

天线测试

- 1、硬件测试
- 2、软件测试
- 3、数据读取

1、硬件测试

1.1 、PCBA 裸板测试

将射频连接线线与裸板焊接好，再将其与 OTA 设备连接。

1.2 、设备环境

本次测试需用到的设备有电脑、频谱仪、放大器和暗室，如下图示：



2、软件测试

The image displays two screenshots of the GTS MaxSign software interface, showing the configuration process for a test setup.

Top Screenshot: Test Setup

The **Test Setup** window is divided into several sections:

- Settings:** Includes fields for Operator (GTS), Temperature (20 °C), Humidity (50 %), Test Polar (Both), Pole Test Manner (Single), Test Position (FS), Instrument Preset (Once), Ring Off End (True), and Manual Page Max (10).
- Equipment:** Shows Product Series (RayZone), Instrument (Agilent 5071C), and Instrument Addr (TCP/IP:K-E5071C-28615.localinst0:INS). It also includes a Working Port section with UL Port1 (Agilent 5071C), UL Port2 (NULL), AMP (L) (NULL), Port1 (RBS CMW500B37), Port2 (NULL), UL Port3 (NULL), and UL Port4 (NULL). A Link Port section is also present with DL Port1 (Agilent 5071C), DL Port2 (NULL), AMP (L) (NULL), Port1 (RBS CMW500B37), Port2 (NULL), DL Port3 (NULL), and DL Port4 (NULL).
- Manual Operation:** Features a Command field (Reset) and an Execute button.

Bottom Screenshot: Template Details

The **Template Details** window shows the configuration for a specific template:

- Parameters (Agilent_5071C/Passive):** Includes Trace Name (S21), IF Bandwidth (0.1 kHz), Factor Average (0), Power (5 dB), Test Mode (Log), Skip Calibration (True), DUT Type (Linear), Radiation Test (False), and S11 Calibration File (State01).
- Angular Coordinator Setup:** Includes Phi (Step: 90) and Theta (Ant No.) (Start: 0, End: 180, Step: 30).
- Display Setup:** Includes Display Frequency Mode (Auto) and Display Frequency (MHz).
- Frequency List:** Includes Test Method (Linear) and a table with columns Start(MHz), End(MHz), and Step(MHz):

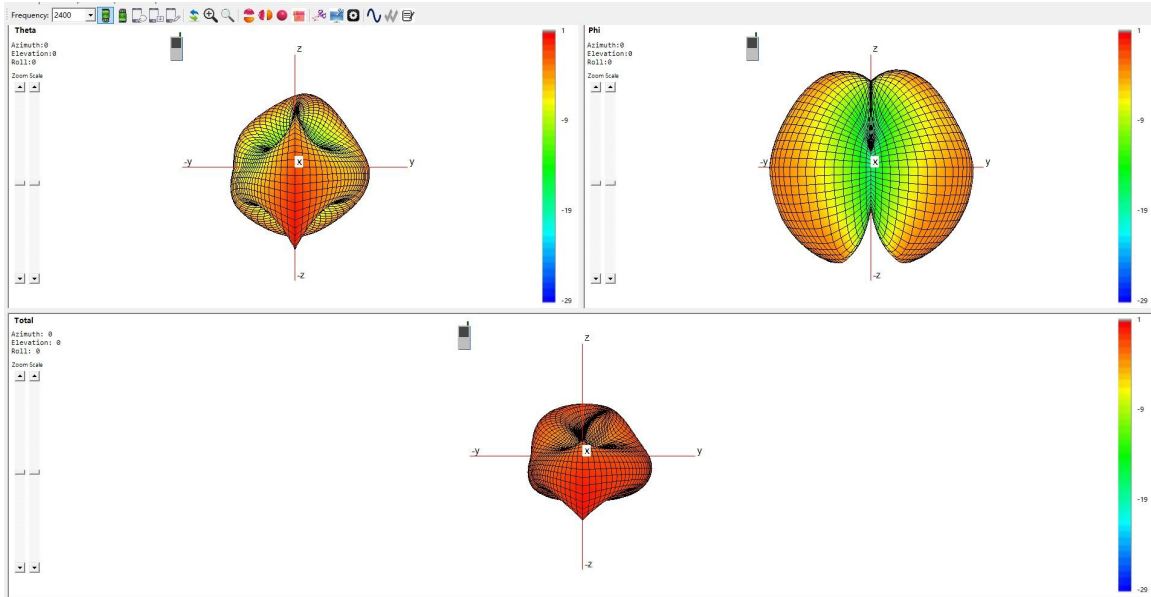
Start(MHz)	End(MHz)	Step(MHz)
1	2400	2500
2		10
- Added Pathloss Correction:** Includes Correction Method (Load File) and Load File (D:\MaxSign\YysData\passive\offset_new.csv).

Red arrows in both screenshots point to specific configuration fields: the top-left 'Setup' button, the 'Instrument Addr' field, the 'UL Port1' and 'DL Port1' fields, the 'AMP (L)' field, the 'Port1' field, the 'Theta (Ant No.)' End field, the 'Frequency List' table, and the 'Save' button.

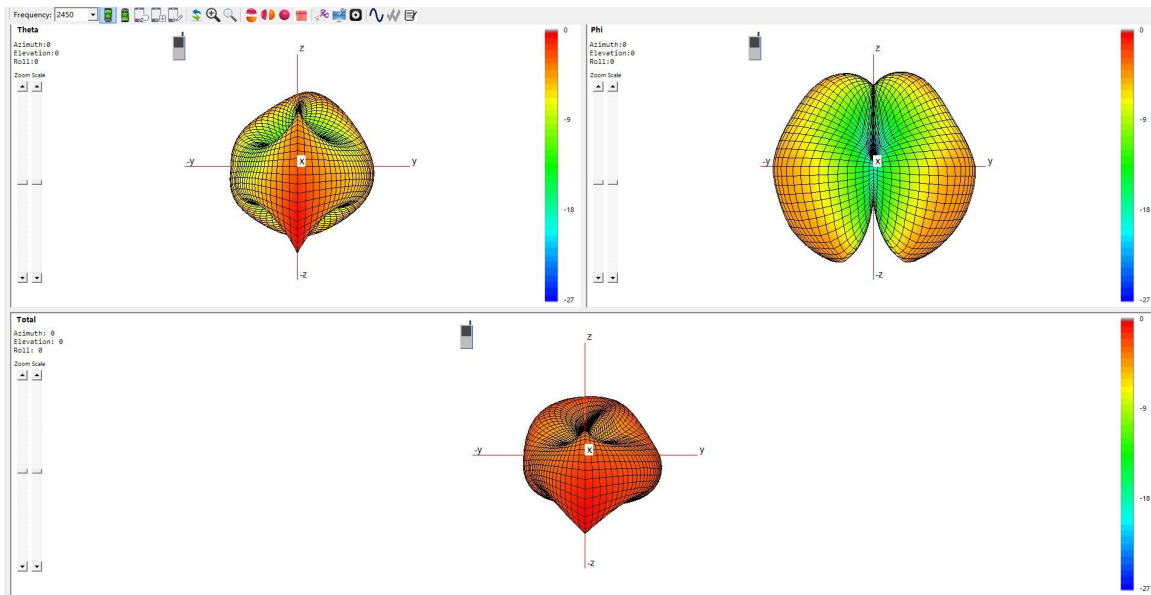
3、数据读取

3.1、扫描天线的 3D 辐射图

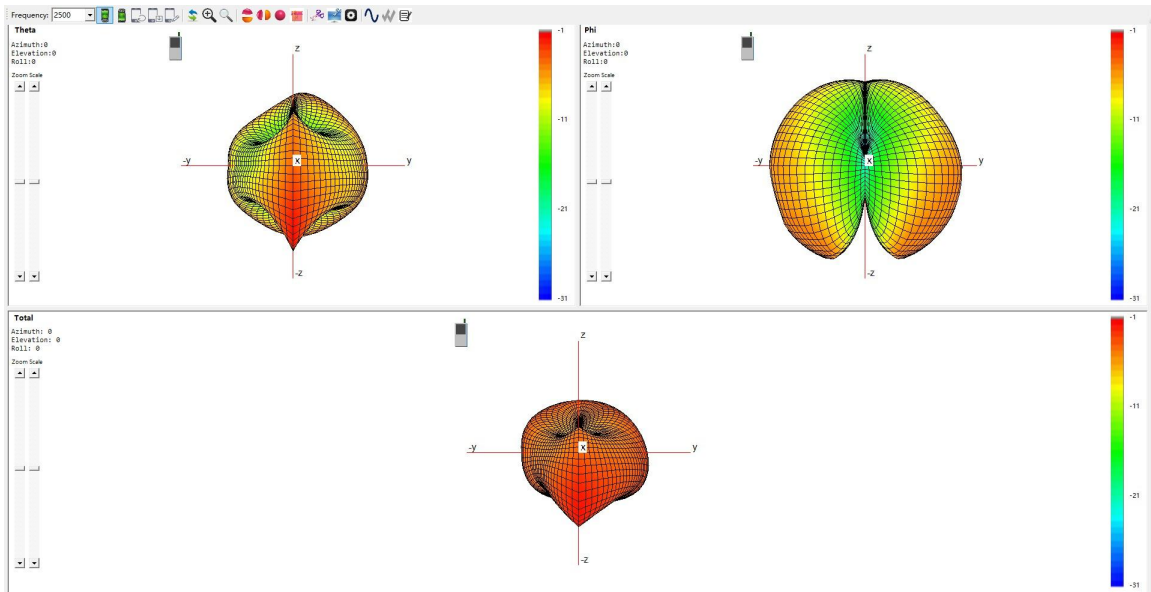
2400MHz:



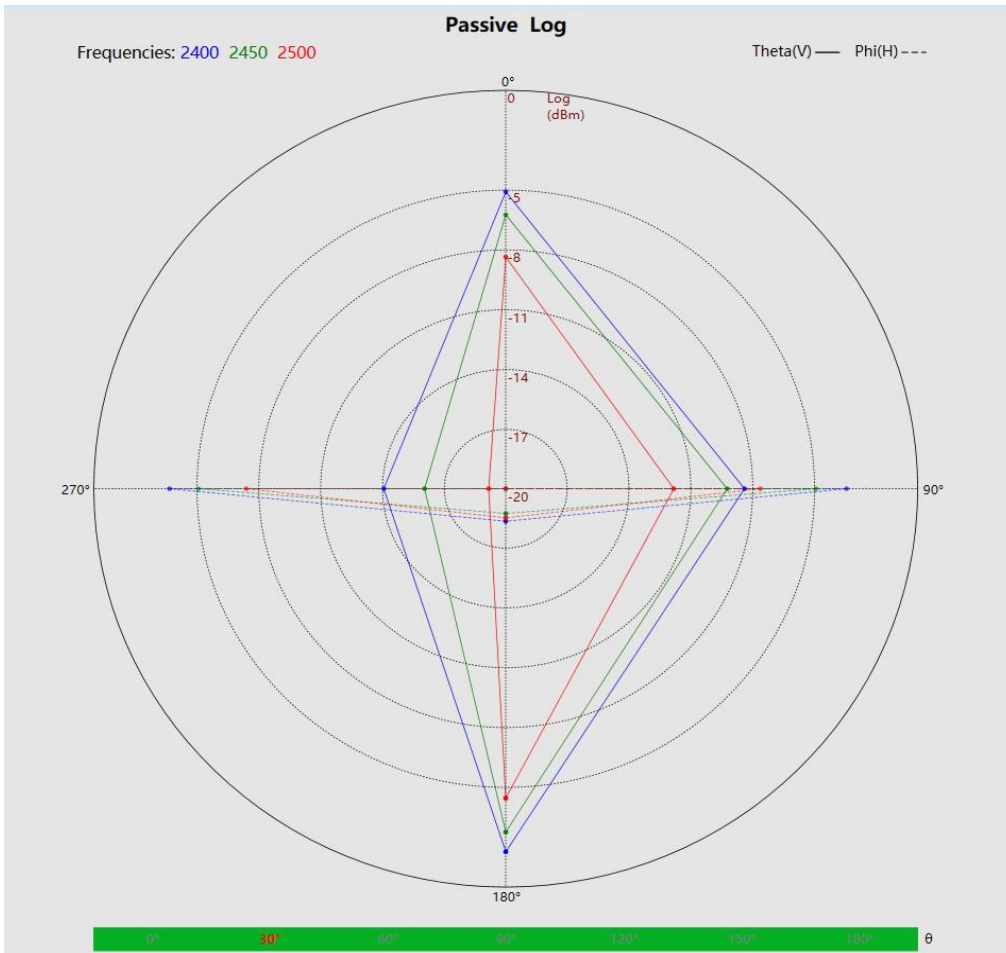
2450MHz:



2500MHz



3.2、扫描天线的 2D 辐射图



3.3、详细的扫描输出数据结果

Freq(MHz)	Gain(dBi)	Efficiency(dB)	Efficiency(%)
2400	0.669282488	-1.475507465	71.19496052
2410	0.828769362	-1.356724983	73.16906438
2420	0.78444832	-1.459679278	71.45490928
2430	0.090215032	-2.162885459	60.77310897
2440	-0.05590836	-2.32666539	58.52392715
2450	-0.03097585	-2.346307698	58.2598323
2460	-0.638251369	-2.943165613	50.77891753
2470	-1.057121671	-3.377168361	45.94975117
2480	-1.47726649	-3.790830412	41.77504811
2490	-1.796725361	-4.090947936	38.98568832
2500	-1.508369805	-3.818845701	41.50643467

Summary

ITEM	ANT SPEC		
Model Name	2.4G ANT		
Antenna plate	PCB antenna		
Center Frequency	2400MHz	2450MHz	2500MHz
	0.67dBi	-0.03dBi	-1.51dBi
MAX. Gain	0.83dBi		
Polarization	Horizontal and Vertical		
Impedance	50Ohm		
Manufacture			

AntennaPhoto&Length(mm)

