

深圳市沃莱特电子有限公司

Shenzhen World Elite Electronic Co. LTD

样品承认书

SAMPLE APPROVAL SHEET

客户（Customer）	Eastech
部品名称（Material Description）	THN004 TX Antenna
客户料号（Customer's Part number）	
部品规格（Specifications）	PCB
料号（Supplier's Part number）	
送样日期（Date）	

签核：

拟 制 Prepared By	审 核 Checked By	批 准 Approved By
张登桥	李岳鹏	张红英

客户签核：

承 认 Accepted By	审 核 Checked By	批 准 Approved By

承认结果：

- ☐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.

1 Specification

This report mainly provides the test status of various electrical and structural performance parameters of THN004 TX antenna.

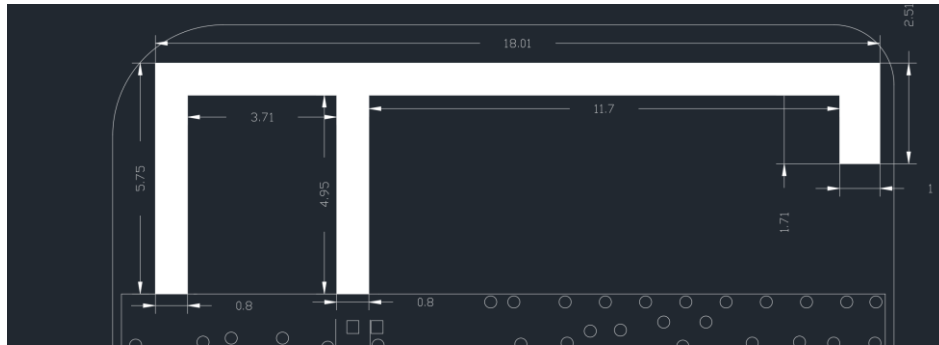


Figure 1 Antenna, Unit: mm

1.1 Electrical specification standard

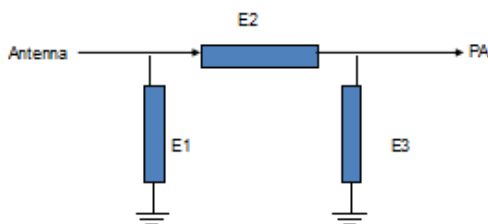
1.1.1 Electrical performance index

The antenna operates in 2400-2500MHz。

The following table is the electrical performance index of our antenna design.

Antenna	THN004 TX Antenna
Frequency band	2400-2500MHz
SWR	< 2.5
Efficiency	> 40%
Impedance	50 ohm
Polarization	Linear polarization

1.1.2 Match the circuit



Element	Value
E1(0201)	N/A
E2(0201)	OR
E3(0201)	N/A

2 Test

Commissioning and testing with the prototype provided by customer.

2.1 Passive S11 test

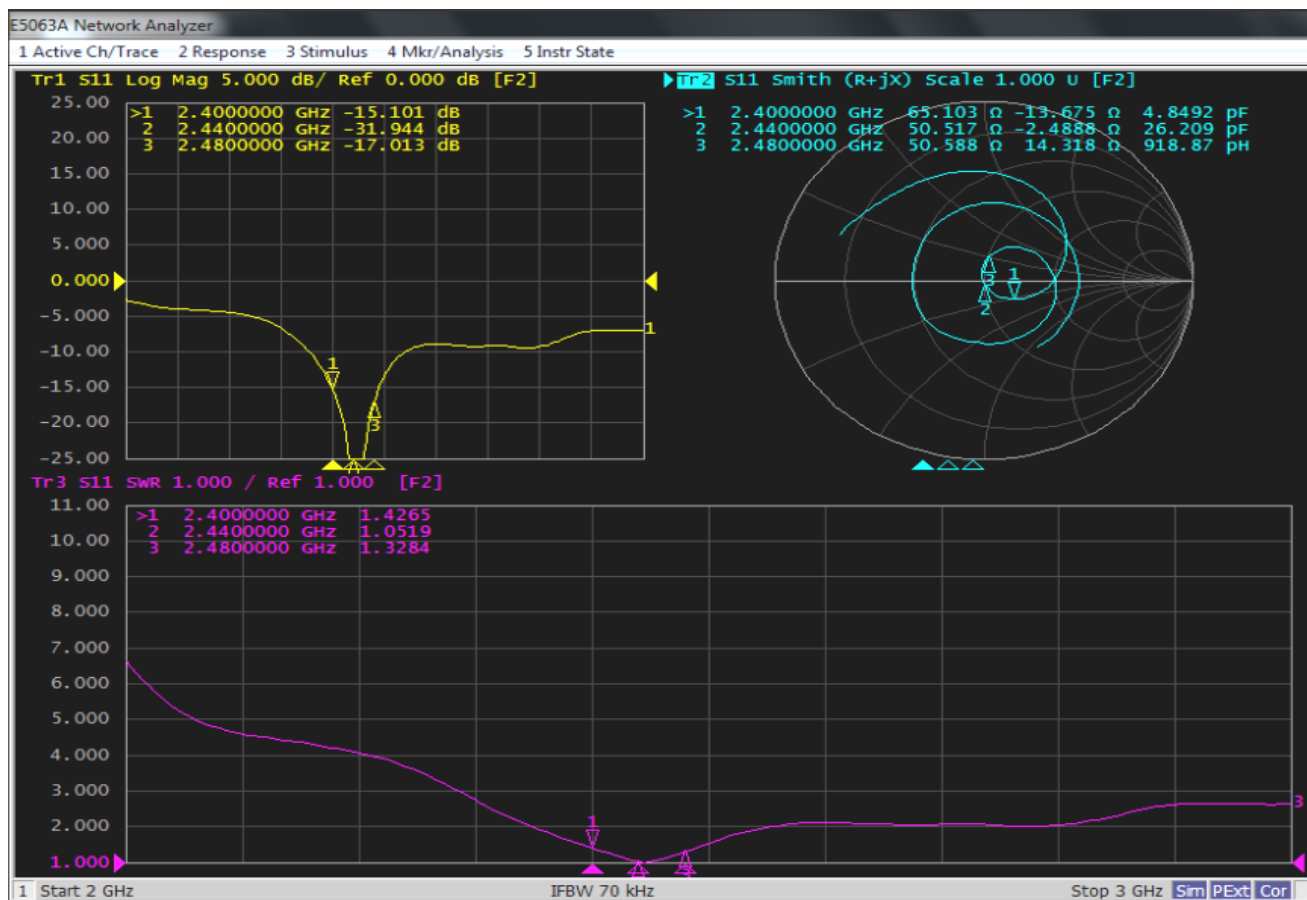
2.1.1 Test connection

The passive S11 test device is connected in sequence: Network analyzer → Test line → Test fixture。

2.1.2 Passive S11

The following table shows the value of standing wave ratio at the edge frequency of the antenna operating band. The Return Loss and VSWR related waveforms obtained from the test are shown in the figure below.

Frequency (MHz)	2400	2440	2480
VSWR	1.43	1.05	1.33
Return Loss	-15.10	-31.94	-17.01



2.2 Gain and efficiency testing

2.2.1 Test site

Chamber: The test frequency range is 400MHz - 6GHz

2.2.2 Test equipment

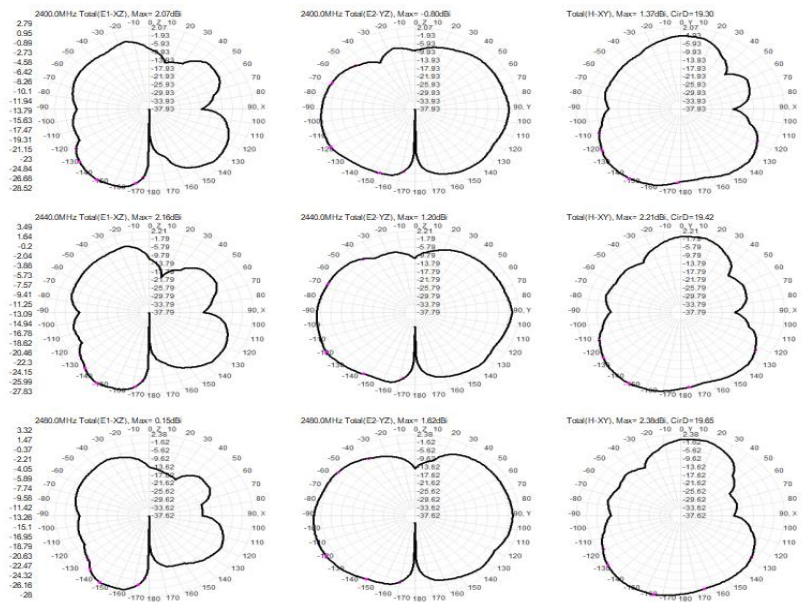
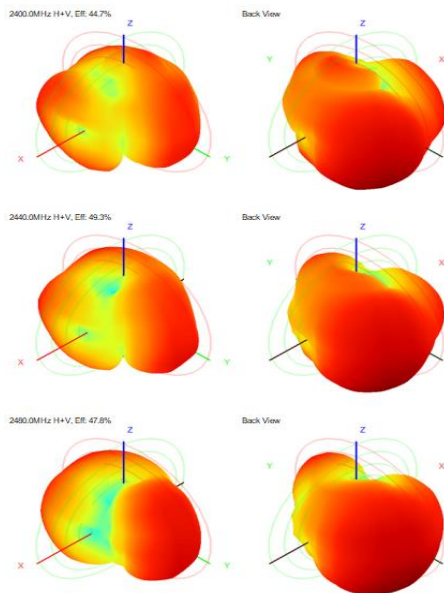
Network analyzer, standard horn antenna, multi-probe near-field antenna test system, test computer, etc.

2.2.3 Test result

In the microwave darkroom, the values related to efficiency and gain tested are shown in the table below.

Frequency (MHz)	Gain (dBi)	Efficiency
2400	2.79	44.66
2410	2.99	45.74
2420	3.26	47.75
2430	3.51	49.34
2440	3.49	49.31
2450	3.57	49.81
2460	3.47	49.81
2470	3.37	49.00
2480	3.32	47.79
2490	3.06	46.63
2500	2.68	44.66

2.2.4 Passive radiation pattern



3 Conclusion

The antenna is designed on the basis of the prototype provided by the customer. The above electrical performance parameters are tested based on the environmental treatment conditions of the test prototype. The electrical parameters and structural performance have met the technical requirements, please confirm!