



communications
Communication Systems-West

T-Series Model - WB Airborne Data Link

The Model - WB Airborne Data Link design emphasizes low weight, and an open (CPCI), modular, scalable architecture developed for use on manned aircraft. The Model - WB is a U.S. Common Data Link (CDL) and NATO STANAG 7085 compliant system supporting data rates up to 274 Mbps. The terminal communicates with a CDL compatible surface terminal such as CHBDL, TIGDL, or MIST.

PRODUCT DESCRIPTION

The Model - WB is a member of L-3 Communications' T-Series Product Line. The T-Series architecture of open, modular, and scalable hardware and software components enables simple adaptation to a wide range of platforms and interfaces providing lower manufacturing and upgrade costs. The Model - WB was fielded in 2003 and has been used operationally on the F/A-18.

The Model - WB Airborne Terminal Equipment (ATE) consists of a Compact PCI based liquid cooled Airborne Modem Assembly (AMA), Radio Frequency Equipment (RFE) that contains a 70W Power Amplifier, and a 9.5" antenna assembly. The data rates, modulation techniques, and transmission frequencies are fully interoperable with other CDL compatible terminals. The ATE is used to transmit and receive user data and commands through a standard CDL legacy egress and MIL-STD-1553.

Key supportability issues such as vanishing vendor, repair turnaround times, and inventory are closely monitored to insure operational success.



Lifetime buys, dedicated repair facilities, and continuous production provide T-series products supportable through 2010 and beyond.

KEY FEATURES AND OPTIONS

- Features Interoperable with CDL surface terminals
- Wideband Digital Data Rates
 - 274, 137, 10.71 Mbps return link standard CDL
 - 200 kbps, 2.0, 10.71 Mbps forward link standard CDL
- Operating Frequency
 - Ku-Band
- Tunability - 5 MHz steps
- Solid state TWTA transmitter
- Flexible I/O, Ethernet Interfaces
- Ruggedized, COTS construction
- MIL-STD1553B Interface
- Liquid conduction cooled chassis

DFOISR Public Release Approval 04-S-2661

Airborne Common Data Link Products

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SPECIFICATIONS

Model-WB Airborne Data Link

PHYSICAL CHARACTERISTICS

Model WB ATE consists of three units

- Airborne Modem Assembly (AMA)
- Radio Frequency Equipment (RFE)
- One or more fixed or steerable antennas

AMA Size, Weight and Power

- Overall Size: 10.2" W x 8.6" H x 15.9" D
- Weight: 40 lbs.
- Power Consumption: 250 watts typical 400 Hz

RFE Size, Weight and Power

- Overall Size: 12" W x 4" H x 16" D
- Weight: 30 lbs.
- Power Consumption: 500 watts typical 400 Hz

Directional Antenna

- Overall Size: 11" diameter cylinder x 14.6" long
- Weight: 10 lbs.
- Power Supplied by RFE

- Secure Full-Duplex voice and data communications; CDL interoperable
- Software programmable modem
- Up to 10.71 Mbps uplink aggregate data rate
- Selectable downlink aggregate rates to 274 Mbps
- Line of sight microwave range to 50,000 ft. altitude and 150 Nmi*
- Interoperable with Common Data Link Class 1 surface terminals

* When used with L-3 Communications Surface Terminal

PERFORMANCE CHARACTERISTICS

Power:

- 750 Watts typical at 120 VAC, 3 Phase, 400 Hz

Bit Error Rate (at range limit):

- 10^{-8} without encryption

Range at 274 Mbps

- Up to 150Nmi depending on weather conditions, platform altitude and surface terminal

RF:

- 9.5" diameter 2 axis directional antenna
- 70 W MPM standard
- Ku-Band frequency ranges:
Uplink: 15.15-15.35 GHz
Downlink: 14.40-14.83 GHz
- Tuning: 5 MHz steps across band

Data Rates

- 274 Mbps, 137 Mbps, 10.71 Mbps return link standard CDL
- 200 kbps, 2.0 Mbps or 10.71 Mbps forward link standard CDL

CDL Legacy Interface:

- Six High Rate Return Link Data Channels - 42.84 Mbps Differential ECL
- One Low Rate Return Link Data Channel - 1.15 Mbps Differential TTL
- One Low Rate Return Link Data Channel - 50.046 kbps Differential TTL
- One Low Rate Forward Link Channel - 10 kbps Differential TTL

Commands & Telemetry:

- MIL-STD-1553B for navigator interface
- 10/100 BaseT Ethernet for operator GUI

Environmental:

- Humidity: 0-95%, non-condensing, condensing optional
- Vib/Shock 1.5 RMS, 6 G shock operating, 20 G non-op

MTBF:

- >1500 Hrs

Audio:

- Full-Duplex toll quality voice

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For further information on the Model-WB Contact:

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Printed in U.S.A.

Data contained within this document are summary in nature and subject to change at any time at L-3 Communications' discretion.



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