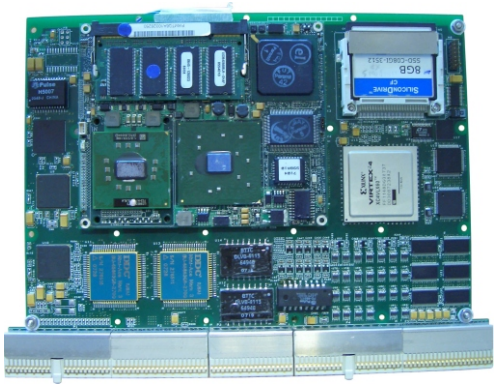
AT-cPCI-SBC

MultiProtocol cPCI Single Board Computer



- **6U HT Single Slot width 6U Compact PCI Form Factor Card**
- **Compliance to PICMG 2.0 R3.0 compactPCI Specification**

On Card ETX Computer On Module specification:

- **1.0GHz Ultra Low Voltage Intel Celeron M (Dothan)**
- **Cache - 1MB L2 Cache, FSB - 400 Mhz**
- **Chipset - Intel 855GME/ECH4M**
- **System Controller – PC Compatible DMA and Interrupt controller, timers & Watchdog Timer**
- **DDR SDRAM up to 1GB capacity using SO-DIMM Main Flash - IDE**
- **Compact Flash up to 8 GB**
- **Three USB 2.0 Ports available on back panel Connectors**
- **Six RS422 Channels**
- **One AC'97 Audio Port, One VGA port**
- **PS2 Keyboard and Mouse Interface**
- **ISA and PCI (32 bit/33Mhz) Bus interfaces**

Additional features on the card:

- **Two Dual redundant 1553B Channels programmable as BC/RT/MT**
- **One 10/100BaseT Gigabit Ethernet Port**
- **One USB2.0 port for Auxiliary Flash Disk Interface**
- **One Virtex 4 LX60 FPGA to Handle IO requirements as per ICD**
- **5V TTL/CMOS Differential Inputs - 16 Nos**
- **5V TTL/CMOS Differential Outputs - 40 Nos**
- **8 x 28V/Open Inputs**
- **8 x 28V/Open or GND/Open Outputs**
- **One 3.125Gbps LVDS channel**
- **Rear IO Connectivity to all the interfaces through Rear IO transition Board**
- **Rugged Version with Heat Sink Metal Plate and Card Wedge Locks**
- **+5V and +3.3V Back Plane supplied Power**

OVERVIEW

The cPCI SBC is an exceptionally high integration, high performance, rugged, and high quality Card, which contains all the component subsystems of an ATX motherboard with cPCI Back Plane Interface. This enables it to be used in systems designed around cPCI Architecture. The cPCI card has a Computer on Module ETX802 plugged into it. ETX802 is based on one of the ultra high performance, high-integration Intel Celeron M processors and gives designers the choice of a complete, high performance, rugged, embedded processor based on the ETX form factor that conforms to the ETX V2.7 specification. The module plugs into the card, which has connectors and additional circuitry to meet your application requirements.

PRODUCT SPECIFICATIONS

CPU

- 1.0 GHz Ultra Low Voltage (ULV) Celeron® M 373 (with 512 KB L2 cache) processor
- Front Side Bus (FSB) of 400 MHz

Memory

- Single 200-pin DDR SODIMM socket provided
- Supports a single +2.5V DDR RAM SODIMM up to 1 GB
- Supports PC2700 DDR 333 (166 MHz)

PCI Bus/ISA Bus

- PCI 2.2 compliant (32 bit/33Mhz)
- ISA bus speed at 8 Mhz

IDE Interfaces

- Supports two enhanced IDE controllers (4 devices)
- Supports dual bus master mode
- Supports Ultra DMA 33/66/100 modes
- Supports ATAPI and DVD peripherals
- Supports IDE native and ATA compatibility modes

Serial Ports

- Two buffered TTL serial ports with full handshaking (transceivers on baseboard) provided
- Provides two 16550-equivalent controllers, each with a built-in 16-byte FIFO buffer
- Provides programmable word length, stop bits and parity
- Provides 16-bit programmable baud-rate generator
- Provides full modem capability

RS422 Ports

- Provides for Six RS422 ports connected to user IO connector
- Accessible through Rear IO Transition Board

USB Ports

- Supports two root USB hubs
- Supports four USB ports
- Supports USB v2.0 and legacy v1.1
- Supports over-current fuses on baseboard
- Supports USB Boot and the respective USB Boot devices
- Three USB 2.0 ports made available at the connectors
- One USB 2.0 port for access to compact flash in offline mode

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Keyboard/Mouse Interface

- Supports PS/2 keyboard & mouse

Audio Interface

- Supports AC'97 standard
- AC'97 CODEC provided on-board
- Audio amplifier provided on the card

Ethernet Interface

- Intel 82551QM Controller and one Ethernet port provided
- Supports magnetic and RJ45 connector on baseboard
- Supports IEEE 802.3 10BaseT/100BaseTX compatible physical layer
- Supports Auto-negotiation for speed and duplex mode
- Supports full duplex or half-duplex mode
- Full-duplex mode uses IEEE 802.3x flow control to transmit and receive frames simultaneously
- Half-duplex mode supports enhance proprietary collision reduction mode
- Intel 82540EP based 10/100/1000 Base TX port
- Both the ports routed to Back Plane User IO Connectors and accessible using Rear IO Transition Board

Video Interfaces (Crt)

- Supports CRT (1600 x 1200) with 64 MB UMA (Unified Memory Architecture)
- Integrated 128-bit graphics controller provided

JTAG

- On-board JTAG chain for FPGA`s
- On-board JTAG header for CPLD programming
- On-board JTAG interface to the processor for debugging and development purposes

Miscellaneous

- Real-Time Clock (RTC) with external battery provided
- Supports battery-free boot
- Watchdog Timer feature provided

I/O Interfaces

- 40 x TTL Differential o/p channels
- 16 x TTL Differential i/p Channels
- 8 x 28V/ Open Inputs
- 8 x 28V / Open or GND/Open Outputs

LVDS Channel

- One LVDS TX Channel of data rates of up to 1.125 Gbps
- One LVDS RX Channel of data rates of up to 1.125 Gbps
- With combined data rates of up to 3.25Gbps in full Duplex mode
- Provided using external LVDS transceiver interfaced to FPGA

FPGA

- Provides on On-board Virtex 4 LX60 FPGA
- FPGA customizable to handle various digital IOs as per customer LCD
- Interfaced to Processor on North Bridge on PCI Bus

Mechanical

- 6U compactPCI card
- Board Dimensions: 160mm x 233mm
- Board thickness: 2.4mm
- Rugged Version with Heat Sink Metal Plate and Card Wedge Locks

Power

- Derived from +5.0V and +3.3V of Back Plane
- All other voltages internally derived
- Power Consumption 20-Watts Approx

Environmental

	Air-Cooled	Conduction-Cooled
Operating Temperature	0ºC to + 60ºC	-40ºC to + 85ºC

Operating Systems Support

- VxWorks (Ver 6.3 workbench 2.5) Board Support Package (BSP), Windows CE (Ver 6.0) and Windows XP

Warranty

- 1 Year limited warranty

ORDERING INFORMATION

Hardware Selection

AT-cPCI-2-2-SBC-ETX802-SDRAM-Main Flash – Ruggedization

- A = Air-Cooled Version
- R = Conduction-Cooled Version

SDRAM:
- 1 = 512 MB
- 2 = 1GB

Main Flash:
- 1 = 2 GB
- 2 = 4 GB
- 3 = 8 GB

AT-cPCI-ETX802-RTB — Rear I/O Board

Software Selection

AT-cPCI-SBC-ETX802-BSP

- 1= VxWorks BSP
- 2= Windows XP
- 3= Win CE

- Contact sales for support for other Operating Systems
- Contact sales for configuration of front and rear I/O configuration
- Contact sales for environmental options

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