

Shenzhen Yishengbang Technology Co. LTD

Fengmi Projector Project Antenna Performance Report

Customer: Fengmi

Project: C015FGN X2

Product: WIFI+BT Antenna—FPC

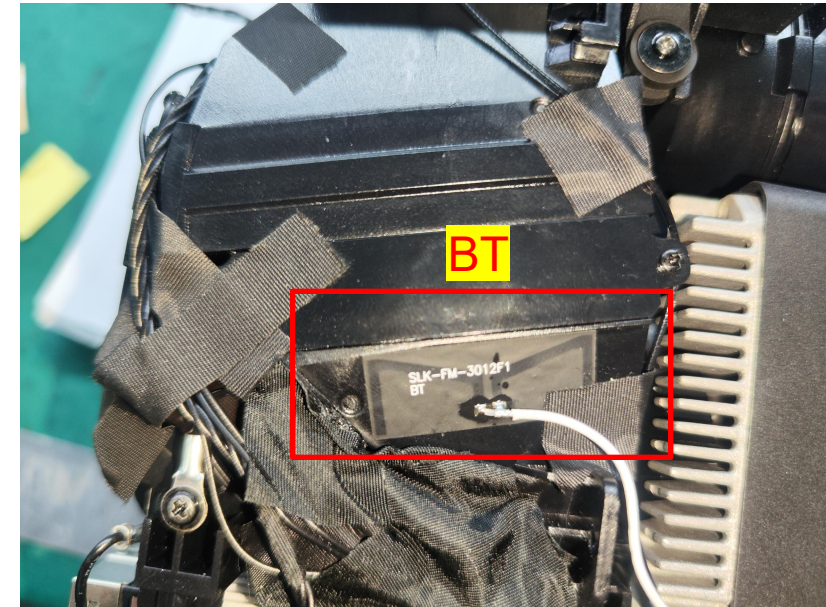
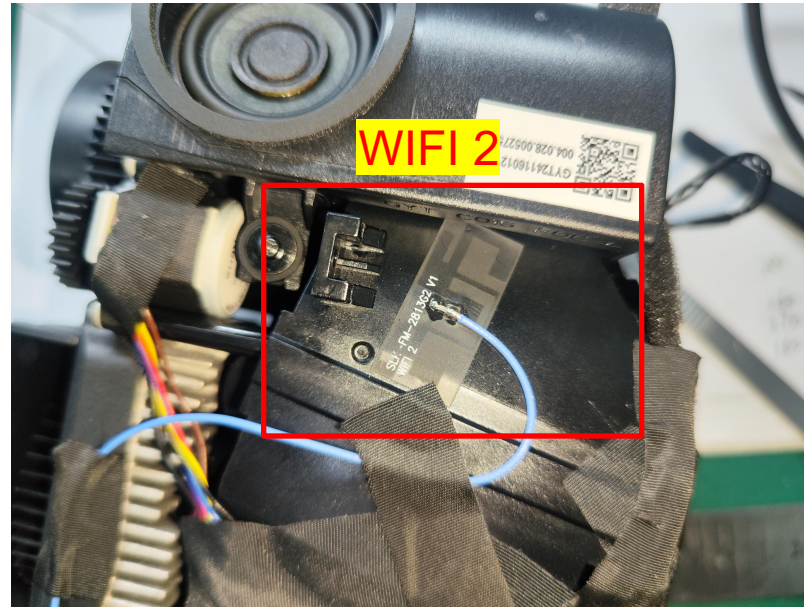
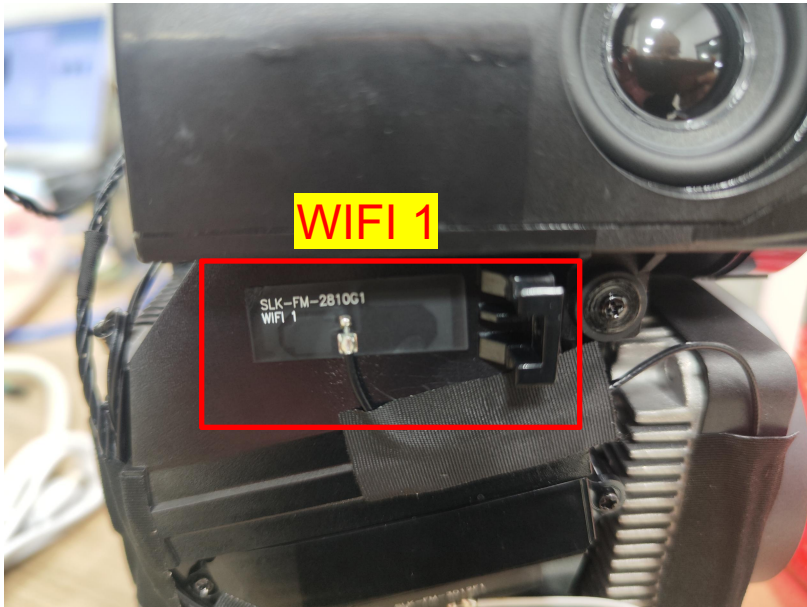
Report date: 2025.09.19

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Checked by :Eason Huang 18666299104

Approved by :Lin mei cai 18025305599

1. Antenna layout and antenna environment



1. Antenna layout and antenna environment

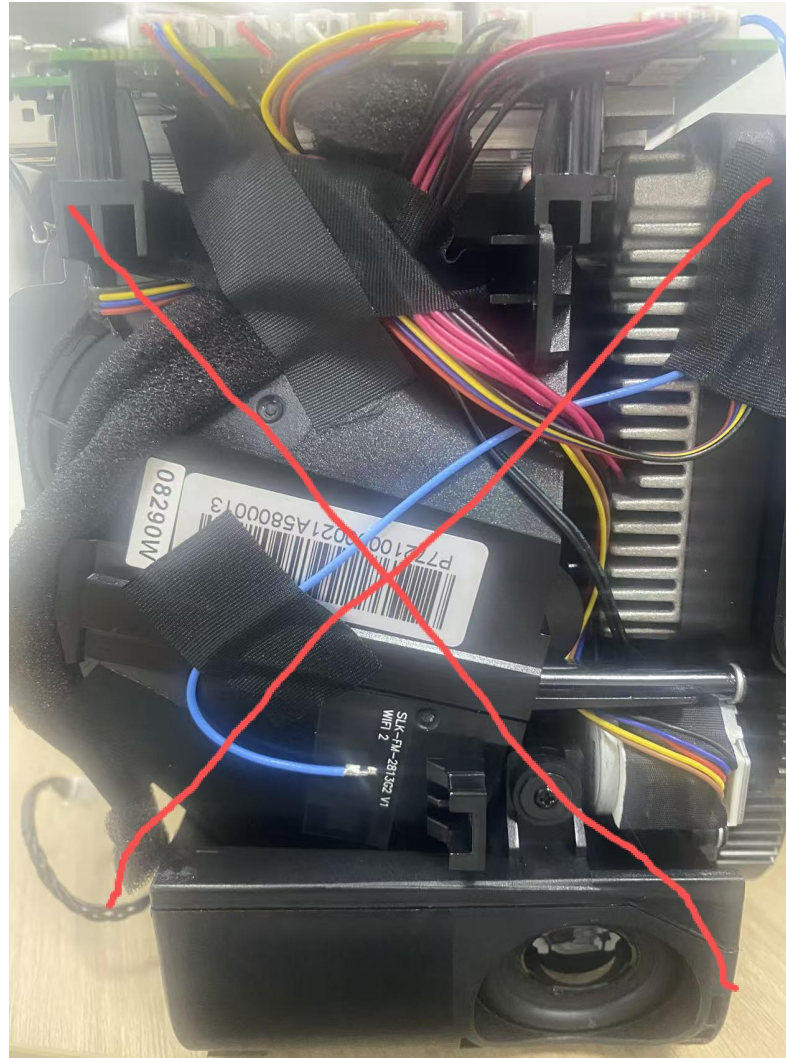


1. Antenna layout and antenna environment

Correct assembly



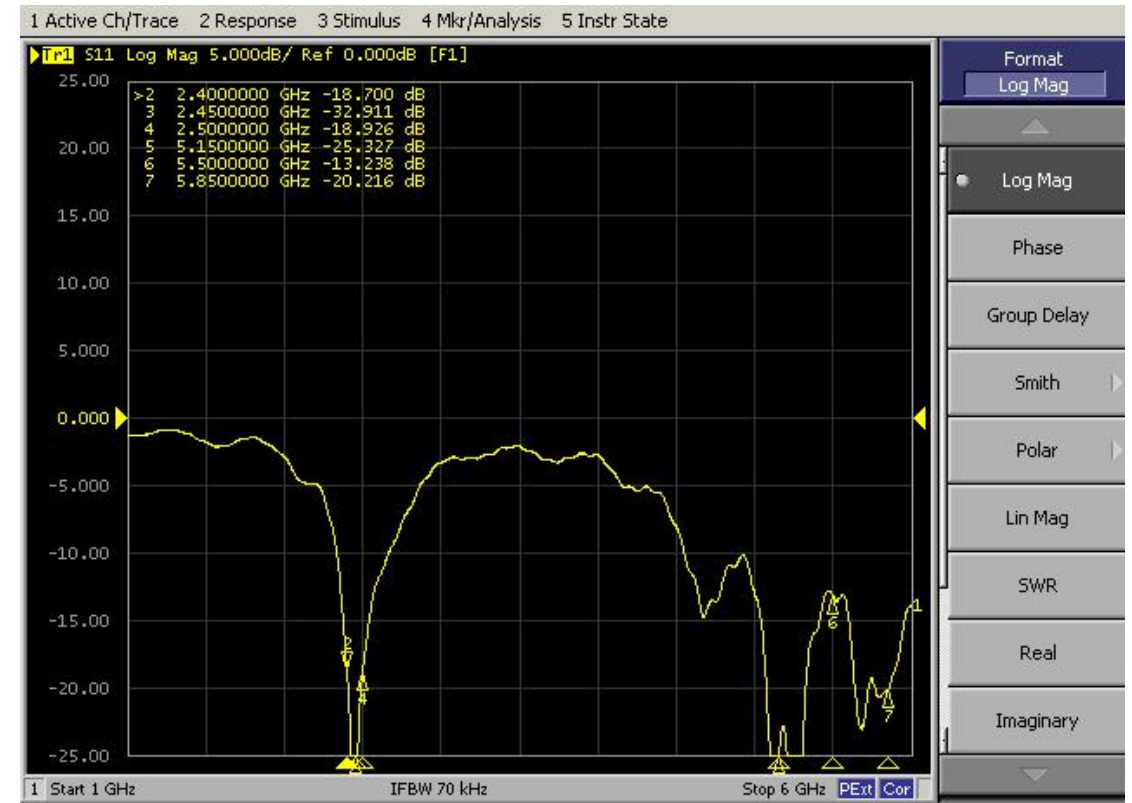
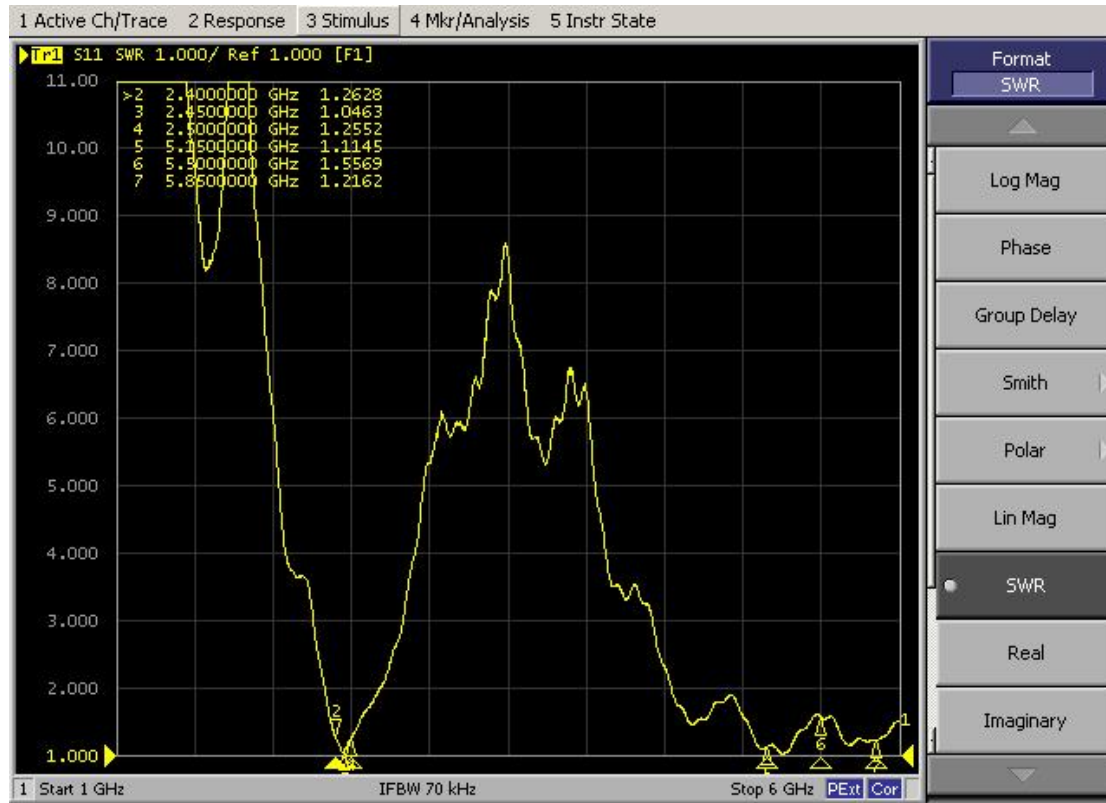
Incorrect assembly, the WIFI antenna wiring cannot directly pass through the LED wire



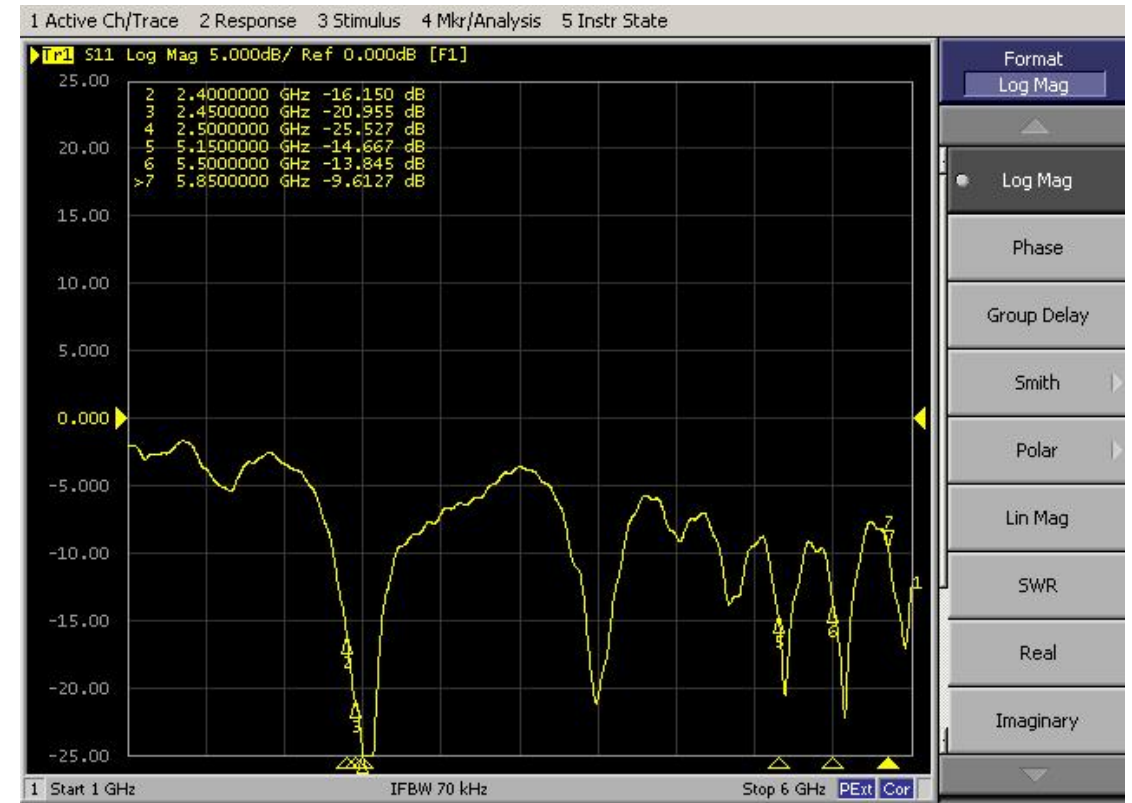
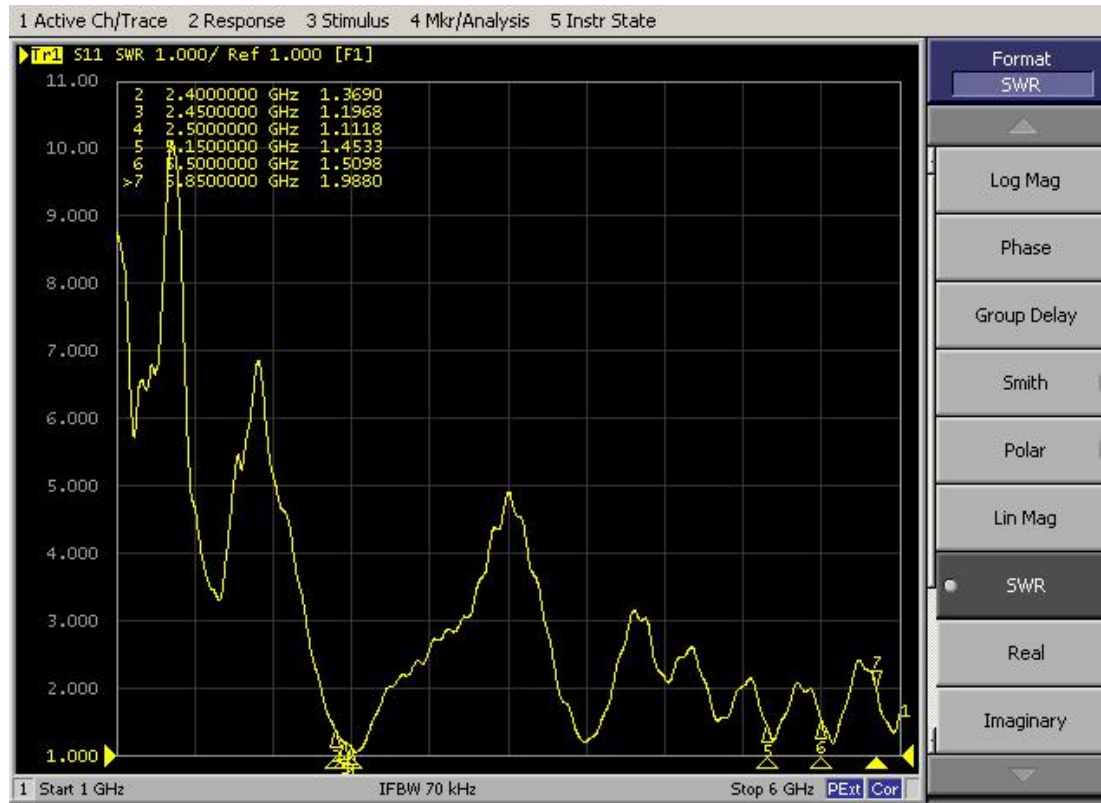
Organize the screen cable according to the diagram



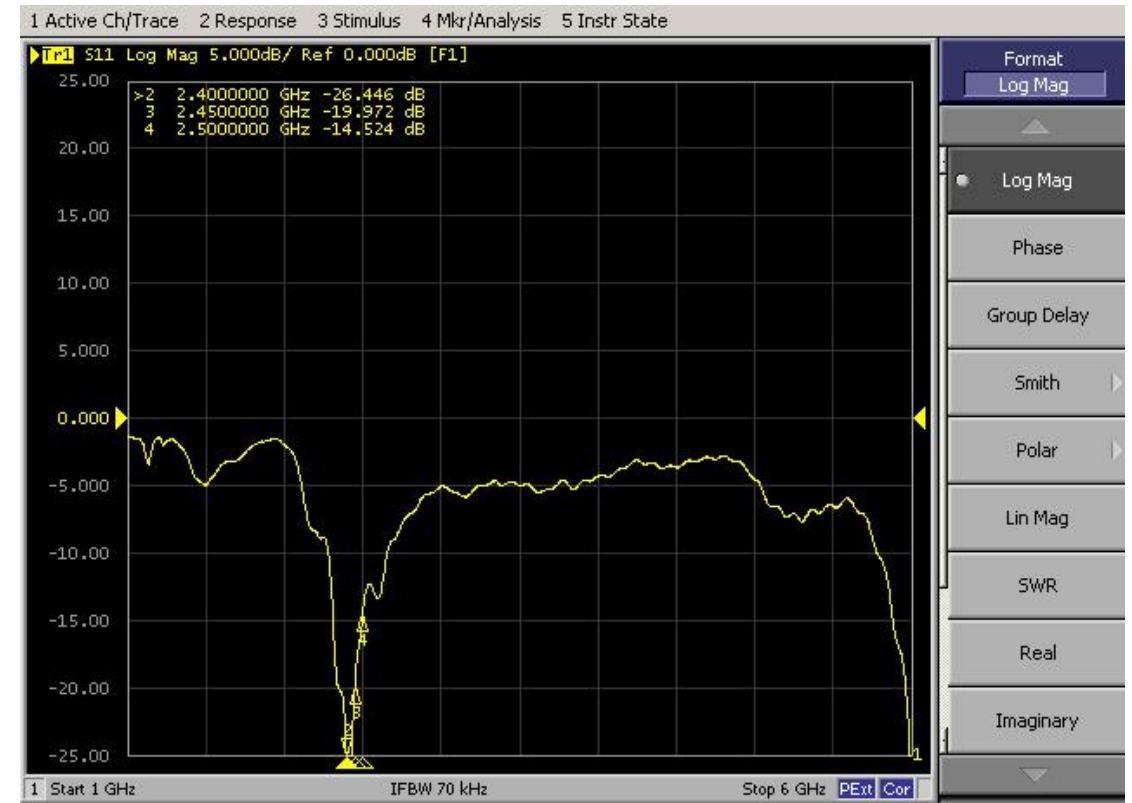
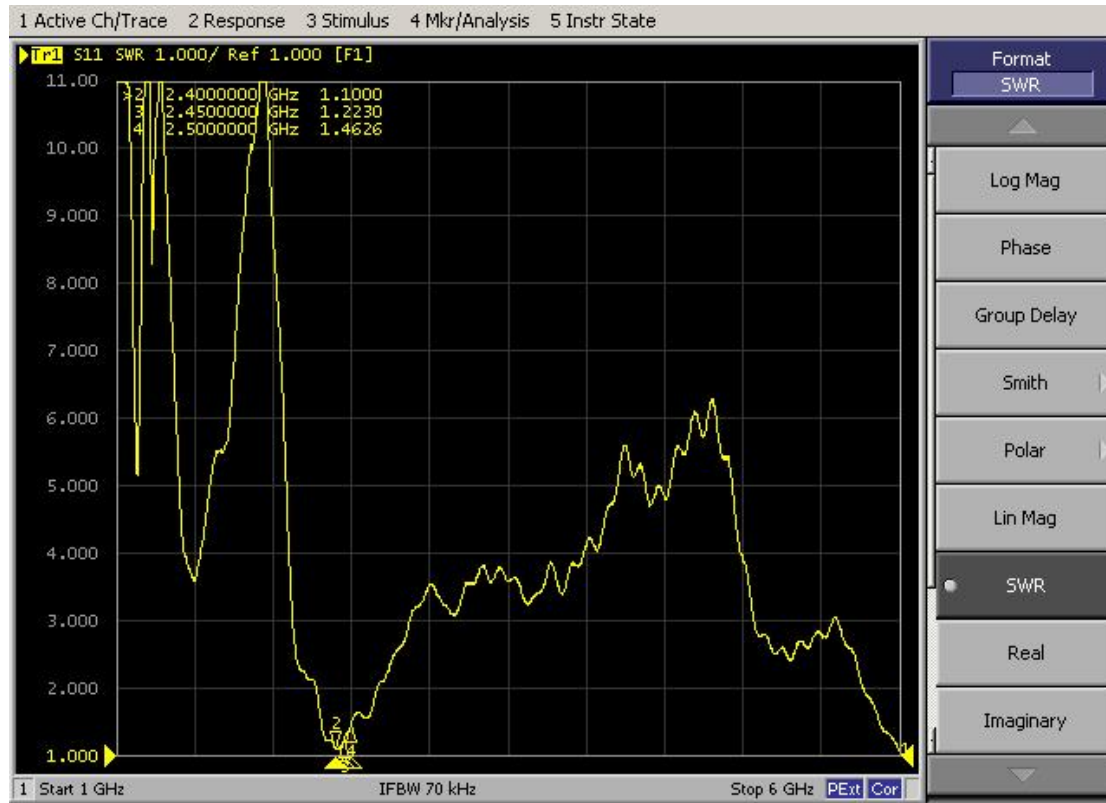
2. Passive performance of antennas (WIFI 1 Antenna S11)



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

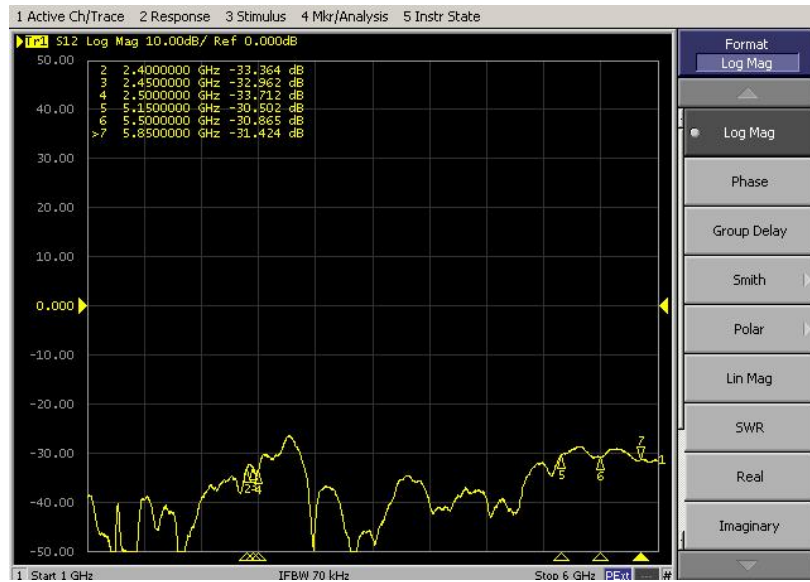


2. Passive performance of antennas (BT Antenna S11)

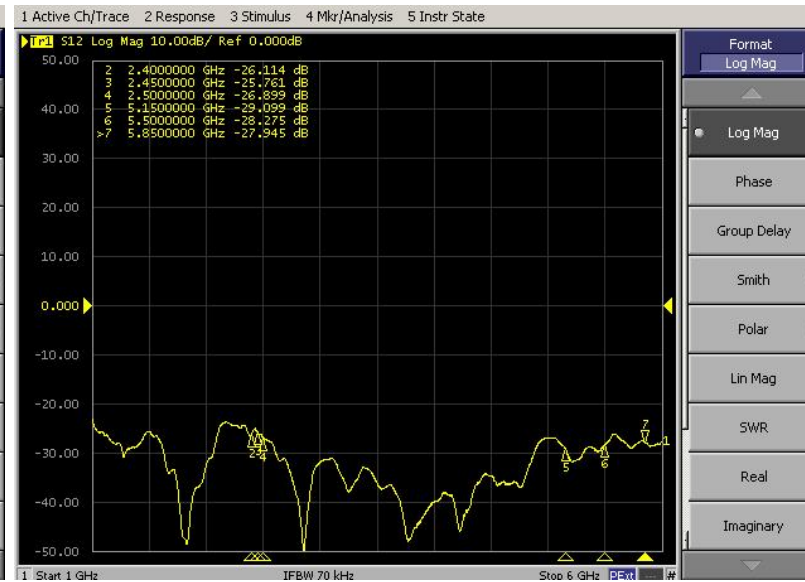


2. Passive performance of antennas (Antenna ISOLATION)

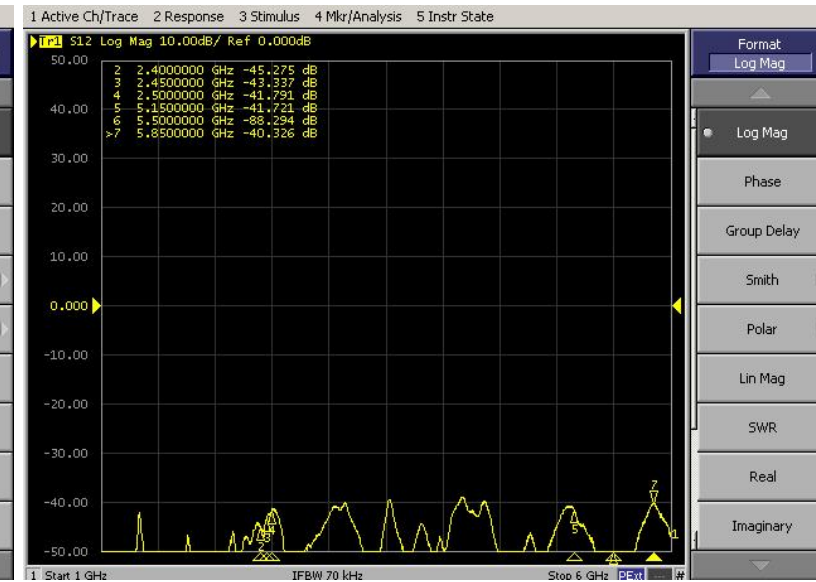
WIFI 1 and WIFI 2



WIFI 1 and BT



WIFI 2 and BT



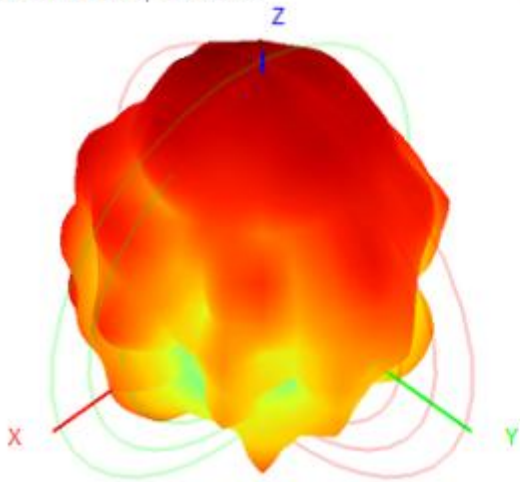
3.Active antenna debugging and experimental results

C015FGN X2								1#		2#		3#	
						D							
	Mode	Channel	Frequency (MHz)	TRP data rate Mbps	TIS data rate Mbps	result,dbm TRP	result,dbm TIS	result,dbm TRP	result,dbm TIS	result,dbm TRP	result,dbm TIS	result,dbm TRP	result,dbm TIS
WIFI 2.4G (BW 20MHz)	b	1	2412	11	11	≥9	≤-77	16.13	-87.66	14.76	-87.03	18.18	-89.44
		7	2442	11	11			17.55	-85.08	16.67	-86.09	18.29	-85.61
		13	2472	11	11			17.67	-85.24	17.36	-87.26	18.4	-84.23
	g	1	2412	6	54	≥9	≤-64	14.77	-77.37	14.23	-77.37	16.02	-78.03
		7	2442	6	54			15.76	-75.65	14.8	-77.31	16.28	-74.16
		13	2472	6	54			16.22	-74.4	15.84	-68.78	16.26	-74.59
	n	1	2412	6.5	65	≥8	≤-60	14.6	-73.07	14.29	-67.51	16.09	-72.27
		7	2442	6.5	65			15.73	-71.44	15.25	-67.83	16	-69.24
		13	2472	6.5	65			16.19	-71.27	15.86	-71.29	16.04	-69.97
WIFI 5G(BW 20MHz)	a	36	5180	6	54	≥7	≤-65	12.09	-72.9	12	-75.92	12.08	-77.96
		149	5745	6	54			12.35	-76.75	12.17	-77.8	13.57	-78.23
		165	5825	6	54			11.36	-77.43	11.53	-77.76	13.66	-79.37

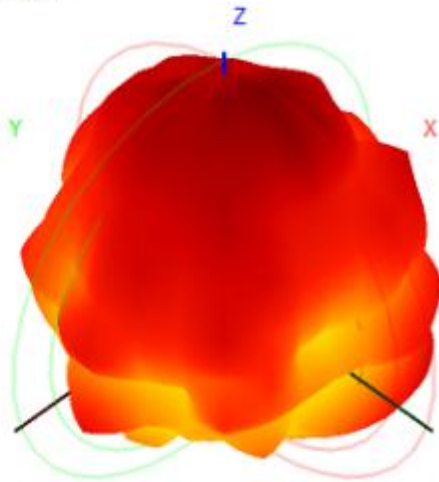
4. WIFI 1 Antenna Gain/Efficiency/3D DATA

Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0	5150.0	5350.0	5500.0	5650.0	5850.0
Efficiency (dBi)	-3.45	-3.13	-3.12	-3.07	-3.09	-3.14	-3.14	-3.07	-2.99	-3.11	-3.13	-3.94	-3.61	-3.67	-3.53	-3.88
Gain (dBi)	2.15	2.59	2.61	2.65	2.70	2.63	2.51	2.51	2.78	2.80	2.87	2.07	2.54	1.76	2.32	2.17
Efficiency (%)	45.20	48.69	48.80	49.30	49.11	48.55	48.49	49.32	50.21	48.84	48.67	40.36	43.53	42.91	44.35	40.87

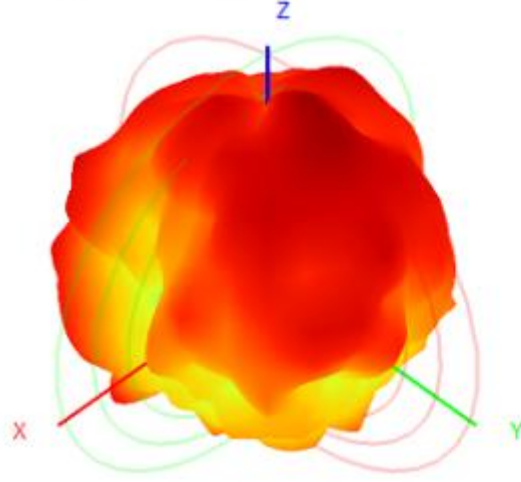
2450.0MHz H+V, Eff: 48.6%



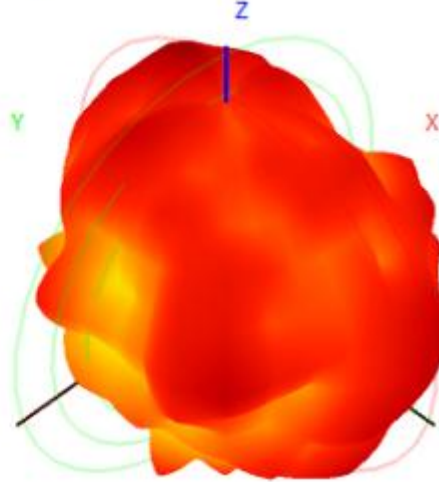
Back View



5850.0MHz H+V, Eff: 40.9%



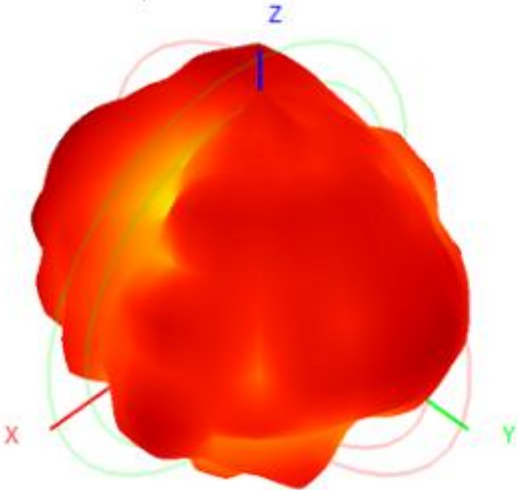
Back View



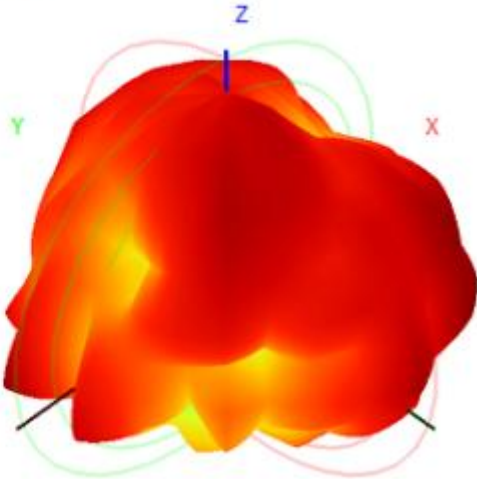
4. WIFI 2 Antenna Gain/Efficiency/3D DATA

Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0	5150.0	5350.0	5500.0	5650.0	5850.0
Efficiency (dBi)	-3.92	-3.79	-3.76	-3.78	-3.68	-3.58	-3.51	-3.44	-3.35	-3.32	-3.32	-3.50	-3.63	-3.79	-3.77	-3.52
Gain (dBi)	1.37	1.42	1.47	1.34	1.53	2.21	2.47	2.50	2.59	2.57	2.91	1.60	1.98	1.35	1.41	1.09
Efficiency (%)	40.53	41.77	42.06	41.81	42.82	43.82	44.56	45.28	46.20	46.52	46.55	44.66	43.25	41.71	41.91	44.44

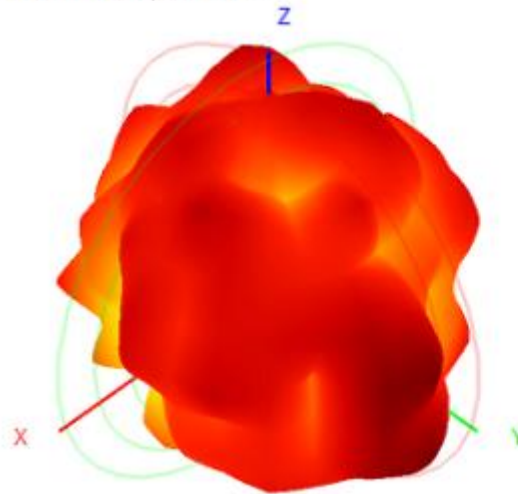
2450.0MHz H+V, Eff: 43.8%



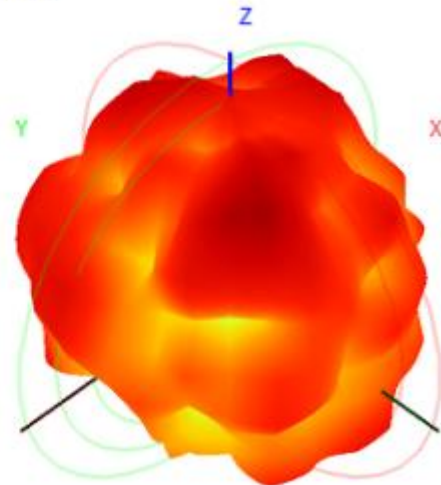
Back View



5850.0MHz H+V, Eff: 44.4%



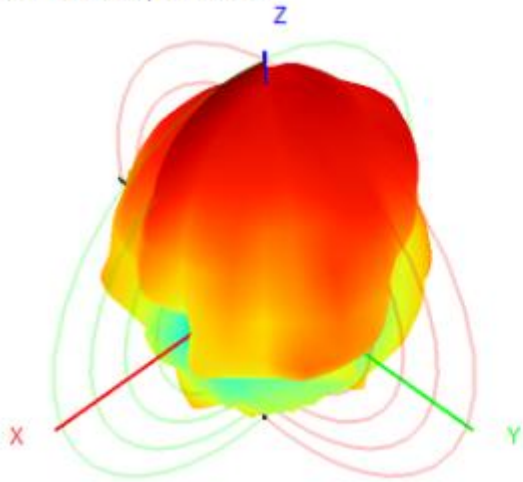
Back View



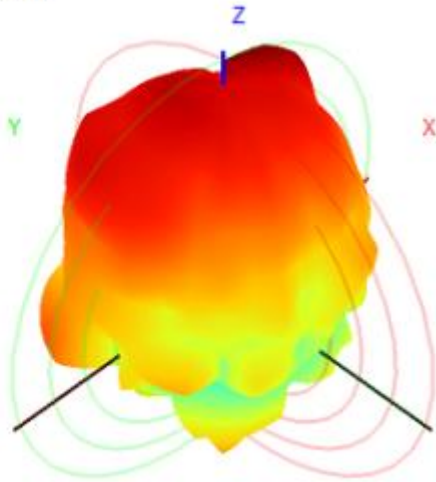
4. BT Antenna Gain/Efficiency/3D DATA

Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Efficiency (dBi)	-3.75	-3.70	-3.68	-3.55	-3.49	-3.41	-3.57	-3.58	-3.61	-3.59	-3.66
Gain (dBi)	1.30	1.72	1.79	1.99	2.15	2.45	2.47	2.40	2.19	2.01	1.86
Efficiency (%)	42.15	42.59	42.81	44.08	44.70	45.53	43.93	43.83	43.53	43.72	42.96

2450.0MHz H+V, Eff: 45.5%

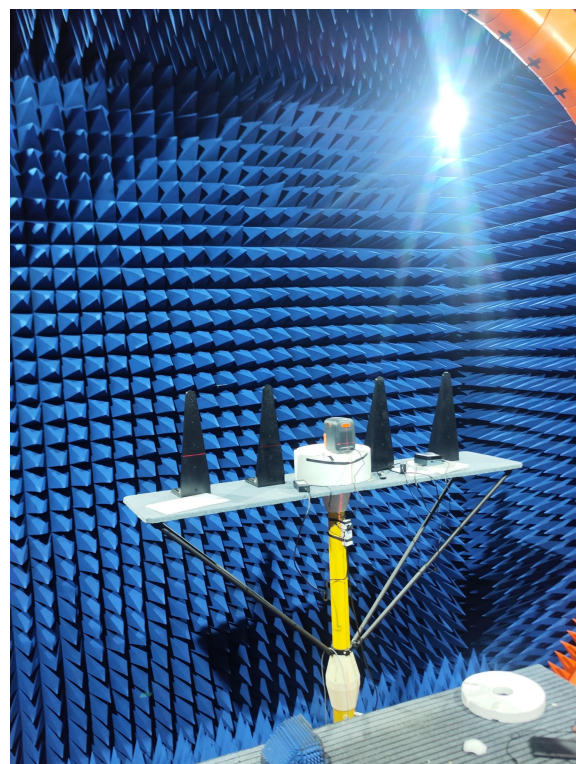


Back View



6. Conclusion

Based on the above active and passive data as well as actual measurements, the overall performance is good. However, it is important to pay attention to the assembly position and the routing of various wires during assembly. Make sure they do not overlap with the antennas and try to keep them away from some antennas as much as possible. Thank you!



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