CPC501

6U CompactPCI
Pentium® M SBC

Best solutions to fit your demands!

- Intel® Pentium® M processor up to 1.8 GHz
- High performance and reliability
- Outstanding communication capabilities
- Packet switching support
- Industrial and commercial temperature ranges
- Fanless operation available

http://www.fastwel.com
Overview

CPC501 is a high performance 6U CompactPCI CPU card designed for various applications such as telecom, factory automation, transportation, aerospace.

The board is based on Intel® Pentium® M processor up to 1.8 GHz and supports up to 1Gb of DDR SDRAM with ECC.

Intel 855GME/ICH4 chipset incorporates a lot of functions, lowering cost and providing high reliability.

CPC501 has 2 Gigabit Ethernet ports, which can be flexibly configured for front or rear panel, or PICMG 2.16 backplane and one Fast Ethernet port.

The board is fully compatible with PICMG 2.16 and PICMG 2.1 specifications, thus providing capability to build robust redundant systems.

Hardware monitor and watchdog timer makes CPC501 suitable for mission critical applications.

32 MB solid-state disk is soldered onboard, thus providing non-volatile storage for system configurations without removable disks.

There are RS-485 COM-ports for connection to remote equipment.

The board is produced in two versions – for industrial temperature range (–40°C to +85°C) and for commercial temperature range (0°C to +70°C).

Technical Specifications

System
- Intel® Pentium® M processor, up to 1.8 GHz
- Up to 2 MB L2 on-die cache at CPU speed
- 400 MHz processor system bus
- Chipset: 82855GME GMCH & 82801DB ICH4
- Up to 1 GB PC2700 Error Correction Code (ECC) DDR SDRAM (SODIMM) with mechanical latch of memory module
- Hardware monitor
- Programmable watchdog timer
- PICMG 2.16 and PICMG 2.1 compliant
- MTBF: 100000 hours

BIOS
Phoenix® BIOS with backup copy
- LAN Boot
- USB Boot
- Multi Boot
- Quick Boot
- ACPI 3.0
- CMOS Fast recovery subsystem

Graphics
- Video controller integrated in 855GME
- 2D/3D built-in accelerator
- Shared video memory up to 64 MB
- Analog display connector supports resolution up to 2048×1536 @ 75 Hz
- LVDS TFT panels support (available at RIO 581)

Storage
- 32 MB solid-state disk (up to 512 MB upon OEM request) soldered onboard
- CompactFlash™ Type I socket
- Two IDE Ultra ATA/100 interfaces*
- Floppy disk interface*
- HDD 2.5” onboard site (for CPC501-01 only)

Software support
- Fastwel DOS™ (MS™ DOS compatible)
- Windows® XP
- QNX® 6.4
- Linux® 2.6

Features
- Intel® Pentium® M processor up to 1.8 GHz
- Two Gigabit and one Fast Ethernet ports
- PICMG 2.16 and PICMG 2.1 compliant
- Integrated VGA graphics
- Onboard PMC or 2.5” HDD
- System and peripheral slot compliance
- Wide range of interfaces on and rear I/O modules
- Operating temperature:
  0°C to +70°C — commercial
  –40°C to +85°C — industrial

Interfaces
- Two Gigabit Ethernet ports 10/100/1000 Mb/s
- One Fast Ethernet port 10/100 Mb/s
- Five USB 2.0 ports*
- Four serial ports. High speed 16C550 compatible (2×RS-232, 2×RS-485)*
- Parallel port: SPP/ECP/EPP compatible*
- PS/2 keyboard and mouse interface*
- PMC interface slot (for CPC501-02 only)
- Rear I/O on J3-J5
- AC’97 2.3 compliant stereo audio**

Conformance
- System/peripheral slot compliance, 3.3/5V tolerant
- System Management PICMG 2.0 R3.0
- Packet Switching Backplane PICMG 2.16 R1.0

Mechanical
- Dimensions: 6U, 4HP (233×160 mm, 9.0”×6.2”)
- Weight: 0.725 kg

Power requirements
- 12 V @ 0.1 A
- 5 V @ 6 A (P1.6, 512 MB RAM)
- 3.3 V @ 2 A (for CPC501-01, 512 MB RAM)

Environmental conditions
- Operating temperature:
  –40°C to +85°C — Industrial
  0°C to +70°C — Commercial
- Storage temperature: –55°C to +95°C
- Humidity: 0% to 95%, noncondensing
- Shock/Vibration: 50G/2G

Warranty
- 3 years for parts and labor

List of deliverables
- CPC501 module with radiator installed
- Screws set for HDD installation
- CD-ROM with documentation and service SW

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System Expansion Capabilities

The RIO581 or RIO585 Rear I/O modules provide extensive rear I/O functionality for the CPC501. The Rear I/O module is installed from the back of the system chassis.
RIO581 Rear I/O Module

Overview
The RIO581 rear I/O module has been designed for use with the Fastwel CPC501 6U CompactPCI board. This rear I/O module provides comprehensive rear I/O functionality being plugged in from the back of the system into the appropriate backplane connectors in line with the CPU board. A particular advantage of the rear I/O capability is that there is no or less cabling on the CPU board which makes it much easier to remove the processor board from the subrack.

Interfaces
- Two Fast Ethernet ports
- VGA-CRT interface
- VGA-LVDS interface*
- COM1 interface (RS-485)
- COM2 interface (RS-485)
- COM3 interface (RS-232)
- COM4 interface (RS-232)
- Two USB 2.0 ports
- Reset button
- GP programmable LED
- PS/2 Connector
- Floppy disk interface
- EIDE interface
- LPT-Interface
- Three audio connectors**
- Fan power connectors (3-pin)

Mechanical
- Dimensions: 233.35×80 mm
- Weight: 0.260 kg

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* RIO 581
** RIO 585

RIO585 Rear I/O Module

Overview
The Rear I/O module can be supplied in two versions: RIO581 and RIO585. The RIO585 Rear I/O module has audio interface (Mic, Phone, Line In) instead of LVDS connector of RIO581 module. All other specifications for these two modules are the same. There is also RIO586 version, with highly reliable IP65 connectors.
Panel Configurations


RIO585 Rear I/O, 6U 4HP (2 Fast Ethernet, VGA-CRT, COM1 (RS-485), COM2 (RS485), COM3 (RS-232), COM4 (RS-232), 2 USB2.0, Reset button, GP Programmable LED, PS/2, FDD Interface, EIDE Interface, LPT Interface, 3 Audio Connectors, Fan Power connector)

RIO586 Rear I/O, 6U, 8HP, analog of RIO585 with increased reliability connectors

Ordering Information

CPC501 Configuration

CPC501 - 01 - P1.8 - I Options

Device Type
CPC501 6U CompactPCI Pentium® M SBC, DDR, FFD 32 MB, VGA, 2xGb LAN

Configurations
01 2.5" HDD Site
02 PMC Site

Processor
P1.4 Pentium M 1.4 GHz, 400 MHz FSB
P1.6 Pentium M 1.6 GHz, 400 MHz FSB
P1.8 Pentium M 1.8 GHz, 400 MHz FSB

Temperature Range
I Industrial Range, –40…+85°C
C Commercial Range, 0…+70°C

Options
\xxx Choose available options from the table

CPC501 Available Options

<table>
<thead>
<tr>
<th>SODIMM Memory Module</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SODIMM512</td>
<td>512 MB DDR SDRAM SODIMM, industrial range</td>
</tr>
<tr>
<td>SODIMM512C</td>
<td>512 MB DDR SDRAM SODIMM, commercial range</td>
</tr>
<tr>
<td>SODIMM1024</td>
<td>1024 MB DDR SDRAM SODIMM, industrial range</td>
</tr>
<tr>
<td>SODIMM1024C</td>
<td>1024 MB DDR SDRAM SODIMM, commercial range</td>
</tr>
<tr>
<td>SODIMM1024ECC-I</td>
<td>1024 MB DDR SDRAM SODIMM with ECC, industrial range</td>
</tr>
<tr>
<td>SODIMM1024ECC-C</td>
<td>1024 MB DDR SDRAM SODIMM with ECC, commercial range</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Compact Flash Module</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF1024</td>
<td>1024 MB Compact Flash, industrial (CF1024C – commercial)</td>
</tr>
<tr>
<td>CF2G</td>
<td>2 GB Compact Flash, industrial (CF2GC – commercial)</td>
</tr>
<tr>
<td>CF4G</td>
<td>4 GB Compact Flash, industrial (CF4GC – commercial)</td>
</tr>
<tr>
<td>CF8G</td>
<td>8 GB Compact Flash, industrial (CF8GC – commercial)</td>
</tr>
<tr>
<td>CF16G</td>
<td>16 GB Compact Flash, industrial (CF16GC – commercial)</td>
</tr>
</tbody>
</table>

Coating
COATED Protective Coating

Operating System Presetting
FDOS Fastwel DOS
XP Windows XP Embedded
QNX QNX 6.4
LNX Linux 2.6

Other configurations and options are available upon request.

Example
CPC501-01-P1.8-I/SODIMM512/CF1024C/HDD20/COATED/XPE
6U CompactPCI Pentium® M SBC, DDR, FFD 32 MB, VGA, 2xGb LAN, 2.5" HDD site
Pentium M 1.8 GHz, 400 MHz FSB
Commercial Range, 0…+70°C
512 MB DDR SDRAM SODIMM, Commercial Range
1024 MB Compact Flash, commercial
HDD 2.5" 20GB
Protective Coating
Windows XP Embedded

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Product specifications could be changed at any time without notice
Applications

- Factory Automation
- Transportation
- Aerospace
- Communications
- Servers
- Power

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