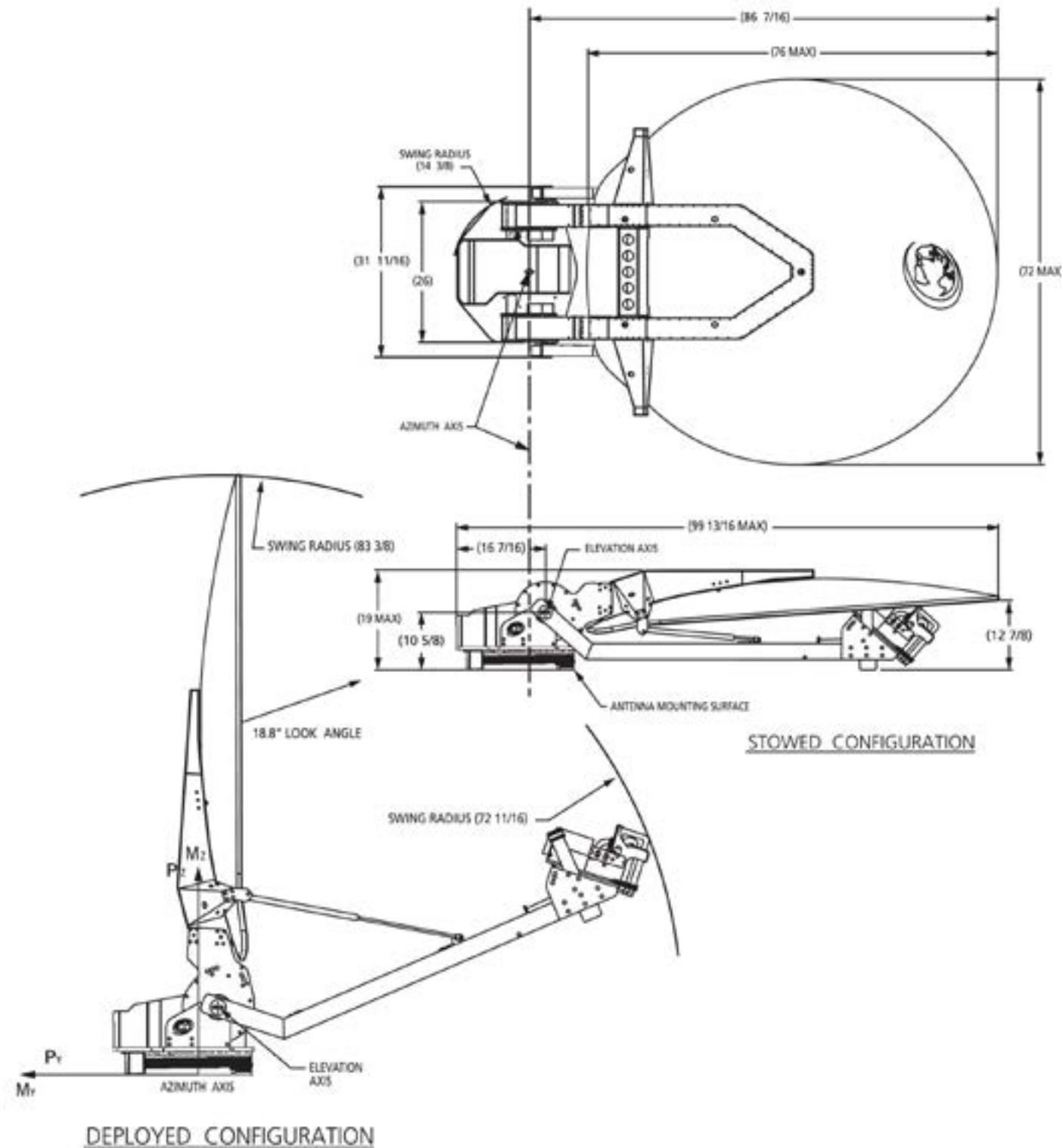


## Model C180M Mobile Antenna



## Model C180M Mobile Antenna

### Mobile Antennas



The Strength to Perform

#### Description

The General Dynamics SATCOM Technologies lightweight 1.8-meter mobile antenna is designed for quad-band transmit and receive operation worldwide. 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
  - Lightweight
  - Precise surface
  - High stiffness
  - Robust design for vehicle mounting
- High performance
  - Low sidelobes, high EIRP capability
  - Compliant under operational wind conditions
- Stow/deployment
  - Low profile
  - Stow position on vehicle
  - Precision alignment
- INTELSAT and EUTELSAT compliant

#### Options

- Finishes
  - Standard Ford Polar White
  - Option Green Fed Std 595 34094 or Desert Sand Fed Std 595 33303 - please specify at order
- Boom-mounted or saddlebags electronics integration kits
- Transmit waveguide run(s)

**GENERAL DYNAMICS**  
SATCOM Technologies

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**GENERAL DYNAMICS**  
SATCOM Technologies

# Technical Specifications

# Model C180M Mobile Antenna

Mechanical	
Antenna	Diameter: 1.8 meters (5.9 ft); Type: single offset
Reflector Construction	Carbon fiber
Mount Type	Elevation over azimuth
Antenna Travel	
Elevation	5° to 90° of reflector boresight
Azimuth	±180° continuous
Polarization	±90°
Stow Height	19 in (48.3 cm)
Antenna Weight	260 lbs. (109 kg)
Integration Capacity	100 lbs. (45 kg) on feed boom, axis crossover for rack mounting

Environmental		
Wind Performance (depends on vehicle and controller capabilities)	Ka-Band	Ku-Band
Pointing Loss 2 dB Rx Pk	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	80 mph (128 km/h) any position
	120 mph (192 km/h) at stow	120 mph (192 km/h) at stow
Temperature Range		
Operational	-22° to +130° F (-30° to +55° C)	
Survival	-40° to +158° F (-40° to +70° C)	
Rain (operational)	Up to 4 in/h (10 cm/h)	
Rain (survival)	Up to 6 in/h (15 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.		

Electrical	C-Band 2-Port Linear/Circular Polarized		C-Band 2-Port Linear Polarized		X-Band 2-Port Circular Polarized		Ku-Band 2-Port Linear Polarized (X-Pol Compensated)		Ka-Band 4-Port Circular Polarized	
	Receive	Transmit	Receive	Transmit	Receive	Transmit	Receive	Transmit	Receive	Transmit
Frequency (GHz)	3.625-4.200	5.850-6.425	3.400-4.200	5.725-6.725	7.250-7.750	7.900-8.400	10.700-12.750	13.750-14.500	20.200-21.200	30.000-31.000
Antenna Gain at Midband, dBi	35.20	39.00	35.50	39.10	41.00	41.70	44.80	46.50	49.70	52.50
VSWR	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)	1.30:1 (17.7 dB)	1.35:1 (16.5 dB)	1.30:1 (17.7 dB)	1.30:1 (17.7 dB)	1.30:1 (17.7 dB)
Beamwidth (in deg at mid-band) -3 dB	2.91	1.90	2.86	1.89	1.49	1.37	0.96	0.80	0.52	0.37
Sidelobe Performance	32-29 log Θ		32-29 log Θ		24-25 log (Az plane) 29-25 log (in general)		24-25 log (Az plane) 29-25 log (in general)		29-25 log	
Antenna Noise Temperature										
5° Elevation	69 K		59 K		67 K		69 K		153 K	
10° Elevation	55 K		45 K		56 K		57 K		129 K	
20° Elevation	50 K		40 K		52 K		50 K		111 K	
40° Elevation	51 K		41 K		53 K		49 K		100 K	
Power Handling (total)	1 kW CW		5 kW CW		2 kW CW		2 kW CW		400 Watts	
Cross Polarization Isolation (minimum)										
On Axis (LP mode)	30.0 dB	30.0 dB	30.0 dB	30.0 dB			35.0 dB	35.0 dB	30.8 dB	30.8 dB
Within 1.0 dB BW (LP mode)	26.0 dB	26.0 dB	26.0 dB	26.0 dB			27.0 dB	35.0 dB	29.8 dB	27.8 dB
On Axis (CP mode)	15.3 dB*	17.5 dB*			21.3 dB	21.3 dB				
Within 1.0 dB BW (CP mode)	15.3 dB*	17.5 dB*			21.3 dB	21.3 dB				
Port to Port Isolation (minimum)										
Rx/Tx (Rx frequency)	0 dB	-30 dB	0 dB	-30 dB	0 dB	-110 dB	0 dB	-30 dB	0.0 dB	-85.0 dB
Tx/Rx (Tx frequency)	-85 dB	0 dB	-85 dB	0 dB	-110 dB	0 dB	-85 dB	0 dB	-85.0 dB	0.0 dB