

2.4M Ka-Band Tx/Rx Antenna

Series 3244

Technical Specifications

Electrical		Ka-Band Circular	Ka-Band Circular	Ka-Band Linear
Antenna Size		2.4 M	2.4 M	2.4 M
Operating Frequency (GHz)	Receive Transmit	19.40 - 21.20 GHz 29.20 - 31.00 GHz	20.20 - 21.20 GHz 30.00 - 31.00 GHz	18.70 - 21.20 GHz 27.00 - 31.00 GHz
Antenna Gain at Midband ($\pm .2$ dB)	Receive Transmit	51.50 dBi 54.30 dBi	51.60 dBi 54.40 dBi	51.40 dBi 54.30 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 -15 dB	Rx: 0.42° Tx: 0.29° Rx: 0.95° Tx: 0.64°	Rx: 0.42° Tx: 0.29° Rx: 0.95° Tx: 0.63°	Rx: 0.42° Tx: 0.28° Rx: 0.95° Tx: 0.63°
Sidelobe Envelope, Co-Pol (dBi)				
100 λ / D < $\theta \leq 20^\circ$		29 - 25 Log θ dBi	29 - 25 Log θ dBi	29 - 25 Log θ dBi
20° < $\theta \leq 26.3^\circ$		-3.5 dBi	-3.5 dBi	-3.5 dBi
26.3° < $\theta \leq 48^\circ$		32 - 25 Log θ dBi	32 - 25 Log θ dBi	32 - 25 Log θ dBi
$\theta > 48^\circ$		-10 dBi (averaged)	-10 dBi (averaged)	-10 dBi (averaged)
Antenna Noise Temperature				
5° Elevation		154 K	154 K	158 K
10° Elevation		128 K	128 K	131 K
20° Elevation		108 K	108 K	103 K
40° Elevation		97 K	97 K	100 K
Power Handling		100 W	100 W	100 W
Cross Polarization Isolation				
On Axis		Rx: 17.70 dB Tx: 21.30 dB	24.80 dB	Rx: 30.00 dB Tx: 35.00 dB
Within 1.0 dB Beamwidth		Rx: 17.70 dB Tx: 21.30 dB	24.80 dB	26.00 dB

Mechanical

Reflector Material	Glass Fiber Reinforced Polyester SMC, Ka-Band Formulation
Antenna Optics	4-piece Offset, Prime Focus
Mast Pipe Size	6" SCH 80 Pipe (6.62" OD) 16.8 CM
Elevation Adjustment Range	5° to 90°, Continuous Fine Adjustment
Azimuth Adjustment Range	360° Continuous Coarse Adjustment, $\pm 45^\circ$ Fine Adjustment
Shipping Specifications	Net Weight: 545 lbs. (248 kg.) Packaged Weight: 885 lbs. (402 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)		1/2" / 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/ft ²

GENERAL DYNAMICS SATCOM Technologies

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