



Alta^{dt}

data technologies



*Innovation,
Quality & Service*

MIL-STD-1553

Including 16PP194/WMUX and EBR

ARINC-429/717

Interface Cards & Real-Time Appliances

Ethernet Converters, USB, Thunderbolt™

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/NLINE)

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**

65,000+ Items Shipped

**\$200M+ 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 — RoHS 2/ REACH

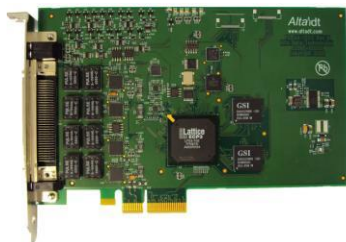


Guaranteed Compliant - No Risk Avionics Integration

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, MOSA

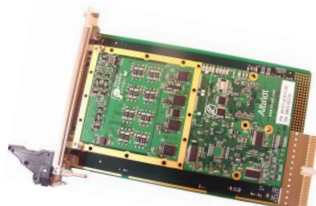


New! Async Serial, Too!

PC104 PCI and
PC104 PCI Express



cPCI/cPCIe



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



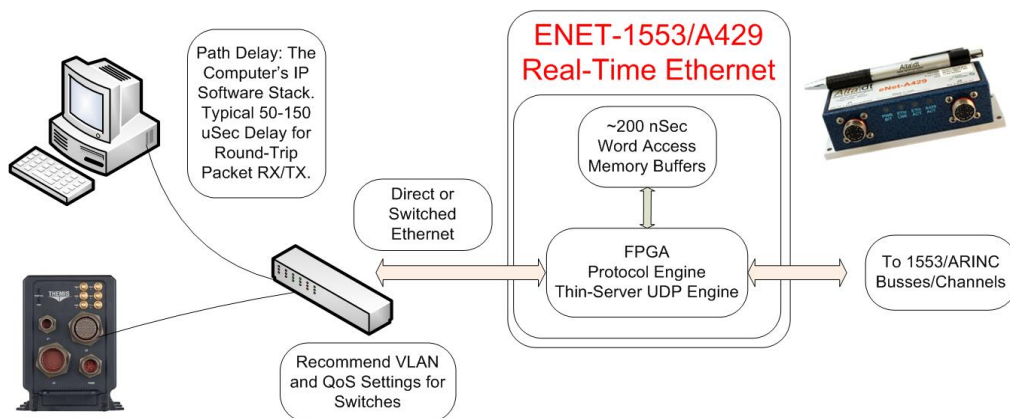
Only 200 grams
13.5 x 3.7 x 4 cm



ENETX – Multi Protocol
Full Rugged – Ready to Deploy!

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

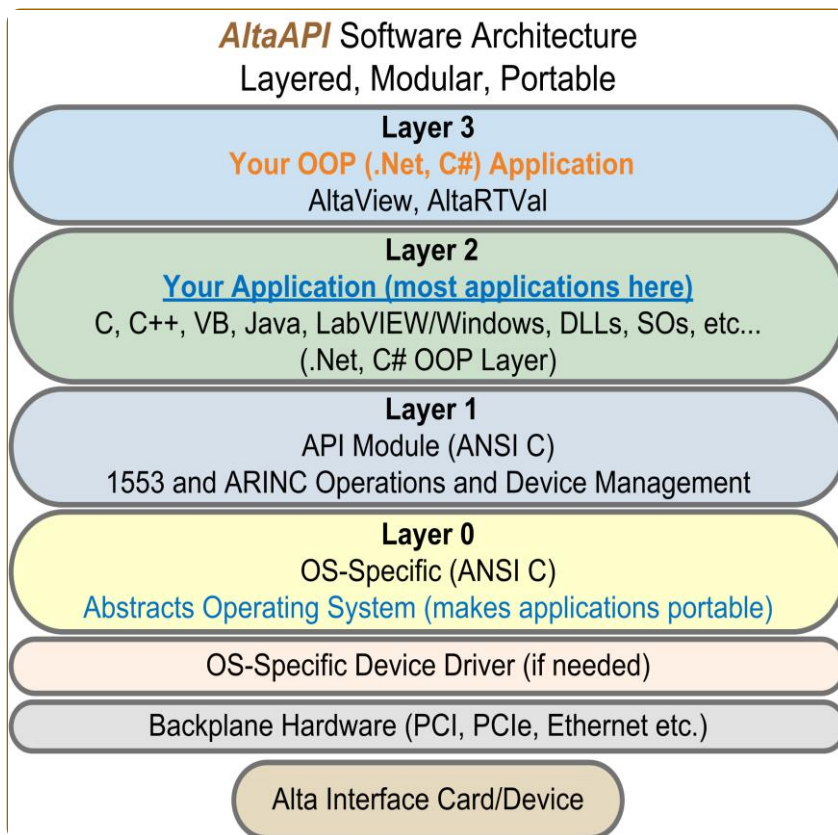
Very Small, No Processor or OS IP Stacks – Real-Time
Interface with Almost Any Client System – UDP Sockets



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



- ✓ No Cost Updates
- ✓ Windows 32 & 64-Bit Server & 7/8/10/11
- ✓ 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

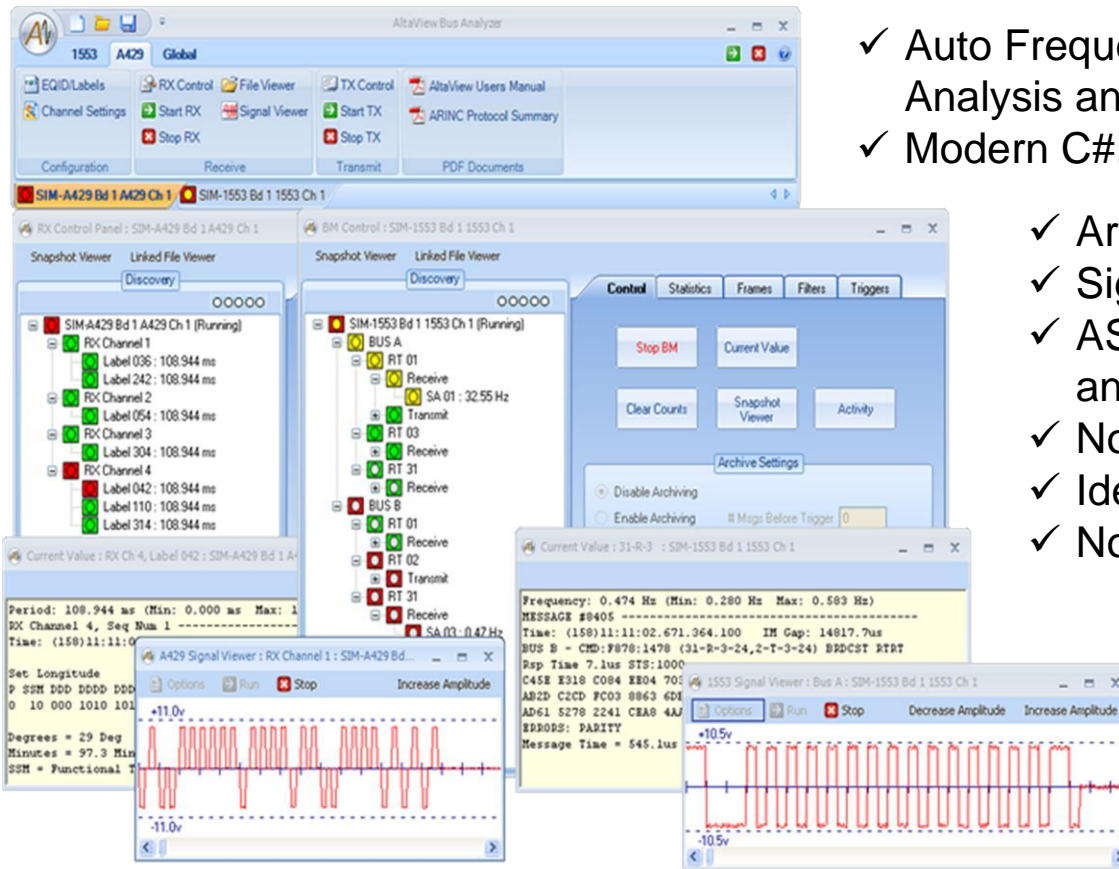
Excellent Documentation and Example Program Templates

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



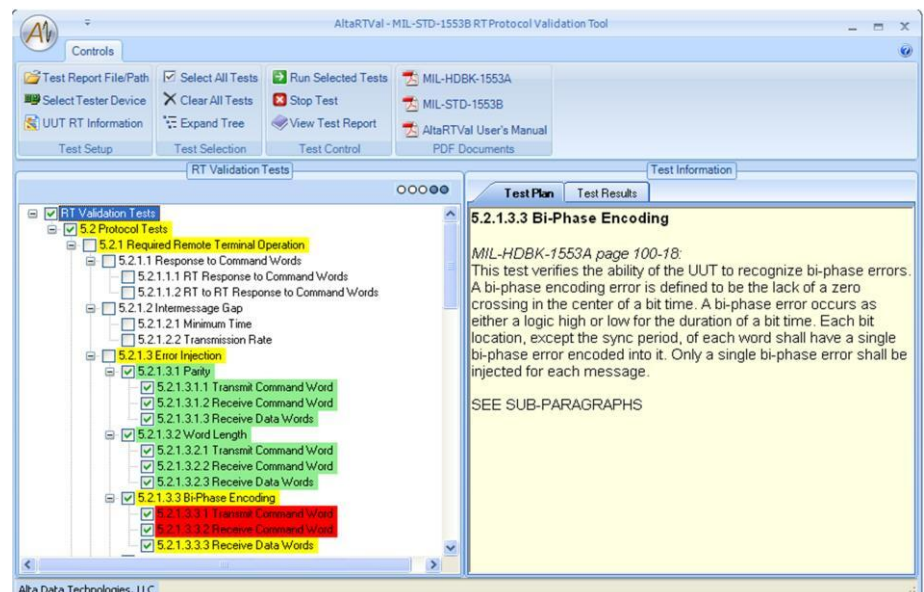
- ✓ Auto Frequency, Loading, Activity Analysis and Data Displays
- ✓ Modern C#, XML Interface
- ✓ Archiving and Playback
- ✓ Signal Capture/Test
- ✓ ASCII & CSV Conversion and EU Processing!
- ✓ No Seat/Node License
- ✓ Ideal for Cyber Testing
- ✓ No Annual License Fees

Free Updates
Win Server, 7/8/10/11
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

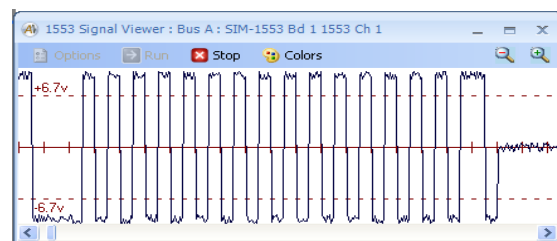
- ✓ Test RTs to Industry Standard Protocol Tests
- ✓ Generates Test Records
- ✓ Detailed Failure Analysis
- ✓ Online Reference to MIL-HDBK-1553A
- ✓ Easy to Setup & Execute Nearly 100% Automatic
- ✓ Requires Two Channel Full Function 1553 Card



MIL-STD-1553 Products

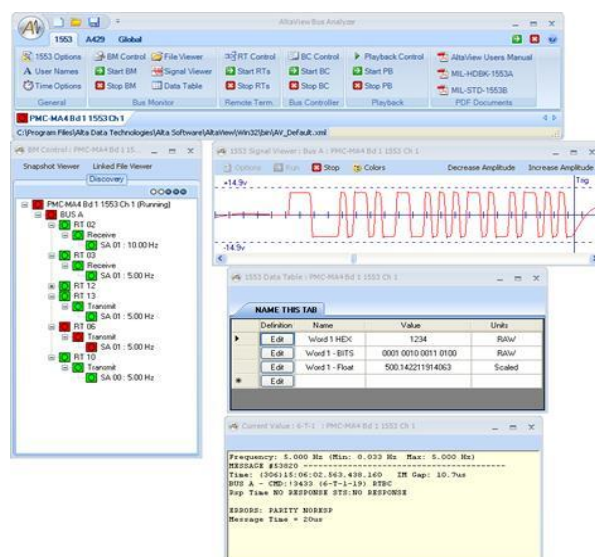
Alta 1553 Advantages

- ✓ 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, EBR & WMUX Products

Largest Selection of Interface Cards, Converters and Appliances

Real-Time Ethernet Converters (ENET)

Small, Rugged, Any OS

1-4 Channels + ARINC
Various Models with
MIL-810G/461F/704F POE
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	1-10
1x and 4x Lanes	
XMC+WMUX/Async Serial	1-10
PMC+WMUX	1-5
cPCI/PXI/PXle	1-5
PCI	1-5
PC/104-Plus	1-4
PC/104E	1-2
Mini PCI Exp	1-2
MEZ-E1553+WMUX	1-2
MEZ-EBR	8
ExpressCard/ PCCARD	1-2



Most
Available
with
ARINC

USB 3 and Thunderbolt Appliances

1-2 1553 Channels + 8 ARINC
Ideal for Test, Notebooks
(Windows and Linux x86)

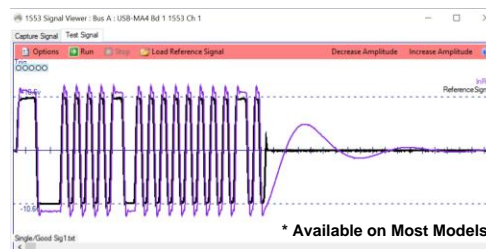


Common Features

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

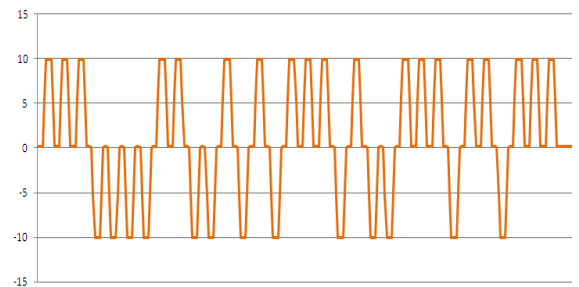
Bus Controller (BC), Multi-RT (mRT), Bus Monitor (BM)

Dual Function = BC & BM or mRT & BM

Full Function = BC, mRT & BM

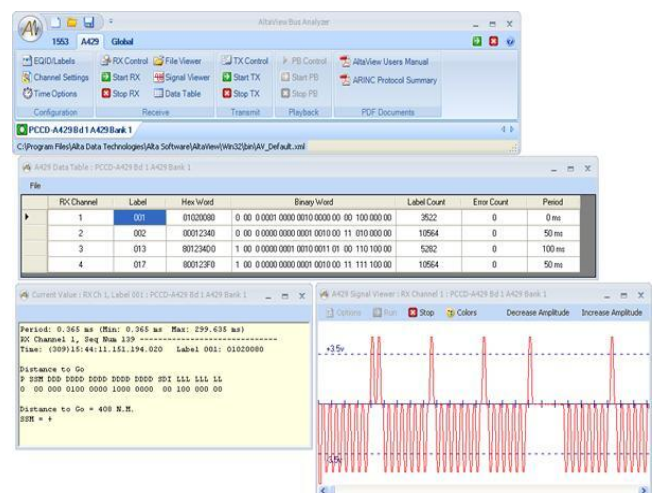
Alta ARINC Advantages

- ✓ Wide Selection of COTS Interface Cards and Real-Time Appliance
- ✓ 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
MIL-810G/461F/704F POE
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 & USB
Ideal for Rugged, Deployed Applications
MIL-810G/461F



Interface Cards

Type Channels

PCI Express	4-48
1x and 4x Lanes	
XMC +Async Serial	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
MEZ-EA429	8
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

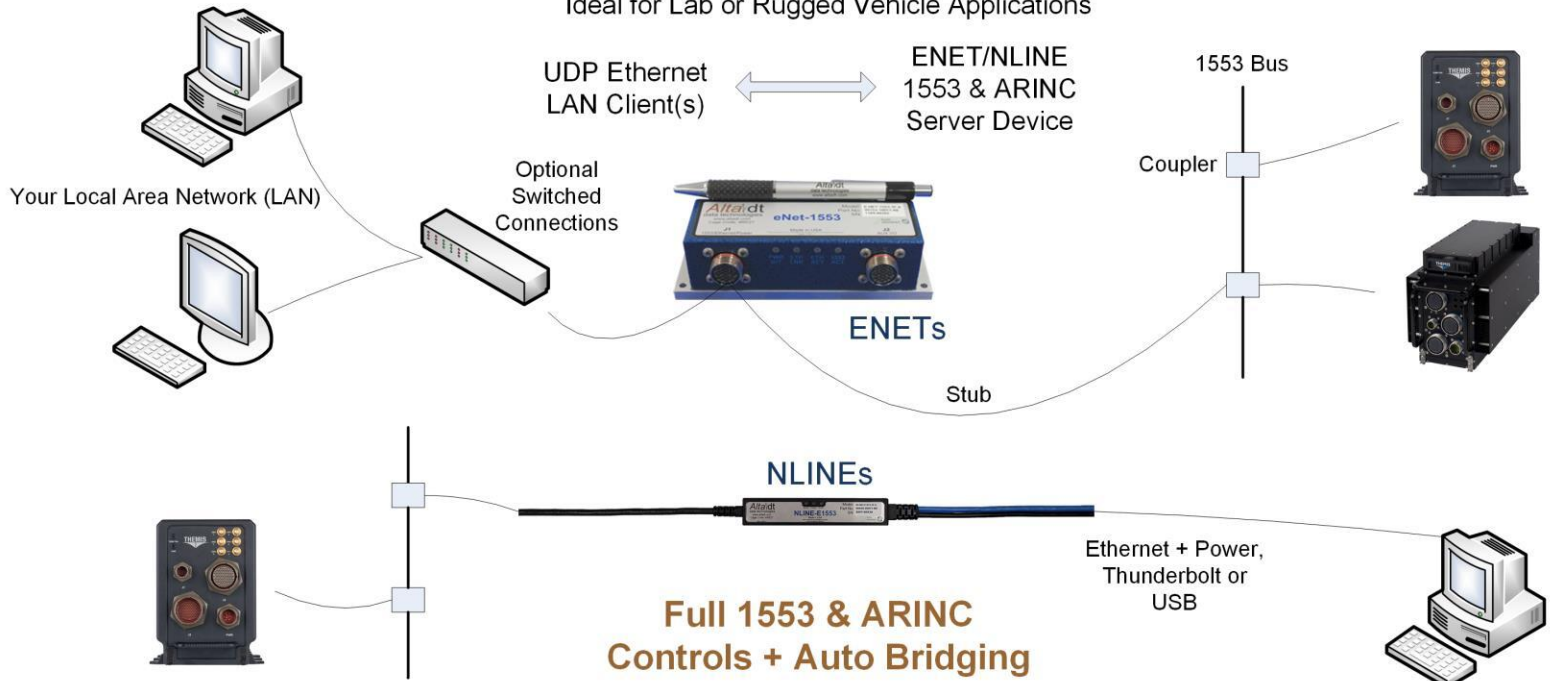
Or Integrate with your OS,
LabVIEW, LabWindows,
Veristand

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**

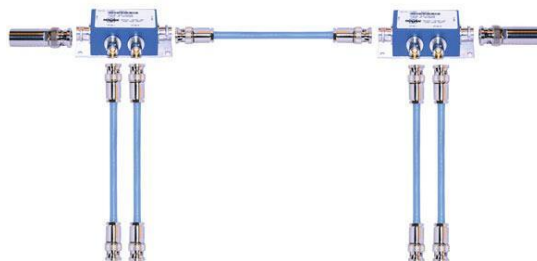


Bus Kits and Cable Accessories Simplify Integration


(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

- 
- ✓ Free Lifetime Software Updates & Support
 - ✓ 5-Year Limited Warranty

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

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