SKA01C25-30RPSJ
GPS/BDS External Antenna

Document Information	
Title	SKA01C25-30RPSJ GPS/BDS External Antenna
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Confidentiality Level	Public

Revision History

Version	Description	Writer	Date
V1.01	Original version	Lena	20240624
V1.02	Update parameters	Taylor	20250725

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1 Overview

The function of a GPS receiving antenna is to convert the electromagnetic wave energy of the radio signals from satellites into electrical power that can be processed by the receiver's electronic components.

Our GPS antenna consists of a ceramic antenna element and an active amplifier. It is enclosed in a plastic shell, offering waterproof and moisture-resistant properties. The product is compact in size, with a magnet installed at the bottom for easy installation and use.

2 Product Appearance

Dimensions	50*38*16.5mm	Mounting method	Adhesive
Weight	＜100 g	Connector Type	SMA female
Shell color	Black	Cable	RG174, 3meters

3 Operating Conditions

Temperature：-40℃～+85℃

Humidity：95％～100％

4 Storage Conditions

Temperature：-40℃～+85℃

Humidity：95％～100％

5 GPS/BeiDou Antenna Specifications

NO.	Item	Specification	Post-Environmental Tolerance*
1	Receiving frequency range (MHz)	1555-1605（MHz）	±2.5（MHz）
2	Center frequency (with 30×30 mm² ground plane)	1568（MHz）	±25（MHz）
3	Bandwidth (Return Loss ≤ -10 dB)	≥15（MHz）	±8（MHz）
4	V.S.W.R (at center frequency)	≤1.5	±0.5
5	Gain at zenith (with 70×70 mm² ground plane)	3.5	±0.5
6	Axial ratio (with 70×70 mm² ground plane)	3.0dB	±0.2
7	Polarization	Right-hand circular polarization	----

8	Characteristic impedance	50	----
9	Frequency temperature coefficient	0±10	----

***Post-Environmental Tolerance: allowable additional deviation after environmental testing.**

6 GPS/BeiDou Amplifier Specifications

NO.	Item	Specification
1	Frequency range	1550-1610（MHz）
2	Amplifier gain	18dB±2dB
3	V.S.W.R	＜1.5
4	Noise figure	≤1.5dB
5	DC voltage	2.5-5V
6	DC current	≤10mA

7 Environmental Tests

1. High Temperature Test：Placed in a dry oven at 80℃ 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℃ 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: 18dB±2	±2	±2
2	V.S.W.R: ＜1.5	±0.1	±0.3
3	Noise figure: ≤1.5dB	±0.1	±0.1

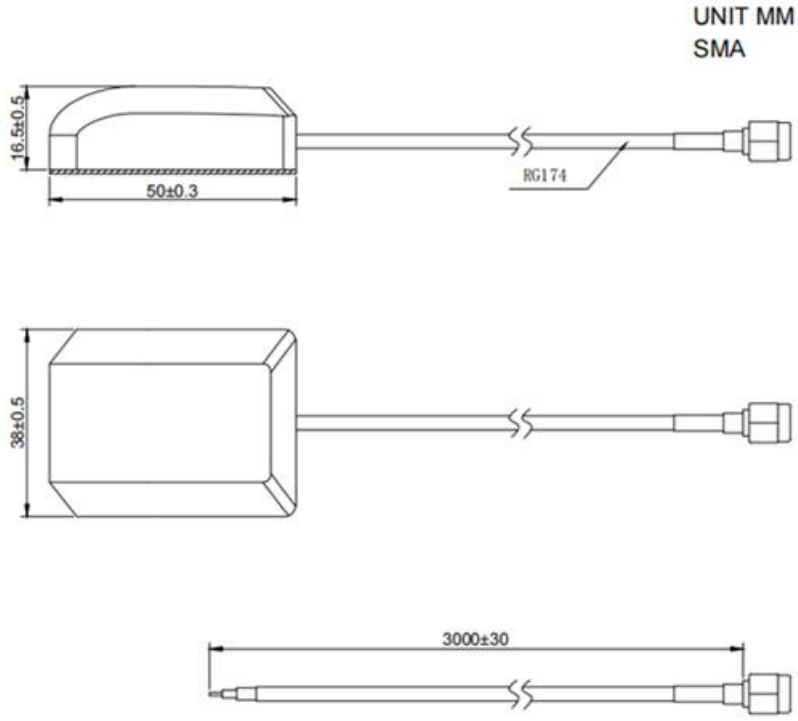
3. Salt Spray Test

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℃	No oxidation or corrosion observed.	The product demonstrates excellent anti-oxidation and corrosion resistance.

		flowing pure water and blow dry.		

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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