



JS-HAC148A

Multi-Frequency RTK Surveying Antenna

Datasheet



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Revision History

[illegible]

1 Product Introduction

1.1 Overview

JS-HAC148A is a quad-system (GPS, GLONASS, BDS, GALILEO) full-frequency external survey antenna, meeting the demand for multi-system compatibility in current surveying equipment. It features high gain and a wide beam pattern, ensuring strong signal reception even at low elevation angles. This guarantees fast satellite locking and stable GNSS navigation signal output even in complex environments with obstructions. It is widely applicable in geodetic surveying, marine surveying, channel surveying, dredging surveying, seismic monitoring, bridge deformation monitoring, landslide monitoring, port container operations, smart agriculture, driver's license testing and training, fleet management, Vehicle positioning and navigation, etc.

1.2 Key Features

- Strong anti-interference capability
- High accuracy
- Strong magnetic base
- High-stability phase center
- Supports full-frequency signals of GNSS quad systems
- Reliable structure, IPX6 protection rating
- Compact dimensions: Ø148*57.7mm (excluding base)
- Strong anti-interference, capable of withstanding harsh working environments
- Stable phase center ensures millimeter-level positioning accuracy

1.3 Application Scenarios

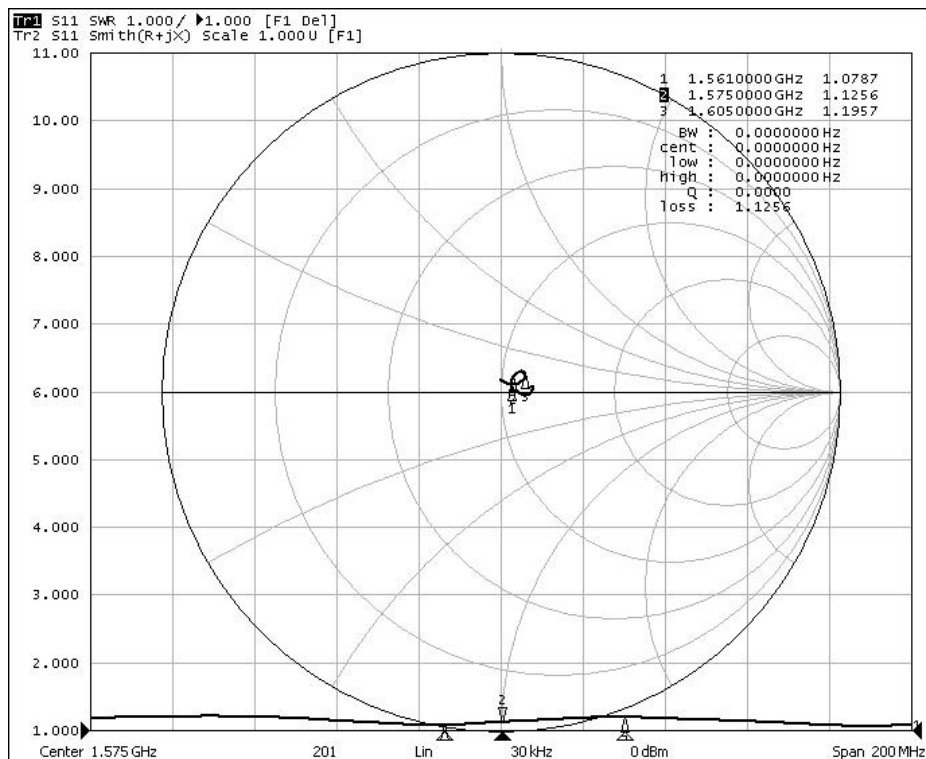
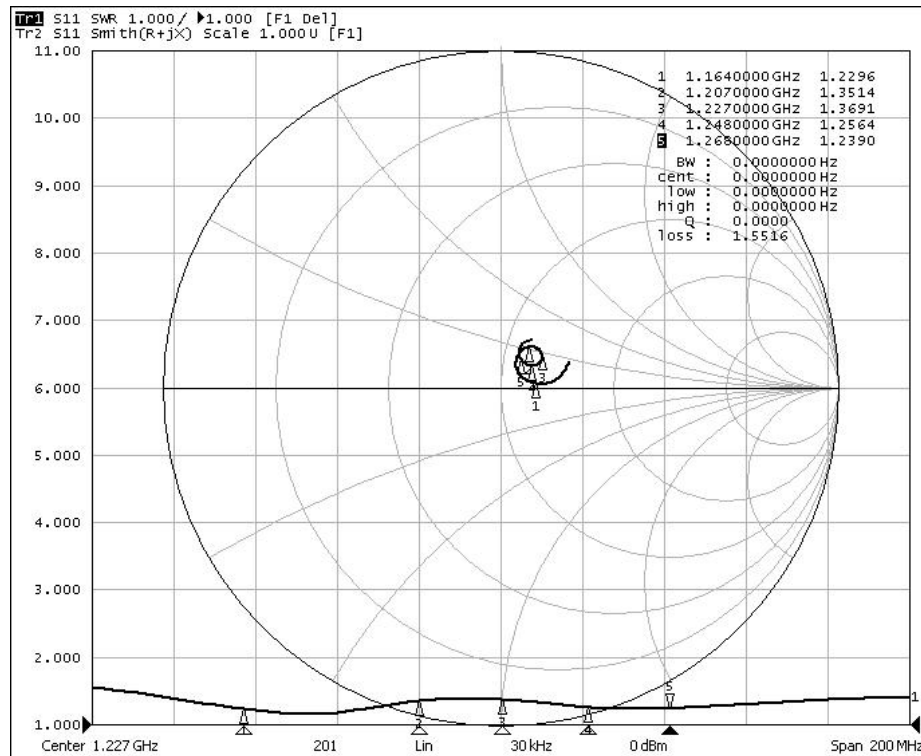
- Geodetic Surveying
- Marine Surveying
- Channel Surveying
- Dredging Surveying
- Seismic Monitoring
- Bridge Deformation Monitoring
- Landslide Monitoring
- Port Container Operations
- Smart Agriculture
- Driver's License Testing and Training

2 Product Parameters

2.1 Performance Metrix

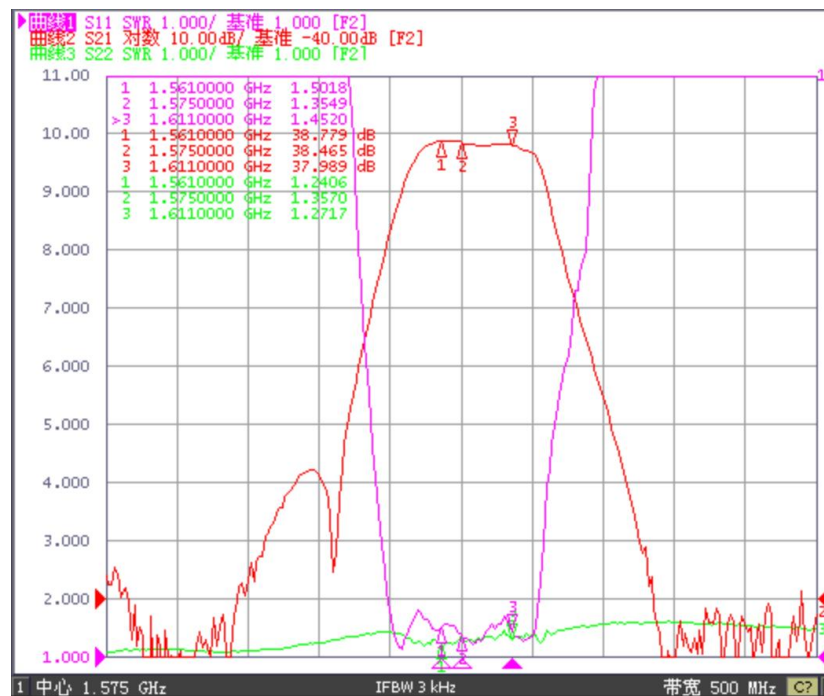
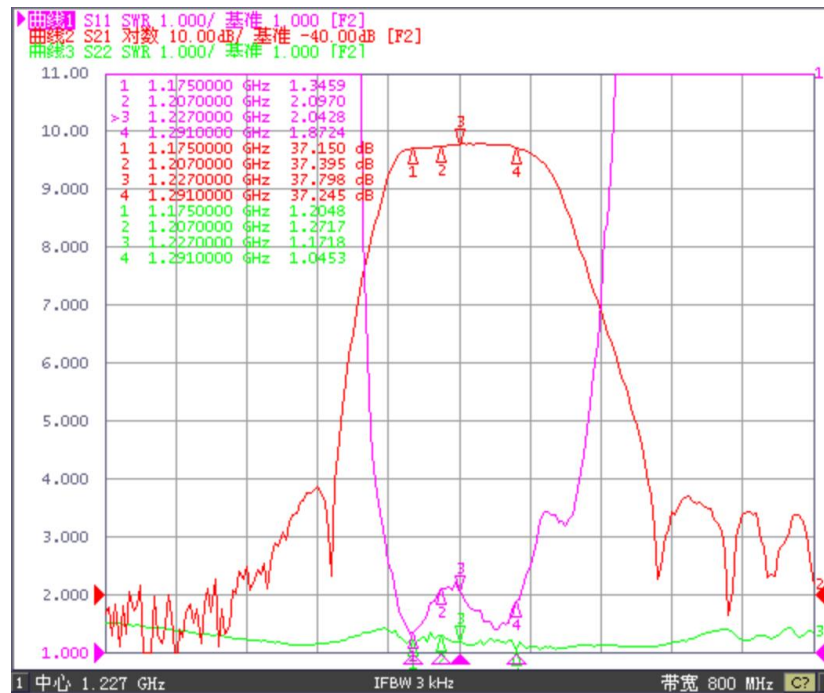
Parameters	Details
Frequency Range	BDS B1/B2/B3 GPS L1/L2/L5 GLONASS L1/L2 GALILEO E1/E5a/E5b QZSS L1/L2/L5/L6 (1164-1278MHz;1559-1606MHz)
Phase Center Error	$\leq 2\text{mm}$
Gain	4.5dBic: max
Axial Ratio	≤ 3 : at Zenith
Impedance	50 Ω
full horizontal (azimuth) coverage	360°
VSWR	2.0
Polarization	RHCP
Amplifier Gain	38 $\pm$ 3dB
Out-of-band Rejection (Absolute)	$\geq 40\text{dB}$ ($F_H+100\text{MHz}$) $\geq 40\text{dB}$ ($F_L-100\text{MHz}$)
Noise Figure	≤ 3.0 (per-filter)
Operating Voltage	3.3~12.0V (DC)
Operating Current	$\leq 30\text{mA}$ (16mA@5V)

2.2 Antenna VSWR Chart



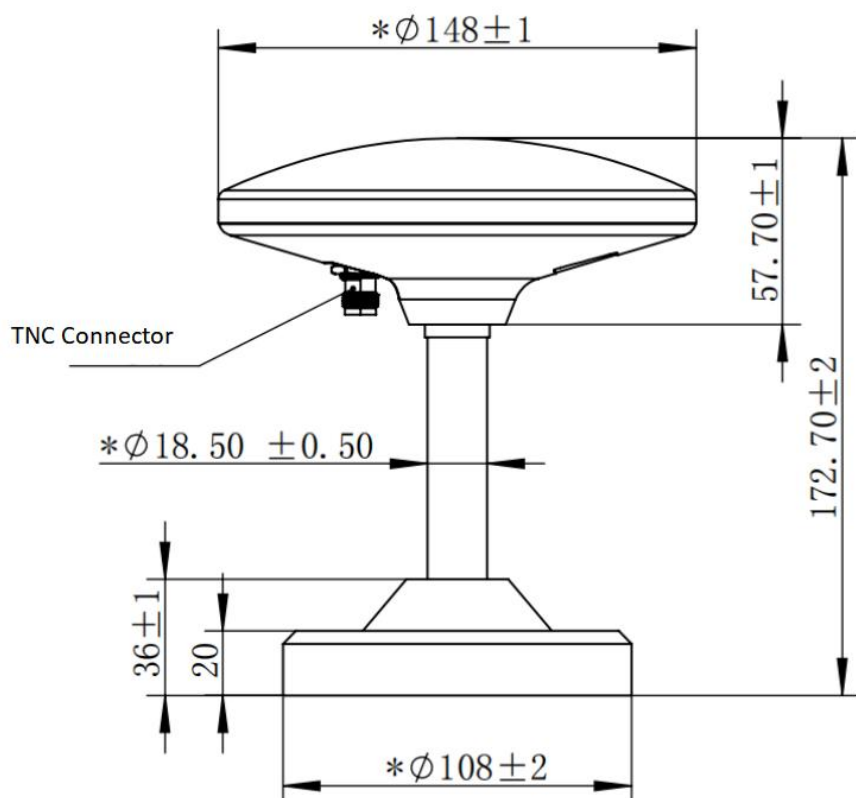
Passive antenna: :vswr≤2.0

2.3 LNA Test curve



Test Condition: DC 5V

2.4 Structure (Unit: mm)



2.5 Antenna Materials

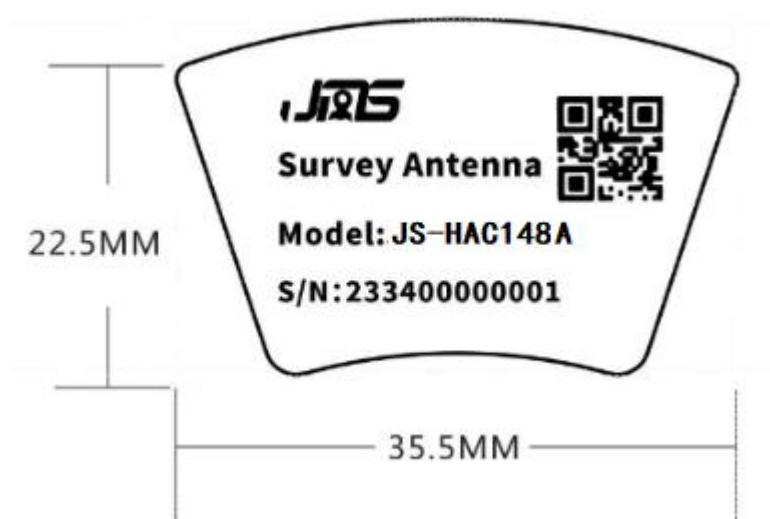
Name	Description
Antenna	PPO
PCB	FR4
Shield Cover	Tinplate
RF Connector	TNC-K
Threaded Hole	Copper
Housing	ABS

3 Environmental Conditions

Parameter	Specifications
Operating Temperature	-40°C ~ +85°C
Storage Temperature	-40°C ~ +85°C
Vibration	Sine sweep 1g(0-p) 10~55~10Hz each axis
Protection Rating	IPX6

4 Product Label

Label Size: 35.5*22.5mm. The label content is shown in the figure below. The S/N code must be generated according to procedural documents and actual conditions; the figure below is for reference only.



5 Notes

5.1 This product datasheet guarantees the quality of our product as a whole. When our product is installed into your product, please ensure that your product is evaluated and confirmed according to your specifications.

5.2 We cannot guarantee against failures resulting from any use deviating from the intended use specified in this product datasheet.

5.3 This product comes with a free three-month warranty from the date of purchase, provided the user operates it correctly; the user is responsible for material and maintenance costs.