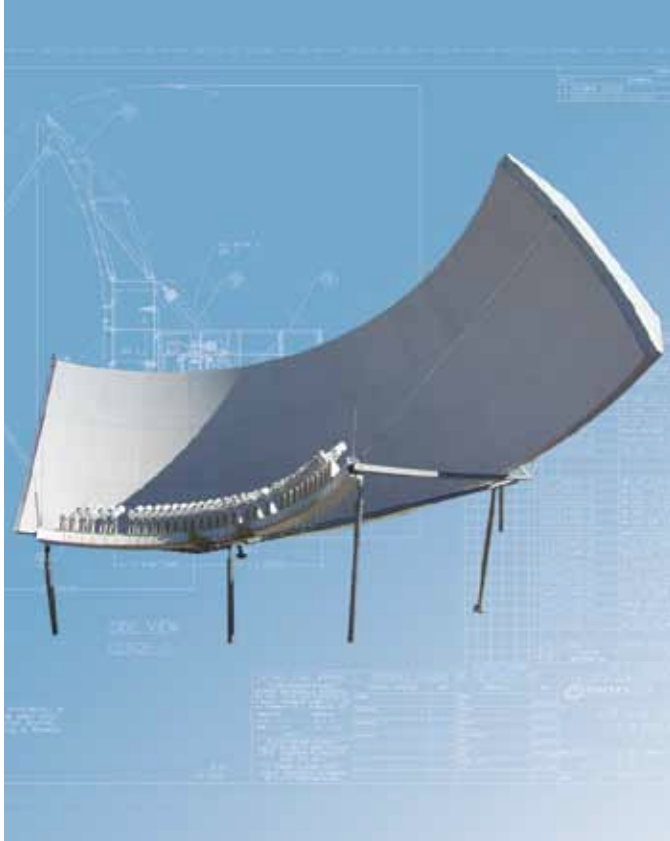


Model 700-70TCK Torus Multiple Band Antenna

Torus Antennas



Description

The General Dynamics SATCOM Technologies Torus antenna consists of contoured, rigid aluminum panels which are parabolic in one plane and circular in the plane of satellite equatorial orbit. It is supported by a stiff steel backstructure, which is unique to each installation. The Torus antenna provides consistent high-quality RF performance across 70° of the orbital arc while utilizing a single reflecting surface.

Individual feeds can be placed on a feed tray to view satellites with 2° of separation. The offset design provides a gain equivalent to that of a 7-meter parabolic antenna, while providing significantly lower sidelobes. This reduces the interference from terrestrial sources or adjacent satellites.

Options

- Simultaneous C and Ku-band linear polarized 4-port
- Ku-band linear polarized 2-port
- C-band linear polarized 2-port
- Ku-band circular polarized 2-port
- C-band circular polarized 2-port
- De-ice system

The Strength to Perform

70° orbital arc field of view

Reception from up to 35 satellites

Meets FCC 2° spacing requirements

Aluminum surface



GENERAL DYNAMICS
SATCOM Technologies

Model 700-70TCK Torus Multiple Band Antenna

Technical Specifications

Electrical	2-Port Linear		4-Port Linear (2-Port C-Band, 2-Port Ku-Band)	
	C-Band	Ku-Band	C-Band	Ku-Band
Frequency Range (receive)	3.4 - 4.2 GHz	10.950 - 12.750 GHz	3.4 - 4.2 GHz	10.950 - 12.750 GHz
Gain at Midband (receive)	47.4 dBi	56.2 dBi	47.3 dBi	54.1 dBi
VSWR	1.30:1	1.30:1	1.50:1	1.50:1
Beamwidth at Midband (receive)				
3 dB	0.73°	0.25°	0.73°	0.32°
15 dB	1.53°	0.53°	1.53°	0.67°
Radiation Patterns Meet Current FCC Specifications for 2° Satellite Spacing				
Antenna Noise Temperature (reference OMT port)				
Typical 10° Elevation	57 K	73 K	71 K	86 K
Cross Polarization on-axis	30 dB	30 dB	25 dB	25 dB
Isolation Between Ports (linear)	30 dB minimum	30 dB minimum	25 dB minimum	30 dB minimum
RF Specification	975-3690	975-2291	975-3549	

Mechanical	
Reflector Size	79 ft (24.1 m) wide by 23 ft (7.0 m) high
Equivalent Diameter	23 ft (7.0 m)
Reflector Construction	36 panels
Beam Pointing Accuracy	< 0.10°
Surface Accuracy	< 0.020 inch RMS (as installed) < 0.034 inch RMS (under worst-case wind conditions)
Net Weight	18,000 lbs. (8,200 kg)
Shipping Weight	40,000 lbs. (18,000 kg)
Shipping Volume	Three 40 ft ISO containers and one 40 ft flatrack

Environmental	
Wind Loading at 32° F (0° C)	
Operational	60 mph (97 km/h) gusting to 80 mph (129 km/h)
Survival (no ice)	125 mph (201 km/h)
Survival [with 1 in (25 mm) ice]	87 mph (140 km/h)
Pointing Accuracy	0.028° RMS [with winds 30 mph (48 km/h) gusting to 45 mph (72 km/h)] 0.056° RMS [with winds 45 mph (72 km/h) gusting to 60 mph (97 km/h)]
Temperature Range (operational or survival)	-40° to +140° F (-40° to +60° C)
Atmospheric Conditions	Salt, pollutants and corrosive contaminants as found in coastal and industrial areas

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2600 N. Longview Street • Kilgore, TX 75662 USA • Tel: (903) 984-0555 • Fax: (903) 984-1826 • Email: kilgore-sales@gdsatcom.com

Website: www.gdsatcom.com

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