

1 规格 Specifications

本报告主要提供天线 BT279 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 BT279 Antenna.



图 1 天线 Antenna

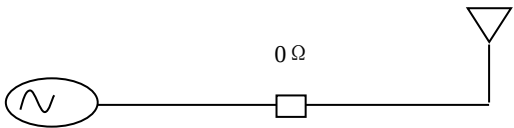
1.1 电气规格标准 Electrical specification standard

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

天线 Antenna	BT279 天线 BT279 Antenna
频段 Frequency band	2400-2480MHz
驻波比 Standing wave ratio	< 1.5
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



天线串联 0 Ω 调谐，并且通过天线辐射体线路进行阻抗匹配。
The antenna is tuned by 0Ω inductance in series, and the impedance is matched through the antenna radiator line.

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

2.1.1 测试连接 Test connection

无源 S11 测试装置依次的连接为：网络分析仪→测试线→测试治具。
The passive S11 test device is 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 figure below shows the VSWR values of the edge frequency points of the antenna operating band
The waveform of return loss and VSWR is shown in the figure.

S11			
频率(MHz) Frequency	2400	2440	2480
VSWR	1.21	1.32	1.4
Return Loss	-20.37	-17.06	-15.49

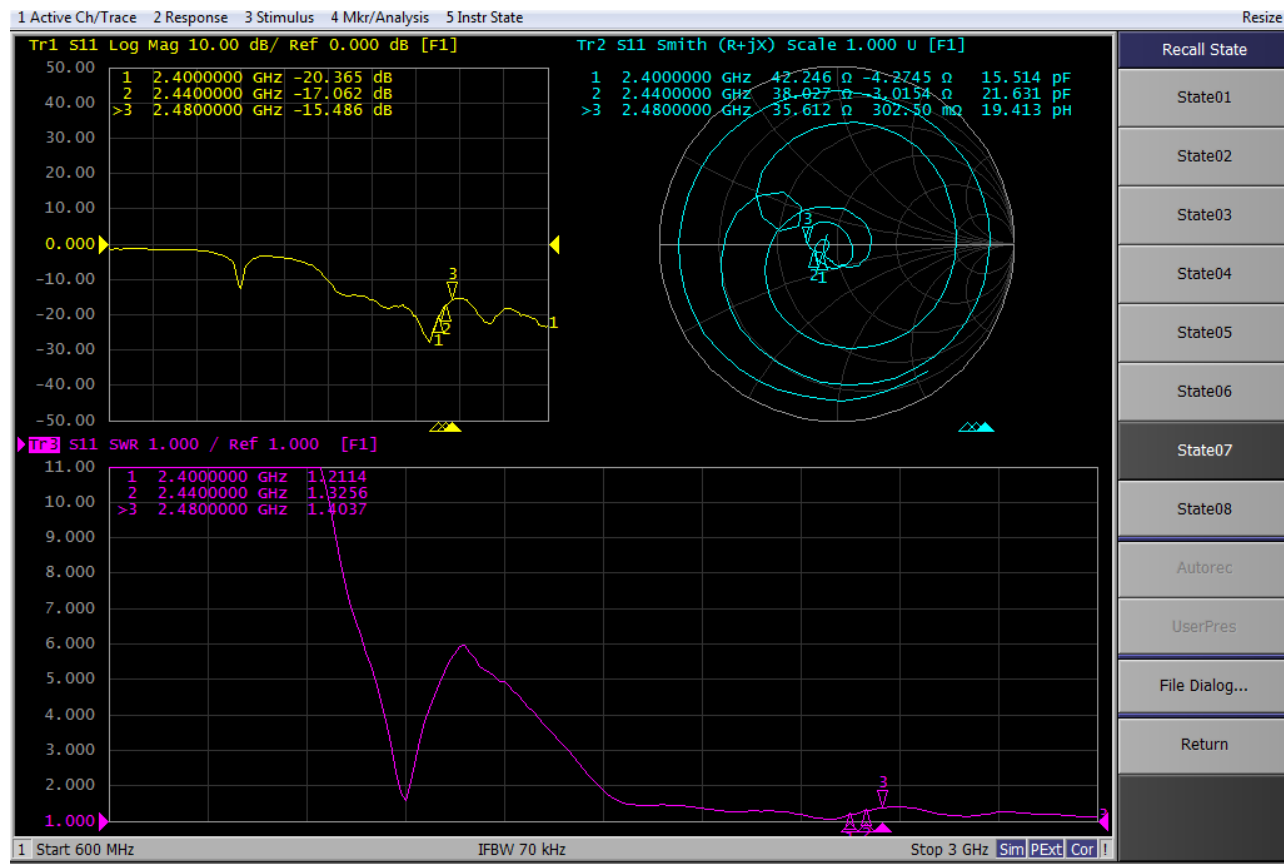


图 2 无源 S11 图 Passive S11 diagram

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

远德微波暗室：测试频率范围为 400MHz—6GHz。 Yuande microwave anechoic chamber: the test frequency range is 4000MHz-6GHz.

2.2.2 测试的仪表 Instruments tested

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 measured values related to efficiency and gain are shown in the table below.

频率 Frequency	效率 (%) Efficiency (%)	效率 (dbi) Efficiency (dbi)	增益 (dbi) Gain (dbi)
2400	71.97	-1.43	6.42
2410	71.44	-1.46	6.45
2420	73.87	-1.32	6.48
2430	73.1	-1.36	6.48
2440	72.36	-1.41	6.08
2450	71.36	-1.47	6.13
2460	71.23	-1.47	6.13
2470	68.81	-1.62	5.97
2480	67.11	-1.73	5.89

2.2.4 无源辐射方向图 Passive radiation pattern

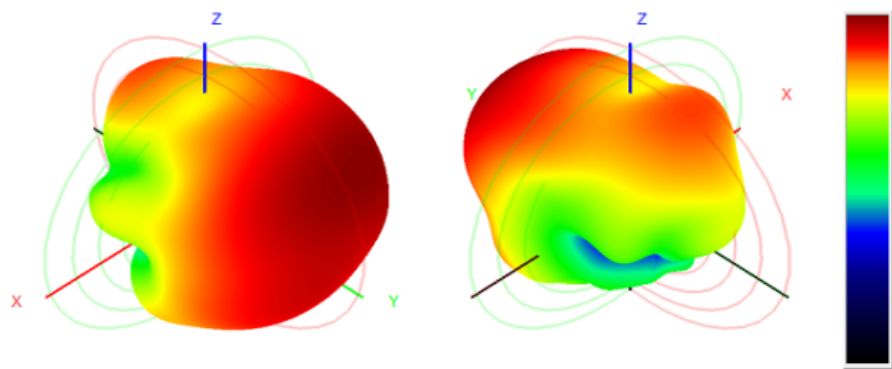


图 3 无源效率方向图 Passive efficiency pattern

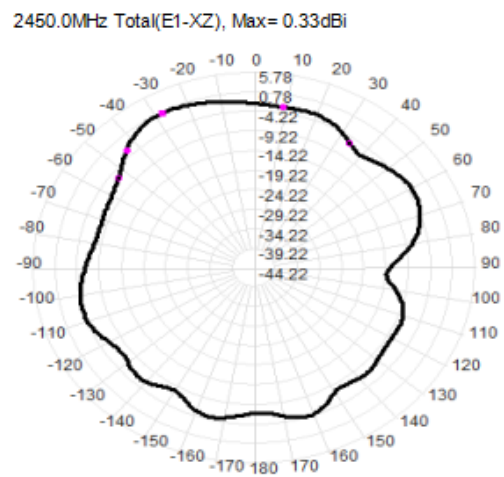


图 4 E1 面-总的增益方向图 E1 plane - total gain pattern

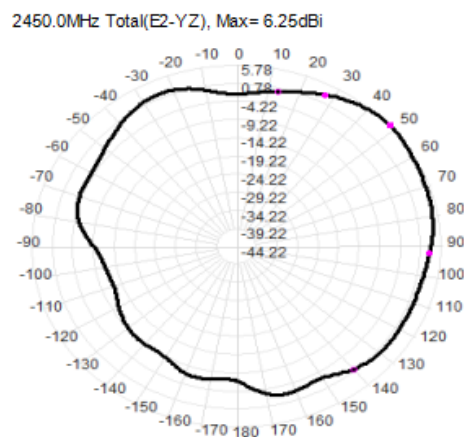


图 5 E2 面-总的增益方向图 E2 plane - total gain pattern

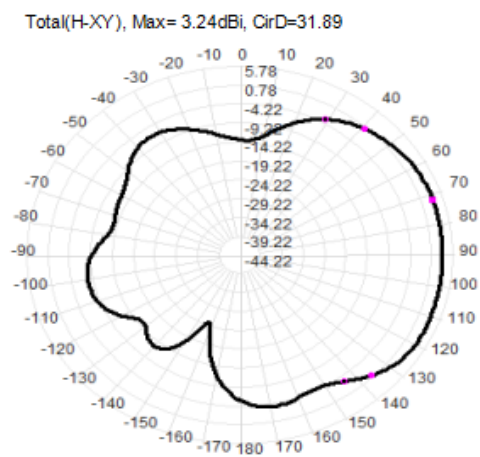


图 6 H 面-总的增益方向图 H plane - total gain pattern

3、结论 Conclusion

此天线是在客户提供样机基础上设计，上述电性能参数基于测试样机环境处理条件下测试，电参数和结构性能已达到技术要求，请确认！

The antenna is designed on the basis of the prototype provided by the customer.

The above electrical performance parameters are tested under the environmental treatment conditions of the test prototype. The electrical parameters and structural performance have reached the technical requirements, please confirm!

4、产品结构图 Product structure drawing

