

# 深圳市金航标电子有限公司

## 产品技术规格书 SPECIFICATION

产品型号 PART NO:      KH-5220-A56
客户料号 CUSTOMER PART NO:
客户确认 CUSTOMER APPROVED BY:
确认日期 APPROVED DATE:

RoHS Compliant Parts

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## 产品规格书版本更改记录

### Version rejigger track record

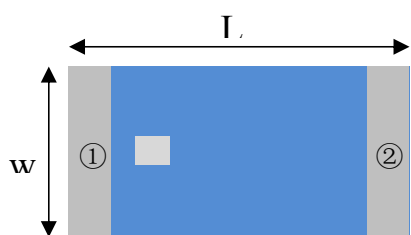
版本号 Version	更改记录 Rejigger	拟制 Prepared	批准 Approve	日期 Date
V1.0	首次发行	姚富鑫	贺俊驹	2019.03.06
备注： 1、更改产品电性能指标时，版本号需更换（V1.0 换为 V2.0、V3.0……）； 2、更改产品测试方法（包括可靠性测试条件），或更改使用条件时，当前版本号加系列（V1.0 换为 V1.1、V1.2……）。				

## 1. 概述 INTRODUCTION

金航标微波多层陶瓷天线 LA 系列产品设计用于 WLAN、WiFi、蓝牙、PHS，手机多频天线, FM 等小体积 SMD 片式设计。

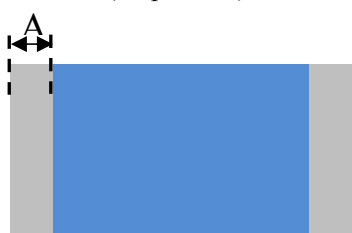
**kinghelm** Microwave Multi-Layer Ceramic Antenna LA series are designed to be used in WLAN、WiFi、Bluetooth、PHS、 Multiple-band Mobile phone antenna, FM, etc and compact size SMD chip design.

## 2. 外型尺寸 Dimensions (Unit: mm)



( Top View )

Number	Terminal Name
①	INPUT
②	NC

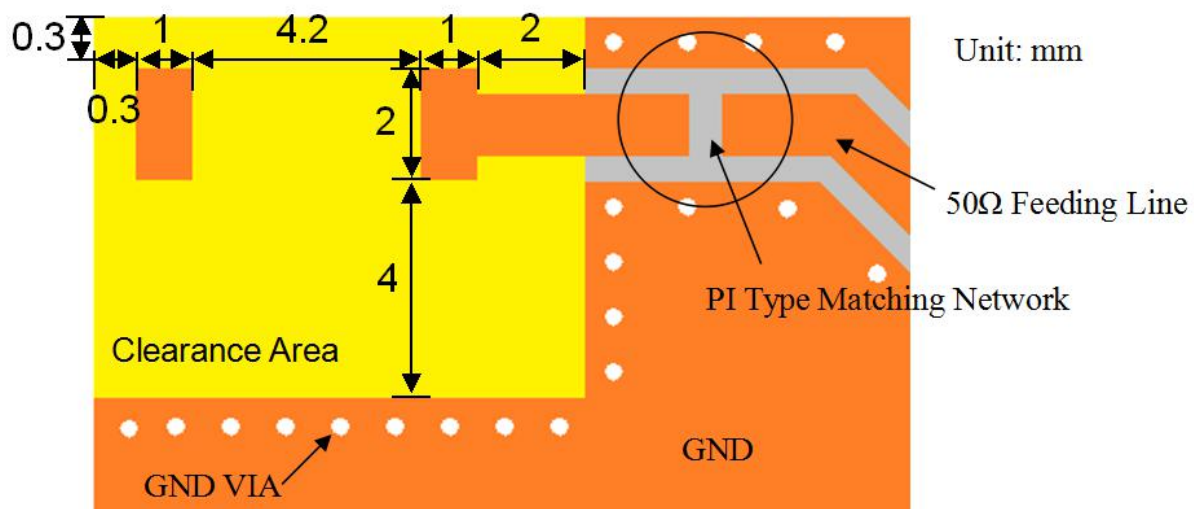


( Bottom View )

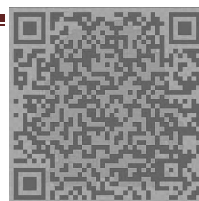
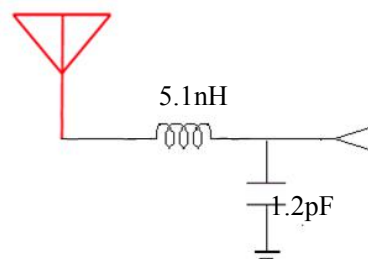
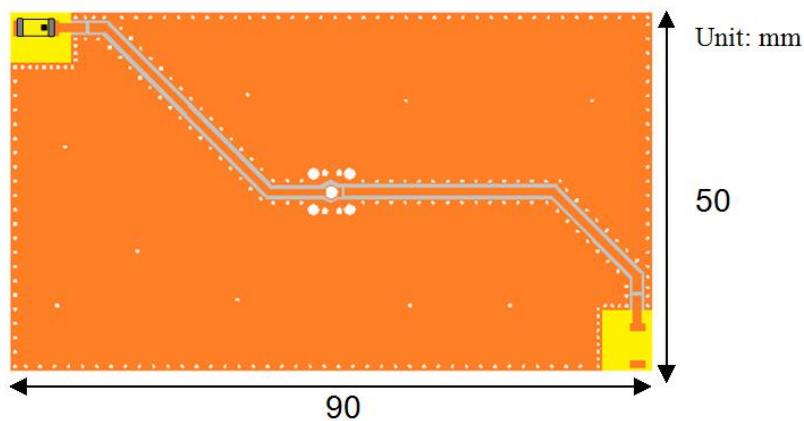


( Side View )

Symbols	L	W	T	A
Dimensions	5.2+/-0.2	2.0+/-0.2	0.6+/-0.1	0.5+/-0.1



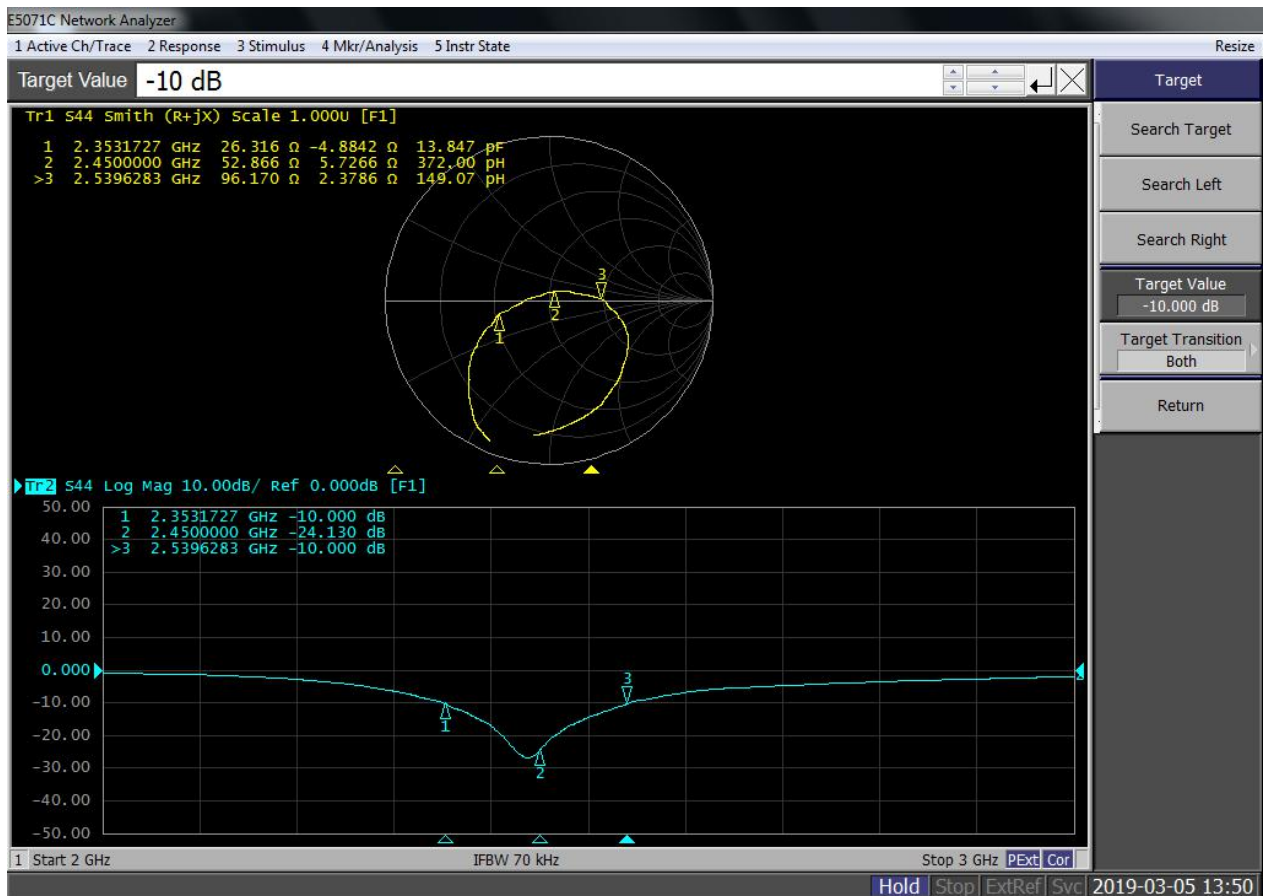
### 3. 测试电路和匹配电路 Evaluation Board and Matching Circuits



## 4. 电气性能 Electrical Characteristics

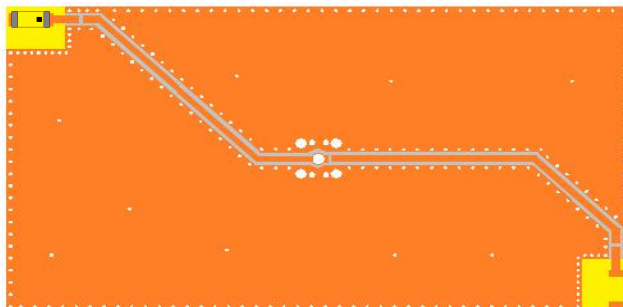
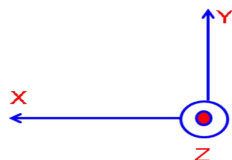
No.	Item (项目)	Specifications (特性)
4.1	(带匹配电路测试)After Matching	2450 MHz
4.2	Band Width 通带宽度	100MHz typ.
4.3	Peak Gain 峰值增益	4.91 dBi
4.4	V.S.W.R 驻波比	≤2.0
4.5	Polarization 极化方式	Linear 线性
4.6	Azimuth Beam width 方位角	Omni-directional 全向
4.7	Impedance 阻抗	50 Ω

## 5. 特性曲线 Characteristic curve

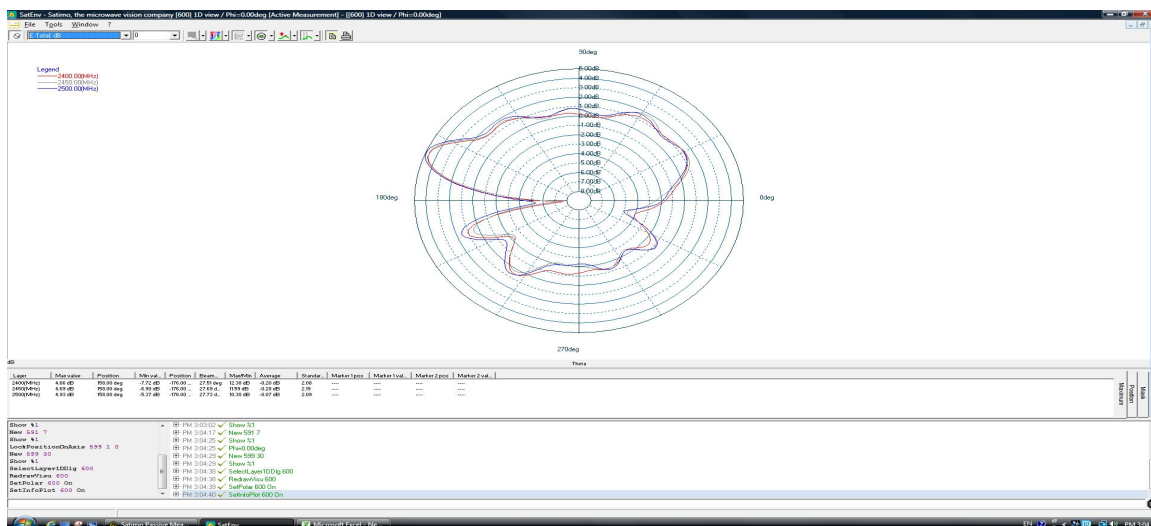


## 6. 方向图 Radiation Pattern

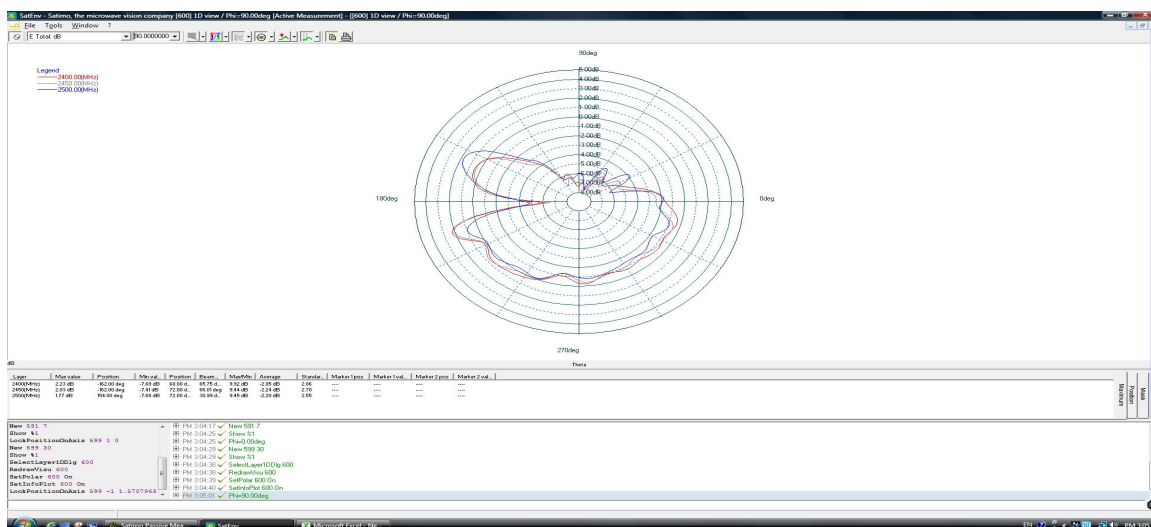
coordinates:



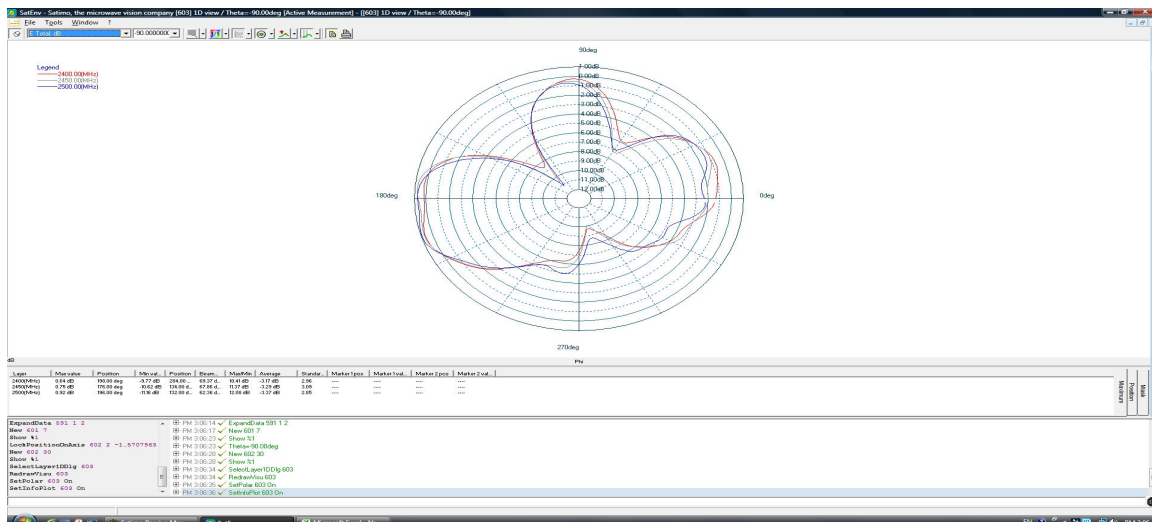
### X-Z Plane



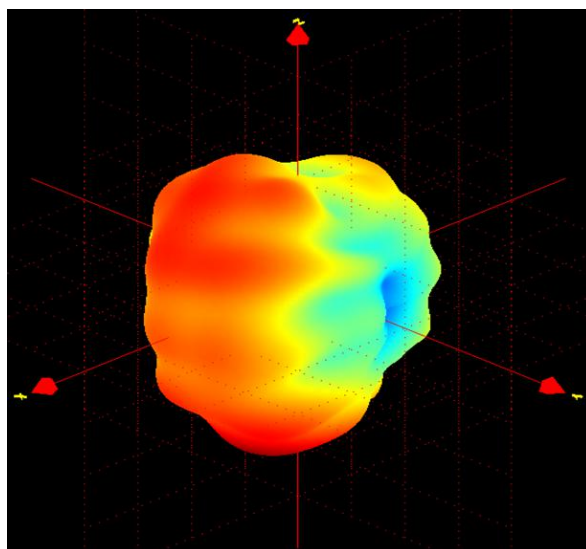
### Y-Z Plane



### X-Y Plane



## 3D Radiation Pattern



Frequency (MHz)	2400	2450	2500
Avg. Gain (dBi)	-1.81	-1.94	-1.88
Peck Gain (dBi)	2.51	4.91	2.54
Efficiency (%)	71	72	72



## 7 可靠性试验后允许误差 Post Dependability Tolerance

经可靠性试验后允许比起始读数偏差见下表

Post Dependability Tolerance (Refer to the table)

No.	Item (项目)	Post Dependability Tolerance (可靠性试验后允许附加误差)
7.1	Central Frequency 中心频率	± 5 MHz
7.2	Band Width 通带宽度	± 5 MHz
7.3	Gain 增益	± 0.1 dBi
7.4	V.S.W.R (in BW) 驻波比	± 0.1

## 8. 可靠性试验 Dependability Test

基准条件: 温度范围 Temperature range  $25 \pm 5^{\circ}\text{C}$   
相对湿度范围 Relative Humidity range 55~75%RH  
工作温度 Operating Temperature range  $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$

### 8.1 耐振动 Vibration Resist

在振动频率为 10~55Hz 振幅为 1.5mm 沿 X.Y.Z 方向各振动 2 小时后测试符合表 8.1~8.4 规定。

The device should satisfy the electrical characteristics specified in paragraph 8.1~8.4 after applied to the vibration of 10 to 55Hz with amplitude of 1.5mm for 2 hours each in X, Y and Z directions.

### 8.2 耐跌落冲击 Drop Shock

在 100cm 高度处按 X, Y, Z 三个面分别自由跌落在木制地板上共 3 次后测试符合表 8.1~8.4 规定。

The device should satisfy the electrical characteristics specified in paragraph 8.1~8.4 after dropping onto the hard wooden board from the height of 100cm for 3 times each facet of the 3 dimensions of the device.

### 8.3 耐焊接热 Solder Heat Proof

能承受经 120~150°C 的温度预热 120 秒后, 在 255°C+10°C 的焊锡浸 5±0.5 秒, 或 300°C-10°C 的电烙铁焊接 3±0.5 秒, 焊接面无损伤。

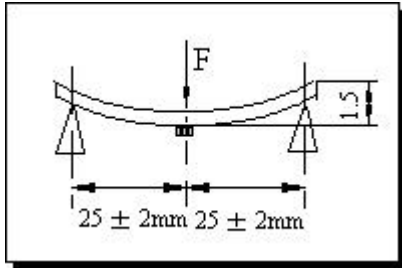
The device should be satisfied after preheating at 120°C ~150°C for 120 seconds and dipping in soldering Sn at 255°C +10°C for 5 ± 0.5 seconds, or electric iron 300°C -10°C for 3 ± 0.5 seconds, without damage.

### 8.4 推力试验 Adhesive Strength of Termination

在产品电极端子上或表面上可承受 5N(≤0603); 10N(>0603) 水平推力 10±1 秒而无明显外观损坏与电极移位。

The device have no remarkable damage or removal of the termination after horizontal force of 5N(≤0603); 10N(>0603)with 10±1 seconds.

## 8.5 耐弯曲试验 Bending Resist Test



将产品按图焊在  $1.6 \pm 0.2\text{mm}$  的 PCB 板中间，由箭头方向施力： $1\text{mm/S}$ ，弯曲距离： $1.5\text{mm}$ ，保持  $5 \pm 1\text{S}$ ，产品金属层无脱落。

Weld the product to the center part of the PCB with the thickness  $1.6 \pm 0.2\text{mm}$  as the illustration shows, and keep exerting force arrow-ward on it at speed of  $1\text{mm/S}$ , and hold for  $5 \pm 1\text{S}$  at the position of  $1.5\text{mm}$  bending distance, so far, any peeling off of the

product metal coating should not be detected.

## 8.6 耐湿热特性 Moisture Proof

在温度为  $60 \pm 2^\circ\text{C}$ ，相对湿度  $90\sim 95\%$  的恒温湿箱中放置  $96$  小时，在常温中恢复  $1\sim 2$  小时后测试，符合表 8.1~8.4 规定。

The device should satisfy the electrical characteristics specified in paragraph 8.1~8.4 after exposed to the temperature  $60 \pm 2^\circ\text{C}$  and the relative humidity  $90\sim 95\%$  RH for 96 hours and  $1\sim 2$  hours recovery time under normal condition.

## 8.7 高温特性 High Temperature Endurance

在温度为  $85 \pm 5^\circ\text{C}$  的恒温箱中放置  $96 \pm 2$  小时，在常温中恢复  $1\sim 2$  小时后测试。符合表 8.1~8.4 规定。

The device should satisfy the electrical characteristics specified in paragraph 8.1~8.4 after exposed to temperature  $85 \pm 5^\circ\text{C}$  for  $96 \pm 2$  hours and  $1\sim 2$  hours recovery time under normal temperature.

## 8.8 低温特性 Low Temperature Endurance

在温度为  $-40^\circ\text{C} \pm 5^\circ\text{C}$  低温箱中放置  $96 \pm 2$  小时后恢复  $1\sim 2$  小时测试符合表 8.1~8.4 规定。

The device should also satisfy the electrical characteristics specified in paragraph 8.1~8.4 after exposed to the temperature  $-40^\circ\text{C} \pm 5^\circ\text{C}$  for  $96 \pm 2$  hours and to 2 hours recovery time under normal temperature.

## 8.9 温度循环 Temperature Cycle Test

在  $-40^\circ\text{C}$  温度中保持 30 分钟，再在  $+85^\circ\text{C}$  温度中保持 30 分钟，共循环 5 次后在常温中恢复  $1\sim 2$  小时后测试符合表 8.1~8.4 规定。

The device should also satisfy the electrical characteristics specified in paragraph 8.1~8.4 after exposed to the low temperature  $-40^\circ\text{C}$  and high temperature  $+85^\circ\text{C}$  for  $30 \pm 2$  min each by 5 cycles and 1 to 2 hours recovery time under normal temperature.

## 9 回流焊温度 Reflow Soldering Standard Condition

