CMC-e Military PC

Quad Core Performance for Airborne, Naval, Vehicles

Military Fully Rugged PC
Quad Core i7-3612QE (4x 2.1 GHz),
Enhanced Graphics, SATA Flash Disks
Expansion Slots PCI-Express & PCI

CMC-e, is a fully rugged military PC, based on Intel Quad Core i7-3612QE (4x 2.1 GHz), L2 Cache 6 MB, and enhanced Intel HD 4000 Graphics. The unit supports Microsoft Operating Systems Win XP Professional & Embedded, Win 7 & Embedded, Server 2003, 2008.
Designed for customer specified configuration, it includes a passive back-plane with three PCI Express slots (x16, x4, x1), and three PCI slots.

The computer provides EMI/RFI and environmental protection for COTS PC boards and other modules and is qualified for Helicopters, Transport Aircraft, Vehicles and Naval Vessels.
The unit is supplied with a mounting tray with four shock isolators, or as a 19" Rack mounted drawer.

Standard shock mount Configuration

19" Rack Configuration

Salient Features

- **Expansion slots: 3 x PCI-e (x 1, 4, 16), 3 x PCI**
- **Internal SATA Flash Disk (SLC): SATA, 8-64GB**
- **Removable SATA Flash DISK: 32-500GB**
- **Ethernet: Internal Switch with 4 x 10/100/1000Base-T.**
- **USB 2.0 : 6 x USB 2.0**
- **Up to 8 x RS-232/RS-422**
- **Programmable Hardware Watch Dog**
- **Voice In/Out**

Graphics

The integrated GMA HD4000 supports:

- **Graphics Core Render Clock : GT1 /GT2 , Base clock: 350/650 MHz**
- **Execution Units / Pixel Pipelines: GT2: 16EU / GT1: 6EU**
- **Max Graphics Memory: 1720MB**
- **API (DirectX/OpenGL): 11 / 3.0 + OCL1.1**
- **SHADER Model: 5.0**

As an alternative NVIDIA or AMD PCI-e x 16 cards can be used.

Options

- **Internal NTSC/RS-170 Ethernet Streamer.**
- **ARINC-429**
- **MIL-STD-1553**
- **RS-232/RS-422 Ports**
- **Internal GPS receiver**
- **Internal AIS receiver.**
- **Video Out: DVI/VGA/RS-170/RS-170 RGB**
- **RS-170 to MPEG4 via Ethernet Streaming**

ETI Services Inc. CAGE CODE: 1PZ92
1400 N Jefferson St., Anaheim CA. 92807 Tel: +1-714-524-2986,
Mobile: +1-714-932-9669 Fax: +1-714-524-8771 E-mail: ezra@etiservicesinc.com

April 2013

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Dimensions & Weight
222x243.5x383.3 (WxHxL) [mm] including base. Weight approx. 13 Kg with base.

Power Supply
- Power In
  12-36, or 18-36VDC per MIL 1275B, MIL-STD-704A approximately 3Amp.
- Hold-Up time minimum 80msec.

Reliable and rugged
The CMC-e withstands severe environmental conditions. Compact and easy to install, the unit is self-cooled. It operates autonomously from a 18-36VDC power source. The CMC-e uses either solid-state or hard-drive recording media, with the storage capacity for many hours of continuous operation.

CMC-e PC Construction
The CMC-e is designed and constructed in accordance with the general requirements of MIL-STD-454.

Thermal Design
The cooling of the components of the CPU and Power Supply is by conduction through the aluminum enclosure of the unit . The cooling of the plug in boards is by forced air.

Processes and Treatment
Processes and treatments (welding, soldering, brazing) and corrosion (resistance protection) of the enclosure is in accordance with MIL-STD-454.

External Connectors
External MIL-38999 circular connectors are used for interfacing with the subassemblies or equipment and are in accordance with requirement of MIL-STD-454. Connector mating bodies are keyed, and keyed locations are varied to prevent improper installation.

Connector's Panel
ETI Customizes the panel and the external connectors on it, per Customer's specifications.

Identification and Marking
The marking and labels of the equipment meet the requirements of MIL-M-13231.

Environmental

Temperature range:
- **Operating: 0°C to +60°C**

  Option: -40°C to +60°C .
- **Non-operating: -40°C to +85°C;**

Relative humidity:
Up to 95% relative humidity, non-condensing, MIL-STD-810F

Salt Fog:
5% solution per MIL-STD-810F method 509.3

Vibration:
MIL-STD-810F Method 514.5 Procedure I

Shock:
MIL-STD-810F for flight equipment 40g, 11ms saw tooth

Altitude:
- With standard hard disks up to 15,000ft , operating and non-operating
- With Flash disks up to 40,000ft, operating and non-operating.

Fungus, Sand and Dust
MIL-STD-810F

EMI/RFI
Per MIL-STD-461F

- **CE102, conducted emissions, power leads, 10 kHz to 10 MHz.**
- **RE102, radiated emissions, electric field, 100 kHz to 1.0 GHz.**
- **RS103, radiated susceptibility,** electric field, 2 MHz to 2.0 GHz.
- CS114, conducted susceptibility, DC cable injection, 10 kHz to 400MHz.

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