Accurate
positioning
22°43'59.57617"N 114°03'03.61546"E

JS-HAC27A-D2

All-Constellations full-band Helical Antenna

Data sheet

Shenzhen Jumpstar Technology Co.,Ltd

Email : info@jumpstar-tech.com
Tel : (86) 0755-23732282
Fax : (86) 0755-23732823
Add : Room 1305, Building A, Lechuanghui Building, No. 1211
Guangguan Road, Guanlan Street, Longhua District, Shenzhen

content

Change revision history

Version	Date	Revision content changes	Reviser
V1.0	2024-08-24	First edition released	WW
V1.1	2025-11-18	Correct the received signal	WW

1 Product Introduction

1.1 Overview

The JS-HAC27A-D2 is a multi- system , multi- frequency high-precision antenna covering BDS, GPS, GLONASS, and Galileo , ensuring compatibility with multiple domestic and international systems and offering plug-and-play functionality. Its low profile facilitates integration, and the antenna boasts high stability. This ingenious structure provides excellent gain and directional pattern characteristics in any direction. The antenna element employs multi-stage amplification, two-stage filtering, multiple feed points, and a high-gain design, ensuring the phase center coincides with the geometric center and providing a wide beam pattern. It can be widely used in surveying, mapping, navigation, and other industries, and is particularly suitable for various applications of lightweight unmanned aerial vehicles (UAVs), such as aerial photography, remote telemetry, disaster monitoring, traffic patrol, and security monitoring.

1.2 Product Characteristics

- High gain
- Beamwidth of the radiation pattern
- Stable phase center, high gain at low elevation angles
- 360° horizontal coverage
- Wide bandwidth, allowing multiple systems to operate simultaneously.
- IP65 waterproof
- Plug and play
- Mini and ultralight, weighing only 16.7g
- The overall dimensions are Φ28.2*H59.3 mm, which facilitates integrated system design.

1.3 Product Application

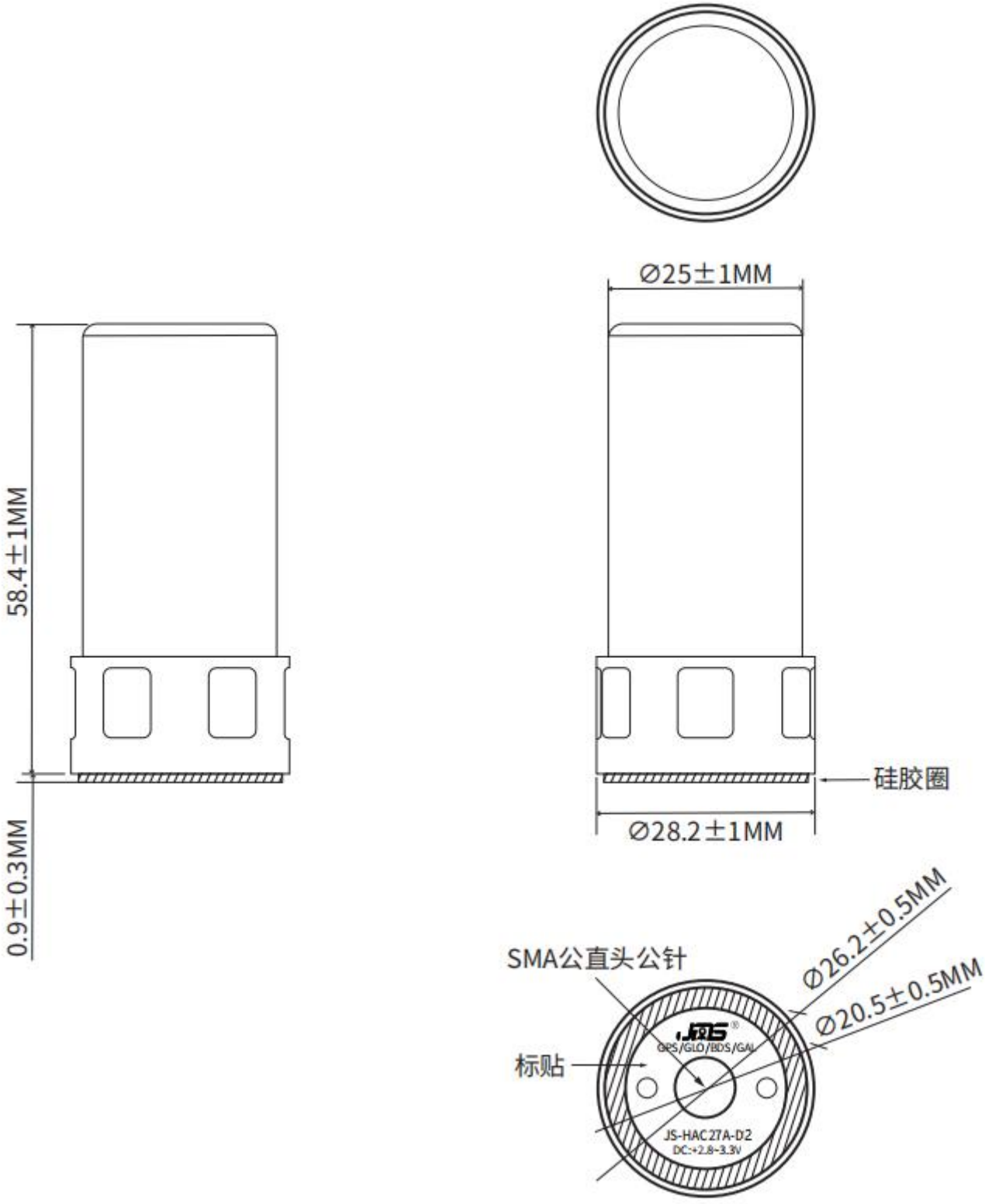
- Surveying and mapping
- Light drones
- Traffic patrol
- Disaster monitoring
- Navigation and Scheduling
- Geographical surveying
- Security surveillance
- Remote telemetry

2 Performance Parameters

2.1 Performance Indicators

passive antenna	
Received signal	■GPS L1 L2 L5 ■BDS B1 I B1C B2 I B3I B2b B2a ■GLONASS G 1 G2 ■GALILEO E1 E5a E5b E6
Impedance	50Ω
Polarization mode	Right-hand circular polarization
Shaft ratio	≤3dB
Horizontal plane coverage angle	360°
VSWR	≤2.0
LNA	
LNA gain	28±3dB
Noise figure	≤2 dB
VSWR	≤2.0
Operating voltage	+2.8~3.3V DC
Operating current	≤35mA
filter	2-channel filter

2.2 Structure



2.3 Product Composition

parameter	Specification
Antenna size	Φ28.2* H59.3mm
Connector type	SMA male head
Casing color	black
Fixing method	SMA rotary knob

3 Environmental conditions

parameter	Specification
Operating temperature	-30 ℃ ~ + 70 ℃
Storage temperature	-35 ℃ ~ + 75 ℃
Humidity	0%~ 95% non-condensing

4 Environmental Testing

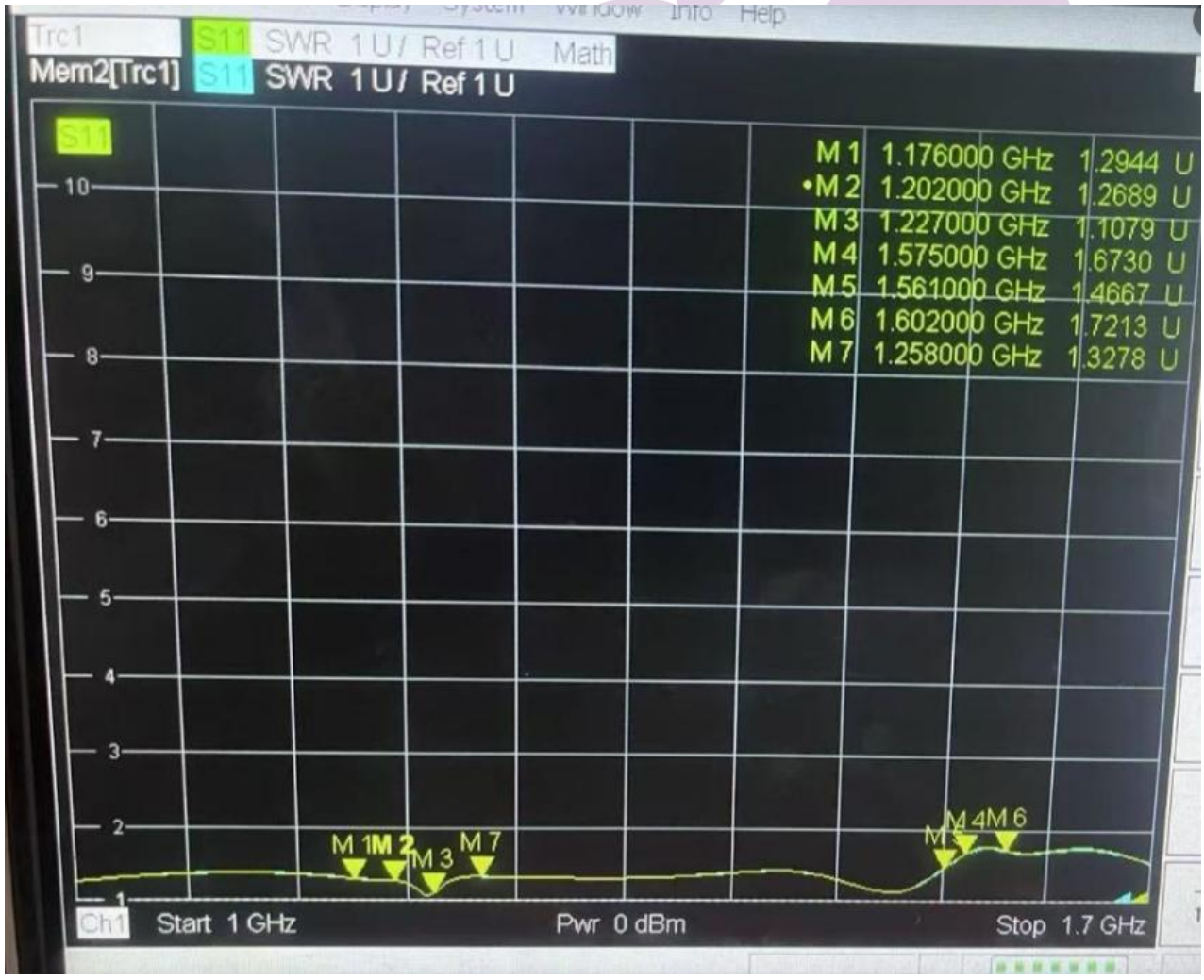
1. High-temperature test: After being placed in a constant temperature and humidity test chamber at 75 ℃ and 95% humidity for 24 hours, and after inspection showing no deformation, and after recovering at room temperature (for at least 1 hour), its performance is tested as shown in the table below:

2. Low temperature test: After being placed in a constant temperature and humidity test chamber at -35 ℃ for 24 hours, and after inspection showing no deformation, and after recovering at room temperature (for at least 1 hour), its performance is tested as shown in the table below:

NO.	Parameter	Performance at room temperature	High temperature test performance and deviation	Low temperature test performance and deviation
1	Amplifier gain	28±3 dB	28±3 dB	28±3 dB
2	Standing Bobby	≤2.0	≤2.0	≤2.0
3	Noise figure	≤2.0 dB	≤2.0 dB	≤2.0 dB

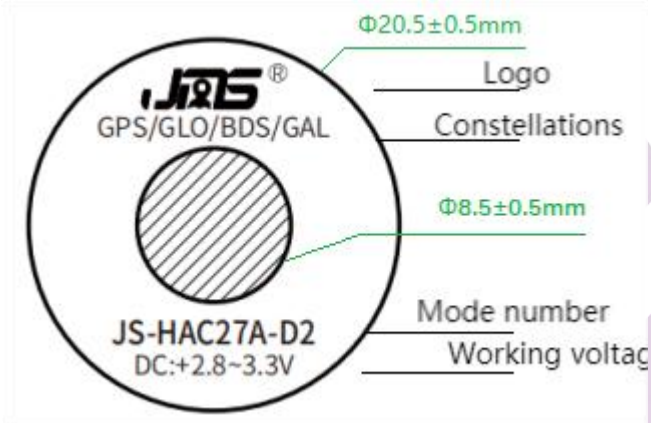
5. Test Curve Graph

FPC Frequency Standing Wave Test



6 Product Labels

The label dimensions are shown in the image below. The shaded areas are perforated. The drawing scale is 1:1.



7 Waterproofing Instructions

The product's IP65 waterproof rating is based on actual user testing, specifically the ability to meet the requirements after SMA connector mating assembly, as shown in the diagram below.

Note: Individual units do not meet the IP65 waterproof rating.