



NLINE-E1553™

1-2 Channel 1553, Rugged In-Line Real-Time Ethernet Converter

- **One or Two Independent, Dual Redundant 1553 Busses**
- 10/100/1000 Ethernet <-> MIL-STD-1553 Applications
- Thin-Server, Real-Time UDP Ethernet to/from 1553 **
- Remote 1553 Devices on the LAN – VERY Small Size
- Auto Load BC, RT and BM Images for Fast Startup
- Auto BM Mode for 1553->Ethernet Bridging: No Programming Needed.
- 5-32 VDC, 500-1500 mAmp 5V typical. 6W max with 2 channels 100% TX.
- IRIG-B RX Decode. RX MIL-STD-1760 RT Addressing.

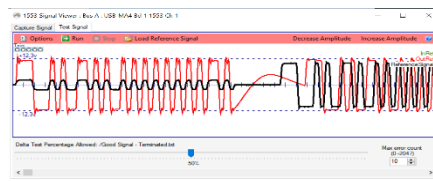
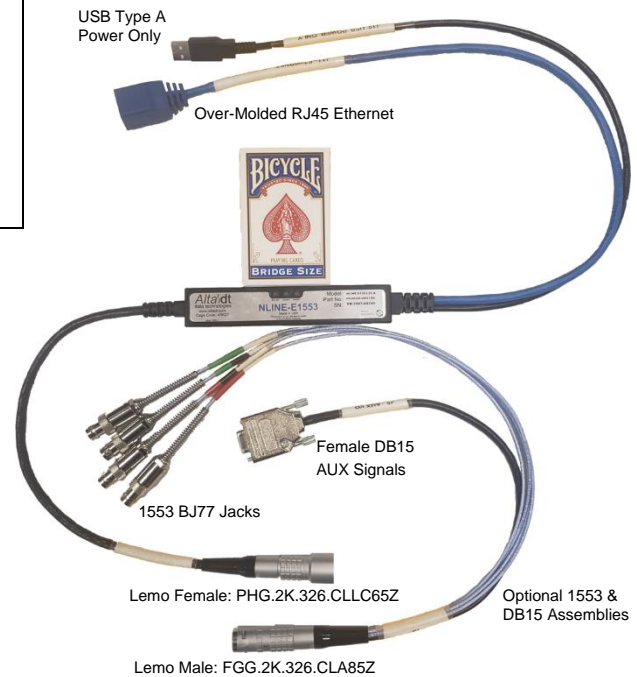
Rugged, Real-Time In-Line 1553 to Ethernet Converter. Full 1553 BC, RT and BM Controls. No OS or IP Stack, No Viruses.

Quick-Disconnect Lemo to BJ77 TRB 1553 Jack Cables & AUX Assemblies (optional with and without DB15 for Aux Signals). Easily Make Your Own 1553 Connections.

Female Lemo, RJ-45 and USB Power Connectors Included/Attached.

Ideal for Deployed Applications: MIL-810G (including 512.6 operational water immersion - not connectors); MIL-461F EMC.

Custom Cable Assemblies (e.g. 38999) Optionally Available



A/D Signal Capture Included on First Channel of NLINE. In-Field Signal Troubleshooting! Use AtaView or your Own Code to Scope/Compare Signals.

NLINE-E1553™ is an innovative product that provides “remoting” of 1553 operations on 10/100/1000 Ethernet IP/UDP local area networks (LAN). NLINE-E1553 is a small, low-power, rugged device that provides real-time Ethernet connectivity to for **one or two** dual redundant 1553 (A/B) busses/channels. Ideal for rugged, in-field 1553 connections.

Alta has combined the industry’s most advanced 32-bit 1553 FPGA protocol engine, **AltaCore™**, with a real-time IP/UDP thin server. The customer can implement their application with the same feature-rich application programming interface, **AltaAPI™**, as used with standard cards – often without even recompiling - the ultimate in code portability.

****NOTE: NLINE-E1553 (server) is a real-time Ethernet/1553 device, but your computers’ (client) IP stack may not be!** The NLINE-E1553 device provides real-time UDP receive and transmit requests (<20 uSecs) to 1553 buffers, but the client’s IP/UDP stack will induce path delays as compared to backplane cards. For many applications (<100-2000 packets per second), this product will provide unparalleled flexibility in 1553 configurations (much better than USB devices). Contact Alta for test results on various OS and computer configurations – your system results may vary.

AltaCore-1553

NLINE-E1553™ Specifications

General

- 1-2 Dual Redundant, Independent Busses
- Full BC/mRT/BM Function or Dual BC/BM or mRT/BM Function Modes
- Standard 10/100/1000 Ethernet UDP
- Optional 1553 Jack Cables and DB15 AUX. Female Lemo, RJ-45 and USB Power Connectors Included/Attached. See HW manual for details.
- One Megabyte RAM Buffering Per Channel
- Common Data Packets (CDPs) for BC/RT/BM
- 5-32 VDC, 500-1500 mA typical. 6W max with 2 channels 100% TX. Conditioned Power Required. See HW manual for more details.
- Parts Temp (C): -55 to +120 Storage, 0 to +70 Commercial, -40 to +85 Extended Temp
- Altitude 0-60,000ft (tested to 70,000ft)
- Transmit Inhibit Optional
- Flash Disable Secure Mem Optional
- MIL-STD-1553A/B/C Notice II & IV, Link 16
- 6 Avionics RX Discretes/RX 1760 Addressing, LVTTTL Trigger.
- Advanced Startup, User and Continuous BIT
- IRIG-B PAM RX
- IP Fragmentation NOT supported. Static IP

BC Features – Full Featured

- Variable Framing and Subframing
- Up to 15 Retries Per Message
- Schedule Message Timing in Frames or Intermessage Gap Spacing
- Low and High Priority Aperiodic Scheduling
- Polling Interrupts, No-Ops, Ext Trigger
- Legal and Reserved Mode Codes
- 1553A and 1553B Support 64-Bit, 20 ns
- Time Tags Full Error Injection/Detection

Signal Capture on First Channel!

- 2048, 50nSec, 8-bit Capture
- Troubleshoot Cabling and Model Topology for Security Analysis

Playback/Signal Vector (BC)

- Real Hardware Playback from Archive Files
- Synchronized with Other Channels/Devices
- Signal Vector Generation at 20 nsecs
- Construct 1553 Bit Signals

RT Features

- Infinite Linked Data/Mode Code Buffers
- 1553A and 1553B Support – 1760 Startup
- Time Tags with Full Error Injection/Detection

Monitor (BM)

- Sequential and RT Mapped Monitor
 - Auto Start for 1553 UDP Conversion (no coding required!)
- Hardware Trigger (Input and Output)
- 64 bit, 20ns Time Tags, IRIG, Ext Clock Source

AltaAPI, AltaView Software

- Multi-Layer, Portable *AltaAPI* Software Tool Kit. Windows™, .NET, LabVIEW™, ANSI C, Linux
- Most RTOS Platforms, Contact Factory
- OS Portable – No OS Obsolescence – DO178
- Optional *AltaView* Analyzer Windows
 - Full Analyzer Integration Tool
 - Multi Language Support

Part Numbers (also select 1553 cables below)

Dual Function: BC/Mon or mRT/Mon

- **NLINE-E1553-1D** or **NLINE-E1553-2D**

Full Function: BC, mRT and Monitor

- **NLINE-E1553-1F** or **NLINE-E1553-2F**

Options: Add -E for Ext Temp Parts (-40 to +85C), -N for NVRAM Write Protection, -D for Direct Coupling, -I Transmit Inhibit, -A for AltaView Analyzer.

Example: NLINE-E1553-2F-ADEIN

Optional 1553 Connector Assemblies

Part Numbers (Male Lemo to 1553/DB15)

- **NLCAB-1553-P1-X-01** or **NLCAB-1553-P1-X-AUX01**

X = Channel Count (1 or 2). AUX is DB15 for RX Av Discretes, Trigger, etc...Signals.

5 Year Limited Warranty

EU and China RoHS Compliant

Contact Alta for Special Lead Build Configurations

Non-Public Telcom/CE Device

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