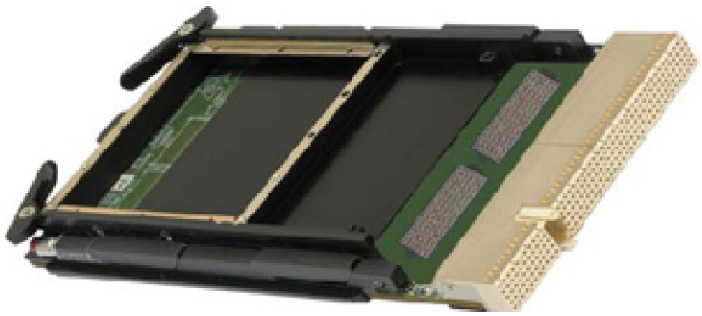
AT-cPCI-SBC-INTEL QUARK



- **Single slot (4HP) 3U CompactPCI Single Board Computer**
- **INTEL Quark ™ X1021 Series Processor with 16 K cache, 400 Mhz**
- **Compliance to PICMG 2.0 R3.0 CompactPCI Specification**
- **2 GB of DDR3 SDRAM**
- **16 MB legacy SPI Flash**
- **Micro SD card slot expandable up to 32GB**
- **One 10/100 Mbps Ethernet interface**
- **Three USB 2.0 ports**
- **One Dual redundant 1553B channel programmable as BC/RT/MT**
- **1Tx and 1Rx ARINC429 Channels**
- **Single XMC mezzanine site**
- **Two UART ports**
- **16 GPIO**
- **One I2C interface**
- **Real Time Clock**
- **Conduction-cooled version**
- **Windows, Linux OS are available**

OVERVIEW

The AT-cPCI-SBC-INTEL Quark™ is a 3U CompactPCI board supporting 400 MHz Intel Quark™ X1021 series Processor. The AT-cPCI-SBC-INTEL Quark™ is an exceptionally high integration, high performance, rugged, and high quality board. This product provides a suitable solution in an embedded market wanting low power and small size.

It has On-board 2 GB of DDR3 SDRAM, and a range of I/O interfaces including one 10/100 Mbps Ethernet port, two UART ports, three USB2.0 ports, 16 MB legacy SPI Flash, RTC, one I2C interface, Micro SD card slot and is equipped with On-board one mezzanine expansion site – x1 lane PCIe, a number of user defined GPIO's, one dual redundant MIL-STD-1553B channel, one transmit and one receive ARINC429 Channels.

The AT-cPCI-SBC- INTEL Quark™ 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. The board is available in Conduction-cooled version as well. OS supports for Windows, Linux are available.

PRODUCT SPECIFICATIONS

CPU

- Processor: INTEL Quark™ (SOC) X1021 series processor
- Clock Frequency: 400 Mhz
- L2 Cache – 16 KB

Memory

- Onboard 2 GB DDR3 SDRAM
- 16 MB Legacy SPI Flash

JTAG

- On-board JTAG interface to the processor for debugging and development purposes

Mass Storage Interface

- Micro SD card slot expandable up to 32 GB

Communication Ports

- One 10/100 Mbps Ethernet port
- Three USB 2.0 ports
- Two UART ports
- 16 GPIO pins - software configurable

Peripherals

- 1 Real Time Clock
- 1 I2C Interface and 1 SPI interface

MIL-STD-1553B

- 1 Dual Redundant MIL-STD-1553B Channel
- 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 Channel
- 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

AT-cPCI-SBC-INTEL QUARK

CompactPCI Interface

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

PCI Interface

- PCI 32 bit
- 33/66 MHz PCI frequency
- Fully compliant to PCI Specs- Rev 2.2

XMC Interface

- XMC – x1 lane PCIe, 2.5GT/s (PCIe base specification 1.0a)
- Single XMC site

Operating Systems

- Windows, Linux OS are available

Environmental: Temperature Range

- Windows, Linux OS are available

Mechanical

- 3U form factor - Single slot (4HP)
- Board Dimensions: 160mm x 100mm
- Connectors: IEC-1076-4-101 for J1-J2
- Shock: 20g, 11ms, ½ sine
- Rugged version with Heat Sink Metal Plate and Board Wedge Locks

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

Test and Diagnostic Software

- Boot software for initialization
- Diagnostic software tool

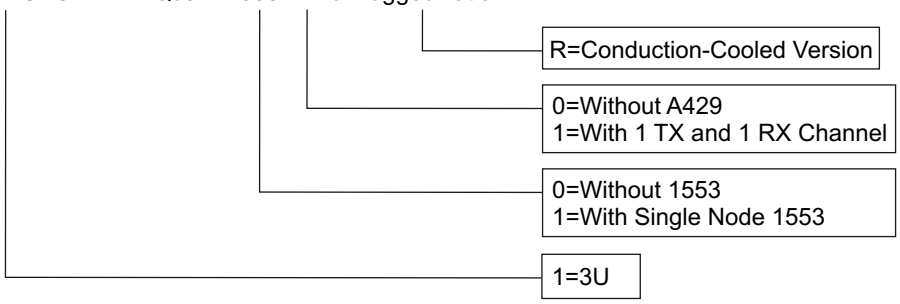
Warranty

- 1 Year limited warranty

ORDERING INFORMATION

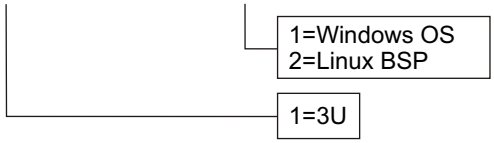
Hardware Selection

AT-cPCI-1-SBC-INTEL Quark-1553-A429-Ruggedization



Software Selection

AT-cPCI-1-SBC-INTEL Quark-BSP



- 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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