces. Includes the above manuals plus mechanical & electrical schematics, NATO list part number, extended functional description and maintenance & calibration procedures for in-service equipment.



ORDERING INFORMATION

CM-MEM-40 /V /T /M



Computer

European Headquarters:

Edificio Congresos, 3-14.
 C/ Alcalde Luis Uruñuela
 s/n.
 41020 Sevilla (SPAIN)
 Tel: +34 954253116
 Fax: +34 954253119

WebSite: www.cmcomputer.com
 E-mail: cm@cmcomputer.com

For more extensive information, contact CM Computer or your representative.

Your local representative: