1.8 m Type-Approved Tx/Rx Antenna Systems

Intelsat
inspiring connections

PATRIOT
Antenna Systems
ISO 9001/2000

TX-INT180KU
Intelsat Type-Approval #IA083A00

TX-EUT180KU

Features

- AZ/EL interface to 4 in O.D. Pipe / 10.16 cm
- Azimuth Fine Tune ±15° for Pointing Accuracy
- Dual side galvanized steel powder coated
- Single Piece Deep Draw Reflector Provides Superior Surface
- Boom Supports 50 lbs / 22.26 kg
- Includes Two port Linear Tx/Rx Feed assembly

Description

Why pay more for a transmit/receive antenna? The Patriot single and dual optics antennas are excellent for VSAT applications and hold Intelsat type-approval. With a past history of use in high quality SNG (Satellite News Gathering) applications, the 1.8 m antenna provides a level of surface accuracy, rugged stiffness, and precision not often found in similarly priced products. The stamping process that produces the solid metal reflector results in superior surface accuracy and repeatability. The steel back structure adds strength and stability to the system and keeps the installation process simple.

The Navigator Style fine tune Azimuth and Elevation cap reduces pointing errors during installation, allowing more accurate boresighting on the satellite. Increased pointing accuracy leads to greater link availability. Special packaging techniques are employed for every system shipped to protect the surface of the dish.

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Intelsat Type-Approval #IA091A00

C-Band	C-Band Linear	
Polarity	Receive	Transmit
Frequency	3.4-4.2 GHz	5.7-6.725 GHz
Feed - 2 Port Xpol		
Return Loss	17.7 dB typ	17.7 dB
Insertion Loss	0.2 dB	0.2 dB
Tx/Rx Isolation	40 dB	70 dB
Feed Interface	WR229	WR137
Antenna Specifications		
Efficiency	70%	70%
Midband Gain	36.0 dBi	39.8 dBi
Noise Temperature	55 K @ 10°	---
(6.138 Tx, 4.0 Rx)	50 K @ 30°	
Cross Pol On Axis	30 dB	30 dB
1 dB beamwidth	22 dB	25 dB
Tx/Rx Sidelobe Level	29 - 25 log θ	
	-3.5	
	32 - 25 log θ	
	-10	

C-Band Circular		
Polarity	Receive	Transmit
Frequency	3.625-4.2 GHz	5.85-6.425 GHz
Feed - 2 Port Xpol		
Return Loss	17.7 dB typ	17.7 dB
Insertion Loss	0.3 dB	0.2 dB
Tx/Rx Isolation	40 dB	60 dB
Feed Interface	WR229	WR137
Antenna Specifications		
Efficiency	70%	70%
Midband Gain	35.6 dBi	39.5 dBi
Noise Temperature	65K @ 10°	---
(6.138 Tx, 4.0 Rx)	60K @ 30°	
Cross Pol On Axis	15.3 dB	17.7 dB
1 dB beamwidth	15.3 dB	17.7 dB
Tx/Rx Sidelobe Level	100 λ/D < θ < 20°	
	20° < θ < 26.3°	
	26.3° < θ < 48°	
	48° < θ	

Ku-Band	Ku-Band Linear	
Polarity	Receive	Transmit
Single Optic Frequency	10.7 - 12.75 GHz	13.75-14.5 GHz
Feed - 2 Port Xpol		
Return Loss	17.7 dB typ	20 dBtyp
Insertion Loss	0.3 dB typ	0.1 dBtyp
Tx/Rx Isolation	40 dB	80 dB
Feed Interface	WR75	WR75
Antenna Specifications		
Efficiency	70%	70%
Midband Gain	45.3 dBi	47.0 dBi
Noise Temperature	55 K @ 10° EL	---
	50 K @ 30° EL	---
Cross Polarization On Axis	30 dB	30 dB
within 1 dB Beamwidth	22 dB	26 dB
Tx/Rx Sidelobe	100λ/D < θ < 20°	29 - 25 log θ
	20° < θ < 26.3°	-3.5
	26.3° < θ < 48°	32 - 25 log θ
	48° < θ	-10

Mechanical Data		
f/D Ratio	0.61	
Focal Distance	43.2 in / 109.7 cm	
Mount Type	Elevation over Azimuth	
Mast Pipe Size	4 in / 10.16 cm O.D.	
Offset Angle	22°	
Elevation Adjustment	8° to 90° Continuous Fine Adjustment	
Azimuth Adjustment	+ 15° Fine, 360° Continuous	

Environmental Data		
Wind Loading		
Operational	60 mph, gusts of 80mph	101 kph, gusts to 130 kph
Survival	120 mph	194 kph
125mph Wind forces		
Wind Force	1,660 lbs	
Overturning Moment	11,000 ftlb (on 60in ground pole)	
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

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