NWIEE 7.3M ANTENNA

The 7.3M antenna system, Model 3957TC and Model 3957TK, designed and manufactured by NWIEE with CAD, can be applied to the newly updated INTELSAT (IESS) standard earth station.

The antenna system consists of dual shaped Cassegrain reflectors with backup structure; a frequency reused feed assembly with corrugated horn, an elevation-over-azimuth limit motion kingpost pedestal. the hub connecting the main reflector with mount. The pedestal provides the guaranteed pointing accuracy required in C and Ku band operations.

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.

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 7.3M 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	3.625-4.2	5.85-6.425
Gain	48.1	51.7	47.9	51.6
Antenna Noise Temp. 10°Elevation 20°Elevation 40°Elevation	36K 30K 24K		40K 34K 28K	
Sidelobe Pattern	First sidelobe level ≤-14dB Wide angle sidelobes patterns meet the requirements specified in INTELSAT IESS and ITU R. 580-5.			
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	1.3:1
Pattern beamwidth -3dB -15dB	 0.66° 1.30°	 0.44° 0.83°	 0.66° 1.30°	 0.44° 0.83°
Axial Ratio in CP	1.5	0.75	0.5	0.5
Feed Insertion or Ohmic Loss	0.20dB	0.20dB	0.25dB	0.20dB
Power Handling Capability	3 Kw in C band			
Port to Port Isolation	85dB		85 dB 20dB(CP) 30dB(LP)	
Feed Interfaces	CPR-229F	CPR-137F	CPR-229F	CPR-137F

NWIEE 7.3M COMPACT CASSEGRAIN ANTENNA IN KU -BAND				
R.F. SPECIFICATION	2-Port		4-Port	
	RECEIVE	TRANSMIT	RECEIVE	TRANSMIT
Frequency in GHz	10.95-12.75	14.0-14.5	10.95-12.75	14.0-14.5
Gain	57.2	58.4	57.0	58.2
Antenna Noise Temp. 10°Elevation 20°Elevation 40°Elevation	63K 45K 36K		72K 54K 45K	
Sidelobe Pattern	First sidelobe level ≤-14dB Wide angle sidelobes patterns meet the requirements specified in INTELSAT IESS and ITU R. 580-5.			
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	1.3:1
Pattern beamwidth -3dB -15dB	 0.22° 0.40°	 0.22° 0.32°	 0.22° 0.40°	 0.22° 0.32°
Feed Insertion or Ohmic Loss	0.30dB	0.30dB	0.50dB	0.50dB
Power Handling Capability	1 Kw in Ku-band			
Port to Port Isolation Tx/Rx Rx/Rx ,Tx/Tx	85dB		85 dB 30dB	
Feed Interfaces	WR75F	WR75F	WR75F	WR75F

MECHANICAL SPECIFICATIONS	
Pedestal Type	Limited Motion, El. over Az., Kingpost
Azimuth Travel	180° in total
Elevation Travel	0° to 90° continuous
Polarization Travel	± 45°
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
Relative Humidity	up to 100%
Solar Radiation	1000 kcal/M2/h
Radial Ice (Survival)	225mm 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