Antenna Passive Test Report

Project No.	:	TSED260400338
Product Type	:	Surfing Swim Jet
Test Mode	:	Free Space
Date of Receipt	:	2026/04/13
Date of Test	:	2026/04/13
Issued Date	:	2026/04/22
Test Sample	:	TSED260400338-M-01
Standard(s)	:	ANSI/IEEE Std 149-2008
Applicant	:	AQUAGEM TECHNOLOGY LIMITED
Address	:	FLAT/RM H 19/F, MAXGRAND PLAZA, 3 TAI YAU STREET, SAN PO KONG KL. HONG KONG
Manufacturer	:	AQUAGEM TECHNOLOGY LIMITED
Address	:	FLAT/RM H 19/F, MAXGRAND PLAZA, 3 TAI YAU STREET, SAN PO KONG KL. HONG KONG

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	2026/04/22	Original	Fan Jiafu

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1. CERTIFICATE OF COMPLIANCE

1.1 DESCRIPTION OF EUT AND TEST(S) PERFORMED

Manufacturer	AQUAGEM TECHNOLOGY LIMITED
Model	M230
Serial Number(s) / ESN(s) / IMEI(s)	N/A
Hardware Version	N/A
Software Version	N/A

1.2 LABORATORY ENVIRONMENT

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

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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

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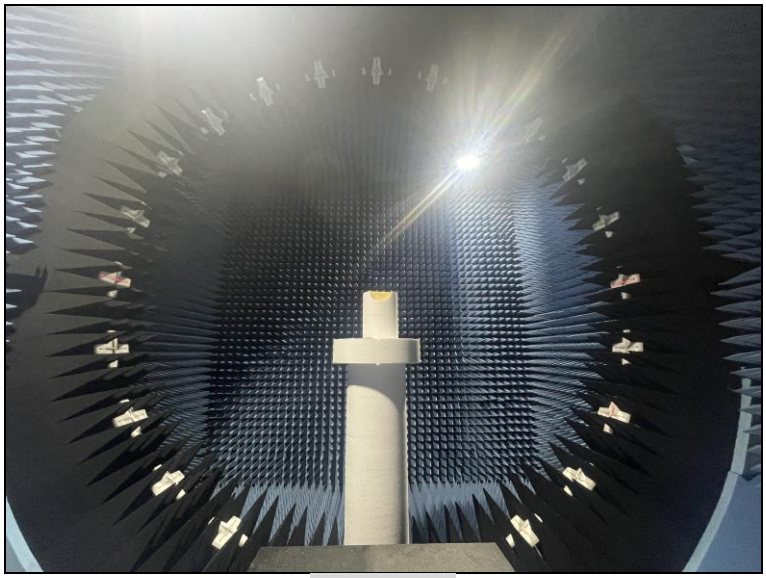

Inside View

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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

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2.3 MEASUREMENT UNCERTAINTY

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

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3.TEST RESULTS

FPC IPEX Antenna

Free Space		
Frequency (MHz)	Efficiency (%)	Gain (dBi)
2400	7.32	-5.84
2410	7.67	-5.64
2420	8.42	-5.34
2430	9.10	-4.88
2440	9.69	-4.57
2450	9.81	-4.63
2460	10.01	-4.50
2470	10.26	-4.29
2480	10.60	-4.18
2490	10.99	-4.13
2500	11.15	-4.13

On board PCB Antenna

Free Space		
Frequency (MHz)	Efficiency (%)	Gain (dBi)
2400	4.97	-5.16
2410	5.01	-5.20
2420	5.36	-4.76
2430	5.52	-4.77
2440	5.49	-4.77
2450	5.22	-4.81
2460	5.07	-4.99
2470	4.98	-5.03
2480	4.85	-5.08
2490	4.83	-5.26
2500	4.92	-5.07

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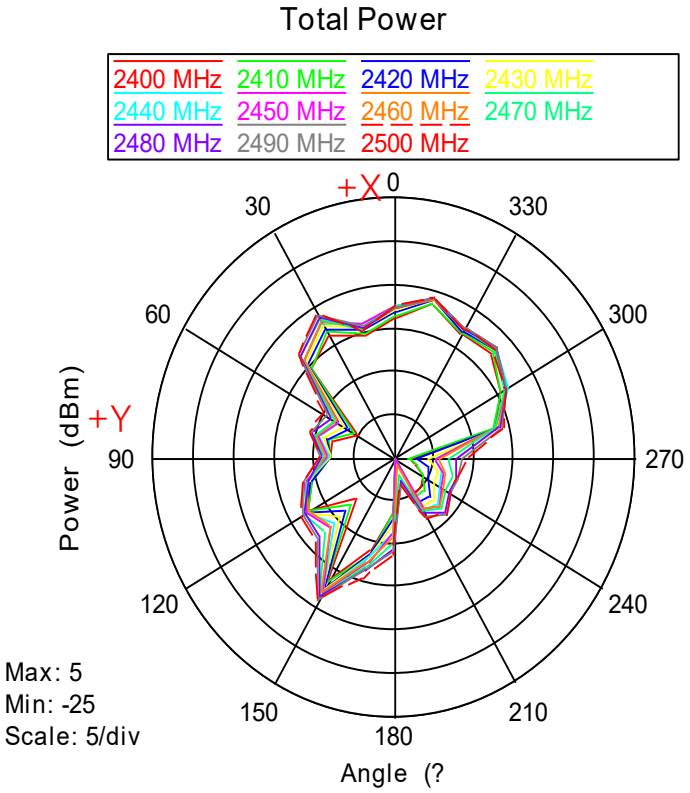
4. 2-D PATTERN PLOTS

4.1 FPC IPEX ANTENNA



Theta=90° (X-Y Plane)

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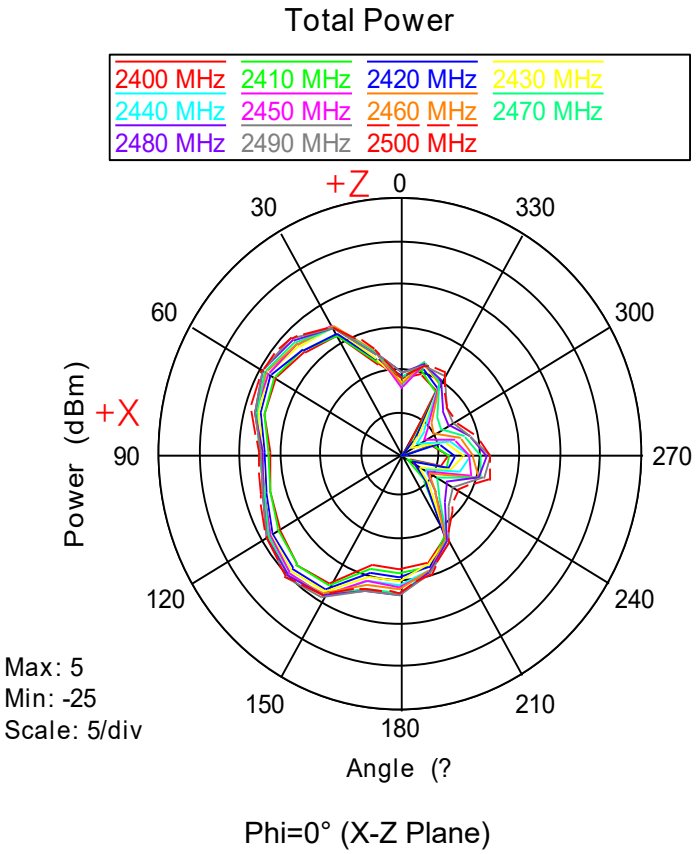

Phi=0° (X-Z Plane)

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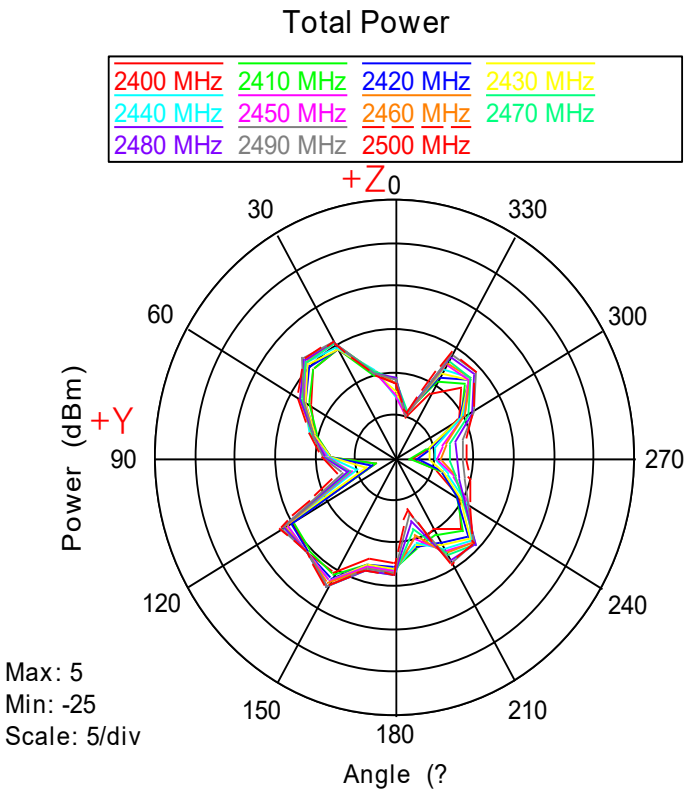

Phi=90° (Y-Z Plane)

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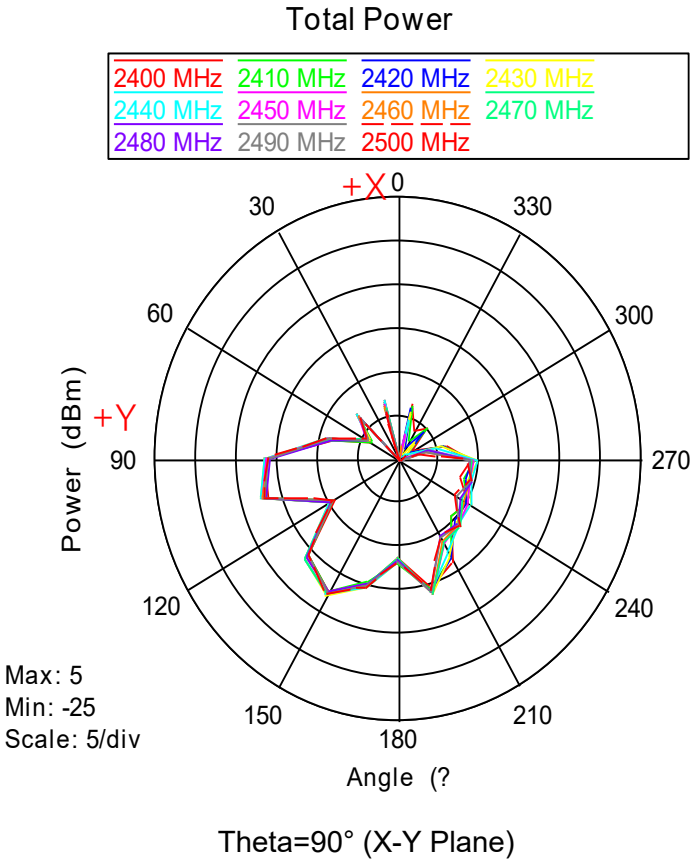
4.2 ON BOARD PCB ANTENNA



Theta=90° (X-Y Plane)

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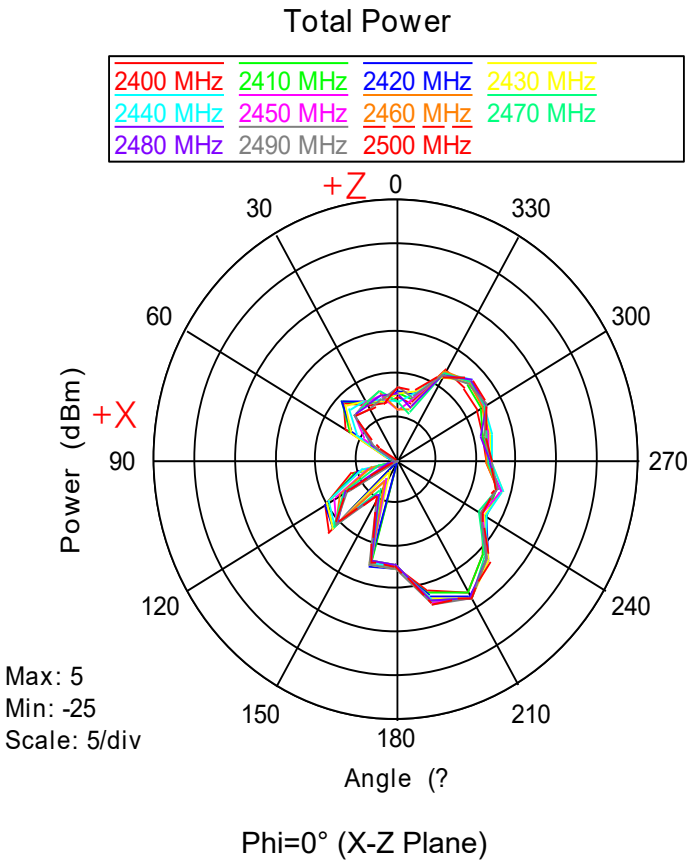

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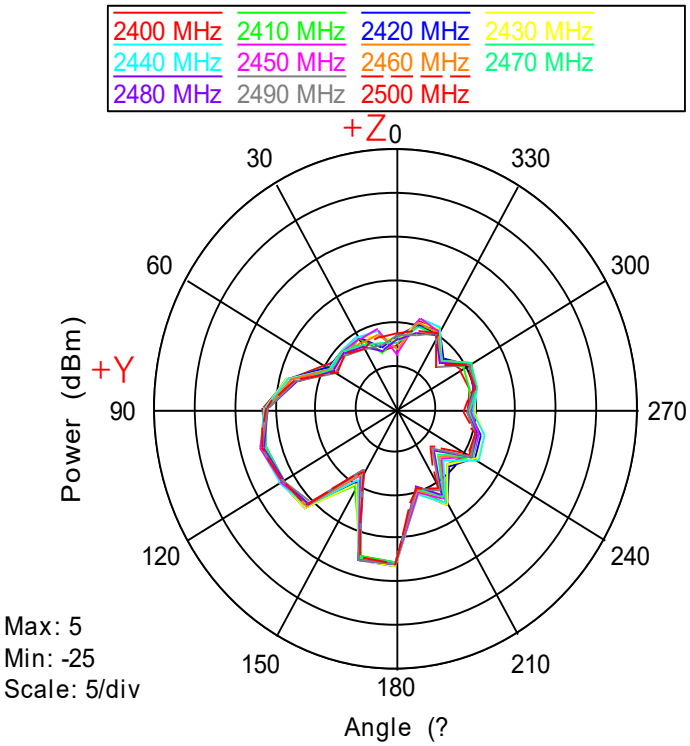
Total Power



Phi=90° (Y-Z Plane)

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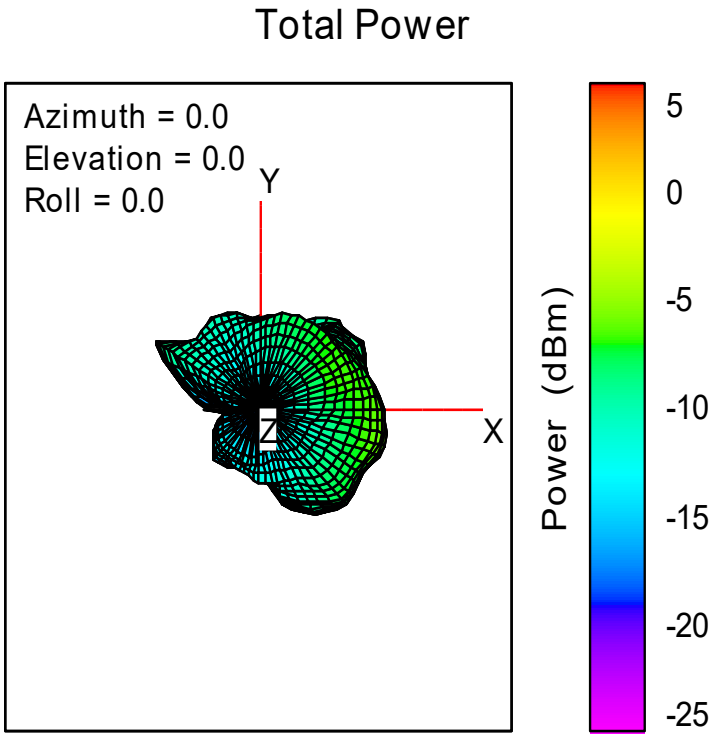
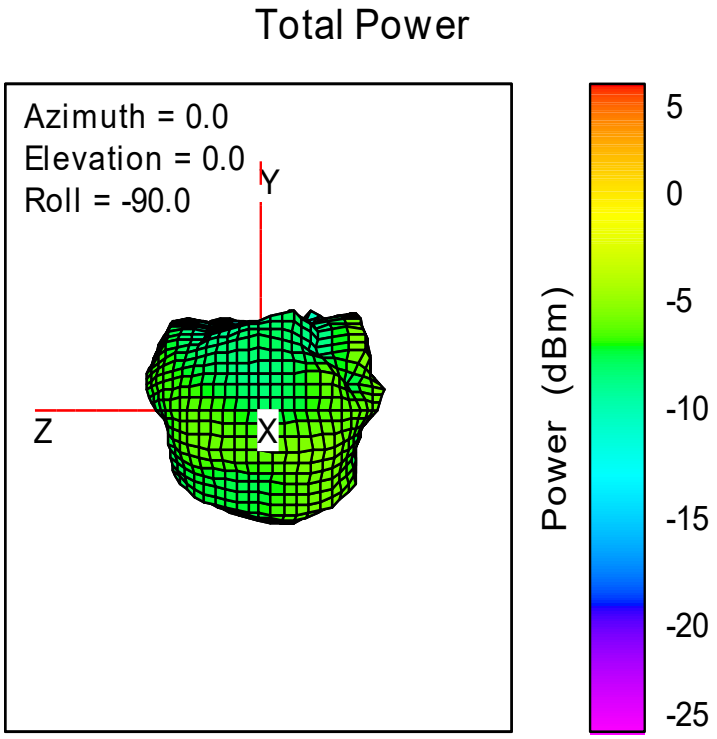
5. 3-D PATTERN PLOTS

5.1 FPC IPEX ANTENNA





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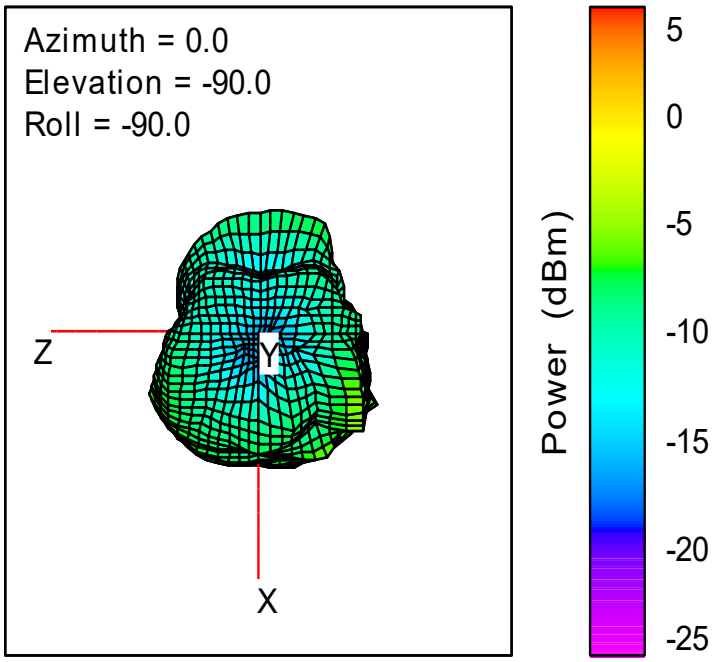
Total Power



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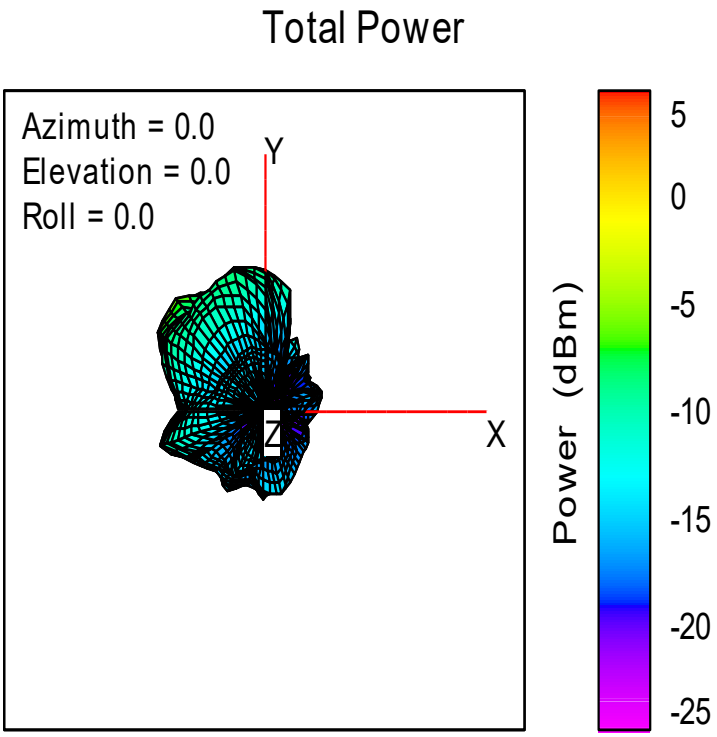
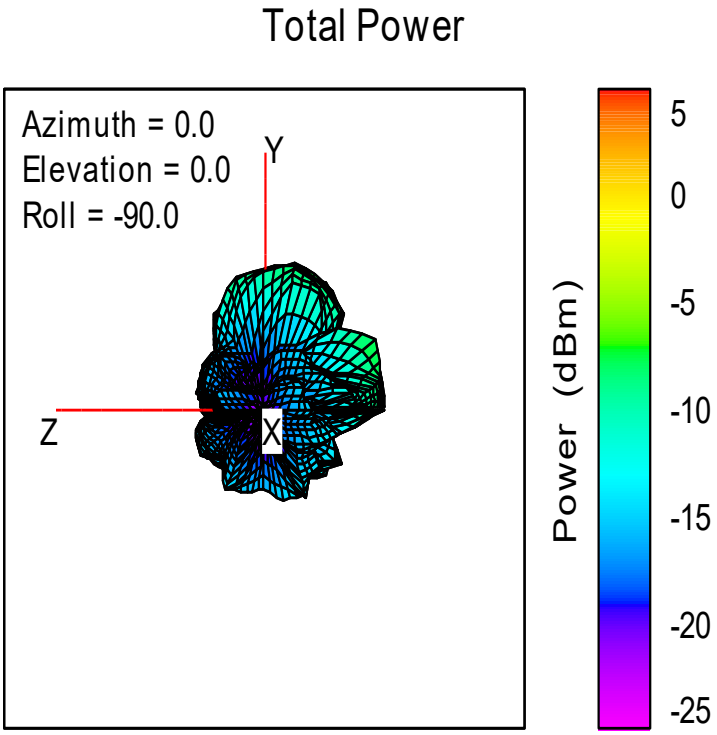
5.2 ON BOARD PCB ANTENNA





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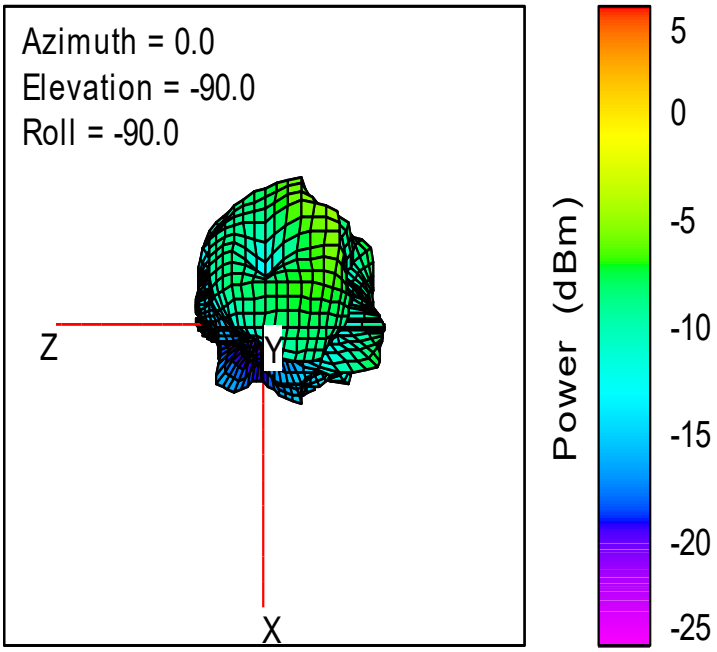
Total Power



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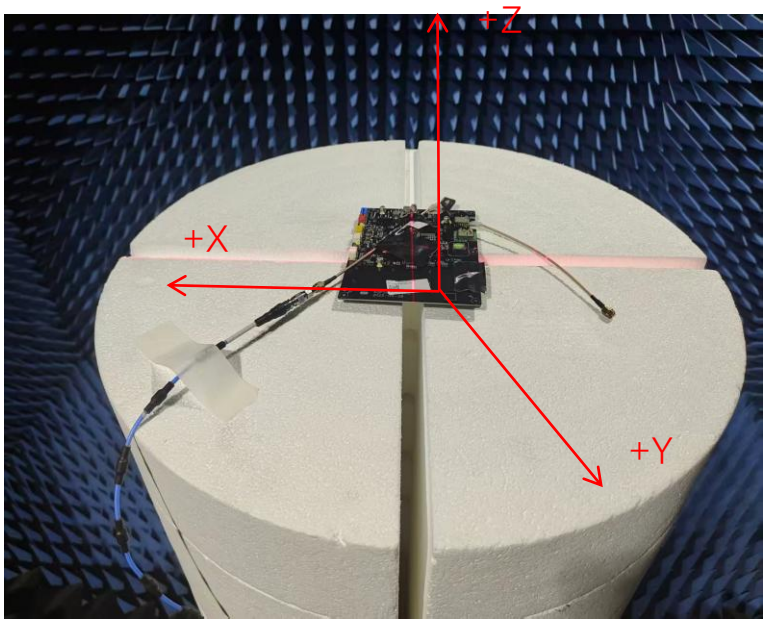
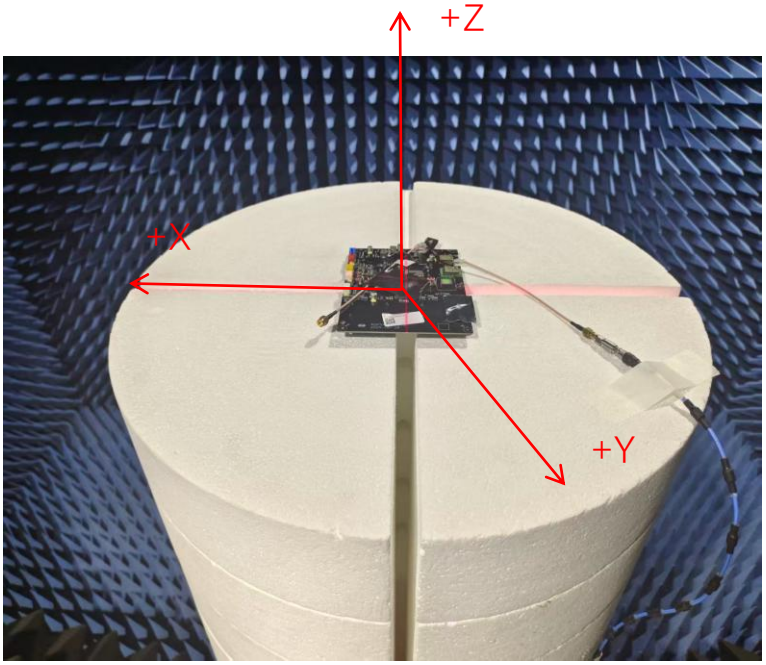
6. THE EUT AND TEST CONFIGURATION



FPC IPEX Antenna Free Space View



On board PCB Antenna Free Space View

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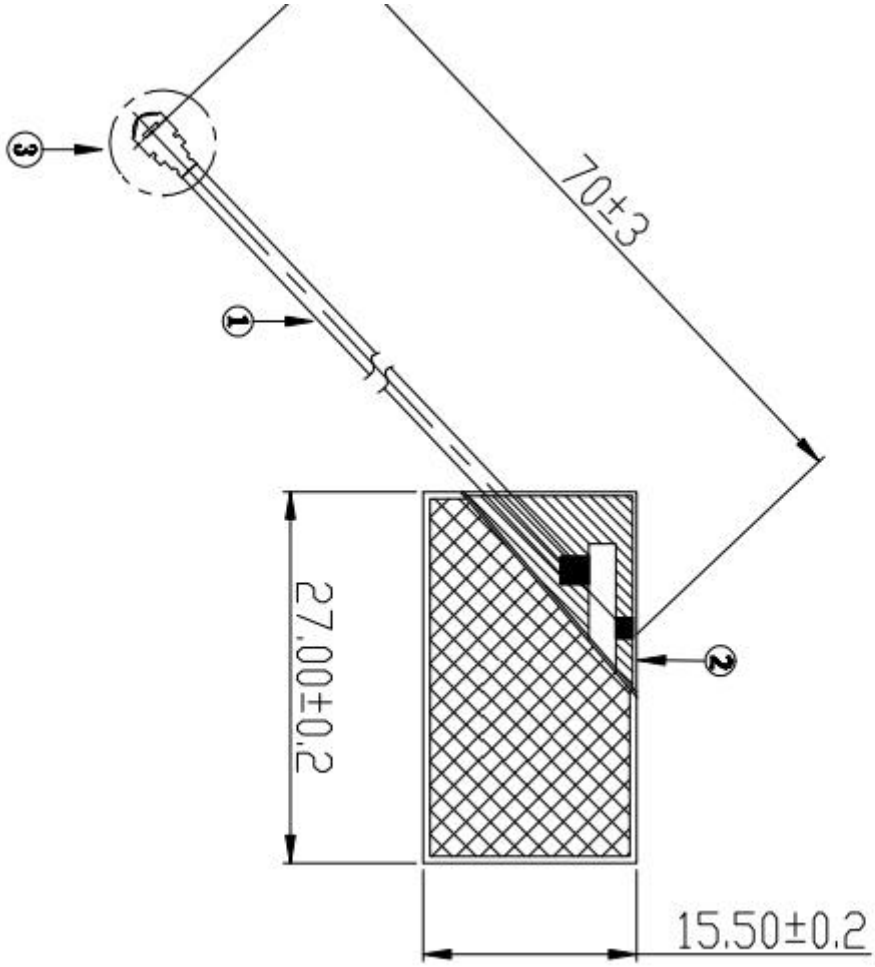
APPENDIX A ANTENNA SPECIFICATION

FPC IPEX Antenna



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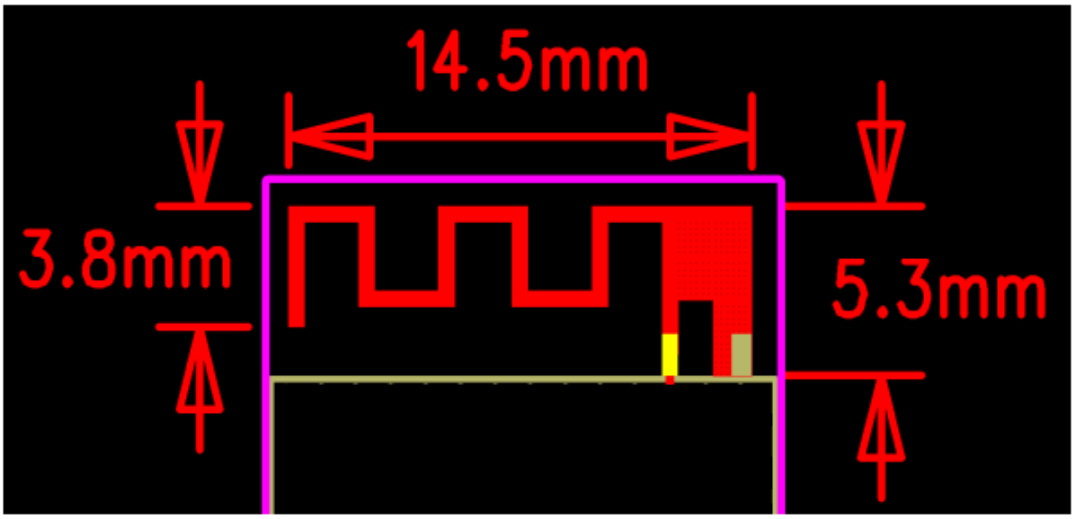
On board PCB Antenna



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