



AK201





Dalang Communication Technology Co., Ltd Product Specification

Product Name:	GPS external antenna
Product Model:	AK201
Version Number:	V 1.0
Revision Date:	2025.07.18

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1 Product Application Scenarios

Our company's AK201-GPS external antenna has excellent performance and can be widely adapted to various scenarios: in the field of automotive electronics, it assists in precise vehicle positioning and navigation operations, while providing stable signal support for automotive security, area measurement, and monitoring equipment, ensuring efficient and reliable in vehicle electronic systems; Faced with emerging electronic products and consumer electronics devices, such as handheld navigators, tablets, and other products that require GPS signal enhancement, they can effectively enhance signals, solve problems such as weak and unstable signals, make device positioning more accurate and navigation smoother, safeguard the positioning function of various electronic terminals, and meet the high requirements for GPS signal quality in different scenarios. Refer to Figure 1 for details.



Figure 1 Product Application Scenarios

2 Features

In this chapter, we will delve into and comprehensively elaborate on the functionalities and operating principles of the AK201, detailing how it plays a pivotal role in various applications as follows:

- 1. Strong compatibility:** Supports GPS and BD (Beidou) dual systems, can simultaneously receive two types of satellite signals, can flexibly switch between different satellite positioning systems, meet the needs of different scenarios and devices, and improve the reliability and accuracy of positioning.
- 2. Flexible working voltage:** The working voltage range is 3V-5V, suitable for various power environments, and can be matched with the power systems of various electronic devices without the need for additional complex power conversion devices, making it easy to connect to various devices.
- 3. Accurate signal reception:** The working frequency is 1589MHz, which is within the effective frequency range of GPS and Beidou satellite signal transmission. It can efficiently capture satellite signals, making device positioning more accurate. Whether in urban high-rise environments or open outdoor areas, it can quickly and accurately obtain location information.
- 4. Good protective performance:** The shell is made of sturdy and durable materials, with certain anti drop and pressure resistance, which can maintain the normal working state of the antenna in harsh use environments, such as vehicle vibration, outdoor collisions, etc.
- 5. Easy installation:** Equipped with suitable connection cables, such as common IPEX ports, it is convenient to connect with various devices. The installation process is simple and fast, without the need for professional installation tools and complex installation steps.

3 Structural Characteristic

In this section, we will conduct an in-depth analysis of the product's design details, presenting its aesthetic features and precise interface specifications through detailed structural diagrams. This perspective aims to provide a comprehensive framework, thereby enhancing the understanding and perception of the product's architecture. Refer to Figure 2, Figure 3, Figure 4.

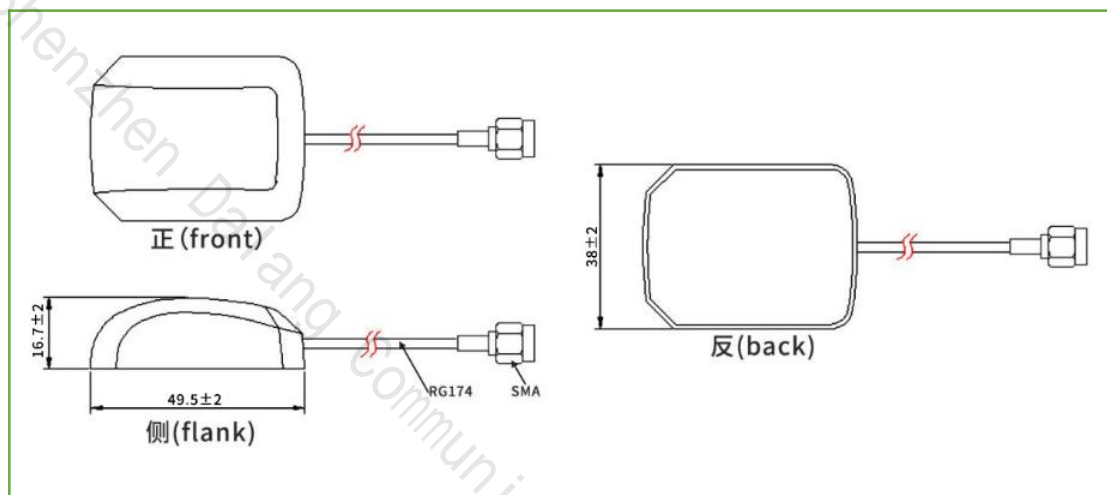


Figure 2 Product structure diagram

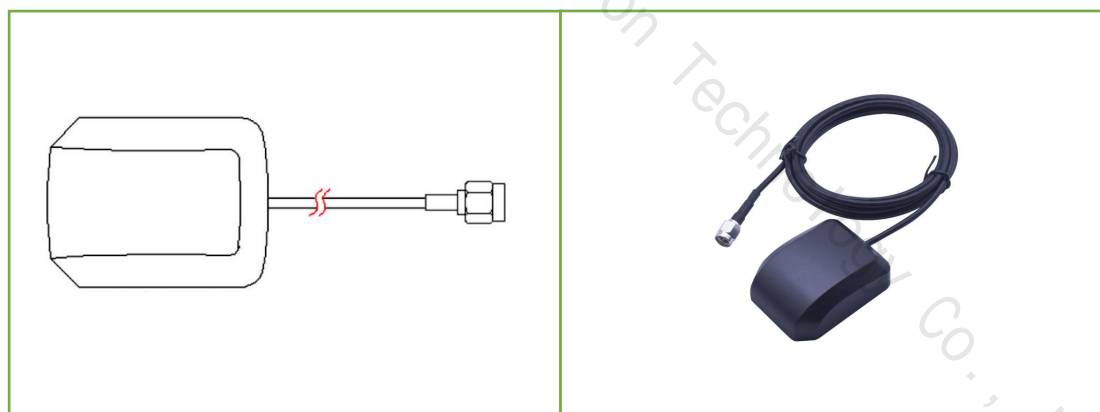


Figure 3 Product correlation chart



Figure 4 Process flow diagram

4 Specifications

In this section, we will provide a detailed list and explanation of the product's chip features, sensitivity, accuracy, operating principles, and other technical details, as detailed in Table 1.

Table 1 Product Specifications

Specification parameters			
Antenna characteristics	1	Antenna model	GNSS antenna
	2	Ceramic size	25*25*4
	3	Usage frequency	GPS L1: 1575.42±1.023MHz, GLONASS: L1:1602+0.5625*K(MHz) BDS: B1 1561±1.023MHz GALILEO E1: 1575
	4	Gain (peak gain of 70 * 70mm ground facing the zenith plane)	3dBic
	5	V.S.W.R	≤1.5
	6	-10dB bandwidth MHz minimum	10min
	7	impedance	50 Ω
	8	Polarization mode	RHCP
	9	Frequency Temperature Coefficient	20ppm/deg. °C max
LAN	1	gain	18±2dB
	2	figure	<1.5dB
	3	VSWR	<2.0
	4	output vswr	<2.0
	5	voltage	DC 3~5V
	6	electric current	3~6mA
	7	impedance	50 Ω
Physical parameters	1	Product size	49.5*38*16.7mm
	2	Product weight	50g
	3	Line length	L=1.5m
	4	Line type	RG174
	5	Linear interface	SMA
	7	pcb	FR4
	Environmental	1	work environment
2		Environment	-55°C ~ +100°C, 10%~95% RH
3		vibrate	Sine scan @ 1.5mm AM, 10~55Hz per axis

5 Product Photos

In this chapter, we will showcase real-life images of the product, as shown in Figure 5. These images provide a detailed view of our product from various angles and perspectives. We believe that through authentic representation, we can better convey the value and concept of the product, thereby enhancing your trust and satisfaction.



Figure 5 Product Images