

Shenzhen Yishengbang Technology Co. LTD

Fengmi Projector Project Antenna Performance Report

Customer: Fengmi

Project: C025RGN

Product: WIFI+BT Antenna—FPC

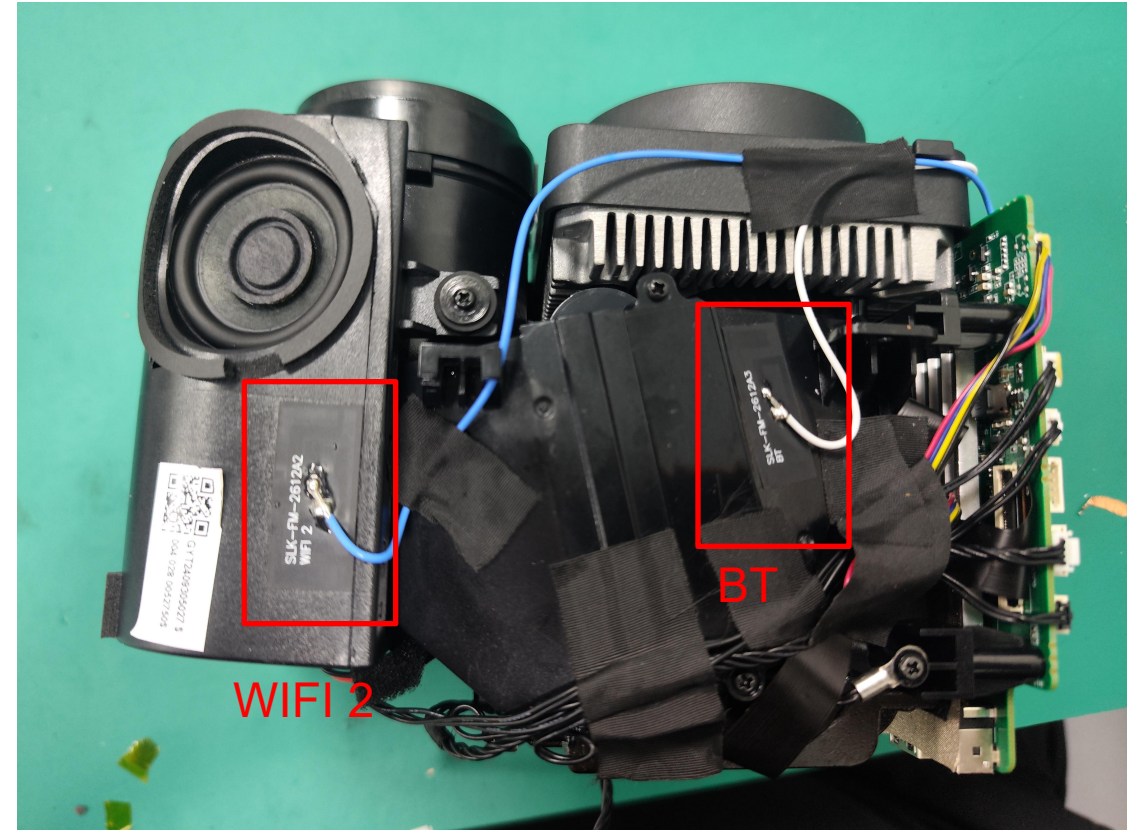
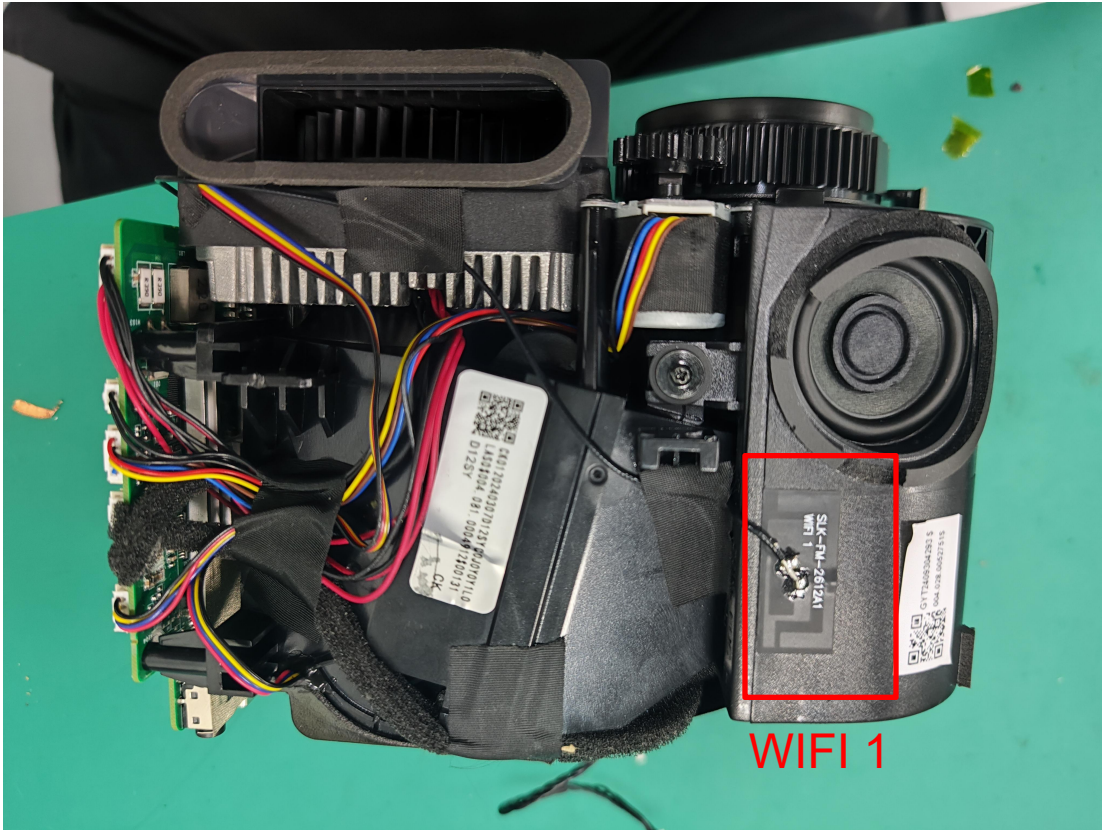
Report date: 2024.06.24

Prepared by :Fan xin zhu 18874143615

Checked by :Eason Huang 18666299104

Approved by :Lin mei cai 18025305599

1. Antenna layout and antenna environment

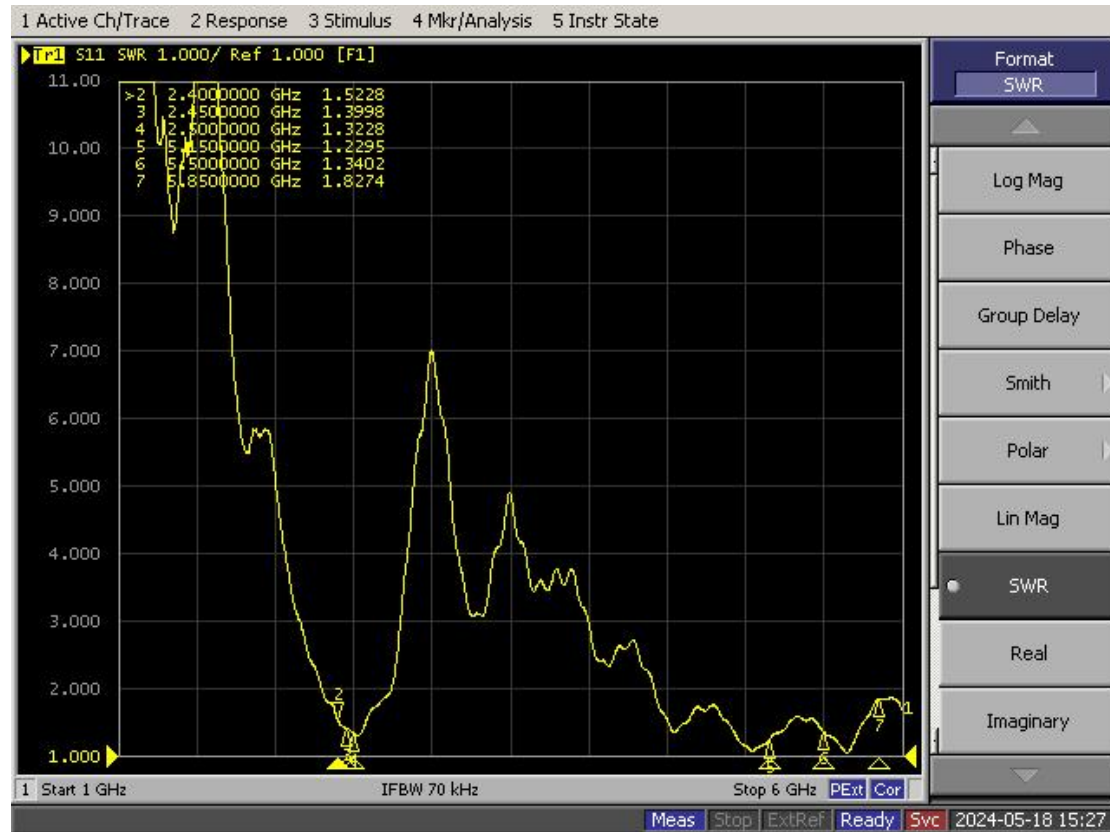


Be careful not to lift the wiring to avoid getting stuck or broken during installation

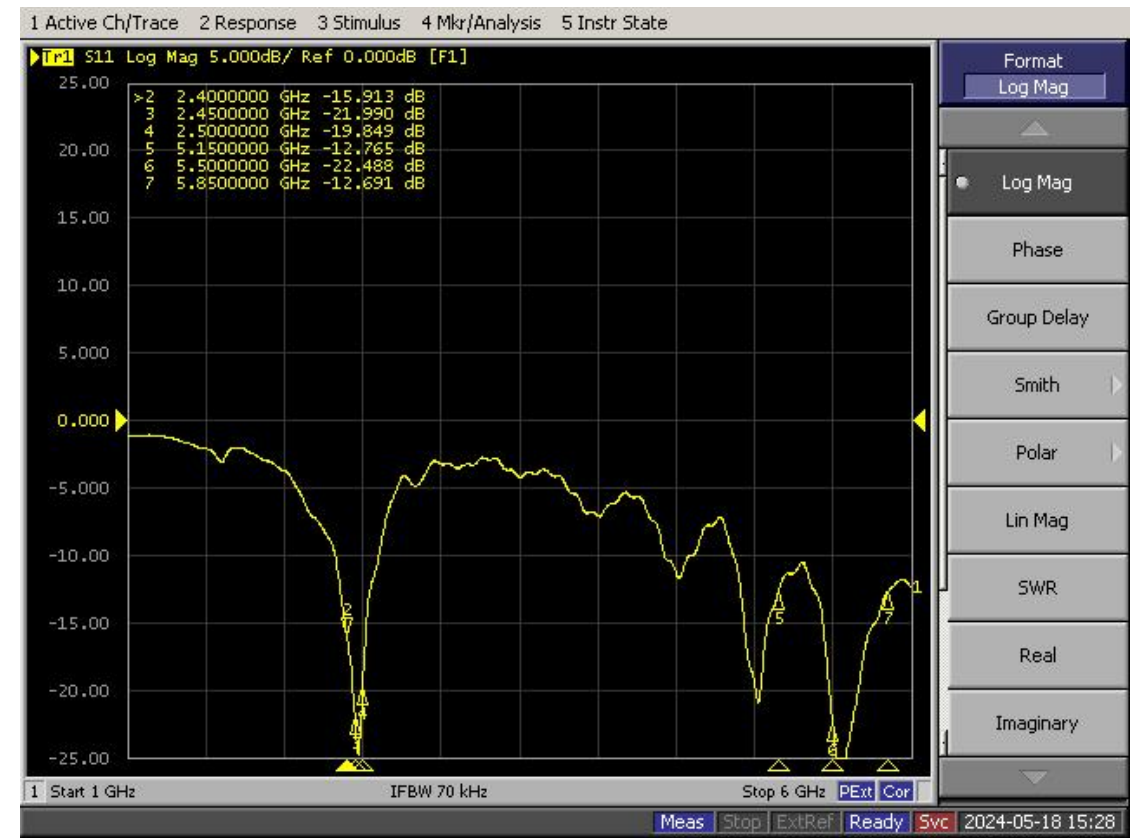
1. Antenna layout and antenna environment



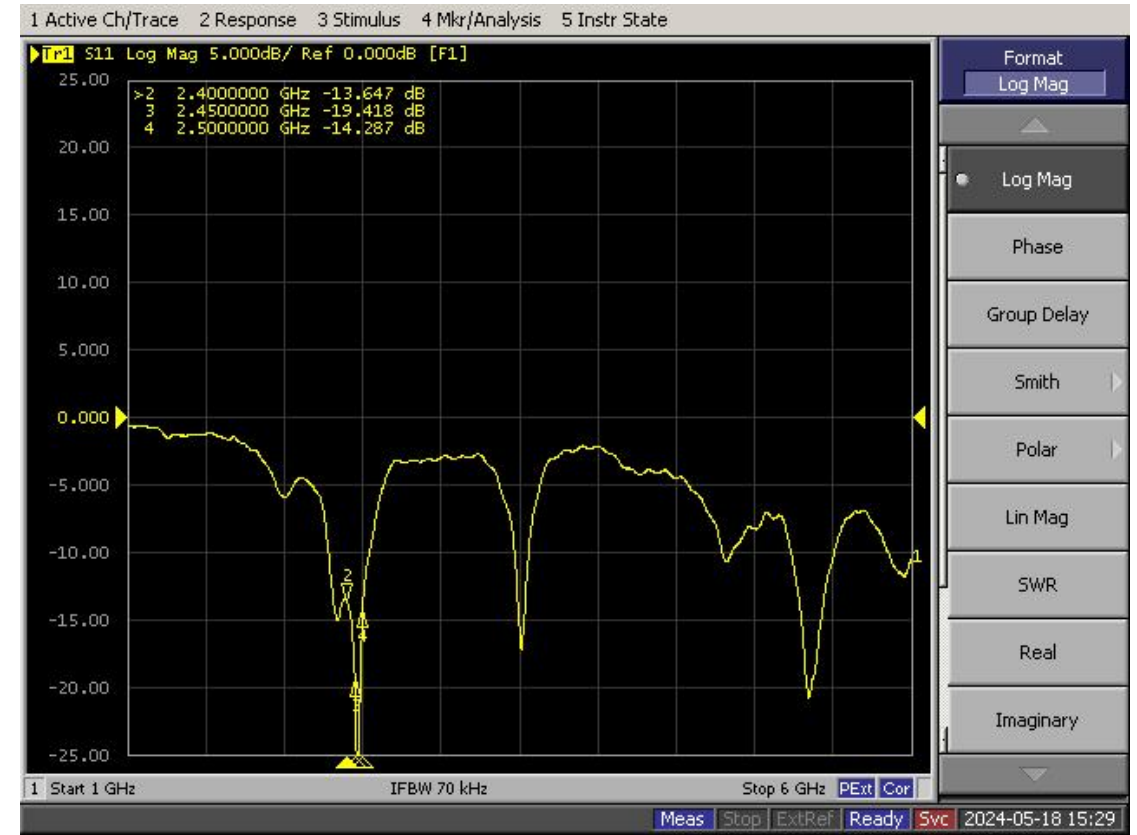
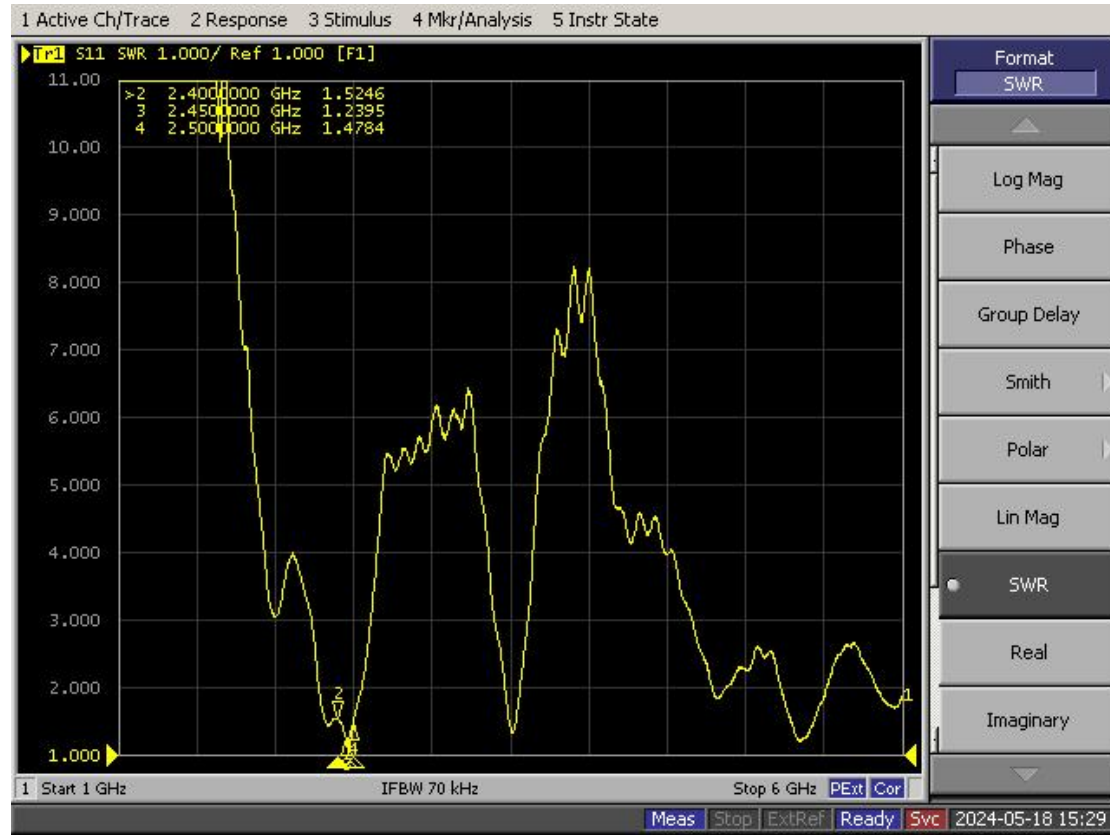
2. Passive performance of antennas (WIFI 1 Antenna S11)



2. Passive performance of antennas (WIFI 2 Antenna S11)



2. Passive performance of antennas (BT Antenna S11)



2. Passive performance of antennas (Antenna ISOLATION)

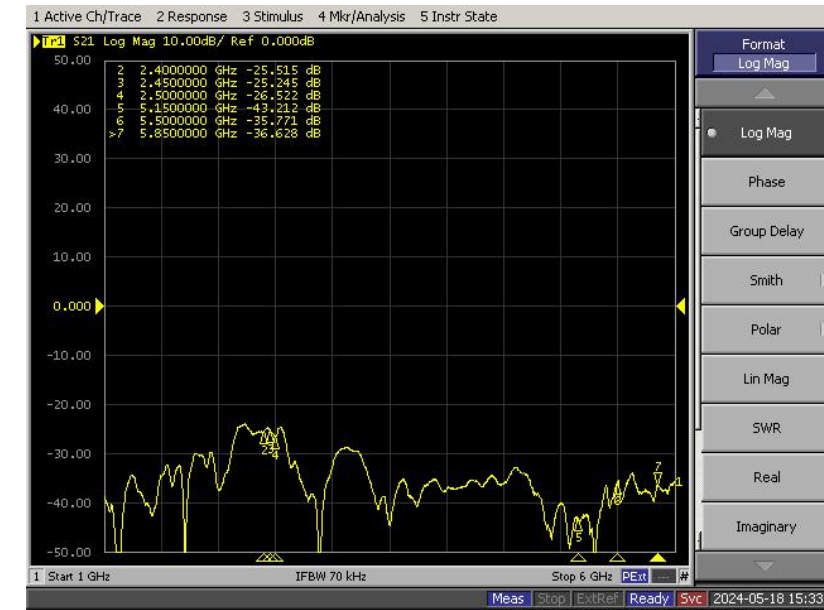
WIFI 1 and WIFI 2



WIFI 1 and BT



WIFI 2 and BT



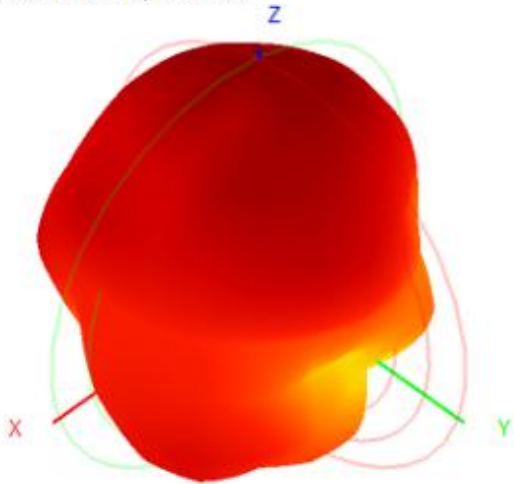
3.Active antenna debugging and experimental results

WIFI	CH	功率(54M) dBm	灵敏度 (54M) dBm	WIFI	CH	功率(54M) dBm	灵敏度 (54M) dBm
802.11a	36 (5180MHz)	12.63	-74.45	802.11g	1 (2412MHz)	15.66	-68.34
	149 (5745MHz)	13.02	-78.16		6 (2437MHz)	16.06	-66.53
	161 (5805MHz)	11.59	-77.38		11 (2462MHz)	16.64	-66.44
WIFI	CH	功率(11M) dBm	灵敏度 (11M) dBm	WIFI	CH	功率(MCS7) dBm	灵敏度 (MCS7) dBm
802.11b	1 (2412MHz)	15.68	-76.7	802.11n	1 (2412MHz)	15.68	-61.99
	6 (2437MHz)	17.26	-78.22		6 (2437MHz)	16.04	-60.02
	11 (2462MHz)	16.73	-79.17		11 (2462MHz)	16.65	-61.85

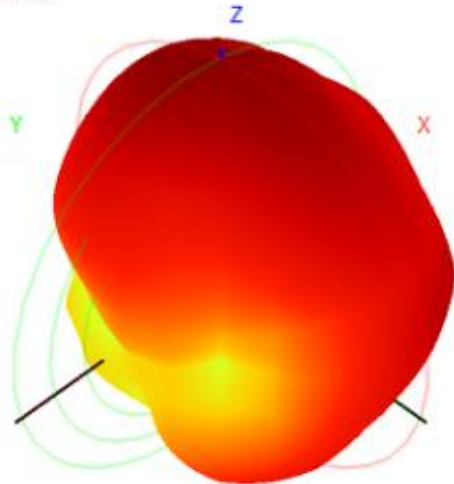
4. WIFI 1 Antenna Gain/Efficiency/3D DATA

Frequency (MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500	5150	5350	5500	5650	5850
Efficiency (dBi)	-3.20	-3.23	-2.86	-2.90	-2.75	-2.87	-2.74	-2.90	-2.93	-2.82	-2.82	-3.42	-3.33	-2.87	-2.99	-3.22
Gain (dBi)	1.84	1.76	2.22	2.18	2.45	2.32	2.17	2.06	2.07	2.10	2.16	1.84	1.62	1.66	2.97	2.75
Efficiency (%)	47.89	47.57	51.74	51.29	53.11	51.63	53.18	51.23	50.89	52.28	52.25	45.48	46.40	51.70	50.24	47.61

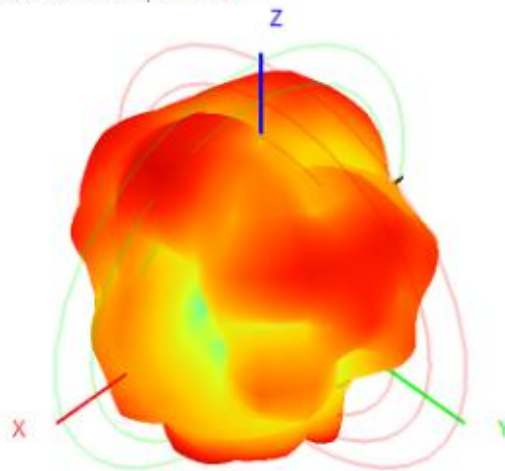
2450.0MHz H+V, Eff: 51.6%



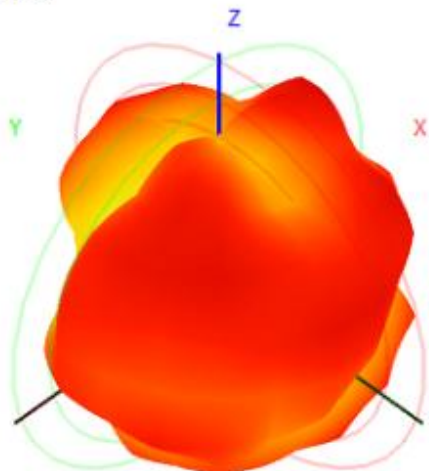
Back View



5850.0MHz H+V, Eff: 47.6%



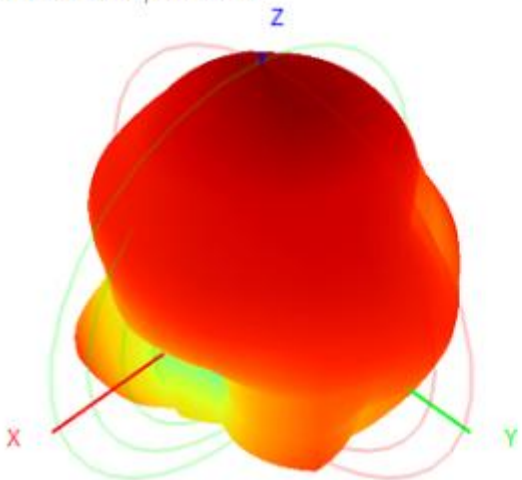
Back View



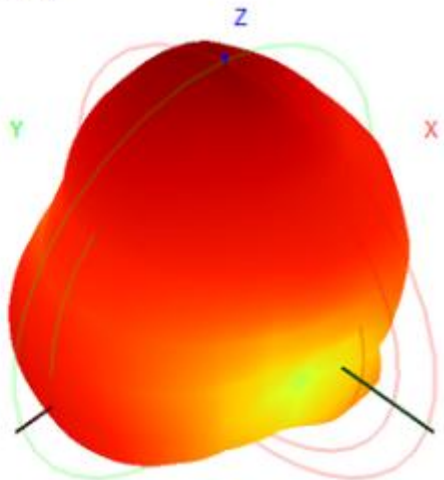
4. WIFI 2 Antenna Gain/Efficiency/3D DATA

Frequency (MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500	5150	5350	5500	5650	5850
Efficiency (dBi)	-3.88	-3.57	-2.95	-3.01	-2.84	-2.83	-2.42	-2.73	-2.79	-2.65	-2.58	-3.16	-2.87	-2.41	-2.47	-2.50
Gain (dBi)	1.92	2.17	2.20	2.31	2.47	2.60	2.63	2.78	2.78	2.65	2.52	1.62	2.52	2.50	2.18	2.43
Efficiency (%)	40.96	43.98	50.67	50.04	52.05	52.11	57.31	53.30	52.61	54.30	55.21	48.30	51.61	57.44	56.68	56.27

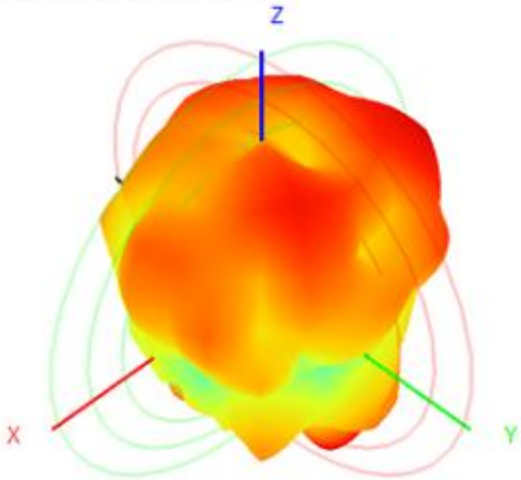
2450.0MHz H+V, Eff: 52.1%



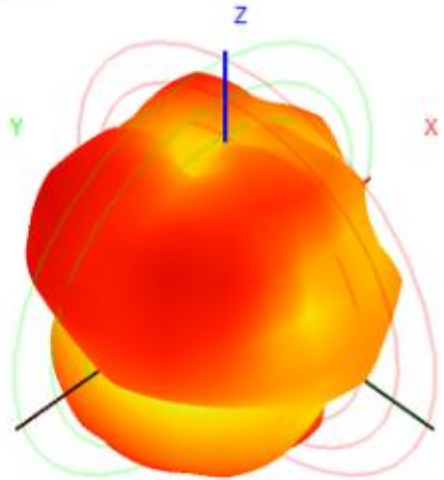
Back View



5850.0MHz H+V, Eff: 56.3%

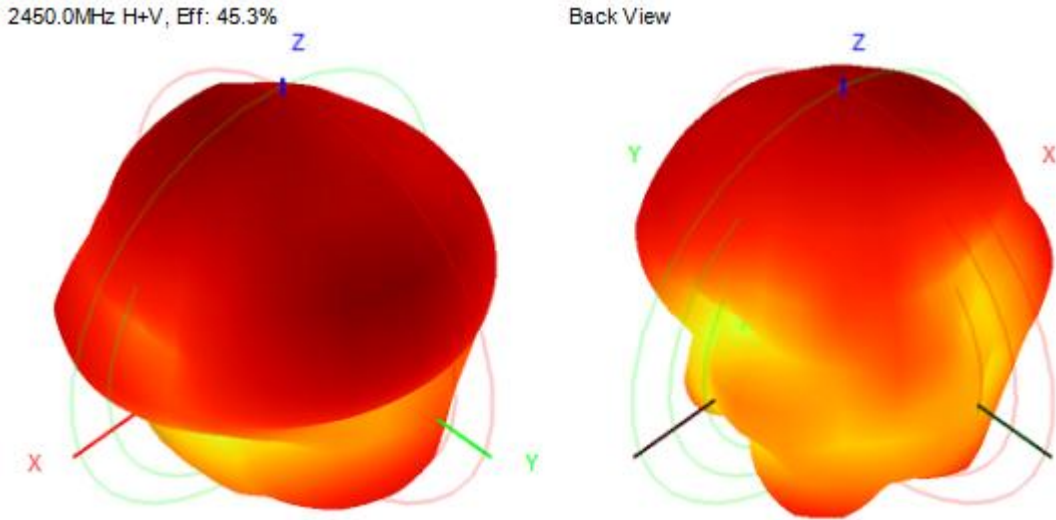


Back View



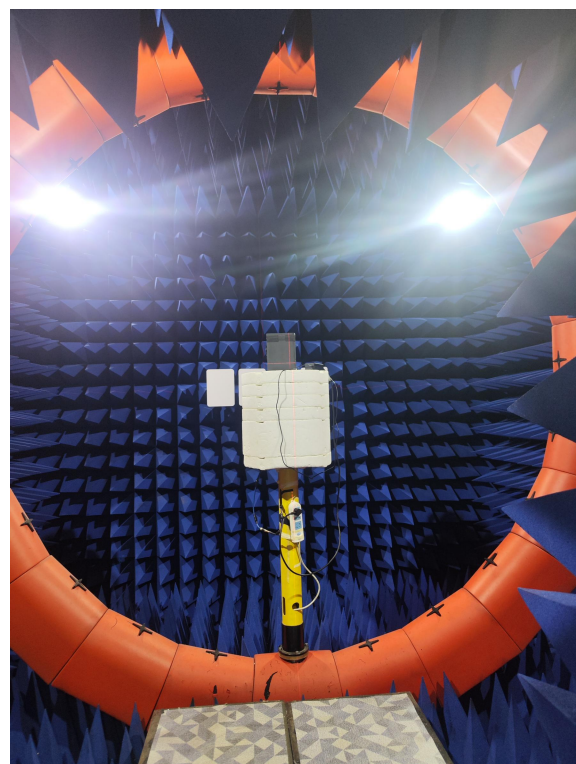
4. BT Antenna Gain/Efficiency/3D DATA

Frequency (MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Efficiency (dBi)	-3.30	-3.40	-3.13	-3.28	-3.25	-3.44	-3.35	-3.66	-3.83	-3.89	-3.95
Gain (dBi)	1.63	1.68	2.16	1.98	2.07	2.10	2.35	2.58	2.74	2.90	2.91
Efficiency (%)	46.73	45.72	48.65	47.00	47.27	45.28	46.22	43.07	41.35	40.79	40.23



6. Conclusion

Based on the above active, passive, and measured data, it is important to note the assembly position and the routing of various wires during assembly. Do not place them above the antenna and try to stay away from some antennas as much as possible. thank you!



Note: The placement of the entire machine during the testing process.