

# 700-70TCK Torus Multiple Band Antenna

## Satcom & Antenna Technologies Division



### Overview

The CPI Satcom & Antenna Technologies Inc. (CPI SAT) 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 back structure, 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.

### FEATURES

- 70° orbital arc field of view
- Reception from up to 35 satellites
- Aluminum surface

### 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

### BENEFITS:

- High antenna efficiency
- Excellent rejection of noise and microwave interference

### APPLICATIONS:

- Communications, Data transfer, Broadcast

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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	10.700 - 12.750 GHz	3.4 - 4.2 GHz	10.950 - 12.750 GHz
Gain at Midband (receive)	47.4 dBi	53.9 dBi	46.9 dBi	52.5 dBi
VSWR	1:30:1	1:30:1	1:50:1	1:50:1
Beamwidth at Midband (receive)				
3 dB	0.73°	0.34°	0.76°	0.38°
15 dB	1.53°	0.71°	1.60°	0.80°
Radiation Patterns Meet Current FCC Specifications for 2° Satellite Spacing				
Antenna Noise Temperature (reference OMT port) Typical 10° Elevation	57 K	50 K	78 K	90 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	975-5208	975-3549	

Mechanical	
Reflector size	79ft (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)
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 (25mm) ice]	87 mph (140 km/h)
Temperature Range	-40° to +140°F (-40° to +60°C)
Atmospheric Conditions	Salt, pollutants and corrosive contaminate as found in coastal and industrial areas

**Contact us at [CustomerCareSAT@cpii.com](mailto:CustomerCareSAT@cpii.com) or call us at +1 770-689-2040.**

The data should be used for basic information only.

Formal, controlled specifications may be obtained from CPI, for use in equipment design.



**Communications  
& Power Industries**

**Satcom & Antenna  
Technologies Division**  
2600 N Longview St.  
Kilgore, TX  
USA 75662

tel +1 770-689-2040  
+1 888-874-7646 (In North America)  
+1 619-240-8480 (Outside North America)  
email [CustomerCareSAT@cpii.com](mailto:CustomerCareSAT@cpii.com)  
web [www.cpii.com](http://www.cpii.com)

For more detailed information, please refer to the corresponding CPI technical description if one has been published, or contact CPI. Specifications may change without notice as a result of additional data or product refinement. Please contact CPI before using this information for system design.

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