Innovation, Quality & Service

MIL-STD-1553
Including 16PP194/WMUX and EBR

ARINC-429/717

Interface Cards & Real-Time Appliances
Alta Data Technologies – Company Overview

MIL-STD-1553 & ARINC
COTS Interface Cards & Real-Time Appliances

- PCI, PCI Express, PMC, XMC, CPCI/PXI, CPCIE/PXle, PC104+, Express, Mini PCI Express, etc...
- Real-Time Ethernet (ENET)
- Thunderbolt and USB 3 Appliances
- In-Line (NLINE) Cable Devices
- Test, Simulation, Rugged Deployed

Founded in 2007
Alta is the Market Leader in Innovation and Quality

- 100+ Years Combined Experience
- 50,000+ Items Shipped
- $150M+ Sales Across 100s of Aerospace and MIL Programs

Quality at Every Phase of Alta Operations

- ✓ 5 Year Limited Warranty – Industry Leading!
- ✓ ISO 9001:2015 Certified
- ✓ ANSI ESD S.20.20 Certified
- ✓ IPC-A-610 Class 3 & J-STD-001
- ✓ Advanced JTAG Boundary Scan
- ✓ Only Tier One/OEM Parts Suppliers
- ✓ FPGA Based Designs to Reduce Parts Obsolescence Risks
- ✓ US Owned and Operated – NIST/CMMC Compliant

Guaranteed Compliant - No Risk Avionics Integration
For Test, Simulation or Rugged Embedded Applications, Alta Has an Interface Device for Your System.

PCI, PCI Express (PCIe), One Lane & Four Lane

PCMCIA/PCCARD/ExpressCard54

PMC, XMC, VPX, cPCI, PXI/PXie

Mini PCI Express
COM Express

PC104 PCI and PC104 PCI Express

Industry Firsts!
USB 3.0 & Thunderbolt 3 (USB-C)
1553 and ARINC Appliances

Real-Time Ethernet Converters (ENETs & NLINEs) for 1553 and ARINC Systems – Another Alta First!

Commercial, Lab and Deployed Appliances
MIL-810G/461F/704F/DO-160 Test Reports

Very Small, No Processor or OS IP Stacks – Real-Time Interface with Almost Any Client System – UDP Sockets

ENET Models for:
MIL-STD-1553
Enhanced Bit Rate 1553 - EBR
ARINC-429/717
Multi-Protocol

ENET-1553/A429 Real-Time Ethernet

Path Delay: The Computer’s IP Software Stack. Typical 50-150 µSec Delay for Round-Trip Packet RX/TX.

Recommend VLAN and QoS Settings for Switches

Direct or Switched Ethernet

FPGA Protocol Engine Thin-Server UDP Engine

To 1553/ARINC Busses/Channels

Only 200 grams
13.5 x 3.7 x 4 cm

Alta 1553 and ARINC COTS Products
Interface Cards & Real-Time Appliances

Cards and Appliances 888-429-1553 Page 3
AltaAPI – Software Development Kit
Proper OSI Layered-Abstraction Model

Alta’s Hardware is 2nd to None, and the AltaAPI SDK Simplifies Software Integration and Maintenance

What Makes AltaAPI Different Than All Other 1553 and ARINC SDKs?

The OSI Layered Model Provides Maximum Portability
The same executable program can run on any alike Alta channel or device

The Layer 0 and Layer 1 Simplify and Protect Memory Objects
AltaAPI abstracts low-level hardware pointers and registers for safer code
AltaAPI provides memory management and object boundary protection

Excellent Documentation and Example Program Templates
Significant Reduction in Development Time and Future Maintenance

/* Single Function Call for 1553 Bus Monitor or ARINC RX! */
status = ADT_L1_1553_BM_ReadNewMsgs(DEVID, 1000, &numMsgs, bmMessages);
AltaView – The Industry’s Most Advanced Windows Analyzer Software for 1553 and ARINC

- Autom Frequency, Loading, Activity Analysis and Data Displays
- Modern C#, XML Interface

- Archiving and Playback
- Signal Capture/Test
- ASCII & CSV Conversion and EU Processing!
- No Seat/Node License
- Ideal for Cyber Testing
- No Annual License Fees

Free Updates
Server 8/12, 7/8/10
Vmware with ENETs.
Runs on Any Enabled Alta Product

AltaRTVal Software Provides Automated MIL-STD-1553 Protocol Validation for Remote Terminals Per the SAE AS4111/4112 Standard

- Test RTs to Industry Standard Protocol Tests
- Generates Test Records
- Detailed Failure Analysis
- Online Reference to MIL-HDBK-1553A
- Easy to Setup & Execute Nearly 100% Automatic
- Requires Two Channel Full Function 1553 Card

AltaData Technologies, LLC
Alta 1553 Advantages

✓ Wide Selection of COTS Interface Cards and Real-Time Appliances
✓ Packetizing Engine – 3rd Gen Design Common Data Packet (CDP) Architecture
✓ Portable FPGA AltaCore Design – Reduced Parts Obsolescence Risk
✓ Independent Channels – Separate Application Threads Per Channel
✓ Full SAE RT Protocol Validation – No Risk
✓ Most Advanced Error Injection and Detection Available
✓ Layered, Modular and Portable AltaAPI – Simplified Integration
✓ Lab, Rugged and Conduction Cooled Configurations
✓ Highly Accurate/Flexible BC Controls
✓ IRIG/PPS, External Clock Controls
✓ Signal Capture and Generator Standard

Advanced Software

The Alta Difference

✓ AltaAPI – SDK for all Products Drivers, 100+ Example Templates NI LabVIEW/TestBench/Windows™
✓ AltaView Windows Bus Analyzer Many Free Features for All Customers
✓ AltaRTVal – RT Protocol Validation
Largest Selection of Interface Cards, Converters and Appliances

Real-Time Ethernet Converters (ENET)

**Small, Rugged, Any OS**

1-4 Channels + ARINC
Various Models for POE, MIL-810G/461F/704F Power
Auto BM to UDP Bridging
No Programming
8 EBR Channels

In-Line (NLINE) Interfaces

1-2 Channels
Ethernet, Thunderbolt, USB
Ideal for Rugged, Deployed MIL-810G/461F/60K ft

Interface Cards

<table>
<thead>
<tr>
<th>Type</th>
<th>Channels</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCI Express</td>
<td>1-10</td>
</tr>
<tr>
<td>1x and 4x Lanes</td>
<td></td>
</tr>
<tr>
<td>XMC</td>
<td>1-10</td>
</tr>
<tr>
<td>PMC (WMUX)</td>
<td>1-5</td>
</tr>
<tr>
<td>cPCI/PXI/PXe</td>
<td>1-5</td>
</tr>
<tr>
<td>PCI</td>
<td>1-5</td>
</tr>
<tr>
<td>PC/104-Plus</td>
<td>1-4</td>
</tr>
<tr>
<td>PC/104E</td>
<td>1-2</td>
</tr>
<tr>
<td>Mini PCI Exp</td>
<td>1-2</td>
</tr>
<tr>
<td>PCMCIA/</td>
<td></td>
</tr>
<tr>
<td>PCCARD</td>
<td>1-2</td>
</tr>
<tr>
<td>Express Card</td>
<td>1-2</td>
</tr>
</tbody>
</table>

Most Available with ARINC

Common Features

28V Avionics and Digital Discretes (MIL-1760)
IRIG-B RX, PPS, Triggers
Optional Cables.

USB 3 and Thunderbolt Appliances

1-2 1553 Channels + 8 ARINC
Ideal for Test, Notebooks
Industry’s Only USB 3

Only with Alta!

- Signal Capture and Testing: Oscilloscope
- Signal Generator – Cyber Testing
- No-Cost Training, Tech Support
- Free Software Updates

1553 Configurations

**Channel = Dual Redundant A/B Bus Pair**

Bus Controller (BC), Multi-RT (mRT), Bus Monitor (BM)

**Dual Function** = BC & BM or mRT & BM

**Full Function** = BC, mRT & BM

*Available on Most Models*
Alta ARINC Advantages
✓ Wide Selection of COTS Interface Cards and Real-Time Appliances
✓ 4-48 Shared and Dedicated, Independent RX/TX Channels
✓ Portable FPGA AltaCore Design – Reduced Parts Obsolescence Risk
✓ Most Advanced Error Detection and Injection Available Parametrics Variable Voltage on ENET-A429P
✓ Layered, Modular and Portable AltaAPI – Simplified Integration
✓ Lab, Rugged and Conduction Cooled Configurations
✓ Highly Accurate TX Scheduling
✓ 3 Simultaneous RX Options per Channel!
✓ IRIG/PPS, External Clock Controls
✓ Signal Capture & Generator Standard!

Advanced Software
The Alta Difference
✓ AltaAPI – Most Advanced Development Kit Included Drivers, 100+ Example Templates NI LabVIEW/TestBench/Windows™
✓ AltaView Windows Analyzer TX/RX Controls, Archive, Signal Capture
Real-Time Ethernet Converters (ENET)

Small, Rugged, Any OS

- 4-8 Channels + 1-2 1553
- Various Models for POE, MIL-810G/461F/704F Power
- Auto RX to UDP Bridging
- No Programming
- DO160 RX & Parametrics Models

In-Line (NLINE) Interfaces

- 8 Channels Ethernet, Thunderbolt, USB
- Ideal for Rugged, Deployed MIL-810G/461F

Interface Cards

<table>
<thead>
<tr>
<th>Type</th>
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</tr>
</thead>
<tbody>
<tr>
<td>PCI Express</td>
<td>4-48</td>
</tr>
<tr>
<td>XMC</td>
<td>4-30</td>
</tr>
<tr>
<td>PMC</td>
<td>4-48</td>
</tr>
<tr>
<td>PCI</td>
<td>4-30</td>
</tr>
<tr>
<td>CPCI/PIXI/PIXe</td>
<td>4-48</td>
</tr>
<tr>
<td>PC/104-Plus</td>
<td>4-24</td>
</tr>
<tr>
<td>Mini PCI Exp</td>
<td>6</td>
</tr>
<tr>
<td>PC/104E</td>
<td>8</td>
</tr>
<tr>
<td>PCMCIA/</td>
<td></td>
</tr>
<tr>
<td>PCCARD</td>
<td>8</td>
</tr>
<tr>
<td>Express Card</td>
<td>8</td>
</tr>
</tbody>
</table>

Most Available with 1553

Common Features

- 28V AV and Digital Discretes
- IRIG-B RX, Clock PPS, Triggers, O-Scope Capture
- Signal Bit Testing

USB 3 and Thunderbolt Appliances

- 8 ARINC + 1-2 1553 Channels
- Ideal for Test, Notebooks
- Industry’s Only USB 3

Combine Hardware Choices Above with AltaView Analyzer

Or Integrate with your OS, LabVIEW, LabWindows, Veristand
Alta’s ENETs and NLINEs Provide Ethernet, Thunderbolt & USB Connectivity

Ideal for Lab or Rugged Vehicle Applications

**Real-Time UDP FPGA Engine:** <20 uSec Response

**Control Mode for All Operations AND Auto Bridge 1553/429 » Ethernet Mode**

**Nearly 100x Faster Than Polling USB!**

**Works with Almost Any OS – Control From Your DO178 Certified OS!**

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**ENET Dedicated and Combo Models for:**
- 1-4 Channels 1553
- 4-8 Channels ARINC
- 8 Channels 1553-EBR
- **ENETX Deployable**
  - MIL-704F/461F/810G/DO160

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**Actual Size**

**ENETX Slightly Larger**

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**Alta Real-Time Ethernet Advantages**

- No Processor or Operating System (OS) IP Stacks!
- Real-Time UDP FPGA Engine: <20 uSec Response
- Control Mode for All Operations AND Auto Bridge 1553/429 » Ethernet Mode
- Nearly 100x Faster Than Polling USB!
- Works with Almost Any OS – Control From Your DO178 Certified OS!
Alta – The Leading Avionics COTS Supplier!
Innovation, Quality and Service

Alta Advantages

✓ Widest Selection of COTS 1553 and ARINC Interface Cards, USB, Thunderbolt and Real-Time Ethernet Converters
✓ Packetizing Engine – Only 3rd Gen Design Common Data Packet (CDP) Architecture
✓ Portable FPGA AltaCore Design – Reduced Parts Obsolescence Risk
✓ Independent Channels – Alta Unique!
✓ Advanced Development Software (SDKs)
✓ Windows Analyzer and Protocol Validation
✓ Customer Service 2nd to None – Let us Help You!
✓ 5 Year Warranty – Best In The Industry

Bus Kits and Cable Accessories Simplify Integration
(Most Alta Cards Includes 1553 Cables or ARINC Flying Lead Cables)

Bus Kits
Cables
Couplers
Terminators
Industry Leader in
MIL-STD-1553 & ARINC
COTS Products

✓ The Industry’s Most Advanced
  Protocol Engines and Software
✓ 5 Year Limited Warranty
✓ Expert Technical Sales and Support

Sales & Support Offices:
New York, Florida, Texas,
Colorado and California

 Alta Data Technologies
Headquarters/Factory:
Alta Data Technologies, LLC
4901 Rockaway Blvd., Bld A
Rio Rancho, NM 87124 USA
tel: 505-994-3111  fax: 805-504-8588
888-429-1553 toll free
www.altadt.com

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