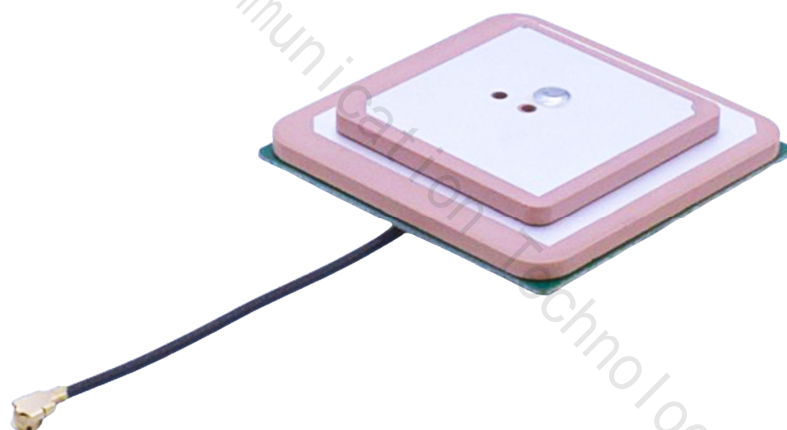




AK525





Dalang Communication Technology Co., Ltd Product Specification

Product Name: GPS ANTENNA

Product Model: AK525

Version Number: V 1.0

Revision Date: 2024.07.04

Confidentiality Statement

This document and the information contained within are the property of **"Dalang Communication Technology Co., Ltd"**, and are for use only by authorized individuals for specific purposes. This document contains confidential information. Without explicit written permission from **"Dalang Communication Technology Co., Ltd"**, no person or group may copy, distribute, disseminate, display, or disclose this document or any part of it to a third party in any form. Recipients must strictly adhere to confidentiality obligations, protect the information in the document from being disclosed or misused, and ensure that all relevant personnel follow the same confidentiality rules. Individuals or organizations violating this statement will face legal prosecution and/or contractual penalties.

Thank you for your support and cooperation in protecting the confidential information of **"Dalang Communication Technology Co., Ltd"**.

Contents

1 Product Application Scenarios	1
Figure 1 Product Application Scenarios	1
2 Features	2
3 Structural Characteristic	3
Figure 2 Product structure diagram	3
Figure 3 Product correlation chart	3
Figure 4 Process flow diagram	3
4 Specifications	4
Table 1 Product Specifications	4
5 Product Photos	5
Figure 5 Product Images	5

1 Product Application Scenarios

Our company's AK525 laminated ceramic active antenna stack is a revolutionary work in the field of communication, with distinct advantages. Its size is extremely compact and can be easily integrated into various small devices, achieving a compact design of the product. In terms of performance, it performs excellently, relying on laminated ceramic materials to efficiently adapt to high-frequency communication, significantly reducing signal transmission loss, while significantly improving gain through active circuits, enhancing signal transmission and reception capabilities, and ensuring stable and efficient communication. Moreover, it has stable mechanical performance and can adapt to complex and harsh working environments, ensuring long-term reliable operation and providing strong support for diverse communication scenarios. It is an ideal choice for various applications such as vehicle navigation, drone positioning, and precision agriculture. 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 AK525, detailing how it plays a pivotal role in various applications as follows:

- 1. Dual frequency 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. Ultra compact design:** The 35 * 25 * 8 specification is a relatively small size, which makes this active antenna highly advantageous in equipment integration that requires extremely high space. For example, in wearable devices and micro sensor nodes, it does not take up too much space, which helps to achieve miniaturization and portability of the devices.
- 3. Stacked antenna design:** Two single fed antennas are combined to form a stacked antenna, which can enhance signal reception capability and stability.
- 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.

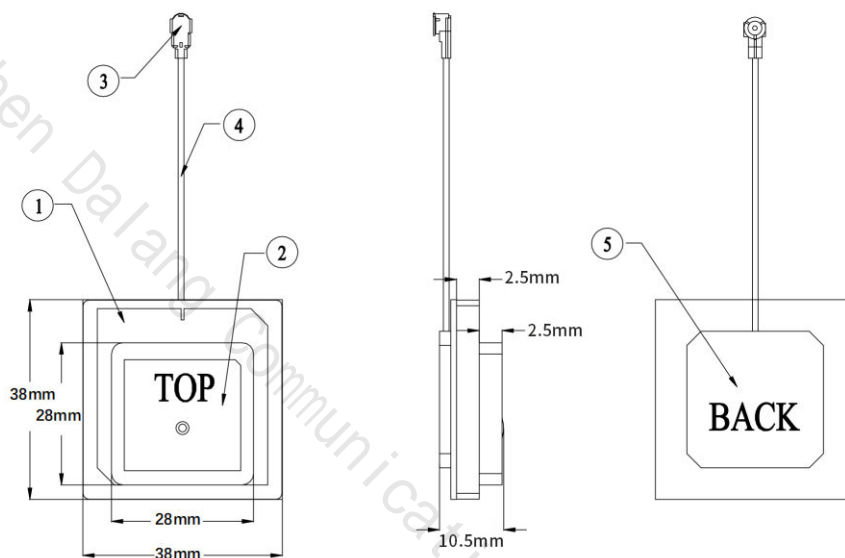


Figure 2 Product structure diagram

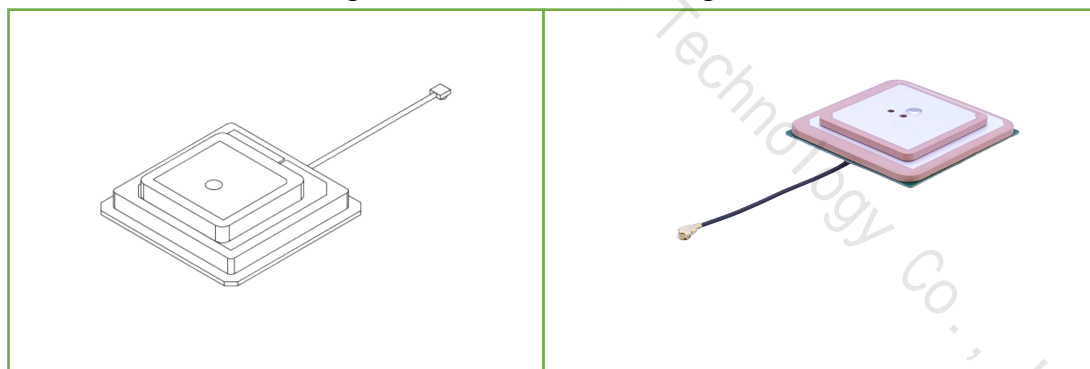


Figure 3 Product correlation chart



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	Ceramic size	38*38*2.5/28*28*2.5
	3	Usage frequency	GPS: L1:1575.42±1.023MHZ L5:1176.45±1.023MHZ GLONASS: L1:1602+0.5625MHZ BDS: B1:1561±1.023MHZ GALILEO: E1:1575
	4	Gain	28±2db
	5	V.S.W.R	≤2
	6	impedance	50 Ω
	7	Polarization mode	RHCP
	8	voltage	DC 3~5V
	9	electric current	15~25mA
mbom	1	Overall size	38*10.5mm
	2	Product weight	12g
	3	joint	IPEX (customizable)
	4	wire rod	RG1.13 line (customizable)
	5	Line length	65mm (customizable)
	6	PCB	FR4
work environment	1	work environment	-40℃~+85℃, 10%~95%RH
	2	Environment	-55℃+100℃, 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.

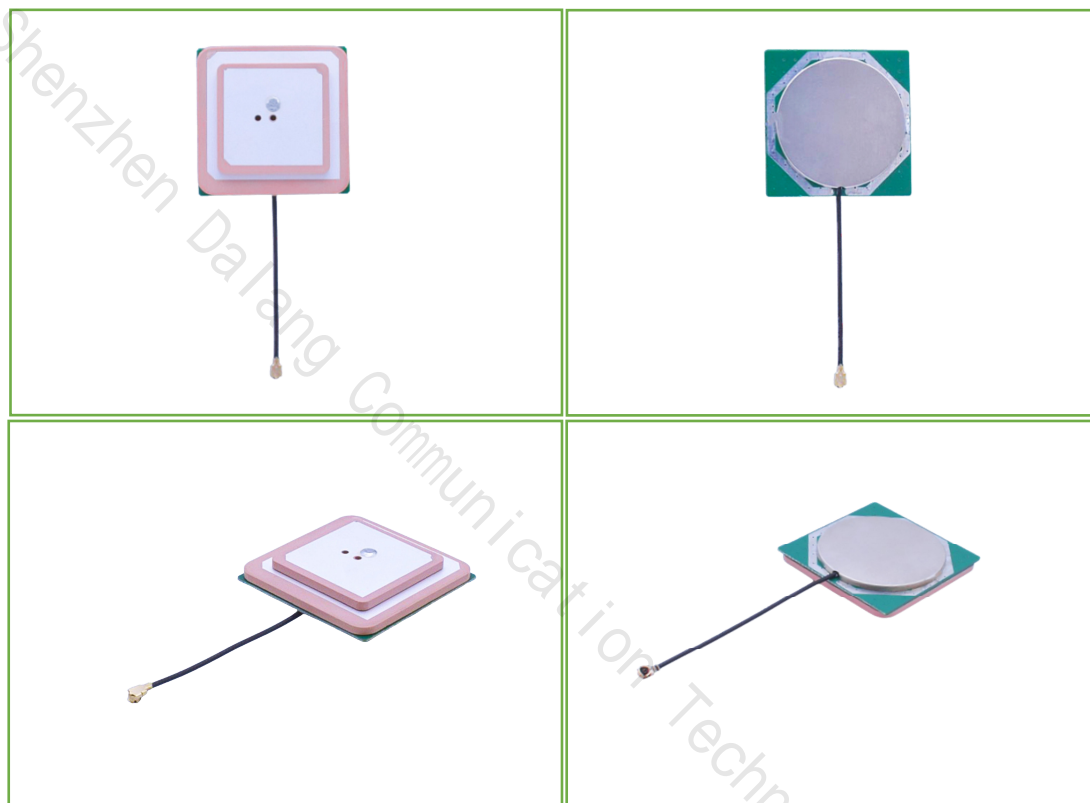


Figure 5 Product Images