

Product Name	GNSS Base Station Timing Antenna	Product Code	KH-GPS/BD-SS02
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Antenna Technical Specifications



1. Summary

◇ This antenna is a dual-frequency receiver for BeiDou/GPS satellite signals, primarily designed for mobile communication base station satellite positioning, system timing, and other applications requiring access to BeiDou/GPS satellite signals. It meets the current demand for multi-system compatibility in navigation positioning devices and can be paired with various receivers domestically and internationally. It is widely used in navigation positioning, tracking monitoring, security surveillance, and military applications.

◇ The antenna features high gain and good axial ratio, with a wide beamwidth in its radiation pattern. It performs well in receiving low-elevation angle signals and operates effectively in various harsh environmental conditions. The low noise amplifier (LNA) section of the antenna utilizes a low noise amplification circuit design, ensuring high gain with low noise to enhance the accuracy and success rate of positioning and communication.

The antenna is designed with a fully sealed enclosure for aesthetic appeal and durability. It exhibits excellent waterproof, corrosion-resistant, and high-temperature-resistant properties. The antenna housing is made from UV-resistant and aging-resistant engineering plastics, ensuring long-term operation in outdoor harsh environments.

2. Technical Requirements

2.1 Antenna Technical Requirements

	Technical Requirements	Technical Specifications
1	Operating Frequency	BeiDou B1:1561.098±2.046MHz GPS L1:1575.42±10MHz
2	Gain	≥4.5dBi
3	Axis Ratio	≤3.0dB@Center Frequency
4	Front to Back Power	≥10dB
5	Output V.S.W.R	≤1.5
6	Polarization	RHCP
7	Impedance	500

2.2 LNA Technical Requirements

	Technical Requirements	Technical Specifications
1	LNA Gain	34±2dBi
2	Noise Figure	≤1.9dBtyp (≤2.4dB Across Full Temperature Range)
3	Output V.S.W.R	≤2.0
4	Output Impedance	500
5	Out of Band Rejection	f0=1568MHz±30MHz: ≥12dBc f0=1568MHz±50MHz: ≥35dBc f0=1568MHz±100MHz: ≥70dBc(With Pre-Filter)
6	Pass Band Ripple	1575.42MHz±1.023MHz: ≤1dB 1561.098MHz±2.046MHz: ≤1dB
7	1dB Compression Point Output	≥0dBm (Only LNA)
8	Jam Rejection of Large Signal The receive roperates reliably under these conditions	When a 0 dBm large signal is applied at a frequency 100 MHz offset from the center frequency, the in-band gain variation of the GPS antenna is less than 2 dB. At a frequency 60 MHz offset from the center frequency, with a -10 dBm large signal applied, the in-band gain variation of the GPS antenna is less than 2 dB. At a frequency 50 MHz offset from the center frequency, with a -20 dBm large signal applied, the in-band gain variation of the GPS antenna is less than 2 dB.
9	Operating Voltage	3.5V ~ 5V
10	Operating Current	≤40mA In all environmental conditions

2.3 Environmental Reliability Requirements

1	Relative Humidity	90%
2	Operating Temperature	-40°C ~+80°C
3	Operating Environment	-45°C ~+85°C
4	Storage Temperature	Outdoor, meets IP67 requirements. Note:Apply waterproof sealant tape after installing the fixed base. Waterproof seal the cable head after connecting the cable.
5	Surgeresistion	According to IEC 61000-4-5 standard,withstands CWG surges,6 kV surge voltage with1.2/50µswaveform,or 3 kA surge current with 8/20 µs waveform,positive and negative polarity each 5 times.
6	ESD Protection	IEC6100-4-2 Grade3
7	MTBF	≥80000 hours

2.4 Structural Characteristics

1	Dimension	80X80mm,Refer to Figure1
2	Connector	N-K
3	Radome	Engineered plastic ASA, Incorporating anti-aging agents and UV absorbers
4	Weigh	<400g (Excludes mounting hardware)
5	Wind Resistance	140Km/h

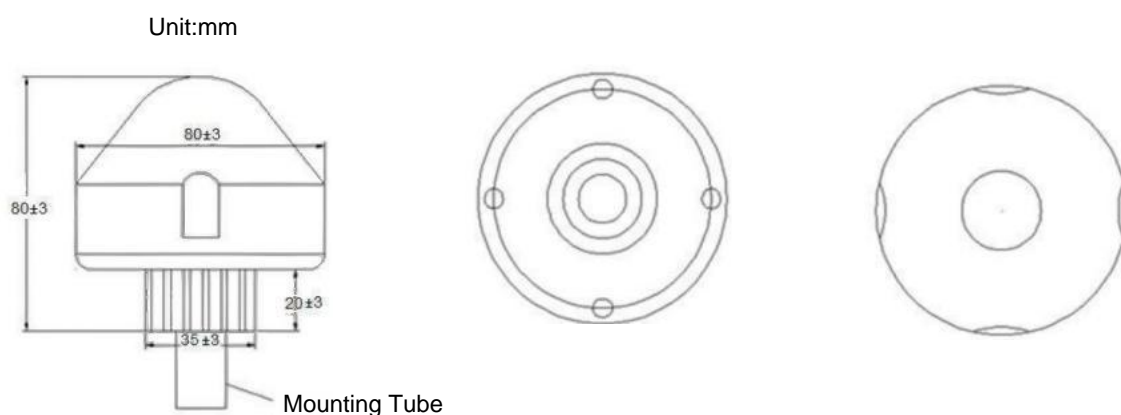


Figure 1 Antenna Outline Dimensions Diagram

2.5 Antenna Packaging And Installation

Antenna Packaging List

GNSS Timing Antenna	1pcs
Mounting Tube	1pcs
Mounting Fixtures	2pcs
Certificate of Conformity	1pcs

Packing specifications:

1. Standard Packing Box Dimensions: 230*300*550mm.
2. Quantity Per Standard Packing Box: 24sets/box.
3. Gross Weight Per Box: 21kg.

Installation instructions:

1. Mounting Bracket: Suitable for pole outer diameter range: 30 ~ 60mm, single side M6 thread length: 50mm.
2. Mounting Tube: Metal tube 27*100mm, thread length: 15mm.
3. Pole Mounting: Pole outer diameter range 30~60mm.

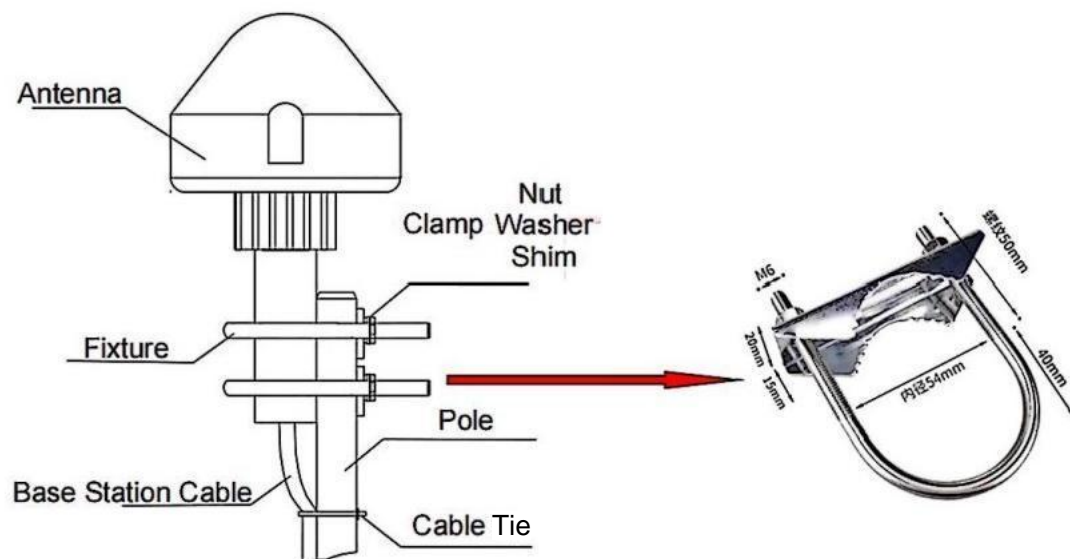


Diagram 2: Antenna Installation Schematic