ECD54-A429

High Density ARINC Interface
For 54mm PCI ExpressCard Systems

Alta Data Technologies’ ECD54-A429 interface modules offer a variety of ARINC-429/575/717 channel configurations with software selectable Rx/Tx channels, baud rates, bit encoding and word configurations (Start/Stop, Parity, bits/word,_signals). Encode or decode almost any ARINC-429 transceiver compatible signal.

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 ECD54-A429 Transmit 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-610 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.

AltaView & AltaRTView 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

Key Features:

- 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
  - 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
- Two Avionics/ Two RS-485 Discretes/Clock
- One TTL In and Out Clock
- Advanced BIT Features and Temp Sensors
- Full HW Interrupt Features
- 54mm PCI ExpressCard – PCI Express 1.1
Multi-Channel (4-8)
ECD54-A429 Specifications

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

**ECD54-ARINC-4**
- 4 Shared Rx/TX ARINC-429 Channels
- 2 RX/2TX ARINC-717 Shared Channels
  - (Each 717 Tx or Rx Replaces Two 429 Channels)

**ECD54-ARINC-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,.Net and LabVIEW & RT provided at No Cost.

General
- 54mm PCI ExpressCard – 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
- Weight: 3oz/90grams
- Parts Temp (C) : -55 to +120 Storage, 0 to +70 Commercial, -40 to + 85 Extended
- 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)
- 2 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 9001:2008 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

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