

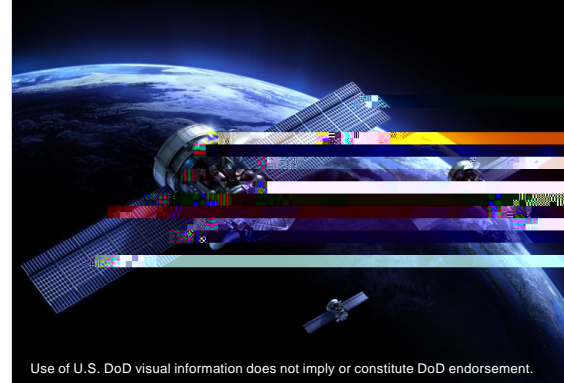
# MULTI-CONSTELLATION MODEM (MCM-500)

Ruggedized, Ground Mobile SATCOM modem capable of high data rates for simultaneous connection to Low Earth Orbit (LEO), Medium Earth Orbit (MEO) and Geostationary Earth Orbit (GEO) Constellations.

The MCM-500 provides connectivity to emerging Commercial Space Internet Satellite Constellations and current Wideband Global SATCOM systems by using multiple MODEMS in a single chassis achieving connectivity to two constellations simultaneously. The MCM provides Comms On-the-Move (OTM) as well as Comms At-the-Halt and is ruggedized for applications in nearly any environment.

## PRODUCT DESCRIPTION

The MCM-500 is designed for comms-on-the-move applications and incorporates multiple MODEMS and associated radio frequency (RF) circuits to support LEO/MEO/GEO connectivity. Implemented as a modular design, the MCM-500 includes both Field Programmable Gate Array based and General Purpose Processor based software defined MODEM hardware resources as well as proprietary MODEM hardware with flexibility to connect to past, present, and future partner constellations. Standard L-Band and Ethernet interfaces, including Open Antenna to Modem Interface Protocol (OpenAMIP) antenna control protocol, simplifies the deployment of the MCM-500 to create application specific terminal architectures. The MCM-500 is MIL-STD-188-165 compliant and ARSTRAT certified.



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## Commercial Space Internet SATCOM Communications

### KEY FEATURES

#### Multi-Constellation

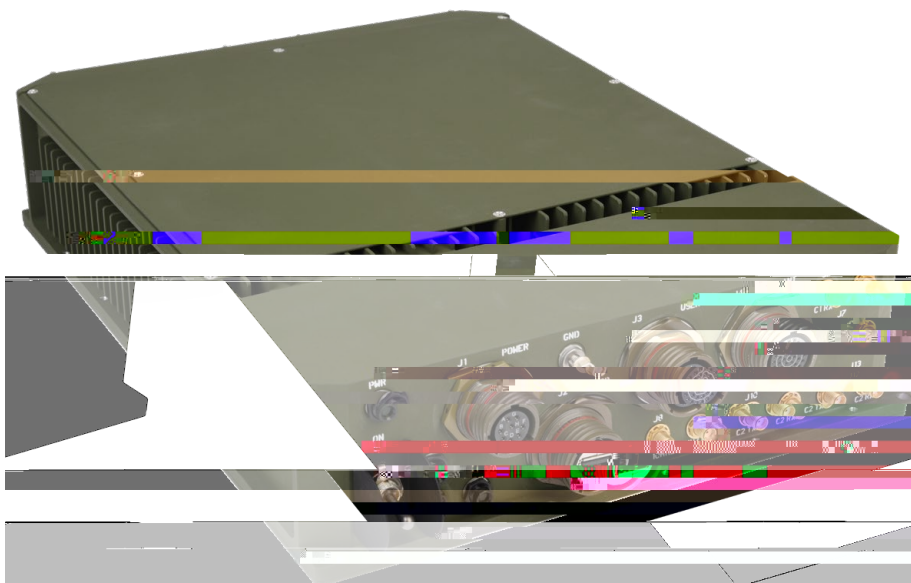
- > Supports two simultaneous links via two L-band IF interfaces to enable Ku & Ka RF to LEO, MEO, and GEO applications
- > Employs up to three MODEMS in one chassis including both proprietary hardware and software defined designs.

#### Antenna Agnostic

- > Supports Open AMIP antenna control protocol to enable systems designs employing latest technology.
- > Supports the extensions to Open AMIP, specifically the Ku/Ka Antenna Modem Protocol (KAMP) standard

#### COTM, Ground Mobile Ready

- > MIL-STD-188-165
- > OM-89 (ARSTRAT) Certified
- > Enhanced OTM capability enabled by the Antenna Beam Control System
- > Ruggedized to MIL-STD-810



## SPECIFICATIONS

### WAVEFORMS

- > LEO/MEO/GEO supported
- > Commercial Space Internet
- > DVB-S2X
- > STANAG 4486

### EXTERNAL INTERFACES

- > Two gigabit Ethernet ports
- > Ethernet antenna control with optional RS-422 and discretes

### ENCRYPTION

- > AES Encryption

### MODEM SWAP

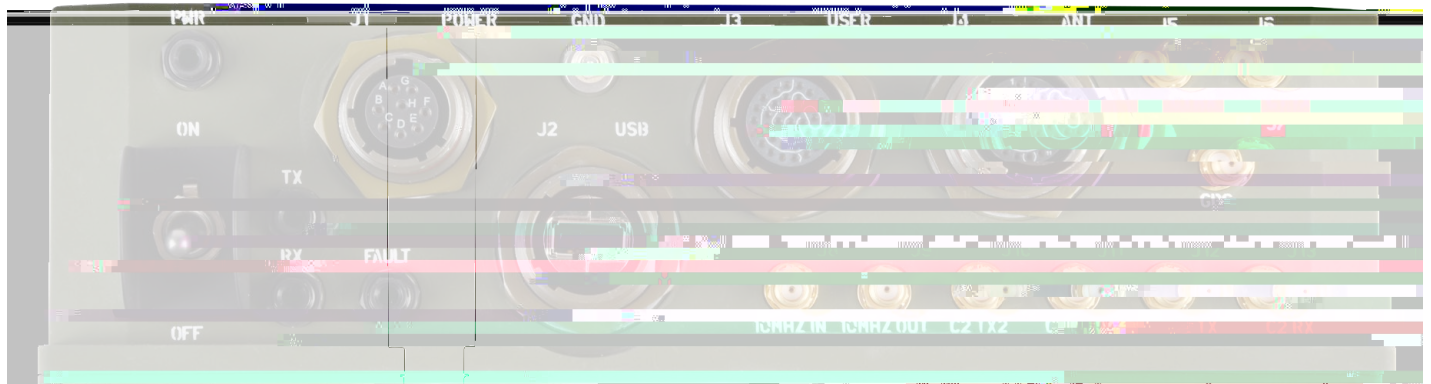
- > Size: 13" (L) x 9.9" (W) x 2.8" (H)
- > Weight: 13 lbs
- > Power: 90 W max (120 W with optional fans), 12 to 36 VDC

### CONTROL INTERFACES

- > SNMP v3
- > Web-based GUI

### ENVIRONMENTAL

- > Operational altitude: -100 to 10,000 ft
- > Shock/Vibration: per MIL-STD-810
- > Temperature: -38 to 49 °C, operating (up to 60 °C with fans)
- > EMI: per MIL-STD-461



## INTERFACE

### J1

- > 28VDC Power
- > Power En/Dis

### J2

- > USB (future)

### J3

- > Ethernet user data, 10/100/100
- > Ethernet management, 10/100/1000
- > Serial, RS-422, NMEA input
- > Restore factory default

### J4

- > Ethernet, antenna, 10/100/1000
- > Tx blanking, RS-485/422
- > Tx mute, discrete
- > GPIO x2 (future)

### J5

- > RS-485, 422 x2 endpoints (future)

### J5

- > Rx, L-Band IF, 10 MHz Commercial Space Internet

### J6

- > Tx, L-Band IF, 10 MHz Commercial Space Internet

### J7

- > GPS input Commercial Space Internet

### J8

- > 10 MHz Ref IN

### J9

- > 10 MHz Ref OUT

### J10

- > Tx, L-Band IF, 10 MHz DVB-S2X, other, MBB

### J11

- > Rx, L-Band IF, 10 MHz DVB-S2X, other, MBB

### J12

- > Tx, L-Band IF, 10 MHz DVB-S2X, other

### J13

- > Rx, L-Band IF, 10 MHz DVB-S2X, other

### Multi-Constellation Modem (MCM-500)

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