

SATCOM-on-the-Move®

Model 20-20M Terminals



(General Dynamics Mission Systems furnished radome not shown)

Reliable high data rate satellite communications
while on-the-move

Interchangeable X, KU and KA band payloads

Modem agnostic

Lightweight and rugged to withstand
the harshest environments

Overview

General Dynamics Mission Systems SATCOM-on-the-Move (SOTM) products share a legacy of proven, reliable performance on aircraft, ships, fast boats and a variety of military wheeled and tracked vehicles.

The M20-20M was specifically designed for ground vehicle command, control & communications (C3) missions where beyond line of sight (BLOS) SATCOM capabilities are mission critical.

Key to the performance of any SOTM product is the ability to maintain the link during dynamic platform motion. SATCOM-on-the-Move products provide world class "on satellite" tracking accuracy via a combination of integrated tracking receiver and high-bandwidth line-of-sight stabilization.

The modular design of the terminal leverages a common gimbal with band-swappable certified RF payloads enabling frequency band changeover within 5 minutes.

Features

- Reliable high data rate satellite communications
- Superior link availability and performance over a wide range of operational conditions
- RF bands provide maximum operational flexibility, including Ku, Ka MIL, and X-band
- Leverages a wide range of commercially available modem systems
- Modular design enhances maintainability and minimizes life cycle cost
- Lightweight, low profile design with all RF Components on Elevation Payload for high efficiency RF Tx/Rx
- Antenna houses the antenna positioner, servo controller, tracking receiver, and complete suite of RF components
- Antenna interface includes +28VDC power, data (Ethernet), navigation, and L-Band Tx/Rx (To Modem)

SPECIFICATION	Ku	Ka (MIL)	X
Frequency - Receive	10.95 to 12.75GHz	20.20 to 21.20 GHz	7.25 to 7.75 GHz
Frequency - Transmit	13.75 to 14.50 GHz	30.00 to 31.00 GHz	7.90 to 8.40 GHz
Model Number	M20-20M Ku	M20-20M Ka MIL	M20-20M X
Aperture Size	20.5 inches		
Pedestal	2 Axis Az/EI		
SSPB P1dB	25 Watts	13 Watts	25 Watts
G/T Typ at Midband (30° EI, 25°C)	12.6 dB/K	15.9 dB/K	8.8 dB/K
EIRP Typ at Midband and P1dB	48.0 dBW	52.7 dBW	43.4 dBW
Beamwidth, 3 dB, Rx/Tx Midband	3.2°/2.7°	1.9°/1.3°	5.3°/4.9°
Sidelobes, Tx	FCC VMES Compliant	MIL-STD-188-164A	MIL-STD-188-164C
Polarization	Active Pol Alignment	Circular, RH/LH or LH/RH, or RH/RH, or LH/LH Remotely Selectable	
Transmit Cross Polarization at 1 dB Down	30 dB Typ, 26 dB Min	N/A	N/A
Axial Ratio inside 1 dB BW, Rx/Tx	N/A	1.5/1.0	<1.2 dB
Environmental/EMI	MIL-STD 810G / MIL-STD-461F (Land-Army)		
Azimuth Travel	360° deg continuous		
Elevation Travel (Full Performance)	0° (horizon) to +80°		
Elevation Travel (Total)	0° (horizon) to +95°		
Polarization Travel	360° Continuous	N/A	N/A
Tracking Performance	FCC VMES Compliant	< 0.20° – 99% of the time during Churchville B conditions	
Satellite Acquisition Time	< 5 sec hot, < 5 min from cold start		
Height	24.5 inches		
Diameter (Radome)	24.0 inches		
Diameter (Footprint at Base)	27.5 inches		
Weight			
Standard Radome	130 lbs		150 lbs
Heavy Duty Radome	135 lbs		155 lbs
Operating Temperature	-40°C to +49°C		
L Band IF Tx/Rx Range	950 to 1750 MHz	1000 to 2000 MHz	950 to 1450 MHz
Supply Voltage	28 VDC per MIL-STD-1275E*		
Power	350 Watts Continuous, 800 Watts Peak		

*Steady state, transient, rev pol, EMC and ESD.

GENERAL DYNAMICS

Mission Systems

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