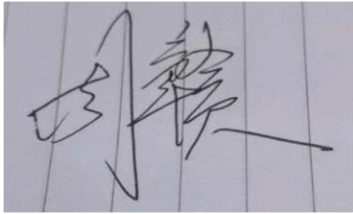


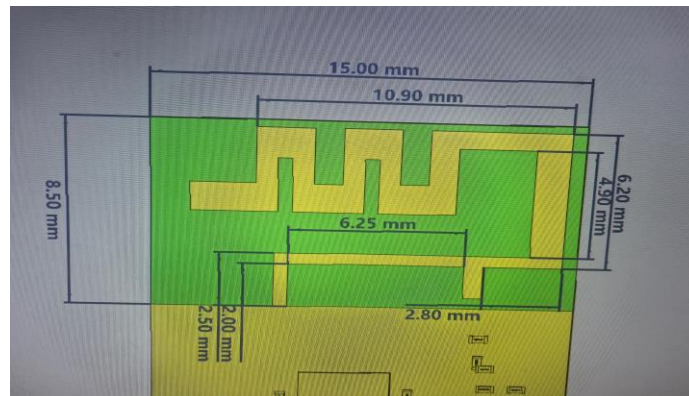
Q65K-Subwoofer BT Antenna report

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

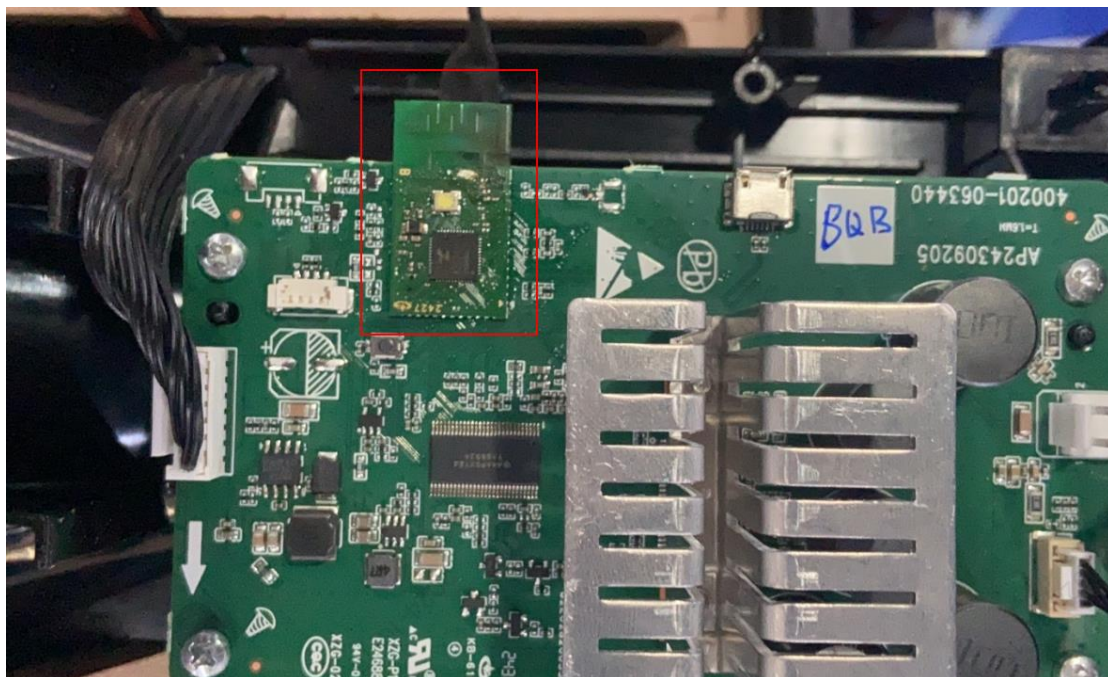
Manufacturer or Supplier	Tonly Technology Co., Ltd.
Address	Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guangdong Province, 516006 China
Product	Subwoofer BT ANT
Brand Name	Tonly
Antenna Types:	PIFA
Model	Onboard
Max. Peak Gain	2.50dBi
Date of tests	2024-11-28
Tested by : Gan.zhou	



1. Antenna Size (mm)



2. Antenna photo (Please refer to Antenna photos document)



3. Test standard

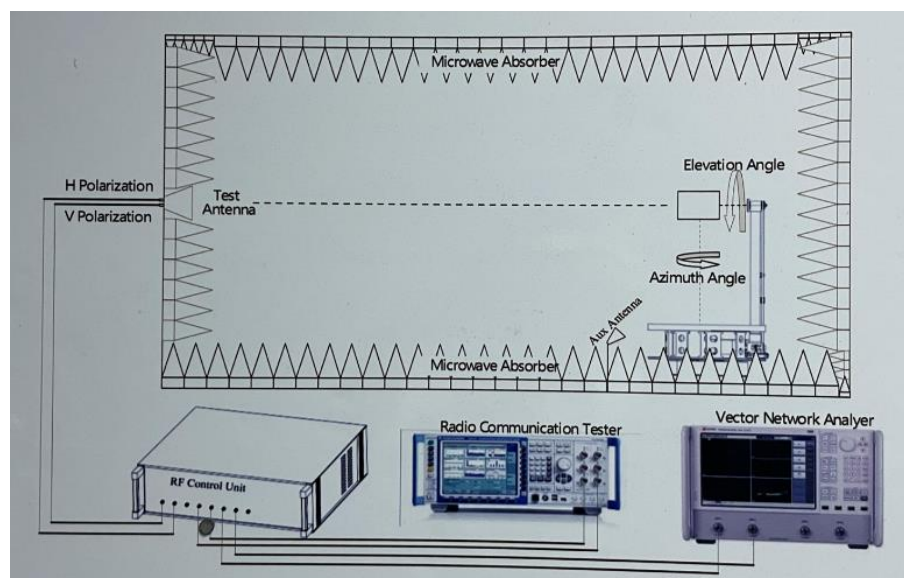
Name	Parameter	Method	Standard no.
Antenna performance	Radiation efficiency	IEEE Standard Test Procedures for Antennas	ANSI/IEEE Std 149-1979

4. Equipment list

Equipment	Manufacturer	Model No	Serial No.	Last Cal.	Due Date
Network Analyzer	Agilent	E5071B	MY42403791	2023.11.02	2025.11.01
Microwave chamber	FEITUKEJI	MC-MP-AT24	MPAT2205240031	2023.11.02	2025.11.01
Turn table	FEITUKEJI	MC-MP-TT03	MPTT2205240031	2023.11.02	2025.11.01

turn table controller	FEITUKEJI	MC-MP-TT03	MPTT2205240 031	2023.11.02	2025.11.01
Broad-Band Horn Antenna	FEITUKEJI	HZ-10200- DRHA10S	H224061102- 0101	2023.11.02	2025.11.01
Test Software	FEITUKEJI	AnTestPro97	38.15	2023.11.02	2025.11.01

5. 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.

6. Antenna Performance

Passive Efficiency

Subwoofer			
Frequency (Mhz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
2400	-2.28	59.16	2.45
2410	-2.37	57.92	2.38
2420	-2.47	56.65	2.39
2430	-2.59	55.12	2.30
2440	-2.46	56.79	2.46
2450	-2.29	58.97	2.50
2460	-2.33	58.50	2.27
2470	-2.51	56.04	1.91
2480	-2.82	52.20	1.47
2490	-3.27	47.14	1.23
2500	-3.79	41.76	0.95

Active OTA

Sub	Channel		
		TRP	TIS

	0 (2402mhz)	2.56	-92.39
	39 (2441mhz)	3.05	-92.42
	78 (2480mhz)	2.98	-93.29

7. Antenna Radiation Pattern

