

Force Computers cPCI-690

PowerCore CompactPCI Single-Board Computer



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PowerCore CPCI-690

Universal-Mode Single-Board Computer

DATASHEET



KEY FEATURES

PowerPC® 750FX processor with core frequency starting at 700 MHz

Discovery GT-64260 system controller – five decoupled busses for concurrent processor/PCI peripheral device access to main memory

Sentinel™ universal-mode PCI-to-PCI bridge enables SBCs to switch between system- and peripheral-slot functionality

Up to 1GB high speed SDRAM main memory

PICMG® 2.16 compliance for CompactPCI® Packet Switching Backplane specification

Dual 64-bit/66 MHz PMC slots

Three independent Fast Ethernet interfaces

Dual serial RS-232 interfaces – front panel or rear transition module

133 MHz frontside bus host interface

Full hot swap support for CompactPCI specification

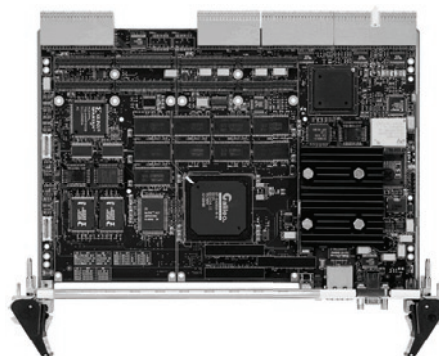
IPMI system management support (PICM 2.9)

The PowerCore™ CPCI-690 brings maximum real-time computing performance in a single slot to both system controller and intelligent peripheral modes. The CPCI-690 is built around the PowerPC 750FX processor with its ultra-high speed and extremely low power consumption characteristics. The use of the PowerPC 750FX processor, together with up to 1GB high speed memory and Sentinel PPB on-chip buffers for elevated system performance, enables the CPCI-690 to address the most demanding applications. The CPCI-690 is also backward compatible with earlier members of the PowerPC based PowerCore family of SBCs.

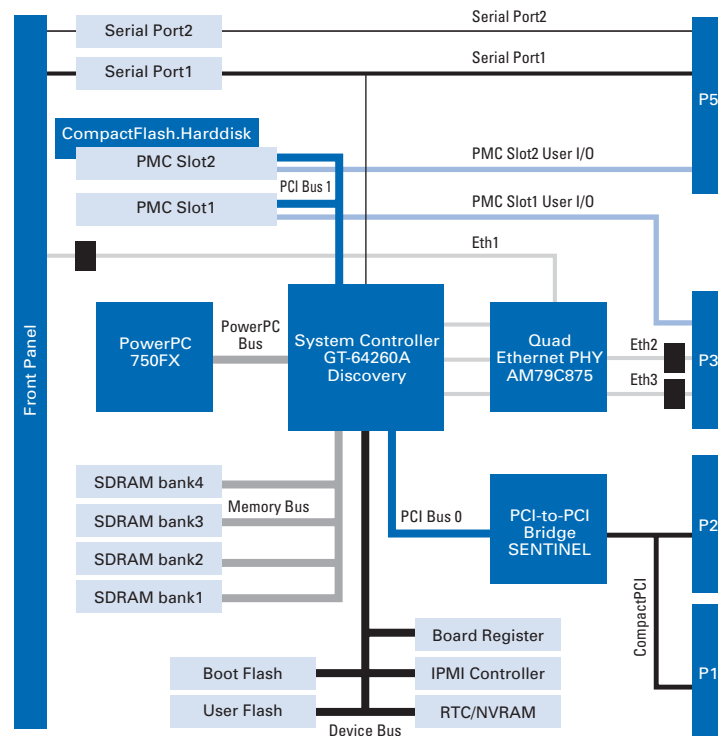
By using the Sentinel PPB technology, developers can simplify and accelerate the design of multiprocessor systems based on cost-effective, industry standard components.

Developers can take advantage of the CPCI-690's power and performance when running major real-time operating systems (RTOSes) or when deploying applications based on the low cost, open source Linux operating system. RTOSes supported include VxWorks and Linux.

In addition to its versatility and high performance, the PowerCore CPCI-690 provides developers with broad expansion capabilities and a wide range of interface options. Up to two PMC slots are available for expansion, and one PMC slot can accommodate an IDE interface-compatible PMC module for CompactFlash or hard disk drive storage (PMC must have on-board IDE controller). There are also up to three independent Fast Ethernet interfaces and two serial interfaces for maximum I/O flexibility.



The Motorola PowerCore CPCI-690 CompactPCI (6U) single-board computer (SBC) brings new levels of flexibility and power to embedded telecommunications, data communications and industrial applications. Based on the award-winning Sentinel universal PCI-to-PCI bridge (PPB) technology, the PowerCore CPCI-690 can function as a high performance system controller or an intelligent peripheral card without any need for hardware or software reconfiguration when switching between operating modes. This, combined with its advanced PowerPC 750FX 700 MHz+ processor and broad array of interfaces, makes the PowerCore CPCI-690 an ideal choice for configuring fast-to-market, highly reliable multi-computing platforms.



UNIVERSAL-MODE COMPACTPCI SINGLE-BOARD COMPUTER SOLUTION

Dual functionality – system slot and/or peripheral slot capabilities

Based on Sentinel universal-mode PCI-to-PCI bridge technology

Zero hardware or software impact when switching operating modes

Ready-made building block for multiprocessor systems

Single-slot solution – even fully configured

HIGH PERFORMANCE EMBEDDED COMPUTING PLATFORM

Optimum computing performance in a single 6U CompactPCI slot

Built-in buffers in Sentinel PPB allow fast data transfers across the widely deployed 32-bit CompactPCI bus

Low power consumption for embedded applications

Operating system flexibility – broad Linux and RTOS support

FLEXIBLE CONFIGURATIONS

Up to two PMC slots

Up to three on-board independent Fast Ethernet interfaces – one on the front panel, two on the backplane

Two on-board serial RS-232 interfaces

IDE device support for CompactFlash or hard disk drive

SPECIFICATIONS

PROCESSOR/MEMORY

PowerPC 750FX processor, starting at 700 MHz

Up to 1GB on-board ECC-protected SDRAM

512KB L2 cache at full processor speed

Up to 64MB on-board programmable user flash

512KB boot flash

I/O CAPABILITIES

Discovery GT-64260 system controller with five decoupled busses for concurrent access of processor, PCI peripheral devices and main memory

IPMI baseboard management controller (PICMG 2.9)

On-board full PICMG 2.16 CompactPCI Packet Switching Backplane specification compliance

Dual 64-bit/66 MHz PMC slots

Option for PMC module with CompactFlash or hard disk drive (with on-board IDE controller)

Up to three Fast Ethernet interfaces

Two RS-232 serial interfaces – on front panel or RTM

COMPACTPCI INTERFACE

Universal PCI-to-PCI bridge – system slot and peripheral slot – 32-bit/33 MHz

OTHER FEATURES

32KB NVRAM real-time clock

Watchdog timer

Reset and abort switches, status LEDs, hot swap LED

POWER REQUIREMENTS

5V 1.5 A, +3.3V 1.7 A

OPERATING TEMPERATURE

0°C to 55°C with forced-air cooling

STORAGE TEMPERATURE

–40°C to +85°C

RELATIVE HUMIDITY

5% to 95% non-condensing

BOARD SIZE

Single-slot 6U CompactPCI

160.00 mm x 233.35 mm

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