

# 0.98M Ka-Band Antenna Rx/Tx

## Series 3982

### Technical Specifications

Electrical		Ka-Band Circular	Ka-Band Circular	Ka-Band Linear
Antenna Size		0.98 M	0.98 M	0.98 M
Operating Frequency (GHz)	Receive	18.30 - 21.20 GHz	20.20 - 21.20 GHz	18.70 - 21.20 GHz
	Transmit	29.20 - 31.00 GHz	30.00 - 31.00 GHz	27.00 - 31.00 GHz
Midband Gain ( +/- .5 dB)	Receive	44.10 dBi	44.50 dBi	44.40 dBi
	Transmit	47.60 dBi	47.70 dBi	47.40 dBi
VSWR		1.3:1 max	1.25:1 Max	Rx: 1.5:1 max Tx: 1.3:1 max
Pattern Beamwidth (in degrees at midband)	-3 dB	Rx: 1.06° Tx: 0.71°	Rx: 1.04° Tx: 0.70°	Rx: 1.05° Tx: 0.73°
	-15 dB	Rx: 2.36° Tx: 1.59°	Rx: 2.32° Tx: 1.57°	Rx: 2.34° Tx: 1.62°
Sidelobe Envelope, Co-Pol (dBi)				
100λ / D < θ ≤ 20°		29 - 25 Logθ dBi	29 - 25 Logθ dBi	29 - 25 Logθ dBi
20° < θ ≤ 26.3°		-3.5 dBi	-3.5 dBi	-3.5 dBi
26.3° < θ ≤ 48°		32 - 25 Logθ dBi	32 - 25 Logθ dBi	32 - 25 Logθ dBi
θ > 48°		-10 dBi (averaged)	-10 dBi (averaged)	-10 dBi (averaged)
Antenna Noise Temperature				
5° Elevation		184 K	184 K	187 K
10° Elevation		140 K	140 K	143 K
20° Elevation		107 K	107 K	110 K
40° Elevation		87 K	87 K	90 K
Power Handling		100 W	100 W	100 W
Cross Polarization Isolation				
On Axis		Rx: 17.70 dB Tx: 21.30 dB	Rx: 17.70 dB Tx: 21.30 dB	Rx: 30.00 dB Tx: 35.00 dB
Within 1.0 dB Beamwidth		Rx: 17.70 dB Tx: 21.30 dB	Rx: 17.70 dB Tx: 21.30 dB	26.00 dB
Output Waveguide Interface Flange		Rx: WR42 Tx: WR28	Rx: WR42 Tx: WR28	Rx: WR42 Tx: WR28

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	360° Continuous Coarse Adjustment, ± 10° Fine Adjustment
Shipping Specifications	Approx. Net Weight: 55 lbs. (25 kg.) Approx. Packaged Weight: 65 lbs. (30 kg.)

Environmental Performance	
Wind Loading	Operational Survival
	50 mph (80 km/h) 125 mph (201 km/h)
Temperature (operational)	- 40° to 140°F (- 40° to 60°C)
Rain (operational)	½" / hr
Ice (operational)	-----
Atmospheric Conditions	Salt, Pollutants and Contaminants as Encountered in Coastal and Industrial Areas
Relative Humidity	0 to 100% with Condensation
Solar Radiation	360 BTU/h/ft2

## GENERAL DYNAMICS

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