

SA-3.0T C/Ku Antenna



1. Summary

The satellite communication antenna SA-3.0T C/Ku is a dual reflector ring focus (step up from 1980's technology of Gregorian) type. The antenna diameter is 3.0 meters, and the antenna mount is a mono-post 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. It is relative easy to point to the satellite and has strong and robust wind resistant characteristic because of its military design bench mark. The components of the antenna are interchangeable with each other, and it is convenient to install and maintain for the users.

The performance of this antenna meets the CCIR-580 standards relevant to satellite earth stations, and it has obtained the 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 Eletrical Specifications

Electrical specifications	C-Reception	C-Transmit	Ku-Receive	Ku-Transmit
Frequency	3.652-4.2	5.85-6.425	10.95 ~ 12.75	14.00 ~ 14.50
Gain	40.4	43.6	49.5	50.9
VSWR	1.25:1	1.25:1	1.25 : 1	1.25 : 1
Beam width -3dB	2.01°	1.36°	0.57°	0.48°
Beam width -15dB	4.04°	2.67°	1.14°	0.96°

Noise temperature	2-port		2 Port Feed	
10° EI	32° K		52K	
20° EI	26° K		43K	
40° EI	23° K		38K	
Power capacity		5KW/port		1000W
Interface	CPR-229G	CPR-159G/137G	WR-75	
Feed insertion loss	0.15dB	0.2dB	0.40dB	0.40dB
Axis ratio	0.9	0.9		
Sidelobe envelope	29-25LOG(θ) dBi ($1^\circ \leq \theta \leq 20^\circ$)		29-25LOG(θ) dBi ($1^\circ \leq \theta \leq 20^\circ$)	
	-3.5 dBi ($20^\circ < \theta \leq 26.3^\circ$)		-3.5 dBi ($20^\circ < \theta \leq 26.3^\circ$)	
	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 characteristics

Main reflector diameter	D=3.0m
Sub-reflector diameter	D=0.4m
Azimuth angle	$\pm 60^\circ$
Elevation angle	$5^\circ \sim 90^\circ$
Surface accuracy	0.5mm(r.m.s.)
Re-installation accuracy	0.6mm(r.m.s)
Net weight of the antenna	350kg
Painting	white

2.3 Environmental characteristics

Operation wind speed	72Km/h-97Km/h
Survival wind speed	200Km/h
Humidity	0%~100%
Temperature	-30°C~+60°C
Earthquake	Horizontal: 0.3G's; Vertical: 0.15G's

3. 3.0M Antenna Packing List

Box NO.	Component name	Qty.	Packet Size	Total Weight
No.1	Reflector	8	1550mm×450mm×1250mm	
	Supporting Legs	8		
No.2	Hub	1	750mm×750mm×450mm	
	Feed System	1		
	Subreflector	1		
	Duplexer	1		
	Fastener	1		
	Anchor Blots	4		
	Phase Shifter	1		
No.3	Upright Column	1	1230mm×400mm×450mm	
	Rotary Pedestal	1		
	Subreflector support	4		
	Elevation leading screw	1		
	Azimuth leading screw	1		
	Foundation template	1		
				350Kgs

4. Foundation Technical Requirements

