



communications

Communication Systems-West

Compact Multi-band Data Link (CMDL)

The CMDL modem is capable of providing in Ku-band, C-band, L-band, or S-band a duplex or simplex link for ground or airborne platforms. It is small and rugged and is interoperable with TCDL, ROVER III, and future ROVER terminals. CMDL offers the advantage of both analog and digital waveforms for maximum performance.

PRODUCT DESCRIPTION

The CMDL is ideal for UAVs, targeting pods, and other airborne terminals coordinating with ground forces outfitted with ROVER and TCDL equipment. Band and configuration are determined through selection of RFE and Antenna. Configurations include duplex, transmit-only, and receive-only. CMDL provides the ability to transmit and receive sensor data, imagery, streaming video, discrete data, and command and control data. It enhances air/ground coordination, reducing time-on-target for close air support, providing situational awareness, targeting, surveillance, and battle damage assessment. Applications include convoy protection and other time critical operations where eyes on target are required.



CMDL Modem

Applicable Platforms



KEY FEATURES

Full Duplex Quad-band Modem

- Ku-band
- C-band
- S-band
- L-band

Compact, Low SWaP

- 39 cubic inches
- 2.8 lbs
- 30 Watts

Mission Selectable RFE & Antenna

Interoperable with:

- CDL Terminals
- Legacy ROVER III
- Future ROVER Terminals

Selectable Digital & Analog Waveforms

Up to 45 Mbps
Multiple Video Formats
Forward Error Correction
Live Streaming Video
Encryption

Cleared by DoD/OSR for Public Release under 08-S-0584 on 30 January 2008

Small Data Link Products

640 North 2200 West

P.O. Box 16850

Salt Lake City, UT 84116

U.S. Toll Free: 800-874-8178

International: +801-594-2000

FAX: 801-594-3003

www.L-3com.com/csw

SPECIFICATIONS

Compact Multi-band Data Link

PERFORMANCE CHARACTERISTICS

Frequency Bands

- L-band: 1.71 GHz to 1.85 GHz, 0.5 MHz steps
- S-band: 2.20 GHz to 2.50 GHz, 0.5 MHz steps
- C-band: 4.40 GHz to 5.00 GHz, 1.0 MHz steps
- C-band: 5.25 GHz to 5.85 GHz, 1.0 MHz steps
- Ku-band: 14.40 GHz to 15.35 GHz, 1.0 MHz steps

Modulation Formats

- FM analog video
- FSK
- BPSK
- QPSK
- O-QPSK

Data Rates (Transmit & Receive)

- CDL: 200, & 400 kbps, 2.0, 10.71, 21.42, & 44.73 Mbps
- Predator: 1.6 & 3.2 Mbps
- Other: 455 Kbps (H.261,FSK only) & 466 Kbps (MPEG-4, FSK)
- Any rate upto 45 Mbps upon request

Forward Error Correction (FEC)

- Rate $\frac{1}{2}$ concatenated with Reed-Solomon with byte interleaver
- Rate $\frac{1}{2}$ convolutional with bit interleaver
- Turbo codes

Video

- RS-170, encode/decode
- MPEG-2, MPEG-4 & H.264, encode/decode
- H.261, decode only
- NTSC / PAL decode only

Networking

- CDL Annex B, and Packet Mux Compliant
- IPv4 and IPv6 (future release)

PERFORMANCE CHARACTERISTICS

Encryption

- Triple DES
- AES (future release)

Interfaces

- 10/100 base-T Ethernet
- RS-422 Antenna Control (future release)
- RS-232 NAV/GPS Data
- RS-170 Video
- Limited Discrete I/O (Platform, RFE & Antenna Status)

PHYSICAL CHARACTERISTICS

Modem SWaP

- Size: 5.3" L x 4.3" W x 1.7" H
- Weight: 2.8 lbs
- Power: 30 Watts
- Input power: MIL-STD-704, +28VDC

Environmental

- Humidity: 0-100%, condensing
- Altitude: 50,000 feet
- Vibration: 4.72 Grms, 0.5 to 2000 Hz per MIL-STD-810F
- Shock: 20g, 11msec, (terminal sawtooth peak)
- Temperature: -40°C to +65°C
- EMI: designed to MIL-STD-461

RFE Options

Band	Transmit/Receive	PA	Configuration	Power Consumption
Ku	Duplex	15 Watt	External	120 watt
C	Duplex	25 Watt	External	120 Watt
C	Transmit Only	25 Watt	External	100 Watt
S	Transmit Only	2 Watt*	Internal to Modem	-
L	Transmit Only	1 Watt*	Internal to Modem	-

* For S-band and L-band an external amplifier can be added for higher power output and for duplex operation.

For further information on CMDL contact:

L-3 Communications
Communication Systems - West
640 North 2200 West, P.O. Box 16850
Salt Lake City, Utah 84116-0850
U.S. Toll Free: 800-874-8178
International: +801-594-2000
Fax: 801-594-3003
www.L-3com.com/csw
E-mail: CSW.Products@L-3com.com

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



communications

Communication Systems-West