

Sward Antenna Report

Customer: **Zhongbai**

Project : **J1 Jiangyuan TU140 motherboard -
8852BE module**

Report Date: 2024. 08. 07

深圳市索沃德通讯技术有限公司
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Project Introduction

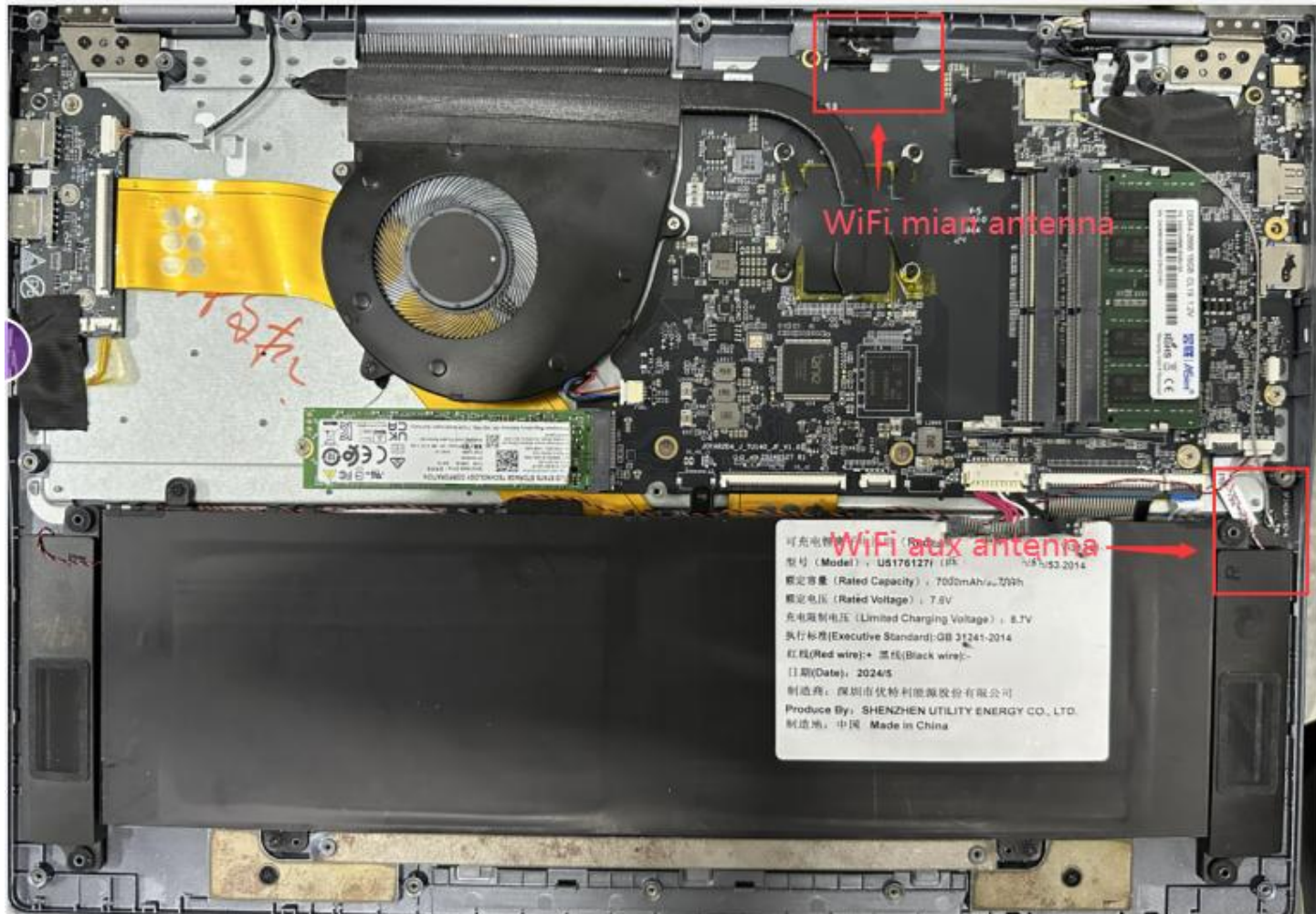
1.Resume

Antennas	Type
1	Tablet
Shell Material: 10.1-inch metal shell	

2.Description

Num.	Function	Frequency Band / MHz	Material / Structure
1	WIFI&BT&5Gwifi	2400MHz/2500MHz&5.8GHz	PCB

Antenna Position



WIFI&BT Main Antenna S11

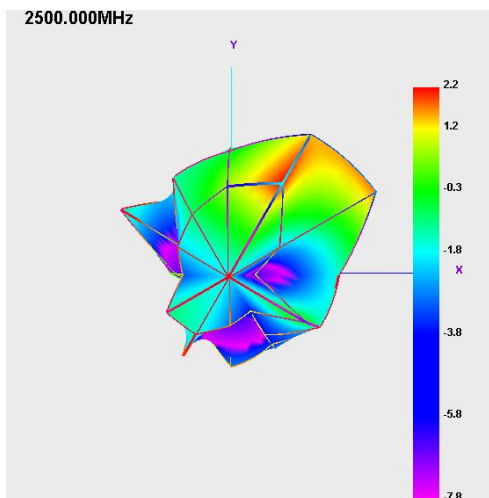
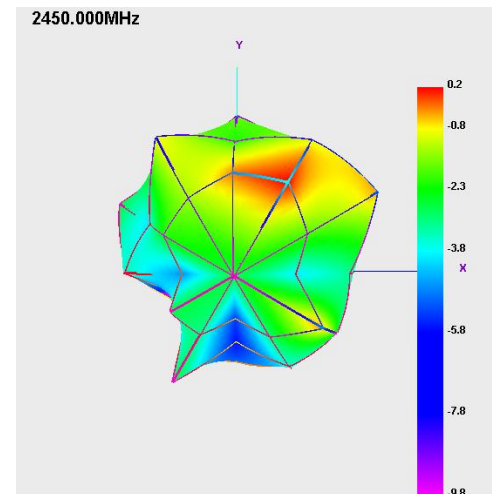
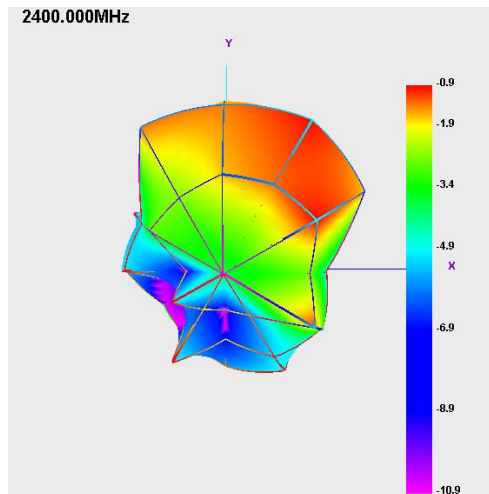


WIFI&BT Aux Antenna S11



Main Antenna 2.4G Efficiency

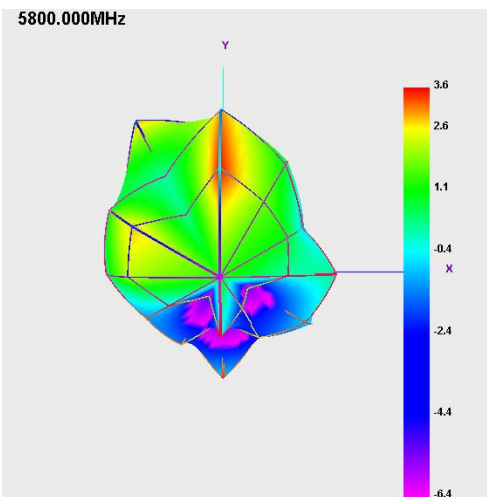
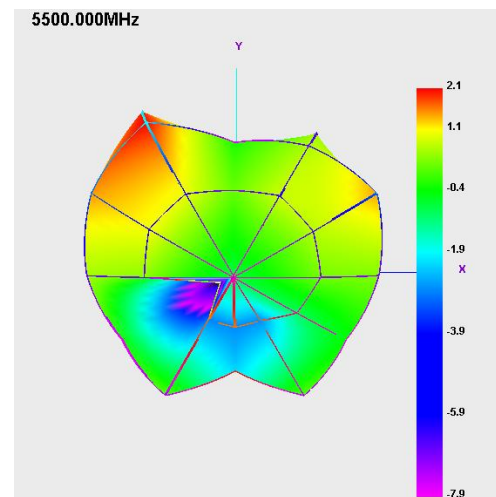
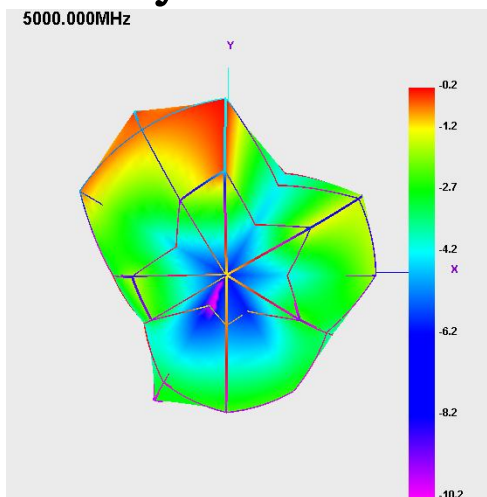
Passive Test For 2.4G			
Freq	Effi	Effi	Gain
(MHz)	(%)	(dB)	(dBi)
2400	19.51	-7.1	-0.87
2410	19.91	-7.01	-0.89
2420	19.26	-7.15	-1.17
2430	19.29	-7.15	-1.28
2440	18.82	-7.25	-0.48
2450	19.85	-7.02	0.19
2460	21.34	-6.71	0.76
2470	22.18	-6.54	2.00
2480	23.2	-6.34	1.38
2490	24.19	-6.16	1.83
2500	24.88	-6.04	1.24



Main Antenna 5G Efficiency

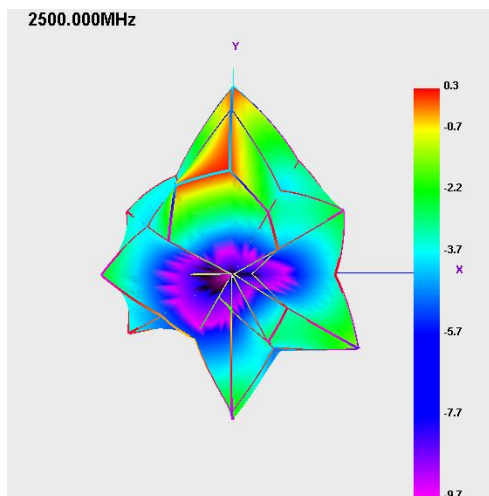
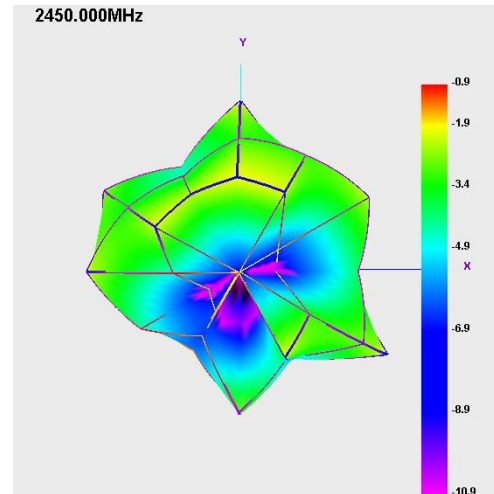
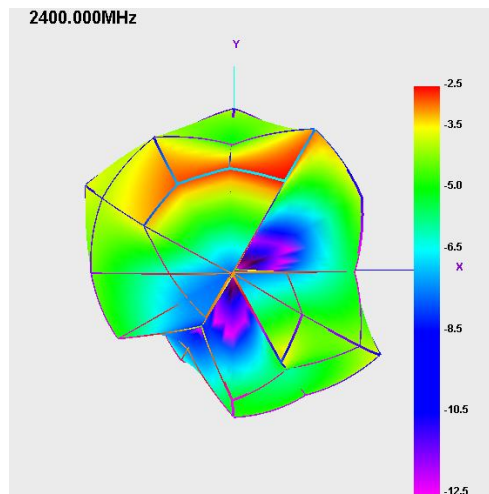
Passive Test For 5G-WIFI

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
5000	25.2	-5.99	-0.23
5100	26.52	-5.76	-0.23
5200	24.17	-6.17	-0.58
5300	30.84	-5.11	1.41
5400	37.57	-4.25	1.48
5500	38.25	-4.17	1.07
5600	32.46	-4.89	1.02
5700	29.73	-5.27	1.98
5800	31.27	-5.05	2.00
5900	20.68	-6.84	1.08
6000	21.97	-6.58	1.57



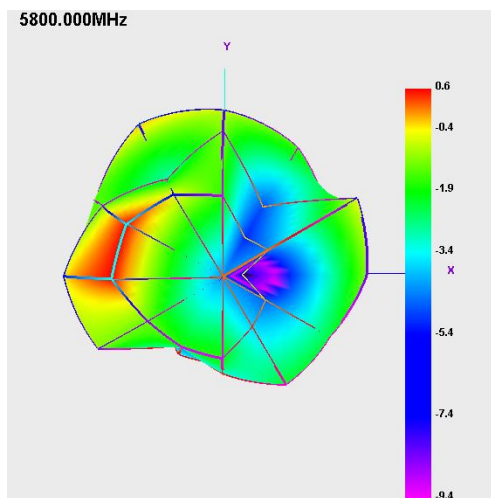
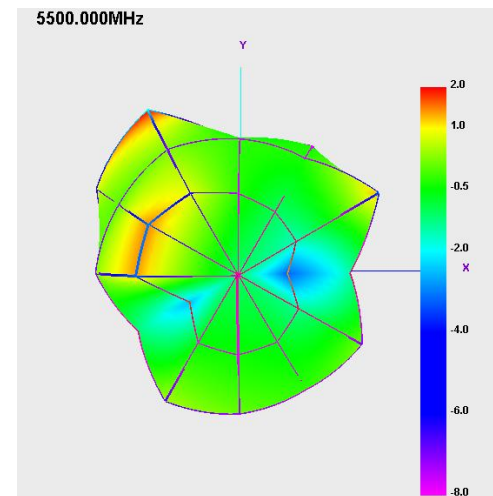
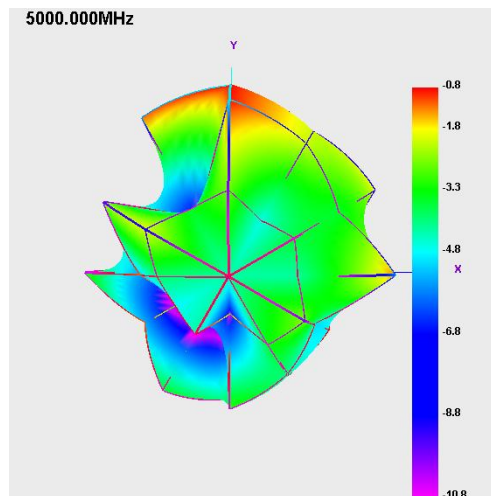
Aux Antenna 2.4G Efficiency

Passive Test For 2.4G			
Freq	Effi	Effi	Gain
(MHz)	(%)	(dB)	(dBi)
2400	15.3	-8.15	-1.48
2410	16.03	-7.95	-1.05
2420	16.85	-7.73	1.49
2430	18.65	-7.29	2.00
2440	18.98	-7.22	1.43
2450	18.29	-7.38	0.9
2460	17.82	-7.49	0.78
2470	15.99	-7.96	1.18
2480	16.34	-7.87	0.93
2490	17.82	-7.49	-0.38
2500	19.67	-7.06	0.26



Aux Antenna 5G Efficiency

Passive Test For 5G-WIFI			
Freq	Effi	Effi	Gain
(MHz)	(%)	(dB)	(dBi)
5000	17.63	-7.54	-0.81
5100	13.78	-8.61	-1.99
5200	12.24	-9.12	-1.68
5300	16.73	-7.77	-1.14
5400	21.7	-6.64	1.91
5500	24.04	-6.19	2.00
5600	22.58	-6.46	1.13
5700	22.8	-6.42	2.45
5800	20.07	-6.98	0.55
5900	16.45	-7.84	-0.76
6000	16.87	-7.73	-0.88



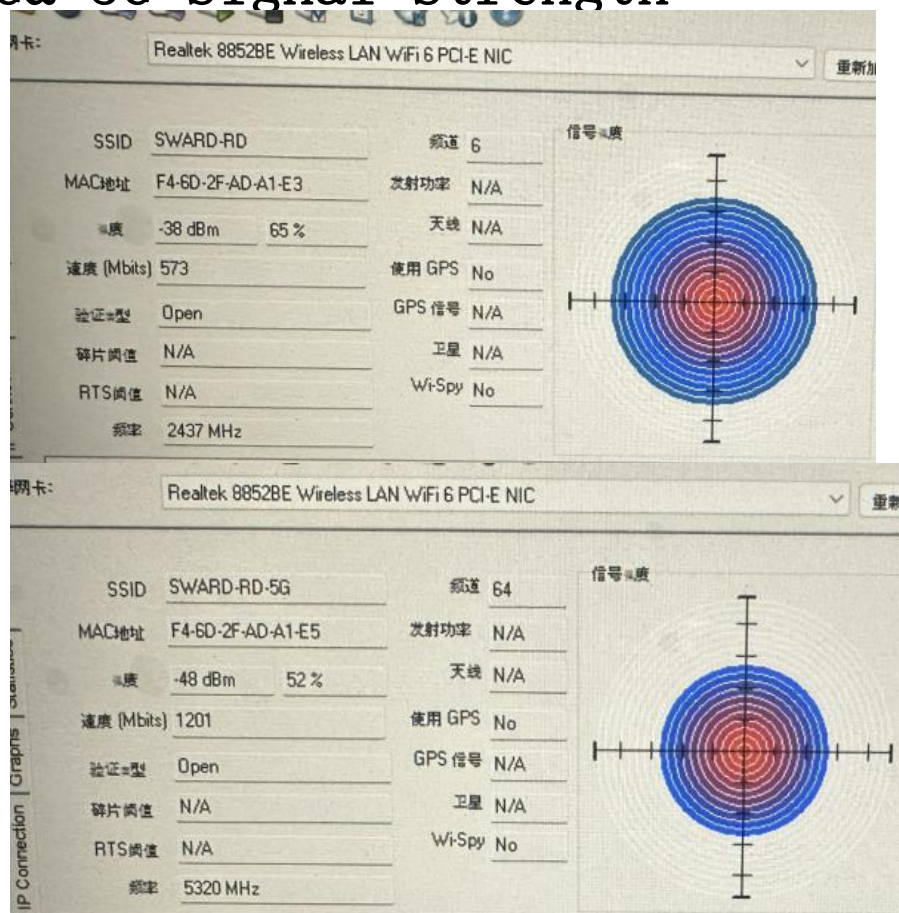
WiFi Throughput

Iperf Test for Throughput						
Type		Module		Software version	Windows_iperf	
No.	Freq.	Status	Angle	Average Value (TX) /1min	Average Value (RX) /1min	Remarks (Packet loss)
1	2.4G	2.4G WIFI (R&D 15m)	0°	63.9 Mbps	89.5 Mbps	0
			90°	67.3 Mbps	94.2 Mbps	0
			180°	66.1 Mbps	92.9 Mbps	0
			270°	65.3 Mbps	90.6 Mbps	0
	5G	5F WIFI (R&D 15m)	0°	449 Mbps	645 Mbps	0
			90°	468 Mbps	646 Mbps	0
			180°	469 Mbps	658 Mbps	0
			270°	459 Mbps	660 Mbps	0

BT antenna measured distance

Actual test effect	
Model number	1
Testing Environment	Soward R&D Center
Test equipment	Huawei AM08
Test distance	10M $\geq$

Antenna 2. 4G& 5G Signal Strength



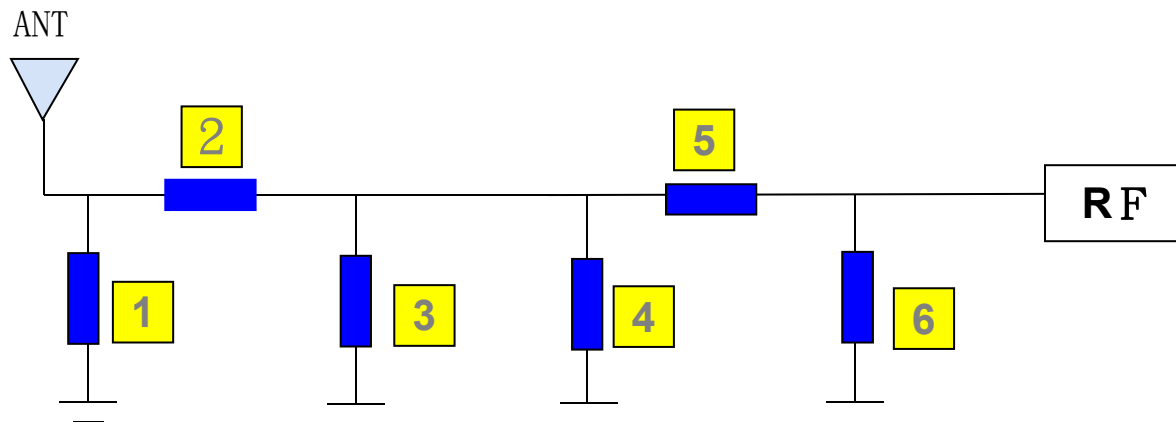
Test Location: R & D of Sward

Test Time : 11:30-12:30

Test Distance: 10-15 meters

Test Result : -48dbm to -38dbm

Antenna Matching Network



Antenna matching **has not been changed.**

Main Ant	1	2	3	4	5	6	Remarks
Original Match	—	—	—	—	—	—	—
Changed Match	—	—	—	—	—	—	—

Notes:

1. This report is based on the actual commissioning and testing of the commissioning prototype, including the assembly instructions, antenna position and assembly position of each device. **It cannot be changed at will;**
2. If there is **any change** in the materials used in the prototype, it is necessary to timely feed back to our company for **re-verification;**
3. List of sensitive devices:
 - TP** (material, coating, wiring, etc.)
 - Screen** (amplification circuit, led, cable layout design, etc.)
 - Shell material** (antenna assembly method, structural interference, shell material, antenna position height and area, etc.)
 - Mainboard** (mainboard conduction, RF circuit matching, PA, duplex, filter, LNA, power circuit, etc.)
 - Camera, battery, motor, MIC, fingerprint identification module, etc.**
4. Due to the small number or only one sample adjusting machine, some probabilistic problems cannot be completely found. **It is recommended to Check the problem points in small batch trial production before mass production**(screen flashes , horn noise, TP jump point, black screen OR crash, signal diving, etc.).

