

Material Acknowledgement

Suppliers: Shenzhen Maya Communication Equipment Co., Ltd

Model: A72

Product Name: On the antenna assembly

Specifications / Models: _____

Material Code: _____

Color: black

Address: _____

Contact / Phone: _____

Supplier (with official seal)

Structural Department	R&D Department	Quality Department	Project Department	

Customer review

ID Department	Structural Department / Special Project	Hardware Department	Packaging engineering	Quality Department

Citations

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Specifications

The report mainly provides A72 GSM+WCDMA +LTE+NR,performance parameter test, antenna for built-in antenna:

2、Electrical performance

2-1Specification Standard

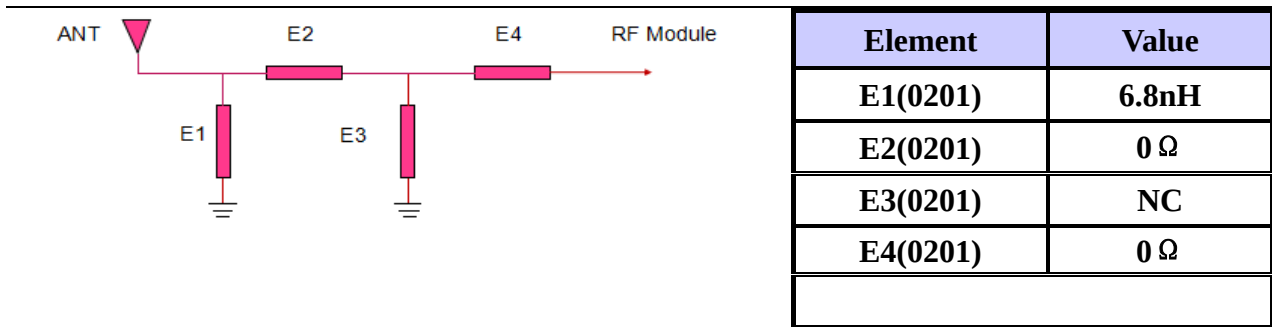
The A72 antenna operates in the LTE650/700/850/900 1800/1900/2100/2300/2700/3300/4200Mhz band, which generates resonances in this ;The following table shows the mass production performance test indicators for the A89 design antenna:

Band	VSWR	Band	VSWR
GSM850	≤ 2.0	LTE FDD, B26	≤ 2.0
GSM900	≤ 2.2	LTE FDD, B28	≤ 2.5
DCS1800	≤ 2.5	LTE FDD, B66	≤ 2.2
PCS1900	≤ 2.2	LTE TDD, B34	≤ 2.2
WCDMA1	≤ 2.2	LTE TDD, B38	≤ 2.6
WCDMA2	≤ 2.2	LTE TDD, B39	≤ 2.2
WCDMA4	≤ 2.5	LTE TDD, B40	≤ 3.0
WCDMA5	≤ 2.0	LTE TDD, B41	≤ 2.6
WCDMA6	≤ 2.0	NR, N1/2/3/25/34/39	≤ 2.2
WCDMA8	≤ 2.0	NR, N5/20/26	≤ 2.2
WCDMA19	≤ 2.0	NR, N8	≤ 2.0
LTE FDD, B1	≤ 2.2	NR, N12/13/28	≤ 2.6
LTE FDD, B2	≤ 2.2	NR, N7/38/40/41	≤ 2.5
LTE FDD, B3	≤ 2.5	NR, N48/77/78	≤ 2.2
LTE FDD, B4	≤ 2.5		
LTE FDD, B5	≤ 2.0		
LTE FDD, B7	≤ 2.6		
LTE FDD, B8	≤ 2.0		
LTE FDD, B12	≤ 2.5		
LTE FDD, B13	≤ 2.5		
LTE FDD, B17	≤ 2.5		
LTE FDD, B18	≤ 2.0		
LTE FDD, B19	≤ 2.0		
LTE FDD, B20	≤ 2.0		
LTE FDD, B25	≤ 2.2		

2-2antenna matching circuit

Antenna Matching circuit is designed to match the motherboard and antenna, so that the mobile phone in the operating frequency band to achieve the best RF performance.

EGSM+WCDMA+CDMA+LTE, antenna structure mode:



Main antenna

3.Standing Wave Ratio(VSWR)test

3-1 Test settings

The VSWR test units are connected in turn: E5071B Network Analyzer → 50 ohm coaxial

Cable → 156mm long copper tube /b110> → Test fixtures. Processing of the test fixture: A hard cable is used from the antenna 50 ohm test point on the pcb of the mobile phone to lead out the SMA-J connector, connect it to the copper tube with a choke, and then connect the other devices in turn.

3-2 VWR test

The following table shows the value of the standing wave ratio of the edge frequency point of the GSM+LTE antenna operating band, , the return loss, VSWR, and the relevant waveform plot is shown in the annex:

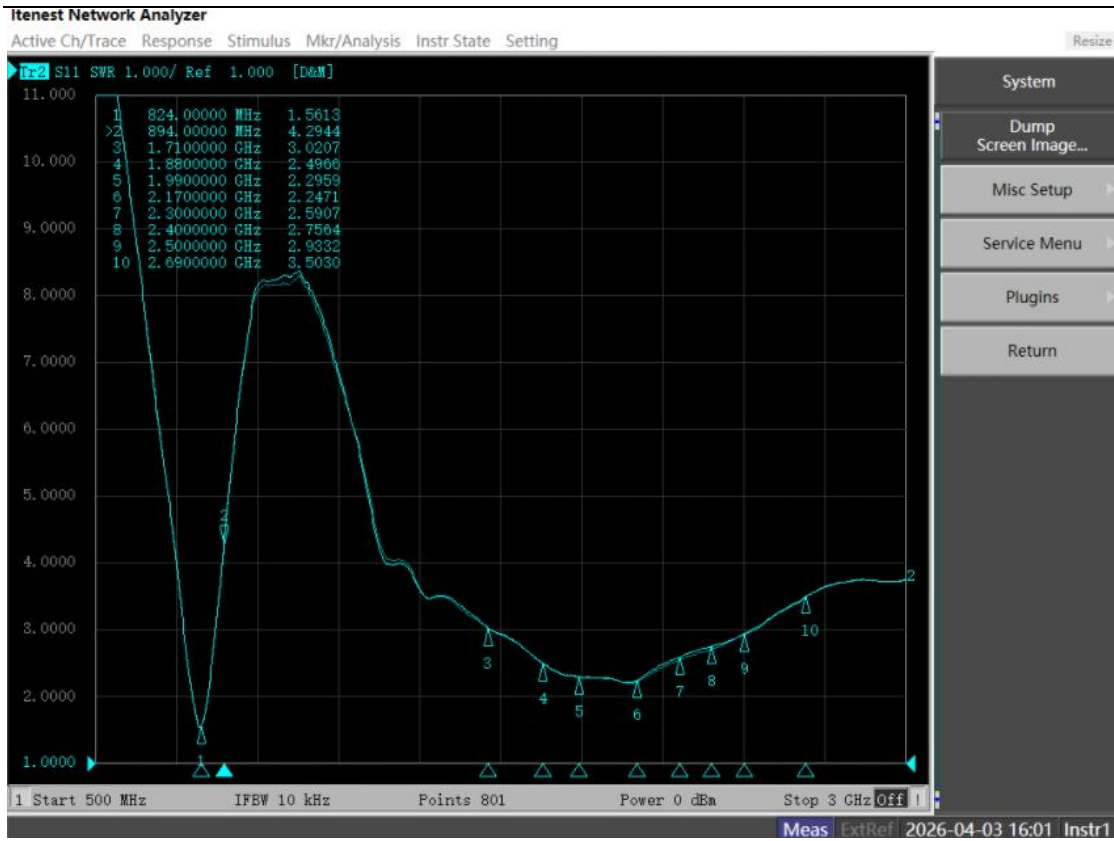
Main antenna VSWR								
Freq(MHz)	824	894	880	960	1710	1880	1850	1990
Free Space	1.5	4.2	3.6	5.6	2.0	2.6	2.4	2.9

Main antenna VSWR					
Freq(MHz)	2170	2300	2400	2500	2700
Free Space	1.5	2.3	2.4	2.4	3.0

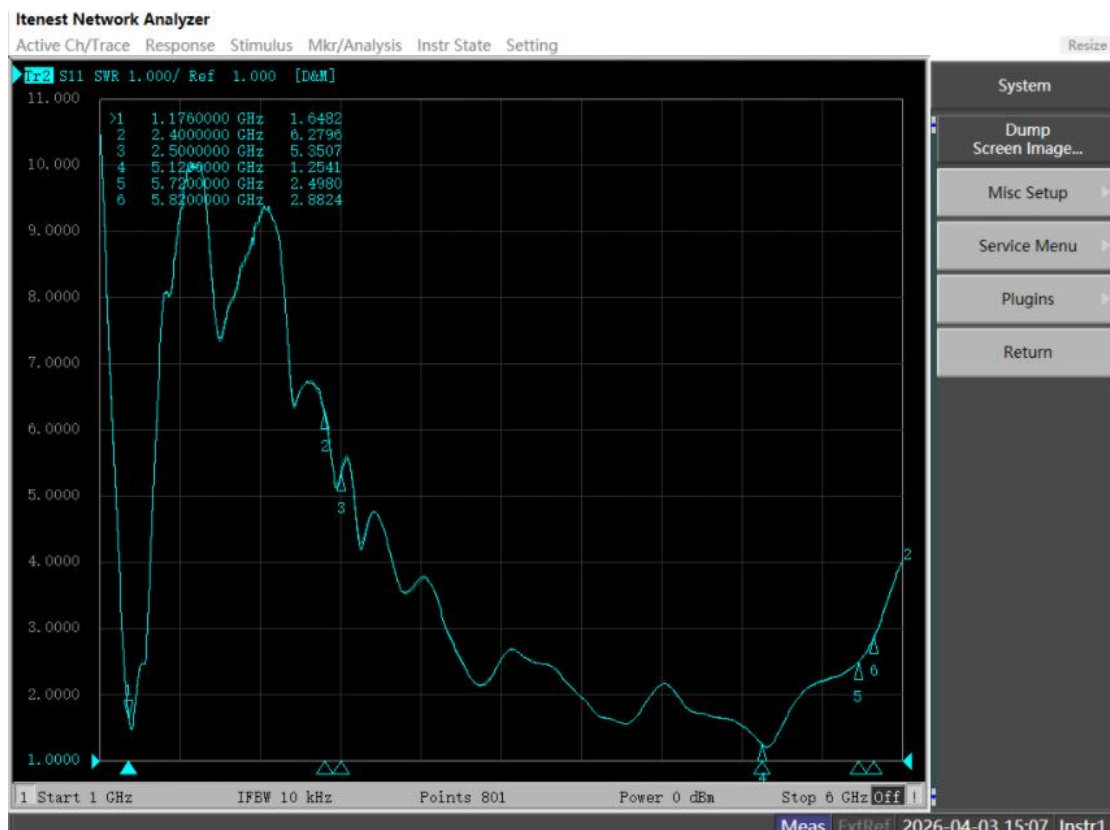
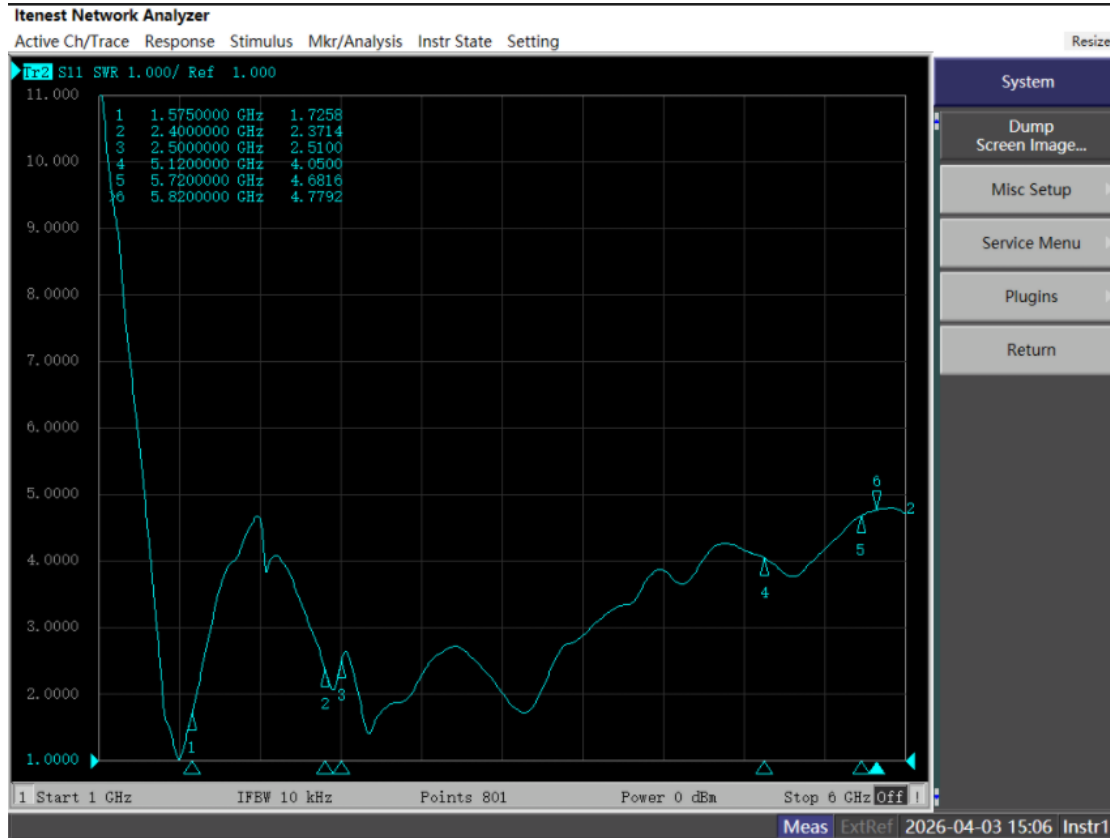
3-3test results

MAIN VSWR





2.4/5.8G-WiFi GPS VSWR

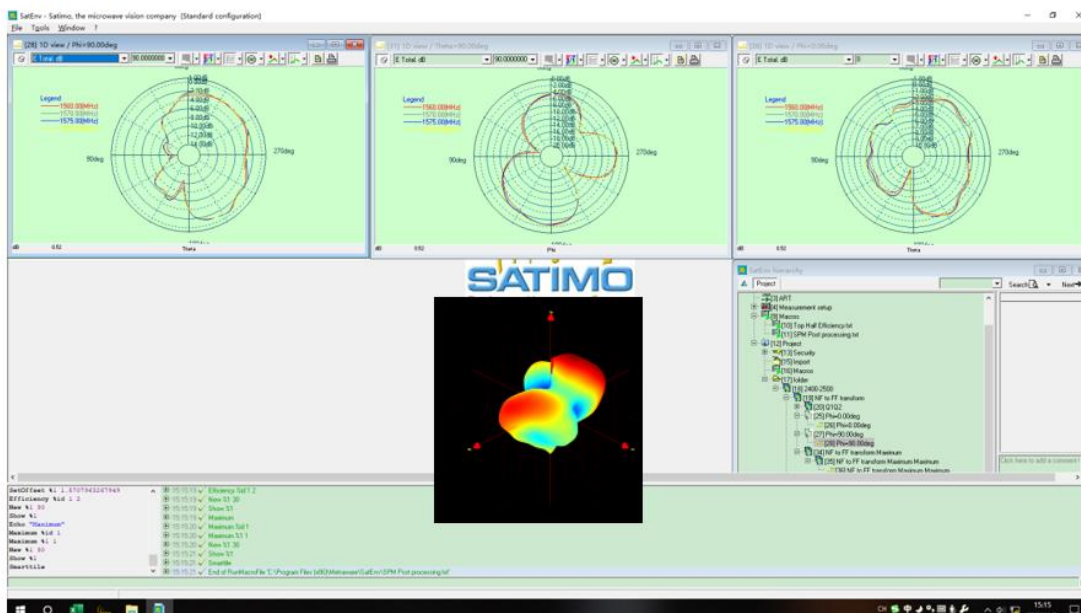


3-4 gain test

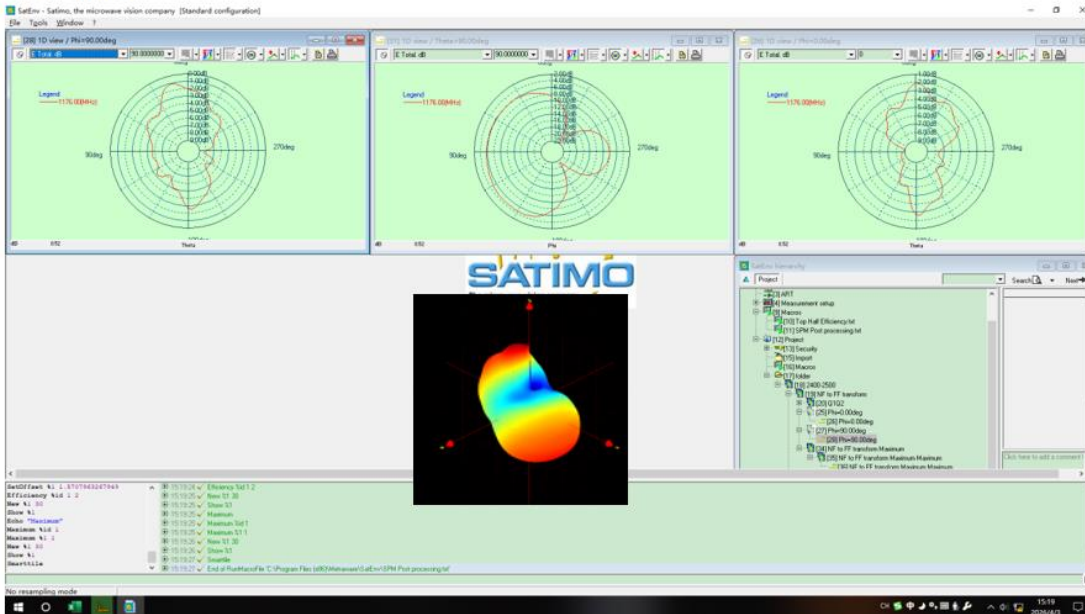
1			1			1			1		
Frequency	Efficiency	Efficiency . dB	Frequency	Gain . dBi		Frequency	Efficiency	Efficiency . dB	Frequency	Gain . dBi	
650000000	11%	-9.75725	650000000	-4.71807		1176000000	25%	-5.94395	1176000000	-1.0408	
700000000	15%	-8.23036	700000000	-4.00607		1560000000	35%	-4.60171	1560000000	0.131504	
800000000	10%	-9.85818	800000000	-5.74531		1570000000	36%	-4.39521	1570000000	0.345013	
824000000	14%	-8.39136	824000000	-3.71193		1575000000	37%	-4.35211	1575000000	0.518609	
850000000	17%	-7.61795	850000000	-2.57053		1580000000	37%	-4.27956	1580000000	0.394879	
894000000	15%	-8.27076	894000000	-2.21124		2400000000	40%	-3.97524	2400000000	-0.02308	
880000000	16%	-7.90252	880000000	-2.54848		2450000000	35%	-4.57593	2450000000	-1.1009	
900000000	17%	-7.61676	900000000	-2.62675		2500000000	17%	-7.73705	2500000000	-3.50564	
960000000	12%	-9.09377	960000000	-5.05568		5100000000	28%	-5.58282	5100000000	-0.82661	
1710000000	31%	-5.07233	1710000000	-0.01231		5720000000	20%	-6.95561	5720000000	-0.57075	
1880000000	24%	-6.24163	1880000000	-1.53001		5820000000	15%	-8.18523	5820000000	-0.74821	
1910000000	21%	-6.77422	1910000000	-1.88394							
2170000000	13%	-8.89926	2170000000	-4.2679							
2300000000	32%	-4.89898	2300000000	0.327174							
2400000000	32%	-5.0096	2400000000	-0.42555							
2500000000	29%	-5.34777	2500000000	-0.97536							
2600000000	27%	-5.73799	2600000000	-1.59941							
2700000000	20%	-6.97522	2700000000	-2.10693							
3300000000	23%	-8.80458	3300000000	-0.80897							
3800000000	24%	-8.68075	3800000000	-0.0175							
4200000000	22%	-7.79882	4200000000	-0.15266							

Passive Pattern

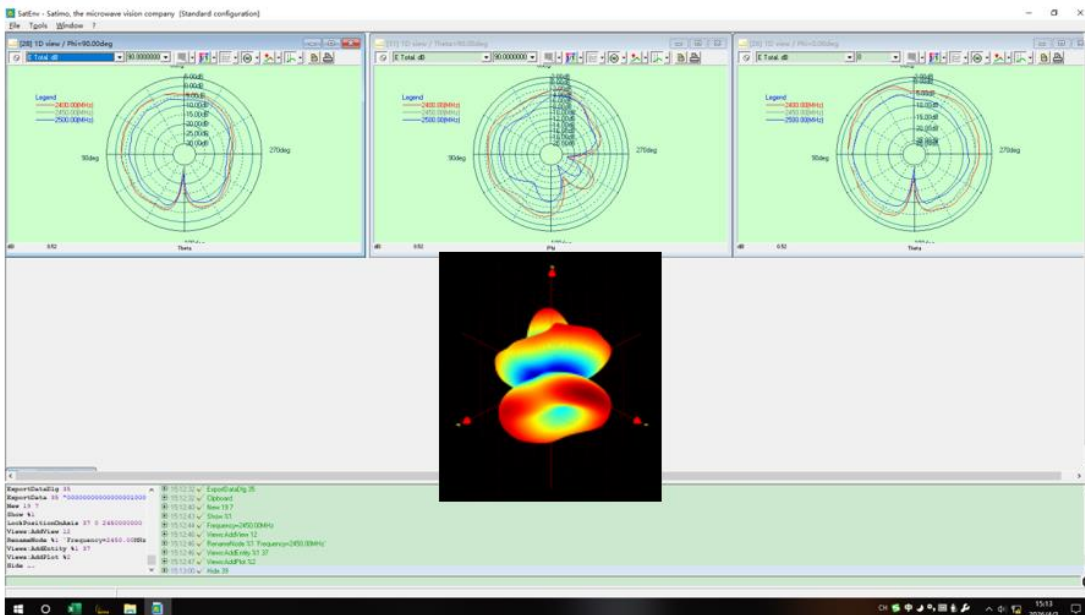
GPS-L1



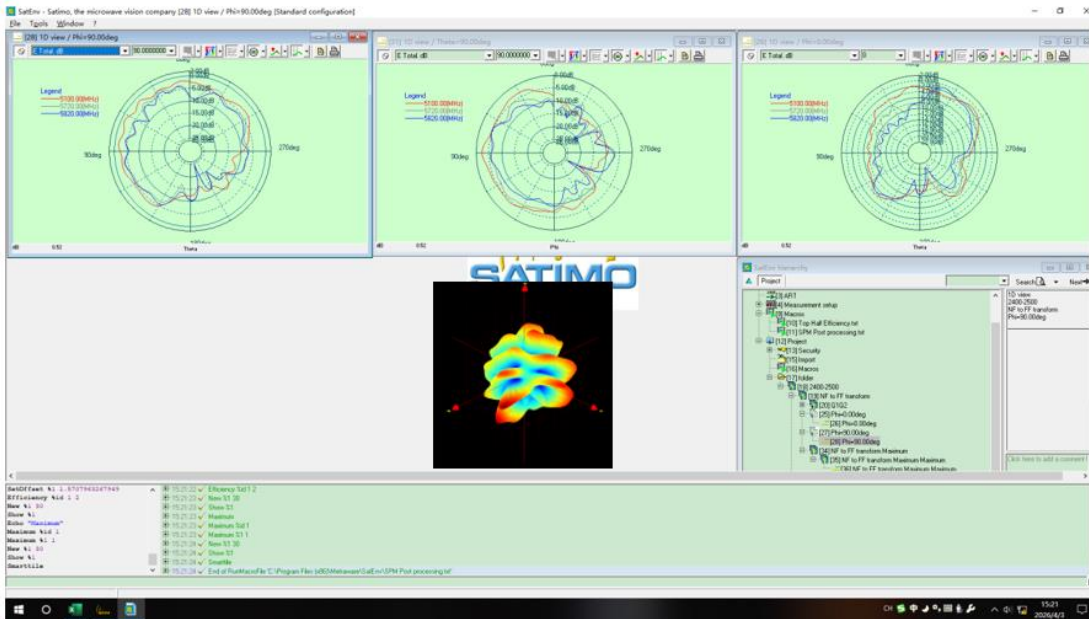
GPS-L5



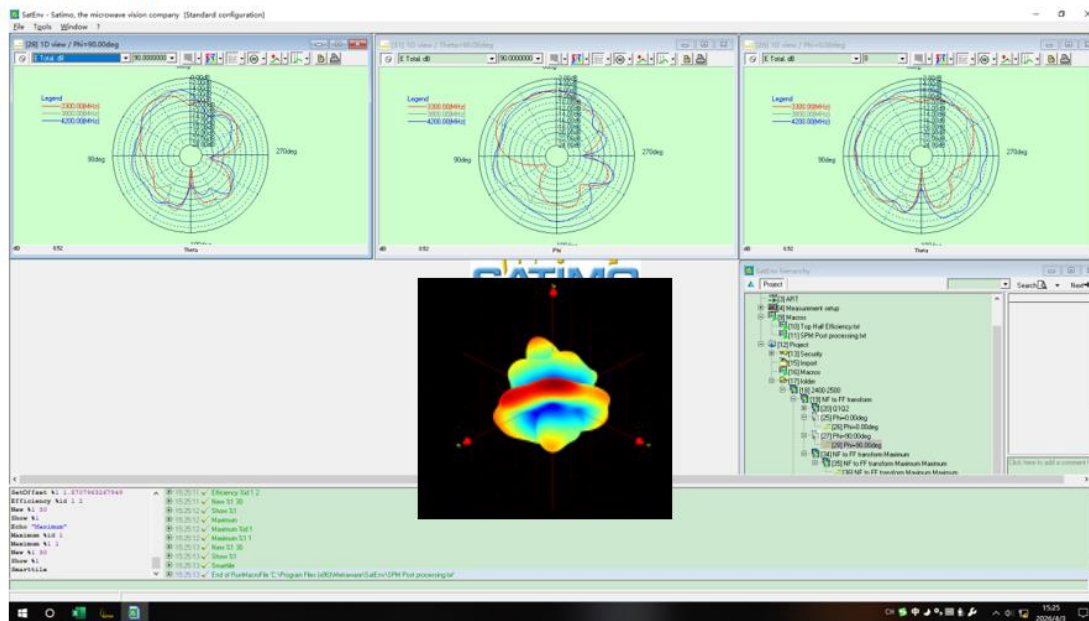
WIFI-2.4G



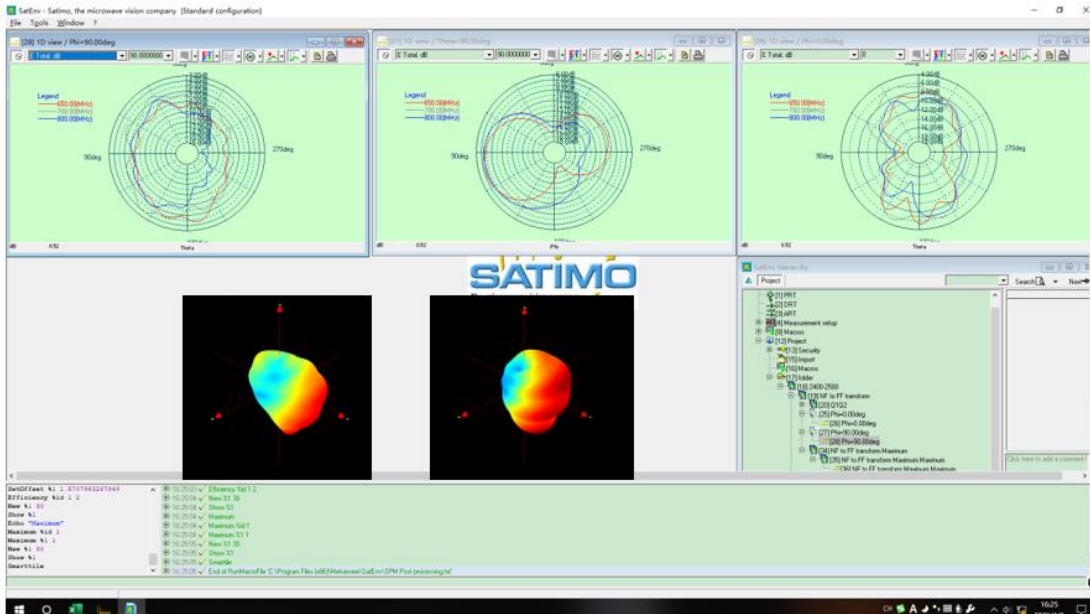
WIFI-5.8G



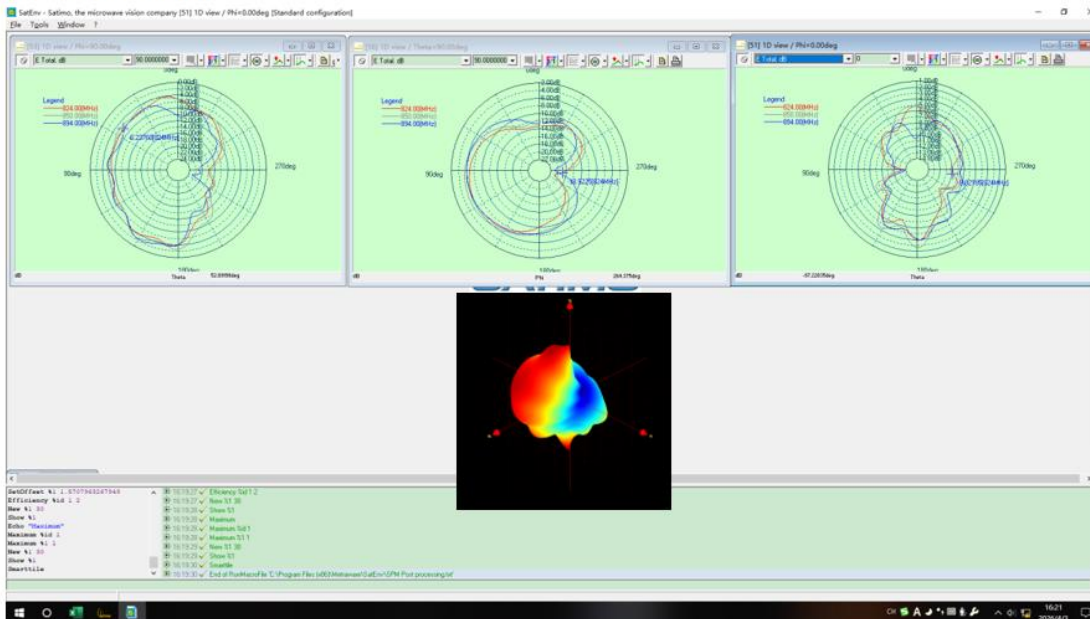
NR77-78



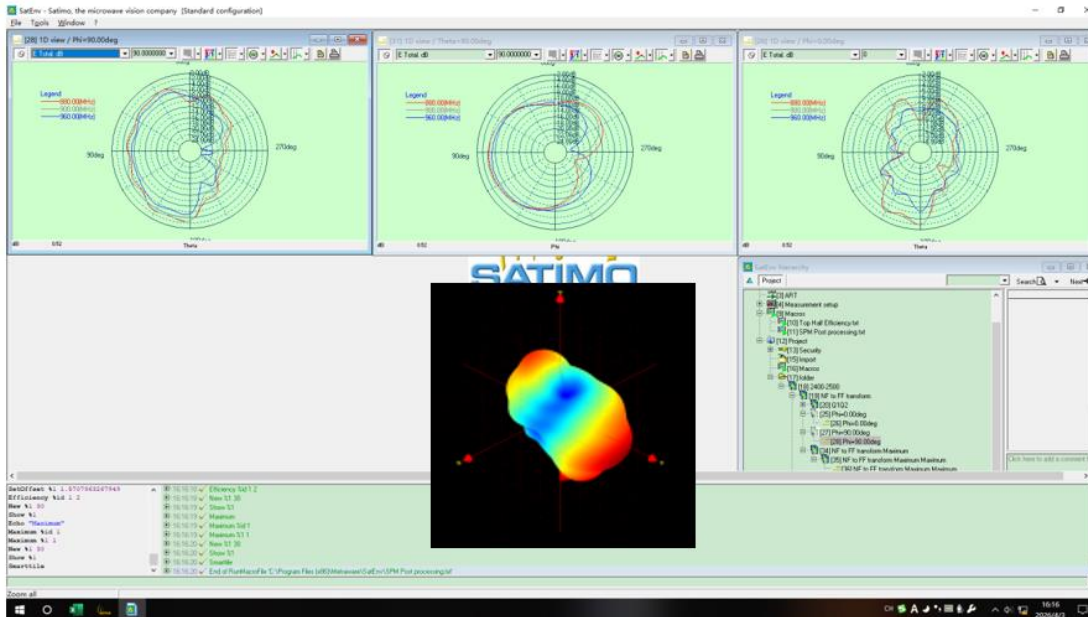
650-800MHz



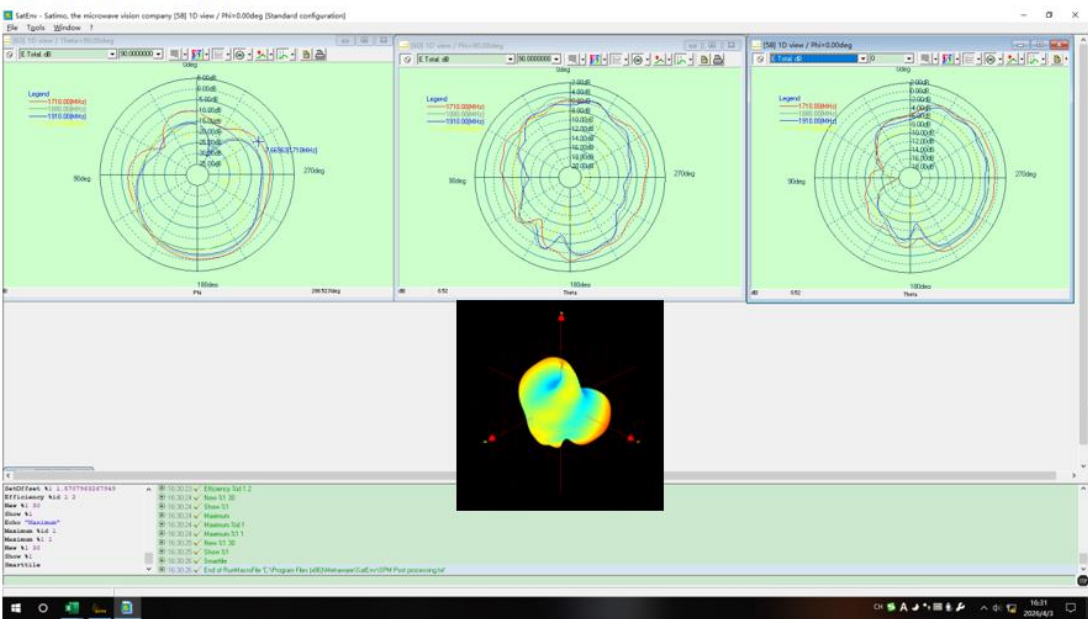
824-894MHz

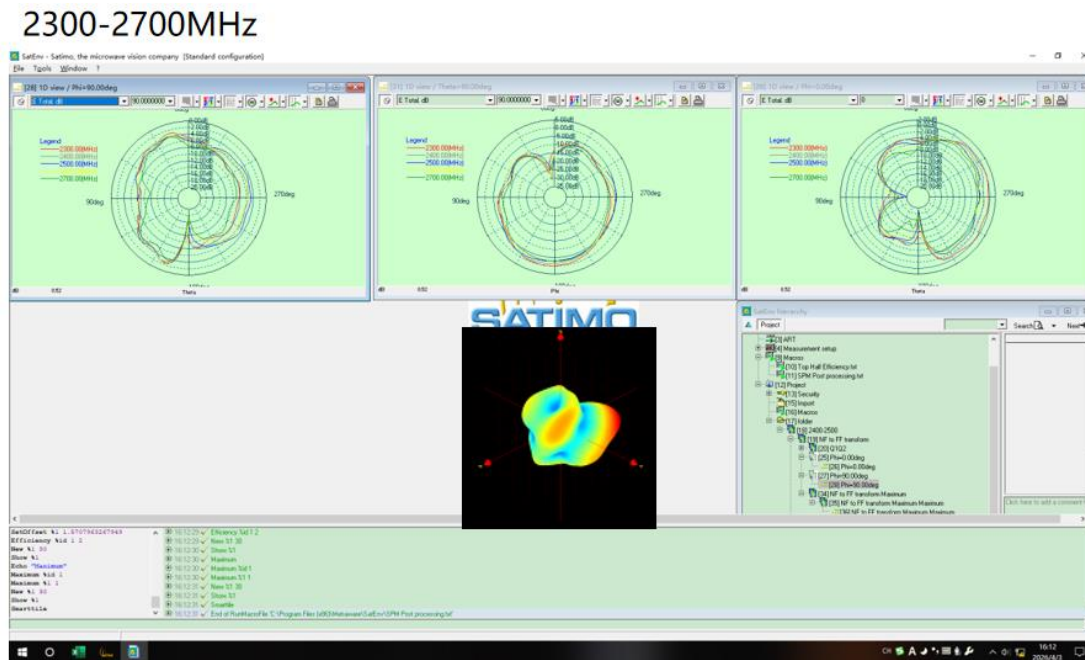


880-960MHz



1710-2170MHz





The active test units are connected in turn as follows: Agilent8960/8820C → 50 ohm

coaxial Cable → GTS Test System → sted.

4-1 Test site

GTS microwave anechoic chamber: the test frequency range is 400MHz-6GHz, the quiet zone range is 40cm circumference, and the reflectivity is less than -90 dB.

4-2 Test results

Maximum radiated power and maximum receive sensitivity reflect the antenna's maximum power radiated value and optimal reception performance over the entire radiation space. /b10> TRP and TIS reflect the average radiated power and average reception sensitivity of the antenna, that is, the overall reception performance of the antenna.

5. Environmental treatment

Original environment treatment.

6. Recommendations and Conclusions

This report is based on the antenna electrical performance measured by the customer's final version of the A68.

Confidential Information

As can be seen from the above test data, this antenna provides better electrical performance.

Fubang R&D looks forward to your confirmation, thank you for your cooperation!

8、 Product drawings