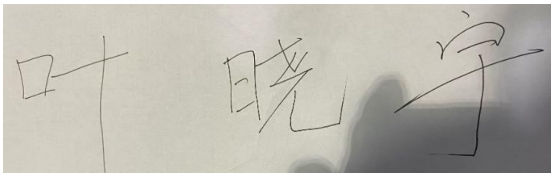
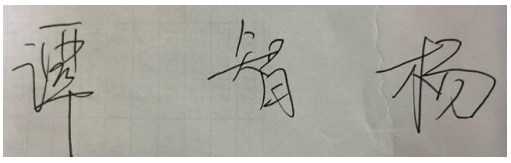
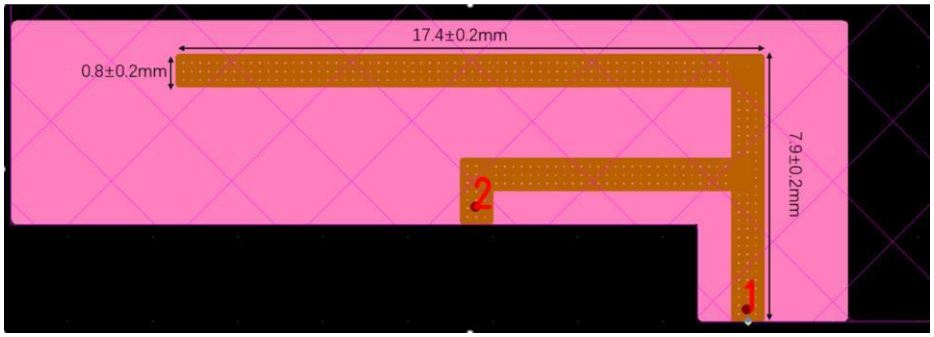
A05 Antenna report

Applicant	Tonly Technology Co., Ltd.
Address	Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, 516006 China

Manufacturer or Supplier	Tonly Technology Co., Ltd.
Address	Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, 516006 China
Product	PCB
Brand Name	Tonly
Model	A05 ANT
Max. Peak Gain	2.45dBi
Date of tests	2023-4-17
Tested by xiaoyu ye	Approved by zhiyang tan
	

1. Antenna Size（mm）



2. Antenna photo （Please refer to Antenna test setup photos）

3. Test setup photo (Please refer to Antenna test setup photos）

4. Test standard

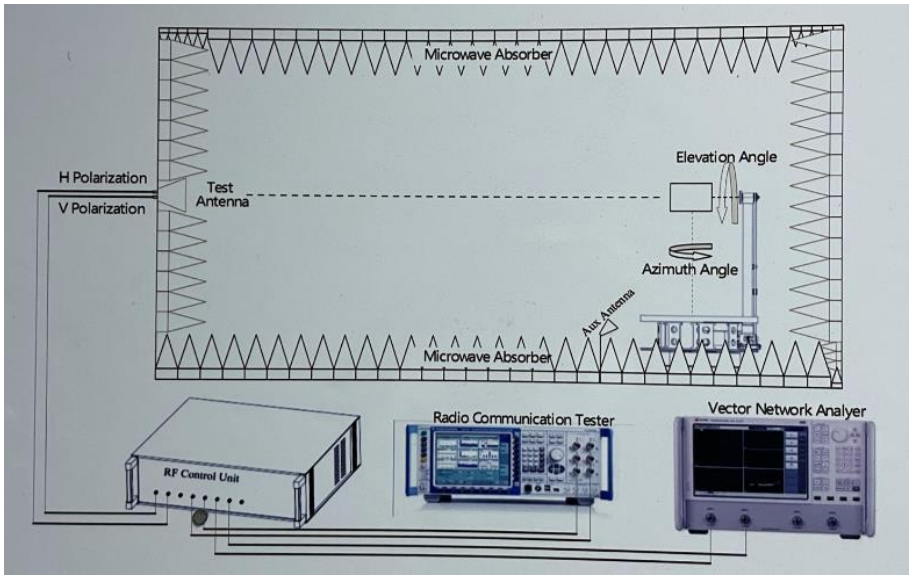
Name	Parameter	Method	Standard no.
Antenna performance	Radiation efficiency	IEEE Standard Test Procedures for Antennas	ANSI/IEEE Std 149-1979

5. Equipment list

Equipment	Manufacturer	Model No	Serial No.	Last Cal.	Due Date
Network Analyzer	Agilent	E5071C	MY46630767	2022.4.28	2023.4.27
Microwave chamber	GTS	GTS Maxsign-Dart7000		2022.4.28	2023.4.27
Turn table	GTS	Dart-700 turn table		2022.4.28	2023.4.27
turn table controller	GTS	Dart-700 turn table controller		2022.4.28	2023.4.27
Broad-Band Horn Antenna	GTS	AT-6000	MA-D0460	2022.4.28	2023.4.27
Test Software	GTS	Libra Version-3.0.3.1		2022.4.28	2023.4.27

*The software used for testing is Libra, and the software version number is 1.2.5

6. Test configuration diagram

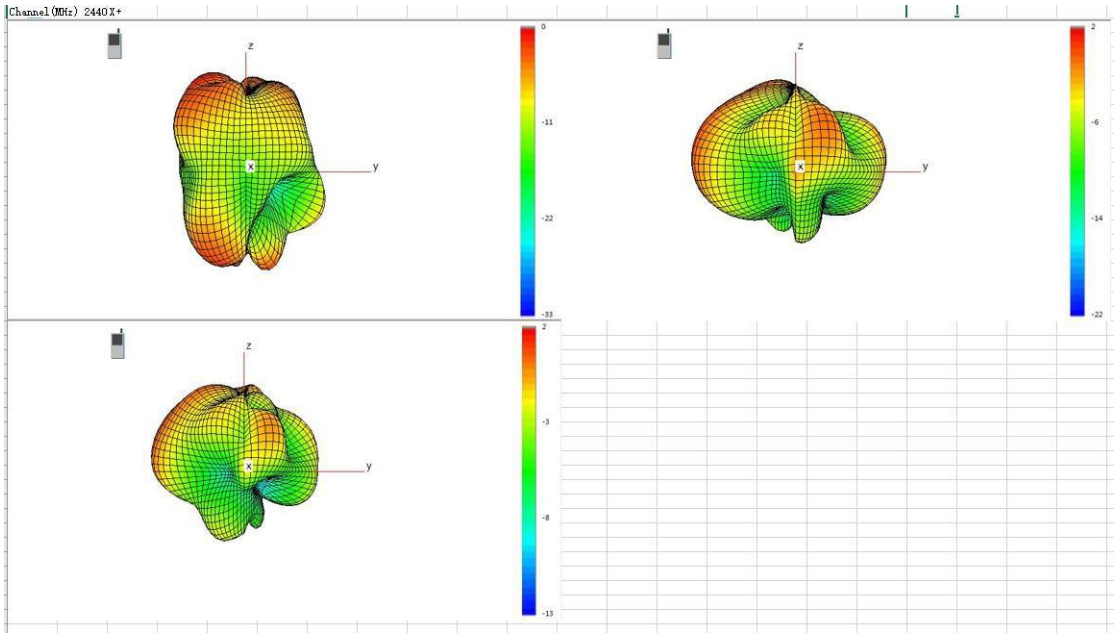


Test step flow:
1) Maintain the test ambient temperature of 23±2 C, the instrument is powered on and preheated for more than 30 minutes;
2) Turn on the darkroom power supply, connect the test cable, and set up the sample according to the standard;
3) Outline sets the test content objectives and conducts calibration tests;
4) Run the software, when the test is completed, export the corresponding test diagram and test data, and save to the corresponding directory.

7. Antenna gain

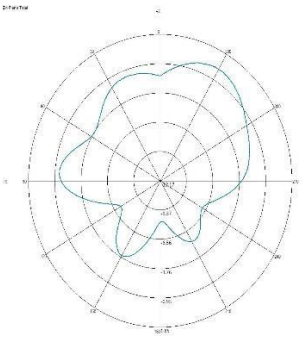
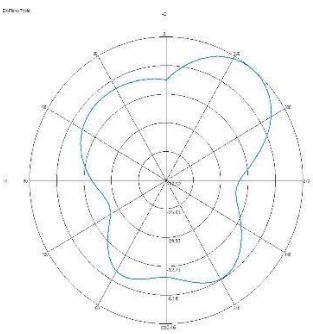
Freq(MHz)	Gain(dB)	Efficiency(dB)	Efficiency(%)
2400	1.158348988	-2.997064758	50.15260828
2410	1.260063379	-2.943604972	50.77378068
2420	1.491563197	-2.905363814	51.22283584
2430	1.5932404	-2.961925627	50.56004332
2440	1.781596828	-2.935838823	50.8646567
2450	1.921785001	-2.865951169	51.68980373
2460	2.022186177	-2.793120054	52.56395013
2470	2.333018712	-2.622404244	54.67132199
2480	2.453248934	-2.658242448	54.22202778

8. Antenna test data(3D)



9. Antenna test data(2D)

XY-Plane Total Max.(dB):0.206 Min.(dB):-8.27	XY-Plane Theta Max.(dB):-9.82 Min.(dB):-14.8	XY-Plane Theta Max.(dB):-0.02 Min.(dB):-12.36
ZY-Plane Total Max.(dB):0.616 Min.(dB):-9.08	ZY-Plane Theta Max.(dB):-1.47 Min.(dB):-13.46	ZY-Plane Theta Max.(dB):-0.33 Min.(dB):-13.6

ZX-Plane Total Max.(dB):0.215 Min.(dB):-8.21 	ZX-Plane Theta Max.(dB):-0.17 Min.(dB):-16.92 	ZX-Plane Theta Max.(dB):-1.82 Min.(dB):-13.04