AK389

Dalang Communication Technology Co., Ltd Product Specification

Product Name:	4G L- Type Antenna（VZ）
Product Model:	A389
Version Number:	V 1.0
Revision Date:	2026.01.09

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1 Product Application Scenarios

The AK389 is a high-performance PCB/FPC primary-secondary antenna kit specifically designed for 4G LTE applications. Utilizing our proprietary design and manufacturing processes, it delivers outstanding stability and sensitivity in LTE Band 4/13. The primary and secondary antennas work in coordination to effectively enhance signal reception diversity. The product complies with RoHS environmental standards.

Designed for devices requiring stable 4G connectivity and flexible spatial layout, it is suitable for smart security cameras, in-vehicle intelligent terminals, industrial IoT devices, portable commercial terminals, and more, meeting the demands for high-quality, high-reliability communication in complex environments. 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 AK389, detailing how it plays a pivotal role in various applications as follows:

1. **Primary-Secondary Diversity Design:** Includes both primary and secondary antennas, supporting receive diversity to significantly enhance signal reception stability and anti-interference capability.
2. **Broad Frequency Band Coverage:** Supports LTE Band 4 (1710-1750MHz) and Band 13 (782-787MHz/751-756MHz).
3. **High Performance:** Delivers high TRP (Transmission) and excellent TIS (Reception) values across all supported frequency bands.
4. **Flexible Structure:** Primary antenna is solderable; secondary antenna comes with an IPEX I cable, allowing flexible internal device layout.
5. **Environmental Compliance:** Conforms to RoHS directive requirements.

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.

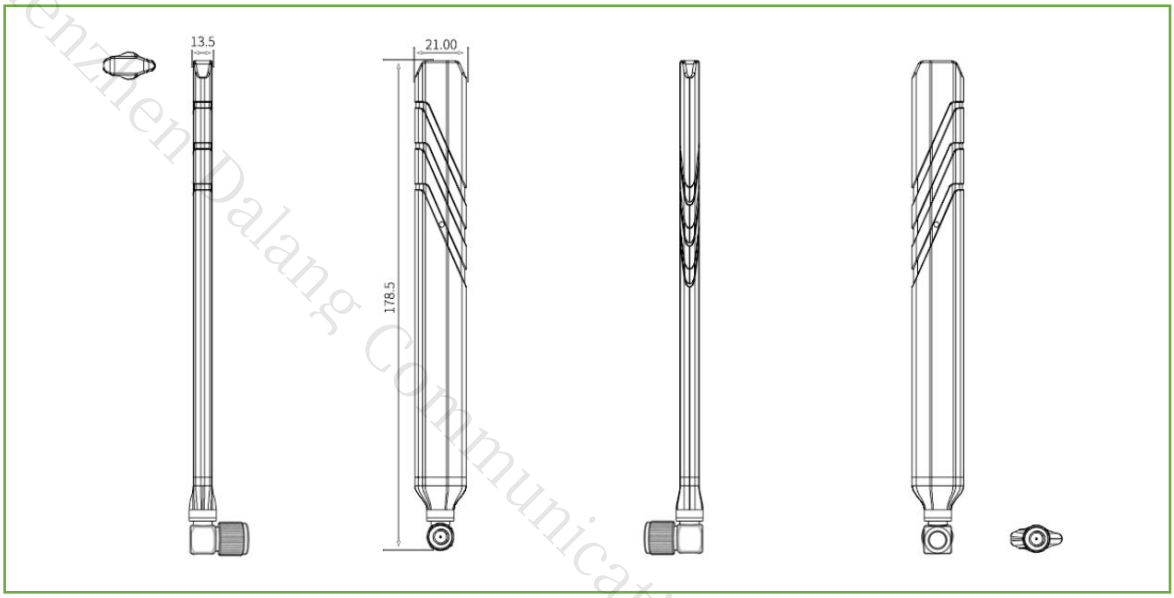


Figure 2 Main Antenna Structure Diagram

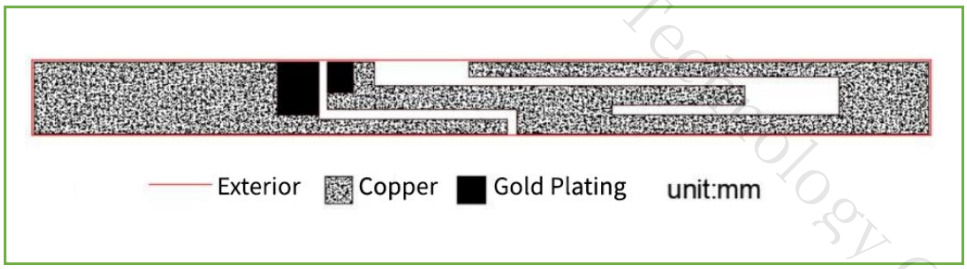


Figure 3 Auxiliary Antenna Structure Diagram

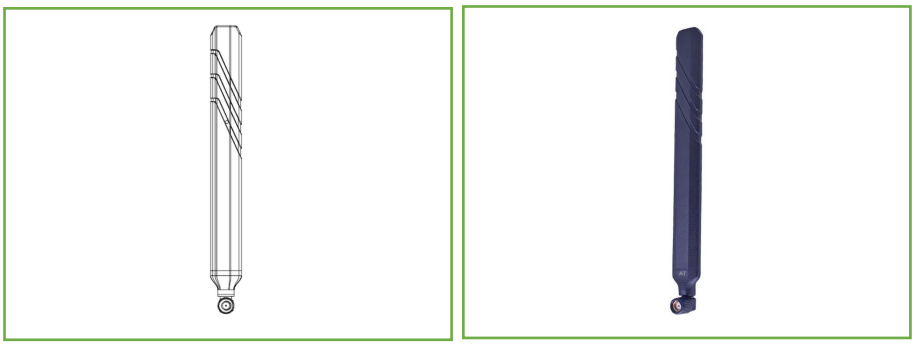


Figure 4 Product Comparison Diagram

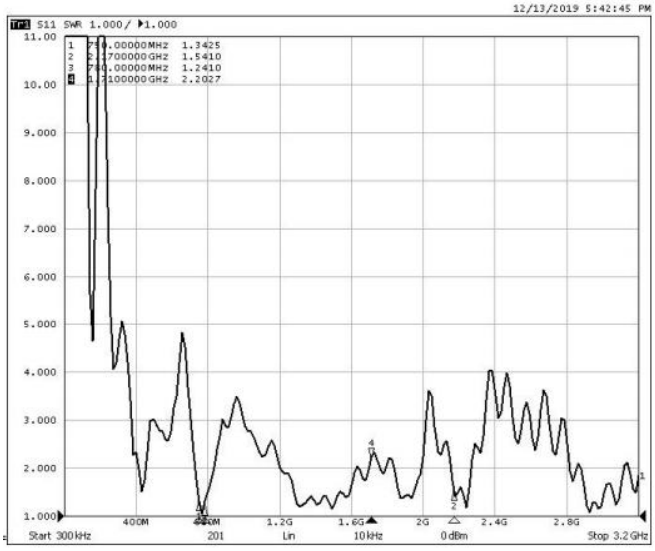
4 Specifications

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

Electrical specifications		
Main Antenna	operating frequency band	LTE Band 4/13
	impedance	50 Ω
	polarization mode	linear polarization
	Bandwidth (return loss ≤ -10dB)	130Min MHZ
	VSWR (Voltage Standing Wave Ratio)	4Max
	Dimensions (L x W x H)	178.5 x 13.5 x 21.0mm
Sub Antenna	operating frequency band	LTE Band 4/13
	impedance	50 Ω
	polarization mode	linear polarization
	Bandwidth (return loss ≤ -10dB)	130Min MHZ
	VSWR (Voltage Standing Wave Ratio)	4Max
	Dimensions (L x W x H)	95*10*0.12mm
	connecting wire	IPEX interface, length 110mm

Main Antenna VSWR:



5 Antenna TRP&TIS

Test conditions: Installed on the designated grounding plate in a standard microwave anechoi c chamber for testing

LTE Band 4:

Test Result	LTE4 TRP 20000	20175	20350
Frequency (MHz)	1715	1732.5	1750
TRP(dBm)	20.06	20.42	19.88
NHPRP(dBm)	19.42	19.83	19.36
MAX(dBm)	22.09	23.04	22.67
Min(dBm)	10.24	10.97	8.9
Attenuation Horiz	38.42	39.53	39.11
Attenuation Verti	38.43	39.45	39.12

Test Result	LTE4 TIS 2000	2175	2350
Frequency (MHz)	2115	2132.5	2150
TIS(dBm)	-95.11	-95.24	-94.83
NHPIS(dBm)	-93.98	-94.14	-93.72
MAX(dBm)	-98.84	-99.03	-98.71
Min(dBm)	-84.36	-84.69	-85.24
Attenuation Horiz	40.04	40.53	40.65
Attenuation Verti	40.12	40.4	40.56

LTE Band 13:

Test Result	LTE13 TRP 23230
Frequency (MHz)	782
TRP(dBm)	21.56
NHPRP(dBm)	20.98
MAX(dBm)	24.26
Min(dBm)	5.24
Attenuation Horiz	33.35
Attenuation Verti	33.35

Test Result	LTE13 TIS 5230
Frequency (MHz)	751
TIS(dBm)	-90.49
NHPIS(dBm)	-89.86
MAX(dBm)	-92.61
Min(dBm)	-78.15
Attenuation Horiz	33.5
Attenuation Verti	33.53

6 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