Antenna report

Customer Name: Huiwei

Project Name: TVE1328R-AP6256

DATE: 2024.08.30

深圳市宝安区前进二路135号河西航城工业区B栋6楼
Building B, Hexi Hangcheng Industrial Zone, No. 135 Qianjin No. 2 Road, Baoan District, Shenzhen

Project Contact

Sward Structure:

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Project Introduction

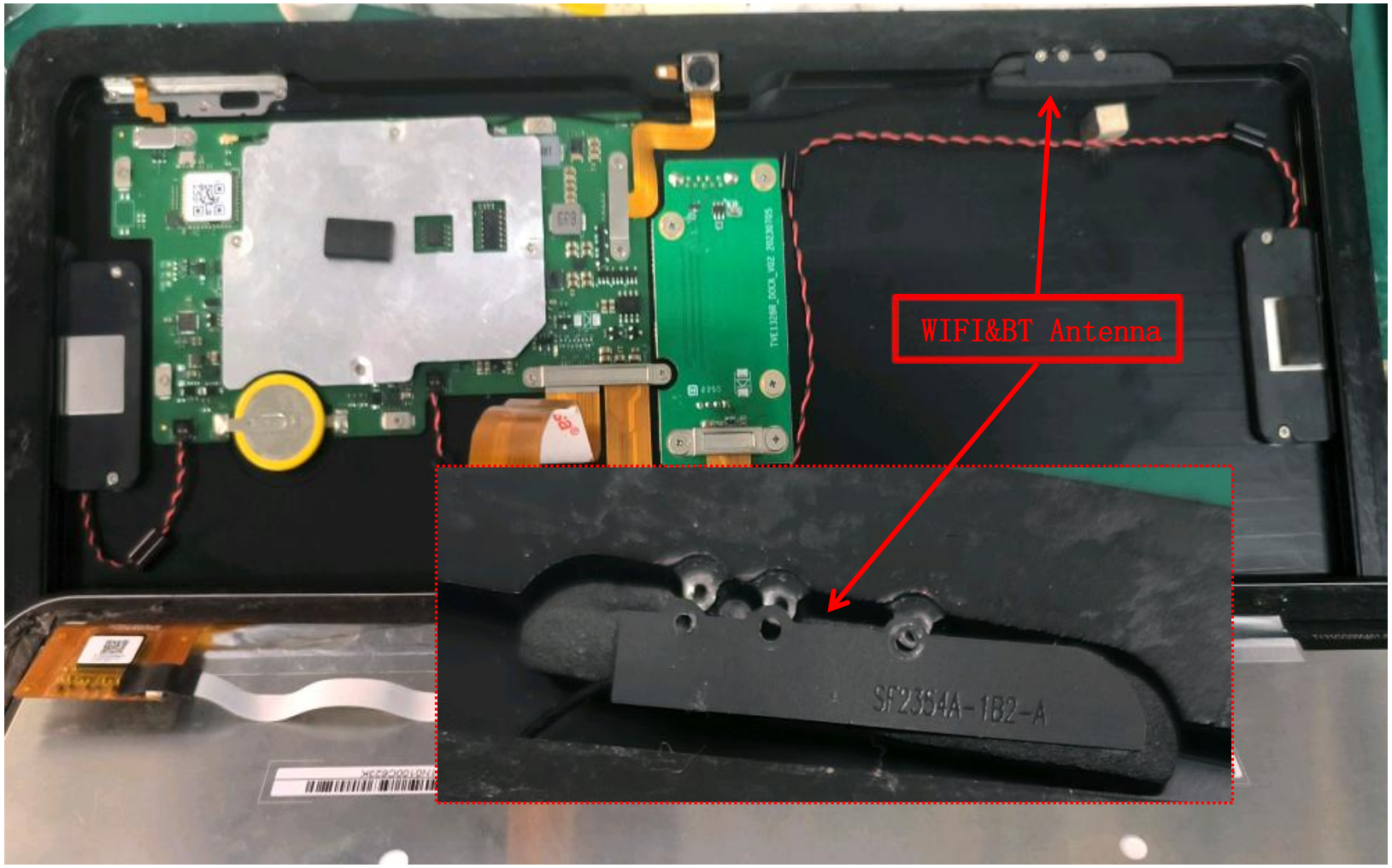
1.Project Description

Number of antennas	Machine Type
1	Wifi Tablet
Machine shell material: screen + metal shell	

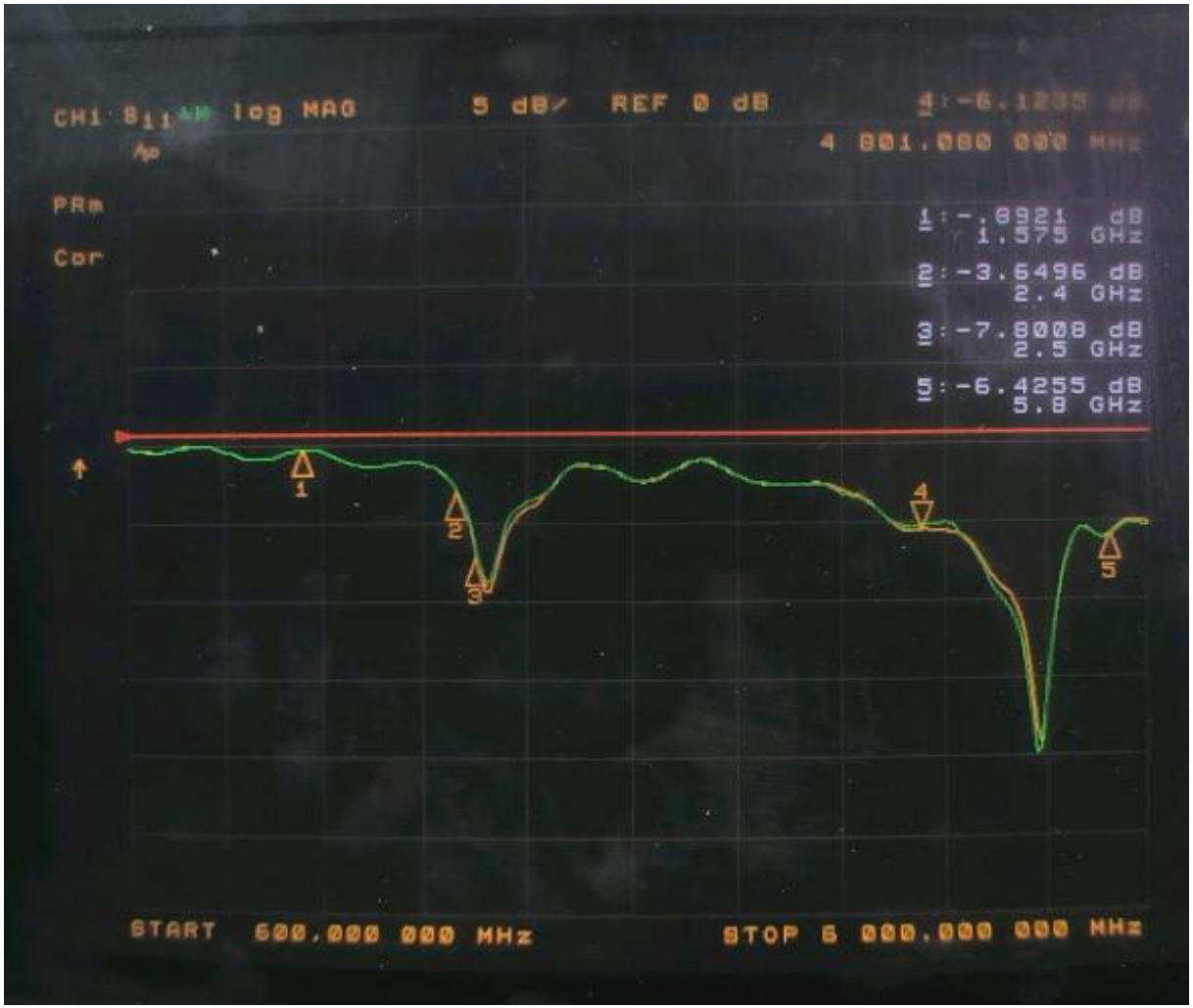
2.Antenna Description

Antenna Number	name	frequency band/MHZ	Material/Structure
1	WIFI&BT&5Gwifi	2400MHz/2500MHz&5.8GHz	FPC

Antenna location



WIFI&BT Antenna S11



WIFIAntenna active data

Model No.	Channel	b（11MHz）		g（54MHz）		n（MCS7）		a（54MHz）	
		TRP	TIS	TRP	TIS	TRP	TIS	TRP	TIS
1	1	8.41	-78.76	8.99	-68.96	9.55	-67.34	NA	NA
	6	9.43	-78.93	9.4	-67.48	9.72	-65.32	NA	NA
	11	9.17	-75.74	8.84	-64.16	8.7	-64.83	NA	NA
	36	NA	NA	NA	NA	12.83	-68.14	12.33	-69.4
	64	NA	NA	NA	NA	13.1	-67.34	13.28	-68.21
	161	NA	NA	NA	NA	13	-66.26	10.99	-65.37

WiFi Throughput

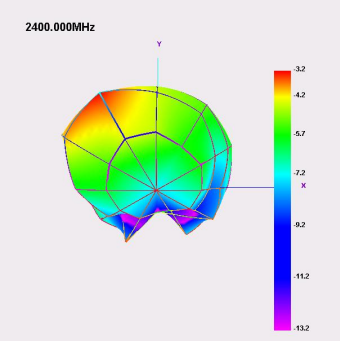
Iperf Throughput test						
model	TVE1328R	Module	AP6256	Software Version	Magic_Iperf	
Model No.	Frequency band	distance	Test Angle	Test Data (TX) 1min	Test Data (RX) 1min	Notes (Number of packet drops)
1	2.4G	2.4G WIFI (R&D distance15m)	0°	30.6 Mbps	48.8 Mbps	0
			90°	31.3 Mbps	47.0 Mbps	0
			180°	31.9 Mbps	52.0 Mbps	0
			270°	32.4 Mbps	49.4 Mbps	0
	5G	5F WIFI (R&D distance15m)	0°	179 Mbps	210 Mbps	0
			90°	179 Mbps	213 Mbps	0
			180°	186 Mbps	218 Mbps	0
			270°	171 Mbps	223 Mbps	0

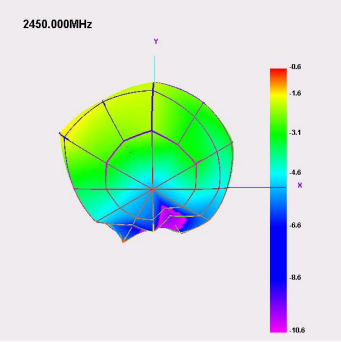
BTAntenna measured distance

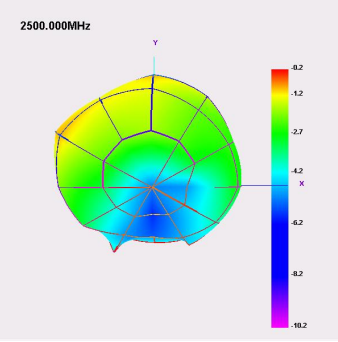
Measured results	
Model No.	1
Test environment	SWARD Research and Development Center
Test equipment	HUAWEI AM08
Test distance	> 10m

WIFI&BT Antenna efficiency

Passive Test For 2.4Gwifi								
Freq	Effi	Effi	Gain	Gain	UHIS	DHIS	Max	Min
(MHz)	(%)	(dB)	(dBi)	(dBd)	(%)	(%)	(dB)	(dB)
2400	14.4	-8.42	-3.21	-5.36	6.989	7.408	-3.21	-20.71
2410	15.49	-8.1	-2.64	-4.79	7.462	8.029	-2.64	-21.58
2420	16.8	-7.75	-2.23	-4.38	7.984	8.821	-2.23	-20.94
2430	20.03	-6.98	-1.11	-3.26	9.387	10.639	-1.11	-23.52
2440	22.46	-6.49	-0.37	-2.52	10.312	12.146	-0.37	-24.55
2450	21.6	-6.66	-0.55	-2.7	9.984	11.615	-0.55	-22.39
2460	20.97	-6.78	-0.54	-2.69	9.534	11.434	-0.54	-27.04
2470	16.68	-7.78	-1.43	-3.58	7.667	9.016	-1.43	-28.31
2480	17.41	-7.59	-1.24	-3.39	8.001	9.41	-1.24	-26.26
2490	18.96	-7.22	-0.91	-3.06	8.765	10.193	-0.91	-27.85
2500	23.2	-6.34	-0.21	-2.36	10.793	12.409	-0.21	-27.72

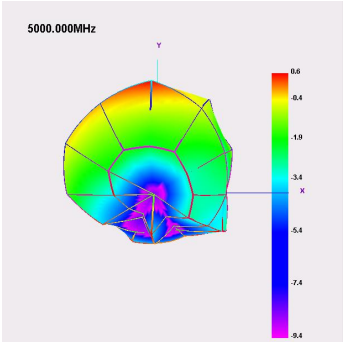


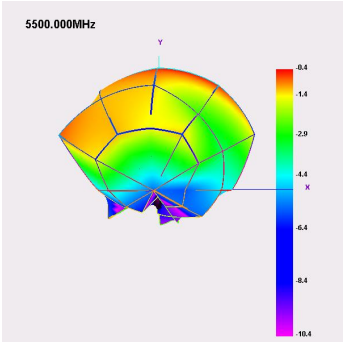


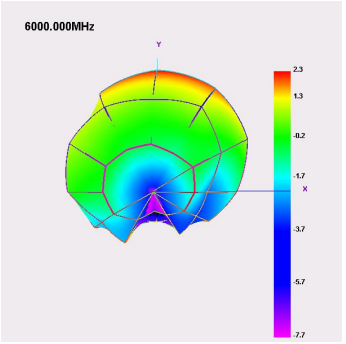


5GWIFIAntenna efficiency

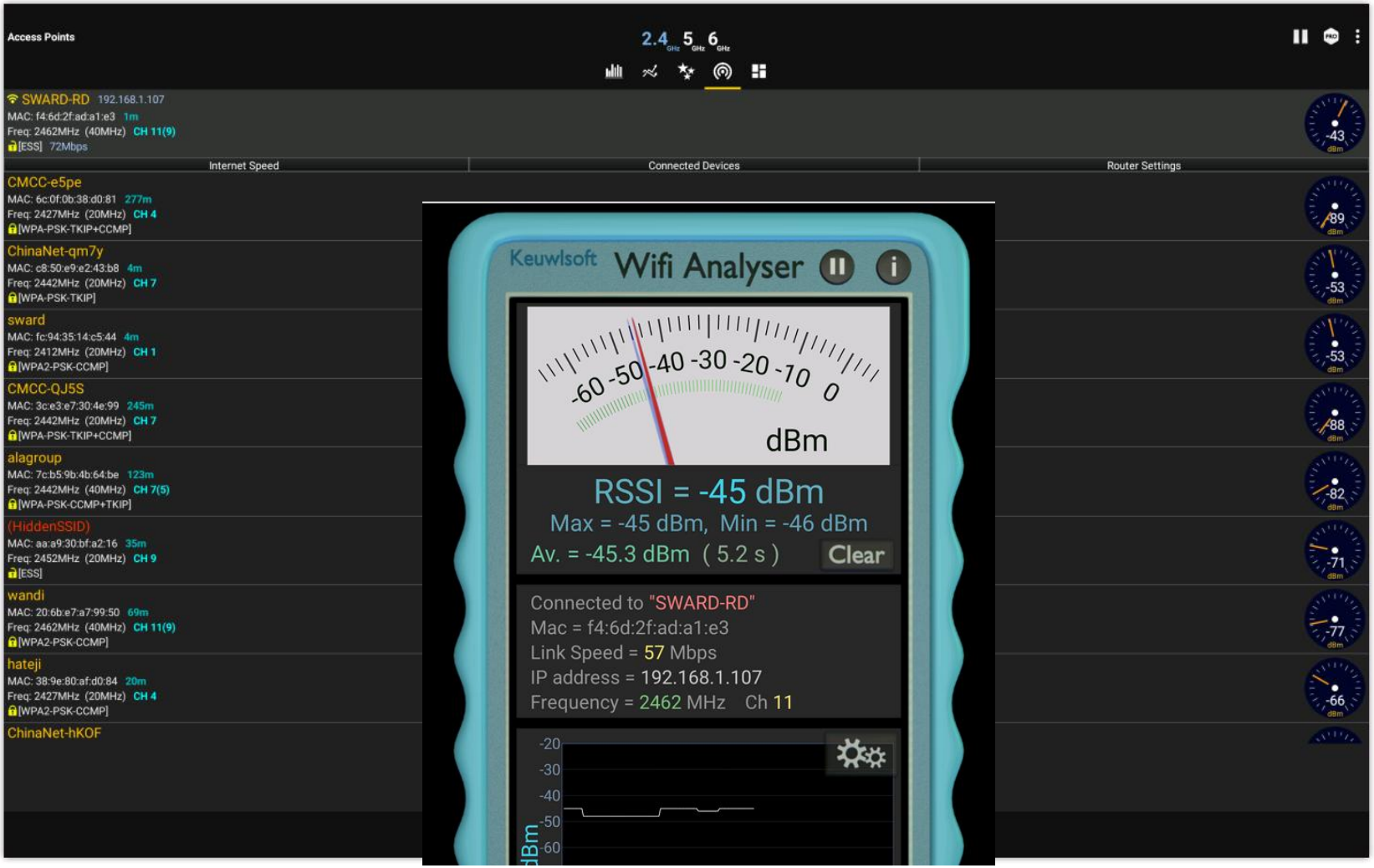
Passive Test For 5Gwifi								
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHIS (%)	DHIS (%)	Max (dB)	Min (dB)
5000	25.51	-5.93	0.6	-1.55	13.033	12.479	0.6	-22.29
5100	21.98	-6.58	0.28	-1.87	9.892	12.084	0.28	-17.13
5200	20.21	-6.95	-1.79	-3.94	12.032	8.174	-1.79	-21.53
5300	25.75	-5.89	-0.67	-2.82	15.331	10.421	-0.67	-20.89
5400	26.28	-5.8	-0.39	-2.54	15.603	10.673	-0.39	-21.51
5500	26.67	-5.74	-0.42	-2.57	14.933	11.736	-0.42	-17
5600	22.81	-6.42	0.31	-1.84	12.071	10.742	0.31	-21.29
5700	21.9	-6.6	0.91	-1.24	11.875	10.023	0.91	-22.89
5800	25.77	-5.89	1.53	-0.62	13.92	11.85	1.53	-21.46
5900	20.25	-6.94	1.27	-0.88	11.1	9.147	1.27	-26.14
6000	27.09	-5.67	2.28	0.13	15.554	11.533	2.28	-25.44



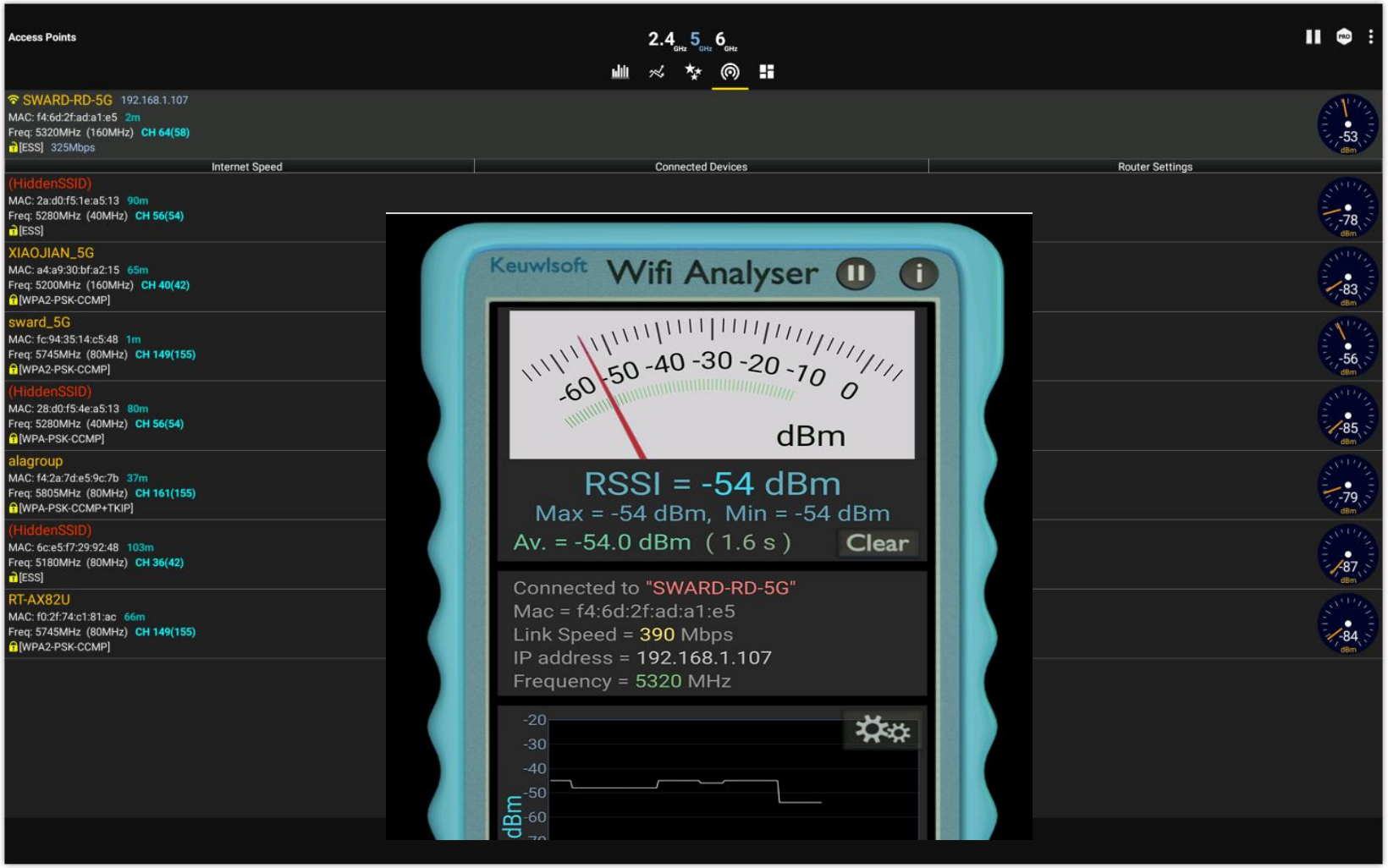




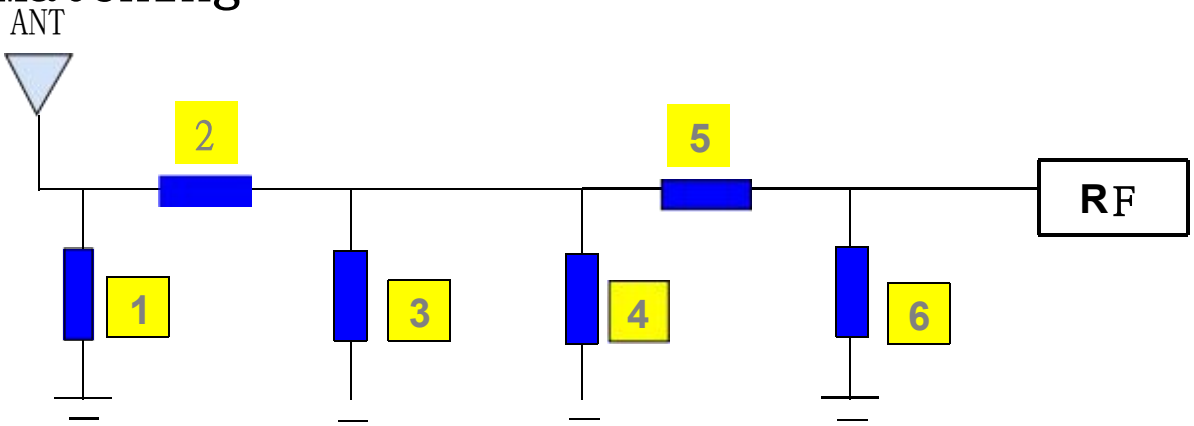
WIFI Antenna signal strength measurement picture (data) 2.4G



WIFI Antenna signal strength measurement picture (data) 5G



Antenna Matching

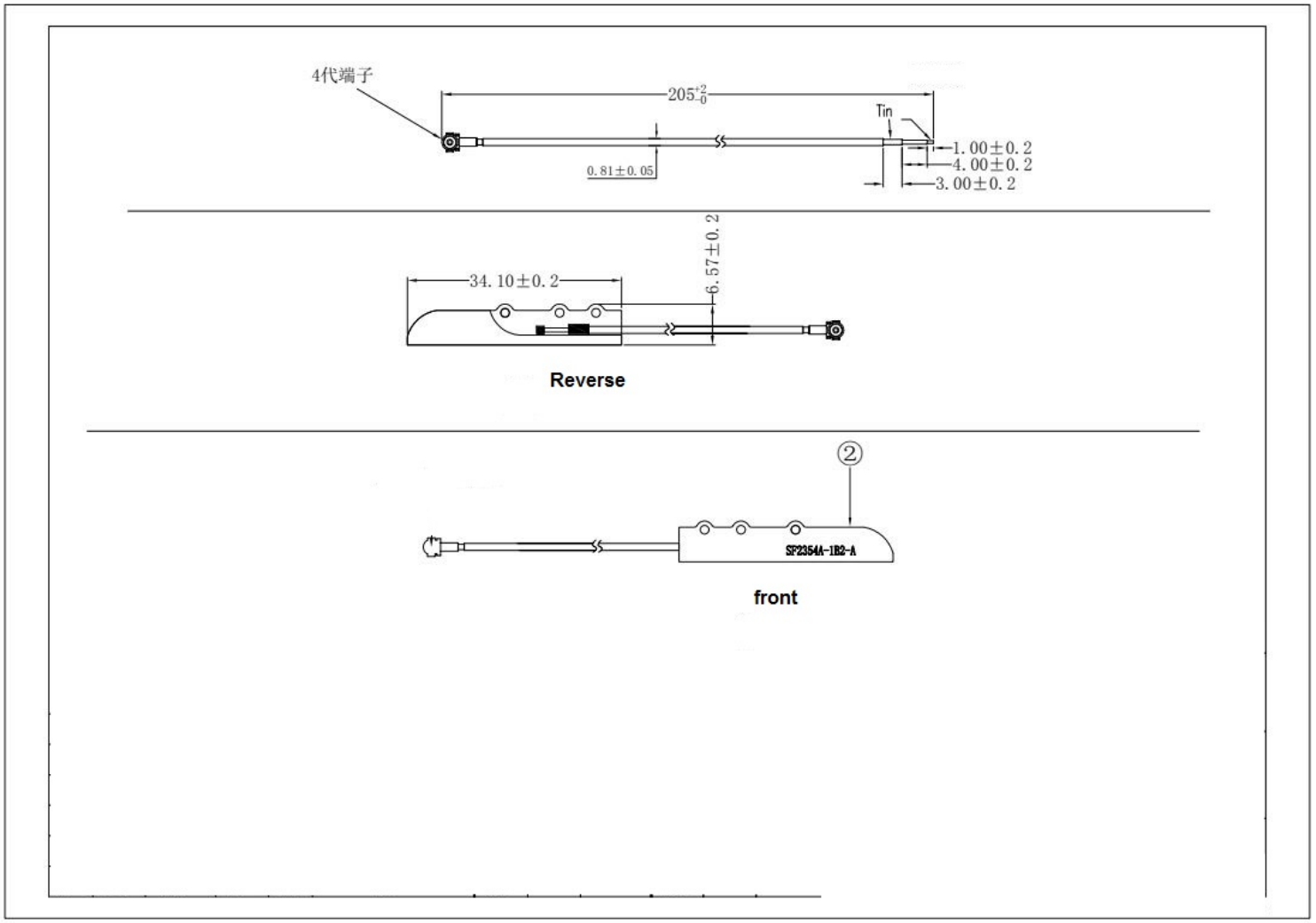


No changes to antenna matching.

Main ant	1	2	3	4	5	6	备注
Original Match							
Change Matching							

Environmental treatment and assembly instructions

Antenna size



Antenna Manufacturer Profiles

The company is a high-tech enterprise integrating the research and development, manufacturing and sales of mobile antennas for wireless terminals. It is located on the 6th floor of Building B, Hexi Hangcheng Industrial Zone, No. 135, Qianjin 2nd Road, Bao'an District, Shenzhen, with a registered capital of RMB 12 million; it has IATF16949:2016&ISO9001:2015 dual system certification to ensure product quality, four sets of high-standard OTA antenna test laboratories to provide support for product development, and a high-requirement reliability test center to provide reliability assurance for products.

The antennas developed by the company are mainly used in smart speakers, driving recorders, tablets, laptops, wireless network cards, routers, POS machines, security equipment and other products that require data transmission and communication functions. The antenna materials are diverse and the antenna forms are rich, such as: internal/external GPS ceramic antenna (active and passive), external Gnouse and internal GPS module antenna, external 4G antenna, external 4G&GPS antenna, external FM antenna, internal microstrip antenna, etc.; it has a complete OTA antenna test system and various antenna debugging equipment, which can test, debug and produce various functional antennas such as 2G&3G&4G, WIFI, BT, GPS, NFC, lora, etc.; it is committed to providing customers with rich, complete and comprehensive communication solutions.

Note: 1. This report is based on the actual debugging and testing of the debugging prototype. The environmental treatment, antenna position and assembly position of each component cannot be changed at will;

2. If there are any changes in the materials used in the prototype, please promptly report to our company for re-verification;

3. List of sensitive components:

TP (material, coating, routing, etc.)
Screen (amplifier circuit, LED, cable design, etc.)
Shell material (antenna assembly method, structural interference, shell material, antenna position height and area, etc.)
Motherboard (motherboard conduction, RF circuit matching, PA, duplexer, filtering, LNA, power circuit, etc.)
Camera, battery, motor, MIC, fingerprint recognition module, etc.

4. Due to the small number of debugging prototypes or only one, some probabilistic problems cannot be completely found. It is recommended to conduct a small batch trial production before mass production to check the problem points (such as screen flashing, speaker noise, TP jump point, black screen crash, signal diving, etc.)