

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

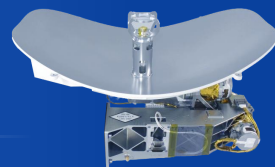
Applications

Test & Measurement	Radar	Military and Space	Satellite
Microwave Radio Systems		Communication Systems	

Description

The Inter-Satellite and Ground Communication Reflector Antenna (ISGC-RA) operates in the QV-band and provides the functions of inter-satellite communication beam transceiving, satellite-ground communication beam transceiving, and mechanical rotation of the antenna.

The main tasks of the antenna assembly are as follows: After the satellite is successfully inserted into orbit, the antenna is released and deployed to the initial operating position via the hold-down and release mechanism (HDRM) in accordance with the satellite system requirements. The controller receives control commands such as pointing angles, drives the antenna to perform two-degree-of-freedom motion, and completes pointing and tracking tasks toward the designated area. In calibration mode, it can perform tracking scanning based on the feedback energy signals.



Function

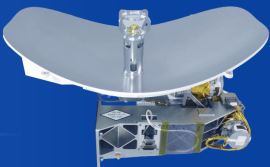
- Normal Operation Mode
- Self-Test Mode
- Maintenance Mode
- Calibration Mode

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	> 0.89
Number of Power On/Off Cycles	≥ 70000 times

Downlink And Uplink Performance

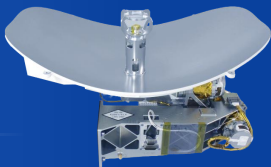
Item	Specification
Operating Frequency	40~64 GHz
Gain	> 41 dBi
Rotation Range	$\pm 90^\circ$ @Azimuth, $>247.50^\circ$ @Elevation
Number Of Rotations Of The Mechanism	More than 500000 times



Item	Specification
Polarization Mode	Inter-satellite: RHCP; LHCP Satellite-ground: Dual circular polarization
Axial Ratio	≤3 dB（normal direction）
VSWR	≤ 1.8
Pointing Accuracy	Better than 15% of the half-power beam width
Sidelobe Suppression	-15 dB
Polarization Isolation	≥ 20 dBc
Power Capacity	16 W(Mean Value@Vacuum)

Mechanical Interface

Total Weigh: ≤6.2 kg (1 Antenna & 1 Controller)		
Antenna		Controller
Reflector Component	5.9 kg	0.3 kg
Pointing Mechanism		
hold-down and release mechanism		
Thermal Control And Low-Frequency Cables		
Rotary Joints		
Triplexer		
Waveguide Components And Fixed Brackets		
Encelope Size		≤520*320*320mm（Antenna Retracted State）



Thermal Interface

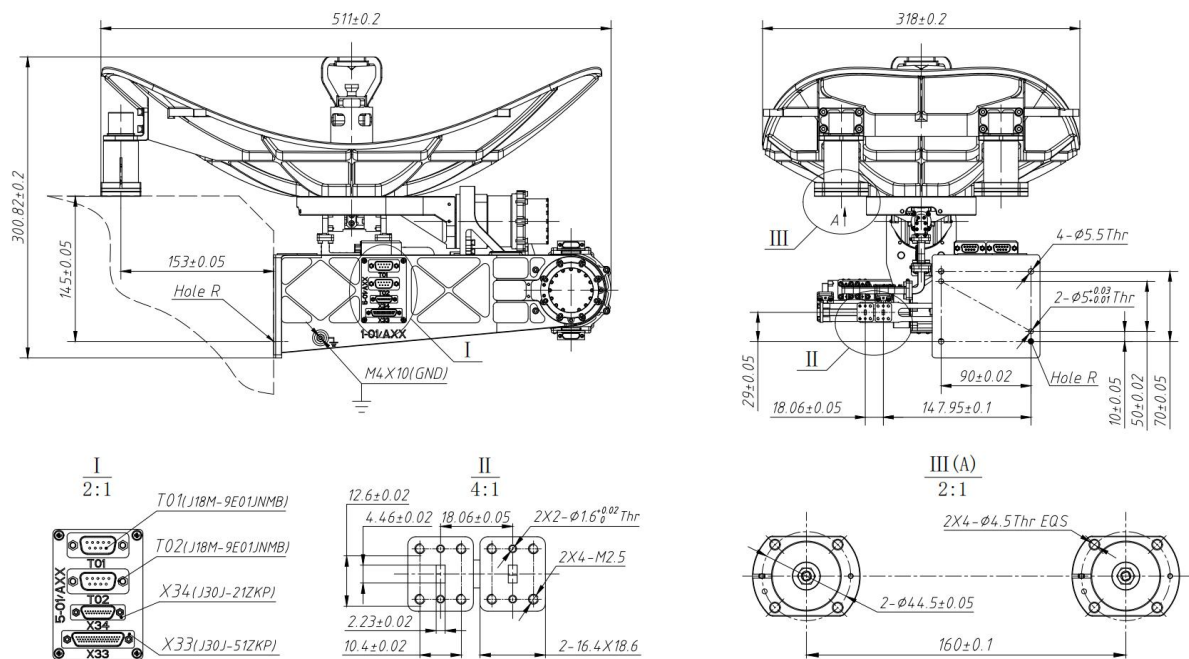
Item	Specification
Storage Temperature Range	ISGC-Antenna: -90℃ ~+90℃ Antenna Controller: -30℃ ~+55℃
Working Temperature Range	ISGC-Antenna: -90℃ ~+90℃ Antenna Controller: -20℃ ~+55℃
Ground Storage Temperature	-10℃~+45℃
Thermal Control Requirements	2-way Temperature Measurement & 2-way Temperature Control

Electrial Interface

Item	Specification	
Power Supply Interface	Voltage	Rated +42V, Pull Off Range +36V~+45V
	Working Current	≤ 1A
	On-off Contro	Controlled By Antenna Controller
	Total Power Consumption	≤0.5 W (Standby) ≤12 W (Working)
RS422	Quantity	2
	Interface Rate	115200bps
RF Interface	Downlink	BJ400&BJ500&BJ620 Waveguide Ports
	Uplink	BJ400&BJ500&BJ620 Waveguide Ports

Notes:
Values at 25℃, 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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