



# PMC-A429HD

## Ultra High Density 16-48 ARINC Channels For PMC/PCI Systems

**Amazing 16-48 Shared RX/TX Channels!  
Highest Channel Count in the Industry.  
PMC, PCI, PCIe, cPCI, PXI, PXIe Systems**



100 Pin Honda Front Pin Connector. 3ft Flying Lead Cable Provided.

Alta Data Technologies' PMC-A429HD interface card offers an unparalleled 16, 32 or 48 channels of ARINC-429 on a single-width, front panel PMC module. The PMC card can be used in almost any PCI based backplane system, and can *encode or decode almost any ARINC-429 physical layer signal*. The card can also support several 717 channels – see side bar.

The card design is based on the industry's most advanced 32-bit ARINC FPGA protocol engine, **AltaCore™**, and a feature-rich application programming interface, **AltaAPI™**, which is a multi-layer ANSI C and Windows .NET (MSVS 2005/08/10 C++, C#, VB .NET, LabVIEW, RTOS) architecture. This hardware and software package provides increased system performance and flexibility while reducing integration time.

The PMC-A429HD Transmit (TX) capability includes both simple and complete frequency control options for each channel and Playback and Signal Generator modes. Three Receive (RX) functions including channel and multi channel levels.

**AltaCore** is guaranteed ARINC-419/429/575/573 compliant and all cards are manufactured to the highest IPC Class 3 standards and ISO 9001:2015 processes. Alta is committed to provide each customer with a risk free integration and will help with any level of your system development.

### Key Features:

- ARINC-419/429/575 Configurations:
  - 16 Shared Rx/TX Channels, or
  - 32 Shared RX/TX Channels, or
  - 48 Shared RX/TX Channels
- For All Channels, RX Function is Always Available and TX is Software Selectable.
- Channels Can Be Fixed on Request
- Fully Programmable Label/Word Encoding and Decoding
- Two ARINC-717 Channels are Available the 16 Channel Card. 4 ARINC-717 Channels are Available on the 32 and 48 Channel Card. Each 717 Channel Replaces 2 ARINC-429 Channels.
- Commercial or Industrial (Extended) Temp
- One Mbyte of Memory per 16 Channel Bank for RX/TX Buffering
- Channel Independent TX Label/Word Frequency Control
- Dual RX Buffering at Channel and Multi-Channel Level with 64-bit, 20 nsec Time Tags
- Advanced, Multi-layer **AltaAPI** Provided at No Cost with Source Code
- Windows, Linux, RTOS, LabVIEW & RT
  - .NET Managed DLLs
  - Contact Factory for Latest RTOS Support
- True HW Playback
- Industry First: 1 uSec Signal Generation
  - Bit Construction
  - Supports Advanced Validation Testing
- IRIG-B RX PAM or RX/TX PPS Ext Clock
- One Avionics Discrete/Shared Trigger, TTL & IRIG RX Clock
- Advanced BIT Features and Temp Sensors
- Full HW Interrupt Features
- PCI 32 Bit, 33/66MHz & PCI-X Compatible

AltaView & AltaRTVal  
Multi-Protocol Analyzer & 1553 AS4111/4112 5.2 Validation  
User's Application with Modular, Portable **AltaAPI**

### AltaAPI Architecture

**Layer 2** – Windows Managed DLL  
Object Oriented Code for .NET, C#, C++, VB, LabVIEW  
Network Client/Server C#

**Layer 1** – Portable ANSI C Application Program Interface (API)  
(most applications tie-in here – includes native LabVIEW/LabWindows CVI DLL)

**Layer 0** – OS Device Driver  
Windows, Linux, Real-Time Operating Systems, LabVIEW-RT

Hardware – PCI, PCI Express, cPCI, PCCD, XMC, etc...

Alta's Advanced Software Architecture

# High Channel Density (16-48 Channels) PMC-A429HD ARINC-429 Specifications

## General

- 32-Bit PCI 33/66MHz/PCI-X Compatible
  - PCI-SIG PCI 2.1 Compliant
  - ANSI/VITA 20-2001 Compliant
- Encode or decode almost any ARINC-429 physical layer signal.
- Full Word/Label Encoding/Decoding
  - Bit Rates 512 to 200K (12.5, 50K & 100K Compliant)
- One Megabyte Per 16 Channel Bank
- Two ARINC-717 Channels are Available the 16 Channel Card. 4 ARINC-717 Channels are Available on the 32 and 48 Channel Card. Each 717 Channel Replaces 2 ARINC-429 Channels.
  
- Weight: 3.1oz/90grams
- Power. 48 Channels 40% TX & RX Bandwidth. 2 RX Load:
  - 580mA@3.3V & 280mA@5V
- Parts Temp (C) : -55 to +120 Storage, 0 to +70 Commercial; -40 to +85 Industrial Extended
- Honda, 100-Pin Connector
- One Avionics Triggers (one in/one out)
  - Shared Trigger
- Advanced BIT, Loop-Back and Dual Temp Sensors
- IRIG-B RX PAM and RX/TX LV-TTL PPS Time Sync
- IPC Level 3 and ISO 9001:2015 Processes

## TX Features

- Simple or Detailed Frequency (Hz) Control Per Label/Word List
- ARINC-717 Frame Support
- Interrupts, External Trigger
- Full Error Injection

## RX Features – Three Buffering Modes

- Channel Level Label/Word Tables
- Channel Level Current Value Tables
- Multi-Channel Data Tables for All Channels
- ARINC 717 Frame Support
- 64-Bit, 20 nsec Time Tags
- Interrupts, External Trigger
- Full Error Detection

## Playback/Signal Generator (TX)

- Real Hardware Playback from Archive Files
- H/W Playback Timing to 10 usec.
- Signal Vector Generation at 1 uSec  
\*\*INDUSTRY FIRST\*\*
  - Construct Bit Signals at 100 nsecs
  - Ideal for Test Validation

## Software: *AltaAPI*, *AltaView Software*

- Multi-Layer *AltaAPI* Architecture to Support Windows & .NET, ANSI C, Linux, VxWorks, etc..
  - No Cost LabVIEW and RT Support
  - Contact Factory for Latest RTOS Platforms
- Optional *AltaView* is Based on the Latest Windows MS Office User Interface Style with Ribbon-Bar
  - Full Analyzer Integration Tool
  - Multi Language Support

## Part Numbers (front panel only):

### PMC-A429HD-16

- 16 Shared RX/TX Channels

### PMC-A429HD-32

- 32 Shared RX/TX Channels

### PMC-A429HD-48

- 48 Shared RX/TX Channels

100 Pin Honda Front Pin Connector. 3ft Flying Lead Cable Provided.

Options: -E for Ext Temp Parts (-40 to +85C); -F for conformal coating; -N for NVRAM Disable, -A for AltaView. Example PMC-A429HD-48-AEFN.

NOTE. On shared channels: TX lines have an extra RX load; when powered-off, RX channels can have severe voltage drain – use only dedicated RX channels for critical systems.

## 5 Year Limited Warranty!

EU and China RoHS Compliant

Contact Alta for Special Lead Build Configurations

*AltaAPI* Software with ANSI C Source and .Net DLL at No Cost.

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