

CPC502

Fastwel 
Creating the Future!

3U CompactPCI / PXI Pentium® M SBC



**Best solutions
to fit your demands!**

- Intel® Pentium® M processor up to 1.8 GHz
- Industrial and commercial temperature ranges
- Low power consumption
- Fanless operation available
- High performance and reliability
- Shock and vibration resistant
- Expandable and flexible
- Outstanding communication capabilities
- Standalone operation available
- Flash disk soldered on board



Features

- Intel® Pentium® M processor up to 1.8 GHz
- SDRAM and flash disk soldered onboard
- PXI support
- Two Gigabit Ethernet ports on internal PCI-X bus
- Two SATA interfaces
- Stand-alone operation without backplane
- Smart temperature control
- Wide range of mezzanine and rear I/O modules
- Operating temperature:
 - 40°C to +85°C — industrial
 - 0°C to +70°C — commercial

Overview

This card is especially designed for industrial automation, instrumentation, medical, telecommunications and other mission critical applications.

CPC502 is based on Intel® Pentium® M processor up to 1.8 GHz and has up to 1GB of RAM. Newest set of Intel 855GME/Hance Rapid ICH system logic guarantees unique performance of the card.

Two Gigabit Ethernet ports working through 66 MHz PCI-X local bus make this card ideally adapted for use in communication intensive applications.

CPU card has both SDRAM and solid-state disk soldered onboard. It allows systems to operate without any moving parts, thus providing better shock/vibration resistance.

All mezzanine cards can be left or right mounted, which allows the same set of cards to be used for both CompactPCI and PXI systems.

ATX power connector on mezzanine board allows 8HP system to be used as a full-functioning stand-alone “computing brick” without any backplane.

Smart temperature control system provides intelligent control of fan speed (if used), CPU clock and core voltage to achieve optimal thermal conditions for CPU card.

There is 32K nonvolatile RAM where user application can save critical data if power fails. CPC502 also has 64K EEPROM memory for user applications.

Opto-isolated Reset port can be used in distributed or redundant systems to receive Reset signal from remote location.

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 & Hance Rapid ICH
- Up to 1 GB PC2700 DDR SDRAM (soldered) with ECC
- Hardware monitor
- Two watchdog timers
- 32-bit data transmissions support for 64-bit application cards
- MTBF: 120000 hours @ 30°C

BIOS

Phoenix® BIOS with backup copy

- LAN Boot
- USB Boot
- Multi Boot
- Quick Boot
- ACPI 3.0

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 2048x1536 @ 75 Hz
- LVDS TFT panels support*

Storage

- 32 MB Solid State Disk (up to 1Gb upon OEM request) soldered onboard
- CompactFlash™ Type I/II or Microdrive™ socket
- Two EIDE Ultra ATA/100 Interfaces*
- Two SATA Interfaces*
- Floppy disk interface*

Software support

- Windows® 2000, XP
- Windows XP Embedded
- QNX® 4.2, 6.0
- Linux® 2.4.20, 2.6.11
- Fastwel DOS™ (MS™ DOS compatible)

Interfaces

- Two Gigabit Ethernet ports 10/100/1000 Mb/s via internal 64-bit, 66 MHz PCI-X bus
- Up to six USB 2.0 ports*
- Three RS-232 serial ports (one with optoisolation). High speed 16C550 compatible*
- Parallel port: SPP/ECP/EPP compatible*
- PS/2 keyboard and mouse interface*
- AC'97 2.3 compliant stereo audio*
- Optoisolated remote reset*

Conformance

- Core Spec. PICMG 2.0 R3.0 32-bit 33 MHz; System Master; 3.3V / 5V compatible
- PXI Hardware Spec. Rev. 2.1, System Master

Mechanical

- Dimensions: 3U, 4HP/8HP* (100x160 mm, 3.9 x 6.2")
- Weight: 0.380 kg

Power requirements

- 5 V @ 6 A
- 3.3 V @ 2 A

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/5G

Warranty

- 3 years for parts and labor

List of deliverables

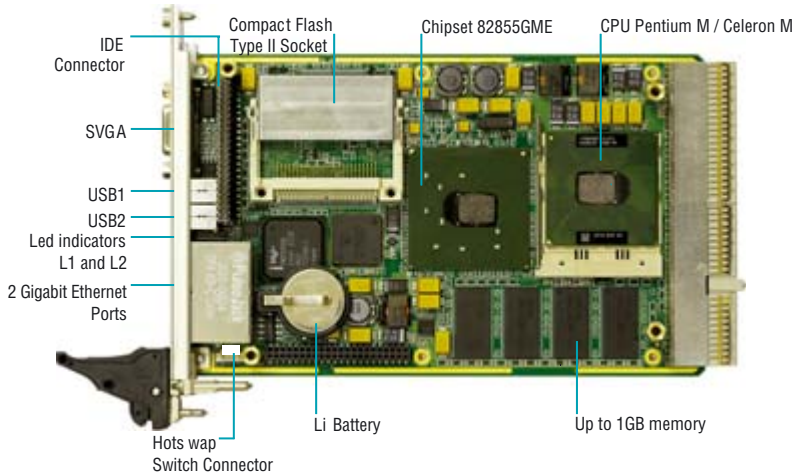
- CPC502 module with radiator installed
- CD-ROM with documentation and service SW

* some interfaces are available via expansion modules only

CPC502

3U CompactPCI / PXI Pentium® M SBC

Board Layout



System Expansion Capabilities



MIC580
3U 4HP Mezzanine Interface Card

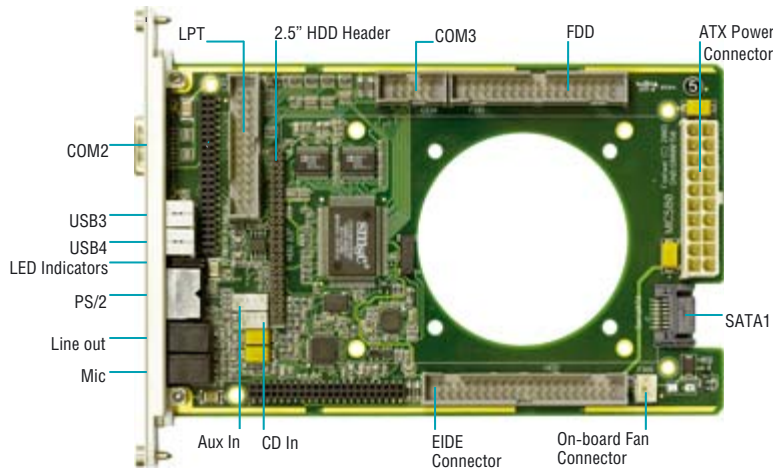


RIO582
3U 4HP Rear I/O Board



MIC583
3U 4HP Rear I/O Mezzanine Interface Card

MIC580 Mezzanine Interface Card



Overview

MIC580 is a mezzanine interface expansion card, which can be installed both on the left and on the right side of CPC502.

The MIC580 can bear either a fan or a 2.5" disk drive. The fan and HDD adapter are supplied together with the MIC580.

Interfaces

- Two RS-232 serial ports
- Two USB 2.0 ports
- LPT header (SPP/ECP/EPP compatible)
- FDD port
- EIDE connector
- SerialATA connector
- Audio Interface (Phone, Mic, Aux In, CD in)

Mechanical

- Dimensions: 100×160 mm
- Weight: 0.200 kg

MIC580 Mounting Options



MIC580 with cooling fan.

MIC580 is shown mounted on the right side of CPC502 forming 8HP configuration



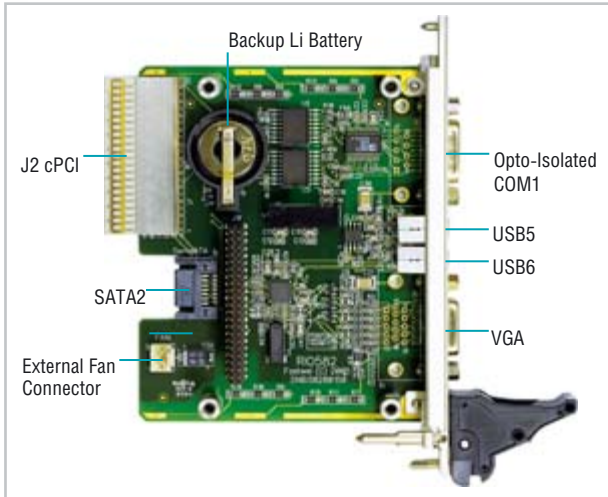
MIC580 with 2.5" HDD.

MIC580 is shown mounted on the right side of CPC502



8HP system as a backplaneless standalone ultra compact "computing brick". MIC580's ATX power connector (angled version upon request) allows more opportunities for embedded systems developers when system size and flexibility are important.

RIO582 Rear I/O Card



Overview

The RIO582 Rear I/O card provides extensive Rear I/O functionality for the CPC502. The card allows installation of additional Li Battery which works as a backup for primary battery on CPC502.

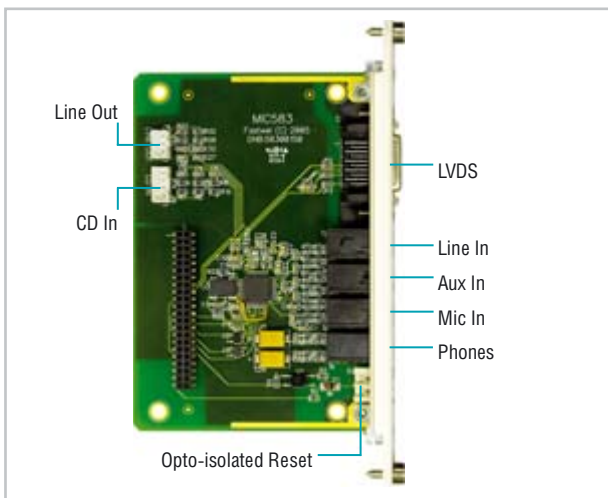
Interfaces

- Opto-isolated RS-232 COM port
- Two USB 2.0 ports
- Analog RGB connector
- SerialATA connector
- External fan connector

Mechanical

- Dimensions: 100×80 mm
- Weight: 0.150 kg

MIC583 Rear I/O Mezzanine Interface Card



Overview

MIC583 is a mezzanine interface expansion card. MIC583 can be installed both on the left and on the right side of RIO582.

Interfaces

- LVDS connector for TFT flat-panel displays
- Opto-isolated remote Reset connector
- AC'97-compatible audio controller with the following connectors: Line In, Aux In, Mic In, Phone, CD In, Line Out.

Mechanical

- Dimensions: 100×80 mm
- Weight: 0.100 kg

Mezzanine Cards Mounting Options



The mezzanine expansion card MIC583 (shown on picture) and MIC580 can be installed both on the left and on the right side of RIO582 and CPC502 respectively depending on where the system slot on backplane is located (left or right position). It is recommended to choose mezzanine cards mounting scheme in such a way, that the whole 8HP card combination occupies only one slot. It allows maximum number of peripheral slots (up to 7) for CPCI/PXI system expansion.

Panel Configurations

Front

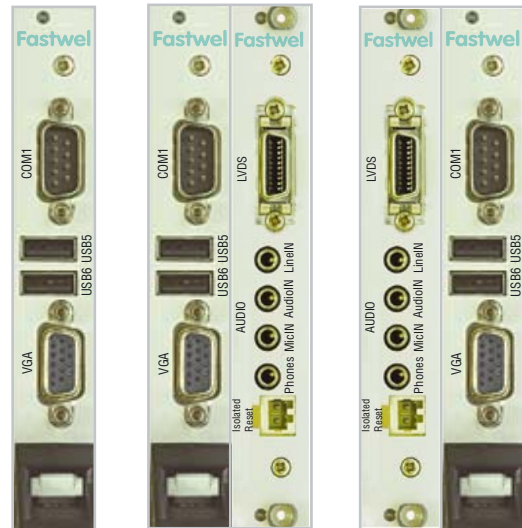


CPC502

CPC502 + MIC580
on the right

CPC502 + MIC580
on the left

Rear



RIO582

RIO582 + MIC583
on the right

RIO582 + MIC583
on the left

Ordering Information

CPC502 Configuration

CPC502 - 01 - P1.8 - RAM1024 - I - \Options

Device Type

CPC502 3U CompactPCI Pentium® M SBC, DDR, FFD 32 MB, VGA, 2xGb LAN

Processor

C1.0 Celeron M 1.0 GHz, LV, 400 MHz FSB
P1.4 Pentium M 1.4 GHz, 400 MHz FSB
P1.8 Pentium M 1.8 GHz, 400 MHz FSB

Soldered Memory

RAM512 512 MB soldered DDR SDRAM ECC
RAM1024 1024 MB soldered DDR SDRAM ECC

Temperature Range

I Industrial Range, -40...+85°C
C Commercial Range, 0...+70°C

Options

\xxx Choose available options from the table

CPC502 Available Options

Compact Flash Module	
\CF256	256 MB Compact Flash, industrial (CF256C – commercial)
\CF512	512 MB Compact Flash, industrial (CF512C – commercial)
\CF1024	1024 MB Compact Flash, industrial (CF1024C – commercial)
\CF2G	2 G Compact Flash, industrial (CF2GC – commercial)
\CF4G	4 G Compact Flash, industrial (CF4GC – commercial)
\CF8G	8 G Compact Flash, industrial (CF8GC – commercial)
\CF16G	16 G Compact Flash, industrial (CF16GC – commercial)
CPC502 Mounted With Mezzanine MIC580	
\MIC580IR	Mezzanine MIC580 right mounted (CPCI), industrial range
\MIC580CR	Mezzanine MIC580 right mounted (CPCI), commercial range
\MIC580IL	Mezzanine MIC580 left mounted (PXI), industrial range
\MIC580CL	Mezzanine MIC580 left mounted (PXI), commercial range
Options for MIC580 only	
\HDDxx	Hard Disk Drive 2.5" xx GB
\FFD2048	Flash Disk 2.5" 2048 MB
\FAN	Fan installed on MIC580 (for CPC502 active cooling)
Coating	
\COATED	Protective coating
Operating System Presetting	
\VDOS	Fastwel DOS
\XPE	Windows XP Embedded
\QNX	QNX 6
\WCE	Windows CE 5.0
\LNX	Linux 2.4.20

Other configurations and options are available upon request.

Example

CPC502-01-P1.4-RAM512-C\CF512C\MIC580CR\HDD20\COATED\XPE

3U CompactPCI Pentium® M SBC, DDR, FFD 32 MB, VGA, 2xGb LAN
Pentium M 1.4 GHz, 400 MHz FSB
512 MB soldered DDR SDRAM
Commercial temperature range, 0...+70°C
512 MB Compact Flash, commercial
Mezzanine MIC580 commercial range
Hard Disk Drive 2.5" 20GB
Protective coating
Windows XP Embedded

Applications



Factory Automation



Transportation



Aerospace



Communications



Medical



Process Control

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