NLINE-EMA4™

1-2 Channel 1553 & 4x ARINC Real-Time Ethernet Converter

- **One or Two Independent, Dual Redundant 1553 Buses**
- **4 RX/TX Shared ARINC Channels**
- 10/100/1000 Ethernet <-> 1553/ARINC Applications
- Thin-Server, Real-Time UDP Ethernet
- Remote 1553/ARINC Devices on an Ethernet LAN - VERY Small Size
- Auto Bridge Mode for 1553/ARINC->Ethernet No Programming Needed.
- IRIG-B RX Decode. RX MIL-STD-1760 RT Addressing.

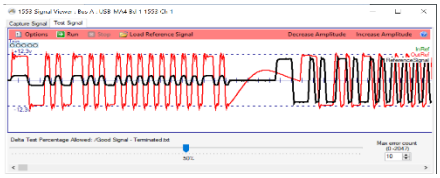
Rugged, Real-Time, In-Line 1553 & ARINC Ethernet Converter. Full 1553 and ARINC Controls. No OS or IP Stack, No Viruses. Auto Conversion.

I/O (1553/ARINC) Side: 38999 Connector
Amphenol 26WD35PN Male

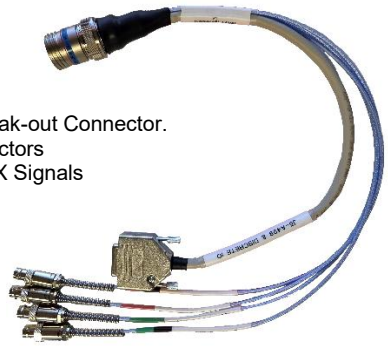
Host side: Overmolded Ethernet RJ-45
Standard USB Type A Power Plug

Ideal for Deployed or Lab Applications

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



A/D Signal Capture Included on First Channels of NLINE.
In-Field Signal Troubleshooting!



Optional 38999 Break-out Connector.
1553 Jack Connectors
DB26 ARINC/AUX Signals

NLINE-EMA4™ is an innovative product that provides “remoting” of 1553/ARINC operations on 10/100/1000 Ethernet IP/UDP local area networks (LAN). NLINE-EMA4 is a small, low-power, rugged device that provides real-time Ethernet connectivity. Ideal for rugged, in-field 1553 connections.

Alta has combined the industry’s most advanced 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-EMA4 (server) is a real-time Ethernet device, but your computers’ (client) IP stack may not be!** The NLINE-EMA4 device provides real-time UDP receive and transmit requests (<20 uSecs) to memory, 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/ARINC configurations (much better than USB devices). Contact Alta for test results on various OS and computer configurations – your system results may vary.

AltaCore-1553/ARINC NLINE-EMA4™ Specifications

General

- 1-2 Dual Redundant Independent 1553 Busses
- 4 ARINC Channels: 4 RX/TX Shared
- Standard 10/100/1000 Ethernet UDP
- Power 1000E @ 50% Load: 800 mAmps (1ch)
  Power 1000E @ 50% Load: 1 Amp (2ch)
  5-32 VDC Conditioned Power
  5V USB Power 2+ Amp
- 38999 to 1553/ARINC/AUX Signals
  Amphenol D38999/26WD35PN Male
  USB Type A Power & Ethernet RJ45
- One Megabyte RAM Buffering Per Channel
- Transmit Inhibit Optional
- Flash Disable Factory Setting for Secure Mem
- Parts Temp (C) : -55 to +120 Storage, 0 to +70 Commercial, -40 to + 85 Extended Temp
- Six Avionics Discretes, TTL Clock, Trigger
  Supports MIL-1760 RT Addressing
- IRIG-B PAM RX, IEEE-1588 or 1, 5, 10 MHz PPS
- Shared ARINC TX Channels Add Electrical Load
- Advanced Startup, User and Continuous BIT
- IP Fragmentation NOT supported.

BC & TX ARINC

- 1553 Framing, Subframing, Scheduling, Aperiodic
- ARINC TX Complete Frequency Control
- Circular Linked Data Buffers
- Polling Interrupts, No-Ops, Ext Trigger
- 1553 Legal and Reserved Mode Codes
  - 1553A and 1553B Support
- 64-Bit, 20 ns Time Tags
- Full Error Injection/Detection

1553 RT Features

- Circular Linked Data Buffers
- Legal and Reserved Mode Codes
  - 1553A and 1553B Support
  - Full Buffering of All Mode Codes
- 64-Bit, 20 ns Time Tags
- Full Error Injection/Detection

ARINC RX Features – 3 RX Modes

- Channel Level Label/Word Tables
- Multi-Channel Data Tables for All Channels
- Channel Level Current Value Tables
- ARINC 717 Frame Support
- 64-Bit, 20 nsec Time Tags

Playback/Signal Vector (BC or TX)

- Real Hardware Playback from Archive Files.
- Signal Vector Generation at 20/1000 (1553/ARINC) nsecs **INDUSTRY FIRST**
  20 nSec 1553 Vectors and 1 uSec ARINC Vectors
  - Sequential and RT Mapped Monitoring with Infinite Linked CDP Data Buffers
- 8-bit, 50 nSec 1553 and 1 uSec A/D Waveform Signal Capture. 1st Channel 1553 and First 2 RX of ARINC

Software: *AltaAPI* & *AltaView Analyzer*

- Multi-Layer ***AltaAPI*** Architecture to Support Windows .NET and ANSI C Linux, VxWorks, Integrity, LabVIEW, etc…
  - Contact Factory For RTOS Platforms
- Optional ***AltaView*** is Based on the Latest Windows MS Office User Interface Style with Ribbon-Bar
  - Full Analyzer Integration Tool
  - Multi Language Support

Part Numbers

Dual Function: BC/Monitor or mRT/Monitor

- **NLINE-EMA4-1D8 or NLINE-EMA4-2D8**

Full Function: BC, mRT and Monitor

- **NLINE-EMA4-1F8 or NLINE-EMA4-2F8**

Options: Add -E for Ext Temp Parts (-40 to +85C), -N for NVRAM Write Protection, -F for Conformal Coating, -I for TX Inhibit and –A for AltaView Analyzer Software.
Example: NLINE-EMA4-2F8-AEFIN

ARINC TX Channels Load RX Channels When Powered-Off.

Optional Cables (38999 to Break-Out Jacks)

- **NLCAB-EMA4-P1-01/02-AUX01**
  - 1553 TRB 3-Lug Calbe Jack Connectors & DB26 ARINC

5 Year Limited Warranty

EU and China RoHS Compliant

Contact Alta for Special Lead Build Configurations

Non-Public Telcom/CE Device/Non Safety-Mission

Alta Data Technologies LLC
4901 Rockaway Blvd., Building A
Rio Rancho, NM 87124 USA
www.altadt.com
alta.sales@altadt.com
888-429-1553 or 505-994-3111