



- Dual Slot (8HP) 3U CompactPCI Single Board Computer
- CompactPCI System Controller
- Compliance to PICMG 2.0 R3.0 CompactPCI Specification
- 8 GPIO
- One Dual redundant 1553B channel programmable as BC/RT/MT
- 1Tx and 1Rx ARINC429 Channels
- Compact Flash site
- High speed CANbus controller
- Windows® XP SP3, XPe, WES 7, CE, Linux, VxWorks, QNX OS are available
- 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 Card, with 3U CPCI Back Plane Interface. The cPCI card 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.

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.

The AT-CPCI-SBC-ATOM is equipped with On-board a number of user defined GPIO's, one dual redundant 1553B channel, one transmit and one receive ARINC429 Channels.

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

# AT-cPCI-SBC-ATOM

## INTEL Atom Processor 3U CompactPCI Single Board Computer

### 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

### Peripherals

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

### MIL-STD-1553B

- 1 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

- 1 Transmit and 1 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

- 3U form factor - Dual slot (8HP)
- Board Dimensions: 160mm x 100mm
- Connectors: IEC-1076-4-101 for J1-J2
- Shock: 20g, 11ms, ½ sine

### 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-1-SBC-ATOM-1553-A429

0= Without A429  
1= With Single Node 429

0= Without 1553  
1= With Single Node 1553

1 = 3U

### Software Selection

AT- cPCI-1-SBC-ATOM -BSP

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



ADTEC Electronics Inc.  
144 Continente Ave , Suite #130  
Brentwood, CA 94513, USA.  
Ph : (408) 420 0646  
www.adtecelectronics.com

Distributor/Reseller