

15th Year!
Leader in 1553 & ARINC Products

Alta^{dt}

data technologies

***Innovation,
Quality & Service***



MIL-STD-1553

Including 16PP194/WMUX and EBR

ARINC-429/717

Interface Cards & Real-Time Appliances

**www.altadt.com
1-888-429-1553**

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**
60,000+ Items Shipped
\$175M+ 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

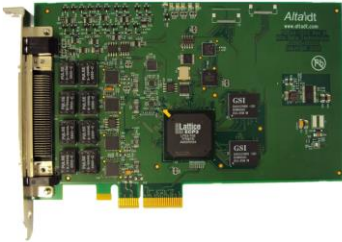


Guaranteed Compliant - No Risk Avionics Integration

Alta 1553 and ARINC COTS Products Interface Cards & 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



PMC, XMC, VPX
cPCI, PXI/PXIe



PC104 PCI and
PC104 PCI Express



PCMCIA/PCCARD/
ExpressCard54



Mini PCI Express,
Ethernet &
COM Express



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



In-Line (NLINE) Ethernet, USB, Thunderbolt



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



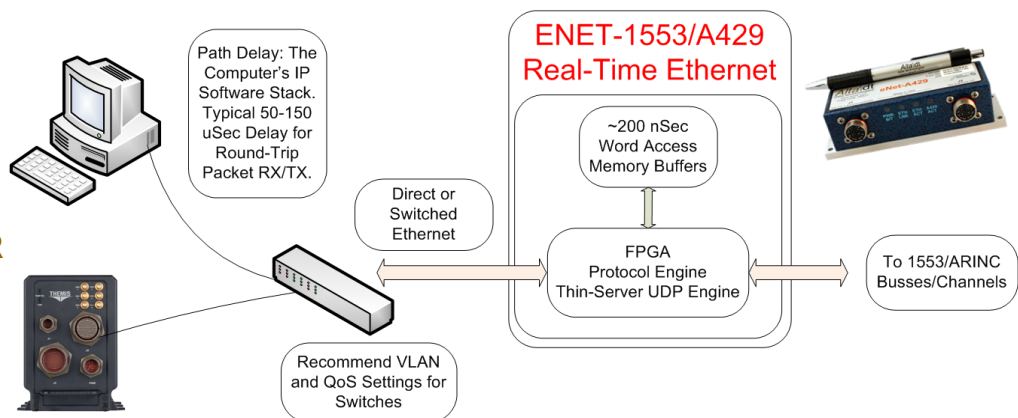
Only 200 grams
13.5 x 3.7 x 4 cm



ENETX – Multi Protocol
Full Rugged – Ready to Deploy!

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

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



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



AltaAPI Software Architecture
Layered, Modular, Portable

Layer 3

Your OOP (.Net, C#) Application

AltaView, AltaRTVal

Layer 2

Your Application (most applications here)

C, C++, VB, Java, LabVIEW/Windows, DLLs, SOs, etc...
(.Net, C# OOP Layer)

Layer 1

API Module (ANSI C)

1553 and ARINC Operations and Device Management

Layer 0

OS-Specific (ANSI C)

Abstracts Operating System (makes applications portable)

OS-Specific Device Driver (if needed)

Backplane Hardware (PCI, PCIe, Ethernet etc.)

Alta Interface Card/Device

- ✓ No Cost Updates
- ✓ Windows 32 & 64-Bit
Server 8/12, 7/8/10
- ✓ Linux x86 32 & 64-Bit
- ✓ VxWorks 5.X, 6.X, 7.X
- ✓ NI LabVIEW™, RT,
LabWindows™ Support
- ✓ Small, Fast Design
- ✓ Layer 1 Source Code
- ✓ Portable to most RTOS
- ✓ 100+ Examples!
- ✓ No Maintenance Fees

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

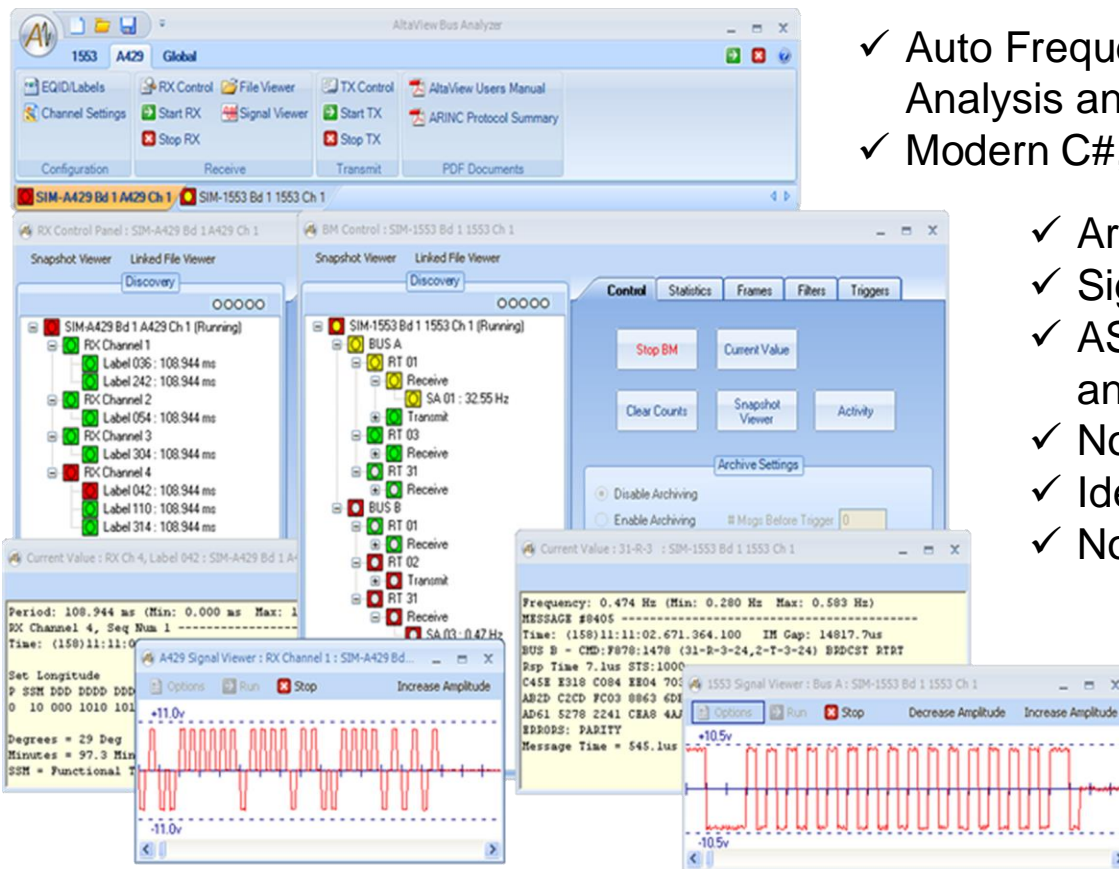
Excellent Documentation and Example Program Templates

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

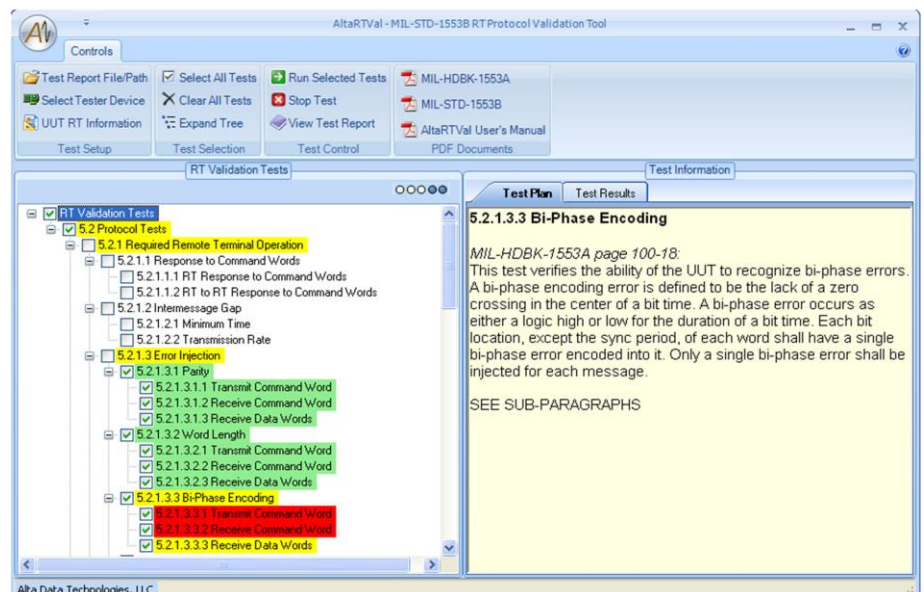


- ✓ Auto Frequency, Loading, Activity Analysis and Data Displays
- ✓ Modern C#, XML Interface
- ✓ Archiving and Playback
- ✓ Signal Capture/Test
- ✓ ASCII & CSV Conversion and EU Processing!
- ✓ No Seat/Node License
- ✓ Ideal for Cyber Testing
- ✓ No Annual License Fees

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

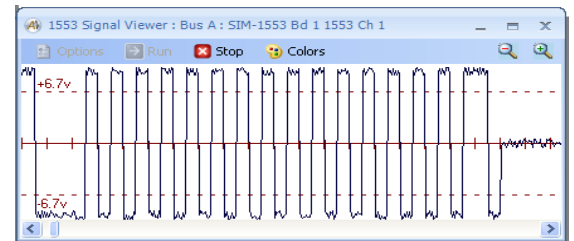
- ✓ Test RTs to Industry Standard Protocol Tests
- ✓ Generates Test Records
- ✓ Detailed Failure Analysis
- ✓ Online Reference to MIL-HDBK-1553A
- ✓ Easy to Setup & Execute Nearly 100% Automatic
- ✓ Requires Two Channel Full Function 1553 Card



MIL-STD-1553 Products

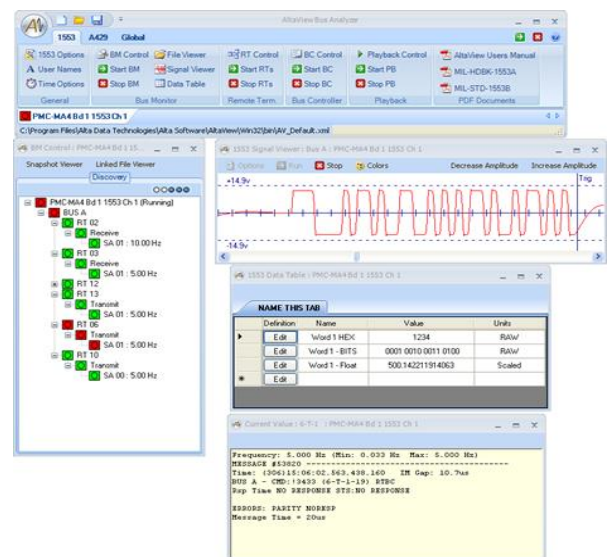
Alta 1553 Advantages

- ✓ 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



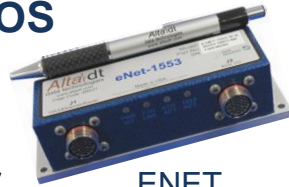
MIL-STD-1553 Products

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



ENET
 ENET2
 ENET-MA4
 ENETX-MA4
 ENETX-1553
 ENET-1553-EBR

In-Line (NLINE) Interfaces

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



Interface Cards

Type	Channels
PCI Express 1x and 4x Lanes	1-10
XMC	1-10
PMC (WMUX)	1-5
cPCI/PXI/PXIe	1-5
PCI	1-5
PC/104-Plus	1-4
PC/104E	1-2
Mini PCI Exp	1-2
MEZ-E1553	1-2
ExpressCard/ PCCARD	1-2



Most Available with ARINC

USB 3 and Thunderbolt Appliances

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

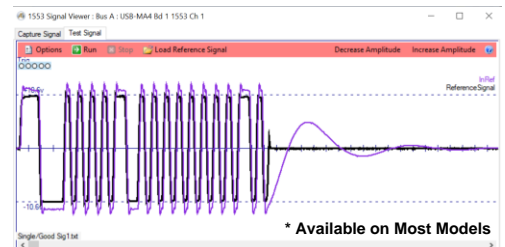


Common Features

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

Only with Alta!

- Signal Capture and Testing: O-Scope
- 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)

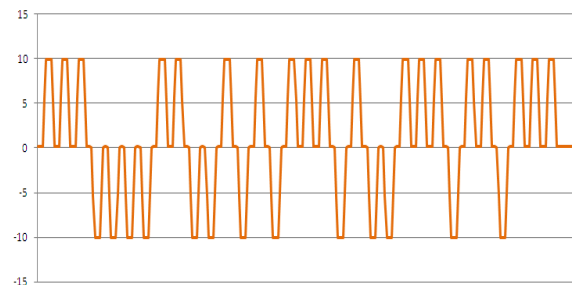
Dual Function = BC & BM or mRT & BM

Full Function = BC, mRT & BM

ARINC Products

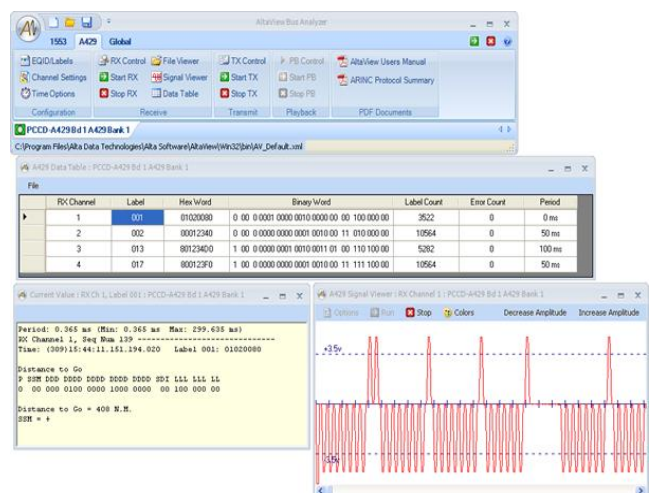
Alta ARINC Advantages

- ✓ 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 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



Ideal Products for Test, Simulation and Deployment

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



ENET-A429
 ENET-A429P
 ENET-MA4
 ENETX-MA4

In-Line (NLINE) Interfaces

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



ARINC NLINE Release Q2 2021

Interface Cards

Type Channels

PCI Express	4-48
1x and 4x Lanes	
XMC	4-30
PMC	4-48
PCI	4-30
CPCI/PXI/PXIe	4-48
PC/104-Plus	4-24
PC/104E	8
Mini PCI Exp	6
PCMCIA/ PCCARD	8
Express Card	8



Most Available with 1553

USB 3 and Thunderbolt Appliances

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



Common Features

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



Combine Hardware Choices Above with AltaView Analyzer

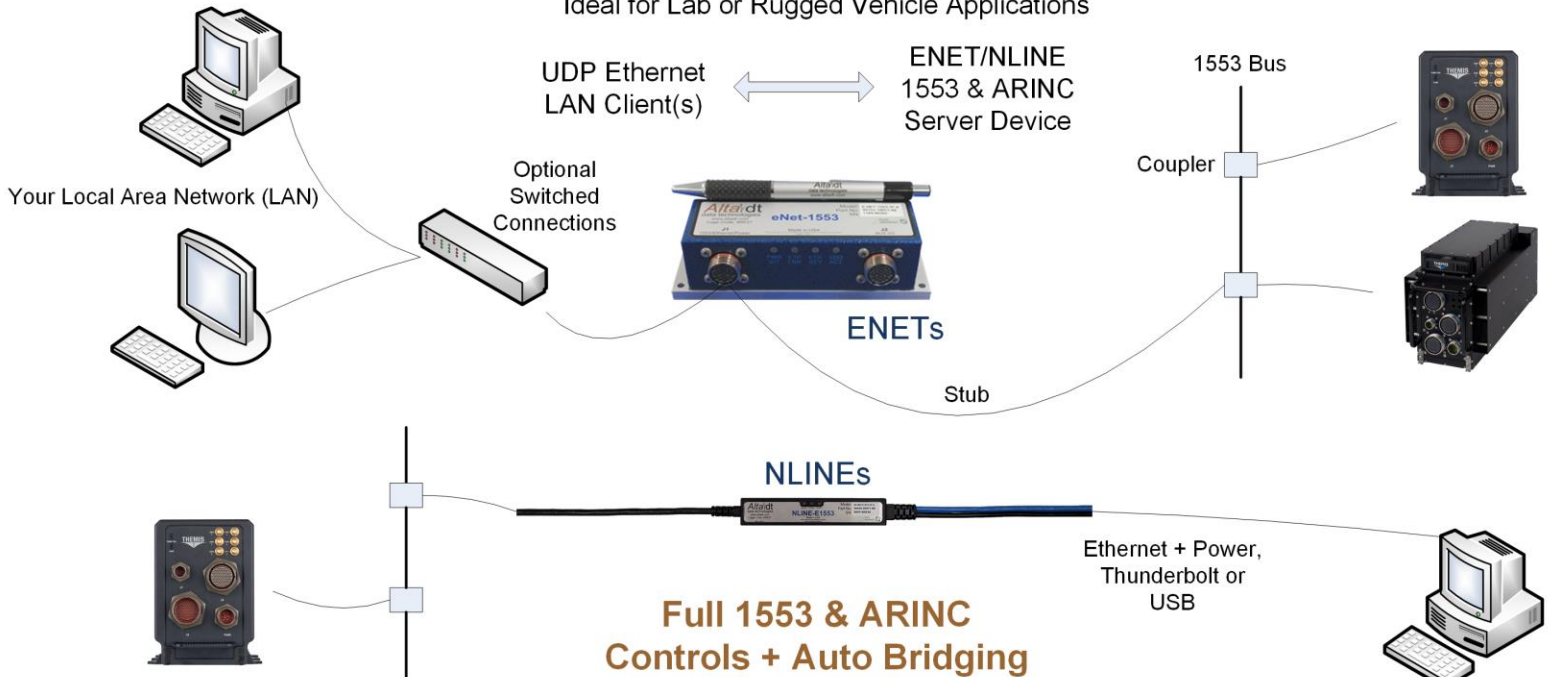
Or Integrate with your OS, LabVIEW, LabWindows, Veristand

Product Focus

Real-Time 1553/EBR ARINC-429 Converters

Alta's ENETs and NLINES Provide
Ethernet, Thunderbolt & USB Connectivity

Ideal for Lab or Rugged Vehicle Applications



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



Actual Size
ENETX Slightly Larger

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

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

Alta Advantages



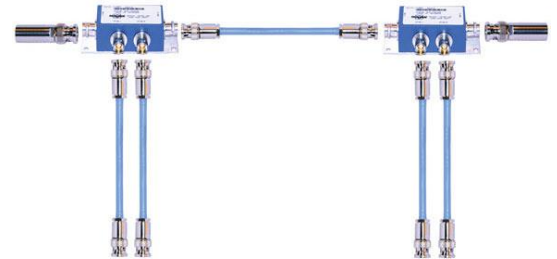
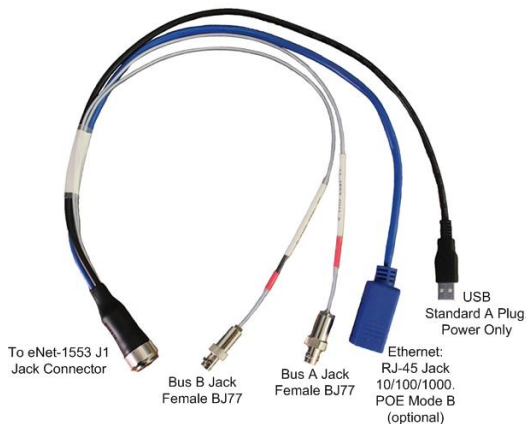
- ✓ Widest Selection of COTS 1553 and ARINC Interface Cards, USB, Thunderbolt and Real-Time Ethernet Converters
- ✓ Packetizing Engine – Only 3rd Gen Design Common Data Packet (CDP) Architecture
- ✓ Portable FPGA AltaCore Design – Reduced Parts Obsolescence Risk
- ✓ Independent Channels – Alta Unique!
- ✓ 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**

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