

# CPN5365

## CompactPCI Peripheral Slot Processor Board

### DATASHEET

#### KEY FEATURES

Intel® Pentium® III based  
CompactPCI compliant non-  
system slot CPU

Up to 1GB PC100 SDRAM

Accelerated 2D graphics with  
4MB video memory

Dual 10/100BaseT Ethernet

Two universal serial bus (USB)  
channels

Two asynchronous serial ports

PS/2 keyboard/mouse, real-time  
clock, watchdog timer

One bi-directional IEEE-1284  
compliant parallel port

Two 32/64-bit PMC expansion  
slots

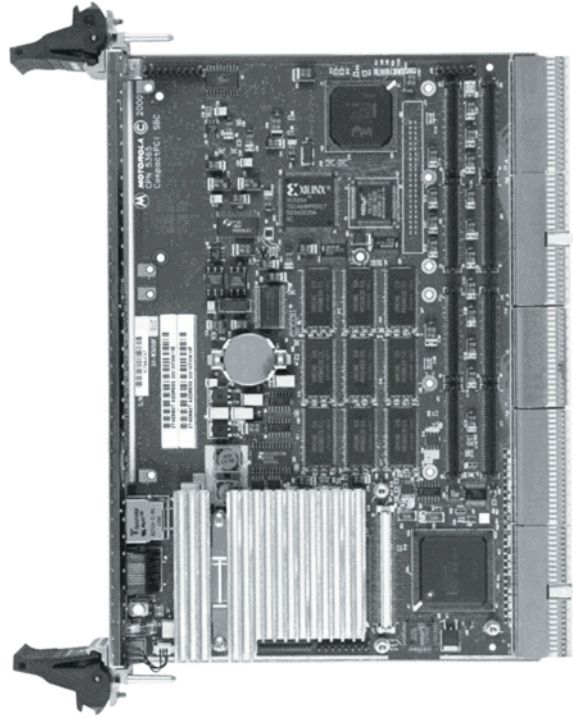
Optional on-board 2.5" EIDE hard  
drive (replaces one PMC site)

Supported by industry-standard  
operating systems such as Linux  
and VxWorks

Functioning as a peripheral  
slot processor within the  
CompactPCI® environment,  
the CPN5365 processor board  
can be customized quickly  
and easily with PMC modules  
to create an application-specific  
network blade.

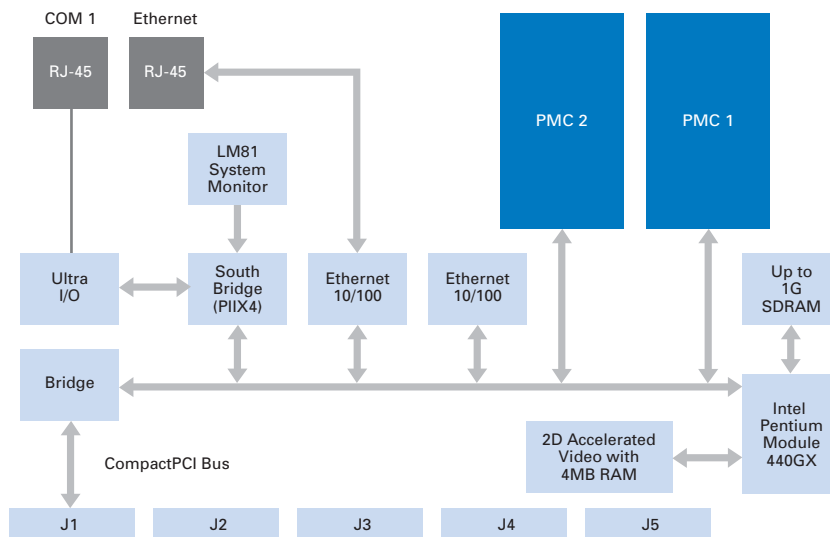
The flexibility of the CPN5365  
allows it to be used in a variety  
of applications such as broad-  
band data or intelligent network  
switching; CTI server; industrial  
control and automation; military  
and aerospace; and medical,  
scientific, or imaging products.

Software support includes  
Linux and VxWorks board  
support packages to speed  
development and time-to-market.



See back page  
for details

The Motorola CPN5365 processor board provides scalable performance and flexibility for non-host slot applications. It complements Motorola's high availability platforms by providing integrated distributed computing required for demanding telecommunications applications.



## SYSTEM ARCHITECTURE

### INTEL PENTIUM III PROCESSOR

For embedded control applications, the CPN5365 fully supports the Intel Pentium III BGA2 processor. The processor is combined with the Intel® 440GX PCI chipset resulting in excellent processing capability. The processor contains 32KB of internal Level 1 cache memory as well as 256KB of Level 2 cache delivering rapid data access to complex applications. Dynamic execution and dual independent buses are additional performance advantages.

### MEMORY

The CPN5365 provides up to 1GB of PC100 compliant synchronous DRAM. Memory size is detected by the system BIOS. The CPN5365 features 512MB of DRAM. The board can support up to 1GB of DRAM by installing CPMEZZ-256 memory expansion modules.

### DUAL ETHERNET

Two Intel® 82559 Ethernet controllers provide redundant Ethernet ports for monitoring and telecom applications. One or both of these controllers can be used as a diagnostic interface allowing remote monitoring of system status (for example, voltage, temperature). One Ethernet RJ-45 connector is located on the front panel. Both Ethernet ports are also routed to the rear I/O.

### HOT SWAP COMPATIBLE

The CPN5365 can be inserted or removed in a powered system. ENUM# services are in compliance with the PICMG 2.1 Hot Swap Specification.

### ON-BOARD PERIPHERALS

The CPN5365 has an extensive array of on-board I/O available from both the front panel of the CPN5365 and/or the rear panel via the CPTM-01 transition module. Front panel I/O includes openings for PMC sites, one RJ-45 connector for Ethernet and one RJ-45 serial connector. Two Ethernet, PS/2 mouse and keyboard, one IDE (secondary), and PMC 2 I/O signals are routed through the backplane via CompactPCI connector J5; one IDE (primary), video, one parallel, and floppy are routed via CompactPCI connector J4; and two serial, two USB, and PMC 1 I/O signals are routed via CompactPCI connector J3.

### COMPACTPCI BUS

Designed to the CompactPCI interface standard, the CPN5365 supports a 64-bit PCI interface on the J1 and J2 physical CompactPCI connectors. On-card devices connect directly to the local bus. Off-card CompactPCI bus accesses are supported through the Intel 21555 PCI-PCI non-transparent bridge.

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## 2D ACCELERATED GRAPHICS

A 69030 HiQVideo accelerator with 4MB integrated memory provides eye-opening 2D accelerated graphics performance for human-machine interfaces and imaging applications. Resolutions up to 1600 x 1200 are supported.

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## SPECIFICATIONS

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### PROCESSOR

500/700 MHz Intel Pentium III BGA2 processor  
Intel 440GX chipset  
100 MHz frontside bus frequency

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### CACHE

Level 1: 16/16KB instruction/data  
Level 2: 256KB

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### MEMORY

Capacity: Up to 1GB  
DRAM: PC100 compliant synchronous, 60 ns, parity or ECC mode

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### COMPACTPCI INTERFACE

Compliance: PCI Specification Rev. 2.1  
Connectors: J1/J2  
Address/Data Lines: 64  
PCI Bus Clock: 33 MHz  
Controller: Intel® 21555 PCI-to-PCI interface bridge chip  
Signaling: +5V or +3.3V compliant

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### IEEE 1386.1 PCI MEZZANINE INTERFACE

Address/Data Lines: 64  
PCI Bus Clock: 33 MHz  
Signaling: 5V  
Power: +3.3V, +5V, ±12V  
Module Types: Two single-wide or one double-wide, front-panel I/O or J3 and J5 I/O  
Note: Due to high component density, uninsulated traces and vias are located in the CPN5365's host I/O keepout area. If installed, PMC modules having conductive I/O connectors could contact these traces and vias. If full IEEE 1386-2001 compliance is required, an insulating shield should be installed.

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### CLOCK/CALENDAR

Real-time clock with replaceable battery backup; includes CMOS

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### INTERRUPTS

Four CompactPCI level-sensitive interrupts, configurable to any interrupt vector for plug-and-play compatibility.  
Note: All ISA on-board interrupts are plug-and-play compliant.

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### ETHERNET

Controllers: Two Intel 82559  
Interface: 10/100BaseT  
PCI Local Bus DMA: Yes, with PCI burst

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### GRAPHICS

Controller: 69030 HiQVideo 2D accelerated video  
Video Memory: 4MB on-chip SDRAM  
Resolution: 1600 x 1200 max.

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### FRONT PANEL I/O INTERFACES

PMC: Two knockouts to accommodate PMC I/O  
Serial Port: One RJ-45  
Ethernet: One RJ-45  
Note: Additional devices may be attached via transition module.

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### BIOS FEATURES

BIOS in flash EPROM  
Auto-configuration or extended setup with serial/parallel ports remappable  
Diskless, keyboardless and videoless operation extensions  
BIOS POST and Setup  
System and video BIOS shadowing  
Network boot using PXE (Preboot eXecution Environment)  
CMOS backup to flash (allows operation without battery)

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### SUPERVISORY

Watchdog Timer: Two-level, software programmable (0.46 sec. to 477 sec.); drives interrupt, NMI/system reset, or soft reset  
Alarm Microcontroller (NS LM81): CPU temperature (user definable threshold alarm on selectable IRQ: 5, 7, 9, 11, NMI, or SCI), backplane and CPU voltages  
Reset Switch: Guarded, on front panel  
Front Panel LEDs: Power OK (green), Hot Swap (blue)  
On-board Headers: CompactFlash or EIDE, and single PMC site  
Rear Panel: Ethernet one and two ports, secondary IDE, PMC I/O, video, printer, floppy, mouse/keyboard, COM1 and COM2, and USB0 and USB1

## MECHANICAL

6U, 4HP wide (233 mm x 160 mm x 20 mm)  
Conforms to PICMG 2.0 CompactPCI (rev. 2.1) and  
PCI SIG 2.1 specifications

## CPTM-01 TRANSITION MODULE I/O

Transition module provides backplane I/O from J3, J4\*  
and J5 on the CPN5365.

On-board Headers: Dual USB, CompactFlash, EIDE,  
floppy, serial, parallel, single PIM site

Rear Panel: Keyboard/mouse, dual Ethernet, video,  
serial, knockout for PIM

\*J4 I/O is not available on models of the CPN5365  
without connector J4

## POWER REQUIREMENTS

(excluding power required by drive option and PMC  
modules)

	500/700 MHz
+5V	2.0 A typ., 3.5 A max.
+3.3V	2.0 A typ., 2.5 A max.
+12V	<50 mA typ., <100 mA max.
-12V	<25 mA max.

## SAFETY

All printed wiring boards (PWBs) are manufactured  
with a flammability rating of 94V-0 by UL recognized  
manufacturers.

## DEMONSTRATED MTBF

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

Mean: 190,509 hours

95%: Confidence: 107,681 hours

(excluding on-board hard drive option)

## ENVIRONMENTAL

(excluding on-board hard drive option)

	Operating	Storage/Transit
Temperature:	0° C to +55° C	-40° C to +70° C
Humidity (NC):	5 to 90%	5 to 95%
Vibration:	0.5 G RMS 20-2000 Hz random	6 Gs RM 20-2000 Hz random

## ELECTROMAGNETIC COMPATIBILITY (EMC)

Intended for use in systems meeting the following  
regulations:

U.S.: FCC Part 15, Subpart B, Class A (non-residential)

Canada: ICES-003, Class A (non-residential)

## ORDERING INFORMATION

Part Number	Description
CPN5365-700-01	700 MHz, 512MB SDRAM, two PMC sites
CPN5365-700-02	700 MHz, 512MB SDRAM, one PMC site, hard drive
CPN5365-700-03	700 MHz, 512MB SDRAM, two PMC sites, no J4
CPN5365-700-04	700 MHz, 512MB SDRAM, one PMC site, hard drive, no J4
<b>Transition Modules</b>	
CPTM-01	Transition module with keyboard/mouse, dual Ethernet, video, COM1
<b>Memory Modules</b>	
CPMEZZ-256B	256MB memory mezzanine, bottom installation
CPMEZZ-256T	256MB memory mezzanine, top installation
<b>Documentation</b>	
CPN5365A/IH	CPIP5365 Single-Board Computer and CPTM-01 Transition Module Installation and Use
Documentation is available for on-line viewing and ordering at <a href="http://www.motorola.com/computer/literature">www.motorola.com/computer/literature</a> .	

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## PMC MODULE SUPPORT

Motorola offers PMC modules that complement and enhance the functionality of the CPN5365.

Additional information is available at <http://www.motorola.com/computer> or by contacting a Motorola sales representative or authorized distributor.

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## 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](http://www.motorola.com/computer/literature).



### 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.

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## 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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