

3D Antenna Measurement Summary Report

REPORT NO.: W7L-P22100003OT01 R1
**PLATFORM
MANUFACTURER:** Hangzhou Yaguan Technology Co., LTD
PLATFORM NAME: Argrace
ANTENNA TYPE: External monopole Antenna
TESTED DATE: 2022.11.08
ISSUED: 2022.11.18

APPLICANT: Hangzhou Yaguan Technology Co., LTD

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RELEASE CONTROL RECORD

REPORT NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P22100003OT01	Original release	2022.11.15
W7L-P22100003OT01 R1	Update Test Method, Testing Setup Photo	2022.11.18

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GENERAL INFORMATION

APPLICANT:	Hangzhou Yaguan Technology Co., LTD
MANUFACTURER:	Hangzhou Yaguan Technology Co., LTD
MODEL NO.:	YGB-T305B

Test Standard: ANSI/IEEE Std. 149-2021.

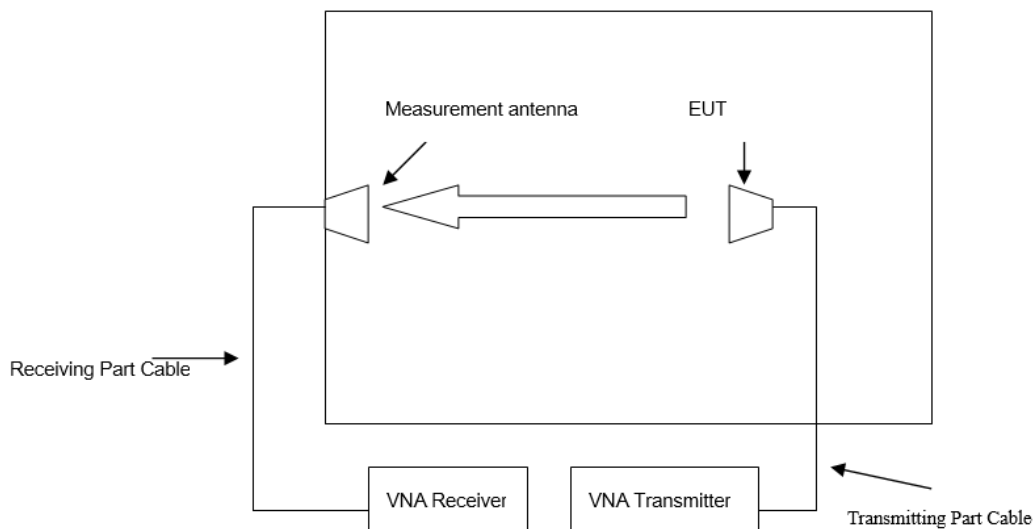
PREPARED BY : Leon Guo , DATE : 2022.11.18
Leon Guo / Engineer

APPROVED BY : Luke Lu , DATE : 2022.11.18
Luke Lu / Manager

1. Test Method

The antenna Gain Efficiency and 3D pattern test is using OTA(Over The Air) chamber test system.

The EUT connect to the network analyzer is established through the cable and the EUT is positioned on center of turntable. The test Parameters are adjusted on the network analyzer to bring the EUT to bring the EUT to the required traffic all frequency and output power level. The EUT is then stepped between 0 and 180 degrees along the theta axis in 15-degree increments. At each theta position, the phi axis is stepped from 0-360 degrees or from 360-0 degrees, alternating to minimize test time, in 15-degree increments. Data is recorded using network analyzer for both theta and phi polarizations at each position. An appropriate filter is used in the EMQuest software to process the data. Upon completion of the test, the required values of Gain efficiency and 3D pattern are automatically calculated.



Setup configuration

2. Test Equipment List

TYPE OF EQUIPMENT	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CALIBRATION DUE DATE
Network Analyzer	E5071C	MY46214638	2022.05.07	2023.05.06
OTA Chamber	ETS AMS8500	N/A	N/A	N/A
RF Switch	ETS EMCenter	N/A	N/A	N/A
Measurement Antenna	ETS 3164-06	N/A	N/A	N/A

3. Measurement Uncertainty

Expanded Uncertainty for Measurement (k=2 or 95% Confidence Level) at Passive antenna test over frequency range 780 – 2200MHz is +/- 1.52 dB.

4. Characteristics of antenna

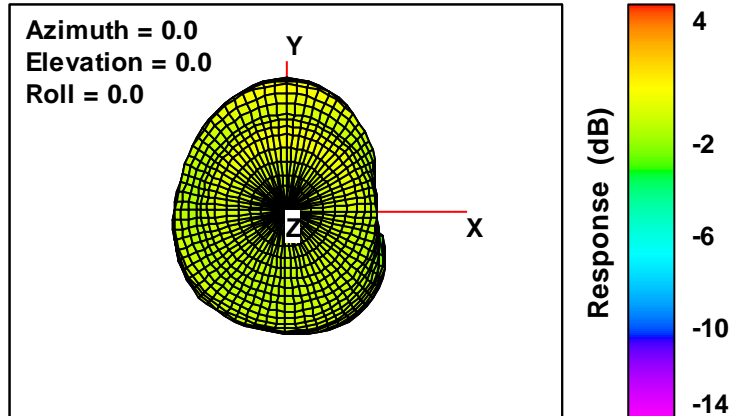
4.1. 3D Antenna Gain-Free Space

Frequency (MHz)	Directivity (dBi)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
2400	3.57	-1.42	72.03	2.14
2410	3.57	-1.50	70.72	2.06
2420	3.65	-1.60	69.26	2.06
2430	3.71	-1.59	69.31	2.11
2440	3.72	-1.59	69.26	2.13
2450	3.71	-1.65	68.40	2.06
2460	3.66	-1.53	70.35	2.13
2470	3.58	-1.61	68.95	1.97
2480	3.51	-1.54	70.08	1.96
2490	3.43	-1.50	70.80	1.93
2500	3.36	-1.38	72.80	1.99

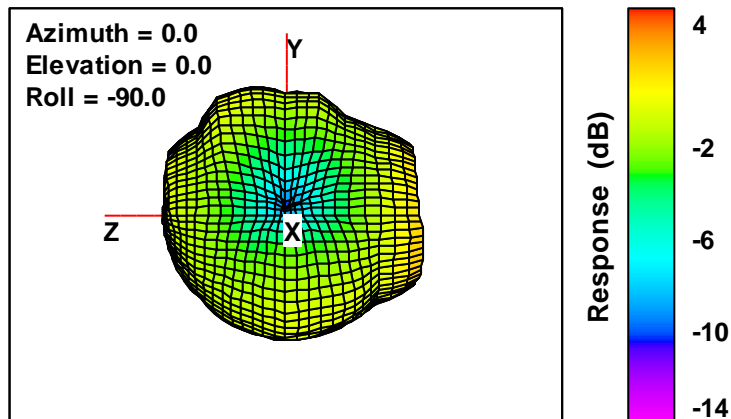
4.2. Antenna Pattern

2400MHz

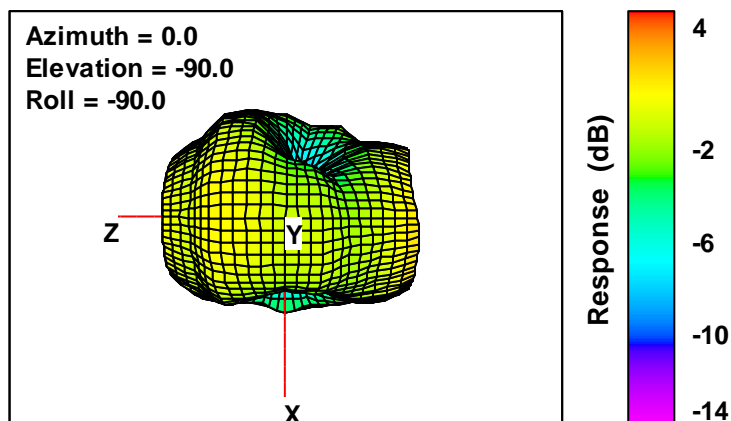
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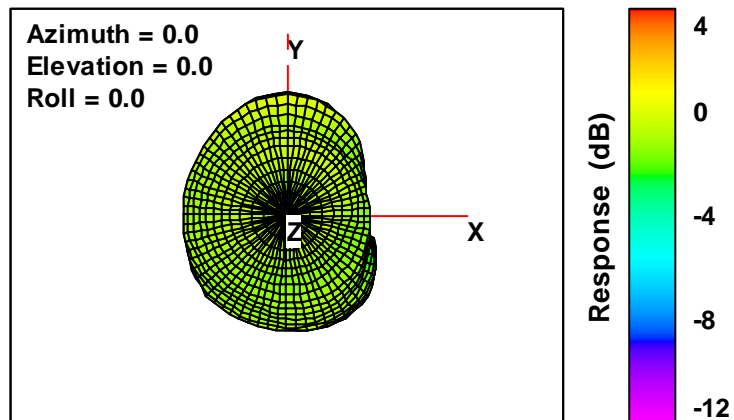


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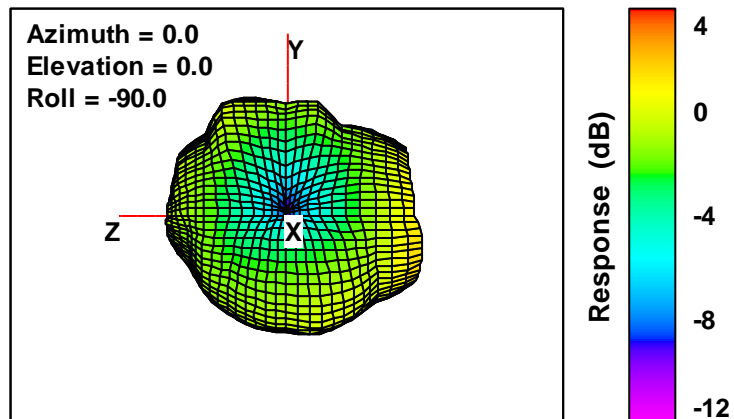


2440MHz

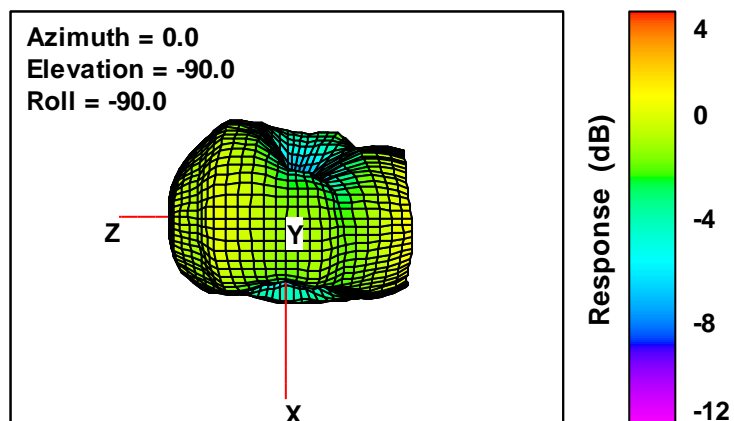
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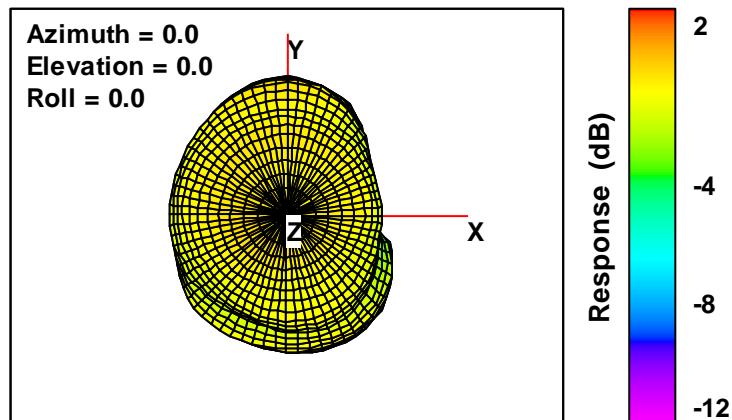


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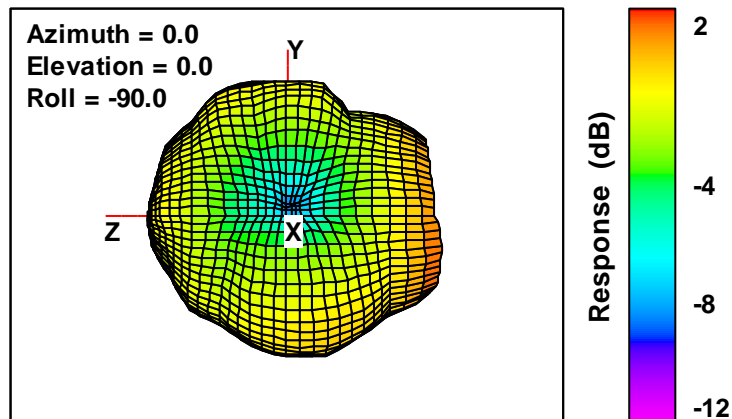


2480MHz

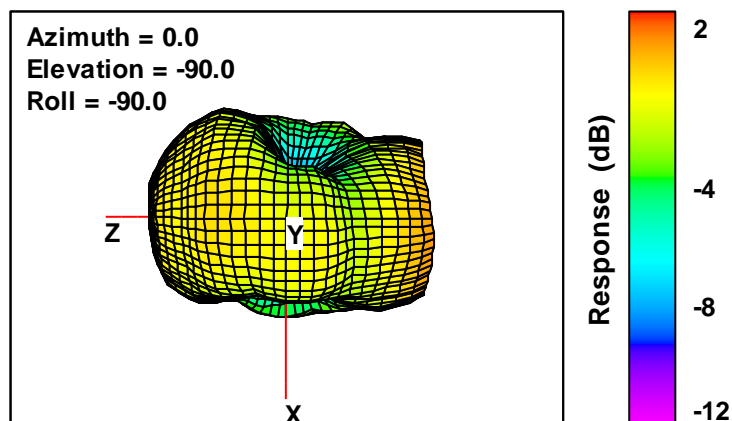
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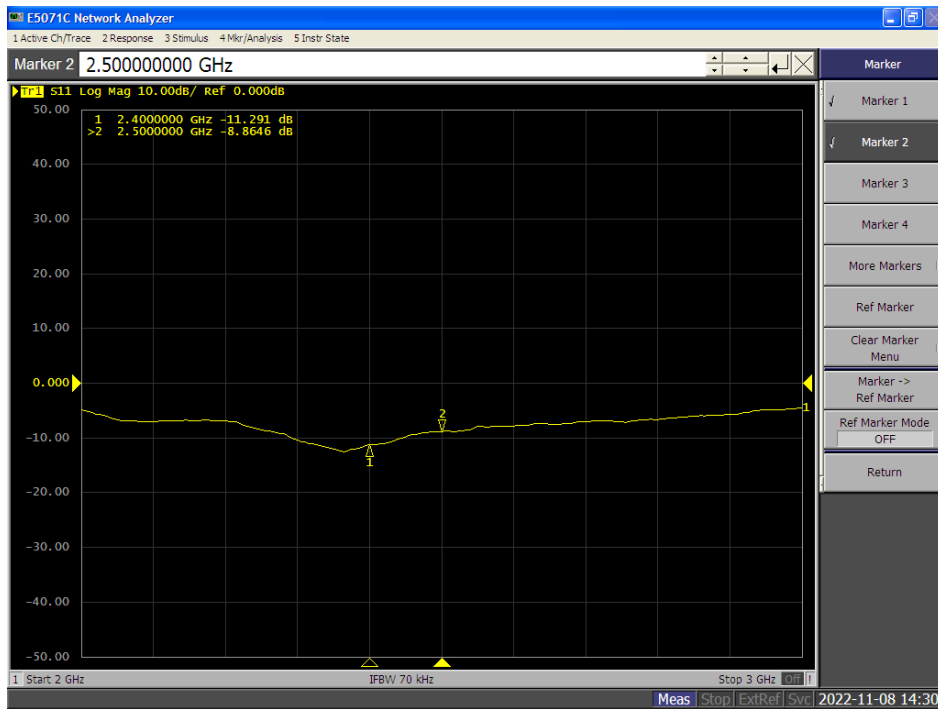
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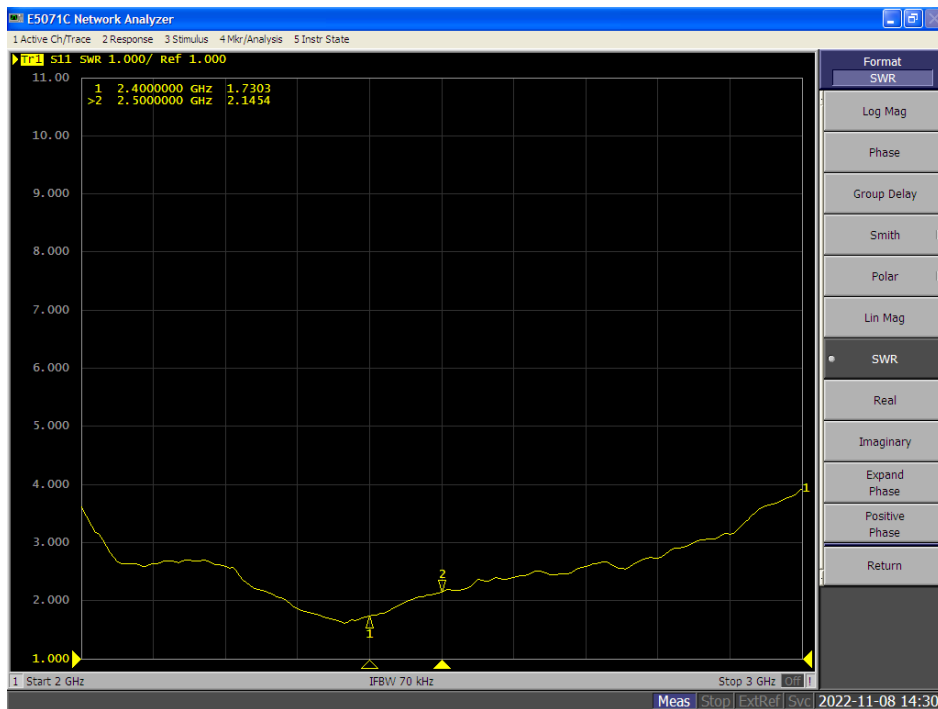
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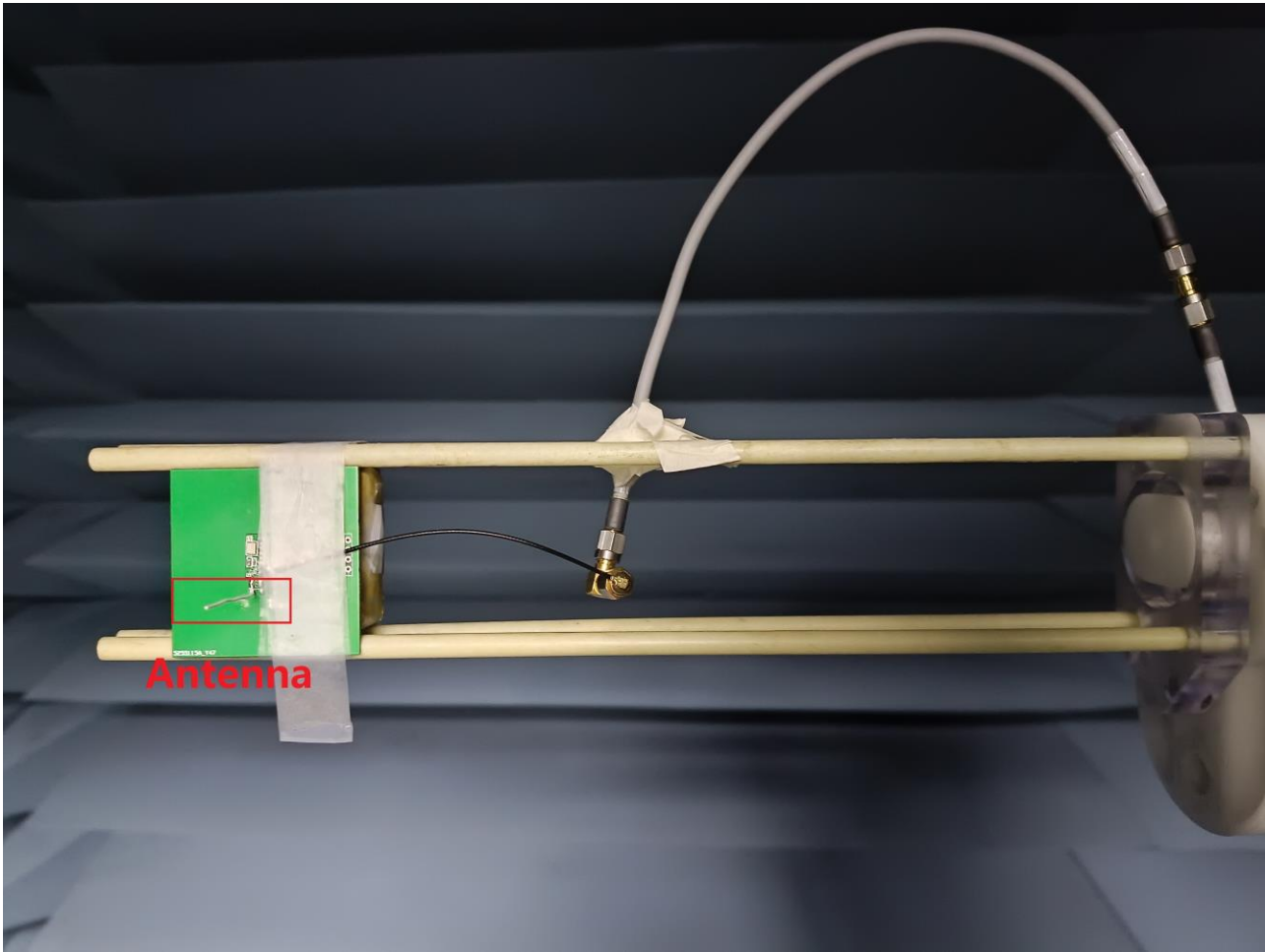
4.3. LOG MAG



4.4. SWR



Appendix A. Testing Setup Photo



Free Space