



Overview

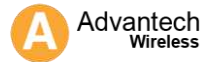
Advantech Wireless A-Line Series 7.3m antenna system, Model 3957TC and Model 3957TK, are designed and manufactured with CAD, and are compliant with the newly updated INTELSAT (IESS) Earth station standards.

The Advantech Wireless A-Line Series 7.3m antenna system consists of dual shaped Cassegrain reflectors, a frequency reused feed network with corrugated horn, an elevation-over-azimuth limited motion kingpost pedestal. The backing 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 Advantech Wireless A-Line Series 7.3m antenna system has characteristics of high gain, low sidelobes, low cross polarization, capable for frequency reuse both in transmit and receive bands, and has high position control accuracy.

The radiation patterns meet the associated requirements of INTELSAT IESS, and CCIR for satellites at 2 degrees spacing location in geo-stationary orbit.

A-Line Series 7.3m ANTENNA



Antenna Specifications

R.F Specifications				
	C-Band			
	2-Port		4-Port	
	Receive	Transmit	Receive	Transmit
Frequency in GHz*	3.625-4.200*	5.850-6.425	3.625-4.2	5.85-6.425
Gain	48.1+ 20lg[f(GHz)/4]dB	51.6+ 20lg[f(GHz)/6.2]dB	47.9+ 20lg[f(GHz)/4]dB	51.6+ 20lg[f(GHz)/6.2]dB
Antenna Noise Temp.				
10°Elevation	40K		42K	
20°Elevation	30K		32K	
40°Elevation	29K		29K	
Sidelobe Pattern	First sidelobe level ≤-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	1.3:1
Axial Ratio in CP	1.3dB	0.75dB	0.5dB	0.5dB
Feed Insertion or Ohmic Loss	0.15dB	0.10dB	0.25dB	0.20dB
Power Handling Capability	3 Kw		3 Kw	
Port to Port Isolation	80 db		80 db	
Feed Interfaces	CPR-229G	CPR-137F	CPR-229G	CPR-137F
All data are available at the feed assembly output and input ports. The following extended frequency range are available at the request from customers: Extended C band A: 3.4-3.7GHz/6.425-6.725GHz Extended C band B: 3.4-4.2GHz /5.85-6.650GHz Extended C band C: 3.4-4.2GHz /5.85-6.750GHz				
R.F Specifications with 4 Port Linear/ Circular Pol. Feed				
	C-Band		Ku-Band	
	Receive	Transmit	Receive	Transmit
	Receive	Transmit	Receive	Transmit
Frequency in GHz*	3.625-3.400*	5.850-6.425	12.20-12.75**	14.0-14.5
Gain	47.9+ 20lg[f(GHz)/4]dB	51.3+ 20lg[f(GHz)/6.2]dB	57+ 20lg[f(GHz)/12]dB	58.2+ 20lg[f(GHz)/14]dB
Antenna Noise Temp.				
10°Elevation	43K		72K	
20°Elevation	35K		54K	
40°Elevation	27K		45K	
Sidelobe Pattern	First sidelobe level ≤-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	1.3:1
Axial Ratio (CP only)	0.5dB	0.5dB		
Feed Insertion or Ohmic Loss	0.25dB	0.20dB	0.50dB	0.50dB
Power Handling Capability	10 Kw		2 Kw	
Port to Port Isolation	80 db		80 db	
Feed Interfaces	CPR-229G	CPR-137F	WR75	WR75
NOTE: All values are at the rear feed output flange. * The frequency range are Rx: 3.4-3.7GHz/Tx: 6.424-6.725GHz or Rx:3.4- 4.2GHz /Tx:5.85-6.650GHz optional. ** The other operational frequency bands of VSAT antennas can be of 10.95- 11.7GHz or 11.7-12.2GHz, even extended as 10.95-12.75GHz. They are available with an option for customers when order.				

A-Line Series 7.3m ANTENNA

Antenna Specifications

Mechanical Specifications	
Pedestal Type	Limited Motion, El. Over Az. Kingpost
Azimuth Travel	180° in total
Elevation Range	0° to 90°
Az and El Travel Rate	0.01 °/second (with motor for Ku band, option)
Polarization Travel	±45°
Reflector	Aluminium
Backing Structure	Steel
Pedestal Structure	Steel
Finish	
Reflector Surface	Aluminium panels with heat-diffusing white paint
Pedestal and Steel Structure	Sand blast and hot spray galvanized and two times paint
Surface Accuracy	0.6mm(RMS)
Antenna Drive Mode	Motorized drive
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 ² /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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