



Highlights

- >> 24 10/100 + Two 10/100/1000 TX Ethernet Ports
- >> FlexLink™ Site (PICMG® 2.15 PTMC Type 5-Compliant)
- >> Wire-Speed Layer 2 Switching/Layer 3 Routing
- >> 9 Gbps Switching Speed
- >> Support for Both 2.16 and Non-2.16 Modes
- >> Real-Time Continuous Integrity Checks for Non-Stop Networking
- >> Rapid Spanning Tree, Link Aggregation, VRRP, and Jumbo Frame Support
- >> Advanced Fast Filter Processor for Wire-Speed Layer 2-7 Packet Classification and Filtering
- >> Prevents Broadcast and Multicast Storms and Packet Flooding
- >> LUA Scripting Language

The CPC4416 is a robust, flexible, full wire-speed Layer 2/3 10/100/1000 Ethernet switch compatible with both standard CompactPCI® and PICMG® 2.16 backplanes. Featuring 24 10/100 + 2 Gb TX ports, it is designed to be used as a high-speed interconnect between devices in a PICMG 2.16 chassis or as a core switch in a fault-tolerant cluster of embedded systems. This fourth-generation switch is the market leader in the most complete, capable, and award-winning line of embedded Ethernet switching products in the industry.

The CPC4416 has been specifically designed to make embedded system integration tasks easier, so projects can get to market sooner. It comes with a potent scripting language that can be used to easily change switch configuration and behavior, attached client setups, fail-over rules, etc., based on SNMP traps, network events, or system configuration/topology changes.

This switch can be deployed in a fully redundant, non-blocking network that prevents single points of failure from halting network traffic. Devices with dual Ethernet ports can be connected to one or both switches. If a link, PHY, or the continuous, real-time integrity test fails on the switch, data can be re-routed to an alternate path, thereby maintaining network connections.

This switch as a very low mean-time-to-repair (MTTR). The replacement unit can obtain all of its operational and configuration information from the other CPC4416 or from an external manager, making change-out of failed modules as easy as sliding one blade out and replacing it with a new one. The CPC4416 has no active components on its rear panel I/O cards, which ensures that failed units can be easily replaced without disturbing cables or other blades in the chassis.

The CPC4416 is intended for use in high-availability, fault-tolerant solutions for embedded data communications, wireless, IP telephony, broadband access, defense, aerospace, and high-availability systems.



CPC4416

Technical Specifications

Ordering Information

- >> **PT-CPC4416-11946**
24-port 10/100 + 2 Gb TX PICMG
2.16 node slot switch
- >> **PT-CPC4416-11947**
24-port 10/100 + 2 Gb TX PICMG
2.16 fabric slot switch
- >> **PT-RTM4416-11948**
5-port 10/100 TX + 2 Gb RTM
- >> **PT-RTM4416-11951**
8-port 10/100 + 2 Gb TX RTM
- >> **PT-RTM4411-11952**
24-port 10/100 TX single-slot rear
transition module with breakout box
and cables
- >> **PT-RTM4416-11953**
24 10/100 + 2 10/100/1000 TX sin-
gle-slot rear transition module with
breakout box and cables
- >> **PT-RTM4416-11954**
24-port 10/100 TX RTM
- >> **PT-RTM4416-11955**
24 10/100 + 2 10/100/1000 TX dual-
slot rear transition module
- >> **PT-FlexConnect-11956**
PTMC option board that brings two
10/100 and two 10/100/1000 TX
ports to the front panel



Contact Information

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- 24 10/100 + 2 Gb TX uplinks
 - Wire-speed Layer 2 switching/Layer 3 routing
 - 9 Gbps switching fabric
 - Store and forward frame processing
 - Support for 2.16 and non-2.16 modes
 - Front panel uplink options
 - Advanced fast filter processor for wire-speed Layer 2-7 packet classification and filtering
 - CompactPCI CORE specification (PICMG 2.0 R3.0) compliant, 6U x 4HP
 - Hot-swap support (PICMG 2.1 Hardware Connection Layer) – made more robust with Performance Technologies' exclusive Auto Configuration Replication
 - System management bus (PICMG 2.9/IPMI, v 1.5)-compliant
 - PICMG 2.16 hot-swap-compliant
 - Full duplex 802.3x flow control
 - 8K MAC addresses
 - 2K Layer 3 IP addresses
 - Managed learning of attached devices on a per-port basis
 - Jumbo packet (9 KB) Layer 2 switching for iSCSI applications
 - Tagged packet (802.3ac) and Jumbo packet (9 KB) support
 - Support for IEEE 802.1p class of service with eight priority queues for traffic class management
 - IEEE 802.1Q VLAN support (16 VLANs)
 - 802.3-2000 link aggregation, up to 12 link groups, eight ports per group
 - Broadcast storm detection and suppression
 - Multi-port mirroring
 - Front panel, non-switched 10/100 Ethernet port for out-of-band management
 - Front or rear panel console port (RS-232)
 - Switched PICMG 2.16 fabric-to-fabric interconnect, auto-negotiating
 - TFTP/FTP-based firmware upgrade and configuration upload/download
 - TFTP/FTP client/server
 - BootP/DHCP client/server with support for port-based leasing
 - DHCP/BootP relay
 - Flash file system enables other blades to load specific configuration information on a slot-by-slot basis
 - Partner switch configuration replication
 - Power-on or manager (CLI or SNMP) invoked diagnostics
 - Online, real-time integrity tests for non-stop networking
 - ASCII extraction of current configuration
 - LED indicators of link, activity, speed, system status, system fault, and hot-swap
 - Multiple configuration, RTM options
- ### Protocols Supported
- GARP, GMRP, GVRP
 - RIP versions 1 and 2
 - OSPF, VRRP
 - 802.1D Spanning Tree/Rapid Spanning Tree Protocol with fast port and fast uplink enhancements
- ### Management
- CLI via RS-232 and out-of-band Ethernet management port
 - Scripting language for value-added applications
 - Embedded HTTP server for management
 - Telnet
 - SNMP v1, v2c, v3 – RFC 1157
 - MIBs
 - MIBII – RFC 1213, MIBII bridge – RFC 1493
 - RMON MIB – RFC 1757 groups 1, 2, 3 and 9
 - EtherLike MIB – RFC 1643
 - IEEE 802.1q MIB – RFC 2674
 - IEEE 802.3AD link aggregation MIB
 - Performance Technologies enterprise MIB
- ### Certifications
- UL/EN 60950
 - CE
 - FCC Class A
 - ETSI EN 300 386
 - Designed to the requirements of NEBS Level 3
 - Fully compliant with RoHS and WEE requirements
- ### MTBF
- 184,146 hours per Bellcore SR-332, Issue 1
- ### Power Requirements
- 19 W typical, 26 W maximum
- ### Environmental
- Operating: 0° to 55°C (32° to 131°F)
 - Non-operating: -40° to 80°C (-40° to 176°F)
 - Relative Humidity: 10 to 90%, non-condensing