



Patriot 1.0 Meter Single and Dual Optic Type-Approved Transmit/Receive Antenna



Ku-Band	Transmit	Receive
Polarity	Linear	Linear
Frequency	13.75 - 14.5 GHz	10.7 - 12.75 GHz
Feed - 2 Port Xpol		
Return Loss	20 dB typ	17.7 dB typ
Insertion Loss	0.1 dB typ	0.3 dB typ
Tx/Rx Isolation	80 dB	40 dB
Feed Interface	WR75	WR75
Antenna	Transmit	Receive
Efficiency	70%	70%
Cross Polarization On Axis within 1 dB Beamwidth	35 dB 26 dB	35 dB 26 dB
Tx/Rx Sidelobe Level	29 - 25 log θ -3.5 32 - 25 log θ -10	100 λ /D < θ < 20° 20° < θ < 26.3° 26.3° < θ < 48° 48° < θ
Gain (14.125 Tx, 11.725 Rx)	41.9 dBi	40.2 dBi
Noise Temperature	---	61K @ 10°EL 53K @ 30°EL
Ku-Dual Optics Specs		
Cross Polarization on axis within 1 dB Beamwidth	35 dB 35 dB	35 dB typ 35 dB typ
Tx/Rx Sidelobe Level	29 - 25 log θ □ +8 32 - 25 log θ □ -10	2.5° < θ < 7° 7° < θ < 9.2° 9.2° < θ < 48° 48° < □ θ □
Feed - 2 Port Xpol		
Return Loss	20 dB typ	17.7 dB typ
Insertion Loss	0.1 dB typ	0.3 dB typ
Tx/Rx Isolation	80 dB	40 dB
Feed Interface	WR75	WR75
Antenna Specifications		
Efficiency	70%	70%
Midband Gain	41.9 dBi	40.2 dBi
Noise Temperature	---	61 K @ 10° EL 53 K @ 30° EL

Ka-Band		Receive	Transmit	Receive	Transmit
Polarity		Linear	Linear	Circular	Circular
Frequency		18.2 - 21.2 GHz	27.5 - 31 GHz	19.7-20.2 GHz	29.5-30 GHz
Feed - 2 - Port Xpol					
Return Loss		17.7 dB typ	20 dB typ	16 dB typ	18 dB typ
Insertion Loss		0.3 dB typ	0.1 dB typ	0.5 dB typ	0.3 dB typ
Tx/Rx Isolation		40 dB	80 dB	40 dB	80 dB
Feed Interface		WR42	WR28	WR42	WR28
Antenna					
Efficiency		65%	65%	65%	65%
Cross Polarization On Axis		30 dB	35 dB	21 dB	21 dB
within 1 dB Beamwidth		22 dB	25 dB	21 dB	21 dB
Tx/Rx Sidelobe Level		29 - 25 log θ -3.5		100 λ /D < θ < 20° 20° < θ < 26.3° 26.3° < θ < 48° 48° < θ	
Gain		44.2 dBi	47.8 dBi	44.6 dBi	48.1 dBi
(29.75 Tx, 19.95 Rx)					
Noise Temperature		78K @ 30°EL	---	90K @ 10°EL 83K @ 30°EL	---

Mechanical Data

f/D Ratio		0.635
Focal Distance		25 in / 63.5 cm
Mount Type		Elevation over Azimuth
Mast Pipe Size		2 7/8 or 3 in / 7.30 or 7.62 cm
Offset Angle		22°
Elevation Adjustment		8° to 90° Continuous Fine Adjustment
Azimuth Adjustment		+ 3° Fine, 360° Continuous

Environmental Data

Wind Loading			
	Operational	60 mph, gusts of 80mph	100 kph, gusts to 130 kph
	Survival	120 mph	193 kph
Temperature			
	Operational	-40° to 140° F	(-40° to 60°C)
	Survival	'-60° to 180°F	(-51° to 82°C)
Rain			
	Operational	1.5 in/hr	(3.1 cm/h)
	Survival	3 in/ hr	(7.6 cm/h)
Ice			
	Survival	2.5cm (1 inch) radial or 1.3cm (.5 inch) radial+ 100 kph (60 mph)	