

# PowerCore CPCI6190

## Universal-Mode Single-Board Computer

■ Embedded Computing for  
Business-Critical Continuity™

**With its advanced PowerPC® 750GX 1 GHz+ processor and broad array of interfaces, the PowerCore CPCI6190 an ideal choice for configuring fast-to-market, highly reliable multi-computing platforms**

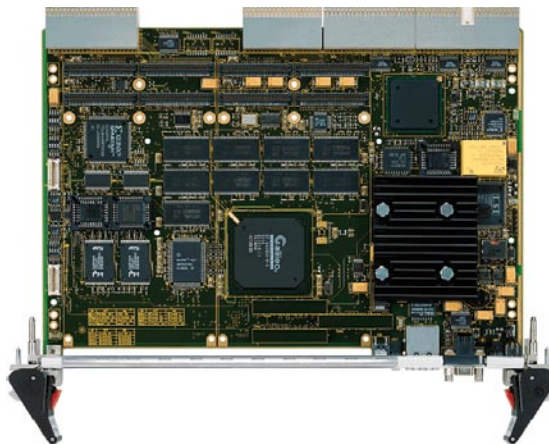
- PowerPC 750GX processor with core frequency of 1 GHz and 1MB L2 cache
- Discovery GT-64260 system controller – five decoupled busses for concurrent processor/PCI peripheral device access to main memory
- Sentinel universal-mode PCI-to-PCI bridge enables SBCs to switch between system and peripheral slot functionality
- Up to 1GB high speed SDRAM main memory
- Optional factory configuration available for 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™ CPCI6190 CompactPCI (6U) single-board computer (SBC) from Emerson Network Power brings new levels of flexibility and performance to embedded telecommunications, data communications and industrial applications. Based on the award-winning Sentinel universal PCI-to-PCI bridge (PPB) technology, the PowerCore CPCI6190 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.

The CPCI6190 brings maximum real-time computing performance in a single slot to both system controller and intelligent peripheral modes. The CPCI6190 is built around the PowerPC 750GX processor with its ultra-high speed and extremely low power consumption characteristics. The use of the PowerPC 750GX processor, together with up to 1GB high speed memory and Sentinel PPB on-chip buffers for elevated system performance, enables the CPCI6190 to address the most demanding applications. The CPCI6190 is also backward compatible with earlier members of the PowerPC based PowerCore family of SBCs.

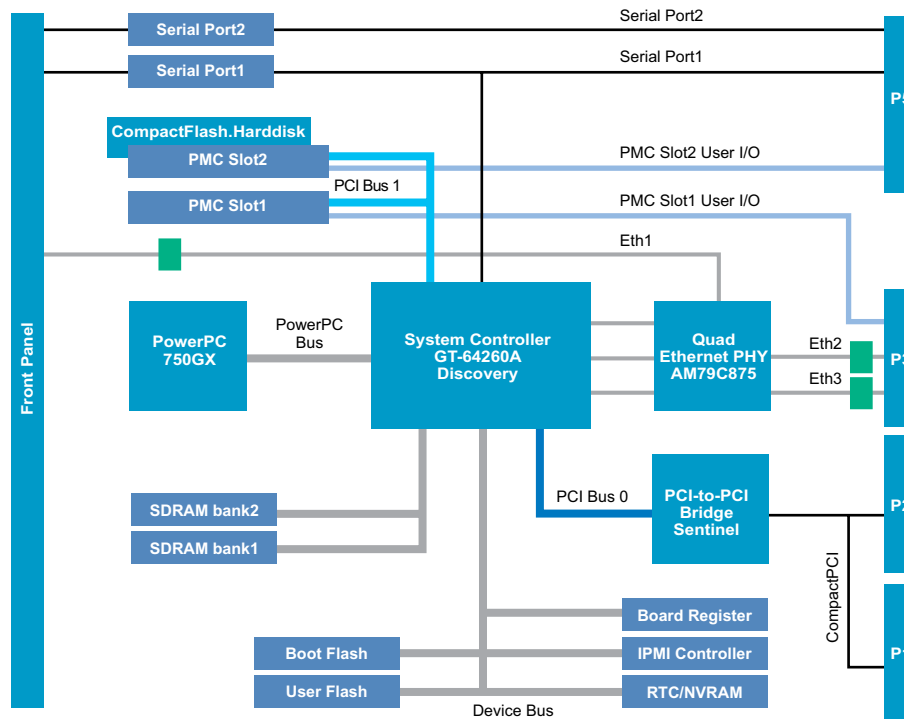
By using the Sentinel PPB technology, developers can simplify and accelerate the design of multiprocessor systems based on cost-effective, industry standard components. Developers can take advantage of the CPCI6190's power and performance when running major real-time operating systems (RTOSes) or when 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 CPCI6190 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.



  
**EMERSON**™  
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## Block Diagram



## Hardware Overview

### UNIVERSAL-MODE COMPACTPCI SINGLE-BOARD COMPUTER SOLUTION

- Dual functionality – system slot or peripheral slot capability
- 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 with PMC or accessory kit

## Specifications

### PROCESSOR/MEMORY

- 1 GHz PowerPC 750 GX processor
- Up to 1GB on-board ECC-protected SDRAM
- 1MB 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

- Optional factory configuration for 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 or 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 3.5A, 3.3v 2.4A

#### 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

Ordering Information	
Part Number	Description
CPCI6190-256-1G-5E	CPCI6190, 256MB, 1 GHz 750GX, 2 PMC sites, 5E
CPCI6190-512-1G-5E	CPCI6190, 512MB, 1 GHz 750GX, 2 PMC sites, 5E
CPCI6190-1024-1G-5E	CPCI6190, 1GB, 1GHz 750GX, 2 PMC sites, 5E
Transition Module	
RTB-610X/PSB-5E	Rear transition module for CPCI6190, PSB compatible, 5E 2 DB-9 Micro D-Subminiature female (COM1, COM2), 1 RJ-45 ICMB (RS-486)
RTB-6190-5E	Rear transition module for CPCI6190, 5E 2 DB-9 Micro D-Subminiature female (COM1, COM2), 2 RJ-45 Ethernet, 1 RJ-45 ICMB (RS-486)
Related Products	
ACC-CABLE-610X-5E	Serial cable, 2 M, 9-Pin Micro D-Sub to 9-Pin D-Sub

## SOLUTION SERVICES

Emerson Network Power provides a portfolio of solution services optimized to meet your needs throughout the product lifecycle. Design services help speed time-to-market. Deployment services include global 24x7 technical support. Renewal services enable product longevity and technology refresh. Plus solution extras include enhanced warranty and repairs.

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