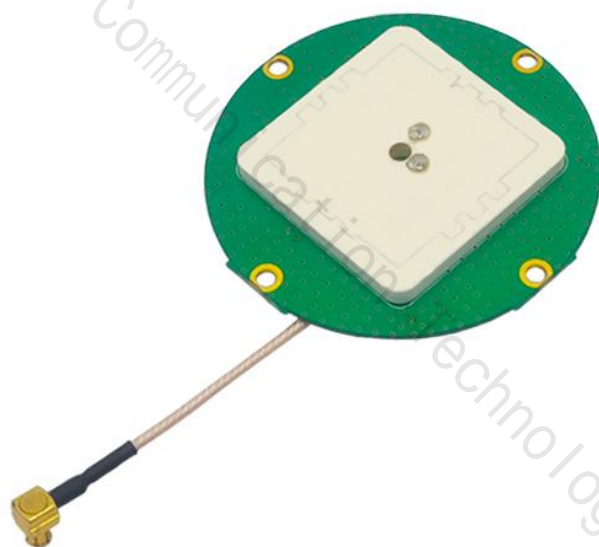


# Dalang

## AK411





# Dalang Communication Technology Co., Ltd Product Specification

Product Name: Ceramic Antenna

Product Model: AK411

Version Number: V 1.0

Revision Date: 2025.07.02

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# 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 .....	6
Figure 5 Product Images .....	6

# 1 Product Application Scenarios

Our company's product AK411 is structurally composed of a ceramic antenna body, a low-noise signal module, cables, and connectors. It has excellent performance parameters such as high gain, low standing wave ratio, and low noise figure, which can meet the requirements of sub meter level precision positioning. It is small in size and easy to integrate, with good stability and strong weather resistance. It adopts a right-handed circular polarization method and has good anti-interference ability. It is widely used in many fields such as vehicle positioning and navigation, intelligent transportation, mechanical control, deformation monitoring, and geographic information and surveying engineering. 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 AK411, detailing how it plays a pivotal role in various applications as follows:

1. **Signal Processing:** L1 frequency band adaptation, sub-meter positioning accuracy, high sensitivity for receiving weak signals, built-in LNA noise reduction to ensure precise positioning.
2. **Compatibility:** Supports multi-satellite systems (GPS, BeiDou, etc.) L1 signals, stable satellite reception in complex scenarios, enhancing positioning reliability.
3. **Physical Characteristics:** Compact and easy-to-integrate size, stable ceramic material, temperature-resistant, waterproof, and dustproof, reliable operation in harsh environments, strong anti-electromagnetic interference capability.
4. **Flexible Adaptation:** Customizable structural parameters to fit different devices; stable performance, long lifespan, and low long-term usage cost.
5. **High Frequency Stability:** Maintains stable L1 frequency signal reception within a certain range of environmental changes (temperature, humidity, etc.), resistant to frequency drift caused by environmental factors, ensuring positioning accuracy remains at sub-meter levels.

### 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.

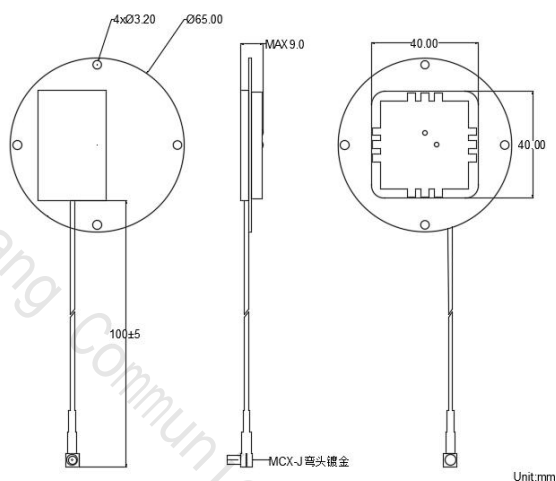


Figure 2 Product structure diagram

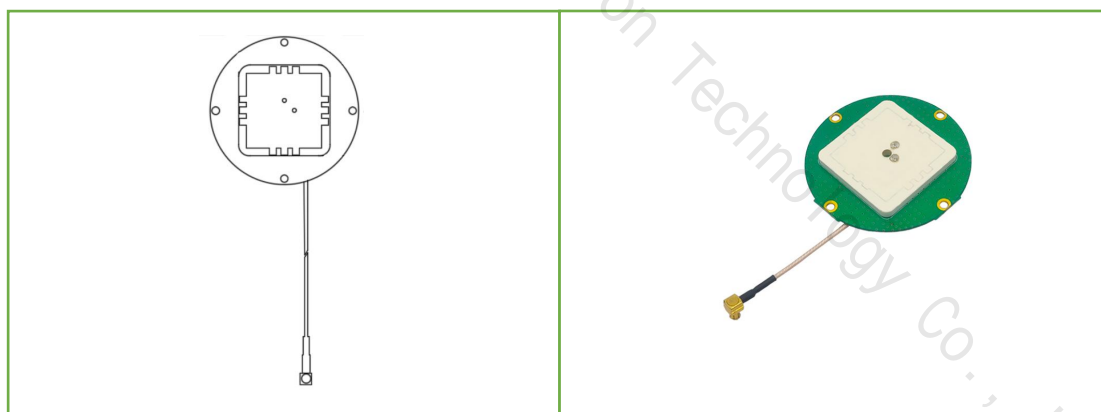


Figure 3 Product correlation chart



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	1	Antenna model	Ceramic Antenna
	2	Ceramic size	40*40*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
	5	Gain (peak gain of 70 * 70mm ground plane facing zenith)	4±2dBic
	6	V.S.W.R	≤2.0
	7	-10dB Bandwidth MHz min	10 min
	8	impedance	50 Ω
	9	Polarization mode	RHCP
	10	Frequency Temperature Coefficient	20ppm/deg.°C max
	LAN	1	parameter
2		gain	34±2dB
3		figure	<1.5dB
4		VSWR	<2.0
5		output vswr	<2.0
6		voltage	DC 3~5V
7		electric current	<8mA
8		impedance	50 Ω

<b>Physical parameters</b>	1	Product size	65*9mm
	2	Product weight	16g
	3	Line length	L=10cm (customizable)
	4	Linear interface	RG178 MCX elbow
<b>Component</b>	1	Part name	SPEC
	2	antenna	ceramics
	3	pcb	FR4
<b>Environment</b>	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.

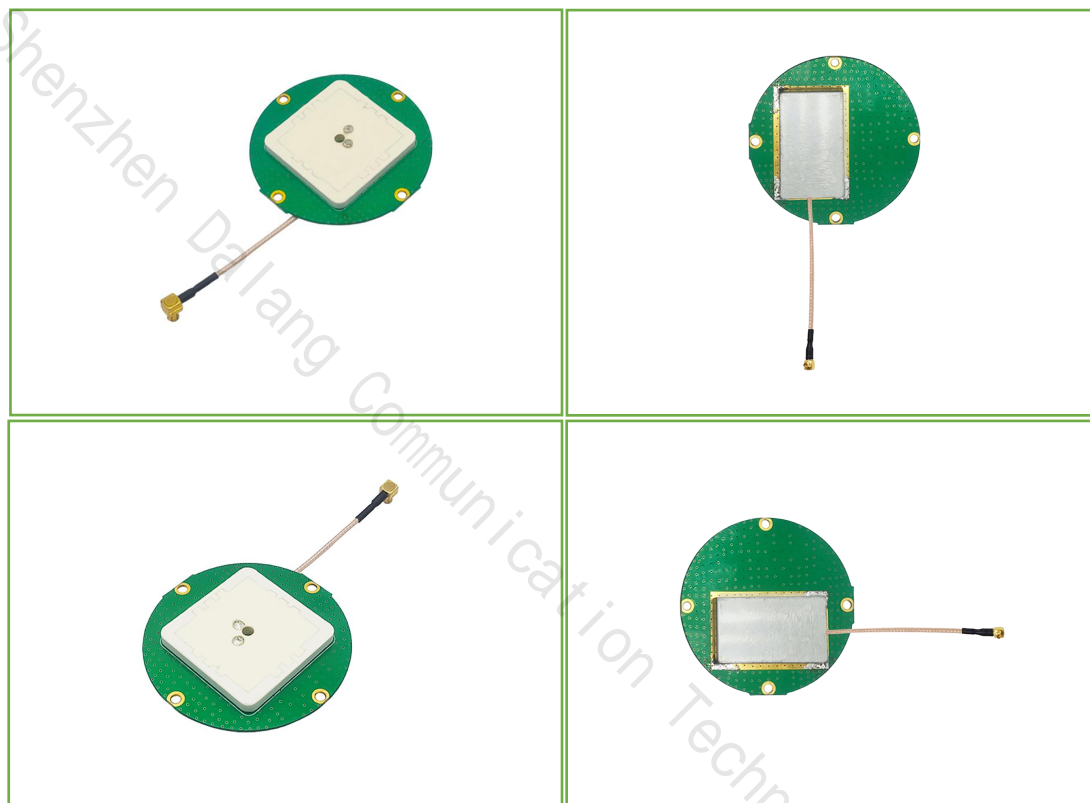


Figure 5 Product Images