

深圳市飞敏科技有限公司

ShenZhen FeiMin Technology CO., LTD.

产品规格书

Product specification

客户

CUSTOMER:

深圳市捷美斯实业有限公司

产品名称

PRODUCTS:

D3 Patch antenna

客户料号

PART NO:

3. 208. 384

产品型号

Spec.:

FM-S803-SMT-1206

日期

Data:

2024. 7. 26

供应商

SUPPLIER

拟制

PREPARED BY

审核

CHECKED BY

批准

APPROVED BY

马凡

夏兴喜

马冬冬

客户

CUSTOMER

承认

ACCEPTED BY

审核

CHECKED BY

批准

APPROVED BY

备注：承认盖章后请回复一份承认书（或复印件）给我司，其余由贵公司存档

REMARK: Please send us one (or copy) of this approval with stamp after accepting, other copies filed by the customer.

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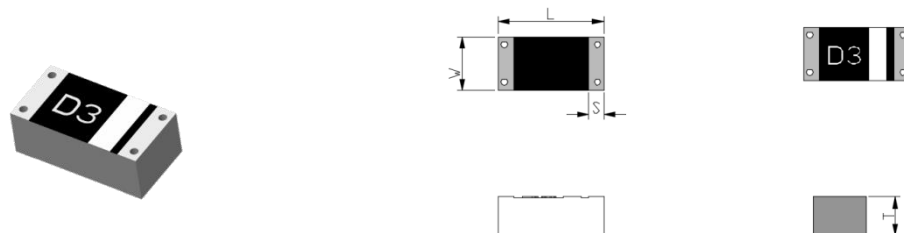
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邮箱 E-mail: ant001@fmant.cn

网址 HTTP: www.fmant.cn

1. 项目信息 Project Information

1.1. 外观尺寸 Appearance and Dimensions

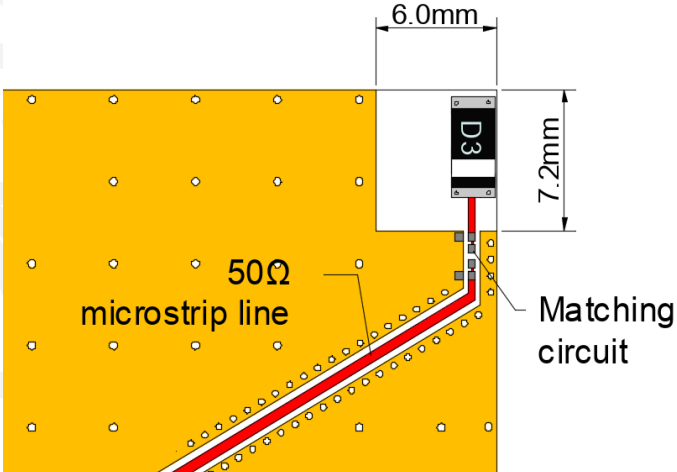


Symbol	Dimension (mm)
L (Length)	3.4 ± 0.20
W (breadth)	1.7 ± 0.20
T (thickness)	1.2 ± 0.20
S (Electrode width)	0.4 ± 0.20

1.2. 天线净空区面积 antenna Clearance area

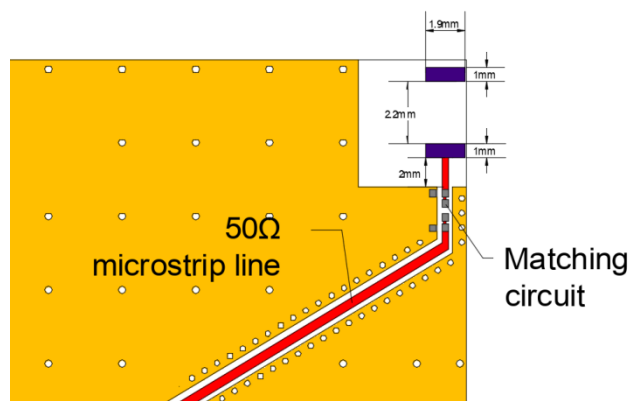
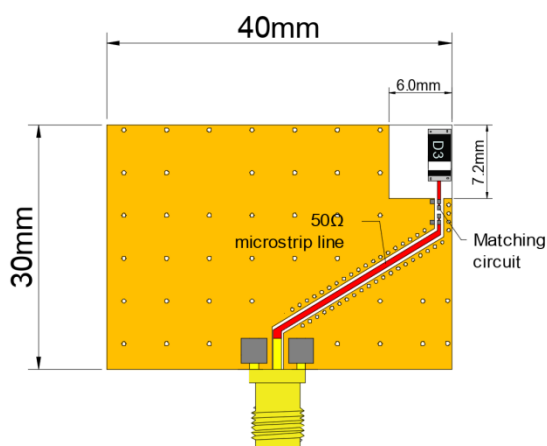
在设计天线时，应远离金属部件和不相关的部件，如电池、振荡器、防护罩、摄像头等，为天线留出干净的空间。这个间隔简称为净空区。以下是我们建议预留的净空区面积大小。

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.

天线型号 (Model)	天线尺寸 (size)	净空区面积 Clearance area L*W(mm)	
A1 (2.4G 单极)	5.5*1.2*1.2	9.1*5.6	
X5 (2.4G 单极)	5.2*2.2*1.0	8.7*6.5	
X6 (2.4G pifa)	3.2*1.6*1.0	7.0*6.0	
D1 (2.4G 单极)	5.2*2.2*1.0	8.7*6.5	
D2 (2.4G 单极)	5.2*2.2*1.0	8.7*6.5	
D3 (2.4G 单极)	3.4*1.7*1.2	7.2*6.0	
F01 (2.4G pifa)	3.2*1.6*0.4	7.0*6.0	
S2 (2.4/5.8G 双频)	7.0*3.0*2.0	9.0*7.0	
U1 (UHF 单极)	15.0*3.0*1.0	19.0*8.0	
G2 (GPS 单极)	9.5*3.0*1.0	13.5*7.5	

1.3. 天线 Demo 测试板

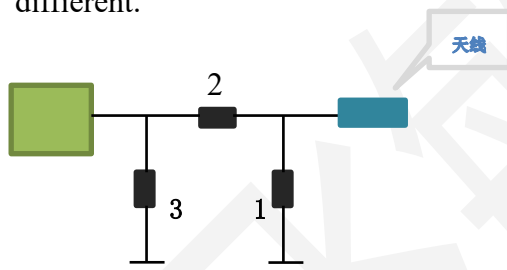
Demo Test Board with Antenna(Unit:mm)



1.4. 匹配电路 Matching Circuit

使用以下推荐的匹配和调谐元件值，在我们的标准 30*40 mm 评估板上，中心频率约为 2440mhz。然而，这些是典型的参考值，当电路板或零件供应商不同时，可能需要更改。

With the following recommended values of matching and tuning components,the center frequencies will be about 2440 MHz at our standard 30*40 mm evaluation board.However,these are typical reference values which may need to be changed when circuit boards or part vendors are different.



系统匹配电路元件(村田)		
System Matching Circuit Component (Murata)		
Location	Description	Tolerance
1	NC	/
2	4.7nH(0402)	±0.2nH
3	1.0pF (0402)	±0.1pF

2. 电特性 Electrical Characteristics(30*40mm ground plane)

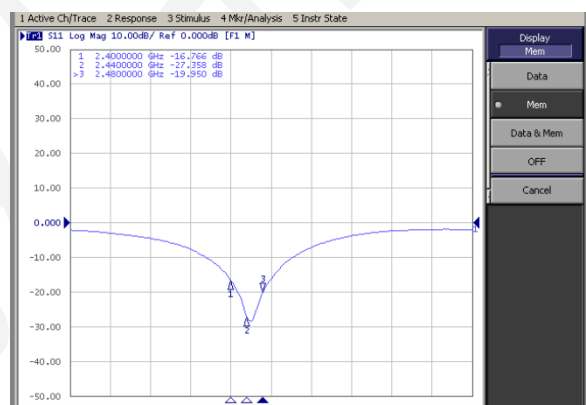
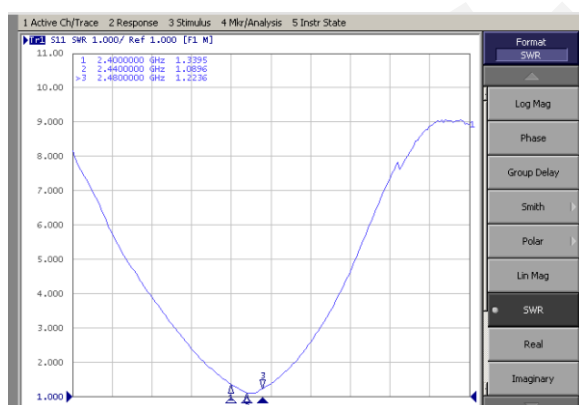
2.1. 电子表格 Electrical Table

特征 Characteristics		规范 Specifications	单位 Unit
轮廓尺寸 Outline Dimensions		3.4*1.7*1.2	mm
工作频率 Working Frequency		2400-2500	MHz
电压驻波比 VSWR		<2	/
阻抗 Impedance		50	Ω
极化 Polarization		线极化	/
增益 Gain	峰值 Peak	2.42	dBi
	效率 Efficiency	50	%

2.2. 电压驻波比与回波损耗 VSWR & return loss

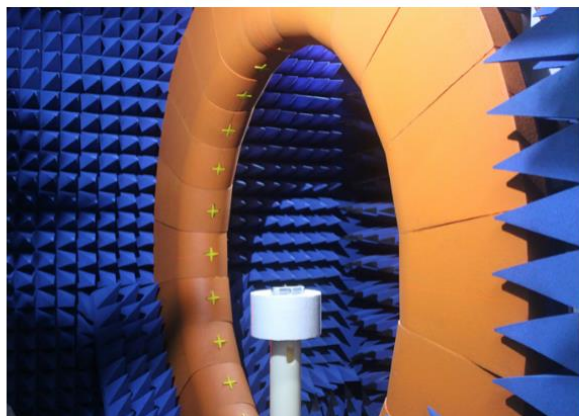
VSWR

return loss



2.3.天线增益与效率 Gain and Efficiency

测试系统 Test system



24 探头微波暗室

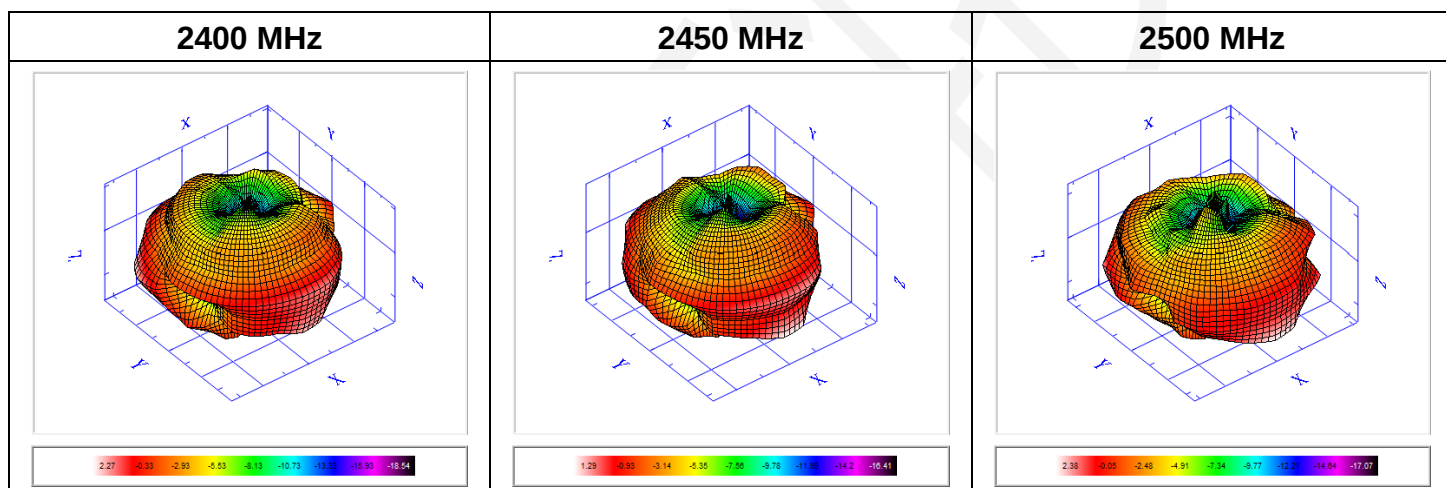
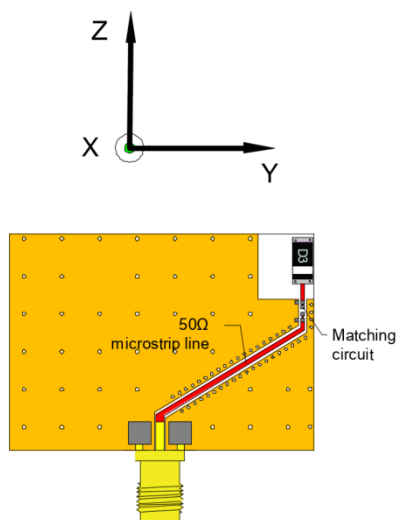
➤ 频率：0.4GHz至6GHz

主要测试指标

- ◆ 无源指标
- ◆ 增益
- ◆ 效率
- ◆ 3D方向图

- 有源指标
- TRP总辐射功率
- TIS总接收灵敏度

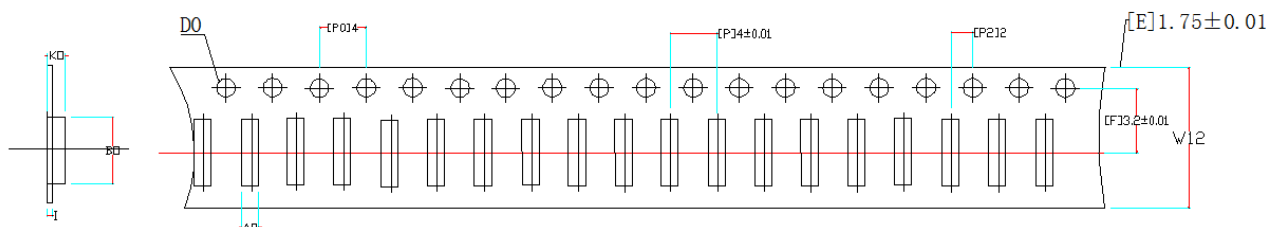
2.4. 天线辐射方向图 Antenna radiation pattern



Frequency	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
E-Total Peak Gain (dBi)	2.27	2.31	2.02	1.52	1.09	1.29	1.72	2.11	2.34	2.42	2.38
Efficiency (%)	49.12	47.19	49.33	49.3	45.74	46.09	45.84	47.58	52.1	50.88	50.75
Average Gain (dB)	-3.09	-3.26	-3.07	-3.07	-3.4	-3.36	-3.39	-3.23	-2.83	-2.93	-2.95

3.包装信息 Packaging Information

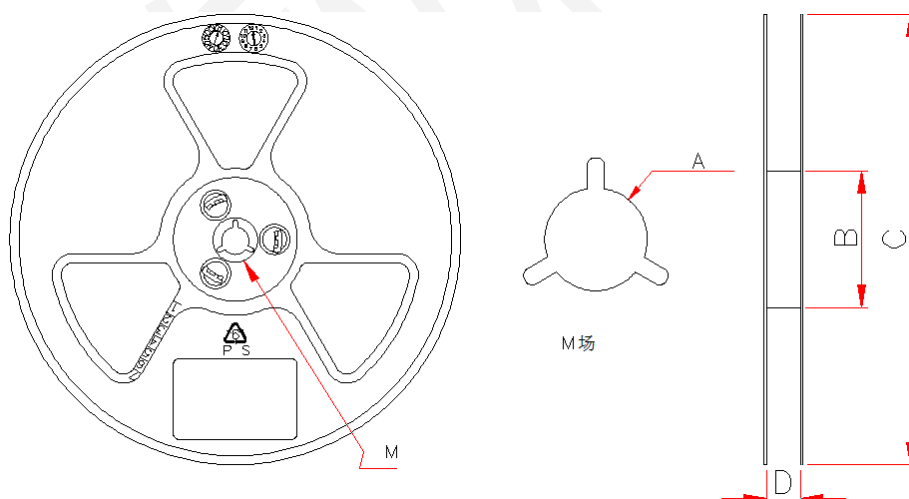
3.1. 胶带规范 Tape specification



Index	A0	B0	K0	P0	P	P2	φ D0	W	E	F	T
Dimension (mm)	2.0±0.1	3.7±0.1	1.5±0.1	4.0±0.1	4.0±0.1	2.0±0.1	1.5+0.1	12.0±0.3	1.75±0.1	3.7±0.1	0.3±0.05

- 10 链轮孔距累积公差±0.20。10 sprocket hole pitch cumulative tolerance ±0.20.
- 在 250 毫米中，载体的拱度在 1 毫米以内。Carrier camber is within 1 mm in 250 mm.
- 所有尺寸符合 EIA-481-C 要求。All dimensions meet EIA-481-C requirements.
- 材料:透明 PS。Material :Transparent PS.
- 包装长度每 7"卷:12.5 米。Packing length per 7" reel :12.5Meters.
- 组件加载/ 7"卷:3000 个。Component load per 7" reel : 3000 pcs.(前后共预留 120pcs)

3.2. 卷规范 Reel specification



Index	A	B	C	D
Dimension (mm)	13.3±0.3	100±0.3	330±0.3	24.5±0.3

4.注意事项 Notes

- 1) 产品应小心处理，以避免汗水和皮肤油脂损坏或污染。
Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
- 2) 对于单个部件，强烈建议使用镊子或真空拾取。
The use of tweezers or vacuum pick up is strongly recommended for individual components.

5.储存条件 Storage Conditions

- 1) 推荐产品从交货之日起 6 个月内使用。
Recommended products should be used within 6 months form the time of delivery.
- 2) 存储环境条件
Storage environment condition
 - 温湿度条件:-10~40℃， 30~70%RH。
Temperature and humidity conditions:-10~40℃ and 30~70%RH.
 - 包装材料应保存在空气中不含氯或硫的地方。
The packaging material should be kept where no chlorine or sulfur exists in the air.
 - 产品应储存在仓库内，无热震、振动、阳光直射等。
Products should be storage in the warehouse without heat shock,vibration,direct sunlight and so on.