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.

http://www.antesky.com/
2.2 Mechanical specification

a) Diameter: \( \geq 3\text{-}6\)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\(^\circ\)/s.\(^s\)

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\%\sim100\%\ 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)