AdTEC Electronics Inc.

Only 3U image Provided

- Dual Slot (8HP) CompactPCI Single Board Computer
- CompactPCI System Controller
- Compliance to PICMG 2.0 R3.0 CompactPCI Specification
- 8 GPIO
- Compact Flash site
- High speed CANbus controller
- Up to two Dual redundant 1553B channel programmable as BC/RT/MT (Refer Ordering information for 3U and 6U form factor)
- Up to 8Tx and 8Rx ARINC429 Channels (Refer Ordering information for 3U and 6U form factor)
- Windows® XP SP3, XPe, WES 7, CE, Linux, VxWorks, QNX OS are available

- Single PMC mezzanine site (Available only in 6U form factor)
- On Card ETX Computer On Module specification:
  > 1.0 GHz INTEL Atom Processor E640T
  > 1 GByte of DDR2-800
  > Up to 4 GB NAND Flash
  > One 10/100/1000 Mbps Ethernet interfaces
  > One serial ATA external
  > 6x USB 2.0 (boot) + 1x USB Client
  > Two Serial channel ports
  > Two COM Ports
  > High definition stereo audio
  > Real Time Clock and Watchdog timer
  > Temperature Sensor

OVERVIEW

The AT-cPCI-SBC-ATOM is an exceptionally high integration, high performance, rugged, and high quality board, with cPCI Back Plane Interface. The cPCI board has a Computer On Module plugged in to it. ETX is based on one of the ultra high performance, high-integration 1.0 GHz INTEL Atom Processor E640T, and gives designers the choice of a complete, 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. The image shown above is 3U cPCI SBC ATOM,

This product provides a suitable solution in an embedded market wanting low power and small size. It utilizes the Intel® Platform Controller Hub EG20T to support up to 1 GB of DDR2 -800. The Computer On Module incorporates a range of I/O interfaces including One Gigabit Ethernet port, two serial ports, six USB ports, CAN bus speed upto 1 Mbps and High Definition Audio, 4 GB NAND Flash, one serial ATA and a number of user defined GPIO's.

The AT-cPCI-SBC-ATOM has implemented all its Discrete IO logic in the FPGA. All discrete inputs and outputs are accessed through registers implemented inside FPGA. The card is particularly well suited to embedded applications and meets all the requirements such as power consumption, temperature range, quality, and reliability demands of embedded system applications. The card uses +5V, +3.3V and +12V from the Back Plane as primary supply voltages. All the internal Voltages required by FPGAs and various other peripherals are derived using on board regulators and DC-DC Converters. OS support for Windows® XP SP3, XPe, WES 7, CE, Linux, VxWorks, QNX are available.

PRODUCT SPECIFICATIONS

CPU

- Processor: INTEL Atom processor E640T
- Clock Frequency: 1.0 Ghz
- 45nm process technology
- L2 Cache: 512 KB of cache
- 32 KB Instruction Cache and 24 KB L1 Cache
- 320MHz Graphics Core Render Clock

Graphics Interface

- Intel® Platform Controller Hub EG20T
- Intel 2D/3D Graphics engine
- LVDS 18/24bit 1280x768@60Hz; SDVO 1920x1080@50HZ

Memory

- Onboard 1 GB DDR2-800
- 4 GB NAND Flash memory
- 4 MB of BIOS Flash EPROM

Mass Storage Interfaces

- 1 x Serial ATA external supporting 3 GB/s
- One EIDE interface
  > Supports an On-board Compact Flash site

Stereo Audio

- Intel High Definition Audio interface

Communication Ports

- One 10/100/1000 Mbps Gigabit Ethernet ports
- 6x USB 2.0 (boot) + 1x USB Client
- One RS-232/422/485 port and one configurable RS232 port
- Two COM ports
- High speed CAN bus controller up to 1 Mbps
- 8 GPIO pins - software configurable

AT-cPCI-SBC-ATOM

INTEL Atom Processor 6U CompactPCI
Single Board Computer

Peripherals

- 1 Real Time Clock
- 1 Watchdog timer and long duration timer
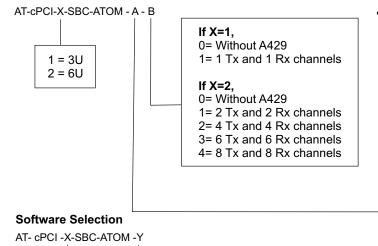- 1 On-board Temperature sensor

MIL-STD-1553B

- IPC1553 – Next generation 1553 core
- 2 Dual Redundant MIL-STD-1553B Channels
- Supports MIL-STD-1553 A/B
- Each channel is independently programmable as either Bus Controller, Remote Terminal or Bus Monitor
- Complete message programmability
- 48-bit/100ns Time tagging
- Direct or Transformer Coupled Bus Interface

ARINC429

- IPC429 – Next generation A429 core
- 8 Transmit and 8 Receive Channels
- Configurable for High Speed (100 Kbps) or Low Speed (12.5Kbps/50Kbps)
- Up to 256 Label memory for each Receive channel
- 128 Word for Tx and Rx FIFOs for each Transmit and Receive channel
- Asynchronous and Synchronous messaging
- Programmable Interrupts
- Programmable Refresh rates of 20ms to 200ms
- Label selective trigger for Capture/Filtering and SDI filtering

CompactPCI Interface

- Universal signaling support Compliant to PICMG 2.0 R3.0, 3.3V or 5V signaling levels
- 32-bit, 33/66 MHz interface
- Operates as a System Slot Controller or operates in a Peripheral Slot
- PICMG 2.1 R2.0 Hot Swap Compliant

Operating Systems

- Windows® XP SP3, XPe, WES 7, CE, Linux, VxWorks, QNX

Environmental
Temperature Range

- -40°C to 85°C
  5% to 95% Relative Humidity, non condensing

Mechanical

- Dual slot (8HP)
- Board Dimensions
- 6U:160mm x 233mm
- 3U:160mm x 100mm
- Metal Heat sink covering over the card for efficient heat transfer from the card to the chassis
- Card fitted with wedge locks on either side for firm seating in the slot

Power

- Derived from +5.0V, +3.3V and +12V of Back Plane
- All other voltages required for powering on-board devices are generated from on-board power circuitry

Warranty

- 1 year standard warranty period

ORDERING INFORMATION

Hardware Selection

AT-cPCI-X-SBC-ATOM - A - B

1 = 3U
2 = 6U

If X=1,
0= Without A429
1= 1 Tx and 1 Rx channels

If X=2,
0= Without A429
1= 2 Tx and 2 Rx channels
2= 4 Tx and 4 Rx channels
3= 6 Tx and 6 Rx channels
4= 8 Tx and 8 Rx channels

If X=1,
0= Without 1553
1= With Single Node 1553 channels

If X=2,
0= Without 1553
1= With Single Node 1553 channels
2= With Two Node 1553 channels

Software Selection

AT- cPCI -X-SBC-ATOM -Y

1 = 3U
2 = 6U

1 =Windows XP SP3
2 = VxWorks BSP
3 = Linux
4 = QNX
5 = CE
6 = Windows XPe
7 = WES 7

- 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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