



Features

- Precise tracking
- Ultra-wideband antenna
- High gain with dual circular polarization
- Modular design with high integration
- Light-weight
- High reliability with long service life
- Equipped with High-performance rotary joint
- Equipped with High-performance servo controller

Applications

Test & Measurement

Radar

Military and Space

Satellite

Microwave Radio Systems

Communication Systems

Description

The main functions of the QV-band feed antenna are as follows: (1) Receive attitude control beam control information, control the antenna beam pointing, and cooperate with the attitude control system to complete the staring pointing to the ground gateway station; (2) Receive forward signals; (3) Radiate and output return signals; (4) Equipped with 2 sets of integrated transceiver antennas to support in-orbit relay use; (5) Support transceiver polarization reuse and shared transceiver antenna; (6) Support multi-channel signal transmission and reception via a single antenna.

The antenna's all operating modes are initiated and controlled by the GMS (Ground Mission System). Relevant control commands (sets) are injected into the satellite platform via the TT&C (Tracking, Telemetry and Command) link, and then processed by the satellite platform to complete the control of the payload, which is required to cooperate to implement the above control operations.



Function

- Standby Mode
- Normal Working Mode
- Feed Working Mode
- Work Mode Control
- Refactoring And Reconfiguring Mode

Overall Performance

Item	Specification
Total Irradiation Dose	The total dose under 3mm equivalent aluminum shielding for the entire star is approximately 43 KRad (Si)
Lifetime	7 years
Reliability	> 0.96
Number of Power On/Off Cycles	≥ 70000 times

Feed Downlink And Uplink Performance

Item	Specification
Operating Frequency	QV-band
Gain	> 40dBi
Rotation Range	$\pm 55^{\circ}$ @X-Axis& Y - Axis
Number Of Rotations Of The Mechanism	More than 500000 times



Item	Specification
Polarization Mode	RHCP@ Downlink; LHCP@ Uplink
Axial Ratio	≤1.5dB （Within 3dB Bandwidth）
VSWR	≤ 2
Pointing Accuracy	≤ 0.15 °
Sidelobe Suppression	-15dB@ Downlink
Isolation Of Sending And Receiving	≥ 25dB
Power Capacity	10W(Mean Value@Vacuum); 200W(Peak Value@Vacuum) (Design Assurance)

Mechanical Interface

Total Weigh: ≤5.9 kg (1 Antenna + 1 Controller)		
Antenna		Controller
Reflector Component	4.7 kg	1.2 kg
Pointing Mechanism		
Latching And Release Device		
Thermal Control And Low-Frequency Cables		
Rotary Joint		
Isolation Of Sending And Receiving		
Waveguide Components And Fixed Brackets		
Encelope Size		≤550*500*400mm（Antenna Retracted State）
Controller		VPX 6U



Thermal Interface

Item	Specification
Storage Temperature Range	Q/V Feed Antenna: -90°C ~+90°C Unlocking Device: -90°C ~+90°C
Working Temperature Range	Q/V Feed Antenna: -90°C ~+90°C Unlocking Device: -40°C ~+90°C Controller Of Q/V Feed Antenna: -15°C ~+45°C
Ground Storage Temperature	-10°C~+45°C
Thermal Control Requirements	8-way Temperature Measurement & 8-way Temperature Control

Electrial Interface

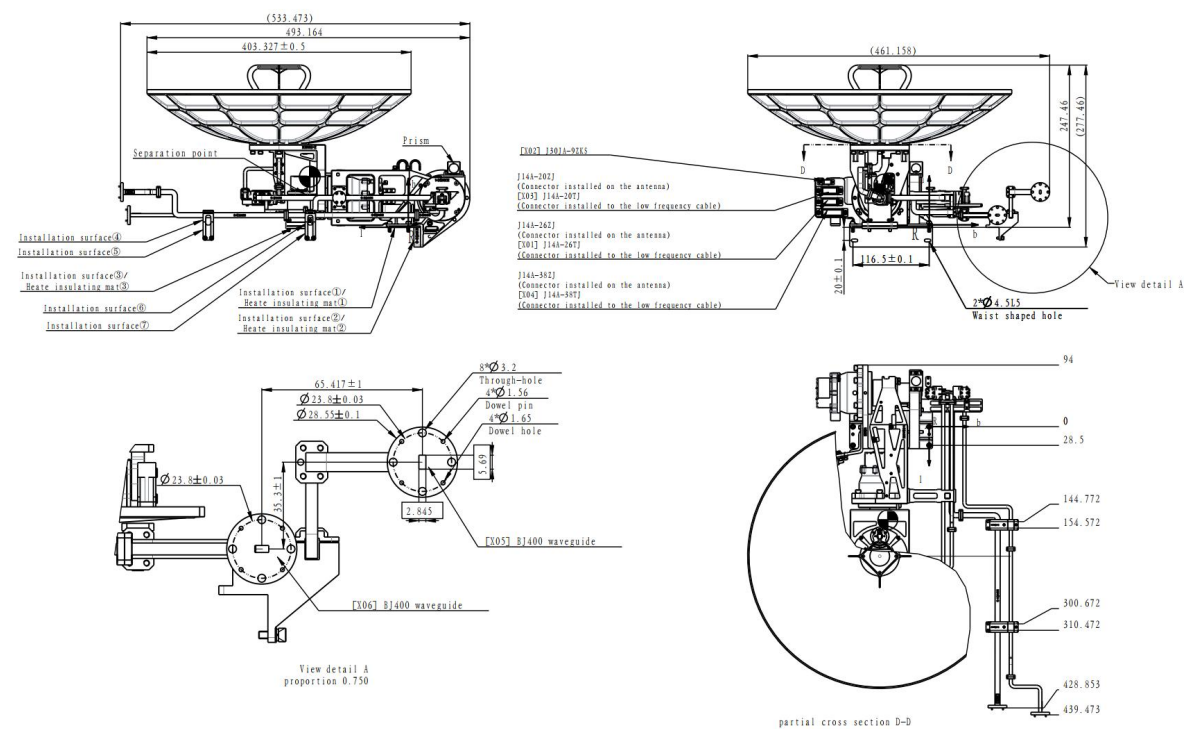
Item	Specification	
Power Supply Interface	Voltage	Rated +42V, Pull Off Range +37V~+46.2V
	Working Current	≤ 1.5A
	On-off Contro	Controlled By Antenna Controller
	Total Power Consumption	≤20W (Standby) ≤52W (Working)
RS422	Quantity	2 (A, B Backups)
	Interface Rate	Interface Rate
Second Pulse Signal Interface	Quantity	1 way, Spacecraft Management To The Controller Of Q/V Feed Antenna
RF Interface	Downlink	BJ400 Waveguide Port
	Uplink	BJ400 Waveguide Port

Notes:

Values at 25°C, sea level.



Outline Drawing:



NOTES:

- 1.UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.
- 2.ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.
- 3.DIMENSIONS ARE IN mm.

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	QV-band Feed Antenna		
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		V1.0	2026.4.9
		SCALE 1:1	