

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Visit our website - *Click HERE*

CETIA VME/VSB PowerEngine VMTR2a

High Performance PowerPC 604 Single Board Computer

Faster:

The PowerEngine VMTR2a delivers more than 3.2 Specfp 95 in a single slot and the PowerEngine's unique snugly-coupled clustered systems will take you over 2000 Specfp 92 on the same VMEbus.

Stronger:

The PowerEngine is a COTS product that has successfully undergone extended environmental testing (shock, vibration and thermal tests).

Further:

With more PowerPC experience than any other vendor in the industry, CETIA will bring you far beyond the year 2000.

Click here to see the CETIA PowerEngine VMTR2a Picture (85 Ko)

General Overview

Based on the PowerPC 604 RISC architecture, the VMTR2a is the second generation of high performance CETIA PowerEngine Single Board Computers.

The PowerEngine VMTR2a is a COTS product that has successfully undergone extended environmental testing (shock, vibration, thermal tests).

This VME standard double Eurocard is perfectly adapted to build high performance VME compact microcomputers which can support both UNIX and Real-Time OS based applications.

With more than 2.9 SPECint 95 and 3.2 SPECfp 95, the PowerEngine VMTR2a (Single Board Computer) enables manufacturers to build very high-performance VME compact microcomputers, which can support UNIX (UNI/XT based on IBM AIX Technology) and Real-Time OS based applications (LynxOS, VxWorks, Chorus...).

This new design is plug to plug compatible with the PowerEngine based on the PowerPC 601 first generation.

CETIA PowerEngine VMTR2a Technical Data

- General Overview
- CETIA PowerEngine VMTR2a **Picture**
- Peripheral I/O
- ETHERNET Interface
- Serial lines
- Parallel I/O
- Software
- CETIA PowerEngine VMTR2a **Technical Features**
  - CPU
  - Memory
  - VME Interface

- CETIA PowerEngine VMTR2a **Block Diagram**
- Features and Benefits
- Processor
- Memory
- Bus Interface
- Miscellaneous
- CETIA PowerEngine VMTR2a **Order Codes**
  - VSB Interface
  - Ehternet Interface
  - SCSI interface
  - Power Requirements
  - Environ.Specifications

Click here to see the CETIA PowerEngine VMTR2a Block Diagram (85Ko)

Features and Benefits

Features	Benefits
PowerPC 604 Microprocessor	High level of performance with broad industry support: radar and sonar processing, optical character recognition, nuclear, ...
16 to 256 MB DRAM	Flexible and high capacity memory size
Up to 8 MB Flash EPROM	On board boot and self test enhance system availability
Dedicated MGSI ASICs	Optimized internal DRAM bus transfers (increased by a 2 factor)
3 asynchronous serial ports	Flexible communications
Ethernet interface	DMA controller
Fast SCSI-2 interface (up to 20 MB/s)	High performance mass storage with DMA
Parallel port	Fast printer
VME master / slave interfaces and VSB	High speed bus transfers and use of P2 backplane connectors
Silicon coating option	Ideal protection against moisture conforming to MIL-I-460580



Processor

- Superscalar 604 PowerPC processor (100 or 150 MHz).
- 64-bit data bus.
- 16-KByte data cache.
- 16-KByte instruction cache.
- 4-GByte direct addressing range.
- 3 integer units.
- 1 floating point unit.
- 1 branch processing unit.
- 1 load / store unit.
- SP and DP precision point: 32, 64 bits.



Memory

- Dynamic RAM (16, 32, 64 and 256 MBytes) of on-board DRAM shared between processor bus, local bus and VME bus. DRAM banks are interleaved with an interlace factor of 2. Memory can be upgraded by exchanging SIMM modules.
- MGSI ASICs: optimize bus throughput between the PowerPC 604 processor bus, the DRAM bus and the local bus.
- Featured for double bank memory, the MGSI ASICs speed up the access to the DRAM and allow full speed bursts of 320 MBytes/sec (bursts 2.1.1.1).
- EPROM: up to 1 MByte on a single 32-pin JEDEC socket.
- Up to 8 MBytes with a IPROM daughter board (Flash)
- EEPROM: 2 KBytes.
- NVRAM 8 KBytes with time of day clock with built-in lithium batteries.
- Real-Time clock = 55 bit at 7.8125 MHz (Time measurement or absolute time) + 32-bit decrementer at 7,8125 MHz.
- External timer: 50 Hz, 100 Hz or 1000 Hz.



Bus Interface

- VMEbus: VMEbus 32-bit rev. C.
- Master and slave Interface.
- D32, D16, D8 data.
- A32, A24, A16 addresses.
- 7 VME interrupt requests.
- Arbitration: 4 levels of bus request.
- VSB: VME Subsystem Bus for high speed transfers, located on the P2 blackplane connector (32-bit multiplexed address and data bus. Multi-master / slave, bloc mode supported).



Peripheral I/O

- SCSI: 8 or 16-bit SCSI2 single ended bus interface. Direct memory access (DMA) to the on-board DRAM, that enables the connection with 7 independent controllers such as disks, tapes, etc...
- Transfer rate:
  - 16-bit SCSI:
    - up to 20 Mbytes/s in fast SCSI mode,
    - up to 10 Mbytes/s in asynchronous mode.
  - 8-bit SCSI:
    - up to 10 Mbytes/s in fast SCSI mode,
    - up to 5 Mbytes/s in asynchronous mode.
- SCSI2 P cable support.



ETHERNET Interface

- ETHERNET: Ethernet M.A.U interface (802.3, 10 base 5).
- 32-bit DMA controller enables direct access to DRAM.



Serial lines

- Three serial lines (one RS232 with MODEM control and the two others dedicated to keyboard and mouse). TSOUTa adaptor cable can convert the keyboard/mouse lines into 2 RX/TX RS232 lines.

Parallel I/O

- Bi-directional CENTRONICS parallel port.



Software

CETIA adopts an innovative approach, offering customers a single interface extending from the development environment to the Target Board Computer, from the system software right through to hardware and system.

CETIA's cluster architecture allows the cohabitation on a single bus of several PowerEngine VME CPU's each executing an OS (AIX, LynxOS,...) and dialoguing by means of a TCP/IP type mechanism or by message passing.

By exercising full control over the source code of the system software, CETIA is able to guarantee optimum durability and performance for its system.

CETIA is a source code licensee for both IBM AIX and LynxOS.

- UNI/XT (based on IBM AIX with X11 / MOTIF, NFS, TCP/IP...) provides binary compatibility with the IBM RS/6000 range of servers and workstations.
- UNI/RT5, dedicated to PowerPC architecture, provides extensions to the LynxOS standard offering : multiprocessing mechanisms over the VME, communication features, extended graphics X11 servers, optimized context switch, kernel debugging tools.
- Other Operating Systems are available from Third Parties: VxWorks, CHORUS, OS Open, etc.



Miscellaneous

- Board size: VME double Eurocard (233.3 mm x 160 mm)
  - 1 slot for 16, 32, 64 MByte DRAM (100 MHz)
  - 2 slots for 16, 32, 64 MByte DRAM (150 MHz)
  - 2 slots for 256 MByte DRAM (100 and 150 MHz).
- Board Air Temperature: 0° to 50°C.

- 0 to 90% relative humidity non condensing (95% with specific coating).
- Air flow:
  - 1.2 m/s for 100 MHz board,
  - 1.5 m/s for 150 MHz board.



CETIA PowerEngine VMTR2a Technical Features

CPU		
Processor	PowerPC 604	
Clock Frequency	100 MHz	150MHz
SPECint 92	160	225
SPECfp 92	165	225

MEMORY	
Global memory dynamic RAM	16, 32, 64 and 256 MByte dynamic RAM
L2 cache	No
EEPROM	2 KBytes
Flash EPROM	Up to 1 MBytes (Socketed) 8 MBytes (Option with daughter board)



VME INTERFACE	
Type	VMEbus 32-bit rev. VC Master and Slave interface

VSB INTERFACE	
Type	IEEE1096-1988 standard Multimaster slave

ETHERNET Interface	
Type	IEEE 802.3 standard 10 Base 5 (thick Ethernet)



SCSI INTERFACE	
	SCSI1 and SCSI2 8 or 16 bit wide; up to 20 MBytes/s transfer rate

POWER REQUIREMENTS

	Maximum
+5V,	8.8 A to 16.5 A (depending on configuration)
+12V,	100 mA (+500 mA with external Ethernet transceiver)
-12V,	100 mA



ENVIRONMENTAL SPECIFICATIONS		
	Operating:	***Storage:***
Temperature range	0 to 50deg. C Ambient	-40 to 85deg. C
Recommended Cooling	1.2 m/s (100 MHz) 1.5 m/s (150 MHz or 256 MB RAM configuration)	
Relative Humidity	10 to 90% without condensation at 40°C	
Altitude	less than 10.000 ft	
Vibration	20 to 2000 Hz at 2g acceleration	
Shock	20g for 6ms (half sine) when mounted in a suitable racking system	



CETIA PowerEngine VMTR2a Order Codes

PRODUCT DESCRIPTION	**ORDER CODE**
VMTR2a 100 MHz 16 MByte RAM	VMTR2a-100-16/R
VMTR2a 100 MHz 32 MByte RAM	VMTR2a-100-32/R
VMTR2a 100 MHz 64 MByte RAM	VMTR2a-100-64/R
VMTR2a 150 MHz 16 MByte RAM	VMTR2a-150-16/R
VMTR2a 150 MHz 32 MByte RAM	VMTR2a-150-32/R
VMTR2a 150 MHz 64 MByte RAM	VMTR2a-150-64/R
8 MByte Flash Memory option	IPROM-8
32 to 256 MByte RAM Memory upgrade*	XMMPR-224*

*Contact CETIA



Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP