

SA-3.7T C/Ku ANTENNA
Ring Focus 3.7M Tx/Rx Antenna System



1. Summary

The satellite communication antenna SA-3.7T C/Ku is a dual reflector ring focus design (step up from the 1980's technology of Gregorian design) type. The antenna diameter is 3.7 meters, and the antenna mount is the A-E type joist style. The main and sub-reflectors of the antenna are shaped to achieve good performance with high efficiency and low sidelobes. The antenna mount is a combination of upright-post and triangular plate at the bottom structure. The antenna is steady and relative easy to point to the satellite and is very robust with strong wind resistant characteristic because of its military design bench mark. The components of the antenna are interchangeable with each other.

This antenna has obtained network type approval certifications from APT satellite holdings limited, AsiaSat, China broadcast Sat, SinoSat, OrientSat since the beginning of 1999.

2. Main Technical Parameters

2.1 Electrical Specification

Electrical Specification	C-Receive	C-Transmit	Ku-Receive	Ku-Transmit
Frequency (GHz)	3.652~4.2	5.85~6.425	10.95~12.75	14.00~14.50
Gain(dBi)	42	45.2	50.9	52.5
Voltage Standing Wave Ratio	1.25:1	1.25:1	1.25 : 1	1.25 : 1
Beamwidth-3dB	1.32°	0.86°	0.47°	0.38°
-15dB	2.75°	1.73°	0.91°	0.75°
Noise Temperature	2-Port Feed		2 Port Feed	
10° E1	36° K		50K	
20° E1	30° K		44K	
40° E1	25° K		38K	
Power Capacity		5KW/port		1KW/port
Interface	CPR-229G	CPR-159G	WR-75	
Insertion Loss of Feed	0.15dB	0.18dB	0.25dB	0.25dB
Isolation Tx-Rx		85dB	85dB	
Axial Ratio	1.09	1.06		
Sidelobe Envelope	29-25LOG(θ) dBi ($1^\circ \leq \theta < 20^\circ$)		29-25LOG(θ) dBi ($1^\circ \leq \theta < 20^\circ$)	
	-3.5 dBi ($20^\circ < \theta < 26.3^\circ$)		-3.5 dBi ($20^\circ < \theta < 26.3^\circ$)	
	32-25LOG(θ) dBi ($26.3^\circ < \theta \leq 48^\circ$)		32-25LOG(θ) dBi ($26.3^\circ < \theta \leq 48^\circ$)	
	-10(Average) dBi ($\theta > 48^\circ$)		-10(Average) dBi ($\theta > 48^\circ$)	

2.2 Mechanical Specification

Mechanical Specification	Parameter
Diameter of Main Reflecting Surface	D=3.7m
Diameter of Secondary Reflecting Surface	d=0.444m
Travel of Azimuth	$\pm 60^\circ$
Travel of Elevation	$5^\circ \sim 90^\circ$
Surface Accuracy	0.5mm (r.m.s)
Re-Installation Accuracy	0.6mm (r.m.s)
Net Weight of Antenna	700Kg
Spray Paint	White

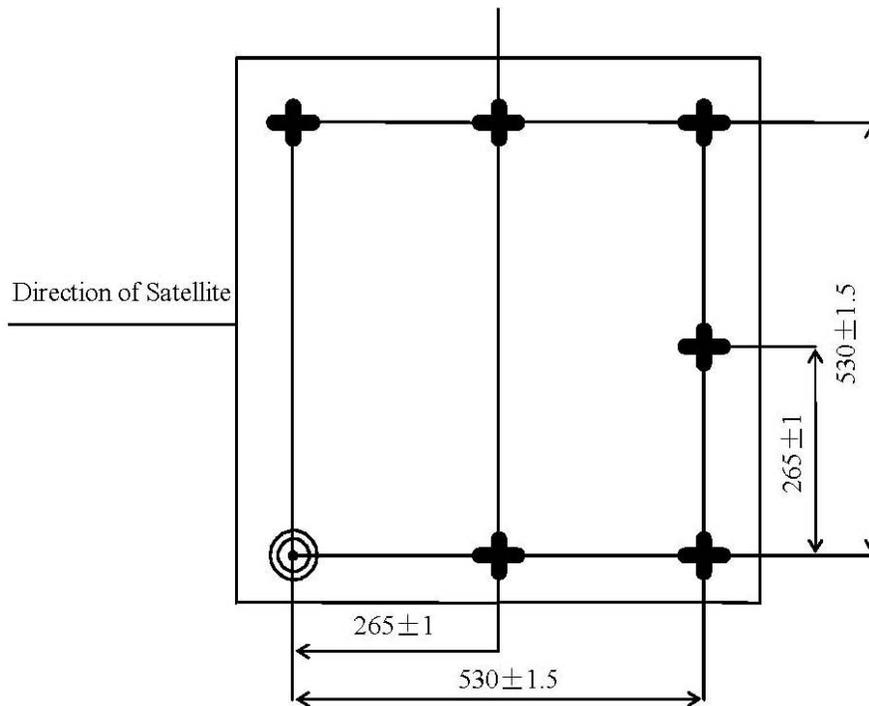
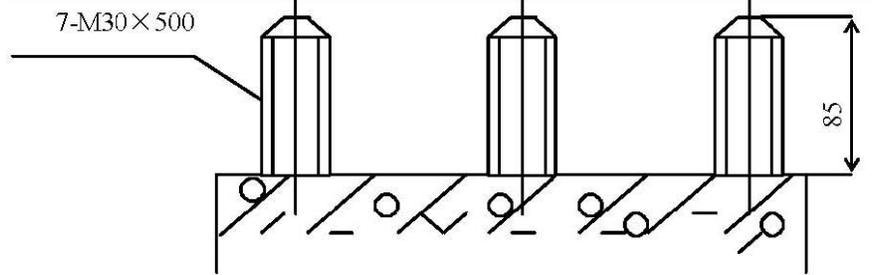
2.3 Environmental Specification

Environmental Specification	Parameter
Operational Wind Speed	72Km/h~97Km/h
Survival Wind Speed	200K/h
Humidity	10%~98%
Temperature	-45°C~+60°C
Anti-Seismic Capacity	Horizontal: 0.3G's Vertical: 0.15G's
Ice thick	3cm
Atmospheric Conditions	Salt、Pollutants

3. 3.7m Antenna Packing List

NO.	Component name	Qty.	Package Size
NO.1	Main Reflector	12 pieces	1900×900×1100
	Subreflector		4 pieces
	Supporting Legs		12 pieces
NO.2	Hub	1 set	1000×1000×1000
	Subreflector bearing rod		1 set
	Feed System		1 set
	Duplexer		1 set
	Phase Shifter		1 set
	Fastener		1 set
	Anchor Blots		7
	ODU Bracket		1 set
NO.3	Upright Column	1 set	1850×1100×750
	Rotary Pedestal		1 set
	Azimuth Adjusting Device		1 set
	Elevation Adjusting Device		1 set

4. Foundation Technical Requirements



3.7 Meter Antenna

Foundation Technical Requirements

1. The level of foundation shall be higher than the ground surface by 200~300mm. The position of anchor bolt shall be arranged for connecting with the reinforcing steel bar in concrete of base strictly according to the requirement of drawing. The foundation shall be formed by processing of cast at one time. The anchor bolts shall be kept parallel strictly with each other, and all of them shall be perpendicular with the ground surface. The upper plane of base shall be flat and level.

2. The dead weight of antenna is 700Kg; its maximal overturning moment is 5500Kg-m (under wind speed of 55m/s).

3. Based on specific status of different erecting place, the foundation shall be designed according to condition offered by this figure.