MIL-STD-1553
ARINC-429/717
Interface Cards, Thunderbolt™ & Real-Time Ethernet Converters
Founded in 2007, Alta is the Market Leader in Innovation and Quality of

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

100+ Years Combined Experience, 40,000+ Items Shipped and $110M+ 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

Guaranteed Compliant - No Risk Avionics Integration
Alta 1553 and ARINC COTS Products
Interface Cards and Real-Time Appliances

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/PXcie

Mini PCI Express
COM Express

PC104 PCI and
PC104 PCI Express

Industry First!
Full Featured Thunderbolt 3 (USB-C)
1553 and ARINC Appliance

Real-Time Ethernet Converters (ENETs)
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

ENETX – Multi Protocol
Full Rugged – Ready to Deploy!

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

Path Delay: The Computer’s IP Software Stack,
Typical 50-160 uSec Delay for Round-Trip
Packet RX/TX.

Recommend VLAN
and QoS Settings for Switches

ENET-1553/A429
Real-Time Ethernet

FPGA
Protocol Engine
Thin-Server UDP Engine

Direct or Switched Ethernet

~200 nSec
Word Access
Memory Buffers

To 1553/ARINC
Busses/Channels
Alta’s Hardware is 2\textsuperscript{nd} to None, and the \textbf{AltaAPI} SDK Simplifies Software Integration and Maintenance

\begin{itemize}
  \item No Cost Updates
  \item Windows 32 & 64-Bit XP/2003/7/8/10
  \item Linux x86 32 & 64-Bit
  \item VxWorks 5.X, 6.X, 7.X
  \item NI LabVIEW\textsuperscript{™}, RT, LabWindows\textsuperscript{™} Support
  \item Small, Fast Design
  \item Layer 1 Source Code
  \item Portable to most RTOS
  \item 100+ Examples!
  \item No Maintenance Fees
\end{itemize}

\textbf{What Makes \textit{AltaAPI} Different Than All Other 1553 and ARINC SDKs?}

\begin{itemize}
  \item The OSI Layered Model Provides Maximum Portability
    The same executable program can run on any alike Alta channel or device
  \item Abstraction: The Layer 0 and Layer 1 Simplify and Protect Memory Objects
    \textbf{AltaAPI} abstracts low-level hardware pointers and registers for safer code
    \textbf{AltaAPI} provides memory management and object boundary protection
  \item Excellent Documentation and Example Program Templates
    \textbf{Significant Reduction in Development Time and Future Maintenance}
\end{itemize}

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

- Auto Frequency, Loading, Activity Analysis and Data Displays
- Modern C#, XML Interface
- Archiving and Playback
- Signal Capture!!
- ASCII & CSV Conversion and EU Processing!
- No Seat License Load on any Machine
- No Annual License Fees

**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

Free Updates
XP/2003/7/8/10
32 & 64 Bit
Run on Any Enabled Alta Product
MIL-STD-1553 Products

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
### 1553 COTS Product Listing

<table>
<thead>
<tr>
<th>Interface</th>
<th>Model Name</th>
<th>Channels</th>
<th>AV Disc</th>
<th>Diff Disc</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCI</td>
<td>PCI-1553</td>
<td>1-4</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>PCI Express – 4 Lane</td>
<td>PCIE4L-1553</td>
<td>1-4</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>(Full Height – Most Popular)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCI Express – 1 Lane</td>
<td>PCIE1L-1553</td>
<td>1-2</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>(Half Height – Ideal for 1U)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PMC &amp; PXle: 1553, WMUX</td>
<td>PMC-1553/WMUX</td>
<td>1-4</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>PMC &amp; PXle: 1553 &amp; 429</td>
<td>PMC-MA4</td>
<td>1-5/8</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>XMC: 1553</td>
<td>XMC-1553</td>
<td>1-10</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>XMC: 1553 &amp; 429</td>
<td>XMC-MA4</td>
<td>1-5/8</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Thunderbolt 3 (USB-C)</td>
<td>TBOLT-MA4</td>
<td>1-2/8</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>PCMCIA/ExpressCard</td>
<td>PCCD/ECD54-1553</td>
<td>1-2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>cPCI/PXI</td>
<td>CPCIC-1553</td>
<td>1-5</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>PC104-Plus</td>
<td>PC104P-1553</td>
<td>1-4</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>PC104-Plus/Express</td>
<td>PC104P/E-MA4</td>
<td>1-2/8</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Mini PCI Express</td>
<td>MPCIE/2-1553</td>
<td>1-2</td>
<td>0/2</td>
<td>2/1</td>
</tr>
<tr>
<td>Ethernet</td>
<td>ENET2/X-1553</td>
<td>1-4</td>
<td>6/7</td>
<td>2/1</td>
</tr>
<tr>
<td>Ethernet</td>
<td>ENET-1553-EBR</td>
<td>8</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Ethernet: 1553 &amp; 429</td>
<td>ENET-MA4</td>
<td>1-2/8</td>
<td>2</td>
<td>0</td>
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<tr>
<td>Ethernet: Flight Qual</td>
<td>ENETX-MA4</td>
<td>1-2/4</td>
<td>7</td>
<td>1</td>
</tr>
</tbody>
</table>

Model Names in **GOLD** are **1553/ARINC** Combo, Multi-Protocol Models

Models Include Triggers, IRIG-B RX, Clock PPS, AV or Diff Discretes.

Various 1553 Jack Cable Assemblies Available. See Hardware Manuals for Details.

**AltaCore-1553** Protocol Engine – Most Advanced in The Industry

#### 1553 Configurations

- **Bus Controller (BC), Multi-RT (mRT), Bus Monitor (BM)**
- **Channel** = Dual Redundant A/B Bus Pair
- **Dual Function** = BC & BM or mRT & BM
- **Full Function** = BC, mRT & BM
ARINC Products

Alta ARINC Advantages
✓ One of the Widest Selections of COTS Interface Cards and Real-Time Ethernet Converters
✓ 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
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<td>2</td>
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<td>8</td>
<td>2</td>
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<tr>
<td>PCI Express – 1 Lane (Half Height – Ideal for 1U)</td>
<td>PCIE1L-A429</td>
<td>4-8</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>PMC &amp; PXle</td>
<td>PMC-A429/HD</td>
<td>4-48</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>PMC &amp; PXle:1553 &amp; 429</td>
<td>PMC-MA4</td>
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<td>PC104P-A429</td>
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<td>1</td>
</tr>
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<td>Mini PCI Express</td>
<td>MPCIE-A429</td>
<td>6</td>
<td>8</td>
<td>0</td>
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<td>Ethernet</td>
<td>ENET-A429/P</td>
<td>4-8</td>
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*AltaCore-ARINC* Protocol Engine – Most Advanced in The Industry
Alta Real-Time Ethernet Advantages

- No Processor or Operating System (OS) IP Stacks!
  
  Real-Time UDP FPGA Engine

- 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

Highest Density Cards on the Market
1-10 1553 Channels & 4-48 ARINC Channels

Alta Advantages
✓ Widest Selection of COTS 1553 and ARINC Interface Cards, 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!
✓ Customer Service 2nd to None – Let us Help You!
✓ Advanced Development Software
Windows Analyzer and Protocol Validation
✓ 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 Offices:
New York, Florida, Texas, Colorado and California

Alta Data Technologies
Headquarters/Factory:
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tel: 505-994-3111  fax: 805-504-8588
888-429-1553 toll free
www.altadt.com

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