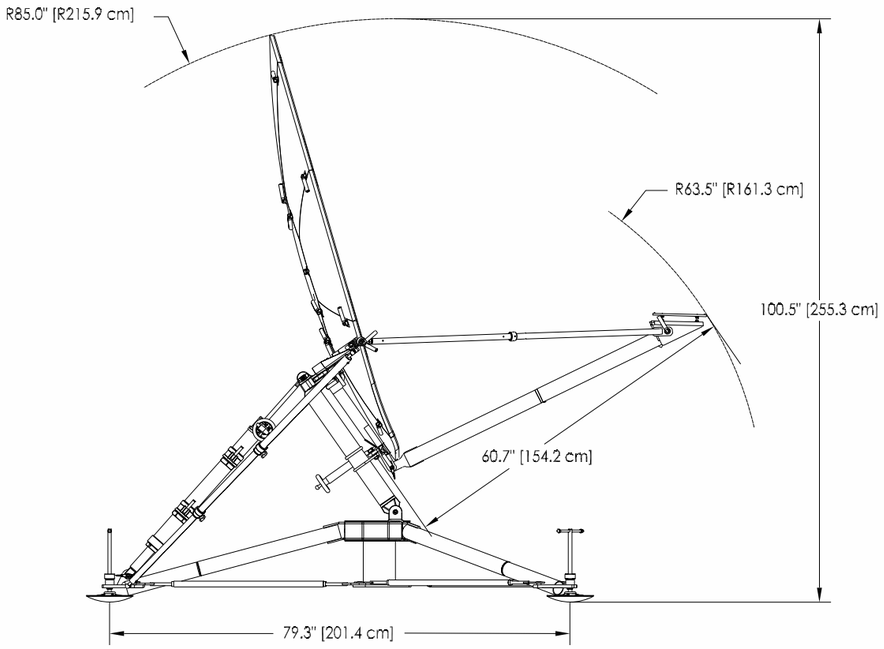

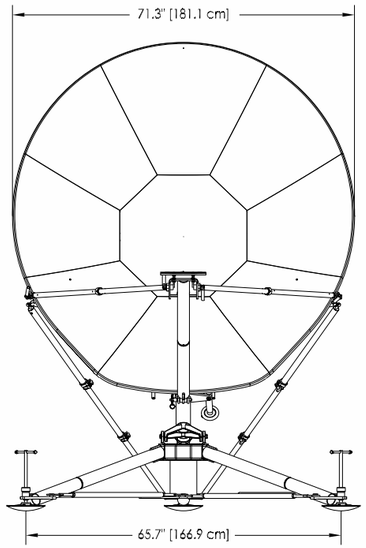

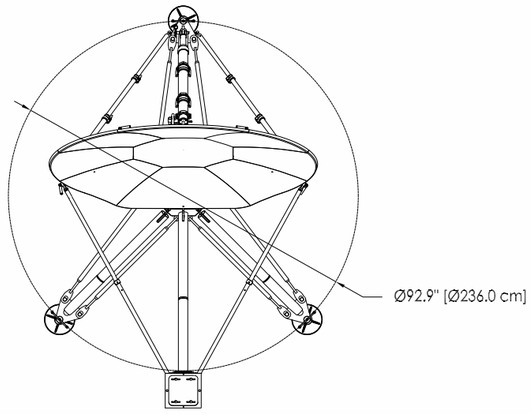

GENERAL DYNAMICS
SATCOM Technologies
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655-0052E 4/08

Model 1.8m SF Antenna

Flyaway Antennas

The Strength to Perform

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Description

The General Dynamics SATCOM Technologies lightweight 1.8-meter SF antennas are designed for worldwide transmit and receive operation in C, X, Ku and Ka band. These portable antennas consist of composite reflectors and aluminum tripod base mounts. This results in a low-weight antenna with superior stiffness and high performance under wind loading conditions.

The unique shape and the accurate reflector surface provide good sidelobe and cross-polarization performance. Repeatability is maintained with precision registration of the nine-piece reflector segments and the feed support structure.

The complete 1.8-meter antenna system, including a single feed, is packaged in multiple portable cases depending on options ordered.

Features

- Carbon fiber composite reflector
- Tripod base mount
- Less than 30-minute setup
- Captive hardware/fasteners
- No tools required
- Quick adjust positioner
- Intelsat/Eutelsat sidelobe compliant (C and Ku band)
- Feed boom supports up to 40 lbs. for amplifier mounting
- Lightweight transport cases

Options

- Multiple feed configurations
- Multiple colors

GENERAL DYNAMICS
SATCOM Technologies

Technical Specifications

Mechanical		
Cross Elevation (Azimuth) Adjustment Range	±20° manual adjustment	
Elevation Adjustment Range	5° to 85°	
Antenna Optics	Single offset, 0.74 F/D ratio	
Reflector Material	Nine-piece carbon fiber composite	
Pedestal Structure	Aluminum, stainless steel and brass	
Boom Mounted HPA Loading*	40 lbs. (18 kg) mounted near reflector (HPA may limit travel)	
Shipping Specifications	Ruggedized Aluminum Cases	
Case Contents	Size	Loaded Weight
Reflector	41" x 35" x 33" H (104 x 89 x 84 cm)	128 lbs. (58 kg)
Pedestal	41" x 35" x 33" H (104 x 89 x 84 cm)	132 lbs. (60 kg)
Components	47" x 31" x 20" H (119 x 79 x 51 cm)	148 lbs. (67 kg)
Feeds	Consult factory for options	

Environmental	
Wind Loading	
Operational (anchored)	30 mph (48 km/h) gusting to 45 mph (72 km/h)
Survival (with tie-downs)	60 mph (97 km/h)
Pointing Loss (operational winds)	Maximum 2.0 dB peak Rx loss at Ku
Ambient Temperature	
Operational (manual)	-22° to +140° F (-30° to +60° C)
Survival	-40° to +140° F (-40° to +60° C)
Relative Humidity (operational and survival)	0% to 100%
Solar Radiation	360 BTU/h/ft^2 (1000 Kcal/h/m^2)
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.	

* Additional information available upon request.

Electrical**	C-Band 2-Port Linear Polarized Feed		C-Band 2-Port Circular Polarized Feed		X-Band 2-Port Circular Polarized Feed		Ku-Band 2-Port Linear Polarized Feed		Ku-Band 2-Port Linear Polarized Feed (Cross-Pol Compensated)	
	Receive	Transmit	Receive	Transmit	Receive	Transmit	Receive	Transmit	Receive	Transmit
Frequency (GHz)	3.625 - 4.200	5.850 - 6.425	3.625 - 4.200	5.850 - 6.425	7.250 - 7.750	7.900 - 8.400	10.950 - 12.750	13.750 - 14.500	10.950 - 12.750	13.750 - 14.500
Antenna Gain at Midband	35.60 dBi	39.30 dBi	35.30 dBi	39.30 dBi	41.30 dBi	42.00 dBi	45.10 dBi	46.10 dBi	44.90 dBi	46.50 dBi
Antenna Noise Temperature										
5° Elevation	56 K		73 K		67 K		73 K		69 K	
10° Elevation	42 K		59 K		57 K		61 K		57 K	
20° Elevation	37 K		54 K		52 K		54 K		50 K	
40° Elevation	38 K		55 K		54 K		53 K		49 K	
Typical G/T at 4.000 GHz, 20° Elevation, Clear Horizon										
C-Band 35° K LNA	17.0 dB/K		15.8 dB/K							
C-Band 50° K LNA	16.2 dB/K		15.1 dB/K							
Typical G/T at 7.500 GHz, 20° Elevation, Clear Horizon										
X-Band 60° K LNA					20.8 dB/K					
X-Band 80° K LNA					20.1 dB/K					
Typical G/T at 11.850 GHz, 20° Elevation, Clear Horizon										
Ku-Band 70° K LNA							24.2 dB/K		24.1 dB/K	
Ku-Band 90° K LNA							23.5 dB/K		23.4 dB/K	
Pattern Beamwidth (in degrees at midband)										
-3 dB Beamwidth	2.84	1.87	2.88	1.86	1.44	1.33	0.92	0.83	0.95	0.80
-15 dB Beamwidth	5.96	3.93	6.05	3.91	3.02	2.79	1.93	1.74	1.99	1.68
Sidelobe Performance										
For Angle A beyond Mainbeam to 20°					29-25 log A	29-25 log A				
For Angles from 20°-48°					32-25 log A	32-25 log A				
For Angle A from 1°-30°							29-25 log A		29-25 log A	
For Angle A beyond Mainbeam to 48°	32-25 log A	32-25 log A	32-25 log A	32-25 log A						
For Angles from 48°-140°	-10 dBi	-10 dBi	-10 dBi	-10 dBi	-10 dBi	-10 dBi				
For Angles from 140°-180°	0 dBi	0 dBi	0 dBi	0 dBi	0 dBi	0 dBi				
For Angle A from 30°-130°							-10 dBi	-10 dBi	-10 dBi	-10 dBi
For Angles from 130°-180°							0 dBi	0 dBi	0 dBi	0 dBi
Cross Polarization										
On Axis	30.0 dB	30.0 dB	15.3 dB	17.7 dB	21.3 dB	21.3 dB	30.0 dB	30.0 dB	35.0 dB	35.0 dB
Within 1.0 dB Beamwidth	26.0 dB	26.0 dB	15.3 dB	17.7 dB	21.3 dB	21.3 dB	27.0 dB	27.0 dB	27.0 dB	35.0 dB
VSWR	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1	1.35:1	1.30:1
Axial Ratio			3.01 dB***	2.28 dB	1.50 dB****	1.50 dB				
Port-to-Port Isolation										
Rx/Tx (Rx frequency)	0 dB	-30 dB	0 dB	-50 dB	0 dB	-110 dB	0 dB	-35 dB	0 dB	-30 dB
Tx/Rx (Tx frequency)	-70 dB	0 dB	-85 dB	0 dB	-110 dB	0 dB	-85 dB	0 dB	-85 dB	0 dB
Feed Insertion Loss	0.20 dB	0.15 dB	0.40 dB	0.20 dB	0.40 dB	0.40 dB	0.40 dB	0.25 dB	0.30 dB	0.20 dB
Output Waveguide Flange Interface	CPR-229G	CPR-137G	CPR-229G	CPR-137G	CPR-112G	CPR-112G	WR-75 Flat	WR-75 Flat	WR-75 Flat	WR-75 Flat
Total Power Handling Capability	2.00 kW CW		2.00 kW CW		5.00 kW CW		2.00 kW CW		2.00 kW CW	
RF Specification	975-3381		975-3380		975-3125		975-3379		975-3437	

** Consult factory for Ka-band option.

*** Low axial ratio feed available.

**** Low axial ratio feed available. X-band dual polarization switch available.