

1.2M Ka-Band Antenna

Series 3122

Technical Specifications

Electrical		Ka-Band Circular	Ka-Band Circular	Ka-Band Linear
Antenna Size		1.2 M	1.2 M	1.2 M
Operating Frequency (GHz)	Receive Transmit	20.20 - 21.20 GHz 30.00 - 31.00 GHz	19.40 - 21.20 GHz 29.20 - 31.00 GHz	18.70 - 21.20 GHz 27.00 - 31.00 GHz
Midband Gain (+/- .2dB)	Receive Transmit	46.00 dBi 49.30 dBi	45.90 dBi 49.10 dBi	45.80 dBi 49.00 dBi
VSWR		1.25:1 max	1.3:1 max	Rx: 1.5:1 max Tx: 1.3:1 max
Pattern Beamwidth (in degrees at midband)	-3 dB -15 dB	Rx: 0.83° Tx: 0.56° Rx: 1.86° Tx: 1.26°	Rx: 0.85° Tx: 0.57° Rx: 1.90° Tx: 1.28°	Rx: 0.84° Tx: 0.54° Rx: 1.88° Tx: 1.30°
Sidelobe Envelope, Mainbeam < θ < 7° 7° < θ < 9.2° 9.2° < θ < 48° 48° < θ < 180°		29 - 25 Log θ dBi +8 dBi 32 - 25 Log θ dBi -10 dBi (averaged)	29 - 25 Log θ dBi +8 dBi 32 - 25 Log θ dBi -10 dBi (averaged)	29 - 25 Log θ dBi +8 dBi 32 - 25 Log θ dBi -10 dBi (averaged)
Antenna Noise Temperature				
5° Elevation		178 K	178 K	181 K
10° Elevation		137 K	137 K	140 K
20° Elevation		107 K	107 K	110 K
40° Elevation		89 K	89 K	92 K
Power Handling		100 W	100 W	100 W
Cross Polarization Isolation				
On Axis		24.80 dB	Rx: 17.70 dB Tx: 21.30 dB	Rx: 30.00 dB Tx: 35.00 dB
Within 1.0 dB Beamwidth		24.80 dB	Rx: 17.70 dB Tx: 21.30 dB	26 dB
Output Waveguide Interface Flange		Rx: WR42 Tx: WR28	Rx: WR42 Tx: WR28	Rx: WR42 Tx: WR28
Maximum Feed Support Weight		8 lbs. (3.5 kg.)	8 lbs. (3.5 kg.)	8 lbs. (3.5 kg.)

Mechanical	
Reflector Material	Glass Fiber Reinforced Polyester SMC, Ka-Band Formulation
Antenna Optics	1-piece Offset, Prime Focus
Mast Pipe Size	2.5" SCH 40 Pipe (2.88" OD) 73.2 mm
Elevation Adjustment Range	5°to 90°, Continuous Fine Adjustment
Azimuth Adjustment Range	± 10°Fine Adjustment, 360°Continuous
Shipping Specifications	80 lbs. (36 kg.)

Environmental Performance	
Wind Loading	Operational* Survival
	45 mph (72 km/h) *0.5 dB Loss @ 14.25 125 mph (201 km/h)
Temperature (operational)	- 40°to 140°F (- 40°to 60°C)
Rain (operational)	½" / hr
Atmospheric Conditions	Salt, Pollutants and Contaminants as Encountered in Coastal and Industrial Areas
Solar Radiation	360 BTU/h/ft2

GENERAL DYNAMICS SATCOM Technologies

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