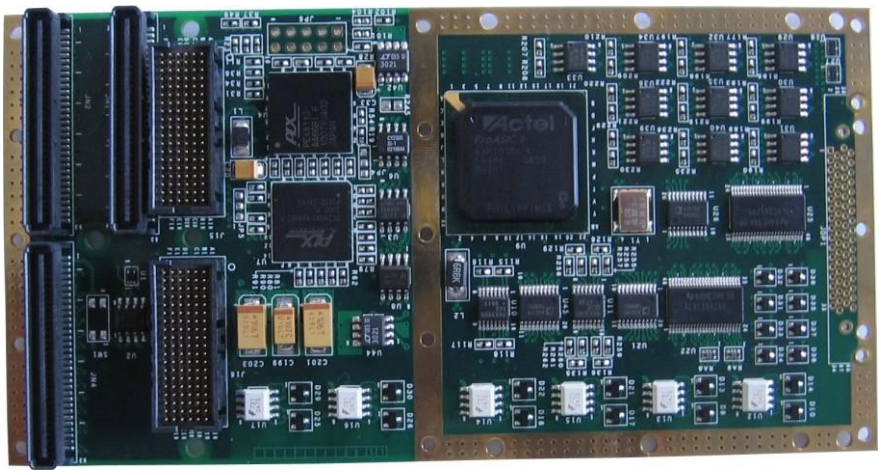
AT-XMC/PMC-DIO

Multichannel Discrete I/O Mezzanine Card



- **XMC - x1 Lane PCIe, 2.5Gbps / PMC - PCI bus 32-bit, 33MHz**
- **IPCDIO - DIO processing Core**
- **Input types: TTL Differential, Open/Gnd, 27V/Open or Casing/Break inputs**
- **Open/GND Inputs and Outputs - 8 Nos Each**
- **27V/Open or Casing/Break Inputs and Outputs - 12 Nos Each**
- **27V/Open or Casing/Break inputs are opto-isolated**
- **Open/GND inputs diode protected**
- **Output types: TTL Differential, Open/Gnd and 27V/Open outputs**
- **Discrete Outputs can switch +27V load, either Low side or High Side**
- **Interrupts programmable on discrete inputs**
- **On-chip Timers for scheduled status reading of discrete inputs or drive of discrete outputs**
- **Rear P16 or Rear P14 or Front I/O available**
- **Available in two variants -Air Cooled, Conduction Cooled**
- **High-level API for Windows XP, Windows 7 and Linux**
- **LabVIEW drivers available optionally**

OVERVIEW

AT-XMC/PMC-DIO is a slave mezzanine card, providing x1 Lane PCI-Express interface or 32-bit PCI interface with the host system. It provides interface to different types of input and output signals for the avionics domain user interactions. The XMC/PMC discrete I/O boards are designed to provide users with a high degree of reliability and flexibility to meet input-output requirements. They are ideally suited for stringent military and airborne applications. AT-XMC/PMC-DIO has implemented all its discrete I/O logic in the FPGA. All discrete inputs and outputs are accessed through registers implemented inside the FPGA.

Discrete outputs can be used to switch +27V/GND/OPEN type loads. AT-XMC/PMC-DIO provides a total of 40 nos of discrete I/O interface to the PCI/PCIe bus. Twelve nos are +27V/OPEN type or casing break type inputs, eight nos are of Open/GND type inputs and an equal number of respective outputs. The card provides I/O interface through front panel mounted 68-pin PCB mount right-angled VHDCI receptacle connector or though rear XMC user I/O connector J16 or PMC I/O connector JN4 for accessing the I/O through back plane. On-chip timers are used for scheduled status reading of discrete inputs or drive of discrete outputs.

Software

The AT-XMC/PMC-DIO software includes Drivers & APIs. The product comes with a powerful set of library functions to access the entire DIO functionality. The drivers are designed in a modular fashion consisting of component functions and 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. LabVIEW drivers available optionally.

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PRODUCT SPECIFICATIONS

Bus Interface

- XMC - x1 lane PCIe, 2.5Gbps (PCIe base specification 1.0a) or PMC - 32-bit, 33/66 MHz (PCI 2.2)

Discrete Inputs

- TTL Differential Inputs - 4 Nos for XMC and 2 Nos for PMC
- Open/GND (Common- break) Discrete Inputs - 8 Nos
- 27V/Open or Casing/Break configurable Discrete Inputs - 12 Nos
- 27V/Open or Casing/Break inputs are opto-isolated
- Open/GND (Common- break) Inputs are diode protected
- All Discrete Input Conditioning at TTL levels, level translated to 3.3V for internal use

Discrete Outputs

- TTL Differential Outputs - 4 Nos for XMC and 2 Nos for PMC
- Open/Gnd (Common-break) Discrete Outputs - 8 Nos
- 27V/Open Discrete Outputs - 12 Nos
- Discrete Outputs can control +27V load, either low side or high side

Diagnostics

- Testing of memory functions
- Internal loop back
- External loop back
- Interrupt function testing

Others

- Software control of outputs and status of inputs using a dedicated Digital Discrete IO FPGA Core
- Discrete Inputs status changes by either polling or interrupt mode
- On-chip Timers for scheduled status reading of discrete inputs or drive of discrete outputs

Discrete I/O

- Optional Six Discrete Inputs & six Discrete Outputs
- TTL outputs and inputs

I/O Configurations

- I/O available on both front panel 68 pins VHDCI connector and rear connectors (P14 - PMC or P16 - XMC)
- Standard configuration is P16 rear panel I/O

Software Support

- Driver and high-level API libraries for Windows XP, Windows 7 & Linux
- Sample applications will be provided
- LabVIEW drivers available optionally

Physical

- Standard Singlewide Mezzanine Card form factor confirming to IEEE 1386.1 (74 mm x 149 mm)
- Conduction Cooled XMC/PMC Card without Bezel

Environmental

	Air-Cooled	Conduction-Cooled
Operating	0° C to +60° C	-40° C to +85° C

Power

- Supply +3.3V and +5V from PMC Connectors when used as a PMC Card and all other voltages internally derived
- Primary Supply +3.3V from XMC Connectors when used as XMC Card, all other voltages internally derived including +5V

Warranty

- 1 year limited warranty

ORDERING INFORMATION

Hardware Selection

AT-XMC/PMC-DIO-Channels-Ruggedization

- A = Air-Cooled
  R = Conduction-Cooled
- 1 = Four TTL Differential Inputs and Differential Outputs
  2 = Eight Open/GND (Common-break) Discrete inputs and Eight Open/GND (Common-break) Discrete outputs
  3 = 27V/Open or Casing/Break Discrete Inputs and 27V/Open Discrete Outputs
- XMC - XMC Configuration
  PMC - PMC Configuration

- 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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Distributor/Reseller

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