

Model C139M Ka-Band, High Wind Ku-Band Antenna

Mobile Antennas



The Strength to Perform

Description

The General Dynamics SATCOM Technologies lightweight 1.39-meter mobile antenna is a compact design 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

Buy Now!



Digisat International Inc.
4195 W. New Haven Ave., Suite 15
Melbourne, FL 32904
USA
+1-321-676-5250
Email: sales@digisat.org
<http://www.digisat.org>

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Technical Specifications

| Electrical | Ku-Band 2-Port X-pol Compensated | | Ku-Band 2-Port Non-Compensated | | Ka-Band 2-Port Linear Polarized | |
|--|--|------------------|--------------------------------|------------------|---------------------------------|------------------|
| | Receive | Transmit | Receive | Transmit | Receive | Transmit |
| Frequency (GHz) | 10.700 - 12.750 | 13.750 - 14.500 | 10.700 - 12.750 | 13.750 - 14.500 | 17.700 - 18.800 | 27.500 - 28.600 |
| Antenna Gain at Midband, dBi | 42.80 | 44.50 | 42.90 | 44.30 | 46.50 | 50.10 |
| VSWR | 1.35:1 (16.5 dB) | 1.30:1 (17.7 dB) | 1.30:1 (17.7 dB) | 1.30:1 (17.7 dB) | 1.30:1 (17.7 dB) | 1.30:1 (17.7 dB) |
| Beamwidth (in degrees at midband) | | | | | | |
| -3 dB | 1.23 | 1.03 | 1.17 | 1.00 | 0.79 | 0.52 |
| -15 dB | 2.58 | 2.16 | 2.46 | 2.10 | 1.66 | 1.09 |
| Sidelobe Performance | Meets Eutelsat, FCC 25.209, ITU-RS-580 | | Meets FCC 25.209 or ITU-RS-580 | | Meets ITU-RS-580 | |
| Antenna Noise Temperature | | | | | | |
| 5° Elevation | 72 K | | 71 K | | 121 K | |
| 10° Elevation | 58 K | | 57 K | | 86 K | |
| 20° Elevation | 51 K | | 50 K | | 67 K | |
| 40° Elevation | 50 K | | 48 K | | 57 K | |
| Power Handling (total) | | 1 kW CW | | 1 kW CW | | 50 W CW |
| Cross Polarization Isolation (minimum) | | | | | | |
| On Axis | 35 dB | 35 dB | 30 dB | 30 dB | 30 dB | 30 dB |
| Within 1.0 dB Beamwidth | 27 dB | 35 dB | 27 dB | 27 dB | 25 dB | 25 dB |
| Port to Port Isolation (minimum) | | | | | | |
| Rx/Tx (Rx frequency) | 0 dB | -30 dB | 0 dB | -30 dB | 0 dB | -85 dB |
| Tx/Rx (Tx frequency) | -85 dB | 0 dB | -85 dB | 0 dB | -85 dB | 0 dB |
| RF Specification | 975-4593 | | 975-3975 | | 975-4240 | |

Mechanical

| | |
|------------------------|---|
| Antenna Diameter | 1.39 meters (4.6 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 |
| Stow Height | 19 in (48 cm) |
| Antenna Weight | 240 lbs. (109 kg) |
| Integration Capability | 100 lbs. (45 kg) on feed boom, axis crossover for rack mounting |

Environmental

| Wind Performance (depends on vehicle capabilities) | Ka-Band | Ku-Band |
|--|--|--|
| Pointing Loss of 0.8 dB | 30 mph (48 km/h) gusting to 45 mph (72 km/h) | 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) | 60 mph (97 km/h) gusting to 75 mph (121 km/h) |
| Survival | 80 mph (128 km/h) any position 112 mph (180 km/h) at stow | 80 mph (128 km/h) any position 112 mph (180 km/h) at stow |
| Temperature Range | | |
| Operational | -5° to +130° F (-20° to +55° C) | |
| Survival | -40° to +140° F (-40° 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 ² (1000 Kcal/h/m ²) | |
| 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.