Alta Data Technologies’ PCIExpress L-A429 interface modules offer a variety of ARINC-419/429/575/573/717 channel configurations with software selectableRx/Tx channels, baud rates, bit encoding and word configurations (Start/Stop, Parity, bits/word, MSB/LSB). Encode or decode almost any ARINC-429 physical layer signal.

The card design is based on the industry’s most advanced32-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 PCIExpress L-A429 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-419/429/575/573/717 compliant and all cards are manufactured to the highest IPC Class 3 standards and ISO 9001:2008 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:

- Low Profile and Single Lane PCI Express! Ideal for 1U/2U Servers and Slot Limited Systems.
- ARINC-419/429/575/573/717 Configurations:
  - 4 RX/TX Shared Channels
  - 4 RX/TX Shared & 4 RX Channels
  - For Shared Channels, RX Function is Always Available and TX is Software Selectable.
  - Channels Can Be Fixed on Request
- A/D Signal Capture on First Two RX Channels!
- Dual ARINC-717 RX/TX Shared
  - Replaces Corresponding 429 Channels
- Fully Programmable Label/Word Encoding and Decoding
  - Word Length, Start/Stop Bits, MSB/LSB, RX/TX Bit (Baud) Rates, Parity, Bit Encoding Types.
- Commercial, Industrial (Extended) Temp
- Channel Independent TX Label/Word Frequency Control. One Shot or List Control.
- Three RX Modes for Channel and Multi-Channel Buffering, each 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
- Eight Avionics/ Two RS-485 Discrete/Clock
- One TTL In and Out Clock
- Advanced BIT Features and Temp Sensors
- Full HW Interrupt Features
- PCI Express 1.1 – MSI Interrupts
Multi-Channel (4 or 8 channels)  
PCIE1L-A429 Specifications

**General**  
- ½ Size, One Lane, Low Profile PCI Express 1.1  
- Encode or Decode Almost any ARINC-429 Physical Layer Signal.  
- 8-bit, 1 uSec A/D Signal Capture on First Two RX Channels!!  
- One Megabyte RAM  
- Parts Temp (C) : -55 to +120 Storage, 0 to +70 Commercial, -40 to + 85 Extended 2.2 Watts or Less Typical.  
- Flying Lead Cable Provided (User Configured)  
- Full Word/Label Encoding/Decoding  
  - Bit Rates 500 to 200K  
  - Bit Types, Length, Start/Stop and Parity Settings (most advanced in industry)  
- 8 Avionics, 2 RS-485, One TTL In and Out  
- Power-Up, Loop-Back and User BIT  
- IRIG-B RX PAM and RX/TX 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 Encoding  
    - Ideal for Test Validation

**Software: AltaAPI & AltaView**  
- Multi-Layer AltaAPI Architecture to Support Windows and C Linux, VxWorks, LabVIEW, etc.  
  - Contact Factory For RTOS Platforms  
- Optional AltaView is Based on the Latest Windows MS Office 2007 User Interface Style with Ribbon-Bar  
  - Full Analyzer Integration Tool  
  - Multi Language Support

**Part Numbers**  
**PCIE1L-A429-4**  
- 4 Shared Rx/TX ARINC-429 Channels  
- 2 RX/2TX ARINC-717 Shared Channels  
  - (Each 717 Tx or Rx Replaces Two 429 Channels)

**PCIE1L-A429-8**  
- 4 Shared Rx/TX; 4 RX ARINC-429 Channels  
- 2 RX/2TX ARINC-717 Shared Channels  
  - (Each 717 Tx or Rx Replaces Two 429 Channels)

Options: -E for Ext Temp Parts (-40 to +85C); -A for AltaView. 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 2.0 DLL with Client/Server provided at No Cost.**

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