

OA-FW1807-2.4G Antenna Specification Document OA-FW1807-2.4G 天线规格书

**OverAir® 柔性 FPC 贴片天线系列
符合 RoHS 规范**

OverAir® Flexible FPC Surface Mount Antenna Series complies with RoHS standards

2.4G flexible FPC surface-mount antenna

2.4G 柔性 FPC 贴片天线

广州寒武纪电子科技有限公司

Guangzhou Cambrian Electronic Technology Co., Ltd.

第一章 产品简介 Chapter 1 Product Introduction

OA-FW1807-2.4G 是一款工作在 2.4-2.5Ghz 自带背胶和同轴线的柔性 FPC 内置天线。
FPC 天线体尺寸为 18*7mm，厚度仅 0.2mm（包含背胶）。自带 RF0.81 同轴线，线损更小，线材更柔软，线长 4cm（可定制），IPEX 一代接口（可定制）。

本天线适用于各种采用 2.4G（如蓝牙、WIFI 等）的天线内置化的电子产品、通信设备等。

The OA-FW1807-2.4G is a flexible FPC built-in antenna operating at 2.4-2.5 GHz, featuring self-contained adhesive backing and coaxial cable. With dimensions of 18×7 mm and a thickness of just 0.2 mm (including adhesive backing), this FPC antenna incorporates RF0.81 coaxial cable for reduced line loss and enhanced flexibility, offering customizable 4 cm cable length and IPEX Gen 1 interface. Chapter 1 Product Introduction. This antenna is ideal for electronic devices and communication equipment incorporating 2.4 GHz antenna integration, such as Bluetooth and WIFI systems.

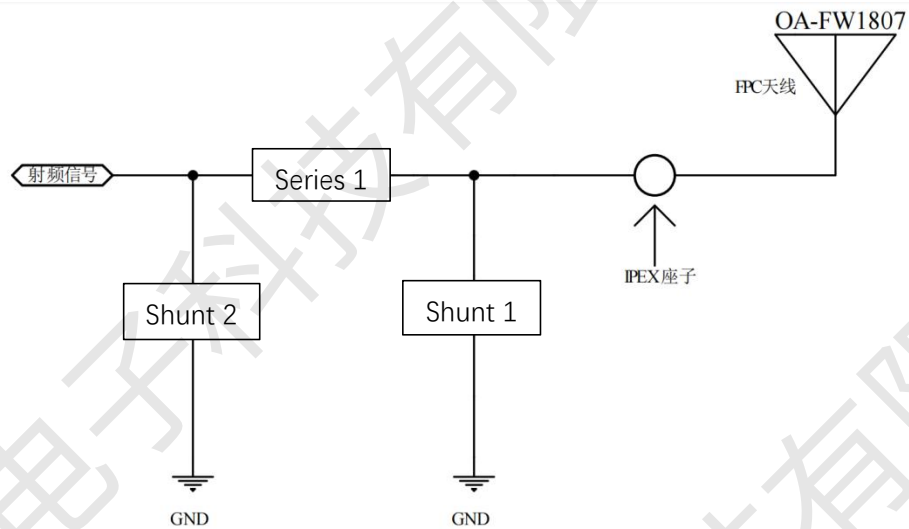
第二章 规格参数Chapter 2 Specification Parameters

电气参数	
center frequency	2450Mhz
antenna bandwidth	2400-2500Mhz
antenna gain	3.71dB@2410MHz
antenna efficiency	59.66%
standing-wave ratio (SWR)	<2
direction of polarization	垂直极化
radiation direction	全向
input impedance	50Ω
maximum power	5W
Other parameters	
Antenna dimensions	18.0*7.0*0.2mm
Antenna body thickness	0.2mm
Coaxial line length	4cm（可定制）
Antenna body material	FPC
Coaxial cable specifications	RF0.81
Interface specifications	IPEX1 代（可定制）
working temperature	-30℃~ +80℃



第三章 天线匹配原理图

Chapter 3 Schematic Diagram of Antenna Matching Principles



第四章 天线特性 Chapter 4 Antenna Characteristics

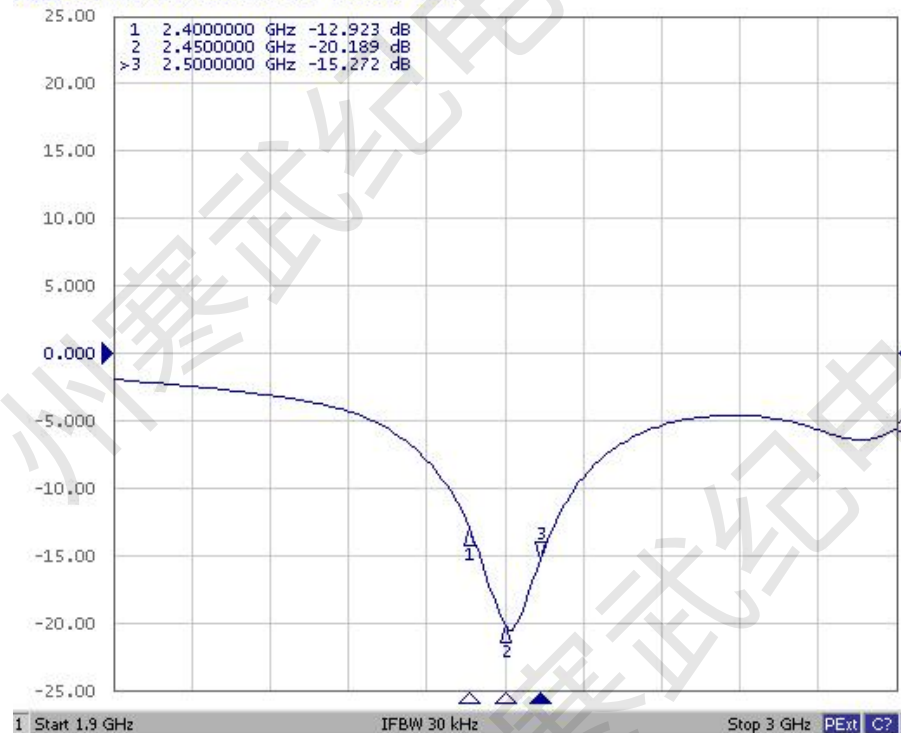
驻波比 (VSWR)

▶ Tr1 S22 SWR 1.000/ Ref 1.000 [F1]



回波损耗 (Return Loss)

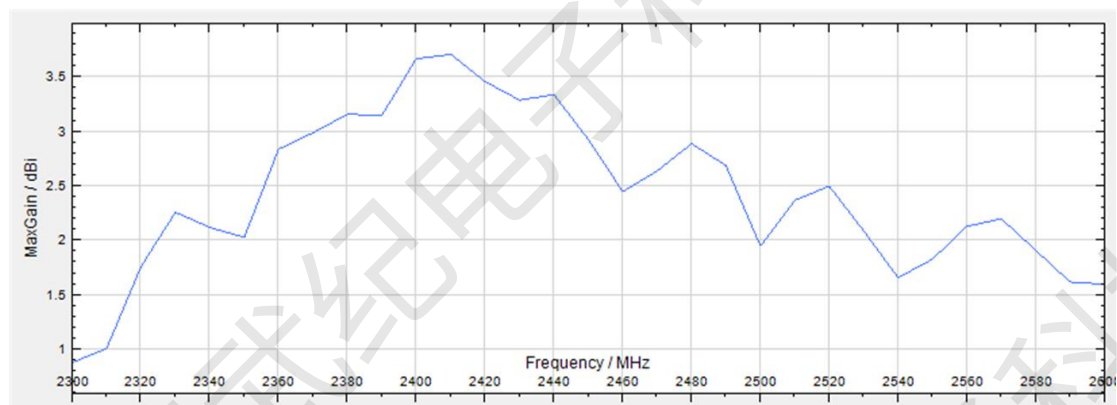
▶ Tr1 S22 Log Mag 5.000dB/ Ref 0.000dB [F1]



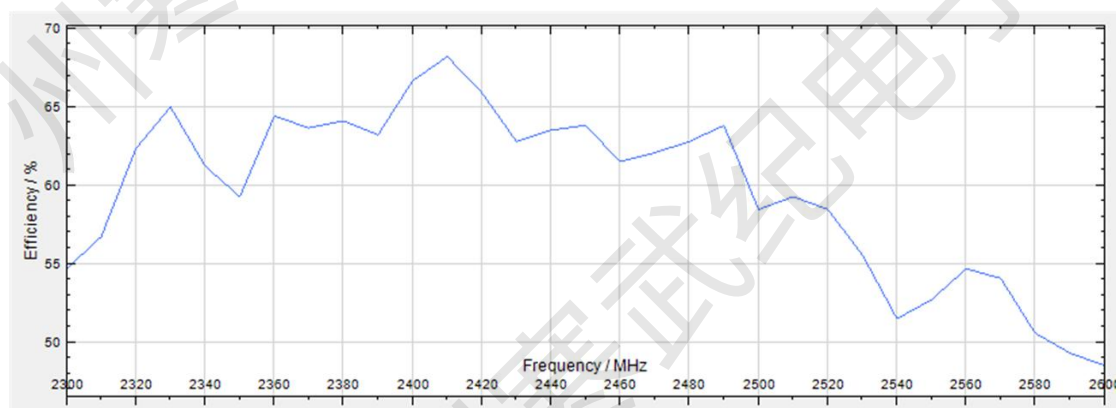
天线效率和增益 (Efficiency and Gain)

Frequency/MHz	MaxGain/dBi	Efficiency / %
2400	3.67	66.68
2410	3.71	68.23
2420	3.46	65.92
2430	3.29	62.81
2440	3.34	63.53
2450	2.93	63.83
2460	2.45	61.52
2470	2.64	62.09
2480	2.89	62.81
2490	2.69	63.83
2500	1.95	58.48

天线增益曲线图 (Gain)

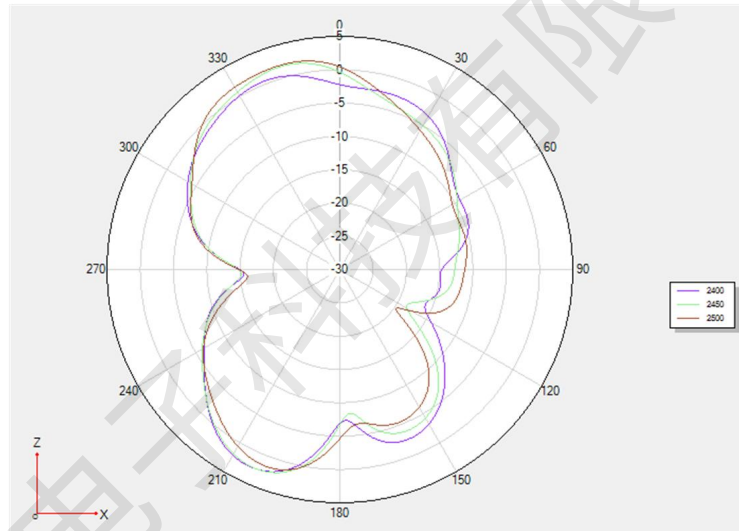


天线效率曲线图 (Efficiency)

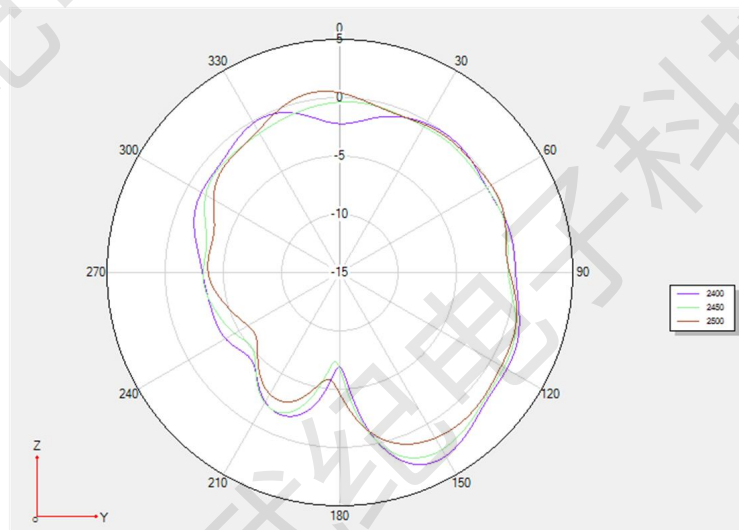


天线 2D 方向图

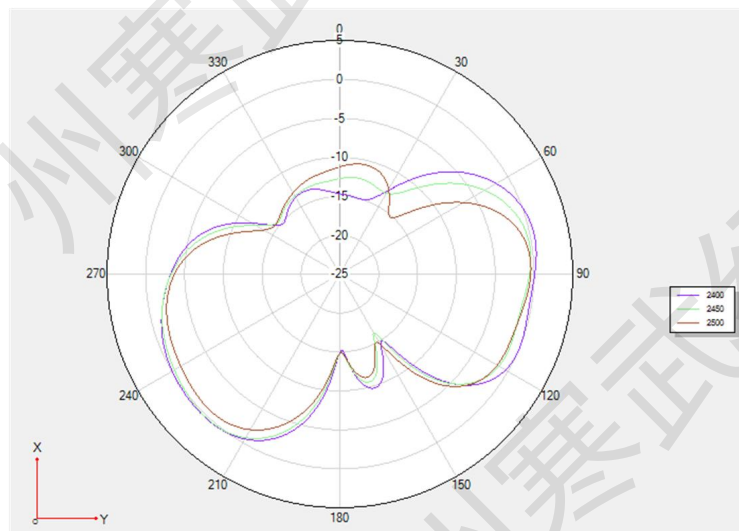
Phi 0 2D



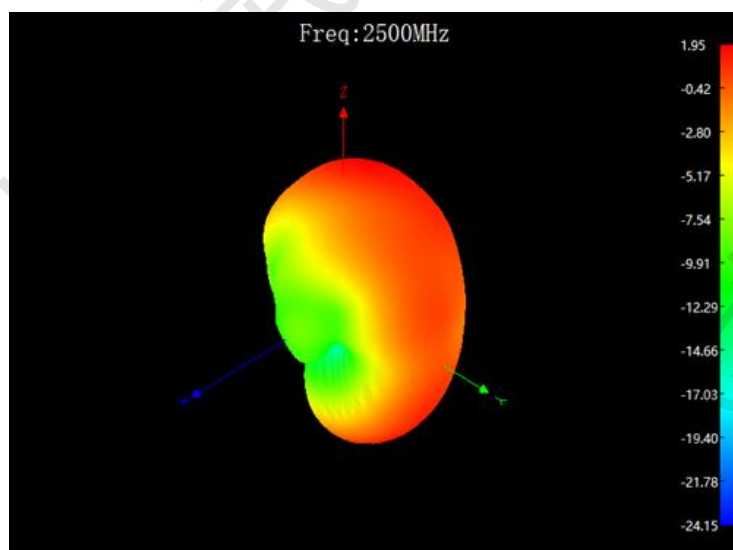
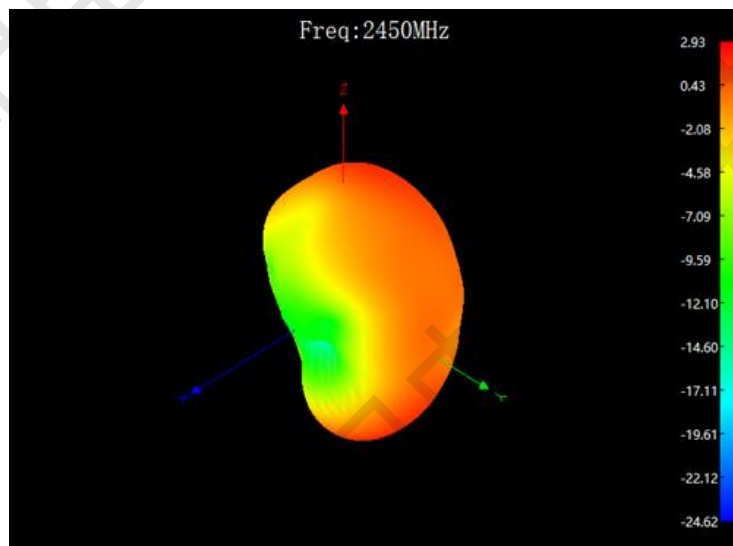
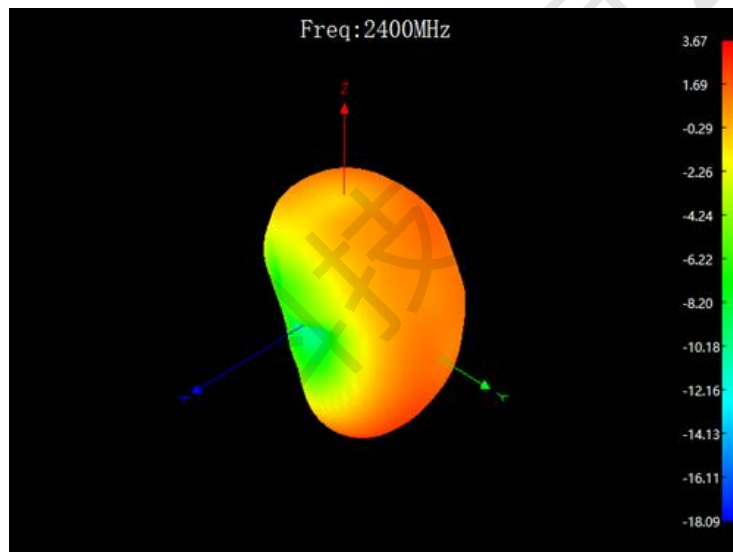
Phi 90 2D



Theta 90 2D



天线 3D 方向图



第五章 注意事项

- 1、天线应粘贴在产品内部的绝缘体表面，请不要将天线体粘贴在金属导体表面。
- 2、天线体与金属导体应保持不少于 3mm 的间距，且与金属导体的间距越大越好。PCB 板作为一块导体同样需要与天线保持尽量远的距离。
- 3、天线的同轴线不要缠绕在天线体上，否则可能导致天线性能下降。
- 4、天线的阻抗可能因不同产品的结构差异发生偏移，可以预留 π 型阻抗匹配器件进行调试改善。如遇到这种情况可与我司联系获得技术支持。

第六章 天线图纸

