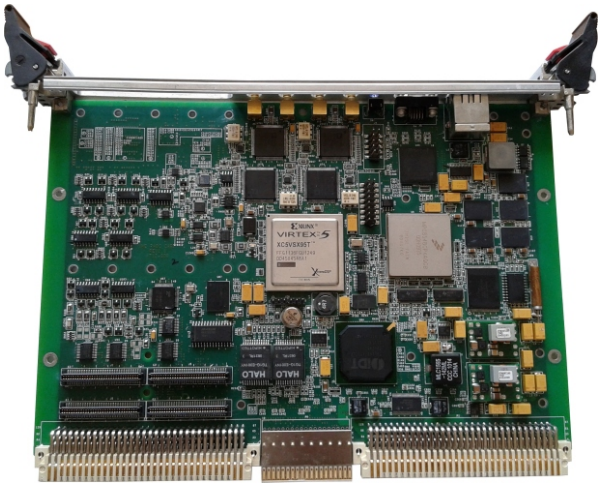
AT-VME-PADC-MPC8548

Rugged 6U VME MPC SBC with ADC



- **6U VME64x single slot module**
- **Based on Freescale MPC8548 PowerPC processor**
- **e500 Processor Core @ 1 Ghz**
- **1 GB of DDR2 SDRAM with ECC**
- **128 MB NOR flash (Program Memory)**
- **1GB NAND flash (Storage/Application Memory)**
- **1 MB NVRAM**
- **Two Gigabit Ethernet ports**
- **Four Multiprotocol RS232/RS422 serial ports**
- **Two USB 2.0 Host ports (Optional)**
- **One PMC mezzanine site**
- **Four Temperature sensors**
- **Real time clock**
- **External Watchdog timer and Reset Generator**
- **Voltage monitoring and power sequencer**
- **On-board Flash FPGA**
- **Analog-to-Digital Conversion Block**
- **Operating temperature -40ºC to +85ºC**

OVERVIEW

The AT-VME-PADC-MPC8548 is the next generation of PowerPC based Single Board Computers in the AT series of products featuring Freescale's MPC8548E PowerQUICC III processor which integrates the enhanced e500 PowerPC core and advanced features such as DDR2 SDRAM with 1GB, 128 MB of NOR flash, 1GB of NAND Flash, 64KB Serial EEPROM, up to 1 GHz of clock speed, 1MB of NVRAM. The system provides the required interfaces to interface custom modules in the system. The system provides communication bus interfaces like asynchronous communication ports on RS232/422 and two gigabit Ethernet ports. The SBC also features a watchdog timer, Real Time Clock and comes equipped with a single PMC mezzanine site.

The card has on-board Analog-to-Digital conversion channels and Digital-to-Analog Channels, providing additional resources for high-speed data acquisition applications. The above said feature is used in the Radar (IFF) Processing that is yet another functionality provided on-board. Radar signals are processed using mode generation, reply video processing and processed video generation. A communication link to control unit & SPU simulation is provided. Online diagnostics present detects presence/absence of external pry trig, ACP, nm, mode pulses & AA for decoder functions. Power on self test (post) & Plot processing are some of the additional features present. RADAR signals processing features include azimuth count pulse processing, primary trigger signal conditioning, processes in simulator, processes in RVP Mode 'S'.

The SBC is available in Air-cooled and Conduction cooled temperature versions to suit various applications. Contact sales for more information.

PRODUCT SPECIFICATIONS

CPU

- Freescale MPC8548E PowerQUICC III processor
- Embedded PowerPC e500 core
- Clock Frequency at 1.0 Ghz
- Two USB 2.0 host ports
- L1 Cache: 32KB of instruction and 32KB of data cache
- L2 Cache: 512 KB

Memory

- 1 GB of DDR2 SDRAM with ECC
- 128 MB of NOR Flash
- 1 GB NAND Flash
- 64Kbits Serial EEPROM
- 1 MB Non-Volatile SRAM

Bus Interface

- 32 bit Local Bus
- Two 32bit/33Mhz PCI r2.2 compliant buses
- VME 32 bit Backplane bus interface

I/O Interfaces

- Two 10/100/1000 Mbps Gigabit Ethernet ports
- One Debug RS232 Serial Port
- Four RS232/RS422 Multiprotocol Serial Ports
- LVTTL Differential IOs - 16 Nos
- LVTTL Single Ended IOs - 16Nos
- Two USB 2.0 Host Ports (Optional)
- PMC User IO on P2 Connector

Others

- Provides a Real-Time Clock (RTC)
- Supports an external battery for Real-Time Clock operation
- Provides Watchdog Timer feature
- Temperature Sensors
- Voltage Monitoring
- Power Sequencing

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JTAG

- On-board JTAG chain for FPGA`s
- VME JTAG signals from P1 connector to test/program on-board JTAG devices
- On-board JTAG interface to the processor for debugging and development purposes

Clock

- On-board 80MHz oscillator
- Different clock signals for ADC and DAC
- On-board PLL circuit for clock frequency programmability

On-board Flash FPGA

- User configurable 16- LVDS I/O
- User configurable 16-LVTTL discrete I/O
- Temperature Monitoring
- Voltage Monitoring and Power Sequencing
- Serial EEPROM interface

Analog-to-Digital Conversion Block

- Four DC Coupled Analog input channels (AC Coupling - Optional)
- High Speed AD9445 14 bit ADCs
- Rate of 105Msps for each channel
- High speed 14-bit AD9744 DACs support testability of both analog and digital subsystems
- SMA coaxial front panel connectors
- 50 ohm input impedance
- Sampling using Internal clock
- Synchronous and Asynchronous modes of operation
- Programmable Sampling rate selection
- One Virtex-5 FPGA, for additional custom logic
- On-board 80MHz clock Oscillator

PMC Interface

- Single PMC mezzanine site on rear I/O

Front Panel Connectors

- One Debug serial port
- One Gigabit Ethernet port
- Three SMA Analog Input Channel Connectors
- Reset Switch

Rear I/O

- Four MultiProtocol RS232 / RS422 Serial Ports
- Two USB 2.0 Host ports
- Two Gigabit Ethernet ports
- PMC User IO on P2 Connector

Mechanical

- 6U VME single slot interface
- Dimensions- 233.35mm x 160mm
- Thickness: 2.4mm
- 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

Operating Systems Support

- Standard Support for Linux 2.6.x
- Optional Device drivers and BSP for VxWorks (6.3) Operating System

Power

- Derived from +5.0V of Backplane
- 3.3V and other voltages required for powering on-board devices are generated from on-board power circuitry

Environmental

	Air-Cooled	Conduction-Cooled
Operating Temperature	0ºC to + 60ºC	-40ºC to + 85ºC

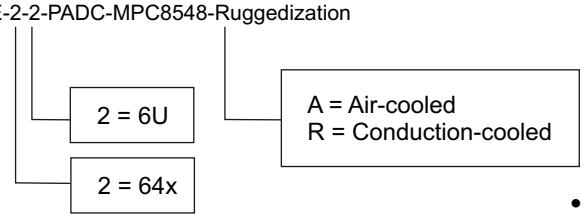
Warranty

- 1 year limited warranty

ORDERING INFORMATION

Hardware Selection

AT-VME-2-2-PADC-MPC8548-Ruggedization



- 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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