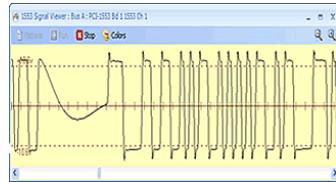


PCIEC4L-MA4

Multi-Channel, Multi-Protocol 1553 & ARINC Avionics Interface for PCI Express Systems



A/D Signal Capture on First 1553 Channel
& First Two ARINC RX

Alta Data Technologies' PCIEC4L-MA4 interface module is a multi-channel, multi-protocol 1553 and ARINC ½ size PCI Express 4 Lane interface card (PMC on 4 Lane PCI Express Carrier) is supported by the latest software technologies. The PCIEC4L card is based on the industry's most advanced 32-bit FPGA protocol engine, **AltaCore™**, and by a feature-rich application programming interface, **AltaAPI™**, which is a multi-layer ANSI C and Windows .NET (MSVS C++, C#, VB .NET) architecture. This hardware and software package provides increased system performance and reduces integration time.

AltaCore-1553 is guaranteed 1553B Notice II & IV compliant and all cards are manufactured to the highest IPC-Level 3 standards and ISO 9001 processes. Cards are available in dual-function (BC/Mon or multi-RT/Monitor) or full-function (BC, mRT and Mon) configurations. Playback and Signal Generation are part of BC operations. Alta is committed to a risk free integration and will be glad to help with any level of your system development.

AltaView

Multi-Protocol Analyzer GUI with XML db,
Real-time Views, Controls and Archiving
[Customer Windows GUI/Application/Labview](#)

AltaAPI Architecture

Layer 2: Windows Managed DLL
OOC for .Net 2.0, C#, C++, VB, Labview
Network Client/Server Layer

Layer 1: Portable ANSI C API
Real-time & Linux Applications

Layer 0: OS Device Driver
Windows, Linux, RTOS

Hardware - PCI, PCI Express or Other

Alta's Advanced Software Architecture

Key Features:

- **One to Five Independent, Dual Redundant MIL-STD-1553 Channels**
- Dual Function 1553 (BC/Mon or mRT/Mon) or Full Function (BC/mRT/Mon)
- 512 Kbyte RAM per 1553 Channel
- **ARINC – 8 Channels Total:**
 - 4 Shared TX/RX & 4 Dedicated RX
 - 512 Kbyte of RAM for all Channels
- ****Capture 1553 & ARINC Waveforms****
 - First 1553 Channel & First Two ARINC RX Channels
 - 8-bit, 50 nSec for 1553 – 1 uSec for ARINC A/D for Voltage Measurements
- Channels May be Factory Configured to fix ARINC RX/TX or Monitor Only 1553.
- Commercial, Industrial (Extended) Temperature and Conduction Cooled
- Front or Rear Panel (P4) Configurations
- Advanced BC & ARINC TX Frequency Controls: 1553 Framing/Subframing;
- RT/ARINC RX Full Buffering 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 (BC or TX)
- Industry First: 20/1000 ns Signal Generation
 - Bit Construction
 - Supports RT or ARINC Validation Testing
- IRIG-B RX PAM or RX/TX PPS Ext Clock
- Avionics/ RS-485 Discretes
- Advanced BIT Features and Dual Temperature Sensors
- Full HW Interrupt Features
- PCI Express, 4xLane Gen 1-3 Only.
Not for Gen 4+ PCI Express.

Multi-Channel, Multi-Protocol Avionics PCIEC4L-MA4 Specifications

General

- ½ Size, 4 Lane PCI Express
 - PCI Express 1.1 Gen 1-3 Only. Not for Gen 4+.
- **1-5 MIL-STD-1553B/C Notice II & IV Channels**
- **4 Shared RX/TX & 4 RX ARINC Channels**
- Dual and Full Function 553 Channels
- Weight: 6oz/180grams
- Power (Estimated @ Max Bandwidth) 8-10W
- Parts Temp (C) : -55 to +120 Storage, 0 to +70 Commercial, -40 to + 85 Extended
- 6 Avionics and 1 RS-485 Discretes
- Loop-Back & User BIT, Dual Temp Sensors
- IRIG-B RX PAM and RX/TX PPS Time Sync
- IPC Class 3 and ISO 9001:2008 Processes

BC & ARINC TX Features

- Variable Framing and Subframing
- Schedule Message Timing in Frames_or Intermessages/Label Gap Spacing
- Low and High Priority Aperiodic Scheduling
- ARINC TX Has Complete Frequency Control Per Channel – No Framing/SubFraming
- Infinite Linked Data Buffers
- Interrupts, No-Ops, Ext Trigger
- 1553 Legal and Reserved Mode Codes
 - 1553A and 1553B Support
- 64-Bit, 20 ns Time Tags
- Full Error Injection/Detection

1553 RT Features

- Infinite Linked Data Buffers
- Legal and Reserved Mode Codes
 - 1553A and 1553B Support
 - Full Buffering of All Mode Codes
- 64-Bit, 20 ns Time Tags
- Full Error Injection/Detection

ARINC RX Features – 3 RX Modes

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

Playback/Signal Vector (BC or TX)

- Real Hardware Playback from Archive Files.
- Signal Vector Generation at 20/1000 (1553/ARINC) nsecs ****INDUSTRY FIRST****
- 20 nSec 1553 Vectors and 1 uSec ARINC Vectors

1553 Monitor

- Sequential and RT Mapped Monitoring with Infinite Linked CDP Data Buffers
 - Available with All Card Models
 - 64-Bit, 20 ns Time Tags, Interrupts, Triggers
 - Full Error Detection
- 8-bit, 50 nSec 1553 and 1 uSec A/D Waveform Signal Capture. 1st Channel 1553 and First 2 RX of ARINC AltaView Software is Ideal for Signal Display

Software: **AltaAPI**, **AltaView**, **AltaRTVal**

- Multi-Layer **AltaAPI** Architecture to Support Windows, .NET and ANSI C Linux, VxWorks, Integrity, etc...
 - Contact Factory For RTOS Platforms
 - LabVIEW & RT Support
- Optional **AltaView** is Based on the Latest Windows MS Office User Interface Style with Ribbon-Bar
 - Full Analyzer Integration Tool
 - Multi Language Support
- Optional **AltaRTVal** provides full AS4111/4112 5.2 RT Validation GUI and Reports

Part Numbers

Add Suffix **#D** or **#F** for 1553 Dual or Full Function Channel Count (#). Further add **"8"** for ARINC.

Example: PCIEC4L-MA4-4D8-T

Contact Factory for Desired Channel Configuration.

Options: -E for Ext Temp Parts (-40 to +85C), -C for Ext Temp, Conduction Cooled/Conformal Coated/Rear Panel, -R for Rear Panel P4 Commercial, -A for AltaView and -B for AltaRTVal

Options: -E for Ext Temp Parts (-40 to +85C)

5 Year Limited Warranty!

EU and China RoHS Compliant

Contact Alta for Special Lead Build Configurations

AltaAPI Software with ANSI C Source, .Net Managed DLLs and LabVIEW & LabVIEW-RT Provided at No Cost.

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