

# Model C120M Ku-Band Antenna

## Mobile Antennas



*The Strength to Perform*

### Description

The General Dynamics SATCOM Technologies lightweight 1.2-meter mobile antenna is designed for worldwide transmit and receive operation in Ku-band. This transportable antenna consists of a single-piece carbon fiber composite reflector mounted on a cable drive elevation-over-azimuth positioner. This results in a low-weight antenna with superior stiffness and high performance under wind loading conditions.

The state-of-the-art design provides exceptionally low sidelobe and cross-polarization performance, well within INTELSAT and EUTELSAT requirements.

The complete antenna system can be interfaced with most lightweight vehicle structures for the purpose of mobile SNG applications.

### Features

- Aluminum/Carbon fiber construction
  - Light weight
  - Precise surface
  - High stiffness
  - Robust design for vehicle mounting
- High performance
  - Low sidelobes, high E.I.R.P. capability
  - Compliant under operational wind conditions
- Stow/deployment
  - Low profile
  - Stow position on vehicle
  - Precision alignment
- INTELSAT and EUTELSAT compliant

### Options

- GPS or jog controller
- Boom-mounted electronics integration kits
- Tx waveguide run(s)

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**GENERAL DYNAMICS**  
SATCOM Technologies

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## Technical Specifications

Electrical	Ku-Band 2-Port Linear Polarized		Ku-Band 4-Port Linear Polarized	
	Receive	Transmit	Receive	Transmit
Frequency (GHz)	10.950 - 12.750	14.000 - 14.500	10.950 - 12.750	14.000 - 14.500
Antenna Gain at Midband, dBi	42.20	43.30	41.90	43.10
VSWR	1.35:1 (16.5 dB)	1.30:1 (17.7 dB)	1.35:1 (16.5 dB)	1.30:1 (17.7 dB)
Beamwidth (in degrees at midband)				
-3 dB	1.32	1.17	1.31	1.16
-15 dB	2.77	2.46	2.75	2.44
Sidelobe Performance	Meets Eutelsat, FCC 25.209 or ITU-RS-580		Meets Eutelsat, FCC 25.209 or ITU-RS-580	
Antenna Noise Temperature				
5° Elevation	64 K		83 K	
10° Elevation	50 K		69 K	
20° Elevation	42 K		62 K	
40° Elevation	41 K		61 K	
Power Handling (total)		2 kW CW		2 kW CW
Cross Polarization Isolation (minimum)				
On Axis	35 dB	35 dB	35 dB	35 dB
Within 1.0 dB Beamwidth	32 dB	35 dB	32 dB	35 dB
Port to Port Isolation (minimum)				
Rx/Tx (Rx frequency)	0 dB	-30 dB	0 dB	-50 dB
Tx/Rx (Tx frequency)	-85 dB	0 dB	-85 dB	0 dB
Rx/Rx, Tx/Tx (same band)			30 dB	30 dB
RF Specification	975-1573		975-1766	

Mechanical	
Antenna Diameter	1.2 meters (3.9 ft)
Antenna Type	Single offset
Reflector Construction	Carbon fiber with white paint on surface
Mount Type	Elevation over azimuth
Antenna Travel	
Elevation	5° - 90° of reflector boresight
Azimuth	±180° continuous, ±120° w/dual run axis crossovers
Stow Height	19 in (483 mm)
Antenna Weight	240 lbs. (109 kg)

Environmental	
Wind Performance (depending on vehicle capabilities)	
Pointing Loss of 0.5 dB	45 mph (72 km/h) gusting to 60 mph (97 km/h)
Drive	45 mph (72 km/h) gusting to 60 mph (97 km/h)
Survival	80 mph (128 km/h) any position 120 mph (192 km/h) at stow
Temperature Range	
Operational	+5° to +122° F (-15° to +50° C)
Survival	-22° to +140° F (-30° to +60° C)
Rain	Up to 4 in/h (10 cm/h)
Relative Humidity	0% to 100% with condensation
Solar Radiation	360 BTU/h/ft <sup>2</sup> (1000 Kcal/h/m <sup>2</sup> )
Radial Ice (survival)	1 in (2.5 cm)
Shock and vibration tolerant to conditions encountered during shipment by airplane, ship or truck. Atmospheric tolerant to conditions encountered in coastal regions and/or heavily industrialized areas.	