Mantis II GDT and VINE Module

Features and Benefits

- **Modular System:** Integrated CDL terminal with high-gain antenna

- **Maximum Dislocation:** 7km dislocation from Control Group

- **Edge Compute and Video:** Combined CDL Data Link UI, Networking, and FMV feed management

- **Man-Portable Networking:** Provides secure networking with onboard router, switch, and server

- **Simplified UX:** Easily view, manage, and understand massive amounts of real-time or archived video

- **Data Link Interoperability:** CDL specification compliant (Standard and Bandwidth Efficient)

Cubic's Mantis II Ground Data Terminal (GDT) is a high-performance data terminal that supports long range, high data rate communications with airborne platforms equipped with a multitude of DoD standard Common Data Link (CDL) waveforms. Cubic has combined the Mantis II antenna group with its Video Interface Network Execution (VINE) module to create a powerful Data Link terminal capable of operating in the harshest environments to provide valuable real time data and video. Any Mantis II and VINE can be deployed in less than 10 minutes providing ground forces with secure expeditionary communications. The onboard GPS antenna aligns the antenna to true north, allowing Mantis II and VINE to perform automatic calibration, making remote set-up easy.

The VINE is Integrated with Cubic's M3-SE networking platform and Unified Video, which powers metadata rich FMV processing, storage, and dissemination in real-time from anywhere in the world. With its suite of robust tools, Unified Video provides intelligence analysts with the abilities to find, scrub, view, annotate and tag imagery, and add metadata to FMV in real-time across the enterprise. Unified Video connects to any video and/or metadata source to collect, index, record, and broadcast mission critical insights for rapid analysis. Both the user portal and network share the same asynchronous technology, the system can easily scale to support thousands of concurrent videos and users around the globe. The M3-SE networking platform provides a small, fully ruggedized solution that has been proven repeatedly in expeditionary environments. The platform includes a switch/router, a UPS, and a server.

Mantis II and VINE supports data transfers from Ku-band CDL-equipped aircraft, including Predator, Reaper, Sky Warrior, Fire Scout, LITENING targeting pod and others. The Mantis II provides operating ranges up to 250 nmi or more, depending on system configuration.

Specifications

Programable Waveform Support	
Waveform	**Data Rates supported**
Standard CDL	200 kbps to 45 Mbps
Bandwidth Efficient CDL (Legacy and Modern FEC)	200 kbps to 45 Mbps
466 ER[1]	200 kbps to 45 Mbps
Vortex Native Waveform (VNW)[1]	50 kbps to 5 Mbps

[1] TBS waveforms are available upon request

RF Band
Data Rates
Full duplex 200 kbps - 44.73 Mbps

Antenna	
Frequency Range	14.4 – 15.35 GHz
Antenna Gain	≈ 41 dBi
-3 dB Beamwidth	≈ 1.2° (Nominal)
Max EIRP	77 dBm

Encryption
NSA Type-1
Commercial AES-256

Video Decompression
MPEG-2
H.264/MPEG-4
Analog RS-170 monochrome or color image data

Certifications	
Information Assurance	DoDI 8510.01 | DODIIS DS-2610-142-01
Environmental	MIL-STD-810G
EMI/EMC	MIL-STD-461F
Operating Temperature	-30°C to +60°C (Antenna Group) 18°C to +29°C (VINE)

- STD-CDL
- BE-CDL Rev A / Rev B
- Tatical 1.6, 3.2, 6.4 and 466ER available
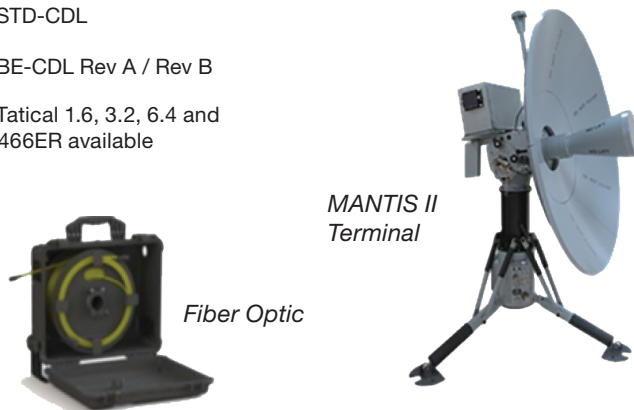
MANTIS II Terminal

Fiber Optic

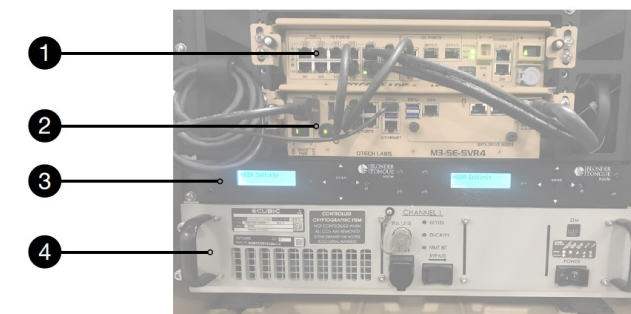*Cubic's Video Interface Network Execution (VINE) module*

Data Interfaces	
User Interface Group	
Ethernet: 10/100 BASE-T Ethernet Interfaces	
Fiber Optical : cabel lengths of 1 km, 7km max dislocation	
DS-101/DS-102 Key Fil interface	
Analog RS-170	
Router Interface (ME-SE3)	
11 x FE Ports	2 x SFP Switch Ports (Shared with GE Ports)
(2 x Router, 9 x Switch, 4 x PoE+)	2 x DC I/O Ports (1 x Front, 1 x Side)
2 x GE Switch Ports	
Server Interface (M3-SE-SVR4)	
USB Ports	2 x USB 3.0 Port
	2 x USB 2.0 Port
Ethernet Ports	2x 10GbE
	4 x GE Ports
	1 x MGMT
	1 x CON
Display Ports	2x

Antenna Group	
Size	48" dish on 45" tripod
Weight	170 lbs
Power	475 W, 110-220 VAC (at 10 W output)

Video Interface Network Execution (VINE) module	
Weight	106.5 lbs
Power	188 W MAX, 100-240 VAC, 50/60Hz, 20A

Transit Cases	Size	Weight
VINE | Weight	22.5" W x 29.0" L x 16.3" H	106.5 lbs
GDT Case 1 | Weight	47.3" D x 24.3" W x 23.6" H	125 lbs
GDT Case 2 | Weight	39" D x 23" W x 17.3" H	128 lbs
GDT Case 2 | Weight	31" D x 25.3" W x 26.5" H	75 lbs
GDT Power Supply | Weight	12" D x 8" W x 10" H	33 lbs

Product Components

1. High-Speed Router Switch
2. Intel Powered Server
3. Video Decoder
4. Cubic User Interface Group

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