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Find the *Emerson / Motorola CPX8216* at our website: ***Click HERE***

CPX8216 Series

CompactPCI High Availability System

Embedded Computing for Business-Critical Continuity™

The Emerson CPX8216 system is a dual 8-slot, 12U, carrier-grade platform with a CompactPCI backplane.

- Dual 8-slot backplane (CPX8216 models) or backplane with H.110 bus to all I/O slots (CPX8216T models) for high availability designs
- A PowerPC® system controller CPU allows simplex or duplex configurations
- Three 400W hot-swappable AC or DC power supply units provide N+1 redundancy
- Front access service and installation of CompactPCI boards, drives and power supplies for easy access to active components
- Rear connection of I/O allows card removal without disconnecting field wiring
- Detection of power, temperature, and fan fail conditions supports remote reporting
- Adherence to PICMG® 2.0 rev. 2.1, PICMG 2.1 rev. 1.0, PICMG 2.5 rev. 1.0 CompactPCI industry standard specifications provide worldwide acceptance and conformance

The Emerson Network Power CPX8216 system is a dual 8-slot, 12U, carrier-grade platform with a CompactPCI® backplane (with or without a H.110 bus), designed especially for high availability telecommunication infrastructure applications requiring NEBS and ETSI certification.

With its 5NINES high availability design, the CPX8216 system can be counted on when you need reliability and availability accompanied by Emerson's superior level of product support. The CPX8216 is used to support a variety of telecommunication applications such as media gateways, packet data gateways, media routers, as well as voice messaging, and VOIP applications. It is the flagship product of the Emerson CPX product line, and has been sold since 1999, with thousands of systems in use around the world.



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Specifications

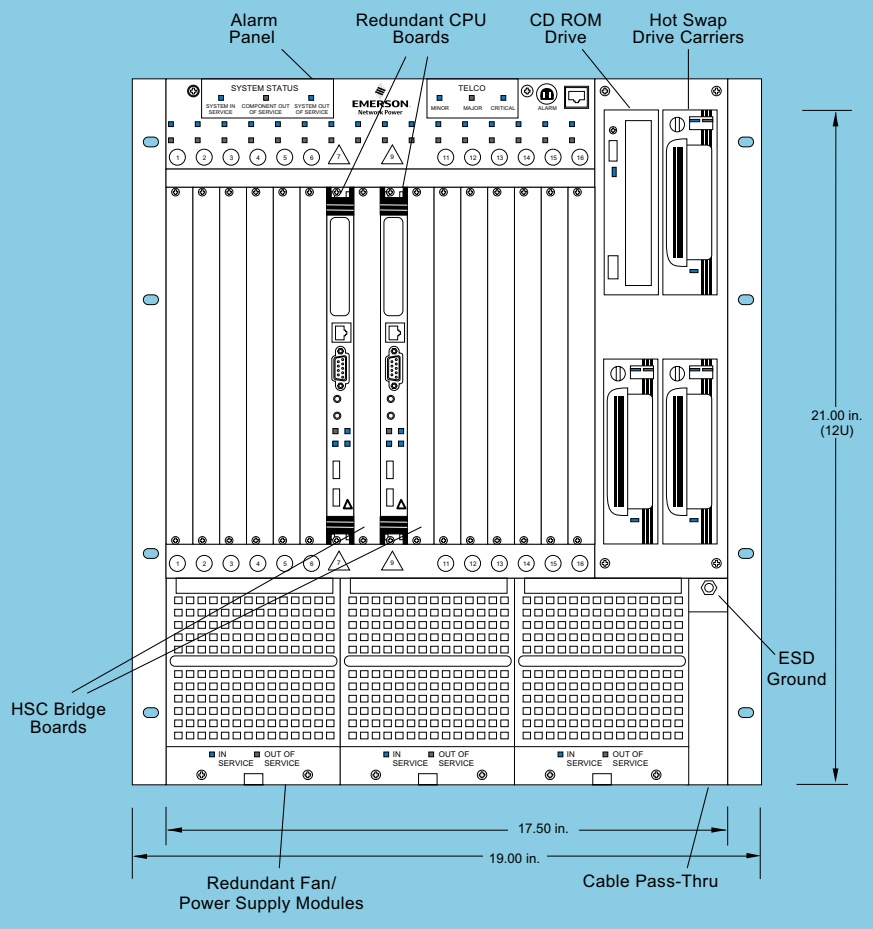
CHASSIS

- Size: 21.00" [533 mm] high (12U), 18.90" [480 mm] wide including mounting flanges, 17.13" [435 mm] deep from mounting flanges
- Weight: Approx. 30 lb. [13.6 kg] unloaded. Approx. 70 lb. [31.85 kg] fully loaded.
- Mounting: Per EIA Standard RS-310-C in 19" rack or 23" rack with mounting brackets
- Slots: 16 hot swap-capable single-width (4HP) CompactPCI slots (two CPU, two HSC bridge and twelve I/O boards, IEEE 1101.10 compatible); 16 80mm transition slots, IEEE 1101.11 compatible
- Power Supplies: Three bays, front accessible
- Air Flow: Front inlet, rear exhaust
- ESD Grounding: Two ESD ground points, one front and one rear
- Earth Ground: Two points at rear, per NEBS requirements
- Metal: Aluminum alloy, T5052-H32
- Metal Plating: Chemical film per MIL-C-5541, clear
- Slot, LED, & Switch Marking: Black silk

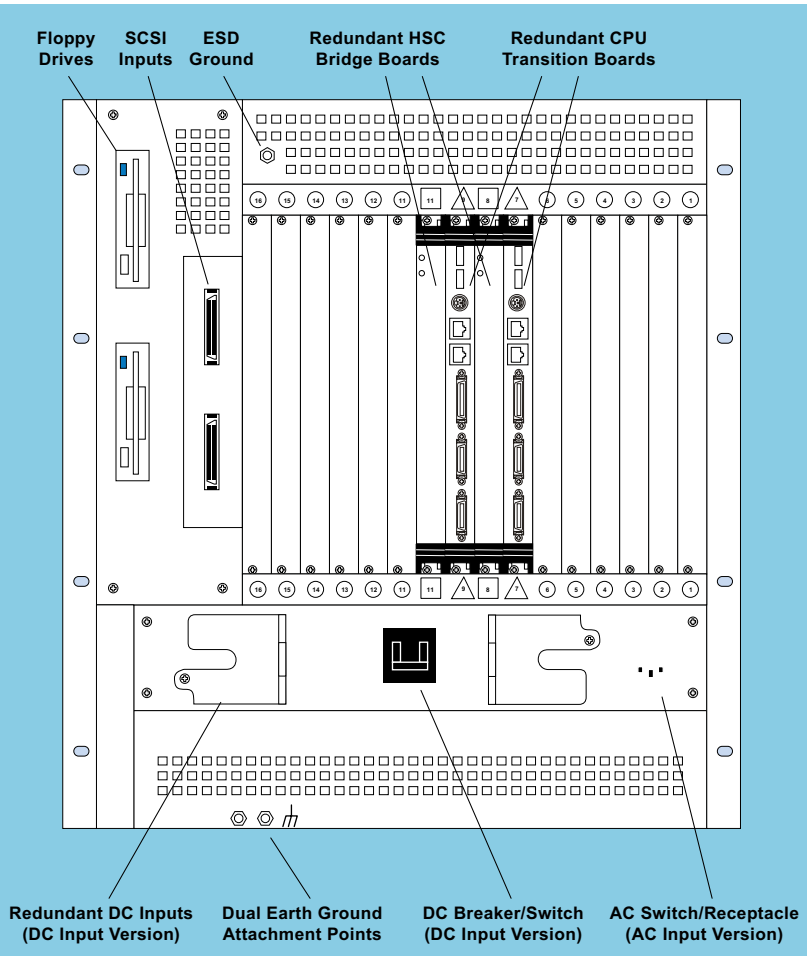
HOT SWAP CONTROLLER (HSC) BRIDGE CARD

- Form Factor: 80 mm rear transition (CPX8216 models) 160 mm front loaded (CPX8216T models)
- Control: CompactPCI bus and slot control per CompactPCI Hot Swap Specification
- Alarm Status Registers: Yes
- Hot Swappable: Yes

FRONT VIEW



REAR VIEW



BACKPLANE

- Domains: Two 8-slot, 64-bit CompactPCI; H.110 bussed to all I/O slots on CPX8216T models
- Slots: One CPU slot, one HSC bridge slot, and six I/O slots per domain
- DC Power Distribution: Yes
- Alarm Signal Routing: Yes

HOT-SWAPPABLE ALARM

- CompactPCI Slot LEDs: Two for each slot; in service and out of service
- Telco Status LEDs: Minor, major and critical
- Output: RJ-45 connector with dry relay contacts

HARD DISK AND CD-ROM DRIVES

A total of four drives can be mounted in front accessible drive bays. Select from:

- EIDE hard drives and/or DVD-ROM drives

HOT SWAP DRIVE CARRIERS

A hot swap drive carrier option can be installed in any of the front four drive bays (EIDE).

REMOVABLE MEDIA DRIVES

Up to two internal floppy drives (one per domain) can be installed in the rear of the chassis.

USER NOTE: SPECIFICATIONS FOR 2.5" DISK DRIVES

Your attention is directed to the fact that the MTBF of any drives mounted on these blades must be considered independently of the MTBF of the blades themselves. Also, the supported operating parameters of the drives may differ substantially from those of the blades.

It is the User's responsibility to ensure that the operating parameters of these drive offerings are well understood and taken into consideration when designing operating use.

The operating parameters of our current drive offerings can be found on the Emerson Technical Publications web page at www.EmersonNetworkPower.com/EmbeddedComputing.

POWER SUPPLY AND FAN MODULE

The CPX8216 uses up to three, 400W, hot-swappable power supplies in an N+1 redundant configuration. Each supply is load sharing and diode protected. The assembly supports the power supply, blind mate connectors and interconnect wiring harness. Either AC or DC versions are available.

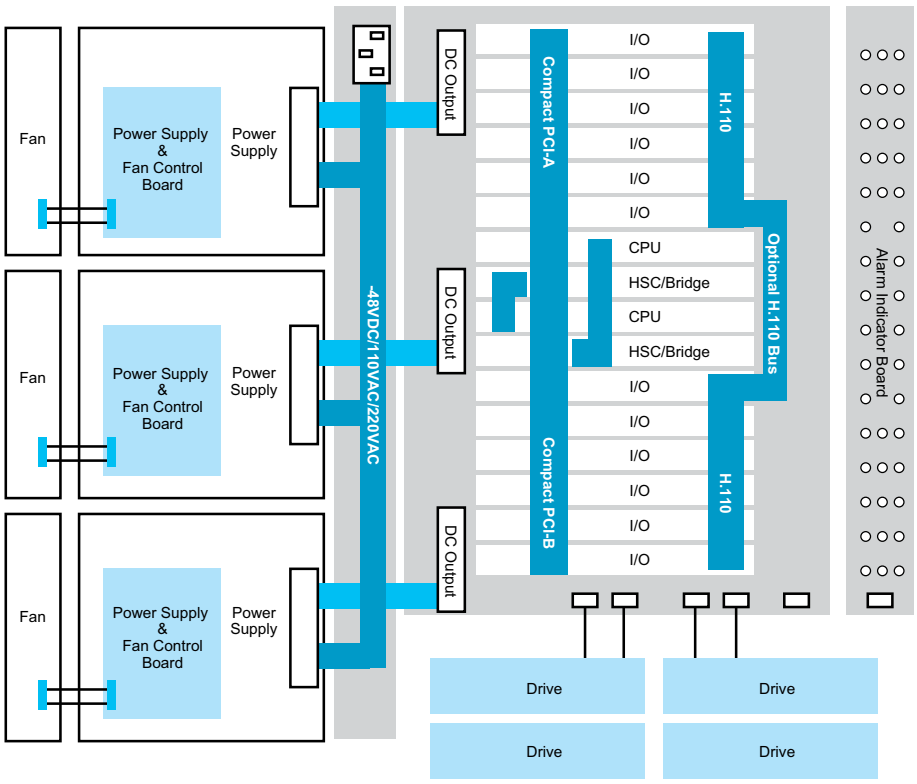
COOLING FEATURES

- Three hot-swappable, N+ 1 modules in system
- DC tube axial fan (removable/replaceable)
- Cooling sensor detects airflow and temperature changes
- Air filter option
- Software monitoring and speed control
- LED status indicators

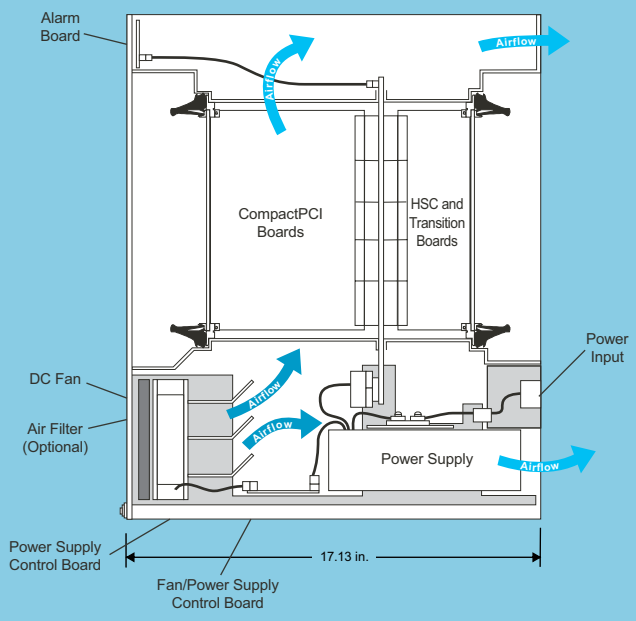
ELECTRICAL SPECIFICATIONS

- Power Factor: 0.98 min. at full load, nominal line (AC only)
- Inrush Current: 20 A peak @ 115 VAC for one line cycle 20 A peak @ –36 VDC within 4ms
- Efficiency: >70% @ full load, nominal line – DC version >72% @ full load, nominal line - AC version
- Output Power: 400W in this app lication
- Hold-Over Storage: 20 ms at full load @ 115 VAC
- Transient Response: All outputs return to 1% within 2 ms of a 25% load change
- Dynamic Load: The supply operates properly when subjected to a 10% load delta with a 50% duty cycle, from 0 to 2 times switching frequency
- Over Voltage Protection: +5V output < 6.25 VDC +3.3V output <4.2 VDC
- Short Circuit Protection: Short between outputs causes latch off

CPX8216 System Diagram



CPX8216 AIR FLOW*



* Diagram for illustrative purposes only. May not be representative of final product.

MODULE DC OUTPUT

Voltage	Regulation	Min. Load	Max. Load	Peak Load 5 Sec.	Max Ripple P/P
+5.05V	+/–3%	0.0 A	40.0 A	–	<50 mV
+3.35V	+/–3%	0.0 A	40.0 A	–	<50 mV
+12.1V	+/–5%	0.0 A	8.0 A	10.0 A	120 mV
-12.1V	+/–5%	0.0 A	4.0 A	–	120 mV

Total combined output loading not to exceed 400W.

POWER DISTRIBUTION MODULE

AC Input Version

- 88 – 260 VAC input, auto selecting, 47 – 63 Hz
- Double-pole rocker on/off switch and IEC AC input receptacle
- 12 A maximum input current at 115 VAC
- 6 A maximum input current at 230 VAC

DC Input Version

- –36 VDC to –72 VDC input
- Double-pole circuit breaker with on/off switch and reset
- Dual (redundant) input terminal blocks, diode protected
- 30 A maximum input current at –48 VDC
- Tip and ring voltage inputs optional

Reliability and Serviceability

REDUNDANCY

Detection, isolation, notification, and replacement of a failed FRU prevents degradation of performance or loss of service during a single fault condition.

WARRANTY

The CPX8000 series is offered with a two-year limited warranty which reduces the cost of ownership, provides investment protection and demonstrates out commitment to quality and reliability of products to out OEM partners.

FIELD REPLACEABLE UNITS (FRUs)

Field Replaceable Units	Hot Swap	Redundant	MTTR*
CompactPCI Boards	X	X	5 min.
HSC/Bridge Board	X	X	5 min.
Hard Disk Module	X	X	5 min.
Power Supply	X	X	5 min.
Power Distribution Module			5 min.
Alarm Board	X		5 min.

*Mean Time to Replace

COMPONENT AND SYSTEM MTBF

- Host CPU and Bridge: 250,000 hours
- Power Supply: 1,000,000 hours
- Alarm Indicator Board: 250,000 hours
- Backplane: 7,000,000 hours
- Fan: 100,000 hours

Note: Component MTBF goals are based on accelerated life testing and field data. System MTBF is demonstrated at accelerated life testing.

REGULATORY COMPLIANCE

- Safety: CSA NRTL/C to standard 22.2 #950, VDE EN60950, CE Mark per European Low Voltage Directive 72/EEC
- EMC: U.S.: FCC Part 15, Subpart B, Class A
  Canada: ICES-003, Class A
  Europe: CE Mark per European EMC Directive 89/ 336/EEC with Amendments; Emissions: EN55022 Class A; Immunity: EN50082-1

Software Support

REAL-TIME OPERATING SYSTEMS

VxWorks from Wind River Systems

GENERAL-PURPOSE OPERATING SYSTEMS

Linux

FAULT MANAGEMENT SOFTWARE

Emerson offers a complete line of Advanced High Availability Software, featuring our award winning HA Linux product.

POWERPC FIRMWARE

On-board PowerPC firmware expands features like power-up tests with extensive diagnostics, and provides an evaluation and debug tool for simple or high-level development support. It also supports booting of operating systems and/or real-time kernels.

INTEL ARCHITECTURE CPU BIOS

The CPU BIOS is contained in on-board flash EPROM. It features auto-configuration or extended setup with serial/parallel ports, remapping capabilities and power-on-self-test features.

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.

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- Precision Cooling
- Racks & Integrated Cabinets
- Services
- Surge Protection

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