AK520-G

Dalang Communication Technology Co., Ltd Product Specification

Product Name:	GPS ANTENNA
Product Model:	AK520-G
Version Number:	V 1.0
Revision Date:	2025.04.28

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1 Product Application Scenarios

Our company's AK520-G RF antenna module, with a unique circular structure as the carrier, achieves excellent signal transmission and reception functions through high-quality printed circuit boards and internal precision RF components. Its uniqueness lies in the optimized design of the connecting cables, which can effectively reduce signal interference. This design allows the antenna to accurately adapt to multiple frequency bands, significantly improving the stability of signal transmission. AK520-G has the characteristics of high sensitivity and low attenuation. Due to the use of high-quality materials, it has excellent anti-interference ability and can operate stably in complex electromagnetic environments and harsh weather conditions. It can be widely used in smart homes, industrial Internet of Things, wireless monitoring devices, etc., providing reliable wireless connection support for various devices. 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 AK520-G, detailing how it plays a pivotal role in various applications as follows:

1. High precision positioning: It can meet the application requirements of high-precision GNSS (Global Navigation Satellite System) antenna positioning and provide more accurate location information.
2. Antenna design: Adopting a Φ50 * 5 ceramic antenna design to increase phase center stability and enhance signal reception capability.
3. Compact size and easy integration: With a compact structure, it is easy to integrate into miniaturized devices (such as IoT terminals, wearable devices, etc.), saving space and having strong adaptability.
4. High gain and wide frequency band: Antennas have high gain and a wide frequency band range, which can effectively improve the reception quality and coverage range of signals.
5. Environmental compliance: Compliant with RoHS (Restriction of Hazardous Substances Directive) requirements, ensuring that the product meets environmental performance standards and is suitable for the global market.

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.

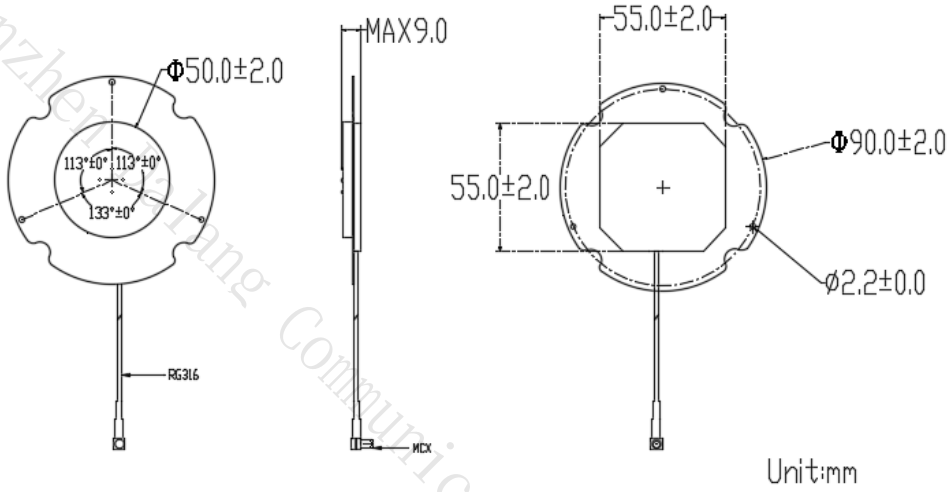

Figure 2 Product structure diagram

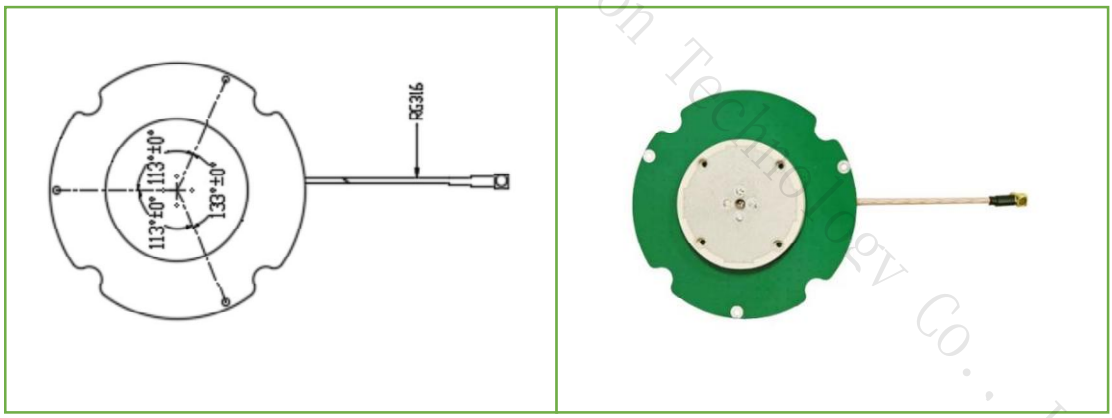

Figure 3 Product correlation chart

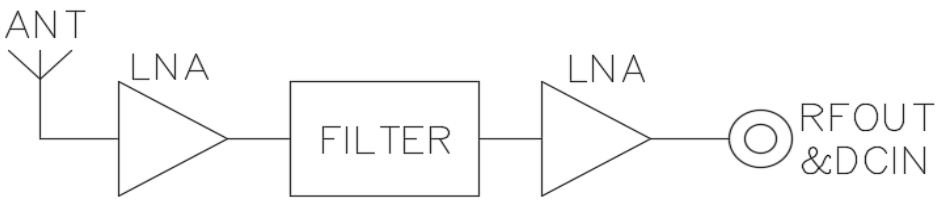

Figure 4 Process flow diagram

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	Antenna size	ф50*50*4mm
	3	Usage frequency	GPS：L1:1575.42±1.023MHZ GLONASS：L1:1602+0.5625MHz BDS: B1:1561±1.023MHz GALILEO：E1:1575
	4	bandwidth	10 MHz min. @S11≤-10 dB
	5	In band standing wave	≤2.0
	6	Antenna gain	2dBic
	7	Polarization form	R.H.C.P.
	8	axial ratio	≤3.0dB Typ.
LNA performance index	1	gain	26±1.5dB
	2	figure	1.5dB typ.
	3	output vswr	＜2.0 typ.
	4	voltage	DC 3.3-15V
	5	electric current	20mA
	6	impedance	50Ω
Working characteristics	1	size	ф90*9mm
	2	Product weight	44.3g
	3	joint	MCX elbow
	4	wire rod	RG316
	5	External leakage line length	150mm
	6	PCB	FR4
	7	work environment	-40℃~+85℃，10%~95%RH
	8	Environment	-40℃~+85℃，10%95%RH

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.

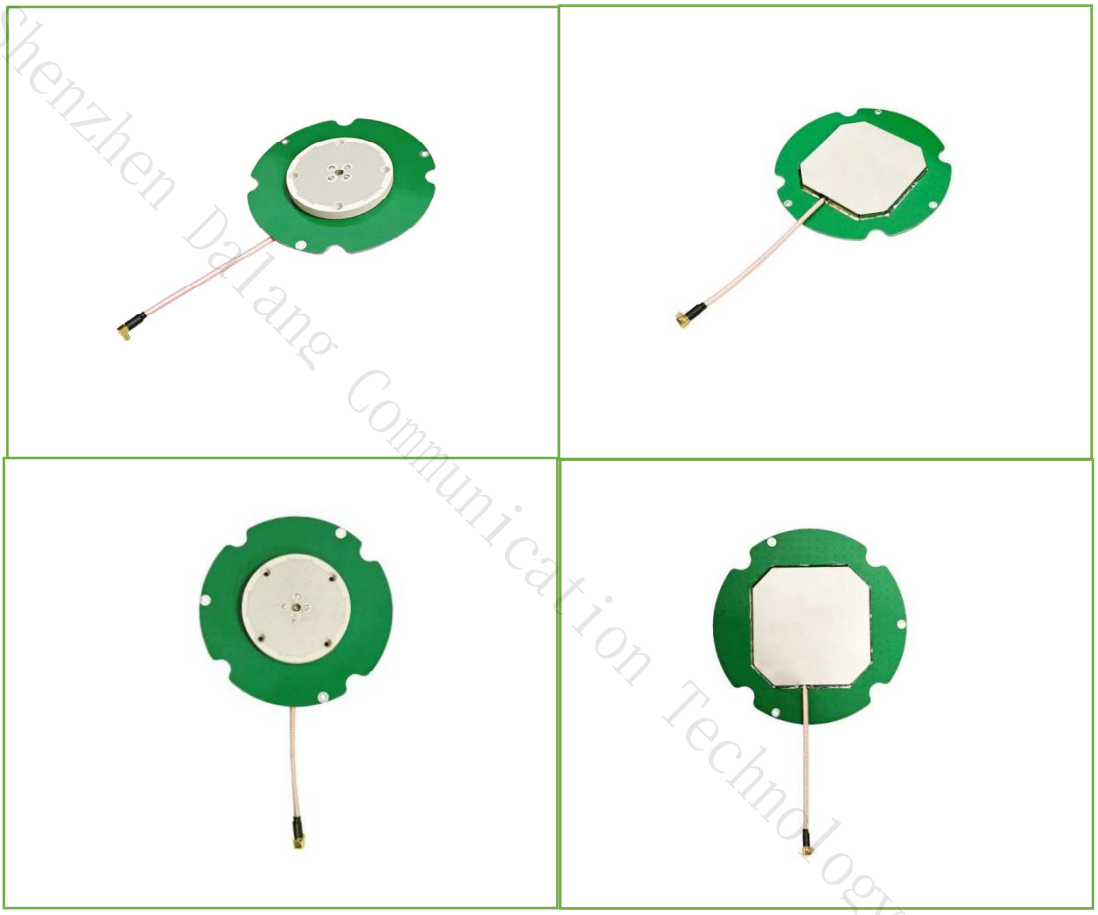

Figure 5 Product Images