- **Available on various industry standard & custom bus platforms**

**UART**

- **1 each of RS-232 / 422 channels (Standard UART)**

**DIGITAL I/O**

- **16 Channel Digital I/O (TTL/CMOS voltage)**

**MIL-STD-1553B - Optional**

- **1 dual redundant channel**
- **DDC controller**

- **Programmable as BC, RT, MT modes**
- **Direct or Transformer coupled**

**ARINC429 - Optional**

- **2 ARINC429 controllers**
- **4 Transmit / 8 Receive Channels**
- **Configurable for High Speed/Low Speed**
- **Programmable Interrupts**
- **Software Driver support for a host of operating systems**

## OVERVIEW

The AT-PCI-MPAC family of products provides the highest level of performance and flexibility on various hardware interface architectures and custom platforms. Integrating MIL-STD-1553B, ARINC429, RS-232, RS-422 and Digital I/O channels, all in a single card, it offers the ideal platform for test & evaluation of avionics systems and sub-systems. While the UART and DIO features are provided as standard, the user has a choice of configuring the card to support either MIL-STD-1553B or ARINC429 or both. The card provides one dual redundant channel of MIL-STD-1553B and 2 ARINC429 controllers. Each ARINC429 controller provides 2Tx and 4Rx channels achieving a maximum of 4 Tx and 8 Rx channels. The MIL-STD-1553B functionality is available with a choice of DDC controller and ARINC429 is also available with DDC controller. The AT-PCI-MPAC is integrated with powerful software that reduces development time. All data bus functionality is supported by our advanced API (Application Programming Interface).

## HARDWARE

### PCI Card

The AT-PCI-MPAC is a ¾ length card meeting PCI Local Bus Spec.Rev 2.1. It comes with a standard 62-pin D-type connector for all I/O connectivity.

### PCI Plug & Play

The AT-PCI-MPAC card provides full PCI plug & play compatibility greatly simplifying the installation of the card into a PCI compliant system. Both the BIOS and the OS can determine the memory and interrupt resources to be used by the card. As PCI interrupts are sharable, the OS can assign an interrupt of any PCI card in the system in the event of no free interrupt resources being available. The driver handles all such events.

## I/O CONNECTIVITY

### UART Channels

The AT-PCI-MPAC cards provide two standard serial UART ports supporting RS-232 and RS-422 interfaces. These are capable of a maximum asynchronous baud rate of 115.2 Kb/s.

### Digital I/O Channels

Additional to the serial I/O capabilities, the AT-PCI-MPAC is equipped with TTL/CMOS level digital I/O channels. It comes with 16 general-purpose digital I/O channels. These are pre-configured as 8 inputs and 8 outputs. These can be used to generate an interrupt on any type of level shift event.

### MIL-STD-1553B Interface - Optional

The AT-PCI-MPAC card's single function MIL-STD-1553B architecture emulates a Bus Controller or 31 Remote Terminals or Monitor Terminal modes. Polling and interrupt generation is also provided. The 1553B Channel comes with 64K words (DDC) static RAM.

### Transformer and Direct Coupling

The cards are provided with the option of using them either in the transformer mode or in the direct mode. A jumper is provided on the cards to select the mode. The default connectivity is transformer-coupled mode.

### ARINC429 Interface - Optional

The card can be configured with up to 2 ARINC429 controllers. Each controller is configured with 2Tx & 4Rx channels and has 128 x 32 bit static RAM. Look-up tables loaded into the RAM enable the modules receive circuitry to filter and sort incoming data by label and destination bit. It also provides multilevel data specific interrupts or hardware triggers.

# AT-PCI-MPAC
## Multi Protocol Avionics Cards

## SOFTWARE

**The AT-PCI-MPAC software includes:**

> Bus Monitor
> Drivers & APIs

### Bus Monitor

- Record and replay of data
- Replay with rate selection
- Message identifier
- Multi console at a time
- Bus ideal time analyzer
- Filtering option up to sub address
- Message sampling option

## PRODUCT SPECIFICATIONS

### UART

- One each of standard serial UART ports supporting RS-232/422 interfaces
- Baud Rate - Max 115.2 Kb/s.

### Digital I/O Channels

- 16 digital I/O channels pre-configured as 8 Inputs and 8 Outputs
- TTL/CMOS compatible I/O channels

### MIL-STD-1553B Interface

- Single channel dual redundant interface
- DDC controller
- Programmable as BC or RT or MT
- 64K words of SRAM - DDC controller
- 31 remote terminal controls
- Message format: BC-RT, RT-BC, RT-RT, Broadcast and System Control
- Transformer or Direct coupling options

### ARINC429 - Optional

- 2 ARINC429 controllers (Each controller 2Tx / 4Rx)
- DDC controller
- 128 x 32 Shared RAM interface on each 6-channel controller (2Tx & 4Rx)
- Programmable Interrupts

### Drivers & APIs

The AT-PCI-MPAC card comes with a powerful set of library functions to access the entire I/O functionality. 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. Drivers and high-level API libraries for Windows XP, Linux and RT-Linux are available depending on the platform. Sample programs are included with the card.

- Configurable Bit Format Control
- Built-in Fault Detection Circuitry
- Wraparound Test for each channel

### Software Support

- Driver and High-level API libraries for Windows XP, Linux and RT-Linux

### Physical

- PCI - ¾ length desktop PCI card

### Environmental

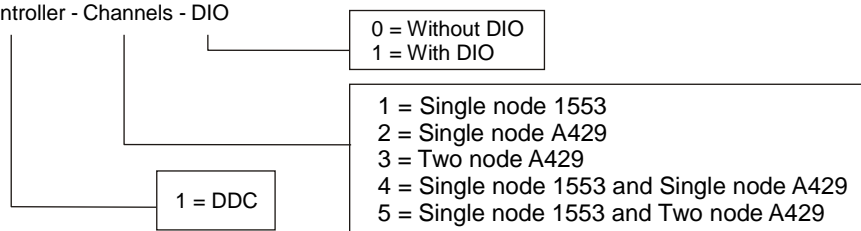- Operating Temperature: 0°C to +50°C
- Storage Temperature: -20°C to +70°C

### Warranty

- 1 year limited warranty

## ORDERING INFORMATION

**Hardware Selection**

AT-PCI-MPAC- Controller - Channels - DIO

0 = Without DIO
1 = With DIO

1 = Single node 1553
2 = Single node A429
3 = Two node A429
4 = Single node 1553 and Single node A429
5 = Single node 1553 and Two node A429

1 = DDC

- 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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