AT-cPCI-SBC-ATOM

INTEL Atom Processor 6U
CompactPCISingleBoard Computer

Only3U image Provided

- DualSlot (8HP) CompactPCI Single Board Computer
- CompactPCISystem Controller
- Complianceto PICMG 2.0 R3.0 CompactPCI Specification
- 8 GPIO
- CompactFlash site
- Highspeed CANbus controller
- UptotwoDualredundant1553BchannelprogrammableasBC/ RT/MT(Refer Ordering informationfor 3U and 6Uform factor)
- Upto 8Tx and 8RxARINC429 Channels (ReferOrdering information for 3U and 6U form factor)
- Windows®XPSP3,XPe,WES7,CE,Linux,VxWorks,QNX OS areavailable

- Single PMC mezzanine site (Available only in 6U formfactor)
- OnCard ETX Computer On Module specification:
  - > 1.0GHzINTELAtomProcessorE640T
  - > 1GByte of DDR2-800
  - > Upto 4 GB NAND Flash
  - > One10/100/1000 Mbps Ethernet interfaces
  - > OneserialATAexternal
  - > 6xUSB 2.0 (boot) + 1x USB Client
  - > TwoSerialchannelports
  - > TwoCOMPorts
  - > Highdefinition stereo audio
  - > RealTimeClockandWatchdogtimer
  - > TemperatureSensor

OVERVIEW

The AT-cPCI-SBC-ATOM is an exceptionally high integration, high performance, rugged, and high quality board, with cPCI BackPlane Interface. The cPCI board has a Computer On Module plugged in to it. ETX is based on one of the ultra highperformance, high-integration 1.0 GHz INTEL Atom Processor E640T, and gives designers the choice of a complete, rugged, embedded processorbased on the ETX form factor that conforms to the ETX V2.7 specification. The module plugs into the card, which has connectors andadditionalcircuitrytomeetyourapplicationrequirements.Theimageshownaboveis3UcPCISBCATOM,

This product provides a suitable solution in an embedded market wanting low power and small size. It utilizes the Intel® PlatformControllerHubEG20Ttosupportupto1GBofDDR2-800.TheComputerOnModuleincorporatesarangeofI/Ointerfacesincluding One Gigabit Ethernet port, two serial ports, six USB ports, CAN bus speed upto 1 Mbps and High Definition Audio, 4 GB NAND Flash,oneserialATAandanumberofuserdefinedGPIO's.

TheAT-cPCI-SBC-ATOMhasimplementedallitsDiscreteIOlogicintheFPGA.Alldiscreteinputsandoutputsareaccessedthroughregisters implemented inside FPGA. The card is particularly well suited to embedded applications and meets all the requirementssuchaspowerconsumption,temperaturerange,quality,andreliabilitydemandsofembeddedsystemapplications.Thecarduses +5V,+3.3Vand+12VfromtheBackPlaneasprimarysupplyvoltages.AlltheinternalVoltagesrequiredbyFPGAsandvariousotherperipherals are derived using on board regulators and DC-DC Converters. OS support for Windows® XP SP3, XPe, WES 7, CE,Linux,VxWorks,QNXareavailable.

PRODUCTSPECIFICATIONS

CPU

- Processor:INTELAtomprocessorE640T
- ClockFrequency: 1.0 Ghz
- 45nmprocess technology
- L2Cache: 512 KB of cache
- 32KB Instruction Cache and 24 KB L1 Cache
- 320MHzGraphics Core Render Clock

GraphicsInterface

- Intel®Platform Controller Hub EG20T
- Intel2D/3D Graphics engine
- LVDS18/24bit1280x768@60Hz;SDVO1920x1080@50HZ

Memory

- Onboard1 GB DDR2-800
- 4GB NAND Flash memory

- 4 MB of BIOSFlash EPROM

MassStorage Interfaces

- 1x SerialATAexternal supporting3GB/s
- OneEIDE interface
  > Supportsan On-board Compact Flash site

StereoAudio

- IntelHigh DefinitionAudio interface

Communication Ports

- One10/100/1000 Mbps Gigabit Ethernet ports
- 6xUSB 2.0 (boot) + 1x USB Client
- OneRS-232/422/485 port and one configurable RS232 port
- TwoCOMports
- Highspeed CAN bus controller up to 1 Mbps
- 8GPIO pins - software configurable

AT-cPCI-SBC-ATOM

INTEL Atom Processor
6U Compact PCI 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-1553A/B
- Each channel is independently programmable as either Bus Controller, Remote Terminal or Bus Monitor
- Complete message programmability
- 48-bit/100ns Timetagging
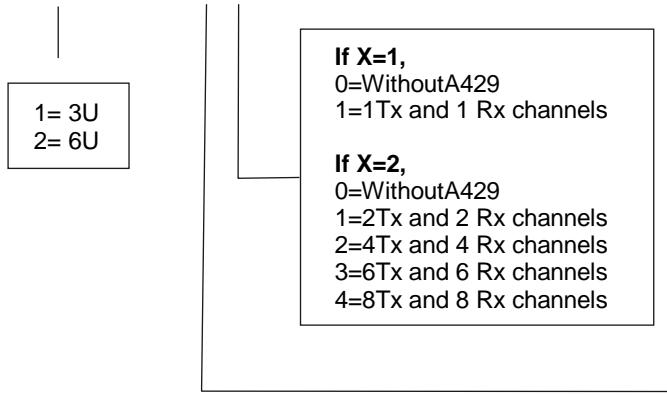- Director Transformer Coupled Bus Interface

ARINC429

- IPC429– Next generation A429 core
- 8 Transmit and 8 Receive Channels
- Configurable for High Speed (100Kbps) or Low Speed (12.5Kbps/50Kbps)
- Upto 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
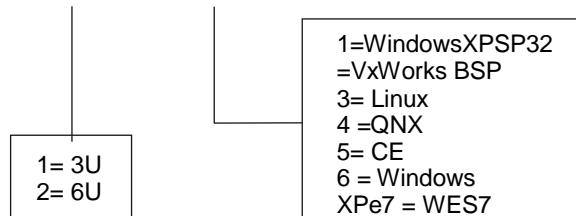- Label selective trigger for Capture/Filtering and SDI filtering

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
- PICMG2.1 R2.0 Hot Swap Compliant

Operating Systems

- Windows®XP SP3, XPe, WES7, CE, Linux, VxWorks, QNX

Environmental Temperature Range

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

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 BackPlane
- 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=1Tx and 1 Rx channels

If X=2,
0=Without A429
1=2Tx and 2 Rx channels
2=4Tx and 4 Rx channels
3=6Tx and 6 Rx channels
4=8Tx 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 = WES7

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

Distributor/Reseller

November 2023