

TIANLUTONG Antenna Test Report

Customer: 阳华

Project : M16QF19 (GPS&WIFI version)

VERSIONS:

Testing Date: 2025-8-2

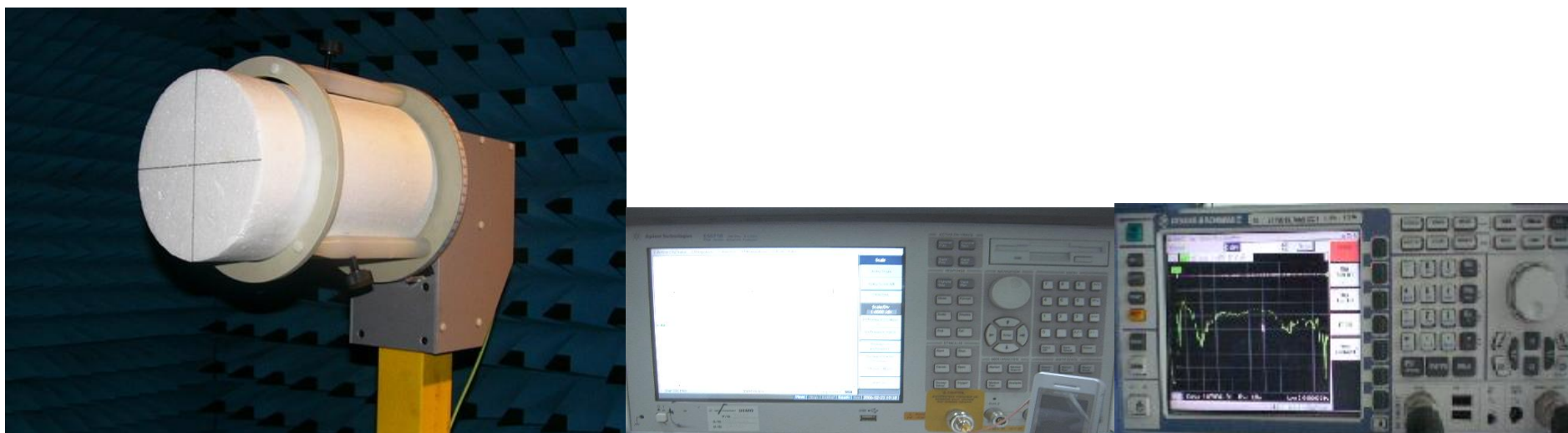
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1. The Equipment of Active Test

1. ETS Chamber 7×4×3 (m)

2. 8960

3. Network analyzer-R&S ZVL

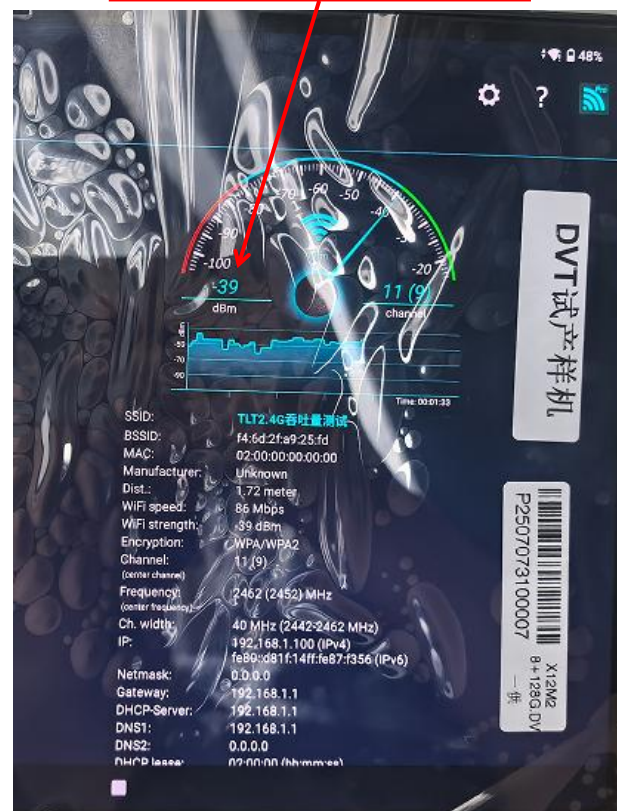


2 WIFI&GPS Graphs and test data:

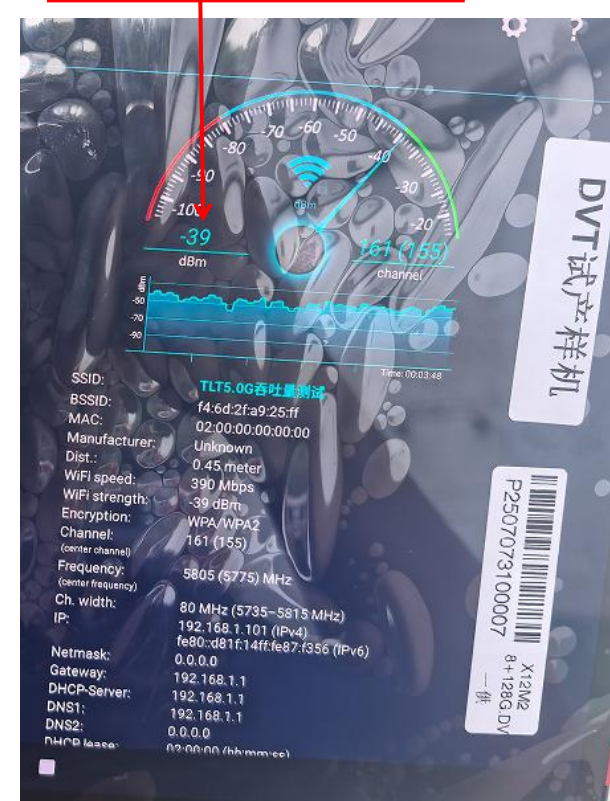
2.1WiFi field test: Test environment: open environment, 15 meters away from our company's router, test as follows:



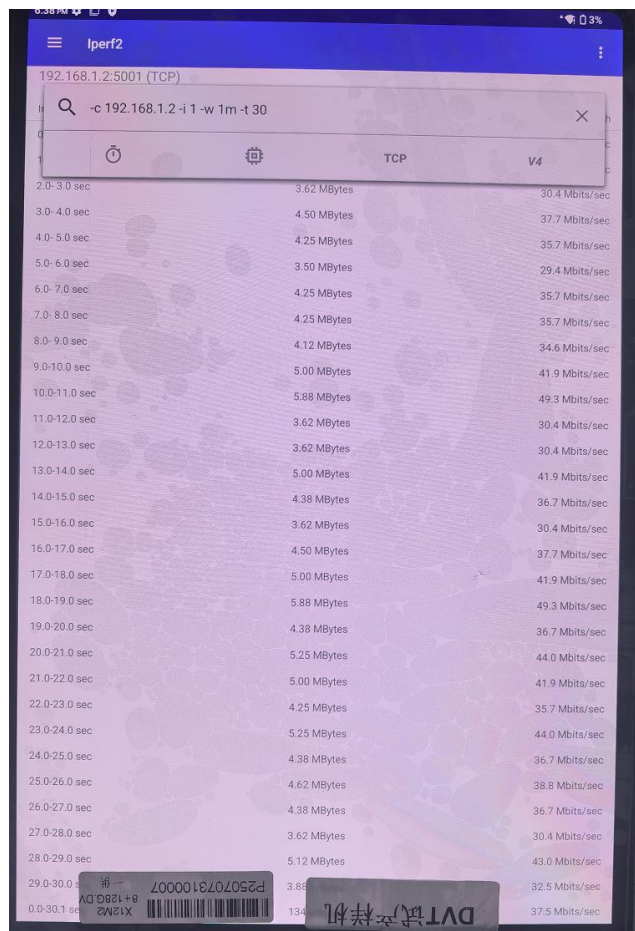
2.4G-WIFI: -39db Full signal



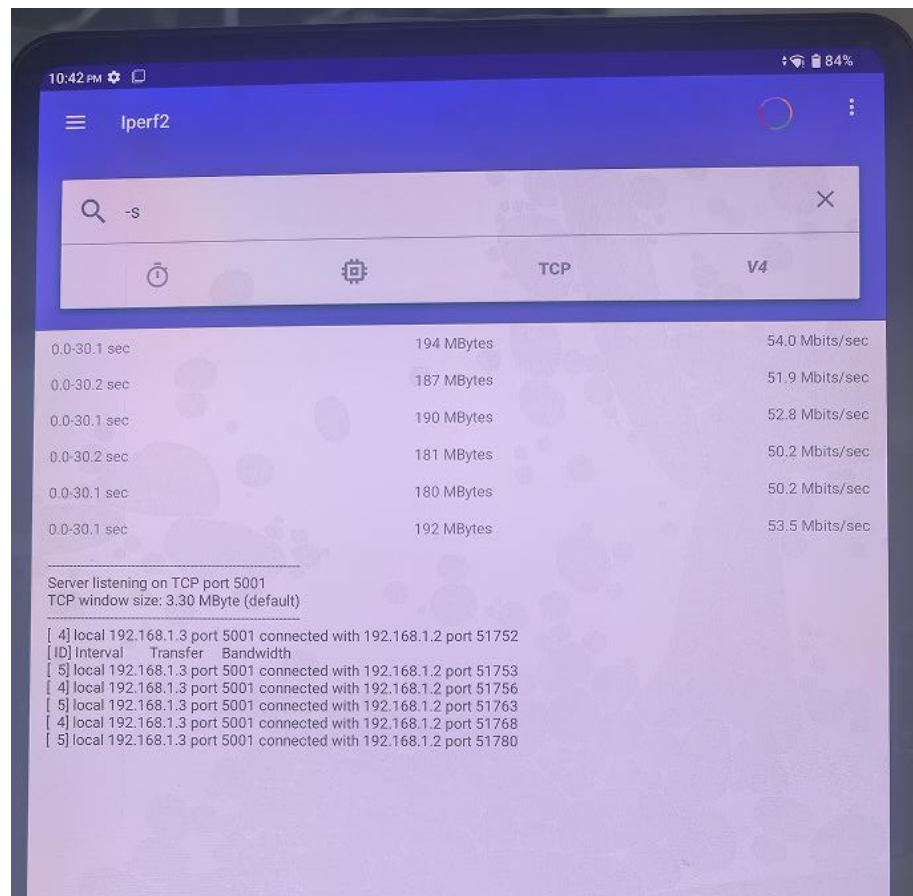
5.0G-WIFI: -39db Full signal



2.2 WIFI throughput test:

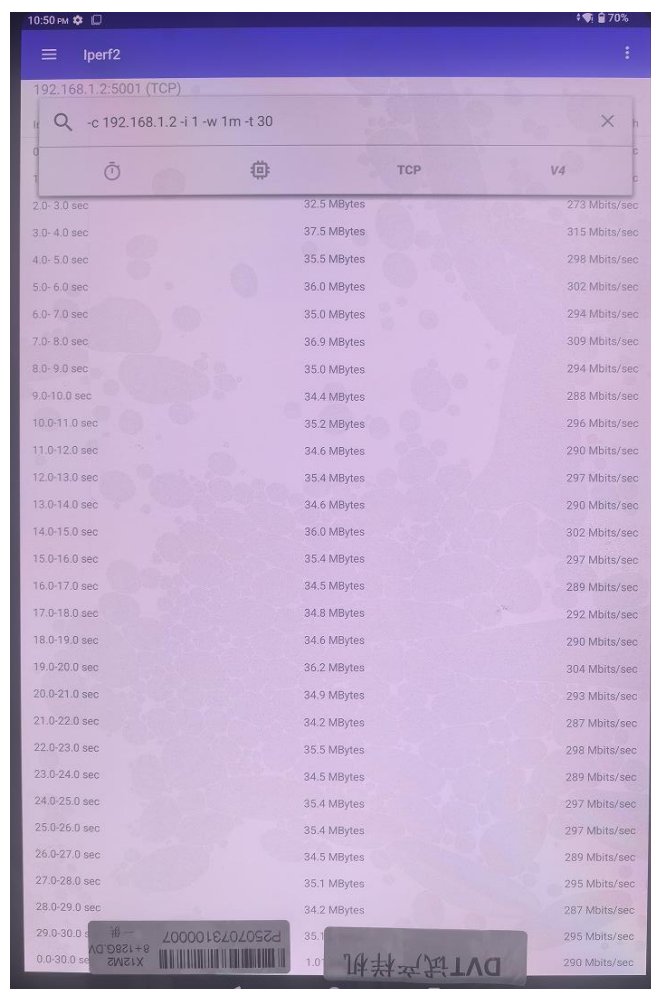


2.4G TX: 37.5Mb/s

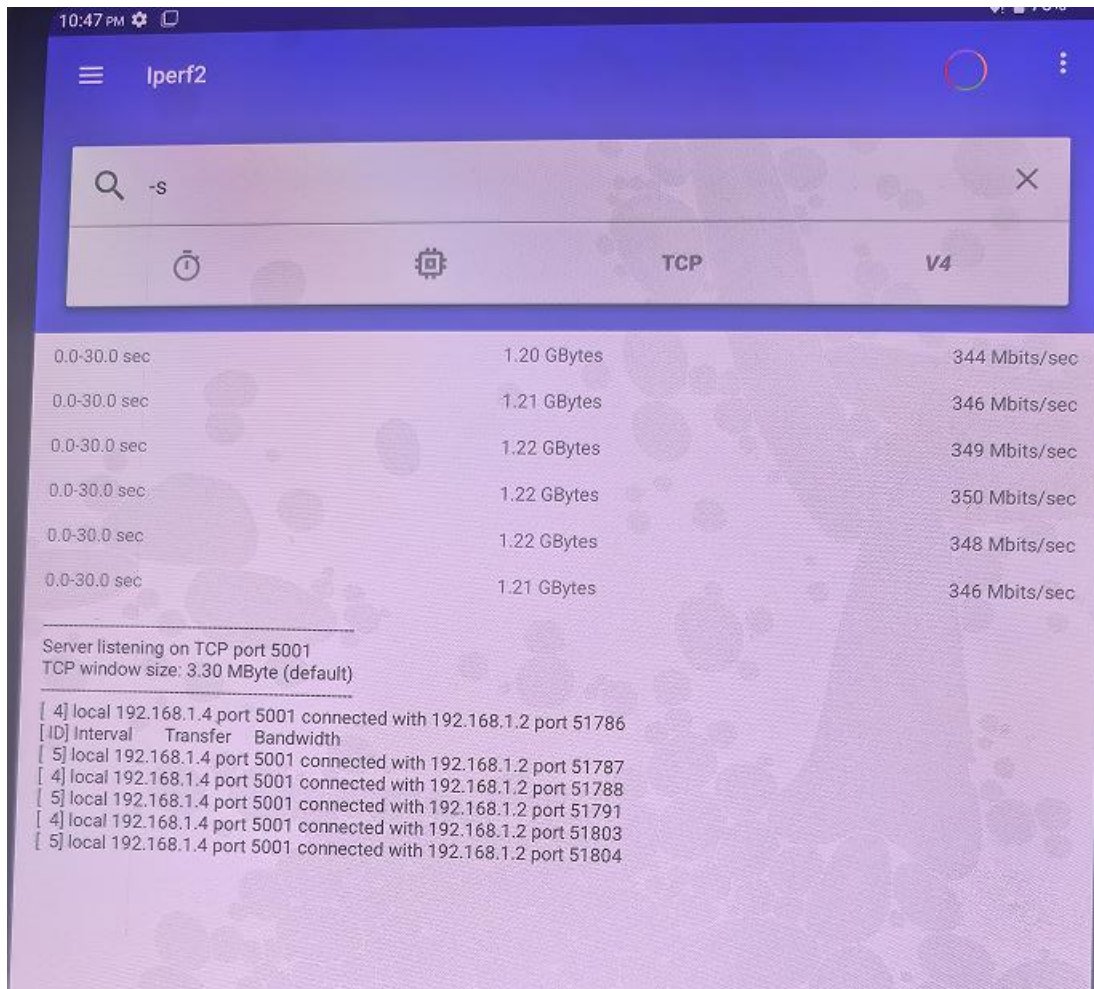


2.4G RX: 53.5Mb/s

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5G TX: 290Mb/s



5G RX: 346Mb/s

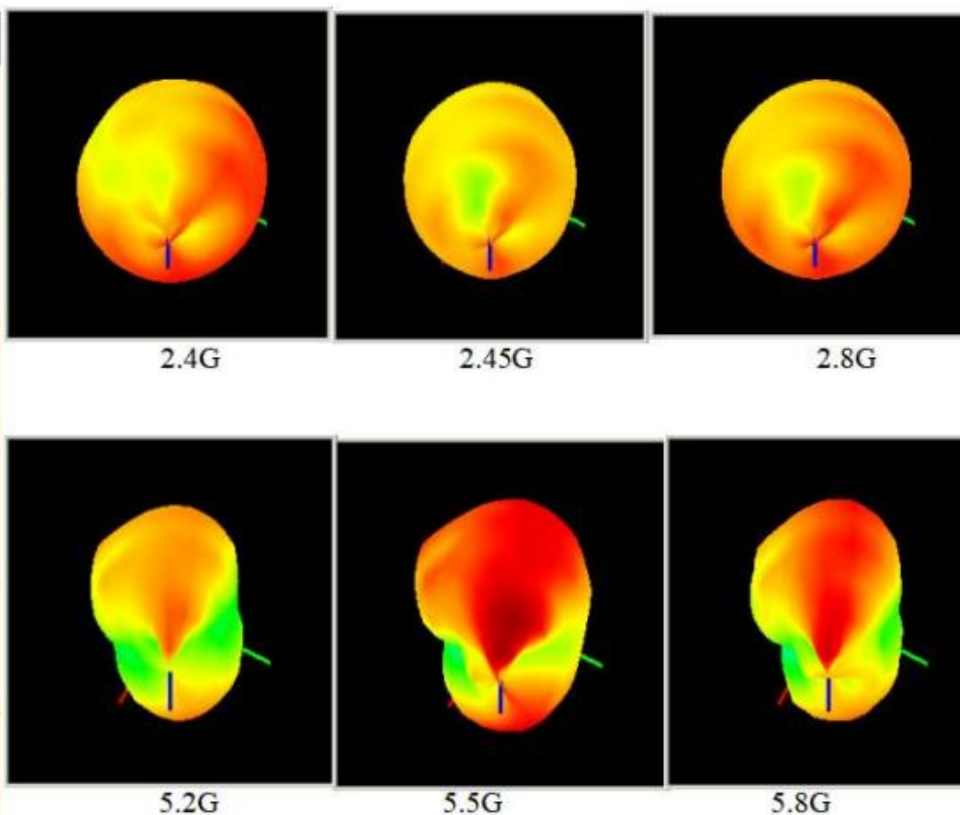
2.3 WIFI OTA test data:

WIFI 2.4G RF Testing		11B(11Mbps)		
Channel		TCH 1	TCH 6	TCH 11
Frequency(Mhz)		2412	2437	2462
	TRP(dBm)	11.46	12.23	12.47
	TIS(dBm)	-73	-75	-74

WIFI 5G RF Testing		11A(6Mbps)		
Channel		TCH 36	TCH 100	TCH 157
Frequency(Mhz)		5180	5500	5785
	TRP(dBm)	10.42	11.79	11.46
	TIS(dBm)	-83	-83	-84

2.4 WIFI Efficiency and gain:

Test Point ID	Freq. (MHz)	TRP (dBm)	Gain (dBi)	Efficiency (%)	Efficiency (dB)
1	2400.0	2400.00	0.17	34.7%	-4.60
2	2405.0	2405.00	-0.90	26.5%	-5.77
3	2410.0	2410.00	-0.24	30.3%	-5.19
4	2415.0	2415.00	0.23	34.0%	-4.69
5	2420.0	2420.00	-0.11	31.8%	-4.98
6	2425.0	2425.00	0.05	33.3%	-4.78
7	2430.0	2430.00	0.40	36.1%	-4.42
8	2435.0	2435.00	-0.14	31.5%	-5.02
9	2440.0	2440.00	-0.71	27.3%	-5.64
10	2445.0	2445.00	-0.71	27.7%	-5.58
11	2450.0	2450.00	-0.89	26.6%	-5.75
12	2455.0	2455.00	0.00	31.6%	-5.00
13	2460.0	2460.00	0.96	37.1%	-4.31
14	2465.0	2465.00	-0.73	25.2%	-5.99
15	2470.0	2470.00	-1.84	30.0%	-5.23
16	2475.0	2475.00	-0.82	35.2%	-4.53
17	2480.0	2480.00	0.01	39.2%	-4.07
18	2485.0	2485.00	-0.65	34.3%	-4.65
19	2490.0	2490.00	-1.17	28.5%	-5.45
20	2495.0	2495.00	-0.75	28.2%	-5.50
21	2500.0	2500.00	-0.33	27.1%	-5.67
22	5150.0	5150.00	0.15	25.4%	-5.95
23	5200.0	5200.00	1.23	27.3%	-5.64
24	5250.0	5250.00	-0.38	26.6%	-5.75
25	5300.0	5300.00	2.36	32.3%	-4.91
26	5350.0	5350.00	0.26	30.3%	-5.19
27	5400.0	5400.00	2.38	36.0%	-4.44
28	5450.0	5450.00	0.47	34.2%	-4.66
29	5500.0	5500.00	-1.08	38.1%	-4.19
30	5550.0	5550.00	1.84	38.6%	-4.13
31	5600.0	5600.00	0.83	31.1%	-5.07
32	5650.0	5650.00	1.28	28.7%	-5.42
33	5700.0	5700.00	-0.53	27.0%	-5.69
34	5750.0	5750.00	-0.02	26.4%	-5.78
35	5800.0	5800.00	0.73	27.2%	-5.65
36	5850.0	5850.00	-1.95	28.1%	-5.51



3.3 GPS field test:

Test environment: on the first floor of our industrial park, use GPS test to test as follows:



4. Antenna assembly and processing drawing :

