



AK154





Dalang Communication Technology Co., Ltd Product Specification

Product Name: Ceramic Antenna

Product Model: AK154

Version Number: V 1.0

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1 Product Application Scenarios

This AK154 ceramic antenna has a compact size of only 18x18x6.7mm and is made of dual frequency ceramic material, specifically designed for specific models. Relying on advanced technology, it can accurately receive GPS and Beidou satellite signals simultaneously, achieving high-performance signal capture and amplification in a compact space, laying a solid foundation for device positioning and navigation functions, allowing car mounted and portable terminals to stably obtain accurate location information in complex environments. With "small size, specialized adaptation, and strong performance", it helps upgrade the device positioning experience. 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 AK154, detailing how it plays a pivotal role in various applications as follows:

1. **Mini size:** 18x18x6.7mm compact size, easy to embed into small devices, suitable for compact space design.
2. **Dual frequency efficiency:** Made of dual frequency ceramic material, it can receive GPS and Beidou signals simultaneously, and can quickly and accurately locate in complex environments.
3. **Specialized and high-performance:** adapted to specific machines, matched with device hardware, built-in low-noise amplifier, interference suppression, and high-performance guarantee for precise positioning.
4. **Low power consumption and stability:** In the voltage range of 2.7-3.3V, the power consumption is low and the signal output is stable, balancing battery life and performance.
5. **Low noise advantage:** The noise coefficient is less than 1.5dB, which weakens environmental noise interference. For example, in urban electromagnetic dense areas, it can also make positioning signals clear and accurate.

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.

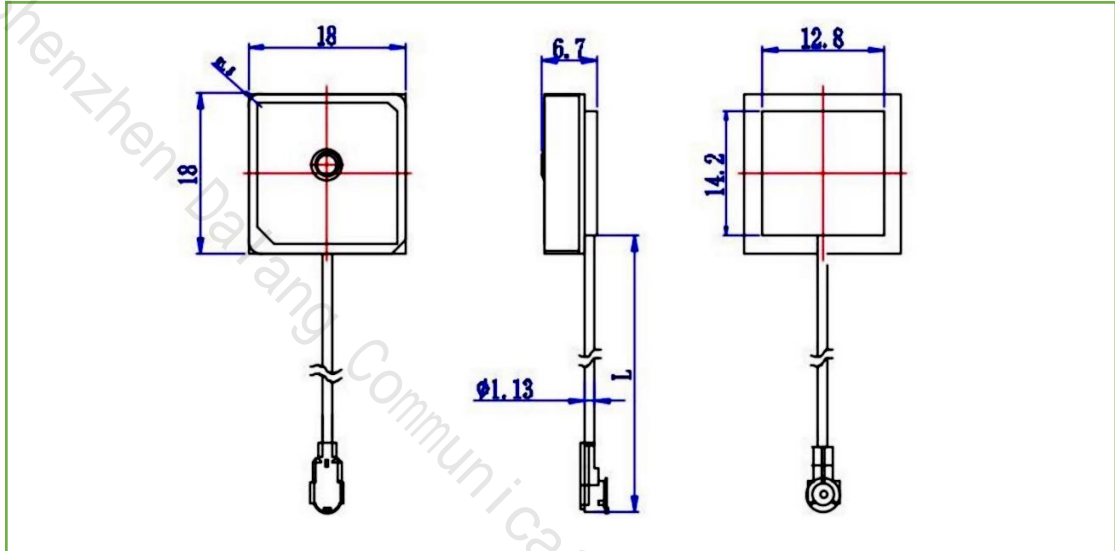


Figure 2 Product structure diagram

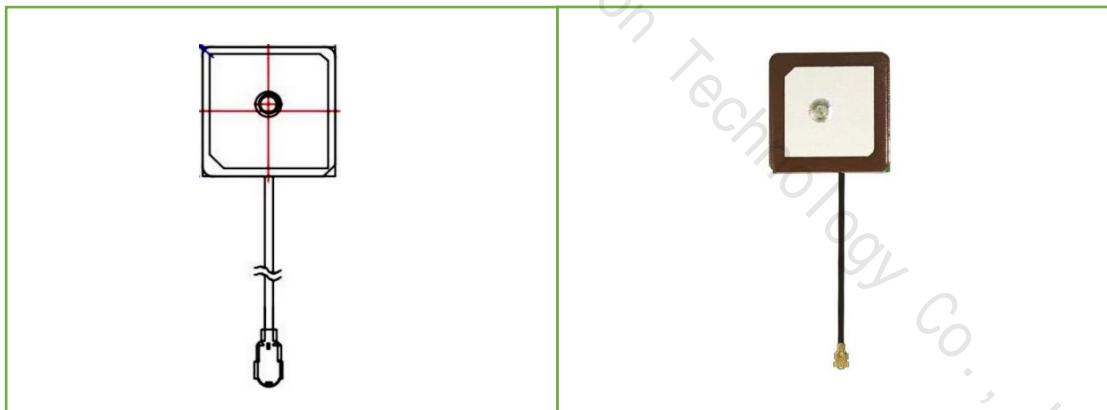


Figure 3 Product correlation chart



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	Beidou antenna
	2	Ceramic size	18*18*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)	2dBic
	5	V.S.W.R	≤1.5
	6	-10dB bandwidth MHz minimum	8 min
	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 2.7~3.3V
	6	electric current	3~6mA
	7	impedance	50 Ω
Physical parameters	1	Product size	18*18*6.7mm
	2	Product weight	7.6g
	3	Line length	L=15cm(Customizable)
	4	Line type	RG1.13(Customizable)
	5	Linear interface	IPEX(Customizable)
	6	pcb	FR4
Environmental	1	work environment	-40°C ~+85°C, 10%~95% RH
	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.

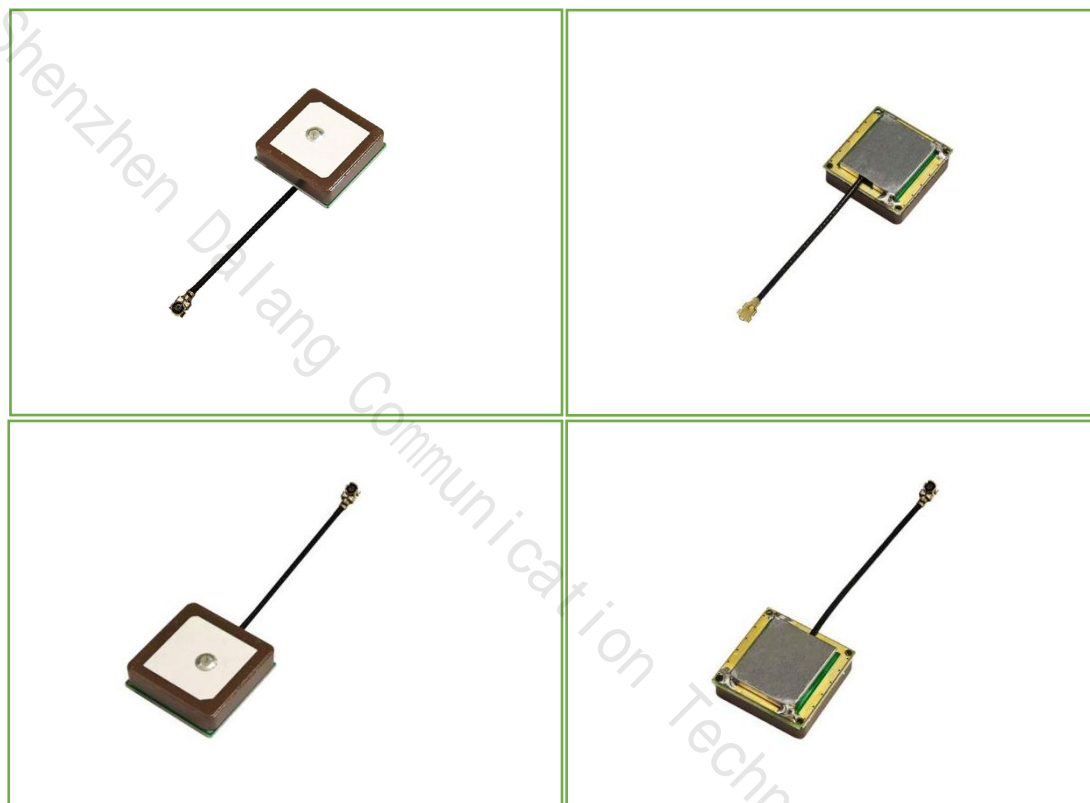


Figure 5 Product Images