NWIEE 9M ANTENNA

NWIEE developed the high performance 9M antenna which can operate at C-band or Ku band for world wide application.

The 9M antenna system designed and manufactured by NWIEE with CAD, can be applied to the newly updated INTELSAT (IESS) standard B and E earth station.

The 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.

Key Features

- CP/LP switchable feed for C-band
- Galvanized steel parts
- High RF performance
- Extended C-band feeds
- AC motor drive per Az., El. and Pol. axes with single speed
- Elevation over azimuth pedestal with jackscrew drive
- Different frequency ranges from many feed configurations

Options

- High wind-resistant design
- 800MHz LP or CP 4-port feed
- Auto-tracking control system
- Hot-dipped galvanized steel parts
- Two or four Tx/Rx port in linear or circular polarized feed
- AC motor drive per azimuth and elevation axes with single or dual speed.

NWIEE 9M COMPACT CASSEGRAIN ANTENNA IN C -BAND				
R.F. SPECIFICATION	2-Port		4-Port	
	RECEIVE	TRANSMIT	RECEIVE	TRANSMIT
Frequency in GHz	3.625-4.2	5.85-6.425	3.4-4.2	5.85-6.65
Gain	50.00	53.20	49.90	53.10
Antenna Noise Temp. 10°Elevation 10°Elevation 20°Elevation 40°Elevation	48K 36K 29K 24K		54K 46K 346K 30K	
Sidelobe Pattern	First sidelobe level ≤-14dB Beyond first sidelobe meet IESS(Intelsat) or CCIR 580-5 Recommendation			
Cross Polarization 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 Ratio (CP only)	0.50dB	0.50dB	0.50dB	0.50 dB
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 Rx/Rx, Tx/Tx	85dB 20dB(CP)30dB(LP)		85 dB 20dB(CP) 30dB(LP)	
Feed Interfaces	CPR-229F	CPR-137F	CPR-229F	CPR-137F

NWIEE 9M COMPACT CASSEGRAIN ANTENNA IN KU -BAND		
R.F. SPECIFICATION	RECEIVE	TRANSMIT
Frequency in GHz	10.95-12.75	13.75-14.5
Gain	59.20+20lg[f(GHz)/12.5]	60.20+20lg[f(GHz)/14.25
Antenna Noise Temp. 5°Elevation 10°Elevation 20°Elevation 40°Elevation	 87 K 73K 65K 50K	
Sidelobe Pattern	First sidelobe level ≤-14dB Beyond first sidelobe meet IESS(Intelsat) or CCIR 580-5 Recommendation	
Cross Polarization Isolation(LP only) On Axis Within 1 dB Beamwidth	 35dB 30dB	 35dB 30dB
Axial Ratio(CP only) ,dB	0.5dB	0.5dB
-3dB Beamwidth	0.19°	0.16°
VSWR	1.3:1 (LP) 1.25:1 (CP)	1.3:1 (LP) 1.25:1 (CP)
Feed Insertion or Ohmic Loss	0.5dB	0.6dB
Power Handling Capability	1 Kw in Ku-band	
Port to Port Isolation Tx to Rx Rx to Rx Tx to Tx	 85dB CP: 20dB LP: 30dB CP: 20dB LP: 30dB	 85 dB CP: 20dB LP: 30dB CP: 20dB LP: 30dB
Feed Interfaces	WR75	WR75
Total Power Handling Capability	1kw cw	

MECHANICAL SPECIFICATIONS	
Pedestal Type	Limited Motion, El. over Az., Kingpost
Azimuth Travel	180° in two 100° overlapping sectors continuous
Elevation Travel	0° to 90°
Polarization Travel	± 90°
Reflector	Stretch-formed aluminum panel
Backup Structure	Steel
Pedestal Structure	Steel
Finish Reflector Surface Pedestal and Steel Structure	 Aluminum panels with heat-diffusing white Hot-dipped galvanization
Antenna drive mode	AC motor Drive per Az, El and Pol.

ENVIRONMENTAL SPECIFICATIONS	
Operation Wind	50km/h gusts to 97km/h
Survival Wind	200km/h
Ambient Temperature	-40℃ to 50℃
Rain	up to 100mm/h Operational and Survival
Relative Humidity	up to 100% Operational and Survival
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