



ANTENNA PASSIVE TEST REPORT

Application No.	SEWM2306000220OA
Applicant	MOTOCADDY LTD.
Manufacturer	TED GOLF EQUIPMENT CO.,LTD
Product Name	BLE Antenna
Model No	M3 GPS (Handle)
Standards	IEEE Std 149 TM -2021
Date Initial Sample(s) Received	2023.06.25
Testing Start Date	2023.06.27
Testing Finish Date	2023.06.27
Report Issue Date	2023.07.03

Comments/ Conclusion: The configuration tested complied to the certification requirements specified in this report.

Rogan Zhao

Rogan zhao
Report Writer

Leno Shi

Leno Shi
Review By

Caleb Gao

Caleb Gao
Authorized By

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.



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REVISION HISTORY

Report No.	Version	Date	Memo
SEWM2306000220OA01	01	2023/07/03	The final version of report



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1. General Information

1.1 Details of Client

Applicant	MOTOCADDY LTD.
Address:	Units 15-18 Stansted Distribution Centre, Great Hallingbury, Hertfordshire, CM22 7DG, United Kingdom
Manufacturer	TED GOLF EQUIPMENT CO., LTD
Address:	NO.65-17 Xinggang Road, Zhonglou District, Changzhou, Jiangsu, China

1.2 Test Location

Company	SGS-CSTC Standards Technical Service (Suzhou) Co., Ltd.
Address	South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone
Post Code	215000
Telephone	+86(0)512-62990300
Fax	+86(0)512-62990300



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1.3 General Description of EUT

Device Description:	BLE Antenna
Device Manufacturer:	TED GOLF EQUIPMENT CO., LTD
Device Model:	M3 GPS (Handle)
Hardware Version:	V1.1
Software Version:	N/A

1.4 Test Procedure

Testing is performed according to the IEEE Std 149™ -2021

1.5 Laboratory Environment

Temperature	Min. =19°C, Max. = 25°C	
Relative humidity	Min. =40%, Max. =72%	
Shield effect	0.7-6GHz	> 100dB
Ground resistance	<0.5Ω	



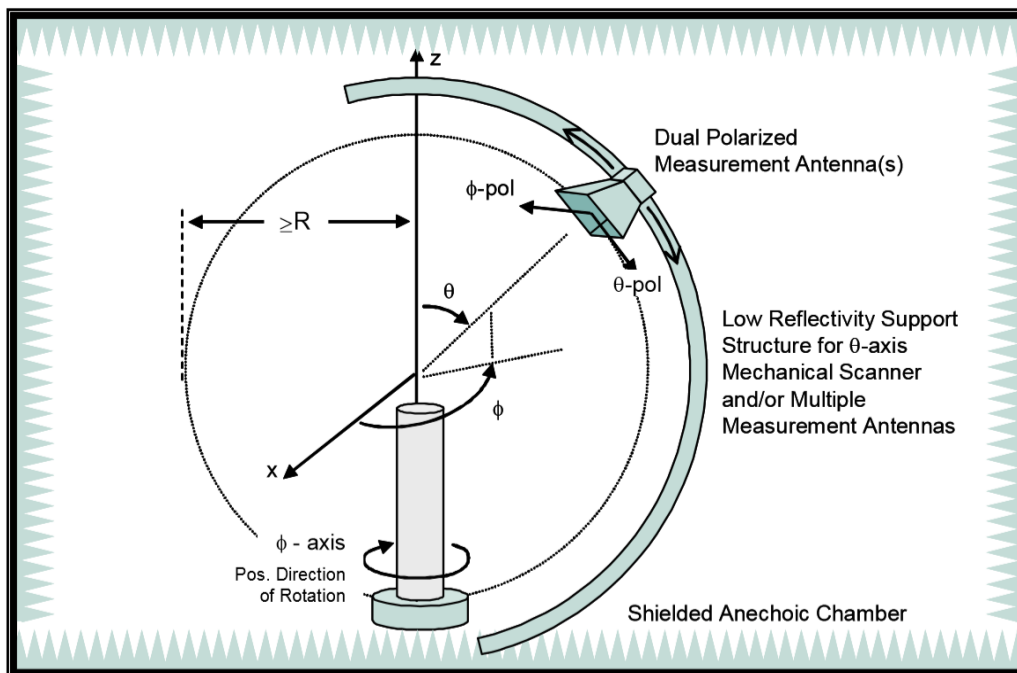
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2. OTA Measurements System Configuration

2.1 Test Configuration

Conical-Cut method is used to measure the antenna 3D GAIN of EUT in OTA qualified anechoic chamber. Equipment Under Test (EUT) geometry centre vertical projection at the centre of platform, the distance from EUT to measurement antenna is 1.5m

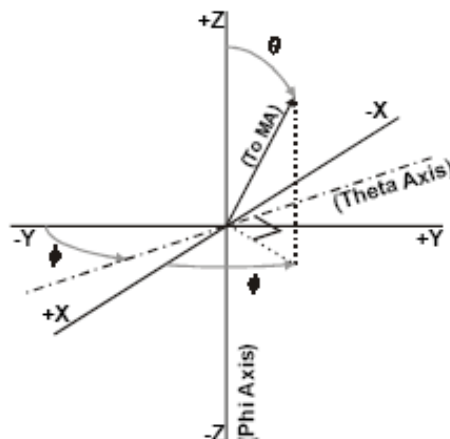


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2.2 Test Measurement

Spherical coordinate system



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3. Test Equipment List

Type of Equipment	Model Number	Manufacture	Calibration Date	Valid Period
Network Analyzer	ZNB8 S/N 103535	R&S	2023-02-06	2024-02-05
Switch Control System	OSP 130 S/N 100358	R&S	N/A	N/A
MAPS Controller	EMCenter S/N 00229695	ETS-Lindgren L.P.	N/A	N/A
Test Software	EMQuest™ REV 1.16 Build 14361	ETS-Lindgren L.P	N/A	N/A
Full Anechoic Wireless Test chamber	ETS-Lindgren AMS- 8923 CT000596-1149	ETS-Lindgren L.P	N/A	N/A



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4. Measurement Uncertainty

Item	617- 698MHz (dB)	699- 798MHz (dB)	814- 894MHz (dB)	1695- 1780MHz (dB)	1850- 2020MHz (dB)	2300- 2800MHz (dB)	3300- 3800MHz (dB)	5150- 5925MHz (dB)
Gain	0.75	0.9	0.74	0.84	0.83	0.9	0.84	0.86
Efficiency	0.75	0.9	0.74	0.84	0.83	0.9	0.84	0.86
Measurement Uncertainty (95% CONFIDENCE INTERVAL) K=2								

5. Test Results

Frequency (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)
2400	5.66	-2.59	55.08
2410	5.90	-2.37	57.90
2420	5.56	-2.59	55.03
2430	5.39	-2.70	53.68
2440	5.53	-2.70	53.66
2450	5.31	-2.95	50.71
2460	5.62	-2.61	54.84
2470	5.43	-2.67	54.05
2480	5.28	-2.78	52.70
2490	5.42	-2.73	53.29
2500	5.50	-2.73	53.39

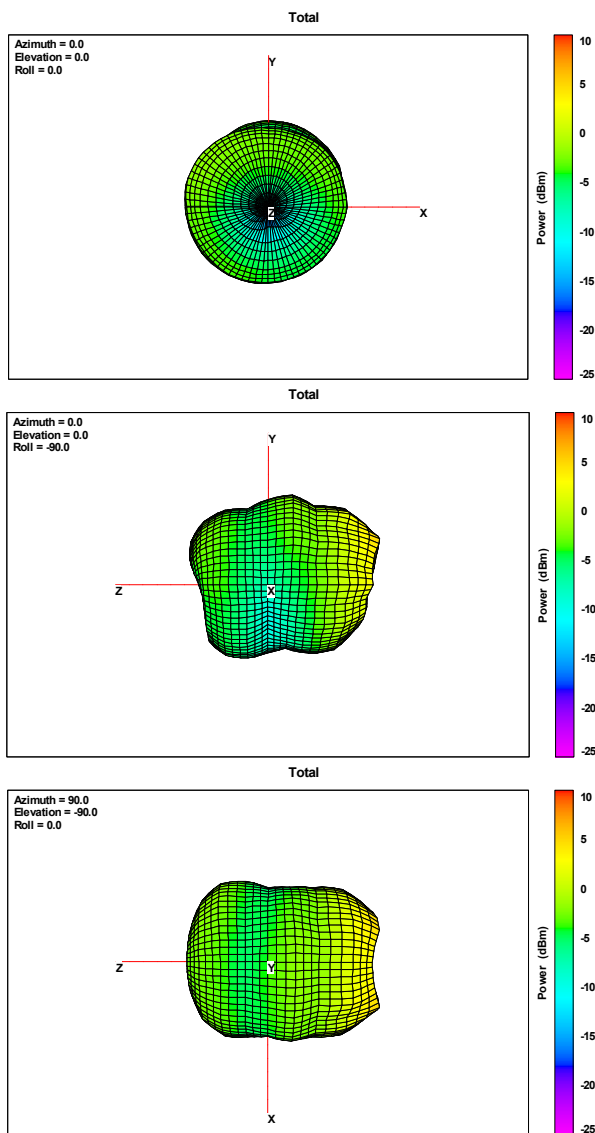


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6. 3-D Antenna Pattern

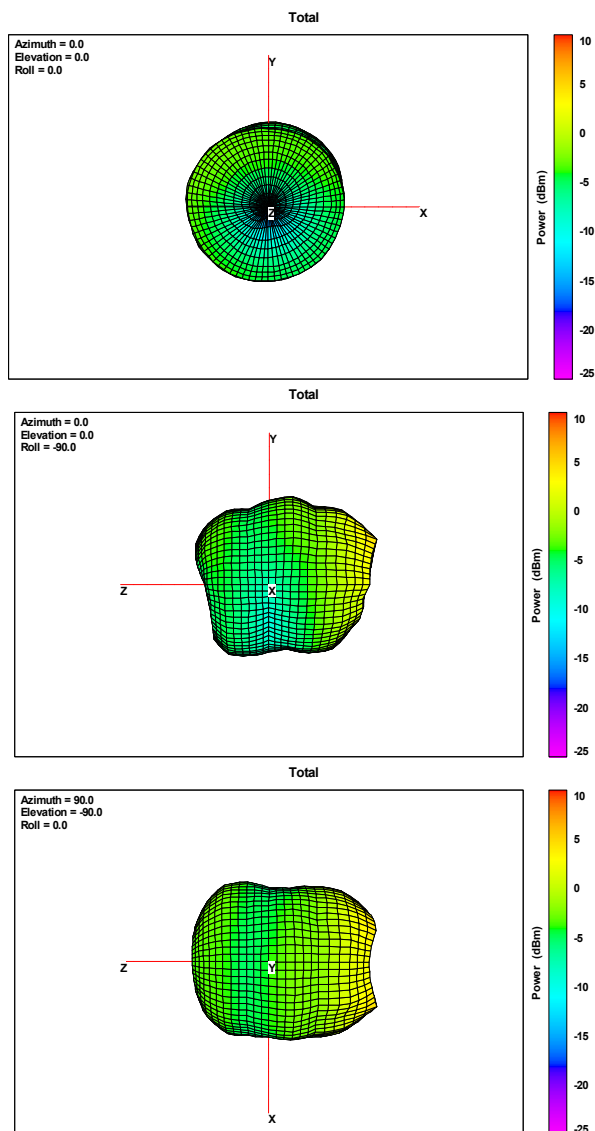
6.1 2400MHz



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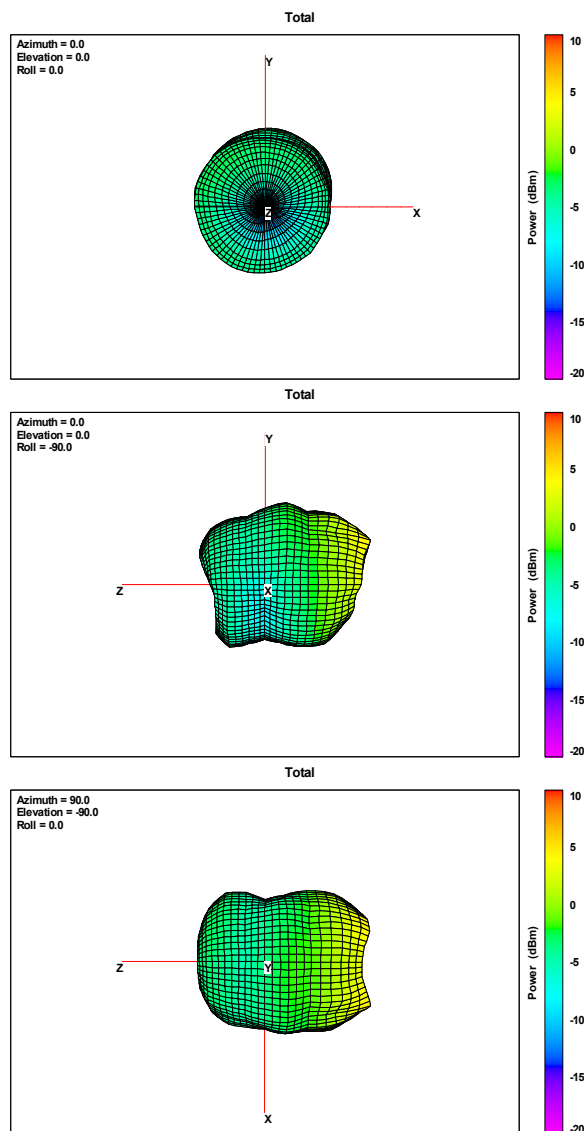
6.1.2 2450MHz



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6.1.3 2500MHz



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7. EUT and Test Configuration

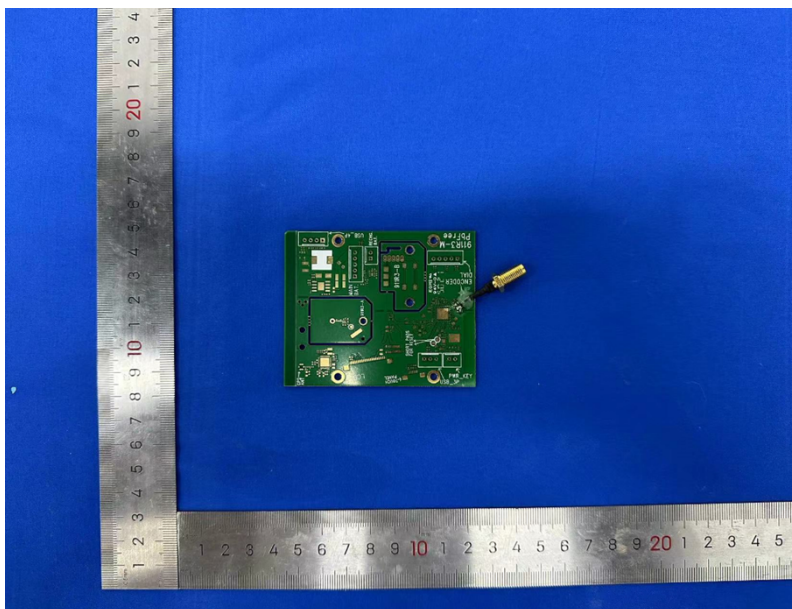


Photo of EUT

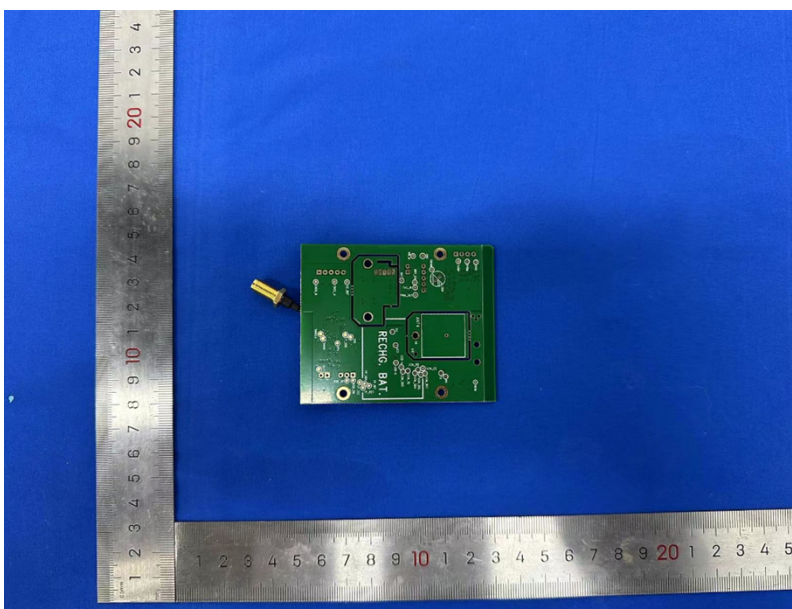
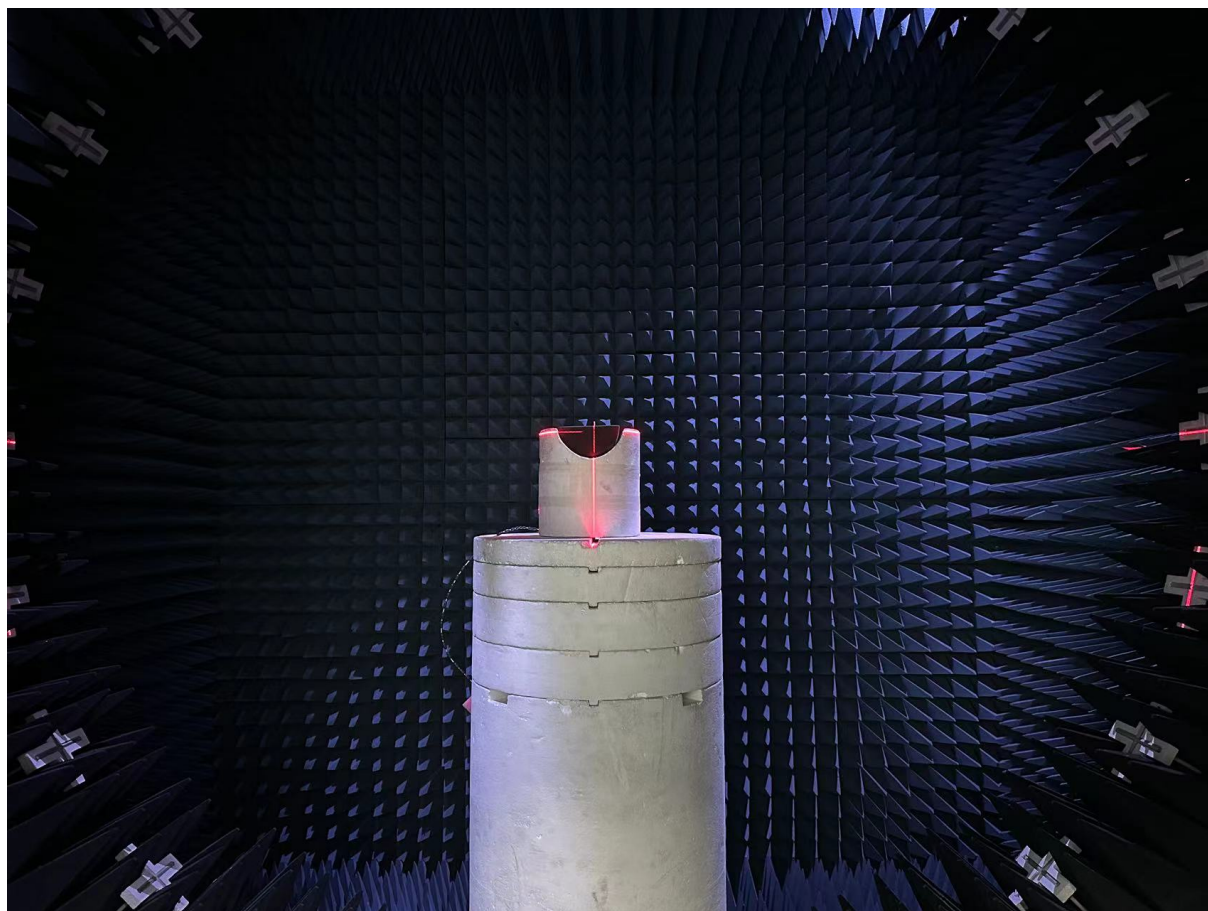


Photo of EUT



Free Space View of EUT

END REPORT



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