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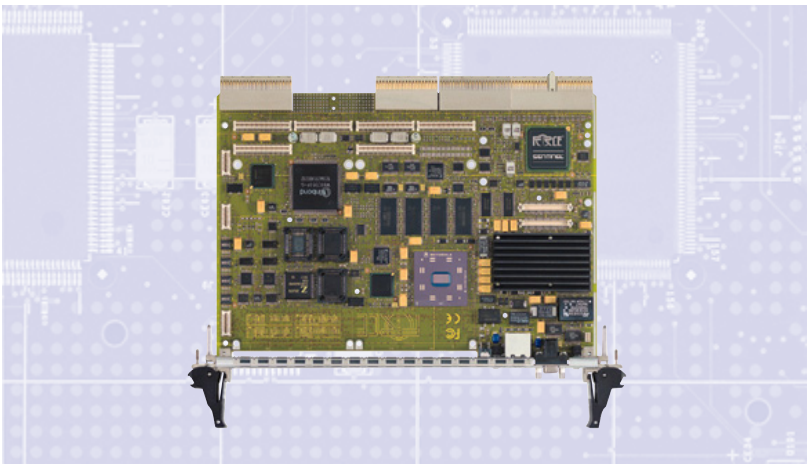
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Find the *Emerson / Motorola / Force Computers cPCI-680* at our website: ***Click HERE***

PowerCore CPCI-680

DATASHEET

PowerCore CPCI-680 “Universal Mode” Single Board Computer



PowerCore CPCI-680
Fast and flexible
CompactPCI SBC

- **Telecommunications**
- **Datacommunications**
- **Industrial Control**
- **Government**

Features

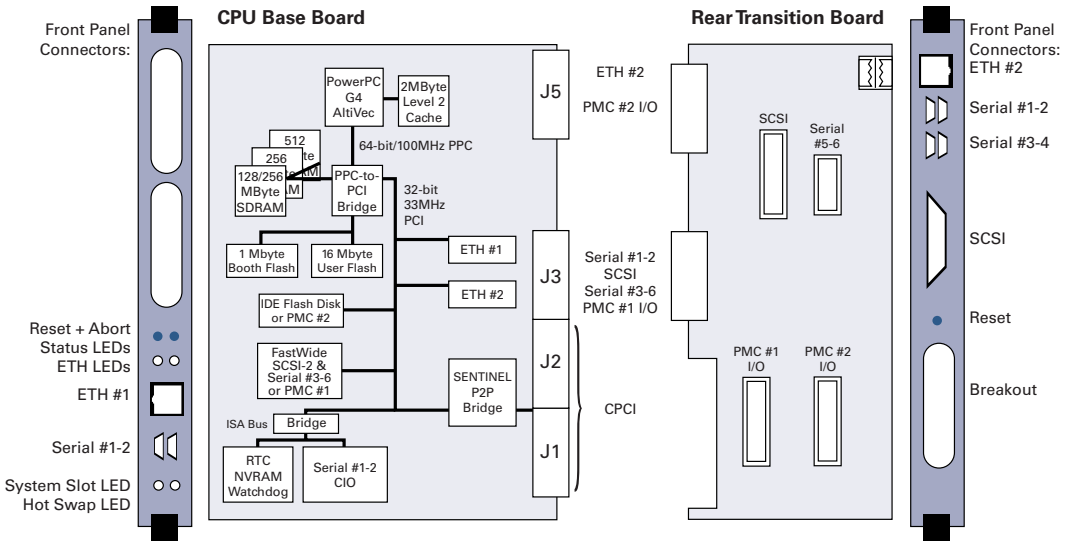
- Force’s SENTINEL Universal PCI bridge—switching of operating modes between system slot function and peripheral slot function
- New generation of PowerPC G4 7400 processor/1 GByte high-speed memory for “supercomputing” performance
- Ideal for real-time operating systems (RTOS) or Linux™ platforms
- Low power consumption
- Dual independent Fast Ethernet interfaces
- Fast Wide SCSI-2 interface
- Full Hot-Swap support for CompactPCI
- Up to two PMC slots
- Single-slot solution

Highlights

The Force PowerCore™ CPCI-680 CompactPCI® (6U) single board computer brings new levels of flexibility and power to embedded telecommunications, data communications and industrial applications. The first product based on Force’s pioneering SENTINEL™ universal PCI-to-PCI bridge technology, the PowerCore CPCI-680 functions as both a high performance system controller and an intelligent peripheral card, without any need for hardware or software reconfiguration when switching from one mode to the other. This, combined with its advanced PowerPC™ G4 7400 processor and broad array of interfaces, makes the PowerCore CPCI-680 an ideal choice for constructing fast-to-market high reliability and multicomputing-based platforms.

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PowerCore CPCI-680



Universal Mode CompactPCI single board solution

- Dual functionality: system slot and/or peripheral slot capabilities
- Based on Force SENTINEL Universal PCI-to-PCI Bridge
- "Zero" hardware or software impact when switching operating modes
- Ready-made building block for multiprocessor systems
- Single-slot solution—even when fully configured

High-performance embedded computing platform

- Optimum computing performance in a single 6U CompactPCI slot
  - PowerPC G4 7400 processor, starting at 400 MHz
  - Up to 1 GByte SDRAM via memory modules
  - Built-in buffers in SENTINEL allow fast data transfers across the widely - deployed 32-bit CompactPCI bus
- Low-power consumption for embedded applications
- OS flexibility
  - Broad real-time operating system (RTOS) support and Linux

Flexible configurations

- Up to two PMC slots
- Two independent Fast Ethernet interfaces on-board
- Two serial interfaces on-board
- Optional interfaces (occupies one PMC slot)
  - Fast Wide SCSI-2 interface for mass storage
  - Four additional serial interfaces
  - On-board CompactFlash interface for Type II cards

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Enabling power of Force's SENTINEL Universal PCI Bridge

The Force PowerCore CPCI-680 is a powerful and versatile CompactPCI single board computer based on Force's revolutionary SENTINEL universal PCI-to-PCI Bridge. Intelligent SENTINEL technology enables the PowerCore CPCI-680 to function as either a system controller (in a CompactPCI system slot) or as an intelligent peripheral card (in a CompactPCI peripheral slot). The SENTINEL Universal PCI Bridge completely eliminates the need for either hardware or software reconfigurations when the PowerCore CPCI-680 switches operating modes.

The use of Force SENTINEL technology simplifies and speeds the design of multi-processor systems based on cost-effective, industry-standard components.

Powerful real-time computing—future proofed and backward compatible

The PowerCore CPCI-680 brings maximum real-time computing performance in a single slot to both system controller and intelligent peripheral roles. The CPCI-680 is built around the PowerPC G4 7400 processor, with its ultra-high speed and extremely low power consumption characteristics. The use of the PowerPC G4 7400, together with up to 1 GByte of high-speed memory and SENTINEL's on-chip buffers for elevated system performance, enables the CPCI-680 to address the most demanding applications. The CPCI-680 is also backward compatible with earlier members of the Force PowerPC-based PowerCore family of single board computers.

Customers can take advantage of the CPCI-680's power and performance when running major real-time operating systems or when deploying applications based on the low-cost and flexible Linux™ operating system. Real-time operating systems supported by the CPCI-680 include VxWorks®, pSOS™ and LynxOS™.

Broad expansion and I/O flexibility in a single slot

In addition to its versatility and high performance, the PowerCore CPCI-680 provides customers with broad expansion capabilities and a wide range of interface options. Up to two PMC slots are available for expansion, and an optional Fast Wide SCSI-2 interface enables high-speed connection to mass storage facilities. There are also two independent Fast Ethernet interfaces and two serial interfaces (expandable to a total of six serial interfaces) for maximum I/O flexibility.

The optional on-board socket for Type II CompactFlash cards allows easy and flexible expansion via removable cards that can be either solid-state flash memory cards or rotating memories.

Yet even when fully configured with a complete set of interfaces and its maximum 1 GByte memory, the PowerCore CPCI-680 remains a single-slot solution.

PowerCore CPCI-680

SPECIFICATIONS

Processor / Memory

CPU Type

- PowerPC G4 (7400), 400 MHz and higher

L2 Cache

- 2 MByte running at half of the processor speed

Main Memory

- Up to 256 MByte on-board SDRAM with ECC

User Upgradeable / Stackable Memory Modules

- Up to 1 GByte SDRAM with ECC in a single slot via memory modules

User Flash Memory

- Up to 16 MByte, on-board programmable

Boot Flash Memory

- Two sockets each 512 KByte

I/O Capabilities

PMC Expansion

- Up to 2 slots, conforming IEEE P1386.1, both slots with rear interfacing, 64 user I/O of both slots

IDE Flash Disk

- Optional on-board CompactFlash Card Interface offers socket for Type II cards

SCSI

- Optional Fast Wide SCSI-2 via pre-installed SSIO PMC module

Ethernet

- Two Fast Ethernet interfaces via 82559
- One 10/100BaseTX on front panel, one 10/100BaseTX via rear I/O

Serial Ports

- Two 16C550, RS-232, I/O on front panel
- Optional additional four 16C550, RS-232, rear I/O

CompactPCI Interface

Specification

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

Miscellaneous

RTC / NVRAM

- MK48T58, 8KByte NVRAM, Real-Time Clock

Counters /Timers

- Z-CIO 8536, 3x16-bit timers, 500ns resolution

Additional Features

- Reset and Abort switches, Status LEDs, Hot-Swap LED, Watchdog timer

Power Requirements (preliminary)

PowerCoreCPCI-680 / 128-400-L1M-16

- +5V 1.7 A, +3.3V 1.9 A

Environmental

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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Force Computers is the Partner of Choice for Open, Scalable, Highly Available Embedded Computing Platforms to the leading OEM's in the Communications Market

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