

Antenna Passive Test Report

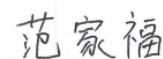
Project No. : TSED260500457
Product Type : Controller
Test Mode : Free Space
Date of Receipt : 2026/05/18
Date of Test : 2026/05/18
Issued Date : 2026/05/25
Test Sample : TSED260500457-M-01
Standard(s) : ANSI/IEEE Std 149-2008
Applicant : Fujian Elsonic Energy-Saving Equipment Co., LTD
Address : No. 23 Long Gong Road, Economic Development Zone, Longyan city, Fujian, China
Manufacturer : Fujian Elsonic Energy-Saving Equipment Co., LTD
Address : No. 23 Long Gong Road, Economic Development Zone, Longyan city, Fujian, China

TOWE. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

the results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of the model are manufactured with identical electrical and mechanical components. All sample tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise. without written approval of TOWE, the test report shall not be reproduced except in full.



Lin Qilong
Approved By:



Fan Jiafu
Reviewed By:

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REVISION HISTORY

Rev.	Issue Date	Description	Revised by
01	2026/05/25	Original	Fan Jiafu

1. CERTIFICATE OF COMPLIANCE

1.1 DESCRIPTION OF EUT AND TEST(S) PERFORMED

Manufacturer	Fujian Elsonic Energy-Saving Equipment Co., LTD
Model	HW-PC201AFT(BW)
Serial Number(s) / ESN(s) / IMEI(s)	N/A
Hardware Version	N/A
Software Version	N/A

1.2 LABORATORY ENVIRONMENT

Temperature	Min = 20°C , Max = 24°C	
Relative humidity	Min = 30% , Max = 70%	
Shield effect	0.6 – 8.5G	> 100dB
Ground resistance	< 0.5Ω	

2. MEASUREMENT SYSTEM INFORMATION

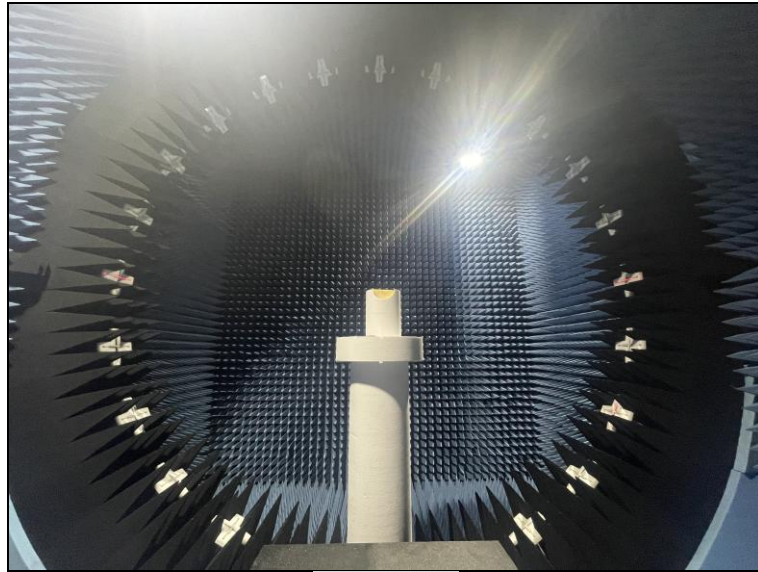
2.1 GENERAL INFORMATION

Measurement Facility:

- Measurement Chamber: ETS-Lindgren 3D fully anechoic chamber and its measuring system (AMS-8923)
- ETS-Lindgren EMCenter
- Vector Network Analyzer: R&S ZNB8



Instruments View



Inside View

2.2 LIST OF EQUIPMENT

Equipment Description	Manufacturer	Identification No.	SN	Current Calibration Date	Next Calibration Date
Vector Network Analyzer	R&S	ZNB8	101413	2025/7/15	2026/7/14
RF switch control	ETS-Lindgren	EMCenter	00251211	N/A	N/A
Measurement software	ETS-Lindgren	EMQuest	N/A	N/A	N/A

2.3 MEASUREMENT UNCERTAINTY

Item	2400 – 2500MHz
Gain	0.83 dB
Efficiency	0.83 dB
Measurement Uncertainty (95% Confidence Interval) K=2	

3.TEST RESULTS

Wi-Fi Antenna

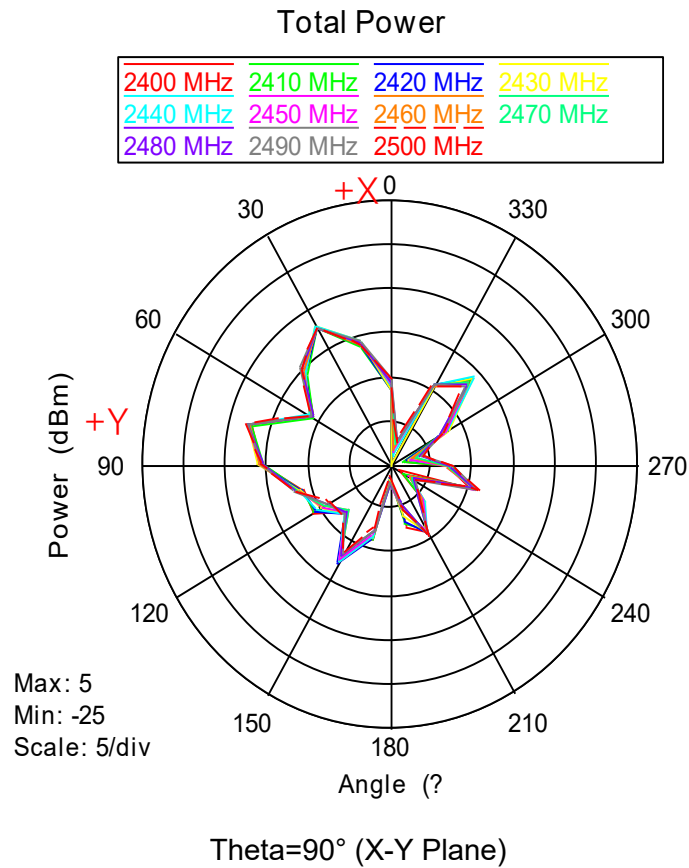
Free Space		
Frequency (MHz)	Efficiency (%)	Gain (dBi)
2400	4.98	-5.86
2410	4.97	-5.86
2420	5.16	-5.54
2430	5.29	-5.42
2440	5.34	-5.41
2450	5.22	-5.51
2460	5.16	-5.49
2470	5.16	-5.48
2480	5.13	-5.52
2490	5.27	-5.19
2500	5.25	-5.15

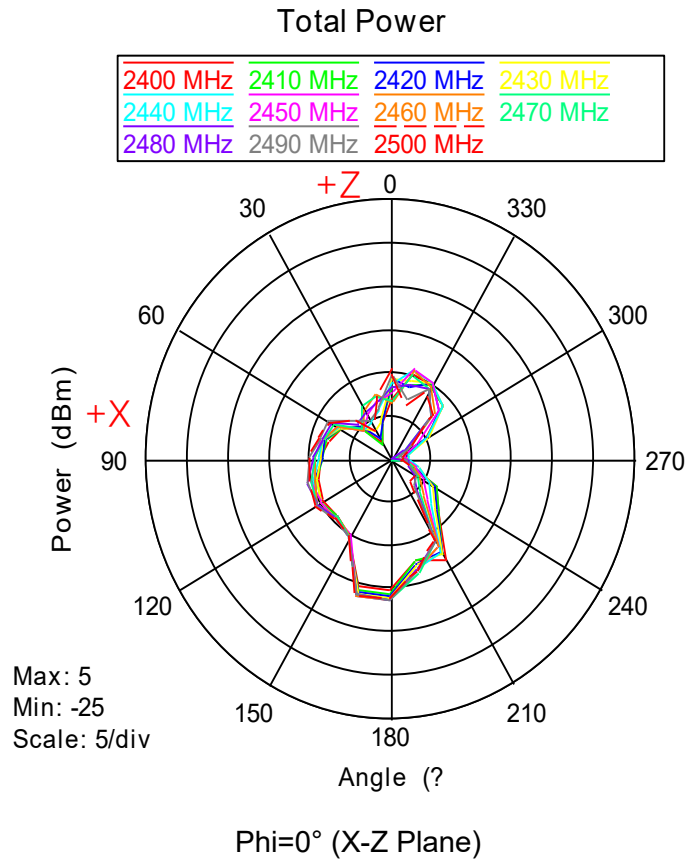
BLE Antenna

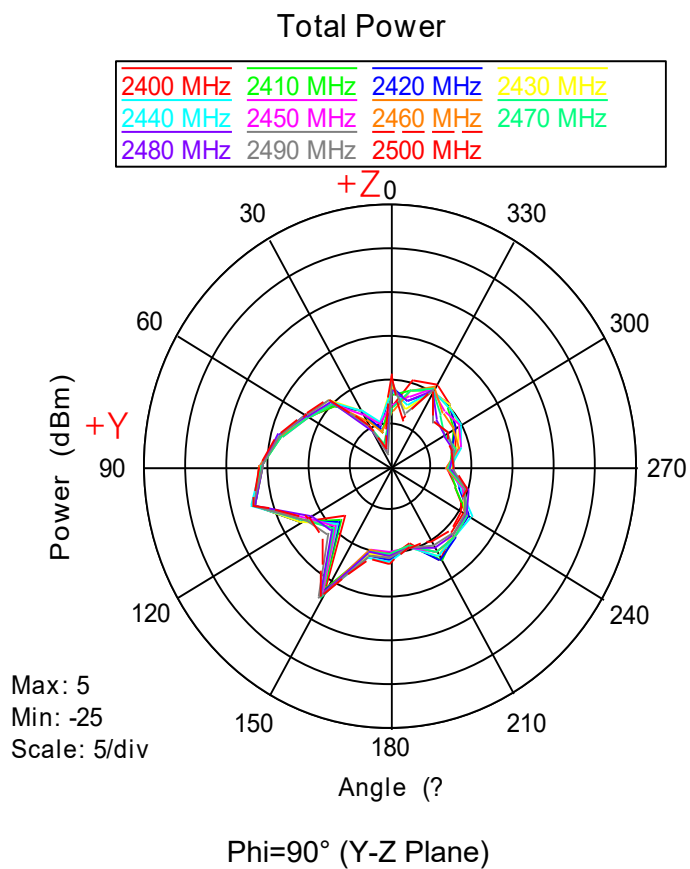
Free Space		
Frequency (MHz)	Efficiency (%)	Gain (dBi)
2400	39.35	3.12
2410	40.64	3.25
2420	43.91	3.56
2430	46.51	3.64
2440	48.27	3.75
2450	48.18	3.66
2460	48.70	3.56
2470	49.72	3.54
2480	50.37	3.55
2490	52.63	3.67
2500	54.19	3.76

4. 2-D PATTERN PLOTS

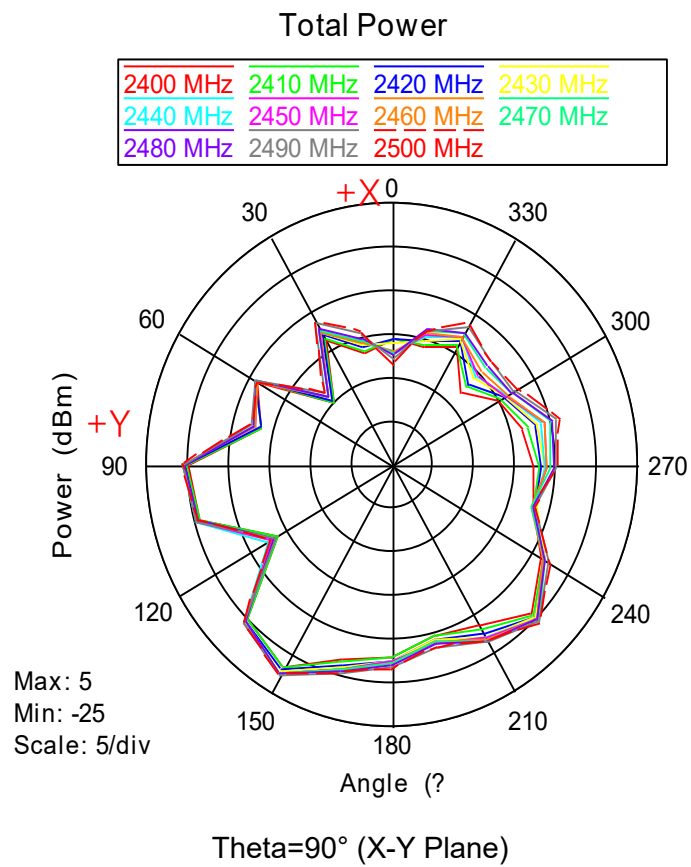
4.1 WI-FI ANTENNA

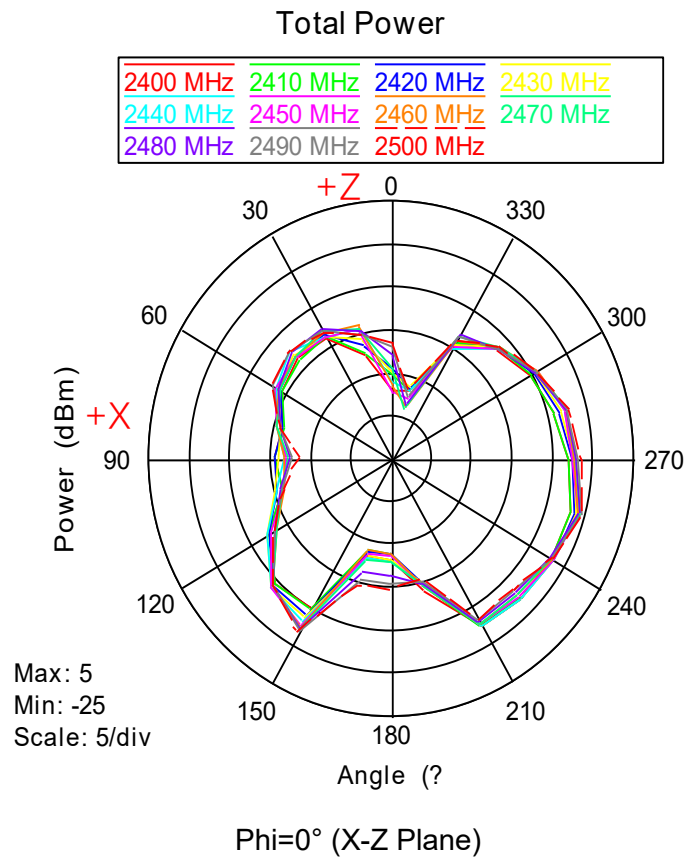


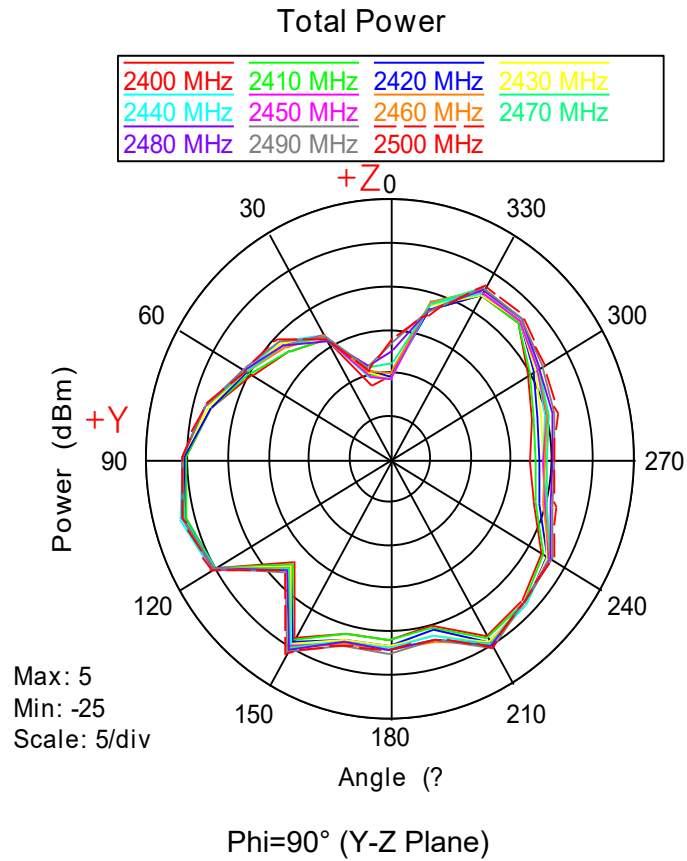




4.2 BLE ANTENNA



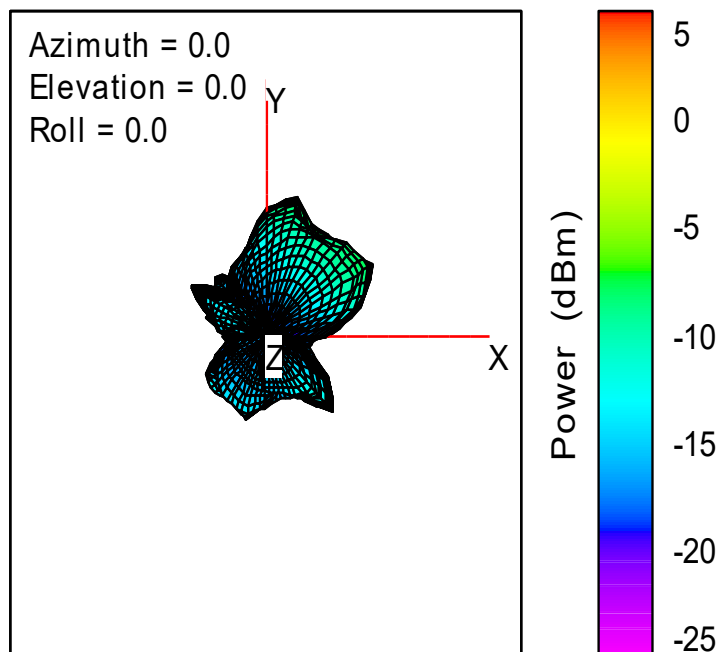




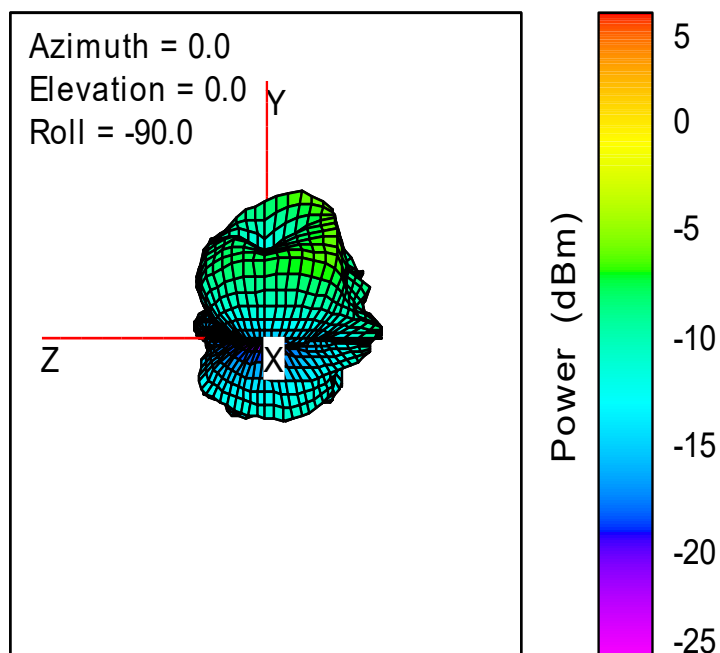
5. 3-D PATTERN PLOTS

5.1 WI-FI ANTENNA

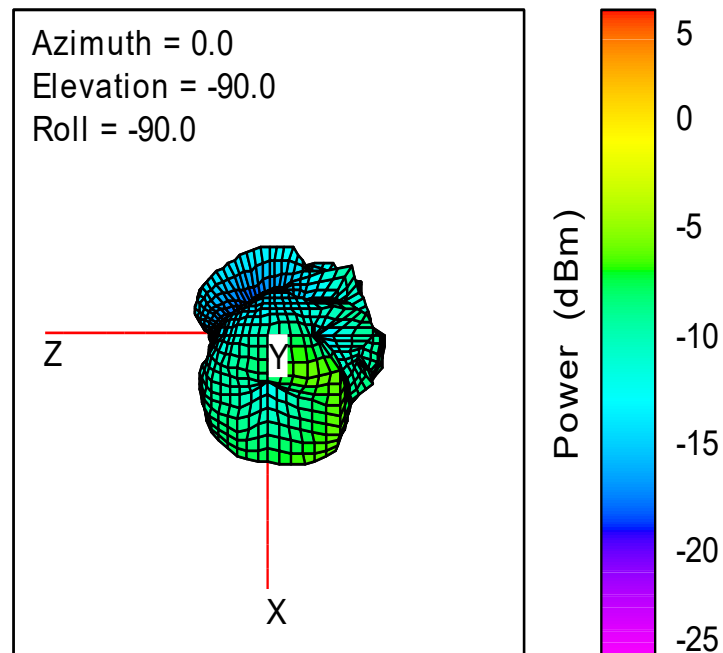
Total Power



Total Power

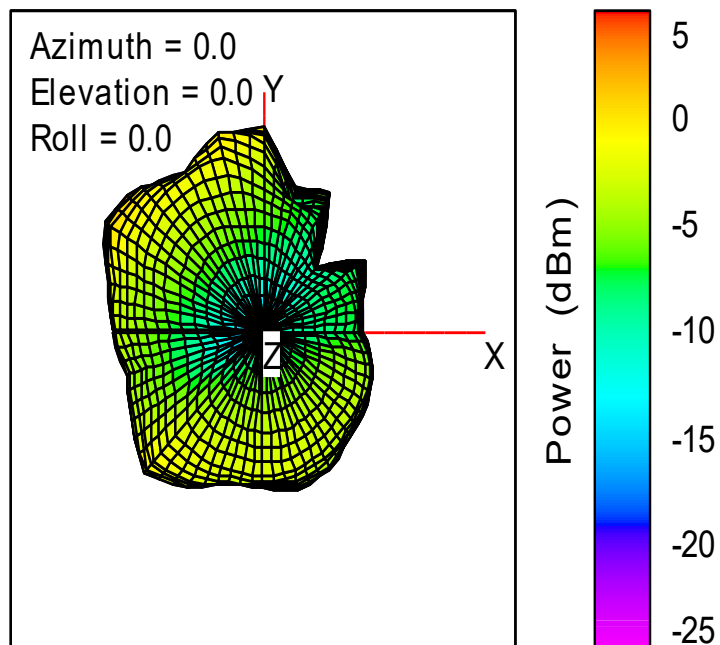


Total Power

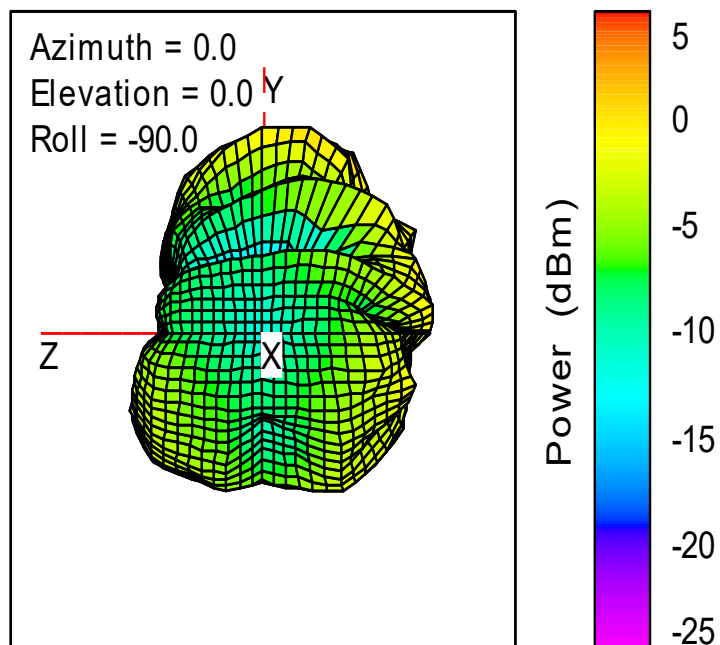


5.2 BLE ANTENNA

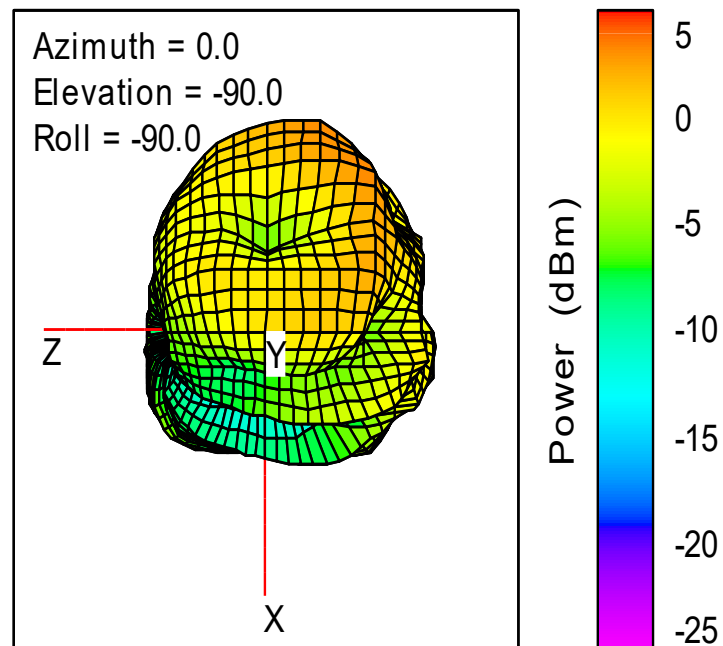
Total Power



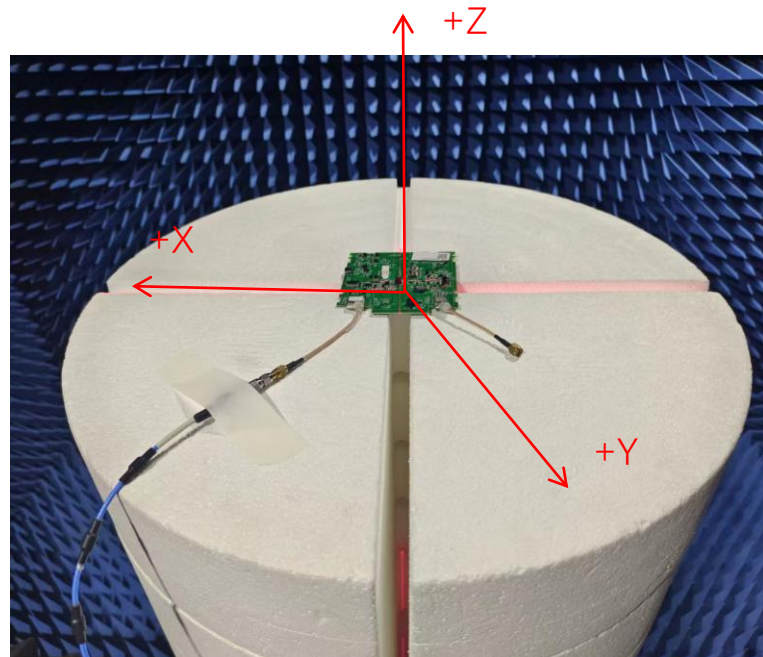
Total Power



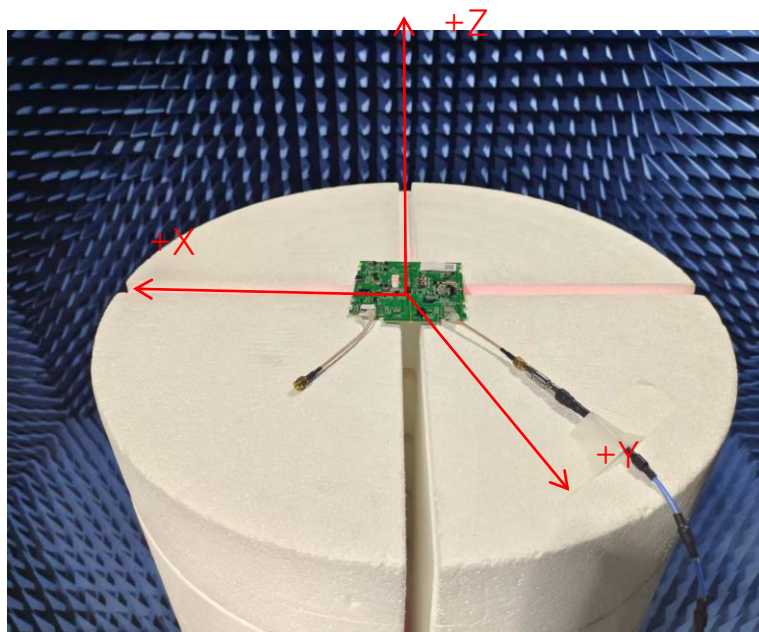
Total Power



6. THE EUT AND TEST CONFIGURATION



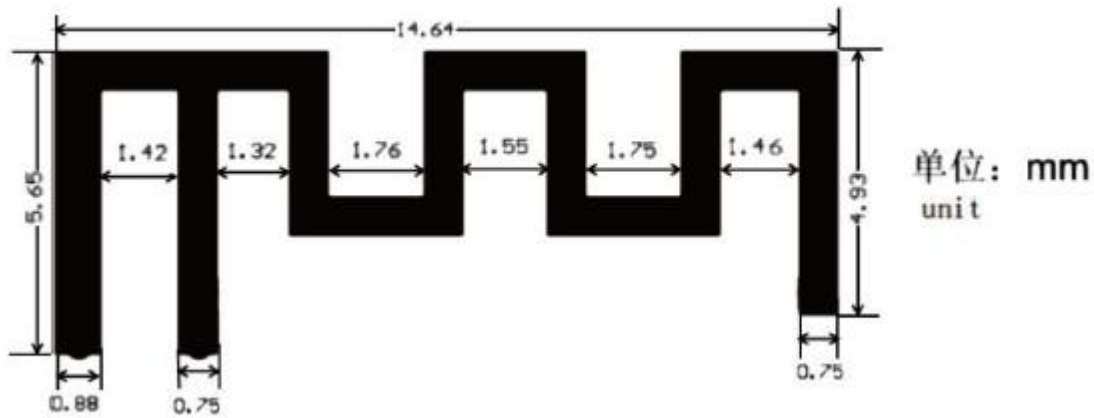
Wi-Fi Antenna Free Space View



BLE Antenna Free Space View

APPENDIX A ANTENNA SPECIFICATION

Wi-Fi Antenna



BLE Antenna

