

Vehicle-mounted Antenna System

1 Main introduction

With the ability of xxxxx-band uplink transmit, downlink receive, vehicle-mounted antenna has fast acquisition and stable tracking for satellites.



Fig.1-1a Vehicle-mounted Antenna A

2 Antenna system specification

2.1 Function

- 1) With transmitting and receiving duplex capability for S/X/C/Ku/Ka (as needed) band feed signal
- 2) The function of receiving low noise amplification channel and frequency conversion
- 3) Monitor network interface and support upper monitoring operation
- 4) With standby, pointing, manual control, automatic tracking, program tracking and other working methods
- 5) With stow automatically ability
- 6) The antenna is equipped with a safety protection device to ensure human, machine and environmental safety during operation.

2.2 Mechanical specification

- a) Diameter: $\geq 3-6\text{m}$
- b) Antenna Pedestal Type: A-E Axis Pedestal
- c) Rotary range:
AZ: $-170^{\circ}\sim +170^{\circ}$
EL: $5^{\circ}\sim +90^{\circ}$

The bottom third axis can be configured as needed

2.3 Electrical specification

- a) Operating Frequency: To be determined

2.4 Servo drive ability

- a) Antenna control mode: standby, pointing, manual control, program tracking, automatic tracking, stow
- b) Rotation speed: $0.01\sim 5^{\circ}/\text{s}$.
- c) Antenna pointing accuracy: better than $1/8$ times antenna main lobe half power beamwidth
- d) Antenna tracking system: single channel single pulse automatic tracking
- e) Antenna tracking accuracy: better than $1/8$ times antenna main blade half power beam width

2.5 Environmental specification

- a) Temperature: $-40^{\circ}\text{C}\sim +55^{\circ}\text{C}$
- b) Relative Humidity: $0\sim 100\%$ No condensation
- c) Wind Load
 - 1) Operational: Steady-state 8-level wind (20.7m/s), transient 10-level wind (27.6m/s)
 - 2) Survival: 12-level wind (35m/s)