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Find the *Emerson / Motorola CPX1205* at our website: ***Click HERE***

DATASHEET

MOTOROLA

CPX1200 Family

Low-Profile Carrier-Grade Systems

KEY FEATURES

500 MHz PowerPC® processor option

700 MHz Intel® processor option

Industry-standard peripheral and I/O options

200W power supply with over 300,000-hour MTBF

Conforms to PICMG® Hot Swap specification

Hot-swappable fans with filter option

Front-access service and installation of boards, drives, fans, and power supplies

Rear connection of power and I/O for easier access to hot swap components

Detection and remote reporting of power, temperature, and fan fail conditions

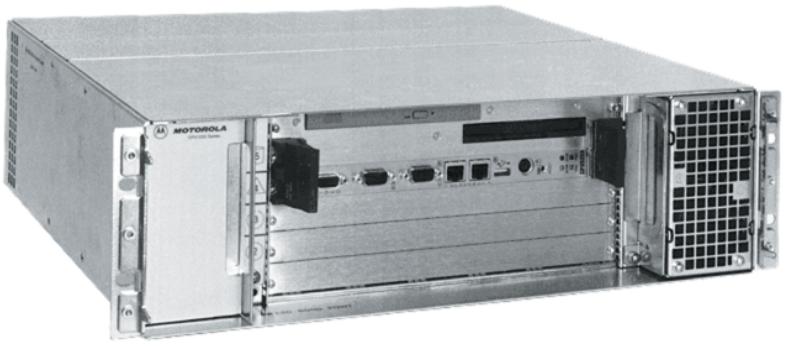
CPX1204 with a CPU, a drive module and three peripheral card slots

CPX1205 with a CPU and four peripheral card slots

Optional H.110 bus support

The CPX1200 family is the ideal carrier-grade solution for limited-space environments demanding scalable I/O. The 3U footprint of the CPX1200 is optimized for front- and rear-access equipment frames and provides I/O density in limited-space environments. CPX1200 design and architecture allow OEMs to integrate their own level of added value and maintain control of the final platform solution.

One of many telecommunications solutions offered by Motorola, the CPX1200 enables telecom equipment manufacturers to use their resources better for quicker time-to-market and better competitive value.



RoHS 0/6 NOT COMPLIANT

See back page for details

Designed for NEBS and ETSI environments, the Motorola CPX1200 family of carrier-grade platforms delivers performance, flexibility and serviceability for limited rack-space telecommunications and central office applications. Based on open architecture CompactPCI® technology, the CPX1200 provides an ideal platform for straightforward integration into central office or enterprise networks for applications such as Voice over IP gateways, cellular base stations, SS7 gateways, ADSL access server, short messaging server, and network element manager.

SPECIFICATIONS

CHASSIS

Size: 5.25" (133.35mm) high (3U), 18.90" (480mm) wide, including mounting flanges, 15.00" (381mm) deep, from mounting flanges

Weight: Approx. 30 lb. (13.6kg) unloaded, 35 lb. (15.9kg) fully loaded

Mounting: Rackmount per EIA Standard RS-310-C in 19" rack, or in 23" rack with mounting brackets

Slots: Four (CPX1204/1204T) or five (CPX1205/1205T) 4HP CompactPCI slots including one system processor slot and three or four hot swap I/O slots; One drive module slot (CPX1204/1204T only); Five 80mm transition slots, IEEE 1101.10 compatible; One unused 6U slot and transition slot for disk expansion and/or cable routing

Power Supplies: Front accessible with blind mate connections to backplane and power input module

Fans: Four 12 VDC, 60mm x 25mm, 25CFM axial fans; front accessible and hot swappable, with fault detection and filter option

Air flow: Two front inlet fans and two rear exhaust fans in a push-pull, N+1 configuration

ESD Ground: Two ESD ground points, one front and one rear

Earth Ground: Two points at rear, per NEBS requirements

Metal: Cold rolled steel

Metal Plating: Zinc chromate, clear

Marking: Slots locations are silk screened using black, Helvetica bold type on adhesive-backed overlays (IBM pearl white)

POWERPC PROCESSOR BOARD (MCP750)

Processor: 500 MHz PowerPC 750

Memory: Up to 256MB DRAM, 1MB L2 cache, CompactFlash IDE flash drive

I/O: EIDE, 10/100 Ethernet, USB, serial (sync/async), parallel

I/O Access: Front and rear

PMC Site: Yes

INTEL ARCHITECTURE PROCESSOR BOARD (CPV5350)

Processor: 700 MHz Intel® Pentium® III

Memory: Up to 128MB DRAM, 16MB flash chipset configured as IDE primary master

I/O: AGP with 8MB video memory, EIDE, dual 10/100 Ethernet, USB, serial (sync/async), parallel

I/O Access: Front and rear

BACKPLANE

CPX1200 backplane features include:

64-bit CompactPCI, hot swap compliant

One system processor slot

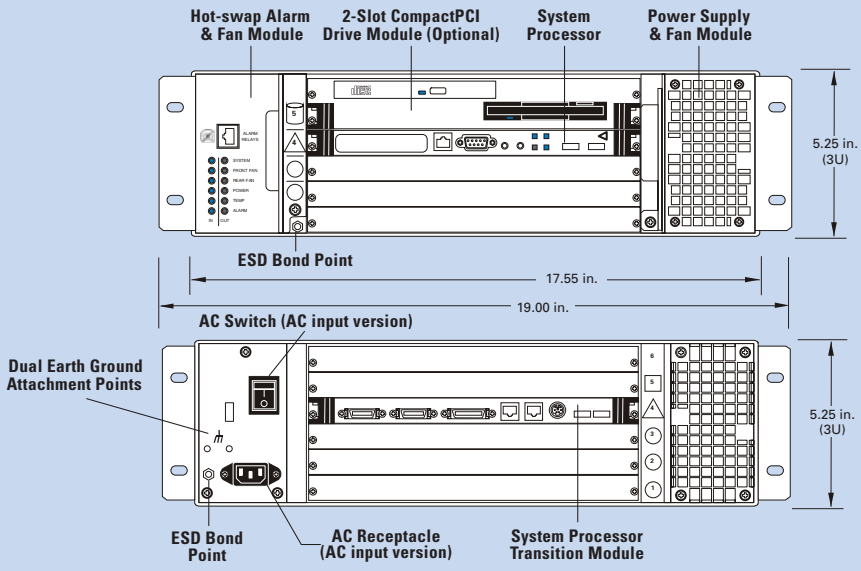
Three (CPX1204) or four (CPX1205) standard CompactPCI I/O slots

Three (CPX1204T) or four (CPX1205T) H.110 capable I/O slots

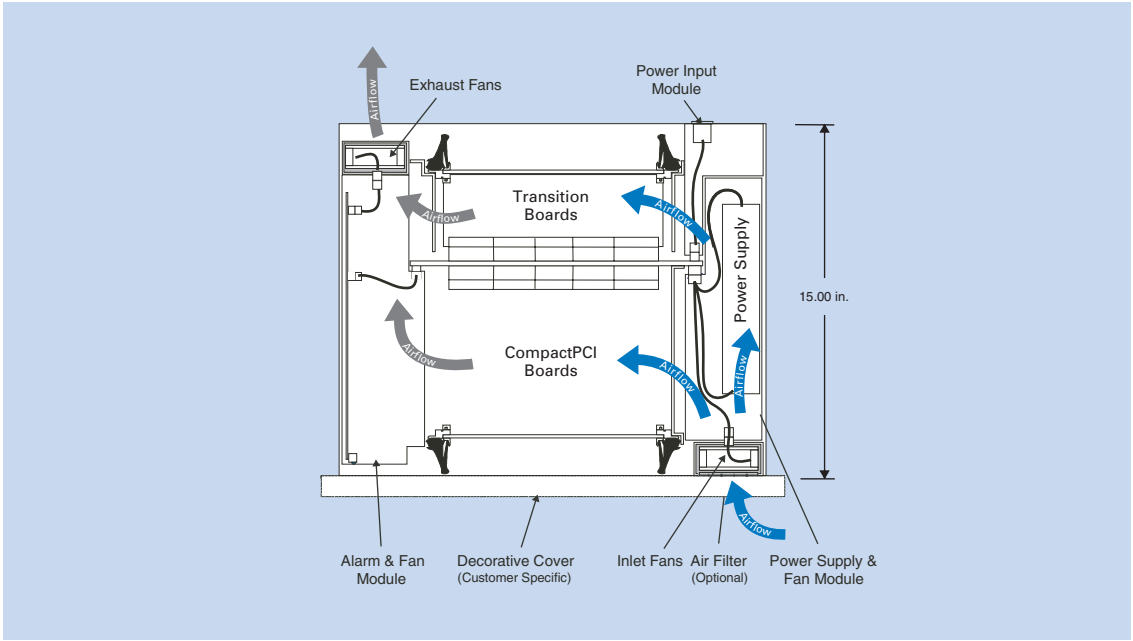
DC power distribution from power supply output to CompactPCI boards

Alarm signal routing from system controller to alarm module

Floppy and IDE drive interface routing from system controller to the optional drive module (CPX1204/1204T only)



CPX1204 FRONT AND REAR



CPU REAR TRANSITION MODULE

Rear transition modules are available to provide rear access to CPU I/O.

ALARM AND EXHAUST MODULE

CPX1200 alarm and exhaust fan module connects to the backplane and provides exhaust fan power connections, alarm control and front panel fault indication. The alarm circuitry is connected to fan tachometer outputs, the "Power Good" signal from the power supply, and the temperature sensing device on the alarm board. The alarm status is communicated over the backplane to the system processor via Serial Port 2 (MCP750 series) or System Management Bus (CPV5350 series). Features include:

- Two 60mm x 25mm, 12 VDC axial fans
- Hot swap, blind mate connection to the backplane
- Front Panel Indicators include power, temperature and fan failure; System In and Out of Service indication
- Front panel RJ-45 connector with central office compliant, dry contact relay, remote alarm connections

ALARM BOARD SOFTWARE DRIVERS

To interface the alarm board functionality to operating system environments, Motorola will make source code available for the software driver and alarm board firmware for both PowerPC and Intel architectures. Drivers contain a sample application and the alarm API that provides the programmatic interface to control and monitor the alarm board using a simple command-line interface.

COMPACTPCI DRIVE MODULE (CPX1204/ 1204T ONLY)

The CPX1204 or CPX1204T can accept a plug-in drive module that installs into the top of the chassis card cage. The drive module can support a variety of device combinations.

EXHAUST-ONLY MODULE (NO ALARM CAPABILITY)

A lower-cost version of the exhaust module is also available without the alarm features.

POWER SUPPLY AND FAN MODULES

The CPX1200 power supply module houses the 200-watt power supply and fan module. An industry-standard, open frame supply is enclosed in a sled assembly that supports the power supply, fan assembly, blind mate connectors, and interconnect wiring harness. Two different build versions support different AC and DC input voltages. Each supply version must be matched to a corresponding input power module.

Electrical Specifications

Power Factor: 0.95 W/VA per EN61000-3-2

Inrush Current: 35A peak at 230 VAC for one line cycle, 35A peak at –72 VDC within 4 ms

Efficiency: Greater than 65% at full load, nominal line

Output Power: 200 watts in this application

Hold-Over Storage: 20ms at full load, 90 VAC

Transient Response: All outputs return to 1% within 500 µs of a 50% load change

Dynamic Load: The supply operates properly when subjected to a 10% load delta with a 50% duty cycle, from 0 to 2 MHz

Over-Voltage Protection: 5V output < 6.4 VDC
3.3V output < 4.2 VDC
Recycle on/off switch to reset

Short-Circuit Protection: Latch off if any output is shorted to any other output; automatic recovery upon removal of short

MODULE DC OUTPUT

200 Watt +5V Main DC Load Requirements

Output Voltage	Min. Load	Max. Load	Regulation	Ripple P/P
+3.3V	0.5A	15.0A	±2%	50mV
+5.0V	3.0A	30.0A	±2%	50mV
+12.0V	0.3A	6.0A	±3.5%	120 mV
–12.0V	0.3A	2.0A (3.0A peak)	±3.5%	120 mV
Total combined current for 5V and 3.3V not to exceed 30A. Total combined current for 12V and –12V not to exceed 5A. Total power for 12V and –12V output not to exceed 60W.				

POWER DISTRIBUTION MODULE

Power distribution modules must match the AC or DC input version of the power supply.

AC Input Version:

85–264 VAC input, at 47–63Hz

2.0A maximum input current at 115 VAC

1.0A maximum input current at 230 VAC

Double-pole rocker on/off switch

IEC standard 6A AC input receptacle

DC Input Version:

–36 VDC to –72 VDC input

6.4A maximum input current at –36 VDC

4.5A maximum input current at –48 VDC

Single-pole circuit breaker

Cooling Features:

Four 2.40" (60mm) x 1.0" (25mm) DC axial fans in push-pull, N+1 redundant configuration

Cooling sensor that detects airflow and temperature changes

Software monitoring

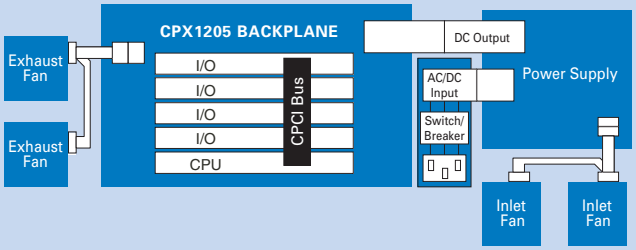
Ducting provides forced air to power supply, CompactPCI boards, and transition boards

Air filter option

SERVICEABILITY

Hot swap components provide for potential field repair without loss of service. All active components are Field Replaceable Units (FRUs), thus minimizing service time for the majority of fault conditions.

Field Replaceable Units	Hot Swap	Mean Time to Replace
CompactPCI boards	Yes	<5 min.
Transition modules	Yes	<5 min.
Power supply and inlet fan sled	Yes (inlet fan only)	<5 min.
Power distribution module		<5 min.
Alarm/Exhaust fan sled	Yes	<5 min.



DEMONSTRATED MTBF

(based on a sample of eight units in accelerated stress environment)

Mean: 107,161 hours

95% Confidence: 60,570 hours

REGULATORY COMPLIANCE

Motorola configured systems meet or exceed the following:

Safety: CSA NRTL/C, VDE EN60950 agency listed, CE Mark per European Low Voltage Directive 72/23/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

WARRANTY

The CPX1200 series is offered with a limited warranty which reduces the cost of ownership, provides investment protection, and demonstrates our commitment to quality and reliability of products to our OEM partners. Additional warranty information can be obtained at http://www.motorola.com/computer/support.

SOFTWARE SUPPORT

The CPX1200 series is supported by general-purpose and real-time operating systems. Additional information can be obtained from the partners listed below. You can also visit our Web site at http://www.motorola.com/computing or contact your local sales representative for up-to-date OS support.

REAL-TIME OPERATING SYSTEMS

VxWorks from Wind River Systems, www.wrs.com

GENERAL-PURPOSE OPERATING SYSTEMS

Linux

FAULT MANAGEMENT SOFTWARE

Motorola offers a complete line of Advanced High Availability Software, featuring our award winning HA-Linux product, http://www.motorola.com/telecom.

STANDARD FIRMWARE

PowerPC CPUs contain firmware that includes basic features like power-up tests and comprehensive diagnostics as well as evaluation and debug tools for simple or high-level development support. Diagnostics include loop backs, register tests, and memory address/data tests. It also supports booting of operating systems and/or real-time kernels.

Intel architecture CPUs have a Phoenix BIOS that provides:

- Auto-configuration, extended setup, Plug-and-Play tables
- Diskless, keyboardless, and videoless operation extensions
- Programmable bus and I/O speeds and memory wait states
- System, video, and SCSI BIOS shadowing
- BIOS POST and Setup console redirection to serial port

STANDARDS COMPLIANCE

NEBS

The CPX1200 family of systems is intended to meet the requirements of the Bellcore standards, Network Equipment Building System (NEBS) Requirements: Physical Protection, GR-63-CORE and Electromagnetic Compatibility and Electrical Safety—Generic Criteria for Network Telecommunication Equipment, GR-1089-CORE. The product is currently being tested to the requirements for NEBS Level 3 criteria.

Criteria	NEBS	
	Specification	Reference
Temperature	Normal: 5° C to 40° C Short-term: -5° C to 55° C	GR-63-CORE, R4-7
Relative Humidity	Normal: 5% to 85% RH Short-term: 5% to 90% RH	GR-63-CORE, R4-7
Office Vibration	0.1G @ 5–100 Hz with 0.1 octave/min 1.5G @ 100–500 Hz with 0.25 octave/min	GR-63-CORE, R4-56 GR-63-CORE, R4-57
Transportation Vibration	5–50 Hz @ 0.1 octave/min 50–500 Hz @ 0.25 octave/min	GR-63-CORE, R4-58
Earthquake	Zone 4	GR-63-CORE R4-44 to O-55
Drop	Packaged: 600mm drop height Unpackaged: 75mm drop height	GR-63-CORE, R4-41 GR-63-CORE, R4-43
Altitude	-60 to 1800m ASL without temp. derating 1800 to 4000m ASL with temp. derating	GR-63-CORE, R4-8 GR-63-CORE, R4-9 GR-63-CORE, O4-9
Acoustic Noise	60dBA @ 600mm	GR-63-CORE, O4-62
Heat Dissipation	Documentation 300/w/m^2/m max per shelf 38° C max. aisle-facing surface temp. @ 26° C ambient	GR-63-CORE, R4-11 GR-63-CORE, R4-12 GR-63-CORE, O4-13
Fire Resistance and Materials	All material UL94V-1 or better. See GR-63-CORE, Section 4.2	GR-63-CORE, R4-14 to O4-40
Illumination	See GR-63-CORE, Section 4.7	GR-63-CORE, R4-63 to O4-69
Airborne Contaminant	Sulfate: 30 µg/m^3 Nitrite: 12 µg/m^3 Volatile organics: 12 µg/m^3 Sulfur Dioxide: 12 ppb Hydrogen Sulfide: 40 ppb Ammonia: 50 ppb NO: 50 ppb NO_2: 250 ppb HNO_3: 50 ppb Ozone: 250 ppb HCL + Cl_2: 6 ppb	GR-63: R4-59, O4-60

ETSI

The CPX1200 family of systems is intended to meet the requirements of the European Telecom Standard (ETSI) including:

Equipment Engineering (EE): Environmental conditions and environmental tests for telecommunications equipment, ETS 300 019-1-3

Storage: ETS 300 019-1-1, for Class 1.2 equipment

Transportation: ETS 300 019-1-2, for Class 2.3 equipment

Criteria	ETSI	
	Specification	Reference
Temperature	Storage: -25° C to 55° C Trans.: -40° C to 70° C Operating: -5° C to 45° C	IEC 68-2-1 IEC 68-2-2 IEC 68-2-14
Relative Humidity	Storage: 10% to 100% RH (non-condensing and condensing) Trans.: 95% @ -40° C to 45° C Operating: 5% to 95% RH (non-condensing and condensing)	IEC 68-2-56 IEC 68-2-30
Vibration	Storage: 1.5mm @ 2–9 Hz, 0.5G @ 9–200 Hz Trans. sinusoidal: 3.5mm @ 2–9 Hz, 1G @ 9–200 Hz, 1.5Gs @ 200–500Hz Trans. random: 1 m^2/s^3 @ 10–200 Hz, 0.3 m^2/s^3 @ 200–2000 Hz. Operating: 1.5mm @ 2–9 Hz, 0.5 G@ 9–200 Hz	IEC 68-2-6 IEC 68-2-36
Shock	Storage, Type I: 4Gs @ 22ms Trans., Type I: 30Gs @ 11ms Operating: 4Gs @ 22ms	IEC 68-2-27 IEC 68-2-29
Drop	Trans.: 1.2m free fall	IEC 68-2-32
Load	Storage: 5 kPa Trans.: 10 kPa	N/A
Altitude	-471 to 3708m ASL	N/A
Acoustic Noise	7.2 bels @ 1m	ETS 300 753 ISO 7779
Fire Resistance and Materials	All material UL 94V-1 or better	UL1950 UL94 BS2782 Part 1 (ISO 181)
Airborne Contaminant	$S0_2$: 0.3/1.0 mg/m^3 H_2S: 0.1/0.5 mg/m^3 Salt mist: sea and road salt CL_2: 0.1/0.3 mg/m^3 HCl: 0.1/0.5 mg/m^3 NO_x: 0.5/1.0 mg/m^3 NH_3: 1.0/3.0 mg/m^3 HF: 0.01/0.03 mg/m^3 O_3: 0.05/0.1 mg/m^3 Dust sedimentation: 20 mg/m^2h Dust suspension: 5 mg/m^3	N/A

ORDERING INFORMATION

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 Motorola Technical Publications Web site at www.motorola.com/computer/literature.

OEM CUSTOMIZATION SERVICES

Motorola provides a wide range of customization options including:

- Labeling and marking options
- Electrical and/or mechanical modifications
- Hardware integration
- Software integration
- Third-party device integration
- Single-point service and FRU point of contact

Contact your Motorola Sales representative for additional information.



Future RoHS Status

Motorola does not intend to redesign this product for RoHS compliance. This product will only be sold and shipped to customers until the RoHS deadline (June 30th, 2006). After that date, it will no longer be available.

SOLUTION SERVICES

Motorola 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. And solution extras include enhanced warranty and repairs.

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CPX1200-D6 10/05

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