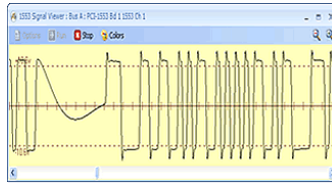# Alta dt
data technologies

PXI Express
Multi-Channel, Multi-Protocol
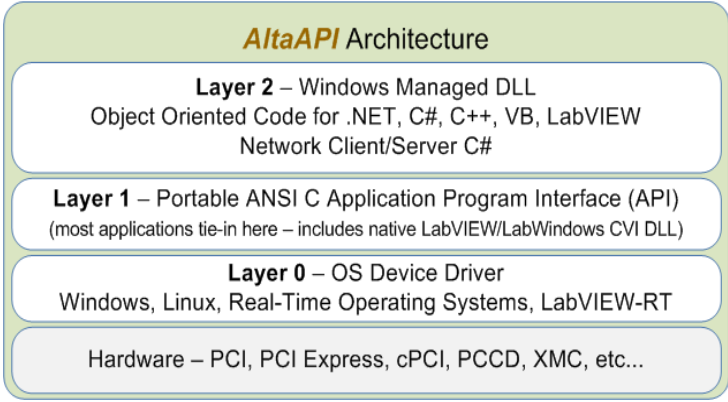## 1553, ARINC, WMUX Interface for 3U PXIe

A/D Signal Capture on First 1553 Channel & First Two ARINC RX. A429 and MA4 PMC Cards Only

Alta Data Technologies' PXI Express interface modules offer a wide range of MIL-STD-1553, ARINC and WMUX configuration options using Alta's XMC cards on a single-slot PXI Express 3U carrier. The cards are based on the industry's most advanced FPGA protocol engines, *AltaCore™*, and by a feature-rich application programming interface, *AltaAPI™* (with LabVIEW SDK).

The product is an ideal fit for your own control code, or National Instruments LabVIEW™, RT, LabWindows, TestBench, VeriStand and other test and control software environments. Native LabVIEW VISA level package with many examples makes LabVIEW and RT integration easy.

AltaCore-1553 is guaranteed 1553B/C Notice II & IV compliant and all cards are manufactured to the highest IPC-Class 3 standards and ISO 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 & 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

Key Features:

- **1-10 MIL-STD-1553 Dual Redundant Channels (Dual or Full Function)**
- **4-48 ARINC-429 Channels. Configurable and Shared Channels.**
- **1-2 Wings of PP194 WMUX**
- **4 Async Serial Channels**
- **Various Alta XMC Cards for PXIe 3U.**

- *__**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

- Advanced BC & ARINC TX Frequency Controls: 1553 Framing/Subframing;
- RT/ARINC RX Full Buffering with 64-bit 20 nsec Time Tags.
- Various ARINC-717 Channel Support.

- Advanced, Multi-layer *AltaAPI* Provided at No Cost with Source Code
- Native VISA LabVIEW & RT
- .NET or DLL Support for Your Control Code, LabWindows, TestBench, etc.
- Numerous Examples for Fast Integration

- True HW Playback (BC or TX)
- Industry First: 20/1000 ns Signal Generation
- 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
- PXI Express Compatible

Contact Alta for Various Configurations. Straight 1553 or ARINC or Multi Protocol Models Available.

www.altadt.com

4901 Rockaway Blvd., Building A Rio Rancho, NM 87124 USA
(In US): 888-429-1553 (Outside US): 505-994-3111 Fax: 805-504-8588
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Multi-Channel, Multi-Protocol Avionics
1553, ARINC and WMUX PXI Express

General

- 3U PXI Express Compatible, Single Slot
- 1-10 1553 Channels
- 4-48 ARINC Shared RX/TX Channels
- Multi 1553/429 Configurations Available
- 1-2 Wings of PP194 WMUX
- 4 Async Serial Channels

- Dual and Full Function 1553 Channels
- ARINC-429 and 717 Support
- Weight: 10oz/300grams
- Power (Estimated @ Max Bandwidth) 8-10W
- Various Avionics Discretes, IRIG RX, Triggers, etc…
- Loop-Back & User BIT, Dual Temp Sensors
- IRIG-B RX PAM and RX/TX PPS Time Sync
- IPC Class 3 and ISO 9001:2015 Certified

BC & ARINC TX Features

- Variable Framing and Subframing
- Schedule Message Timing in Frames or Intermessage/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 and LabVIEW Support. AltaView Analyzer and AltaRTVal RT Testing

- No Cost AltaAPI-LV Native VISA Package for LabVIEW and RT
- Multi-Layer *AltaAPI* Architecture Ideal for LabWindows, TestBench Veristand, etc…
- Optional *AltaView* Windows Analyzer Based
- Optional *AltaRTVal* provides full AS4111/4112 5.2 RT Validation GUI and Reports

Part Numbers

Various COTS XMC 1553, ARINC and WMUX Card Configurations. Please contact Alta for Part Number Guidance. Please let us know required channel counts of 1553 and/or ARINC-429.

NOTE: On shared ARINC 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

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