

- PCI bus compatible
- PMC – 32-bit, 33/66 MHz (PCI 2.2)
- MIL-STD-1553B – Optional
 - > Total-ACE controller from DDC
 - > 4 Dual Redundant MIL-STD-1553 Channels
 - > Supports MIL-STD-1553 A/B
 - > BC, RT, MT or RT/MT Functionality
 - > 64K x 16 RAM
 - > External RT Address Inputs
 - > Direct or Transformer Coupled
 - > Autonomous Built-In Self-Test
 - > 3.3 Volt Only Operation
 - > Fully Integrated, MIL-STD-1553 Terminal & Transformer Solution
- ARINC717 – Optional
 - > One Transmit and one Receive ARINC717 channel operates from a single +3.3V supply
- > Selectable Harvard Bi-Phase (HBP) or Bi-Polar Return-to-Zero (BPRZ) receive channel and transmit channels with HBP and BPRZ encoders and line drivers
- > One selectable receive channel as HBP or BPRZ with integrated analog line receiver
- > Both HBP and BPRZ transmitters have integrated line drivers as well as digital outputs
- > 32-word by 12-bit FIFOs for both the receive and the transmit channel
- > Programmable slew rates on transmit channels: 1.5 μ s, 7.5 μ s or 10 μ s
- > Fast SPI transmitter write and receiver read modes
- Rear P14 or Front I/O available
- Optional Discrete Inputs and Outputs
- Driver & High-level API for Windows XP, Windows 7 and Linux

OVERVIEW

The AT-PMC-MPAC family of products provides the highest level of performance and flexibility on various hardware interface architectures and custom platforms. Integrating MIL-STD-1553B, ARINC717 and Digital I/O channels, all in a single unit, it offers the ideal platform for test & evaluation of avionics systems and sub-systems. On board seven discrete inputs and seven discrete outputs is also available. To provide I/O and processing expansion capabilities, IO are available on either rear user IO connectors or Front Panel VHDCI Connectors. The board is available in Conduction-cooled version.

MIL-STD-1553B

The AT-PMC-MPAC is the latest generation of high performance and flexibility for MIL-STD-1553B functionality. The AT-PMC-MPAC offers full-function test, simulation, monitoring, and data bus analyzer functions for MIL-STD-1553B applications. These high-density high-performance modules are suitable for applications ranging from test equipment to rugged deployable systems. The module comes integrated with powerful software that reduces application development time. All data bus functionality is supported by our advanced API (Application Programming Interface).

The Total-ACE is a complete and compact solution to MIL-STD-1553 applications. It integrates dual transceivers, dual transformers, protocol engine and 64K words of internal RAM combined into a single BGA package. The device is powered by +3.3 volts.

The advanced BC architecture provides a high degree of flexibility and autonomy by improving message scheduling control, minimizing host overhead for asynchronous message insertion, facilitating bulk data transfers and double buffering, message retry and bus switching strategies, and data logging and fault reporting. The RT architecture provides flexibility in meeting all common MIL-STD-1553 protocols. RT data buffering and interrupt options offer support for synchronous and asynchronous messaging, ensure data sample consistency, and support bulk data transfers.

Transformer and Direct Coupling

The module can be configured to work either in the transformer- coupled mode or in the direct-coupled mode. Jumpers are provided on the modules to select the mode. It is configured to work in Transformer coupled mode by default.

ARINC717

The ARINC717 device from the Holt Integrated circuit includes a selectable Harvard Bi-Phase (HBP) or Bi-Polar Return-to-Zero (BPRZ) receive channel and transmit channels with HBP and BPRZ encoders and line drivers. The receive channel has integrated analog line receivers and the transmit channels have integrated line drivers for the corresponding encoding method (HBP and BPRZ). The part operates from a single +3.3V. Each transmit and receive channel has a 32-word by 12-bit FIFO for data buffering. The device uses an SPI (Serial Peripheral Interface) for host access to internal registers and data FIFOs.

SOFTWARE

The software includes Drivers and APIs. The module comes with a powerful set of library functions to access the entire MIL-STD-1553B and ARINC717 functionality. Source code is provided for samples, and detailed documentation. The drivers are designed in a modular fashion consisting of component functions & application functions. The user's test program can be developed with few calls to the driver, by using the set of Application functions provided. Driver and high-level API libraries for Windows XP, Windows 7 and Linux are available.

AT - PMC - MPAC

High Performance Multi Protocol Avionics Card

PRODUCT SPECIFICATIONS

Bus Interface

- PCI bus compatible
- PMC – 32-bit, 33/66 MHz (PCI 2.2)

MIL-STD-1553B Interface

- Fully Integrated, MIL-STD-1553 Terminal & Transformer Solution
- 1 Dual Redundant MIL-STD-1553 Channel
- BC, RT, MT or RT/MT Functionality
- Direct and/or Transformer Coupled
- Supports MIL-STD-1553 A/B
- 64K x 16 RAM
- Tx Inhibit Ball for MT Only Applications
- BC Disable Ball for RT Only Applications
- External RT Address Inputs
- Simple System RT Mode
- Flexible RT Buffering
- Selective Message Monitor with Filtering
- Highly Autonomous BC Architecture
- Autonomous Built-In Self-Test
- 3.3 Volt Only
- High Reliability
- Small Size Saves Board Space

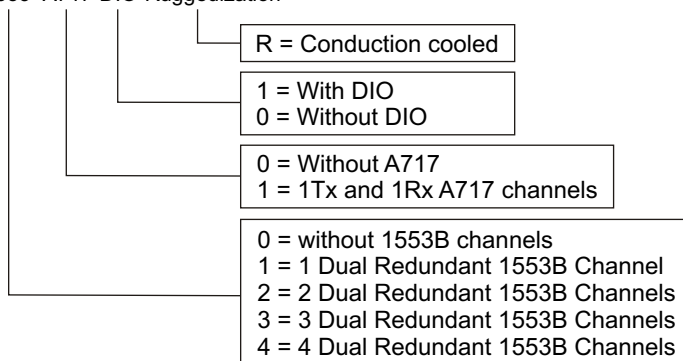
Arinc 717 Interface

- One Transmit and one Receive ARINC717 channel
- Operates from a single +3.3V supply with on-chip converters to provide proper voltages for both Harvard Bi-Phase (HPB) and Bi-Polar Return-to-Zero (BPRZ) outputs
- One selectable receive channel as HBP or BPRZ with integrated analog line receiver
- 32-word by 12-bit FIFOs for both the receive and the transmit channel
- Digital transmitter outputs available for use with external line drivers

ORDERING INFORMATION

Hardware Selection

AT-PMC-MPAC-1553-A717-DIO-Ruggedization



- Programmable slew rates on transmit channels: 1.5µs, 7.5µs or 10µs
- Fast SPI transmitter write and receiver read modes
- Frame / subframe word count indicator
- Applications
 - > Digital Flight Data Acquisition Units (DFDAU)
 - > Digital Flight Data Recorders (DFDR)
 - > Flight Data Acquisition and Recording Systems

Discrete I/O

- Optional Seven Discrete Inputs & seven Discrete Outputs

IO Configurations

- IO available on both Front Panel 68 pin VHDCI Connector and Rear Connectors (P14)

Software Support

- Driver and high-level API libraries for Windows XP, Windows 7, Linux
- Sample applications provided

Physical

- Standard Single wide Mezzanine Card form factor conforming to IEEE 1386.1 (74 mm x 149 mm)
- Conduction Cooled PMC Card without Bezel

Environmental

	Air-Cooled	Conduction-Cooled
Operating Temperature	-40°C to +85°C	-55°C to + 105°C

- Conformal coating available

Power

- Supply +5V, +3.3V, +12V and -12V from PMC Connectors
- All other voltages are internally derived
- Maximum Power consumption is less than 10W

Warranty

- 1 year limited warranty

- 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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