



1.11.3M C/L dual band antenna function requirements

- (1) Antenna Diameter : 11.3M
- (2) Antenna type: Main and sub reflector modified Cassegrain antenna
- (3) Antenna pedestal: Kingpost pedestal, Azimuth and Elevation lead screw drive
- (4) Antenna travel range: El: $0^{\circ} \sim 90^{\circ}$ Az: $\pm 80^{\circ}$ (Three Segments)
- (5) Polarization mode:

C-band: Dual circular Pol.

L-band: Dual circular Pol.

(6) Wind Load:

Operational wind speed for keeping accuracy: Steady wind 13m/s, gusting 20m/s

Operational wind speed for descending accuracy: Steady wind 20m/s, gusting 27m/s

Wind speed for collecting the antenna: 35m/s (Drive the antenna to the position of looking at sky)

Wind speed for preserve: $\leq 55\text{m/s}$ (Antenna not being destroyed on locking position of looking at sky)

(7) Three proofing function:

The antenna has the ability of moistureproof, mouldproof and anticorrosion; there's no obvious corrosion in the antenna life time. For the steel parts, adopt thermal spraying zinc or hot-dip zinc processing or sandblasting processing, and then coat antirust primer, finally do the white painting. For the aluminum parts, adopt anodic oxidation treatment, coat zinc chromate primer, and do the white painting on the surface.

(8) Antenna mechanical parts life time: 15 years

2.11.3M C/L dual band antenna Main specification

(1) Antenna surface accuracy:

Main reflector surface accuracy: $\leq 0.40\text{mm}$ (r.m.s)

Sub-reflector surface accuracy: $\leq 0.15\text{mm}$ (r.m.s)

(2) Rx frequency band

C-band: 3.4~4.2GHz

L-band: 1.5~1.7 GHz

(3) Antenna Gain (Feed output) :

C-band: $\geq 51 + 20\log(f/3.8)$ dBi

L-band: ≥ 25 dBi

(4) Noise Temperature(Feed output)

C-band: $\leq 55^\circ\text{K}$ (EL=10°)

(5) Antenna Sidelobe features: First Sidelobe: $\leq -14\text{dB}$ (C-band)

- (6) Feed system VSWR (waveguide output): ≤ 1.30 (C-band)
- (7) Feed Insertion Loss: C-band $\leq 0.3\text{dB}$
- (8) Circular Pol. Axial ratio: $\leq 1.06:1$ (C-band)
- (9) Port Isolation: $\geq 18\text{dB}$ (C-band)

3.11.3M C/L dual band antenna Main interface requirements

C-band: 2 ports, FDP-40 (RHCP、LHCP)

L-band: 2 ports, N-50K (RHCP、LHCP)

4.11.3M C/L dual band antenna Environmental specification

- (1) Operating

$-40^{\circ}\sim+55^{\circ}$ (Outdoor)

$0^{\circ}\sim+40^{\circ}$ (Indoor)

- (2) Relative Humidity

$\leq 100\%$ (Outdoor)

$\leq 10\% \sim 85\%$ (Indoor)

- (3) Rain Resistance

Rainfall: Maximum 100mm/h

- (4) Power Supply: Single phase: $220\pm 22\text{V}$, $50\pm 1\text{Hz}$.

Three phase: $380\pm 38\text{V}$, $50\pm 1\text{Hz}$

- (5) Anti-seismic: Horizontal 0.3, Vertical 0.15g