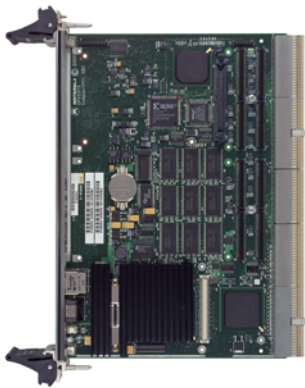


CPV5375

CompactPCI Host Slot Processor Board

Intel Pentium III BGA2 processor

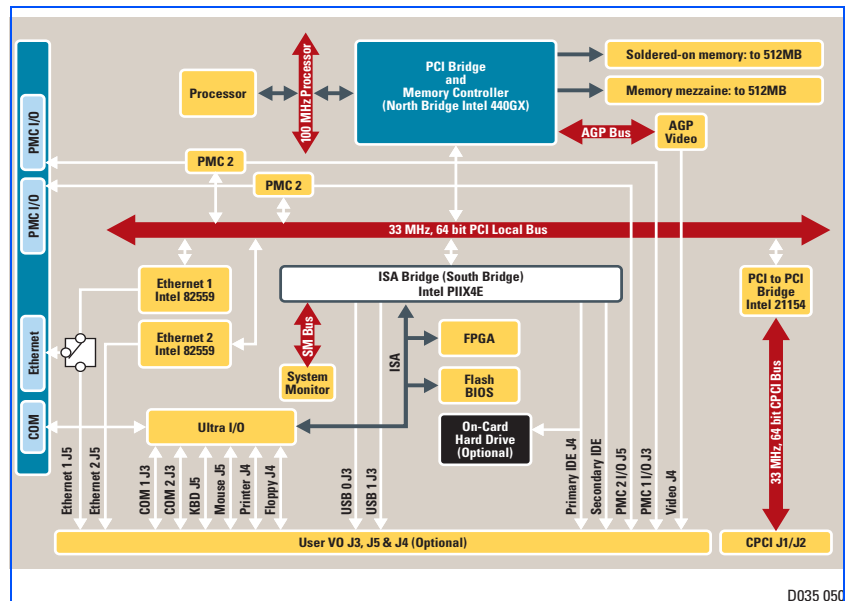


Performance and flexibility in a CompactPCI host slot processor board

The CPV5375 provides a powerful and flexible CompactPCI<sup>®</sup> host slot processor board with a Pentium<sup>®</sup> III processor. This board is specifically designed for cost-sensitive, embedded applications where performance and a rich feature set are required.

The CPV5375 is designed for telecommunications, industrial automation, medical, COTS and applications where leading edge technology is mandatory. The board has a demonstrated high MTBF and is coupled with software support for operating systems such as Linux<sup>®</sup> and VxWorks<sup>®</sup>. The CPV5375 provides an ideal time-to-market solution for CompactPCI host slot controller applications that are based on Pentium processors.

- Intel Pentium III BGA2 processor
- Up to 1GB PC100 SDRAM
- Two 32/64-bit PMC expansion slots
- Optional on-board 2.5" EIDE hard drive (replaces one PMC site)
- Accelerated 2D graphics with 4MB video memory
- Dual 10/100Mbit Ethernet
- Embedded features: two USB interfaces, two serial ports, bi-directional IEEE-1284 parallel I/O
- Supported by industry-standard operating systems such as Linux and VxWorks



### **Intel Pentium III Processor**

For embedded host applications, the CPV5375 fully supports the Pentium III BGA2 processor. The processor is combined with the Intel 440GX PCI chipset resulting in exceptional 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 CPV5375 is configured with up to 512MB of on-board PC100 compliant synchronous DRAM. Memory size is detected by the system BIOS. The board can support up to 1GB of DRAM by installing the CPMEZZ-256 memory expansion module. Refer to the Ordering Information section for additional information.

### **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.

### **Dual Ethernet**

Two Intel 82559 Ethernet controllers provide redundant Ethernet ports for control 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 and temperature). One Ethernet RJ-45 connector is located on the front panel. Both Ethernet ports are routed to the rear I/O and available via the CPTM-01 transition module.

### **Hot Swap Compatible**

The board hardware monitors the ENUM# signal and can be configured to generate an NMI or SMI in response to hot swap events. Event detection via I/O register polling is also possible.

### **Live Insertion and Removal**

The CPV5375 can be inserted into or removed from a powered chassis without sustaining damage. In addition, a live insertion will cause a valid reset on the CompactPCI bus, thus ensuring an orderly bootup with correct device enumeration.

### **On-Board Peripherals**

The CPV5375 has an extensive array of on-board I/O available from both the front and/or rear panel via the CPTM-01 transition board. Front panel I/O includes a knockout for two PMC sites, one RJ-45 connector for Ethernet and one RJ-45 connector for COM1.

User I/O available at the rear of the board includes both Ethernet ports, secondary IDE, both PMC I/O, video, parallel, floppy, mouse/keyboard, COM1 and COM2, and USB0 and USB1.

### **CompactPCI Bus**

Designed to the CompactPCI interface standard, the CPV5375 supports a 64-bit PCI interface on the J1 and J2 physical CompactPCI connectors. On-board devices connect directly to the local bus. Off-board CompactPCI bus accesses are supported through the Intel 21154 PCI-to-PCI transparent bridge.

## SPECIFICATIONS

### Processor

700 MHz Pentium III BGA2 processor

### Cache

**Level 1:** 16/16KB instruction/data

**Level 2:** 256KB

### Memory

**Capacity:** Up to 1GB

**DRAM:** PC100 compliant synchronous, 60 ns, parity or ECC mode

**Addressing:** Real and protected (32-bit) addressing supported

**Data Path:** 32-bit CPU/PCI bus

### CompactPCI Interface

**Compliance:** PCI Specification Rev. 2.1

**Connectors:** J1/J2

**Address/Data Lines:** 64

**PCI Bus Clock:** 33 MHz

**Controller:** Intel 21154 PCI-to-PCI interface bridge chip

**Signaling:** 5V compliant

### IEEE 1386.1 PCI Mezzanine Interface

**Address/Data Lines:** 64

**PCI Bus Clock:** 33 MHz

**Signaling:** 5V

**Power:** +3.3V, +5V, ±12V; 7.5 watts maximum per PMC slot

**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 CPV5375 I/O keepout area. If installed, PMC modules having conductive I/O connectors could contact these traces and vias. If full IEEE 1386.1 compliance is required, an insulating shield should be installed.

### Clock/Calendar

Real-time clock with replaceable battery backup

### 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.

### Ethernet

**Controllers:** Two Intel 82559

**Interface:** 10/100BaseT

**PCI Local Bus DMA:** Yes, with PCI burst

### Graphics

**Controller:** 69030 HiQVideo 2D accelerated video

**Video Memory:** 4MB on-chip SDRAM

**Resolution:** 1600 x 1200 max.; Quarter VGA 320 x 240, 320 x 200

### Front Panel I/O Interfaces

**PMC:** Two openings to accommodate PMC I/O

**Serial Port:** One RJ-45

**Ethernet:** One RJ-45

**Note:** Additional devices may be attached via transition module.

### Supervisory

**Watchdog Timer:** Two-level, software programmable; drives interrupt, NMI/system reset, or soft reset

**Alarm Microcontroller (NS LM81):** CPU and board temperature, backplane and CPU voltages, with status interrogated via NMI, SCI, selectable IRQ or Alarm

**Reset Switch:** Guarded, on front panel

**Front panel LEDs:** Power OK (green) and Hard Drive Activity (green)

**On-board Headers:** Primary EIDE and two PMC sites

**Rear Panel:** Both Ethernet ports, secondary IDE, both PMC I/O, video, printer, floppy, mouse/keyboard, COM1 and COM2, and USB0 and USB1

## SPECIFICATIONS

### BIOS Features

- BIOS in Flash EEPROM
- 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)

### 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

### Safety

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

### CPTM-01 Transition Module I/O

<b>Transition module</b>	Provides backplane I/O from J3, J4, and J5 on the CPV5375
<b>Connectors on the panel include:</b>	Keyboard/mouse, dual Ethernet, video, COM2, and optional PIM module knockout
<b>On-board Headers:</b>	COM1, USB0, USB1, secondary EIDE, floppy, PIM site, floppy, parallel, and CompactFlash

### Power Requirements

(including drive option; using 512MB SDRAM)

	<b>700 MHz</b>
<b>+5V:</b>	2.0A typ.
<b>+3.3V:</b>	2.5 A typ.
<b>+12V:</b>	50 mA typ.
<b>-12V:</b>	<25 mA typ.

### Demonstrated MTBF

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

**Mean:** 214,322 hours

**95% Confidence:** 121,141 hours

(excluding on-board hard drive option)

### Environmental

(excluding on-board hard drive option)

	<b>Operating</b>	<b>Storage/Transit</b>
<b>Temperature:</b>	0° C to +55° C	-40° C to +70° C
<b>Humidity (NC):</b>	5 to 90%	5 to 95%
<b>Vibration:</b>	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)

This product was tested in a representative system to the following standards:

CE Mark per European EMC Directive 89/336/EEC with Amendments; Emissions: EN55022 Class B; Immunity: EN55024

## ORDERING INFORMATION 5

Part Number	Description
<b>CPV5375-700-01</b>	700 MHz, 256MB SDRAM, two PMC sites
<b>CPV5375-700-02</b>	700 MHz, 256MB SDRAM, one PMC site, hard drive
<b>CPV5375-700-03</b>	700 MHz, 512MB SDRAM, two PMC sites
<b>CPV5375-700-04</b>	700 MHz, 512MB SDRAM, one PMC site, hard drive
<b>CPV5375-700-05</b>	700 MHz, 1GB SDRAM, two PMC sites
<b>CPV5375-700-06</b>	700 MHz, 1GB SDRAM, one PMC site, hard drive
<b>Transition Module</b>	
The CPV5375 uses an optional transition module for peripheral and network connections that are required at the rear of the chassis.	
<b>CPTM-01</b>	Transition module with keyboard/mouse, dual Ethernet, video, COM2, and optional PIM module knockout
<b>Memory Modules</b>	
<b>CPMEZZ-256B</b>	256MB memory mezzanine, bottom installation
<b>CPMEZZ-256B-F</b>	256MB memory mezzanine, bottom installation by factory
<b>CPMEZZ-256T</b>	256MB memory mezzanine, top installation
<b>CPMEZZ-256T-F</b>	256MB memory mezzanine, top installation by factory
<b>Documentation</b>	
<b>CPV5370A/IH</b>	CompactPCI CPV5375 Single Board Computer and CPTM-01 Transition Module Installation and Reference Guide
Documentation is available for online viewing and downloading at <a href="http://www.motorola.com/computer/literature">http://www.motorola.com/computer/literature</a>	

### PMC Module Support

Motorola offers PMC modules that complement and enhance the functionality of the CPV5375.

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

#### Motorola Computer Group Regional Offices

NORTH AMERICA: Tempe, AZ 1 800 759 1107 or 1 602 438 5720

EUROPE: Loughborough, UK +44 1509 634300

EAST MEDITERRANEAN: Tel Aviv, Israel +972 3 568 4388

ASIA: Shanghai, China +86 21 5292 5693

PACIFIC RIM: Tokyo, Japan +81 3 5424 3101

ASIA/PACIFIC: Hong Kong +852 2966 3210



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