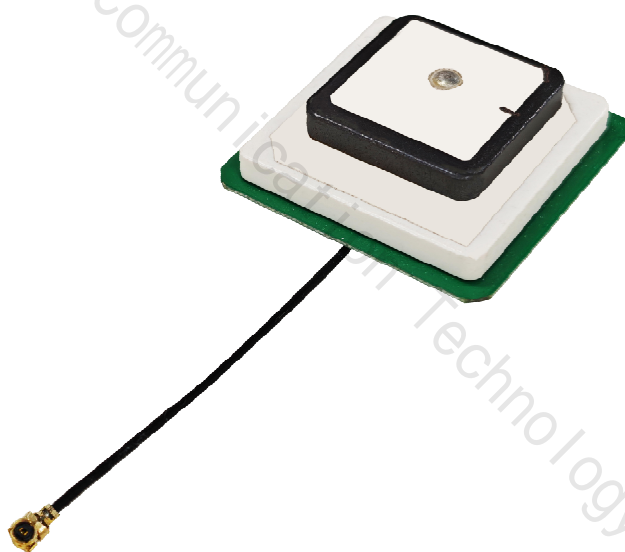


Dalang

AK520-Q





Dalang Communication Technology Co., Ltd Product Specification

| | |
|-----------------|-------------|
| Product Name: | GPS ANTENNA |
| Product Model: | AK520-Q |
| Version Number: | V 1.0 |
| Revision Date: | 2024.07.04 |

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1 Product Application Scenarios

The AK520-Q Multilayer Ceramic (25*35) Active Antenna is a high-precision, dual-frequency antenna for Beidou and GPS satellite navigation. It supports GPS L1, L2, L5, and Beidou B1, B2, B3 bands, offering broad coverage and high signal stability. Utilizing advanced ceramic technology, it is highly durable and adaptable to harsh environments, ensuring accurate positioning in urban and remote areas. Ideal for vehicle navigation, drone positioning, and precision agriculture. See 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-Q, detailing how it plays a pivotal role in various applications as follows:

1. **Dual-Frequency High-Precision Positioning:** Meets the needs of applications requiring high-precision GNSS (Global Navigation Satellite System) antenna positioning, providing more accurate location information.
2. **Multilayer Antenna Design:** Combines two single-feed antennas into one multilayer antenna, enhancing signal reception capability and stability.
3. **High Gain and Wide Bandwidth:** Features high gain and a wide frequency range, effectively improving signal reception quality and coverage.
4. **Environmental Compliance:** Complies with RoHS (Restriction of Hazardous Substances) standards, ensuring the product meets environmental performance requirements and is suitable for global markets.

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.

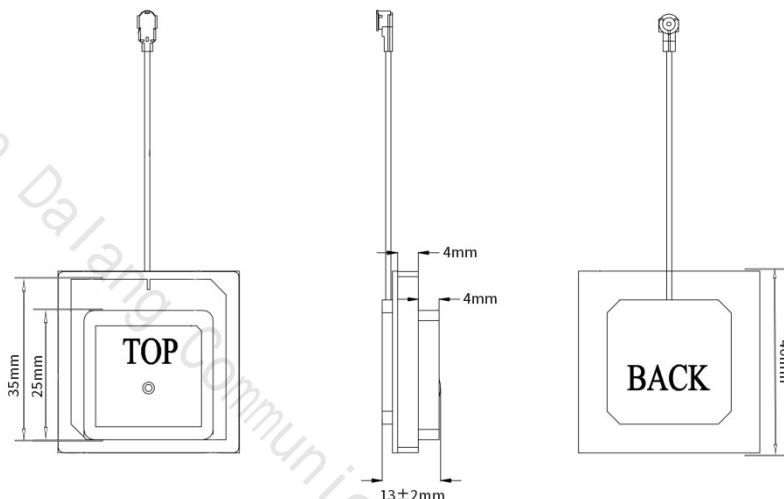


Figure 2 Product structure diagram

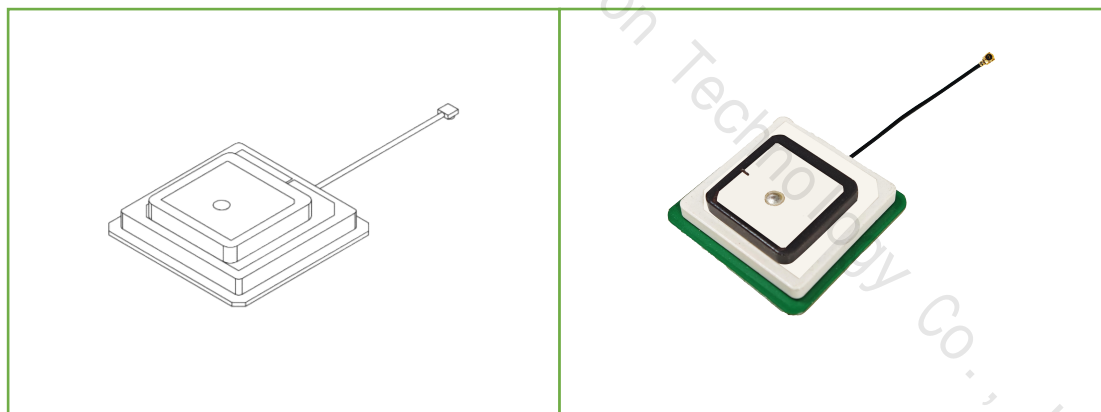


Figure 3 Product correlation chart



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 | 35*35*4/25*25*4 |
| | 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 | 40*13mm |
| | 2 | Product weight | 15g |
| | 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.

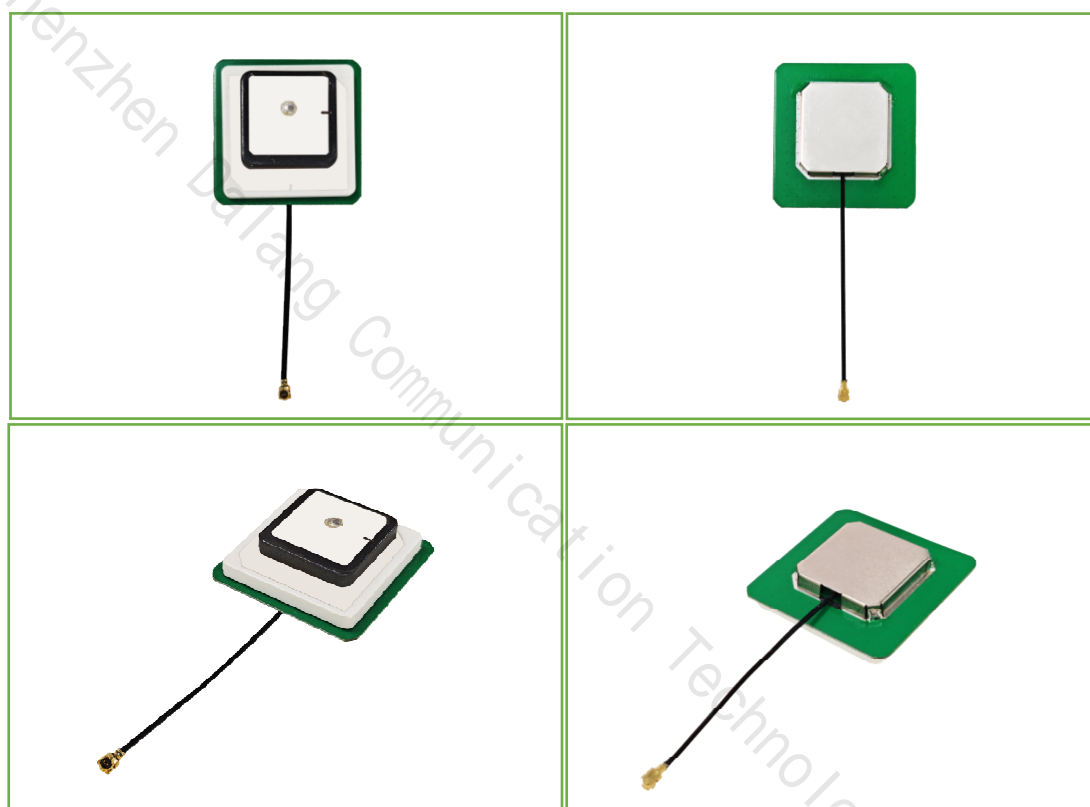


Figure 5 Product Images