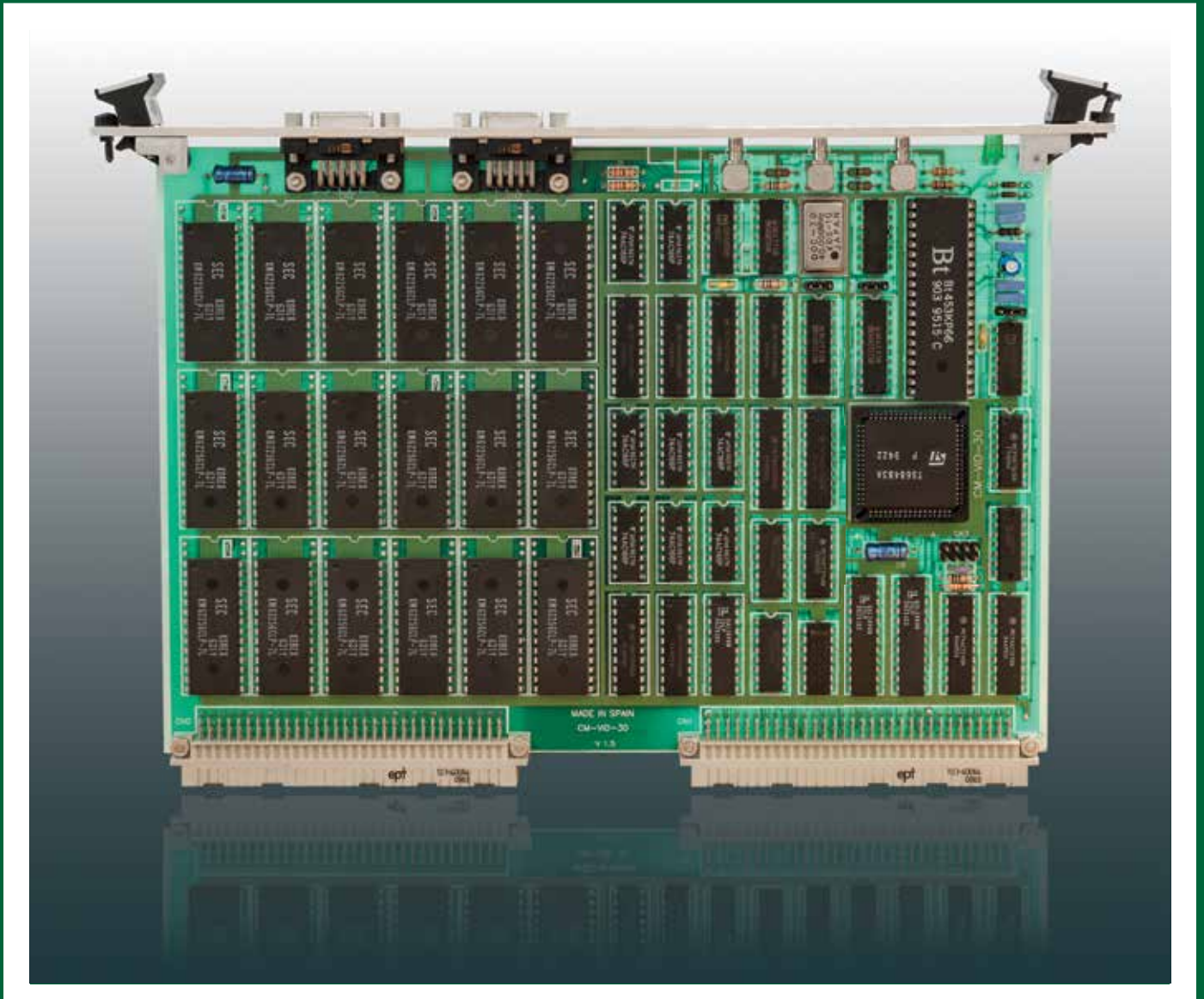
Computer

6U VMEbus Series

CM-VID-30

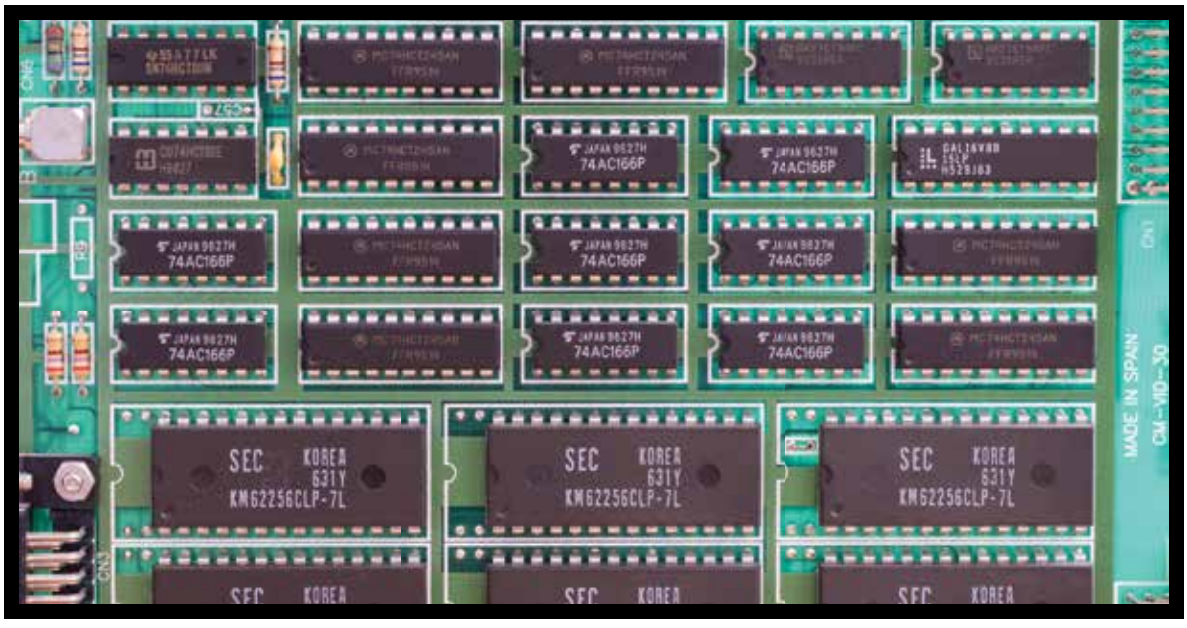


2048x2048 / 4.6Mb SRAM / Color Graphics Module

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

FEATURES

- ❑ **Eighteen on board 32 pin SRAM sockets**
- ❑ **Based on the AGAC (Advanced Graphic and Alphanumeric Controller) TS-68483.**
- ❑ **Up to 4.6 Mbytes SRAM frame buffer.**
- ❑ **High screen resolution of 1024 x 1024 pixels.**
- ❑ **On-board programming with +5VDC only.**
- ❑ **Analog color palette of 4.19 million colors.**
- ❑ **Nine planes of 2048 x 2048 pixels.**
- ❑ **TTL RGBI and analog RS-343A outputs.**
- ❑ **Supports 32K, 128K and 256K SRAM memory chips.**
- ❑ **Supports 720 x 512px, 900 x 512px, 800 x 640px, 1024 x 720px, 920 x 800px, 1024 x 1024px resolution.**
- ❑ **Module assert DTRACK* in 300ns.**
- ❑ **Two independent graphic banks.**
- ❑ **Front Panel VMEbus master access led indicator.**
- ❑ **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 ºC 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.**

NOT RECOMMENDED FOR NEW APPLICATIONS

DESCRIPTION

❑ The **CM-VID-30** is a high performance and resolution graphics module, based on the AGAC (Advanced Graphic and Alphanumerical Controller) TS-68483.

❑ Eighteen, 32 pin memory chips of SRAM, may be installed in a flexible way. A versatile, high performance unit with low heat CMOS technology.

❑ Maximum on-board capacity is 4.6 MB, distributed in 3 banks, each one populated with six 32 pin SRAM chips of 256KB of capacity.

❑ SRAM memory of 32K, 128K, and 256K maybe installed. The AGAC device features on-board programming with +5 VDC only.

❑ Two independent graphics banks, each providing a frame buffer of up to 2048 x 2048 pixels and four color planes. Display windows area of up to 1024 x 1024 pixels with a color palette of 4.19 million colors.

❑ 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-VID-30** versions are 100% compatible at the functional level, allowing software development to proceed with low cost Industrial versions.

FRONT PANEL

TECHNICAL SPECIFICATIONS

Graphics Processor: A TS-68483 device that has 24 16bit internal registers and requires only +5V for its on-board erase or programming.

Capacity: Up to 4.6MB in steps of 256K. Incorporates 18 independent memory banks of 256K - 32 bit wide.

SRAM Memory: The CM-VID-30/S allows 32k, 128k, or 256k memory modules, rated from 35 to 12 ns of access time.

Color Palette: BT-453 analog color palette, 4.19 million colors in accordance with RS-343 A specifications.

Frame Buffer: Four 2048x2048 pixel planes in bank 1 & 2. One pixel plane in bank 3.

Display Pixels: Ouput display of 1024x1024 pixels, 40/36 MHz pixel frequency

Display Outputs: 3 x coaxial & 1 x cannon 9 pin connector for analog video, 1 x cannon 9 pin connector for TTL RGBI output.

VME Decoder: Allows to map the board in the VME range in a flexible manner. There are 128 positions, 32 MB size each.

VME Access Time: The board responds to VMEbus data transfers in 100 ns (0 wait state).

VMEbus Interface: According the IEEE 1014 rev. C. The board responds to VMEbus Extended transfers type A32/D32/D16/D8(EO)

Front panel LED: 1 LED that indicates when module is active.

VME Addressing: Two jumper blocks provide 256 mapping options in the A24 range.

Power consumption: +5VDC @ 600 mA (3 Watts).

Weight: 405 gr. C & I ver.; 510 gr. R+ & 883ver.

Mechanical size: Single slot 6U (233x160 mm).

Mechanical format:

CM-VID-30/A Classic IEC-297 mechanics for 19 inch racks with I/O on front panel.

CM-VID-30/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.).

NOT RECOMMENDED FOR NEW APPLICATIONS

BOARD RANGE

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

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

MILITARY-RUGGED (R+):
Implements ceramic IC's rated from -55 to +125 ºC. Class I MIL-C-55302 connectors. Conduction cooled PCB. Board operation from -40 to +85 ºC. Storage from -55 to +125 ºC.

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

SOFTWARE SUPPORT

Wind River Systems VxWorks Tornado
The **CM-VID-30** 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-VID-30 MAP: User´s manual. Module hardware functional description oriented toward software development.

LEVEL 2, CM-VID-30 MMT: Maintenance manual with BIT scope, test point wave forms, logic analyzer diagrams, etc.

LEVEL 3, CM-VID-30 NAT: Maintenance manual according to NATO forces. Includes the above manuals plus mechanical & electrical schematics, NATO list part number, extended functional description and maintenance and calibration procedures for in-service equipment.

ORDERING INFORMATION

CM-VID-30 /V /T /M

PCB Mechanical Version
- **A:** IEC-297 Standard mechanics with front panel. J2 and front panel I/O connectors
- **B:** P1101.2 Military mechanics with dummy front panel & wedge-locks.

Board Temperature Range
- **C:** Commercial range. Available only with fibreglass PCB.
- **I:** Industrial range. Available only with fibreglass PCB.
- **R+:** Military Rugged+ range. Available only with conduction cooled PCB.
- **883:** Military 883 range. Available only with conduction cooled PCB.

Board Version
- **S1:** Eighteen 32kx8 Memory - 1024 x 512 pixel
- **S2:** Eighteen 128kx8 Memory - 2048 x 1024 pixel.
- **S3:** Eighteen 256kx8 Memory - 2048 x 2048 pixel.

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