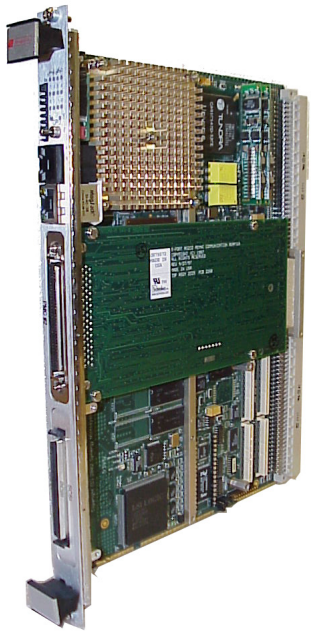
MSE-Tetragenics

VME CPU G-Series

Automation, Control, and Monitoring

VME CPU G-Series



VME CPU
G-Series

FEATURES

- Dependable PowerPC (7410) architecture
- High-performance L2 cache, 2 MB per CPU
- Up to 512 MB high-speed SDRAM (on-board)
- Autosensing 10/100 Base-T Ethernet
- Two PMC sites support industry-standard PMC I/O
- Multiple ruggedization levels (R1, R2)
- Extended temperature tolerance
- Dual board stiffener bars for extra rigidity
- 400-500 MHz CPU speed
- 100 MHz Memory Controller
- Up to 64 MB User Flash
- Two serial ports standard
- Wide, Ultra SCSI
- VME64x support
- Single or dual CPU

HIGHLIGHTS

The G-Series CPU VMEbus microprocessor computer board offers proven performance and functionality:

- **Plant Control System**
- **Industry Adaptable**
- **Sequential Event Recording**
- **Millisecond Time Stamping**
- **Multiple Protocols**
- **HMI functionality**
- **Internet/Intranet Ready**
- **User-Defined Logic/Control Sequences**
- **Auto Generated Screens**
- **Ethernet Polling**
- **System Editors**
- **Trending**
- **Custom Modules**

Page 2 contains specifics on how the G-Series CPU supports these functions.

DESCRIPTION

The MSE-Tetragenics G-Series Central Processing Unit (CPU) is a VMEbus microprocessor computer board that interfaces to our input/output (I/O) bus. The G-Series CPU is a direct replacement for the MSE-Tetragenics Plant Control System (PCS) currently using the FORCE line of microprocessors. This CPU features the MC3000 SCADA Master software on the board, with the following capabilities:

- Ethernet
- Intranet/Internet
- dial-up with 32-bit protected mode processing
- built-in diagnostics
- critical alarm upgrading
- security
- multi-region/number callout
- multiple download options
- electronic CPU printing

You can view the system home page locally or remotely over the Intranet/Internet at remote sites using a standard browser.

The G-Series CPU offers powerful features and supports the functions associated with the MSE-Tetragenics PCS (Load, Volt, Pond, VAR/VAR Balancing Control, and Synchronization). On large, complex systems, the dual CPU option can be used for added horsepower. The G-Series comes standard with on-board Ethernet, dual serial ports, and one Wide Ultra SCSI port, and is perfectly configured to operate the Linux OS with symmetric multiprocessing (SMP). You can poll other intelligent devices either across the Ethernet link and/or via the serial ports.

The G-Series offers CPU speeds up to 500 MHz, a 100 MHz memory bus, exceptional Peripheral Component Interconnect (PCI) bus performance, and two PCI Mezzanine Card (PMC) sites for maximum I/O flexibility. The board features advanced vector parallel processing, a 2 MB L2 backside cache, and very low power consumption.

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VME CPU G-SERIES

ENVIRONMENTAL DATA

Operational Temperature:
- Standard range 0° to +65° C
- Extended ranges -20° to +71° C
- Ambient with forced air cooling,
- 300 LFM min. air flow

Ruggedization options:
- Level R1: 6.25G RMS random /20G shock
- Level R2: 8.9G RMS random /30G shock

Storage temperature:
-50° to 100° C

Shock temperature:
-40° to 85° C

Humidity:
0–95% RH non-condensing

Altitude (est.):
to 39,000 ft. above MSL

MTBF:
182,000 hours (20.7 years)

MECHANICAL DATA

Physical: *6U form factor: 9.187" (233.35 mm) x 6.690" (169.93 mm) x .070" (17.78 mm)

Weight: 6U board: 16 oz. (450g)

* U = 1 unit (approx. 1.71 inches)

POWER REQUIREMENTS

PPC 7410/450MHz: 4.09 amp/20.45 W (power req. differs with configuration)

VME CPU G-Series

HIGHLIGHTS

The G-Series CPU VMEbus microprocessor computer board offers proven performance and supports a variety of products and functions:

- **Plant Control System (PCS)** – provides voltage control, VAR control, breaker control, generator start/stop, synchronization, pump control, multi-generator load control with optimization, pond level, tailrace level, minimum flow, headgate position, spillway level, and fish ladder control
- **Industry Flexibility** - monitors and controls a wide variety of industrial applications, such as hydro power plants, utility substations, communications towers, water and wastewater plants, and energy management systems
- **Millisecond Time Stamping** - records events to millisecond accuracy
- **Sequential Event Recording -** records and archives events (for true sequence of event analysis, historical archive, troubleshooting, etc.)
- **Protocols** - communicates data and control commands between devices with DNP3, Modbus, ESCA ISD/ISC, JEM2, Schweitzer, FM7500, and MSE-Tetragenics protocols
- **HMI** (WinTetraVision) - enables view/control functionality for up to 32 workstations
- **Auto Generated Text Screens** - generates color text screens automatically at run time, displaying the status of each input and output in the system
- **Custom Graphic Screens** - supports custom graphics screens
- **Internet/Intranet Ready** - provides viewing of system with a Web browser and a customizable homepage
- **User-Defined Logic/Control Sequences** - executes time/event-activated sequences and controls
- **Ethernet Polling** - communicates with remote units over the network
- **System Editors** - uses Windows-based System Database Editors containing user-friendly tables with scrolling parameters for easy editing
- **Trending** - creates graphical trends of real-time data
- **Custom Modules** - allows custom system functions by operator, system administrator, or MSE-Tetragenics engineer