

SKA06A5040

High-Precision

RTK&Timing Antenna

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1 Overview

The high-precision full-band mushroom-head timing antenna is an outdoor antenna specifically designed for accurate time synchronization. It supports full-band signal reception from systems such as BeiDou and GPS, making it suitable for high-precision timing applications.

The antenna adopts a high-gain ceramic radiating element and a low-noise amplifier (LNA) to effectively enhance weak signal reception and suppress multipath interference, ensuring stable phase center performance. Its right-hand circular polarization (RHCP) design further improves anti-interference capability, making it ideal for applications with stringent timing requirements, such as communication base stations, power systems, and rail transit.

2 Product Appearance

Dimensions	Φ95.5×124mm	Mounting Method	Threaded fastening
Weight	<110 g	Connector Type	SMA
Shell Color	White	Cable	RG174, 3meters

3 Operating Conditions

Temperature: -40℃～+85℃

Humidity: 95 % ～ 100 %

4 Storage Conditions

Temperature: -40℃～+85℃

Humidity: 95 % ～ 100 %

5 GPS/BD Antenna Specifications

NO.	Item	Specification	Post-Environmental Tolerance*
1	Receiving Frequency Range (MHz)	1、1166-1246 (MHz) 2、1555-1610 (MHz)	±2.5 (MHz)
2	Center Frequency (with 30 mm × 30 mm ground plane)	1568 (MHz)	±25 (MHz)
3	Bandwidth (MHz) (Return Loss ≤ - 10 dB)	≥20 (MHz)	±25 (MHz)

4	V.S.W.R (at Center Frequency)	≤ 2.0	± 0.5
5	Gain (Zenith, dBi typ, with 70 mm square GND plane)	5.0	± 0.5
6	Axial Ratio (with 70 mm square GND plane)	6.0dB	± 0.2
7	Polarization	Right-Hand Circular Polarization	----
8	Characteristic Impedance (Ω)	50	----
9	Frequency Temperature Coefficient (ppm/ $^{\circ}\text{C}$)	0 ± 10	----

* Post-Environmental Tolerance refers to allowable deviation after environmental tests.

6 GPS/BD Amplifier Specifications

NO.	Item	Specification
1	Frequency Range	1166-1610 (MHz)
2	Antenna Gain	36dB \pm 2dB
3	Output V.S.W.R	< 2.0
4	Noise Figure	$\leq 2.0\text{dB}$
5	Supply Voltage (DC)	3-15V
6	Operating Current (DC)	$\leq 25\text{mA}$

7 Environmental Tests

1. High Temperature Test: Placed in a dry oven at 80°C for 48 hours. No deformation observed. After drying and placing at room temperature for 24 hours, no oxidation was found.

2. Low Temperature Test: Placed in a freezer at -40°C for 48 hours. No deformation observed, no oxidation or rust after returning to room temperature.

NO.	Performance (Normal)	Performance (High Temp.)	Performance (Low Temp.)
1	Amplifier Gain: 36dB \pm 2	± 2	± 2
2	V.S.W.R: < 2.0	± 0.1	± 0.3
3	Noise Figure: $\leq 2.0\text{dB}$	± 0.1	± 0.1

3. Rainfall Test: Place the product under a faucet for 4 hours, allowing water to flow directly onto the casing. After four hours, if no water ingredients are observed at the bottom of the product, it indicates that the product has excellent waterproof performance.

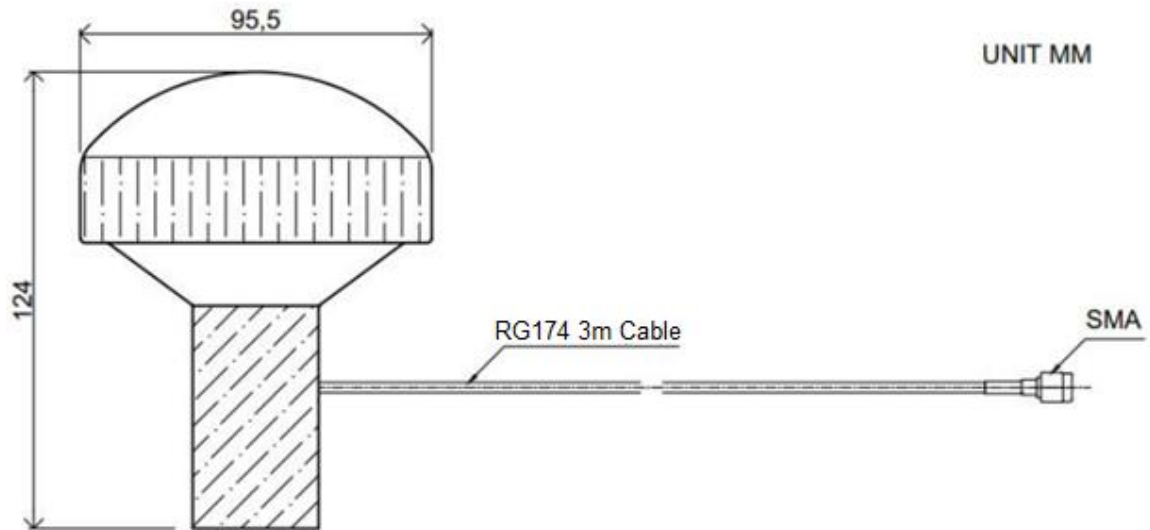
4. Waterproof Level: IP67

Test quantity	Suspension method	Test parameters	Result	Conclusion
2	30° hanging, cut edge covered with 3M tape	Dust-free environment, atmospheric pressure 80 Pa Solution pH: 6.9 Salt solution concentration: 42 g sea salt per liter of water at 35℃ Density: 1.0366 After testing, rinse with 32℃ flowing pure water and blow dry.	No oxidation or corrosion observed.	The product demonstrates excellent anti-oxidation and corrosion resistance.

8 Product Photos



9 Dimensional Drawing



Tolerance:

- $X = \pm 2 \text{ mm}$
- $X.X = \pm 0.3 \text{ mm}$
- $X.XX = \pm 0.05 \text{ mm}$

Units: mm

10 Contact Information

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