communications
Communication Systems-West

Tactical Interoperable Ground Data Link (TIGDL II)

Data Link Products

TIGDL-II is a transportable tactical data link surface terminal designed to support military operations by providing a full duplex communication system surface terminal for communicating with compliant US DoD Common Data Link (CDL)/NATO STANAG 7085 airborne configured systems. This communication system consists of Command Link (CL) data rates of 200 kb/s, 2 Mb/s, or 10.71 Mb and Return Link (RL) data rates of 274.176 Mb/s, 137.088 Mb/s, or 10.71 Mb/s being transmitted and received at X-Band or Ku Band RF frequencies. TIGDL meets its performance requirements when operating with an airborne platform at altitudes up to 70,000 ft., ranges up to 245 Nmi, and at surface antenna elevation angles of 1 degree or higher.

PRODUCT DESCRIPTION

TIGDL-II, one of L-3 Com's Next Generation CDL Surface terminals, is designed to be more scalable than previous generation surface terminals with improved cost effectiveness. TIGDL-II scalability and cost effectiveness is achieved through the utilization of Commercial-Off-The Shelf (COTS) components and standard architectures such as VME/VXI, Legacy interfaces and Asynchronous Transfer Mode (ATM) interfaces. TIGDL-II provides flexibility and scalability through its modular design to add and/or delete functions depending on user requirements and constraints. The use of standard COTS architecture also provides the advantage of continuing development without costly investment. TIGDL-II consists of three functional hardware/software grouping: the Control Processing Group Electronics (CPGE), the Tracking Antenna Group Electronics (TAGE), and the Power Distribution/Pedestal Control Assembly (PD/PCA). TIGDL interfaces to data link users via a COTS CDL "legacy" interface and/or a CDL standard ATM fiber optic interface compliant with the Common Image Ground Station (CIG/SS) and the Common Imagery Processor (CIP). TIGDL-II ATM interface can convert legacy airborne data to a CDL ATM network interface. A Global Positioning System/Satellite (GPS) receiver receives latitude, longitude, and altitude. TIGDL's antenna can be automatically raised and lowered via a switch on the trailer.

KEY FEATURES AND BENEFITS

- High Bandwidth Digital Data Link
- Complies with CDL Class I Spec.
- Low cost COTS design
- Dual BAnd (X-band and Ku-band)
- GPS
- C-130/HMMWV Transportable
- Complies withSTANAG 7085 Spec.
- Upgradeable in the Field
- CDL Legacy Interfaces
- CDL Network Interfaces

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SPECIFICATIONS
TIGDL II

PHYSICAL CHARACTERISTICS

	TAG	CPG
Size	166"L x 85"W x (142"H Deployed) (102"H Transport Mode)	24"L x 19"W x 21"H
Weight	4200 lb	100 lb
Power	4400 Watts	490 Watts
	120/280V 50/60 Hz 3ø or (selectable)	120V 50/60 Hz 1ø or (selectable)
	240/416 V 50 Hz3ø	219/ 240 V 50Hz 1ø

PERFORMANCE CHARACTERISTICS

	TIGDL II
Command Link	
Data Rates	200 kb/s, 2Mb/s, 10.71Mb/s
Modulation	SS'BPSK SS'BPSK OQPSK
Power Amp	5 Watt SSPA
Return Link	
Data Rates	10.71, 137, 274 Mb/s
Modulation	Offset QPSK (OQPSK)
Antenna	
Size	6 foot parabolic reflector
Frequency	X-band and Ku-band
Azimuth capability	Continuous , 360° azimuth
Slew rate	20°/sec (30°/sec optional)
Synchro Accuracy	16 bit (24 bit optional)
Operational wind	40 mph (70 mph optional)
Remoting	300 meters with standard cable (Up to 10Km with optional cable)
Other	
Encyption	Optional (Bypass or Embedded)
Dual Band Operation	Yes
Frequency Tuning	CDL 5 MHz steps
BIT	To module level
Link Audio	Yes
Maintenance Audio	Yes
Remote Spectrum Analyzer	Yes
ATM User I/F	Yes
CDL User I/F	Yes
AN/AIC-26 (Airborne Intercommunication System)	Optional

TAG & CPG FEATURES

- The TAG includes, a trailer-mounted 6 foot diameter parabolic antenna with tracker, antenna pedestal, the TAGE, the PD/PCA, and RF/IF electronics. The trailer is cabable of being towed by a High Mobility Muti-Wheeled Vehicle (HMMWV) or similar vehicle.
- The CPG consists of a notebook computer and a VME chassis of digital electronics (CPGE). The CPG is mounted in a standard 19" rack that may reside in a shelter mounted on a HMMWV.
- The TAG and CPG are connected via a fiber optic cable that provides for easy connection and remoting of the antenna as desired.

TIGDL ENVIRONMENT

	TAG	CPG
Temperature (Operating)	- 40 to +49°C	+0 to +40°C
Temperature (Storage)	- 40 to +63°C	- 40 to +63°C
Natural Environment	4"/hour rain, ice, & snow conditions, Wind - 40 mph Blowing dust & sand Salt fog, Operating Slope - Up to 10 degrees	Shelter
Altitude (Operating)	10,000 ft max	10,000 ft max
Altitude (Storage)	40,000 ft max	40,000 ft max
Roadability	MIL-M-8090F, type III mobility	In S-788/G Shelter on HMMWV
Transportability	C-130 or similar aircraft Helicopter Lift	

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For further information on TIGDL II contact:

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