

SKA04A5040-30RASJ

External Antenna

Document Information

Title	SKA04A5040-30RASJ External Antenna
Type	Datasheet
Code	SL-24060421
Version	V1.03 (25-July-2025)
Confidentiality Level	Public

Revision History

Version	Description	Writer	Date
V1.01	Original version	Lena	20240607
V1.02	Add OTA parameters	Taylor	20250702
V1.03	Update parameters	Taylor	20250725

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1 Overview

SKA04A5040-30RASJ High-Precision External Antenna is specifically designed for centimeter-level real-time kinematic (RTK) measurement, supporting full-band signal reception for BeiDou, GPS, GLONASS, and Galileo. It adopts a multi-feed ceramic array technology to achieve a phase center error of less than 1 mm, ensuring stability in high-precision positioning. The built-in low-noise amplifier and anti-interference filtering module effectively enhance signal quality in complex environments. The Right-Hand Circular Polarization (RHCP) design, combined with a metal ground plane, significantly suppresses multipath effects.

2 Product Appearance

Dimensions	84*75*25mm	Mounting Method	Adhesive
Weight	210 g	Connector Type	SMA
Shell Color	Black	Cable	RG174, 3meters

3 Operating Conditions

Temperature: -40°C~+85°C

Humidity: 95 % ~ 100 %

4 Storage Conditions

Temperature: -40°C~+85°C

Humidity: 95 % ~ 100 %

5 GPS/BD Antenna Specifications

NO.	Item	Specification	Post-Environmental Tolerance*
1	Receiving Frequency Range (MHz)	1166-1288 (MHz) 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/°C)	0±10	----

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

6 GPS/BD Amplifier Specifications

NO.	Item	Specification
1	Frequency Range	1、1166-1288 (MHz) 2、1555-1610 (MHz)
2	Antenna Gain	30dB±2dB
3	Output V.S.W.R	<1.5
4	Noise Figure	≤1.5dB
5	Supply Voltage (DC)	3-5V
6	Operating Current (DC)	≤25mA

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: 30dB±2	±2	±2
2	V.S.W.R: <1.5	±0.1	±0.3
3	Noise Figure: ≤1.5dB	±0.1	±0.1

3. Waterproof level: IP67

4. Salt Spray Test

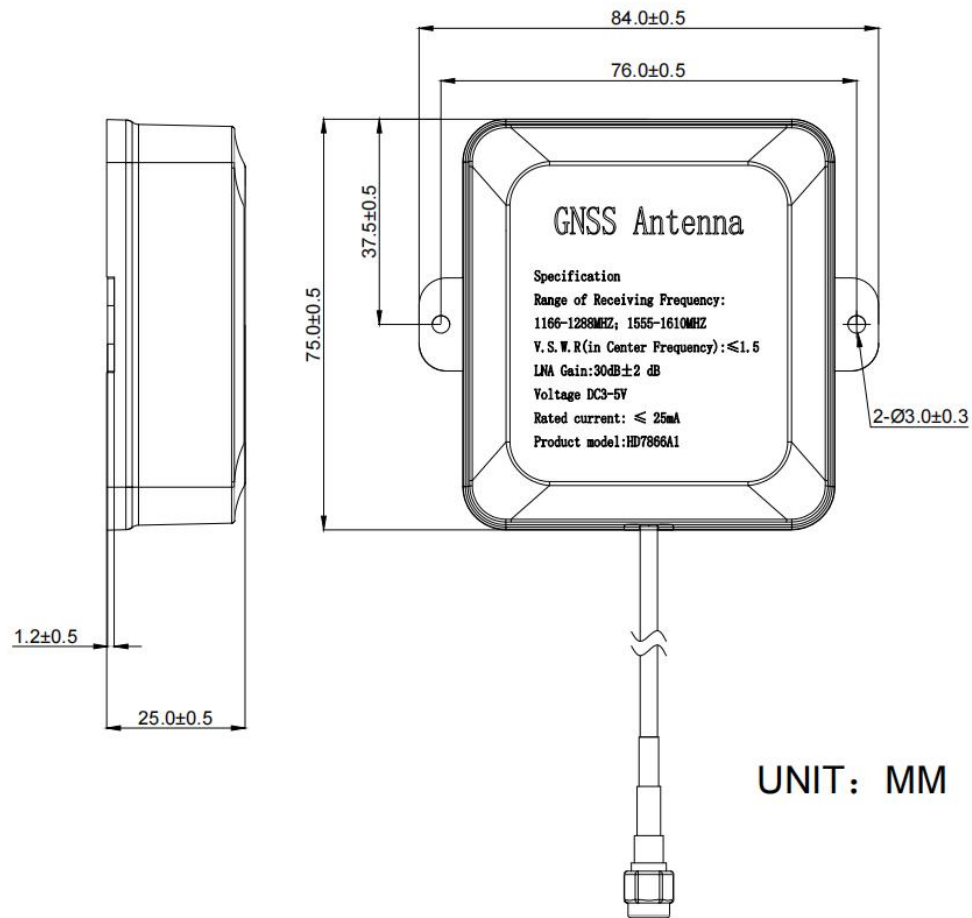
Test quantity	Suspension method	Test parameters	Result	Conclusion
2	30° hanging, cut edge	Dust-free environment, atmospheric pressure 80 Pa	No oxidation or corrosion	The product demonstrates

	covered with 3M tape	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.	observed.	excellent anti- oxidation and corrosion resistance.
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8 Product Photos



9 Dimensional Drawing



Tolerance:

- X = ±2 mm
- X.X = ±0.3 mm
- X.XX = ±0.05 mm

Units: mm

10 Contact Information

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