



AT-cPCI-SBC-ATOM

INTEL Atom Processor 3U
CompactPCI Single Board Computer



- 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
- CompactFlash site
- Highspeed CANbus controller
- Windows® XP SP3, XPe, WES7, CE, Linux, VxWorks, QNX OS are available
- OnCard ETX Computer On Module specification:
 - > 1.0GHz INTEL Atom Processor E640T
 - > 1GB 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 Card has a Computer On Module plugged into 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 1GB 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 up to 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 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
- 32KB 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 18/24 bit 1280x768 @ 60Hz; SDVO 1920x1080 @ 50Hz

Memory

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

Mass Storage Interfaces

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

Stereo Audio

- Intel High Definition Audio interface

AT-cPCI-SBC-ATOM

INTELELAtomProcessor
3UCompactPCISingleBoard Computer

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

Peripherals

- 1RealTimeClock
- 1Watchdogtimerandlongdurationtimer
- 1On-boardTemperaturesensor

MIL-STD-1553B

- 1Dual Redundant MIL-STD-1553B Channels
- SupportsMIL-STD-1553A/B
- Each channel is independently programmable as eitherBusController,RemoteTerminalorBusMonitor
- Completemessage programmability
- 48-bit/100nsTimetagging
- DirectorTransformerCoupledBusInterface

ARINC429

- 1Transmitand1ReceiveChannels
- Configurable for High Speed (100 Kbps) or Low Speed(12.5Kbps/50Kbps)
- Upto 256 Label memory for each Receive channel
- 128WordforTxandRxFIFOsforeachTransmitandRecei ve channel
- Asynchronousand Synchronous messaging
- ProgrammableInterrupts
- ProgrammableRefresh rates of 20ms to 200ms
- Labelselective trigger for Capture/Filtering and SDI filtering

CompactPCIInterface

- Universal signaling support Compliant to PICMG 2.0 R3.0,3.3V or5V signaling levels
- 32-bit,33/66 MHz interface
- Operates as a System Slot Controller or operates in aPeripheral Slot
- PICMG2.1 R2.0 Hot Swap Compliant

OperatingSystems

- Windows@XPSP3,XPe, WES7, CE, Linux,VxWorks, QNX

EnvironmentalTemperatur eRange

- -40°Cto 85°C
5%to95%RelativeHumidity,noncondensing

Mechanical

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

Power

- Derivedfrom+5.0V,+3.3Vand+12VofBackPlane
- All other voltages required for powering on-boarddevicesaregeneratedfromon-boardpowercircuitry

Warranty

- 1year standard warranty period

ORDERINGINFORMATION

HardwareSelection

AT-cPCI-1-SBC-ATOM-1553-A429

0=WithoutA429
1=With Single Node 429

0=Without 1553
1=With Single Node 1553

1= 3U

SoftwareSelection

AT-cPCI-1-SBC-ATOM-BSP

1=WindowsXPSP32=
VxWorksBSP
3= Linux
4 =QNX
5= CE
6 = Windows
XPe7 = WES7

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

Distributor/Reseller

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