

Customer:WNC

Project Name: 2.4G Antenna

Manufacture:HL

Address:2nd. Building, Num. 328 Shengxi Road, Kunshan
Economic&Technological Development Zone

Antenna Type:Dipole

The test equipment list:EM-testing 24+E5071C

Designer:Lvcf

Test Date:2022/11/17

Outline

1. Benchmark
2. S-Parameters (**VSWR**)
3. Antenna Efficiency & Peak Gain
4. Radiation patterns
5. Summary

JH 3D Chamber Structure

VSWR were performed using an Ceyear 3656B S-parameter Network Analyzer.

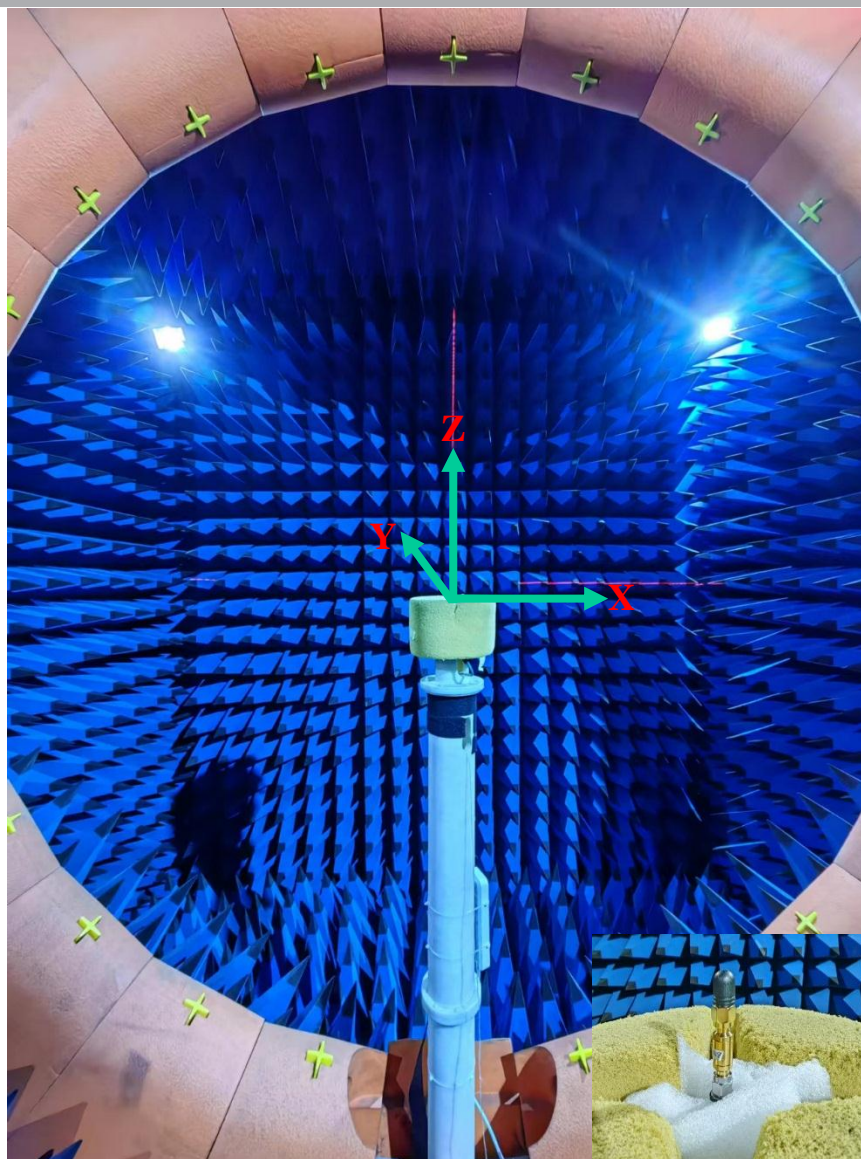
EM-testing 24 Series System Components

- Chambers
- EM-testing 24 Software
- Positioning Systems
- Chamber Room Size: L*W*H=4.0*4.0*4.0 M

- Network Analyzer
Keysight E5071C
- Universal Radio Communication Tester R&S CMW500
- PC and Software

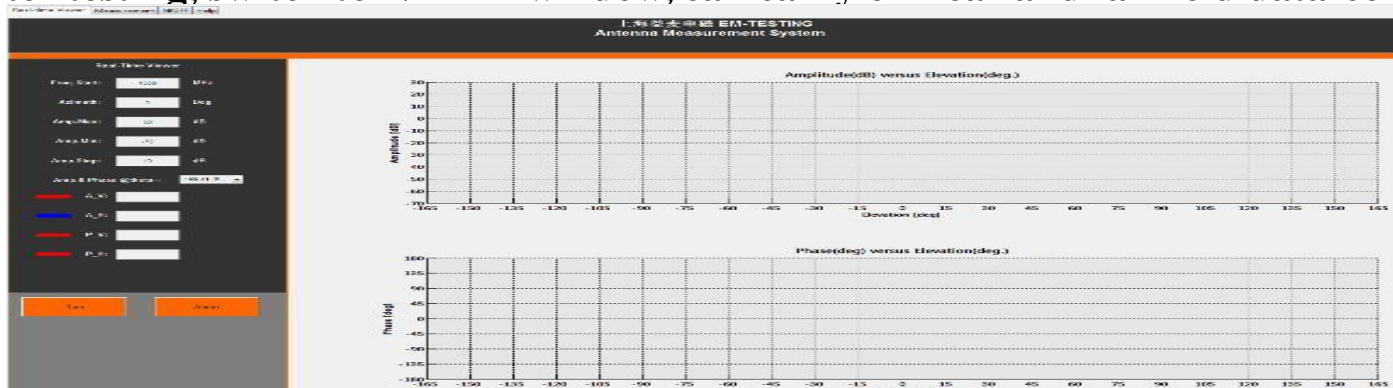


1. Benchmark



1.The measurement method is described below

1. Fix the whole antenna unit on the pole in the center of the Anechoic Chamber, as shown on the previous page.
2. The whole antenna unit is connected with the coaxial line at the transmitter end of the microwave anechoic chamber.
3. Close the microwave anechoic chamber door, so that the external signal can not enter the anechoic chamber interior ,and then start testing.
4. Open the EM-TESTING Antenna Measurement System, Can observe the selected frequency, selected angle of the system real-time data.
5. After testing, switch to NH2FF window, can carry on near and far field data conversion

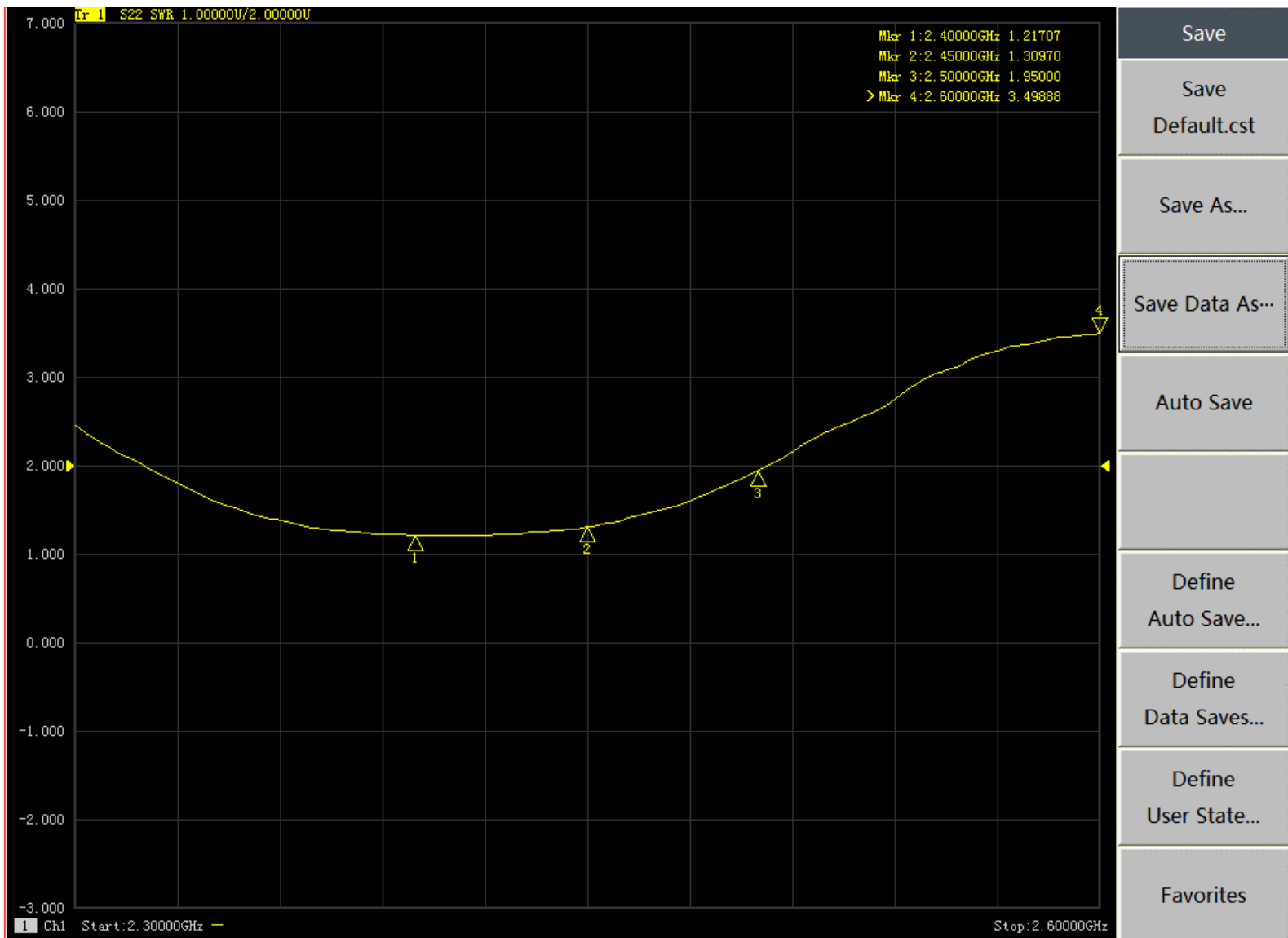


1. Benchmark

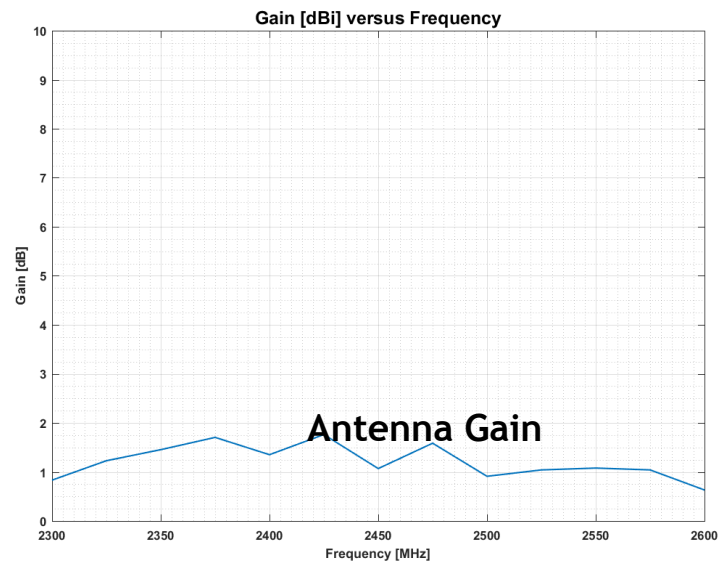
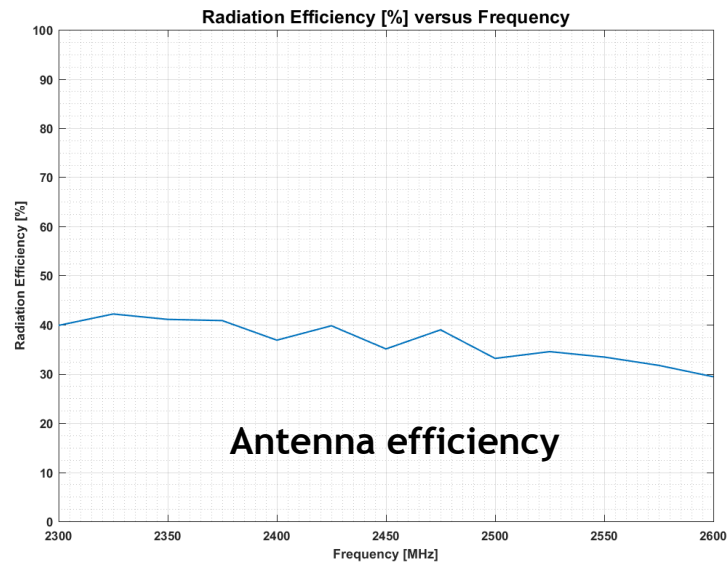


Frequency: 2400~2500MHz

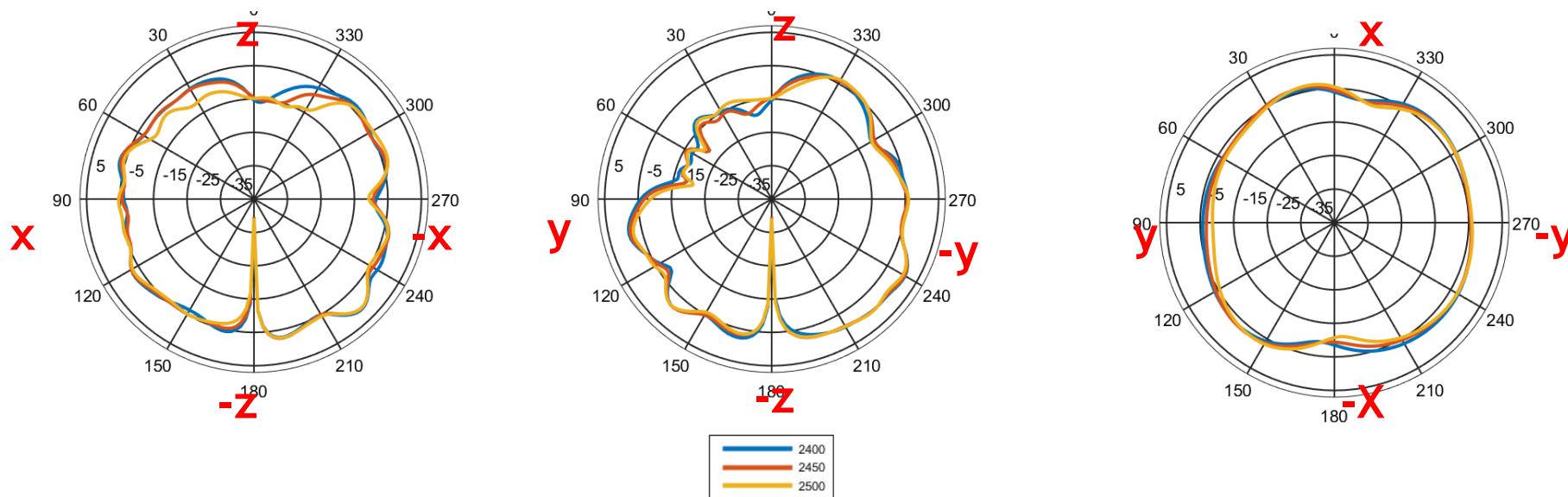
2. S-Parameters (VSWR)



3. Antenna Efficiency & Peak Gain (ant 1)

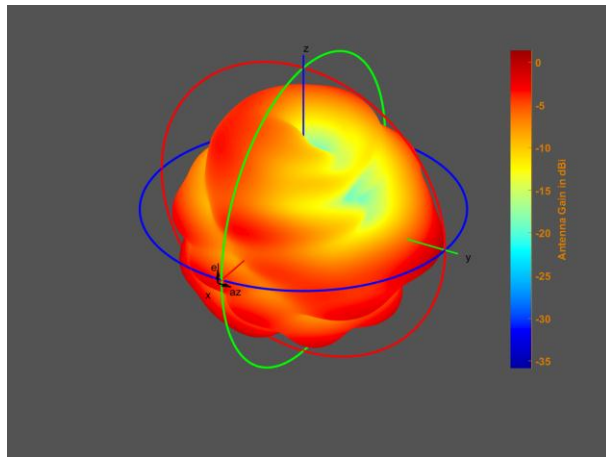


4. Radiation patterns (ant1)

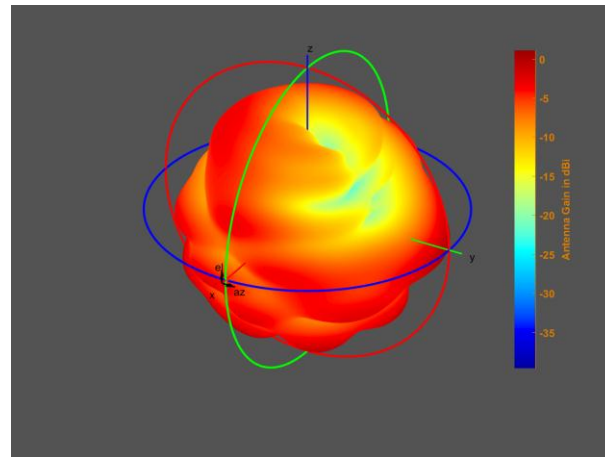


Frequency	2400MHz			2450MHz			2500MHz		
	ZX Plane	ZY Plane	XY Plane	ZX Plane	ZY Plane	XY Plane	ZX Plane	ZX Plane	ZX Plane
Max Gain (dB)	1.15	1.14	-2.36	0.86	0.96	-2.79	0.80	0.42	-2.74
Average Gain (dB)	-6.13	-7.52	-4.84	-6.56	-7.80	-5.12	-7.34	-7.78	-5.57

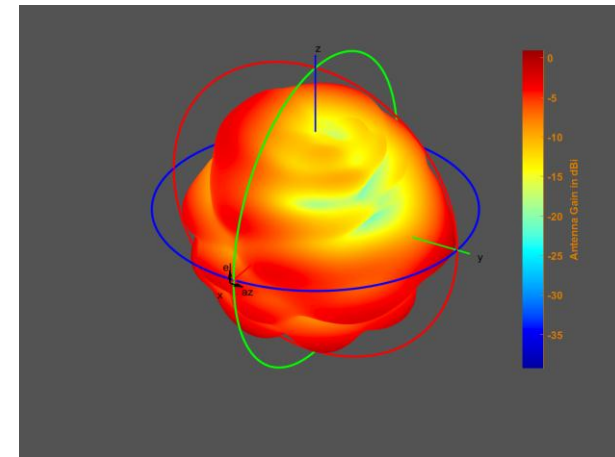
4. Radiation patterns (ant1)



2400 MHz



2450 MHz



2500 MHz

5.Summary

1.The test data is as follows:

Chamber Model	Em-testing 24
Chamber Size	4M*4M*4M
Network Analyzer	E5071C
Active Structure	CMW500
Test Date	2022/11/17
Tester	Lvcf

Item	2400	2450	2500
Peak Gain (dBi)	1.35	1.07	0.91
Efficiency (%)	36.85	35.07	33.14