

深圳市沃莱特电子有限公司

样品承认书

SAMPLE APPROVAL SHEET

部品信息: (Part information)

客户 (Customer)	佳电电子 Dongguan Jiadian Electronics Technology Co.,Ltd.
部品名称 (Material Description)	TAM3205M2/TAM4205M2 Antenna
部品规格 (Specifications)	FPC (39*9mm) + 黑色同轴线Black coaxial line (φ1.13*130mm) + 焊接Weld
料号 (Supplier' s Part number)	136-3505M2-10A
送样日期 (Date)	2024-7-25

签核: (Sign off)

拟制	审 核	批 准
Prepared By	Checked By	Approved By
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客户签核: (Customer Sign off)

承认 Accepted By	审核 Checked By	批准 Approved By
承认结果 (Result): ☐ 完全接受 (Full Approval) ☐ 条件接受 (Conditional Approval) ☐ 不合格 (Unqualified) ☐ 其它 (Others) :		

本样品承认书我司确保属实，如经贵司研发部门确认签核后，请以最快速度回传给我司。如有其它原因，请以书面形式通知我。

This sample approval sheet is guaranteed to be true. If it is confirmed by your R&D department, please send it back to us as soon as possible. If there are other reasons, please inform us in writing.

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1规格(Specifications)

本报告主要提供天线 TAM3205M2/TAM4205M2 天线 各项电气和结构性能参数的测试状况。
(This report mainly provides the test status of various electrical and structural performance parameters of antenna TAM3205M2/TAM4205M2.)



图 1 天 线(antenna)

1.1 电气规格标准(Electrical specification standard)

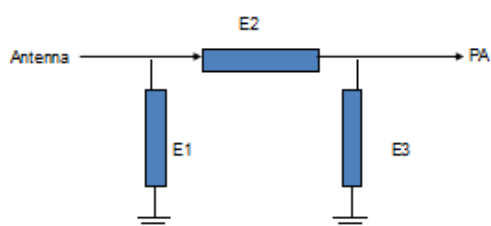
1.1.1 电性能指标(Electrical performance index)

天线工作频段在 2400-2480MHz。下表是我司设计天线的电性能的指标。

(The working frequency band of the antenna is 2400-2480 MHz. The following table is the electrical performance index of antenna designed by our company.)

天线(Antenna)	TAM3505M2/TAM4205 天线(Antenna)
频段(Frequency)	2400-2480MHz
驻波比(Standing-wave ratio)	< 2
效率(Efficiency)	> 50%
阻抗(Impedance)	50 ohm
极化方式(Polarization mode)	线极化(Linear polarization)

1.1.2 匹配电路图(Matching circuit diagram)



Element	Value
E1(0402)	N/A
E2(0402)	2.2nH
E3(0402)	1PF

2 测试(Test)

天线用客户提供的样机进行调试及测试。

(The antenna is debugged and tested with the prototype provided by the customer.)

2.1 无源 S11 的测试(Test of Passive S11 Parameters)

2.1.1 测试连接(Test connection)

源 S11测试装置依次连接为：网络分析仪→测试线→测试治具

(Passive S11 testing devices are sequentially connected as follows)

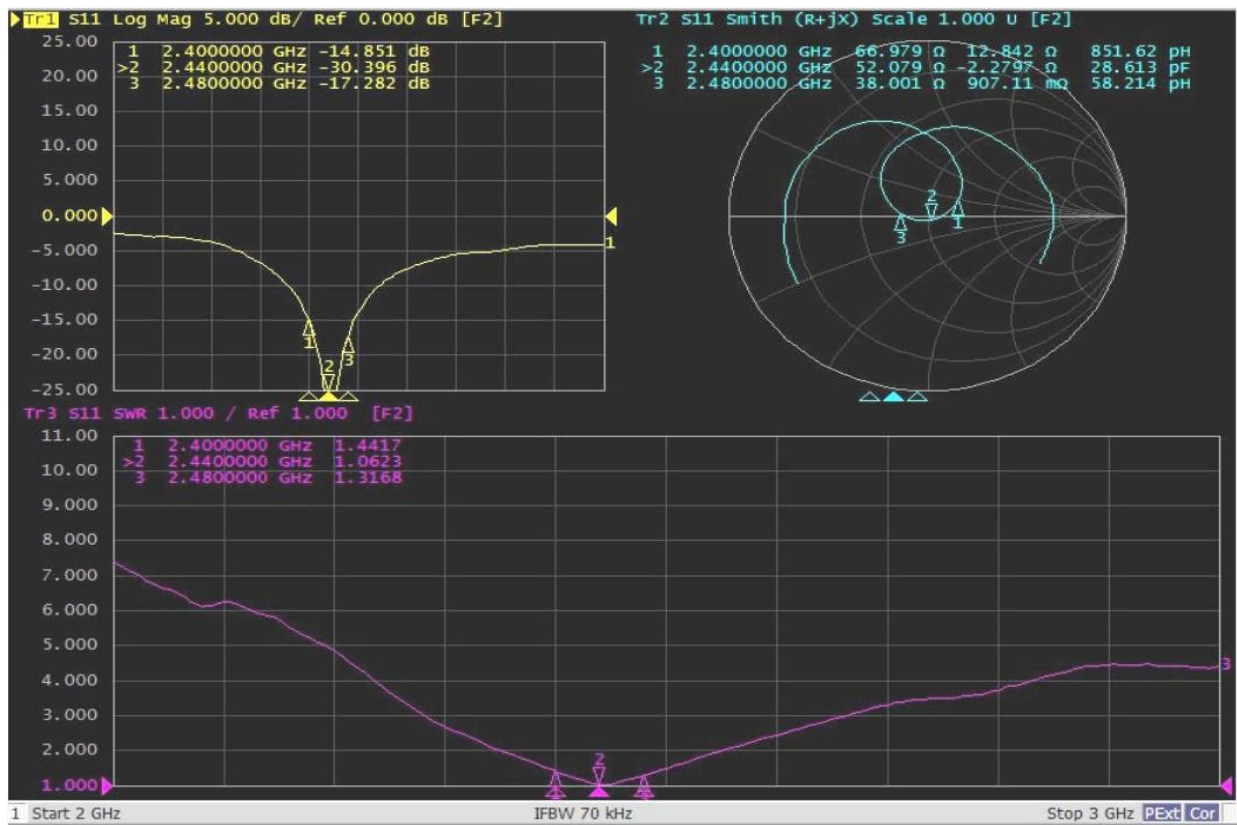
Network analyzer→Test line→Test fixture

2.1.2 无源 S11 (Passive S11)

下表所示为天线工作频段边缘频点的驻波比数值。测试所得的 Return Loss, VSWR 相关波形 图如下图所示。

(The following table shows the standing wave ratio values of the edge frequency points of the antenna working frequency band. The waveforms of Return Loss, VSWR obtained from the test are shown in the following figure.)

(MHz)	2400	2440	2480
VSWR	1.44	1.06	1.31
Return Loss	-14.85	-30.39	-17.28



2.2 增益及效率的测试(Test of gain and efficiency)

2.2.1 测试的场地(Test site)

微波暗室：测试频率范围为 400MHz—6GHz

(Microwave anechoic chamber: the test frequency range is 400 MHz-6 GHz.)

2.2.2 测试的仪表(Test instruments)

网络分析仪、标准喇叭天线、多探头近场天线测试系统、测试电脑等。

(Network analyzer, standard horn antenna, multi-probe near-field antenna test system, test computer, etc.)

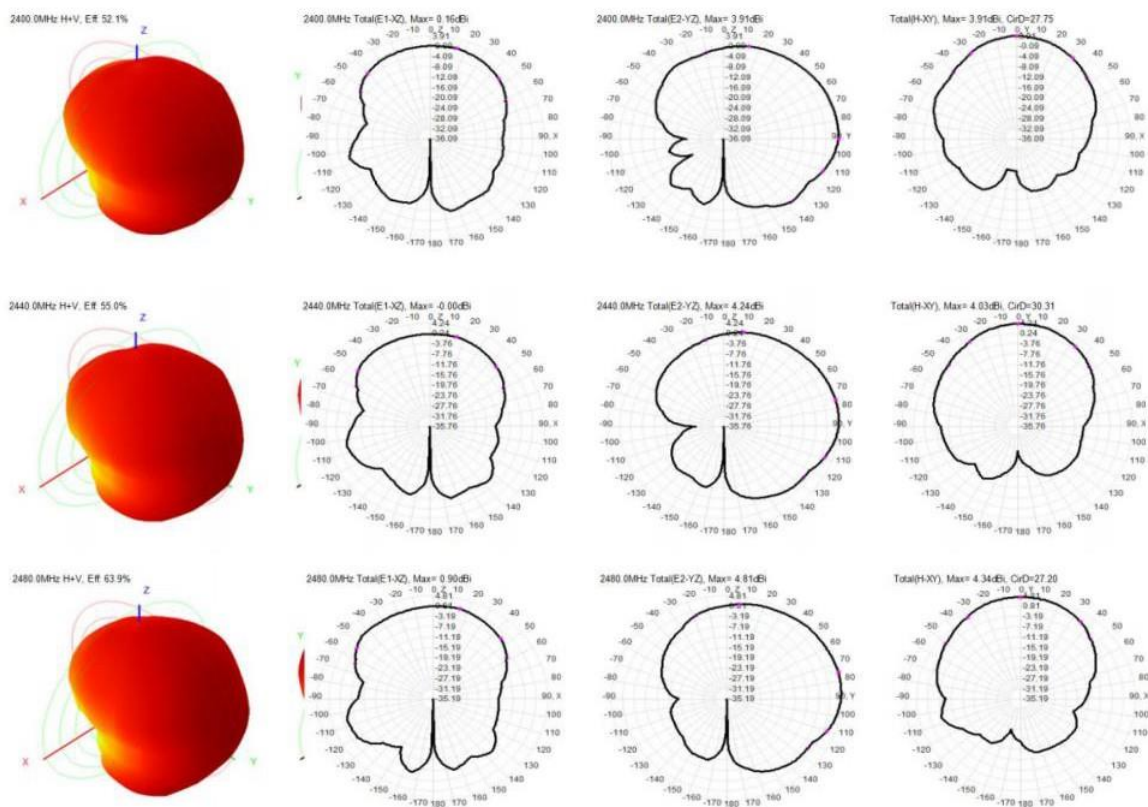
2.2.3 测试结果(Test result)

在微波暗室中，测试的与效率及增益相关的数值如下表所示

(In the microwave anechoic chamber, the values related to efficiency and gain are shown in the following table.)

Frequency(MHz)	Gain(dBi)	Efficiency(%)
2400	3.91	52.10%
2410	3.95	52.20%
2420	3.94	52.70%
2430	4.07	53.50%
2440	4.24	55.00%
2450	4.43	54.20%
2460	4.48	56.30%
2470	4.62	59.70%
2480	4.81	63.60%
2490	4.89	67.40%
2500	4.92	68.70%

2.2.4 无源辐射方向图(Passive radiation pattern)



2.3 有源测试(Active test)

2.3.1 OTA 测试结果(OTA test results)

Channels	TRP(dBm)	TIS(dBm)
0	-2.08	-88.72
39	-0.49	-87.74
78	-0.11	-88.29

3、产品结构图纸/Product structure drawing(mm)

