6U VME — Power PC 7448ST SBC

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Single Board Computer

Key Features

- UsesFreescale MPC7448 Power-PC processor @1.2 GHz
- Processor has an AltiVec™ vector-processing engine that is capable of optimizing the performance of mathematically intensive operations.
- Board features can be custom designed baced on customer and project requirements

Applications such as signal intelligence and automated testing equipment (ATE) require an embedded computing platform that is capable of collecting, analyzing, and disseminating large amounts of data in real-time. Cornet Technology's Celero CVME-7448ST solution is ideal for systems designers choosing commercial-off-the-shelf (COTS) products to achieve substantial cost savings and a reduced time-to-market.

Within a VME 6U form factor, the Celero CVME-7448ST hardware uses a Freescale PowerPC MPC7448 processor running at 1.2 GHz. Each processor has an AltiVec™ vector-processing engine that is capable of optimizing the performance of mathematically intensive operations. The processor node has a 1 MB on-chip L2 Cache, 512 MB or 1 GB DDR2

SDRAM, and 256 MB FLASH. The board has two configurable multi-protocol (RS-232/422) serial ports; two USB 2.0 ports; and two 10/100/1000Base-T Gigabit Ethernet ports, all selectable for front or back access; and two PMC sites for hosting data acquisition or signal conditioning modules or peripherals such as video, MIL-STD-1553B or storage.

Featuring the Tundra Tsi109 host-bridge controller, the Celero CVME-7448ST hardware offers much higher performance per watt than comparable products in the market – a key consideration of military embedded applications with tight power budgets, and improved signal integrity providing significant improvement over older generations of VME PowerPC single board computers. By incorporating the latest DDR2 technology and the Tundra controller into the design, memory latency caused by pipeline blockage is eliminated improving performance by up to 9% and overall power consumption is reduced by up to 6W over boards using older technology.

The Celero solution includes board support packages (BSPs) for VxWorks and Linux operating systems. This lets systems designers seamlessly integrate their application code into a real-time operating system or open-source environment. Software developers can conveniently use the on-board JTAG interface, status LEDs, front panel reset toggle switch, and power-on built-in test features for rapid development.

CORNET TECHNOLOGY

Board Design

Processor:	Freescale MPC7448 PowerPC processor @1.2 GHzMemory:
Memory:	L1 Cache: 32 KB Instruction, 32 KB data
	L2 Cache: 1 MB
	SDRAM: 512 MB expandable to 1 GB
	Flash: 256 MB
Software support:	VxWorks and Linux 2.6
Front Panel I/O :	Two 10/100/1000Base-T Ethernet ports
	One USB 2.0 port
	Two PMC sites expansion
Real Panel I/O:	PMC Site 1 and 2 user I/O signals routed to VME64x P0/P2 (VITA-35)
	Two configurable RS-232/422 ports available via P2
	14 (fourteen) general purpose LVTTL digital I/O lines via P2
	Two RJ-45 10/100/1000Base-T Gigabit Ethernet ports
	Two USB 2.0 ports
Bus:	VME 64X 2eSST at 320 MB/sec
	Processor local bus
Bridges:	PCI bridge uses PLX9056
	VME bridge uses TSI148

Sensor:	Temperature sensor

Mechanical

Form factor:	6U VME, 4TE
Dimensions:	233.4 mm x 160 mm x 20 mm

Power

Supply:	+5V and +3.3V from VME backplane
Consumption (w/o PMC):	20W typical 30 W max

PMC Expansion

Power:	3.3V
Clock Speed:	33/66 MHz
Data bus:	PMC Site 1-64-bit PMC Site 2-32-bit
Conformance:	IEEE P1386, VITA-35, VITA-32

Environment

Cooling:	Air Cooling
Operating Temp:	-20°C to 55°C
Storage Temp:	-40°C to 85°C
Humidity:	Humidity: 10-90% at room temperature non-condensing

Compliance

RoHS Compliant

Designed to comply with FCC 47 CFR Part 15, Subpart B, Class A

Product is Subject to U.S. Export Laws