



## Overview

This high performance Advantech Wireless A-Line Series 9M antenna can operate at C-band or Ku band for world wide application. The 9M antenna system, designed and manufactured with CAD, can be applied to the newly updated INTELSAT (IESS) standard B and E earth station.

The Advantech Wireless A-Line Series 9M antenna system consists of dual shaped Cassegrain reflectors, a frequency reused feed network with corrugated horn, an elevation-over-azimuth limit motion kingpost pedestal. The backup structure for the reflector, the hub connecting the main reflector with mount and the pedestal provides the guaranteed pointing accuracy required in C band and Ku band operations. The main reflector consists of 48 precision stretch formed aluminum panels riveted with the rings and radials in three rings. Antenna system is characteristic of high gain, low sidelobes, low cross polarization, capable for frequency reuse both in transmit and receive bands, high driving/control accuracy with angle position display in high resolution.

The radiation patterns meet the associated requirements of INTELSAT (IESS), FCC and CCIR for 2° spacing location of geostationary satellites.

# A-Line Series 9m ANTENNA



## Antenna Specifications

R.F Specifications				
Dual Shaped with 4 Port. Linear/Circular Pol.. Feed	C-Band		Full C-Band	
	Receive	Transmit	Receive	Transmit
Frequency in GHz*	3.625-4.2	5.850-6.425	3.4-4.200	5.85-6.65
Gain	50.00	53.20	49.90	53.10
Antenna Noise Temp.				
5°Elevation	48K		54K	
10°Elevation	36K		46K	
20°Elevation	29K		36K	
40°Elevation	24K		30K	
Sidelobe Pattern	First sidelobe level $\leq$ -14dB Beyond first sidelobe meet IESS(Intelsat) or CCIR 580-5 Recommendation			
Cross Pol. Discrimination	35dB (On axis) 30dB (within 1 dB Beamwidth)			
VSWR	1.3:1 (LP) 1.25:1 (CP)	1.3:1 (LP) 1.25:1 (CP)	1.3:1 (LP) 1.25:1 (CP)	1.3:1 (LP) 1.25:1 (CP)
Axial Ration in CP	0.50dB	0.50dB	0.50dB	0.50dB
Feed Insertion or Ohmic Loss	0.30dB	0.30dB	0.30dB	0.30dB
Power Handling Capability	5 Kw per port		5 Kw per port	
Port to Port Isolation				
Tx/Rx	85dB		85dB	
Rx/Rx, Tx/Tx	20dB (CP) 30dB(LP)		20dB (CP) 30dB(LP)	
Feed Interfaces	CPR-229F	CPR-137F	CPR-229F	CPR-137F
R.F Specifications				
4 Port Feed	Ku-Band			
	Receive	Transmit		
Frequency in GHz*	10.95-12.75	13.75-14.50		
Gain	59.20+ 20lg[f(GHz)/12.5]	60.20+ 20lg[f(GHz)/14.25]		
Antenna Noise Temp.				
5°Elevation	87K			
10°Elevation	73K			
20°Elevation	65K			
40°Elevation	50K			
Sidelobe Pattern	First sidelobe level $\leq$ -14dB Beyond first sidelobe meet IESS(Intelsat) or CCIR 580-5 Recommendation			
Cross Pol. Discrimination	35dB (On axis) 30dB (within 1 dB Beamwidth)			
VSWR	1.3:1 (LP) 1.25:1 (CP)	1.3:1 (LP) 1.25:1 (CP)		
Axial Ratio in CP	0.50dB	0.50dB		
-3dB Beamwidth	0.19°	0.16°		
Feed Insertion or Ohmic Loss	0.50dB	0.50dB		
Power Handling Capability	5 Kw per port			
Port to Port Isolation				
Tx to Rx	85dB			
Rx to Rx	20dB (CP) 30dB(LP)			
Tx to Tx	20dB (CP) 30dB(LP)			
Feed Interfaces	WR75	WR75		
Total Power Handling Capability	1Kw cw			

# A-Line Series 9m ANTENNA



## Antenna Specifications

Mechanical Specifications	
Pedestal Type	Limited Motion, El. Over Az. Kingpost
Azimuth Travel	180° in two 100° overlapping sectors continuous
Elevation Range	0° to 90°
Polarization Travel	±90°
Reflector	Stretch-formed aluminium panel
Backup Structure	Steel
Pedestal Structure	Steel
Finish	
Reflector Surface	Aluminium panels with heat-diffusing white paint
Pedestal and Steel Structure	Hot-dipped galvanization
Antenna Drive Mode	AC motor Drive per Az, El and Pol.
Physical	
Ambient Temperature	-40°C to 50°C
Operational Wind	50km/h gusts to 97km/h
Survival Wind	200km/h
Rain	Up to 100mm/h
Relative Humidity	Up to 100%
Solar Radiation	1000 kcal/M <sup>2</sup> /h
Radial Ice (Survival)	25mm on all surface or 13mm on all surface with 130km/h wind gusts
Shock and Vibration	As encountered during shipment by commercial air, sea or truck
Corrosive atmosphere	As encountered in coastal regions and/or heavily industrialized areas
Seismic(Survival)	0.3G's horizontal 0.1G's vertical

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Ref.: PB-AW-ALINE-9m-12107