



# 深圳市飞敏科技有限公司

ShenZhen City FeiMin Technology CO., LTD.

## SPECIFICATION

客户

CUSTOMER: 富德康

产品名称

PRODUCTS: 2.4G 天线

客户料号

PART NO:

产品型号

Spec. : D1

日期

Data: 2020. 12. 25

# ANTENNA SPECIFICATION

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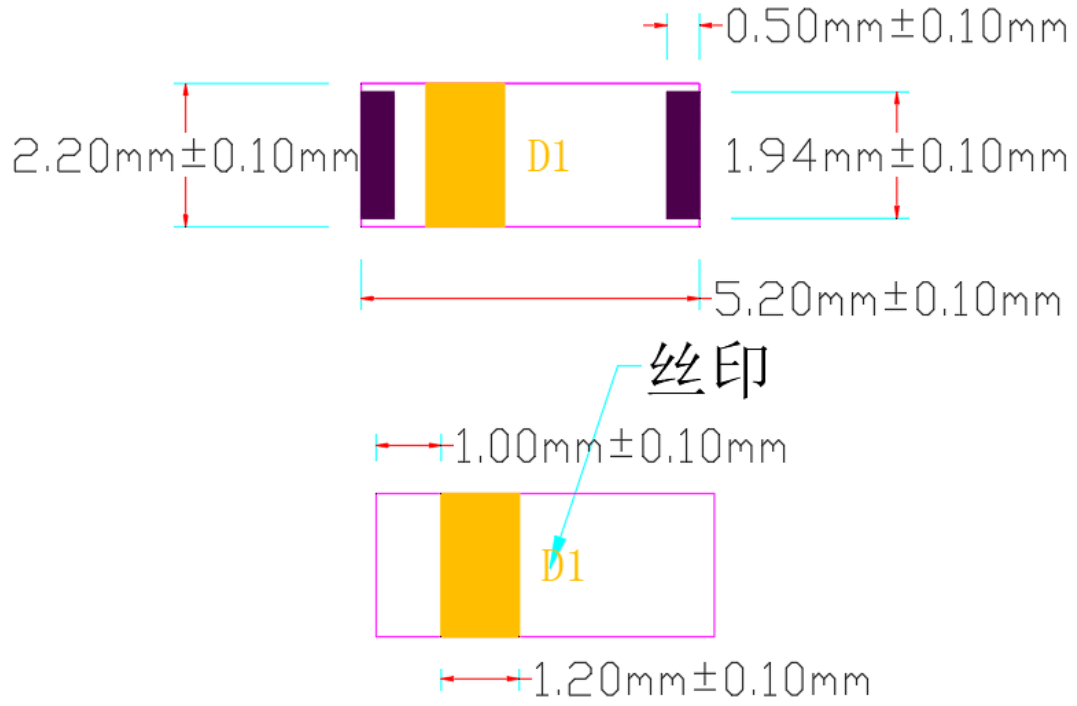
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## Revision history

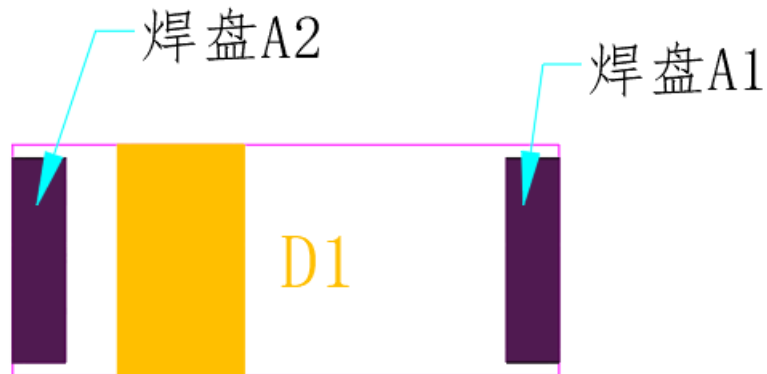
版本	日期	状态
A1	2020-12-25	首版

## 1. Project Information

### 1.1. Appearance and Dimensions

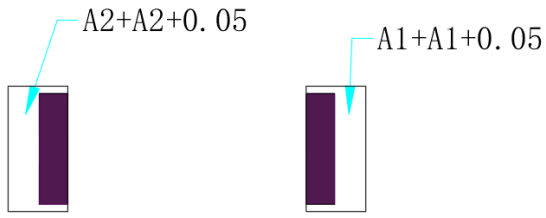


### 1.2. PCB Pad Design Proposal and Steel Mesh Opening Proposal(Unit:mm)

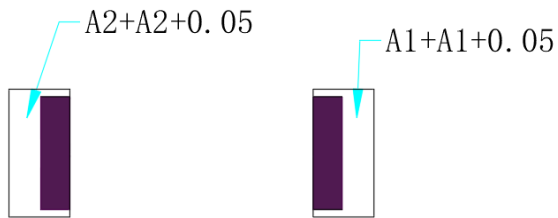


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## 1.2.1. PCB Pad Design Proposal

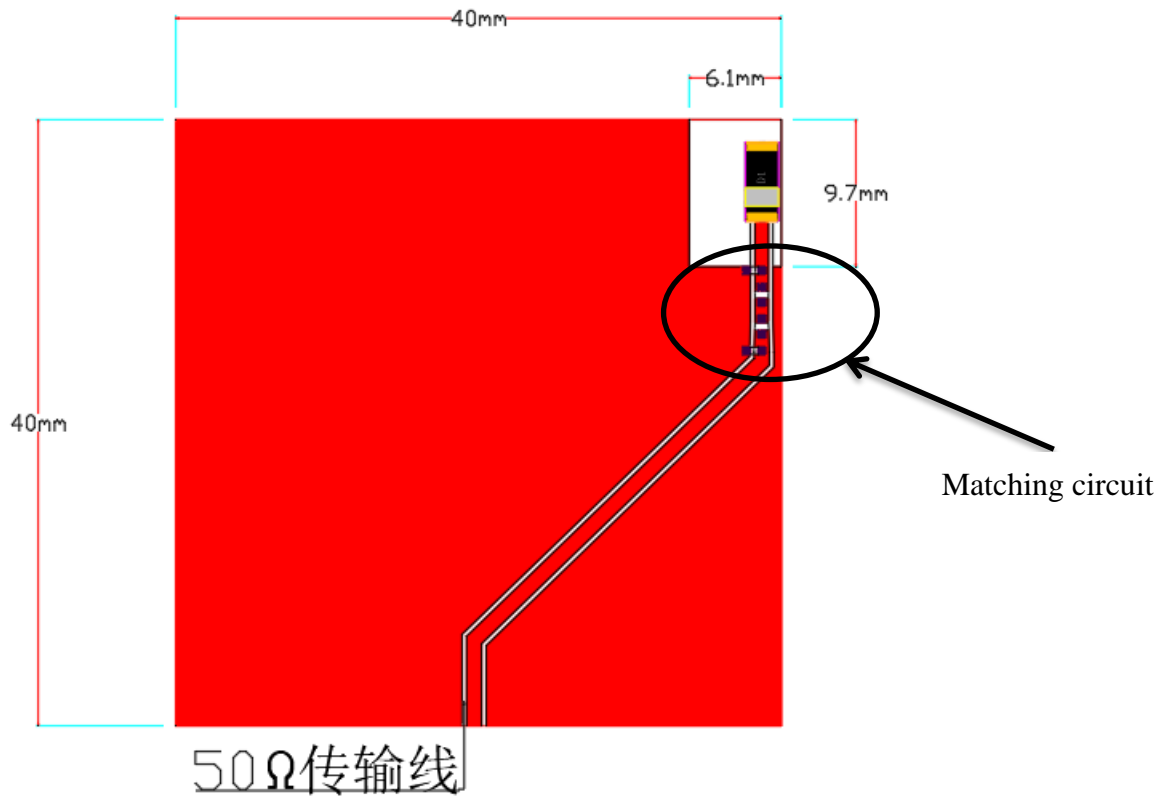


## 1.2.2. Steel Mesh Opening Proposal



Pad width in mm	
A1	0.5
A2	0.5

## 1.3. Test Board with Antenna(Unit:mm)



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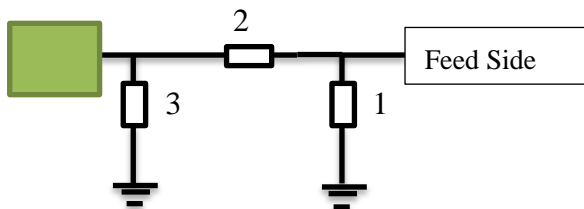
## 1.4. Clearance area

When designing the antenna, it should be far away from metal components and irrelevant components such as batteries, oscillators, shields, cameras, etc. to leave a clean space for the antenna. This interval is called clearance area. The following is the size of clearance area we recommend to reserve.

Model	size	Clearance area size L*W(mm)	
A1	5.5*1.2*1.2	9.1*5.6	
A2	5.2*2.2*1.0	8.7*6.1	
A4	5.5*1.5*1.2	9.1*5.8	
<b>D1</b>	<b>5.2*2.2*1.0</b>	<b>8.7*6.1</b>	
D2	5.2*2.2*1.0	8.7*6.1	

## 1.5. Matching Circuit

With the following recommended values of matching and tuning components, the center frequencies will be about 2440 MHz at our standard 40\*40 mm<sup>2</sup> evaluation board. However, these are typical reference values which may need to be changed when circuit boards or part vendors are different.



System Matching Circuit Component (Murata)		
Location	Description	Tolerance
1	0.5-0.62PF(0402)	±5%
2	1-3NH(0402)	±5%
3	0.5-0.62PF(0402)	±5%

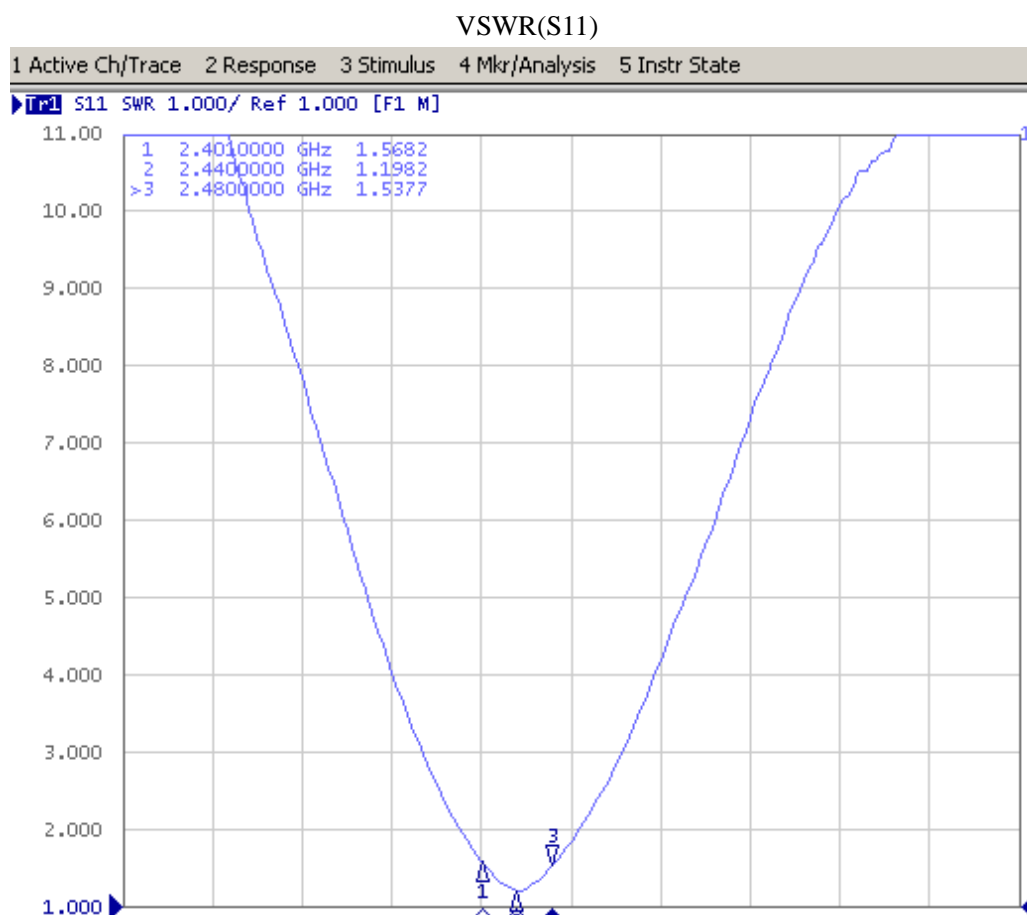
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## 2. Electrical Characteristics(40\*40mm<sup>2</sup> ground plane)

### 2.1. Electrical Table

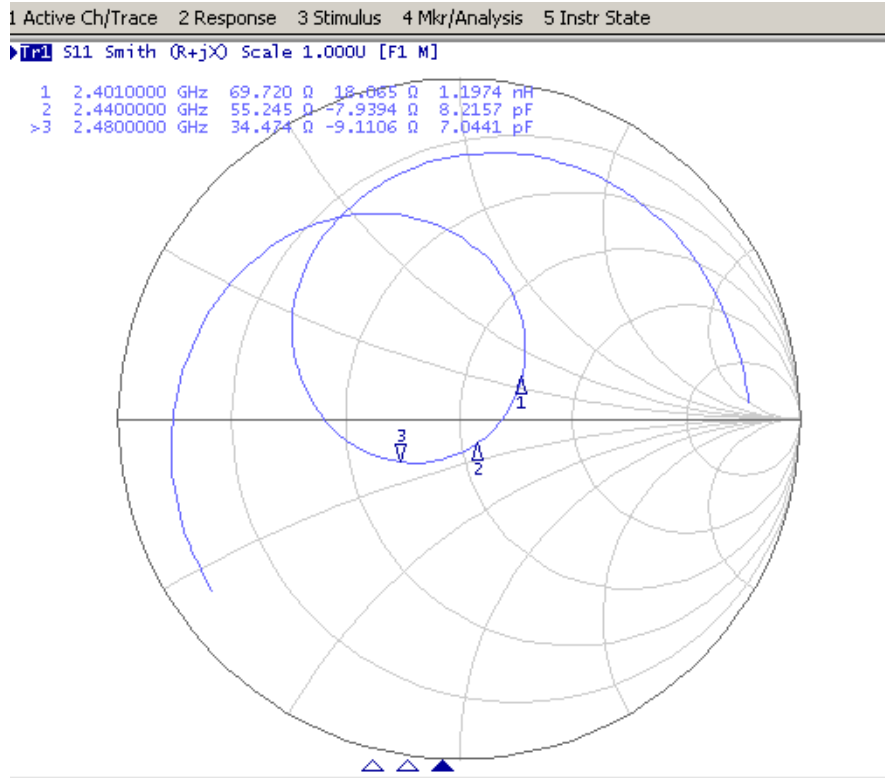
Characteristics		Specifications	Unit
Outline Dimensions		5.2*2.2*1.0	mm
Working Frequency		2400-2500	MHz
VSWR		<2	/
Impedance		50	Ω
Polarization		圆极化	/
Gain	Peak	<2	dBi
	Efficiency	50	%

### 2.2. Return Loss & VSWR



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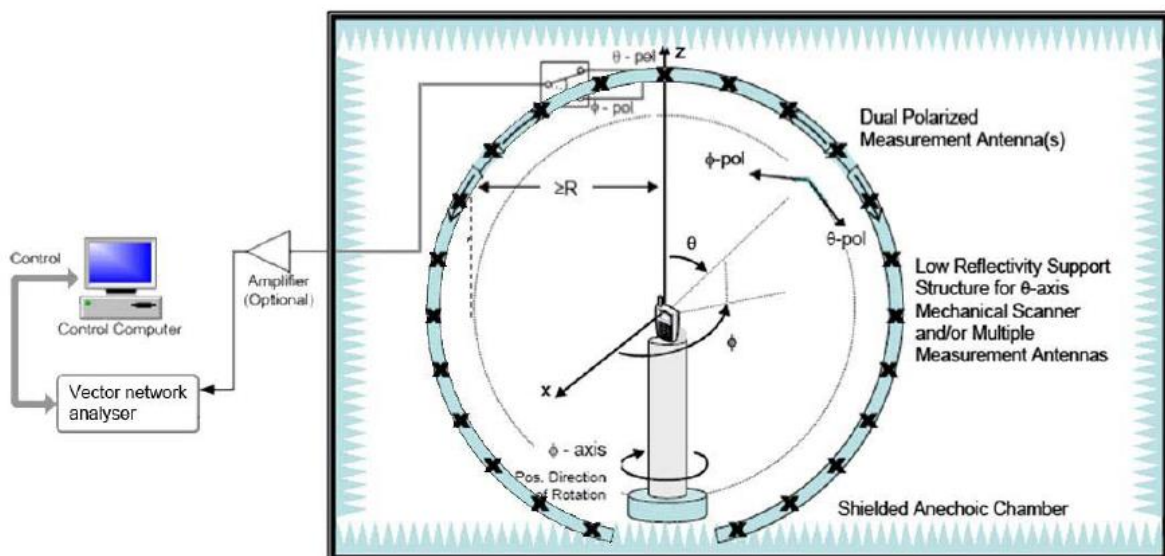
Smith Chart(S11)



## 3. Radiation Pattern(40\*40mm<sup>2</sup> ground plane)

### 3.1. Efficiency and Gain

#### 3.1.1. Test system



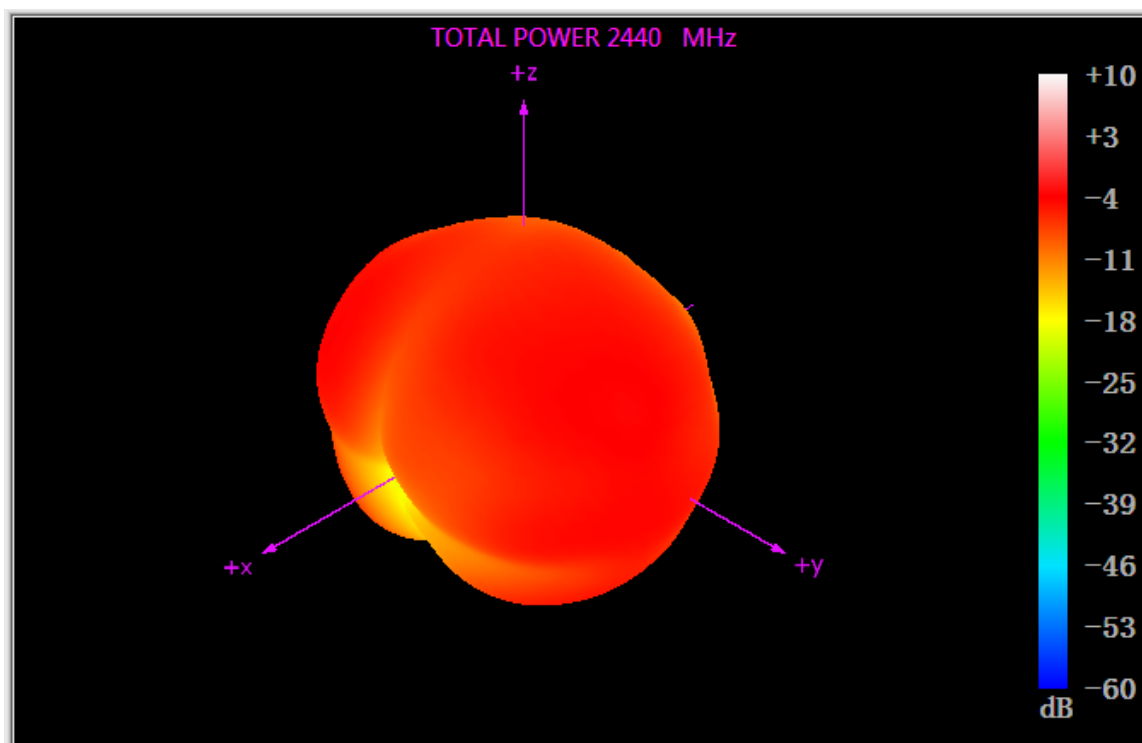


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## 3.1.2. Efficiency and Gain

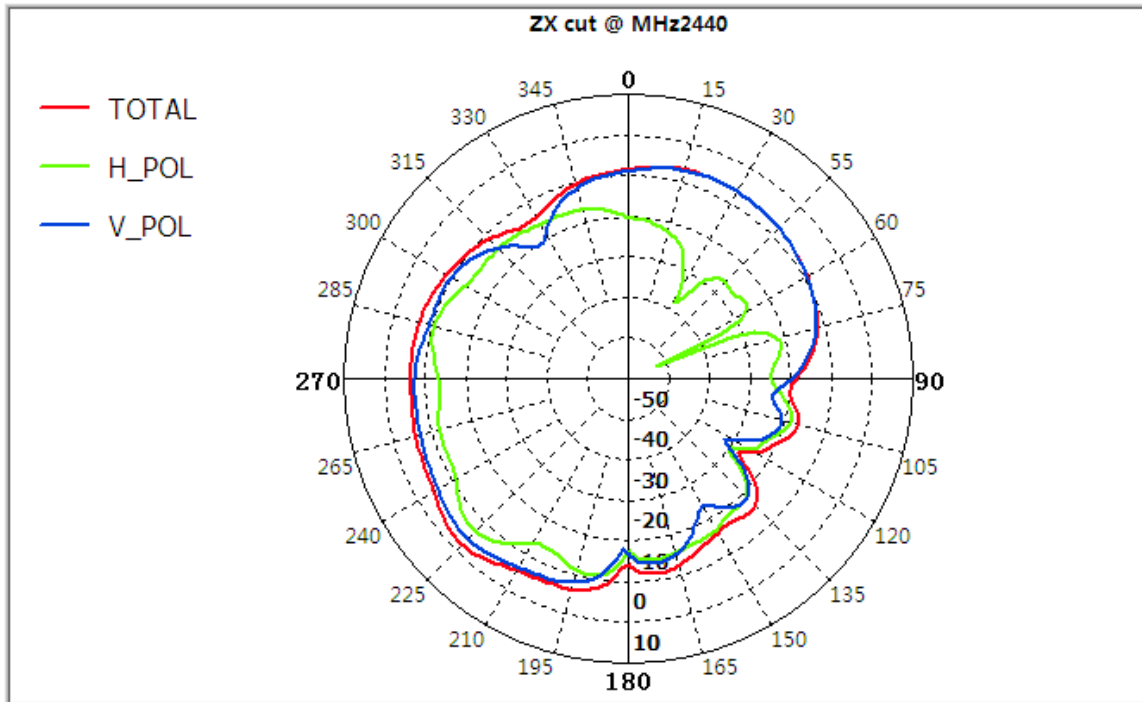
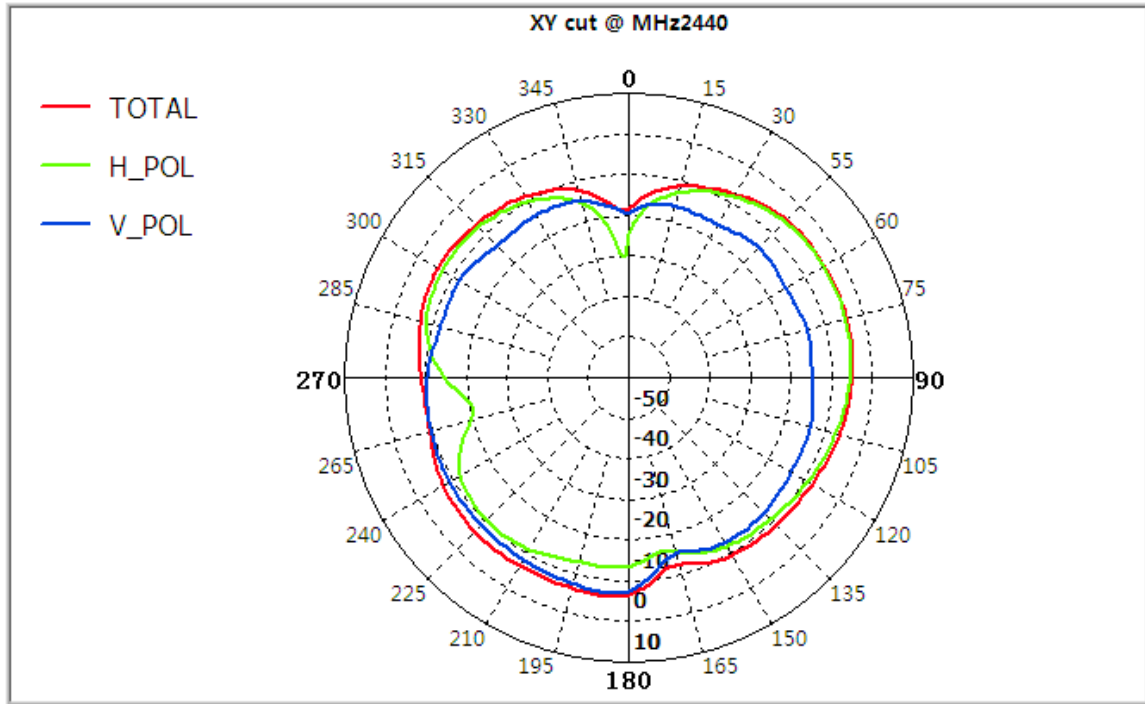
Frequency (MHz)	Gain (dBi)	Efficiency (%)
2400 MHz	0.6	46.56
2410 MHz	0.57	48.48
2420 MHz	1.08	49.98
2430 MHz	1.34	43.31
2440 MHz	1.22	47.74
2450 MHz	1.88	46.05
2460 MHz	1.55	44.77
2470 MHz	1.71	45.7
2480 MHz	1.55	49.76
2490 MHz	0.72	48.96
2500 MHz	0.58	46.81

## 3.1.3. 3D

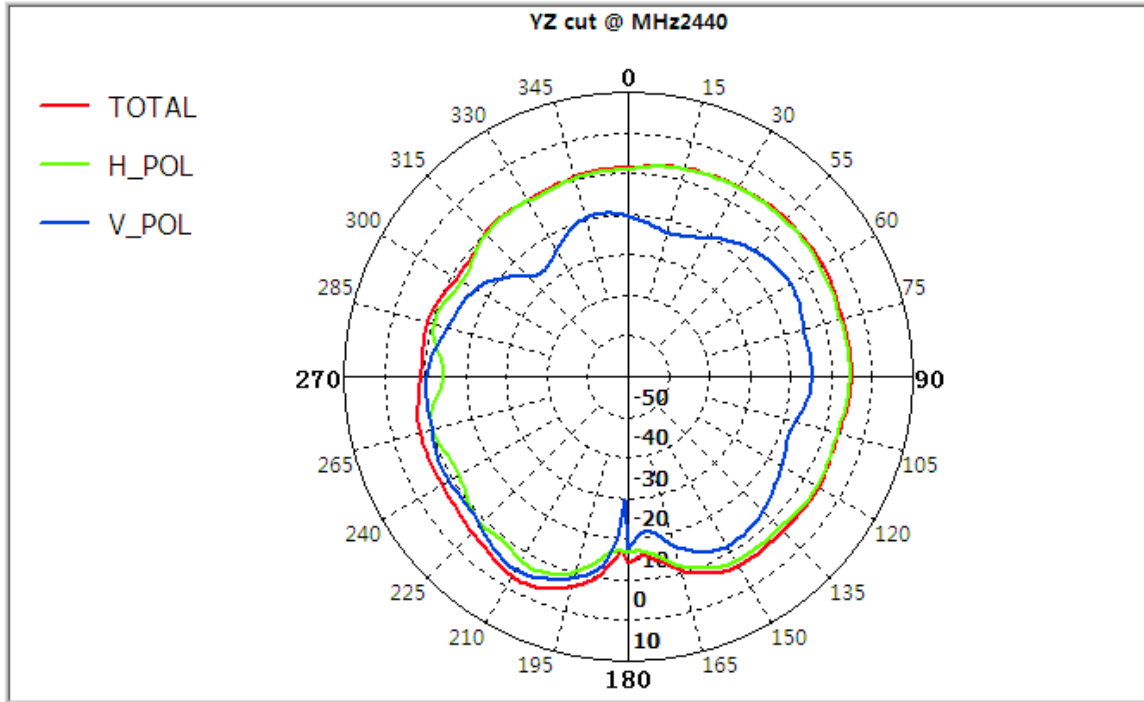


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## 3.1.4. Antenna polarization direction

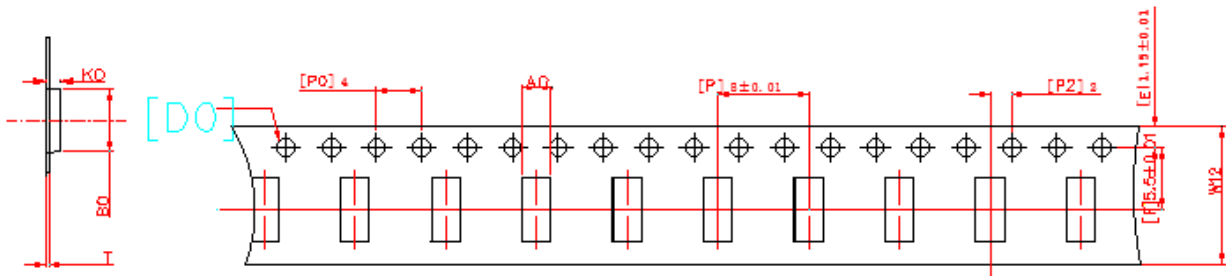


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## 4. Packaging Information

### 4.1. Tape specification

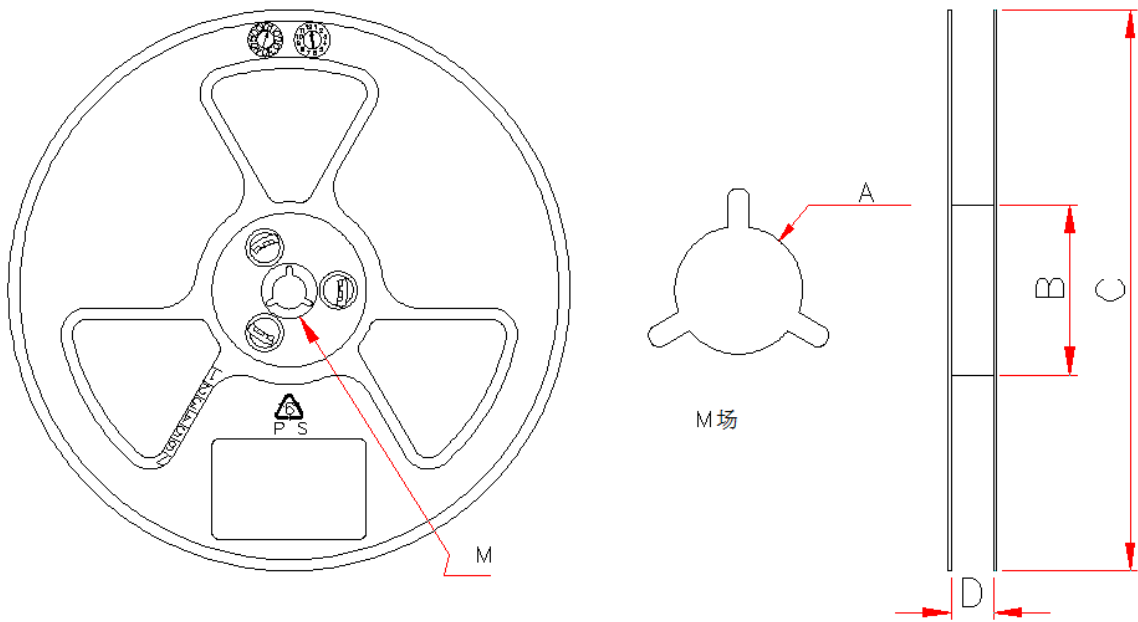


Index	A0	B0	K0	P0	P	P2	φD0	W	E	F	T
Dimension (mm)	2.5 ± 0.1	5.5 ± 0.1	1.3 ± 0.1	4.0 ± 0.1	8.0 ± 0.1	2.0 ± 0.1	1.5 +0.1	12.0 ± 0.3	1.75 ± 0.1	5.5 ± 0.1	0.3 ± 0.05

- 10 sprocket hole pitch cumulative tolerance  $\pm 0.20$ .
- Carrier camber is within 1 mm in 250 mm.
- All dimensions meet EIA-481-C requirements.
- Material :Transparent PS.
- Thickness: $0.3 \pm 0.05$ mm.
- Packing length per 7" reel :12.5Meters.
- Component load per 7" reel : 1500 pcs.(前后共预留 60pcs)

### 4.2. Reel specification

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Index	A	B	C	D
Dimension (mm)	$13.3 \pm 0.3$	$100 \pm 0.3$	$330 \pm 0.3$	$24.5 \pm 0.3$

## 5. Notes

- 1) Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
- 2) The use of tweezers or vacuum pick up is strongly recommended for individual components.

## 6. Storage Conditions

- 1) Recommended products should be used within 6 months form the time of delivery.
- 2) Storage environment condition
  - Temperature and humidity conditions:-10~40°C and 30~70%RH.
  - The packaging material should be kept where no chlorine or sulfur exists in the air.
  - Products should be storage in thewarehouse without heat shock,vibration,direct sunlight and so on.