

Development Case No.: Y2508151412

Manufacturer : Ai-thinker

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Date: 2025.10.10

Version: A0

Acknowledgement

Customer name:Juyang

material number:74220709

Specification description:Intrinsic

antenna-2.4G-gray 1.13 tin tin wire-1 generation terminal

-L=85mm-FPC-31.6×10mm

Factory stamp:

Compile	Examine and verify	Ratify
Xu Zhangjin	Qin Linsu	Liu Lihua

Customer's signature:

Check up	Examine and verify	Ratify

Boantong Contact Information

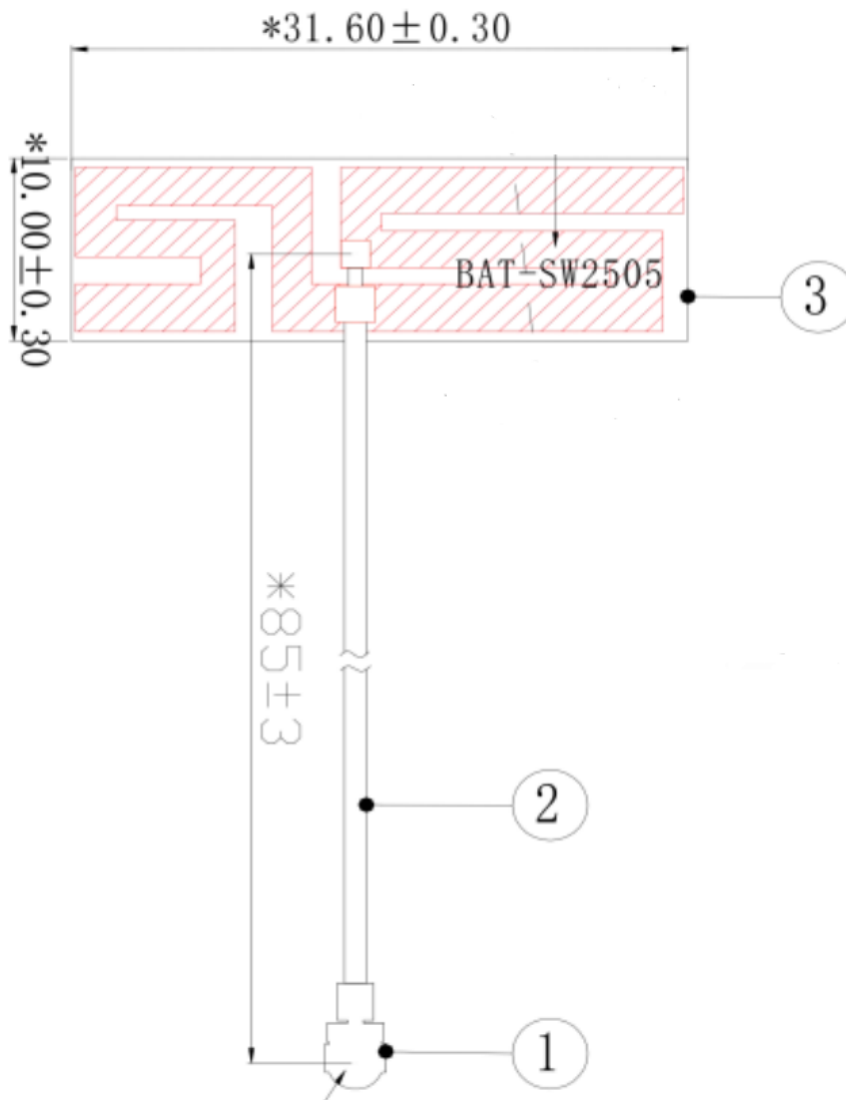
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[illegible]

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3、Product Drawing

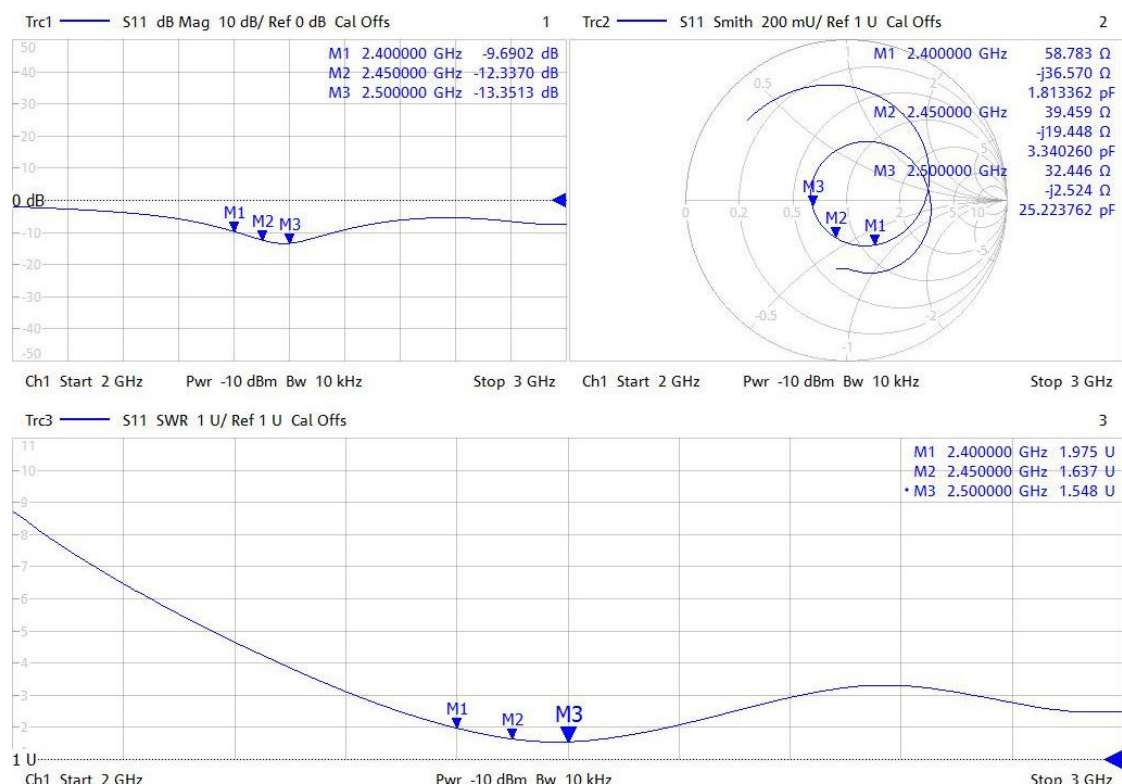


4、Performance Parameter

Electrical parameters	
Frequency range	2400~2500MHz
Input impedance	50 Ω
Standing-wave ratio	<2
Gain	2.96dBi
Power capacity	$<10\text{w}$
Open circuit test	Thoroughfare
Polarization mode	Linear polarization
Radiation direction	Omnidirectional
Joint model	Terminal
Mechanical parameter	
Cabinet minister	$85 \pm 3\text{mm}$
Terminal holding force	$\geq 0.8\text{Kgf}$
Coax	Gray 1.13 Xixi Line
Salt Spray Test	24h
Enviromental parameter	
Working temperature	$-30 \sim 65^{\circ}\text{C}$

5、Electrical Performance Test Report (Whole Machine Test)

S11 Parameter



➤ standing wave ratio data

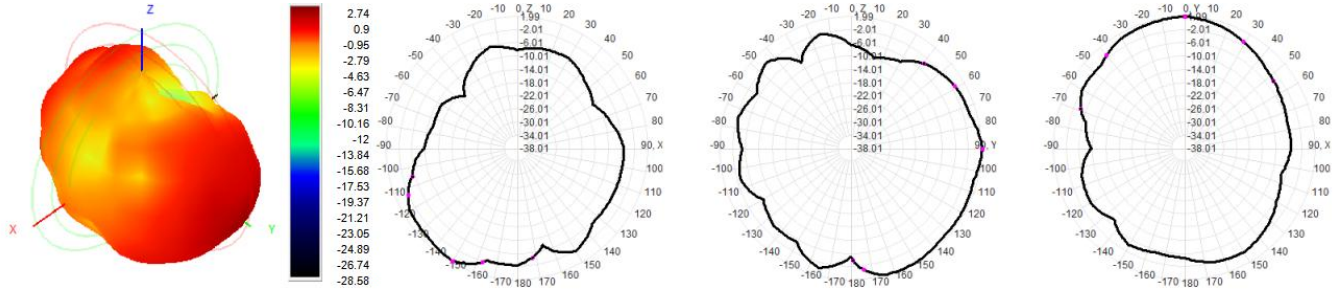
Freq/MHz	2400MHz	2450MHz	2500MHz
VSWR	1.98	1.64	1.55

➤ test data of antenna anechoic chamber

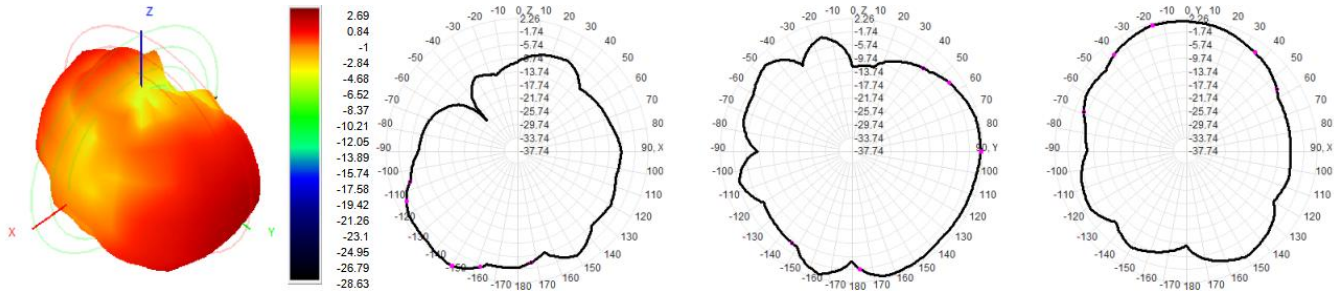
Frequency (MHz)	Gain (dBi)	Efficiency (%)
2400	2.80	52.63
2410	2.96	53.06
2420	2.67	50.16
2430	2.35	49.49
2440	2.57	49.96
2450	2.51	49.05
2460	2.54	50.85
2470	2.67	52.43
2480	2.37	53.78
2490	2.24	53.11
2500	2.49	54.09

➤ Antenna pattern

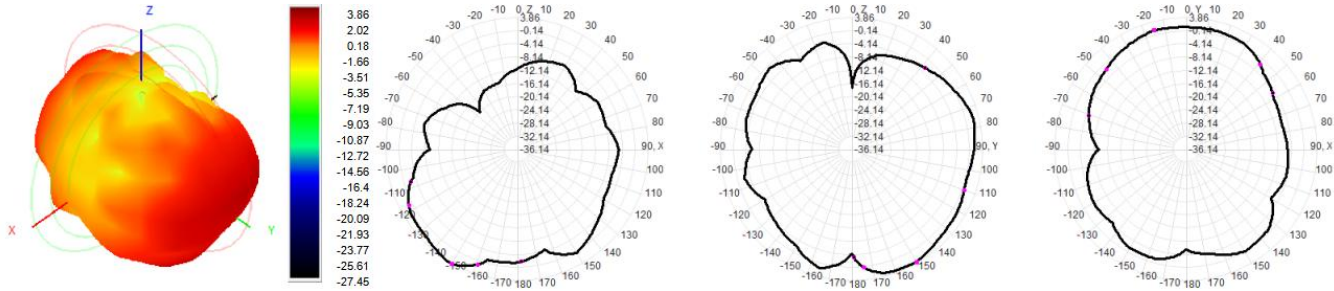
2400MHz 3D-E1-E2-H



2450MHz 3D-E1-E2-H



2500MHz 3D-E1-E2-H



6、 List of Material Components and Harmful Substances

Item	Specifications	Material quality	RoHS test results (PPM)						ICP test number	Detection time
			Cd	Pb	Hg	Cr+6	PBB	PBDE		
1	Line	FEP	ND	ND	ND	ND	ND	ND	NGBPC24007471211	2024/12/23
		Tinned wurd	ND	ND	ND	ND	ND	ND	A2250416468101001	2025/6/20
2	Terminal	PBT	ND	ND	ND	ND	ND	ND	A2250134628103008E	2025/3/12
		Phosphor bronze	ND	4	ND	ND	ND	ND	CANEC24029407215	2025/1/8
3	FPC	PI	ND	ND	ND	ND	ND	ND	SHAEC24028809005	2024/12/20
		Gum	ND	ND	ND	ND	ND	ND	SZXEC25003068038	2025/8/28

Packaging SPECIFICATIONS

PACKING CRITERION

Product part number: 74220709

Product specifications: Built-in antenna-2.4GHz-gray; 1.13mm² solder wire-1 terminal-L=85mm-FPC-31.6×10mm

1. Label Requirements (Refer to the corresponding finished product label requirements based on the customer's name. If no specific requirements are provided, follow the standard label requirements)

Inner label: 10 cm long, 6 cm wide

Demander	*****		
Supplier	Sichuan Boantong Communication Technology Co., Ltd.		
Material code	*****		
Production Serial Number	*****		
Product Name and Specifications	*****	Examination clerk	**
Quantity/Unit	*****	Date	**** ** ..
Trace code	*****	Serial number	**

External label: 10 cm long, approximately 6 cm wide

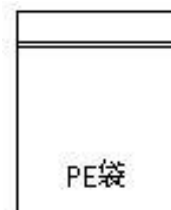
Demander	*****		
Supplier	Sichuan Boantong Communication Technology Co., Ltd.		
Material code	*****		
Production Serial Number	*****		
Product Name and Specifications	*****	Examination clerk	**
Quantity/Unit	*****	Date	**** ** ..
Trace code	*****	Serial number	**

2. Packing Requirements:

1. inner packing :

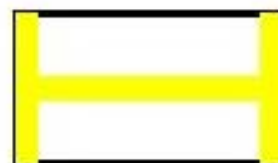
Product 50 PCS/small

bag,200 PCS/large bag

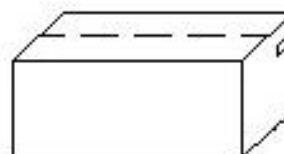


2. external packing :

Quantity based on actual packaging/box



纸箱



Matters Need Attention :

1. Should we install partitions or perlite insulation?
2. Labeling requirements, such as those under the RoHS (Restriction of Hazardous Substances) directive;

8、 Reliability Test Requirement

Order number	Reliability test name	Condition of experiment	Requirement
1	Steady temperature damp test	High temperature: 70°C, humidity: 80% RH for 24 hours; Low temperature -40°C for 24 hours; total duration of 48 hours;	Appearance requirements before and after testing: The metal surface coating should be free from peeling, cracking, wrinkling, or separation. Non-metallic parts should not exhibit discoloration, cracking, deformation, or delamination. Electrical performance tests must comply with standard requirements.
2	High and low temperature thermal shock test	70°C for 2 hours, -40°C for 2 hours, 6 cycles, total 24 hours;	Appearance requirements before and after testing: The metal surface coating should be free from peeling, cracking, wrinkling, or separation. Non-metallic parts should not exhibit discoloration, cracking, deformation, or delamination. Electrical performance tests must comply with standard requirements.
3	Salt spray test	Prepare a 5±1% NaCl solution to ensure the pH of the salt solution is neutral (6.5-7.2); the pressure tank temperature is 47±1°C, the spray pressure is maintained at 1.00±0.1kgf/cm ² , and the spray volume is 1.0-2.0ml; /80cm ² /h; The test time was 24 hours.	The exposed surface areas of the product shall not exhibit oxidation or rusting; the oxidation/rust area in other regions after salt spray testing shall be <1.0%.
4	Terminal holding force test	Room temperature and humidity; test holding force requirement: ≥0.8 kgf;	The terminals and cables show no detachment or loosening; the electrical performance test meets the standard requirements.
5	Terminal insertion and removal force test	Normal temperature and humidity; terminals and sockets are properly connected, insertion force: 0.8~ 3Kgf/with a minimum pulling force of 0.8kgf;	The insertion and removal forces of the terminals meet the requirements, with no detachment, damage, or other defects observed.

9、 Antenna Installation Diagram

