

Antenna test

- 1、Hardware test
- 2、Software testing
- 3、Data read

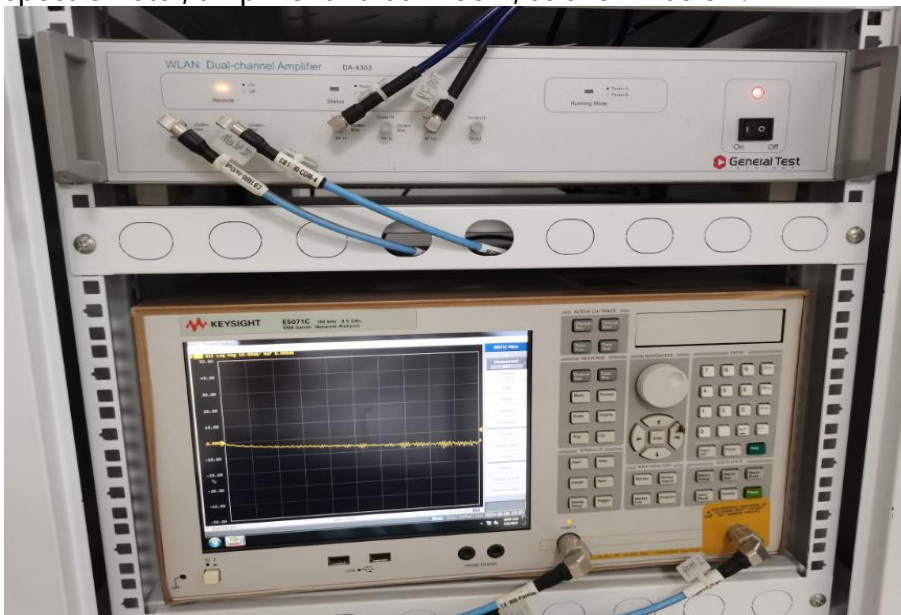
1、 Hardware test

1.1 、 PCBA bare board test

Solder the RF cable to the bare board and connect it to the OTA device.

1.2 、 Equipment environment

The equipment required for this test includes computer, spectrometer, amplifier and darkroom, as shown below:



2. Software testing

The image displays two screenshots of the GTS MaxSign software interface, showing the configuration for testing a RayZone1800NR_Z device.

Top Screenshot: Test Setup

The **Test Setup** window is shown with the **Settings** tab selected. The interface includes a sidebar with buttons for Setup, DUT, Templates, Pathloss, and Display. The main area is divided into several sections:

- Settings:** Operator: GTS, Temperature: 20 °C, Humidity: 50 %, Test Polar: Both, Pole Test Manner: Single, Test Position: FS, Instrument Preset: Once, Ring Off End: True, Manual Page Max: 10.
- Equipment:** Product Series: RayZone, Instrument: Agilent 5071C, Instrument Addr: TCP/IP:K-E5071C-28615.local:inst0:INS, Working Port: Port1, Link Port: Port1. The **UL Port** and **DL Port** sections are configured with Agilent 5071C and RBS CMW500B71.
- Manual Operation:** Command: Reset, Execute button.

Bottom Screenshot: Template Details

The **Template Details** window is shown, displaying the configuration for the **Parameters (Agilent_5071C/Passive)** template. The interface includes a sidebar with buttons for Setup, DUT, Templates, Pathloss, and Display. The main area is divided into several sections:

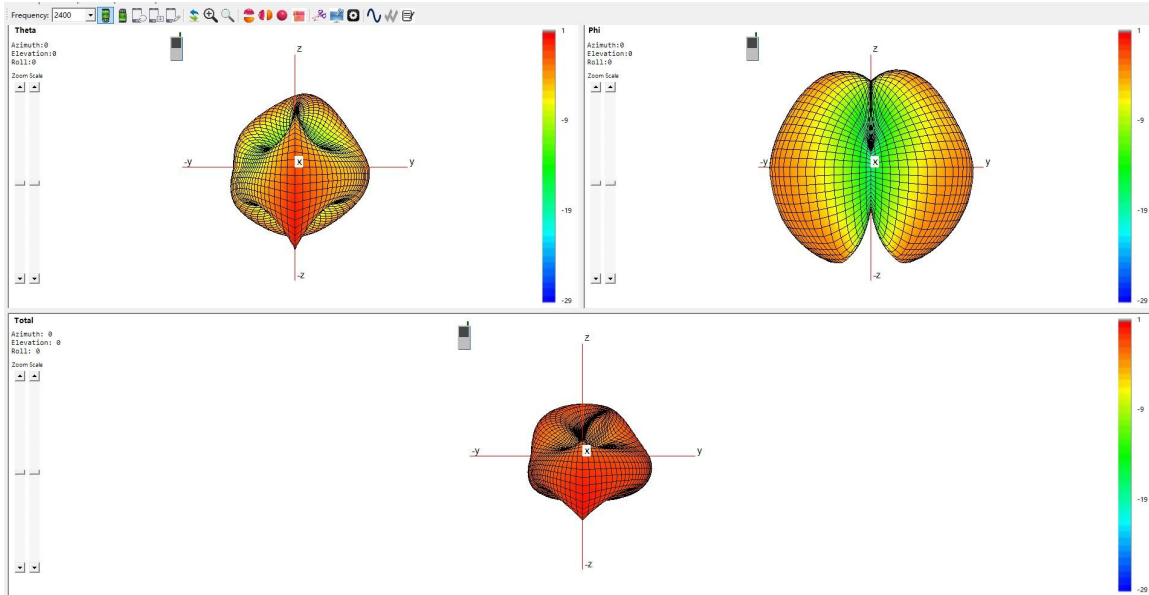
- Test Setup:** Trace Name: S21, IF Bandwidth: 0.1 kHz, Factor Average: 0, Power: 5 dB, Test Mode: Log, Skip Calibration: True, DUT Type: Linear, Radiation Test: False, S11 Calibration File: State01.
- Angular Coordinator Setup:** Phi: Step: 90, Theta (Ant No.): Start: 0, End: 180, Step: 30.
- Display Setup:** Display Frequency Mode: Auto, Display Frequency: MHz.
- Frequency List:** Test Method: Linear, Import, Clear. The list contains two entries: 1 (Start: 2400, End: 2500, Step: 10) and 2 (Start: 2400, End: 2500, Step: 10).
- Added Pathloss Correction:** Correction Method: Load File, Load File: [D:\MaxSign\YysData\passive\offet_new.csv] Select, Clear.

Red arrows in both screenshots point to specific configuration fields, highlighting the test setup and template details.

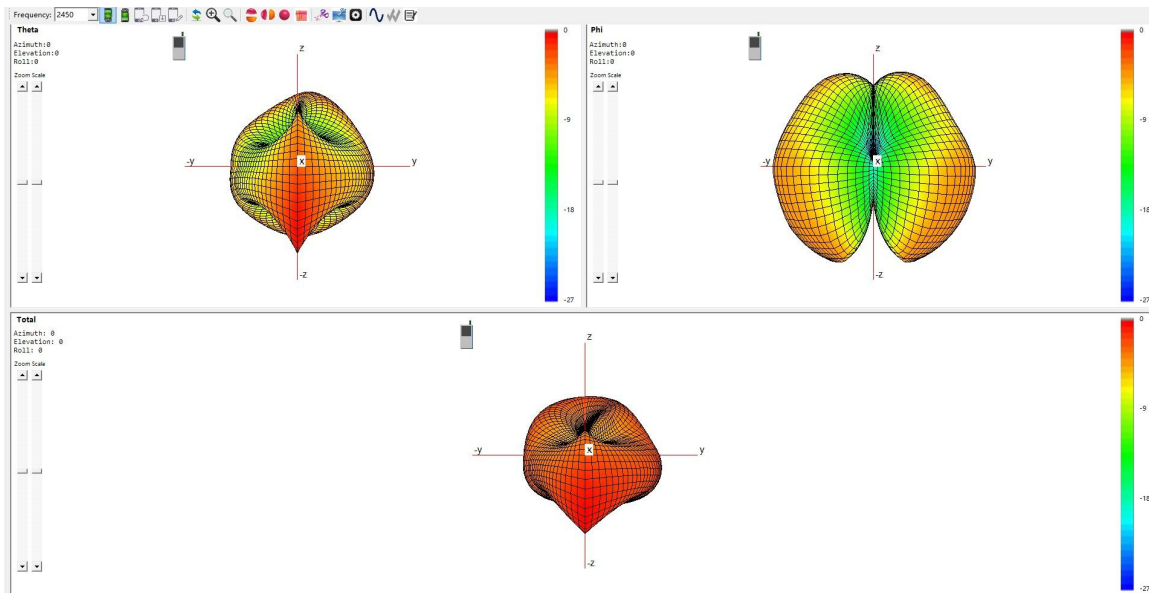
3、Data read

3.1、Scan the antenna for 3D radiation

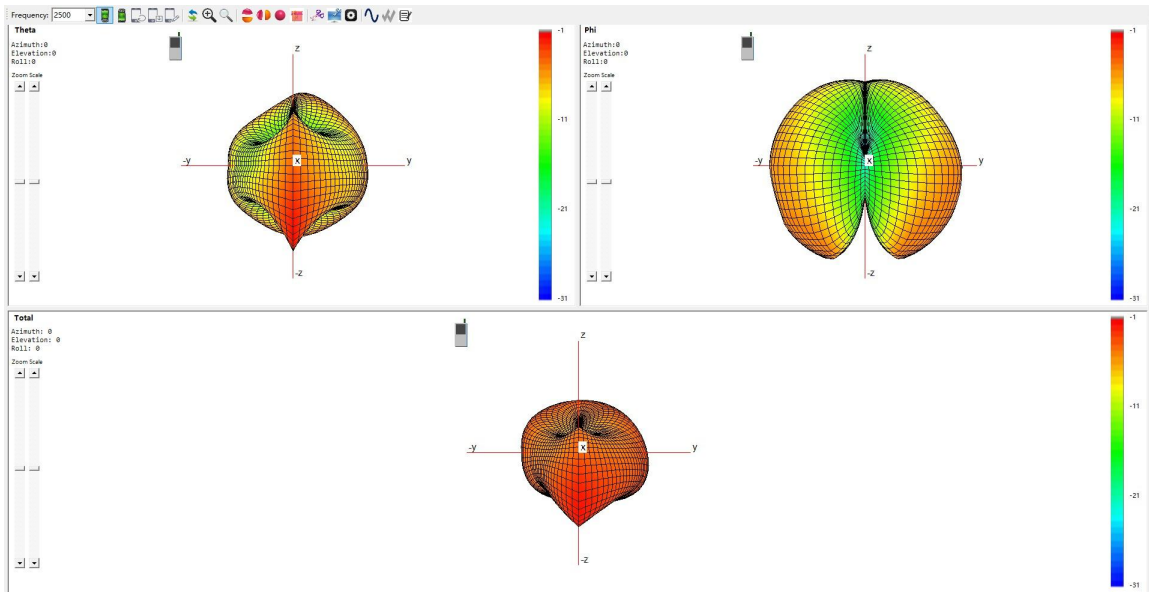
2400MHz:



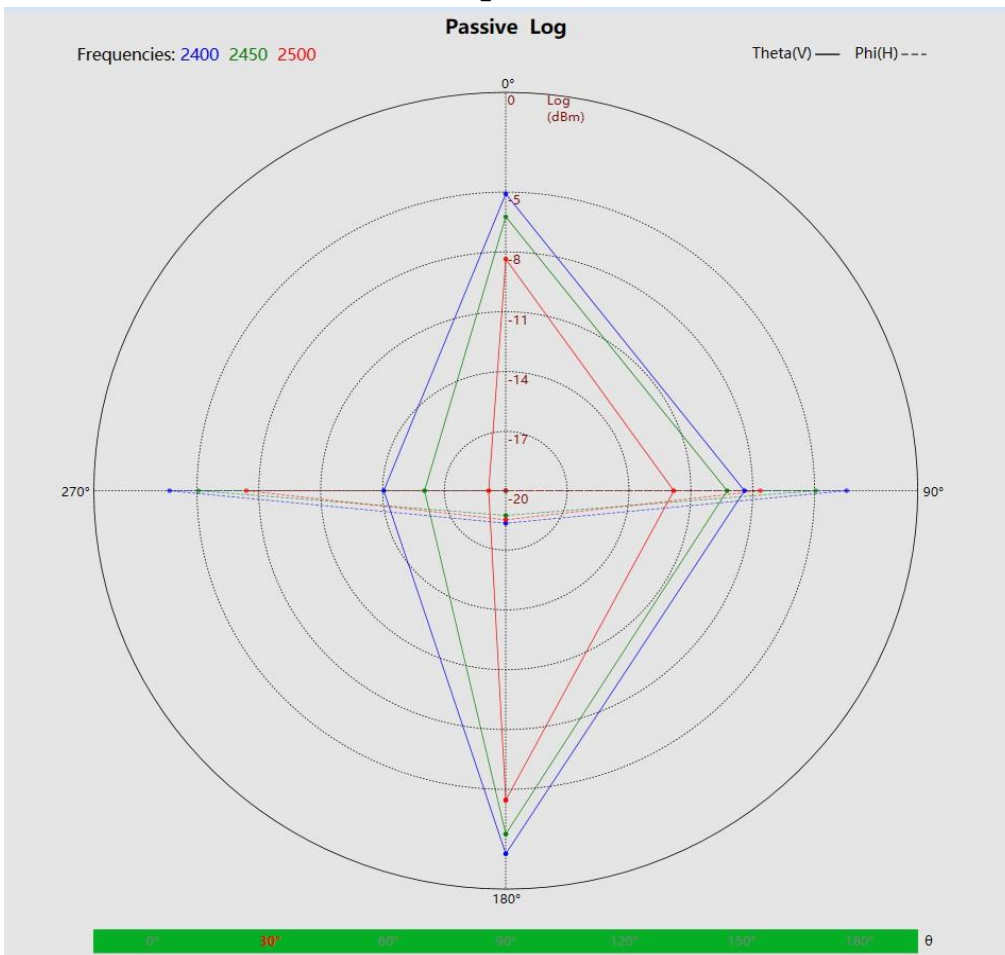
2450MHz:



2500MHz



3.2、 Scan the 2D radiation pattern of the antenna



3.3、 Detailed scan output data results

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)

