



Approval Sheet

客户名称 VK

(Customer Name)

产品名称 S7XF-4G Antenna

(Specification)

客户料号 _____

(Customer P/N)

产品料号 _____

(O/I)

送样日期 2024-12-04 (Date)

Frequency band	2G:900/1800, 850/1900 3G:1/2/4/5/8 4G:FDD:1/2/3/4/5/7/8/12/17/20/25/26/40/28AB,TDD:34/ 38/39/40/41/66		
Version	A		
RF	Chenmeidui	Confirm	
Structural Engineer	Yangyuzhen		
Customer confirmation			
Date			



Catalogue

1. Project image

2. Test fixture

3. Matching circuit

4. S11 Test electrical performance

4.1 S11 Test Method Description Specification Standards

4.2 S11 Parameter

4.3 S11 Parameter image

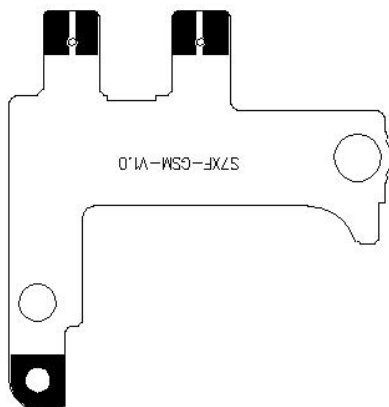
5. Power and sensitivity testing

5.1 Test data

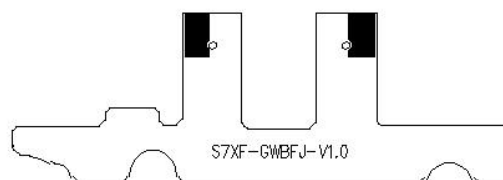
6. Structural drawings



1. Project image (for reference only)



GSM Antenna

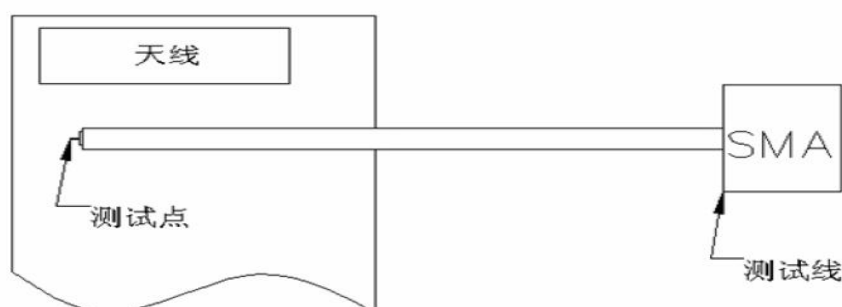


GPS/WIFI+BT/DIV Antenna

2. Passive Test

Purpose: To test the passive parameters of the antenna as accurately as possible.

Method: This fixture uses a 50 ohm coaxial cable, with one end connected to the test point at the back end of the matching circuit (RF test hole front section) of the mobile phone motherboard, and the other end connected to the SMA connector. As shown in the following figure:



The following table shows the performance test indicators for S7XF-4Gmass-produced antennas:

深圳市德仕勤科技有限公司

Doshing MicroElectronics Co.,Ltd

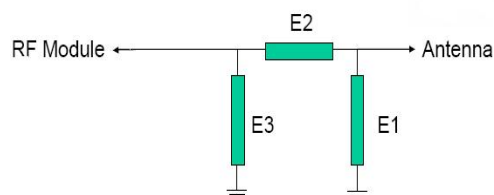
地址：深圳市南山区西丽大学城民企科技园 2 栋（港鸿基大厦）西座 403

TEL:0755-88602767 FAX:0755-82793883



S7XF- Antenna				
	Frequency (MHz)	VSWR	Frequency (MHz)	VSWR
Frequency band	Transmitting end		Receiving end	
GSM850/W5	824-849	≤3.5	869-894	≤3.5
GSM900/WCDMA8	880-915	≤3.5	925-960/925-960	≤3.5
DCS1800	1710-1785	≤3.0	1805-1880	≤3.0
PCS1900/W2	1850-1910	≤3.0	1930-1990/1930-1990	≤3.0
WCDMA-1/4	1920-1980	≤3.0	2110-2170	≤3.0
LTE-FDD-B2/1	1920-1980	≤3.0	2110-2170	≤3.0
LTE-FDD-B4/3/B25/66	1710-1785	≤3.0	1805-1880	≤3.0
LTE-FDD-B5/26	824-849	≤3.5	869-894	≤3.5
LTE-FDD-B7	2505-2565	≤3.0	2625-2685	≤3.0
LTE-FDD-B12/17	880-915	≤3.5	925-960	≤3.5
TDD-B34	2010-2025	≤3.0	2010-2025	≤3.0
TDD-B38	2580-2610	≤3.0	2580-2610	≤3.0
TDD-B39	1890-1910	≤3.0	1890-1910	≤3.0
TDD-B40	2310-2390	≤3.0	2310-2390	≤3.0
TDD-B41	2506-2593	≤3.0	2506-2593	≤3.0
LTE-FDD-B28AB	708-743	≤3.5	763-798	≤3.5

3. Matching circuit



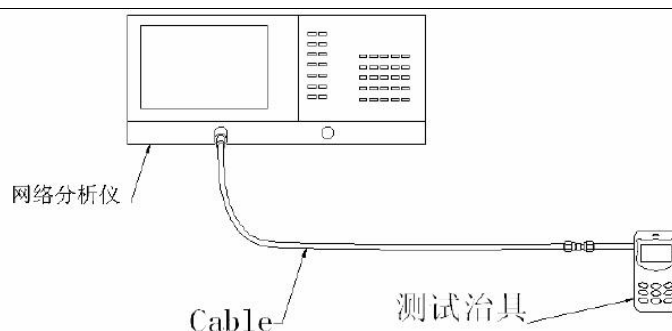
Element	Matching Value
E1	
E2	0
E3	

4. S11Test

4.1 S11Test Method Description Specification Standards

VSWR The testing devices are sequentially connected as follows :
 E5071B Network analyzer → 50Ω Coaxial line → 120mm Copper tube → Test fixture.

Treatment of testing fixture: Use a hard cable to lead out the SMA-J connector from the 50 ohm test point of the antenna on the mobile phone PCB, connect it to a copper pipe with a choke ring, and then connect other devices in sequence.



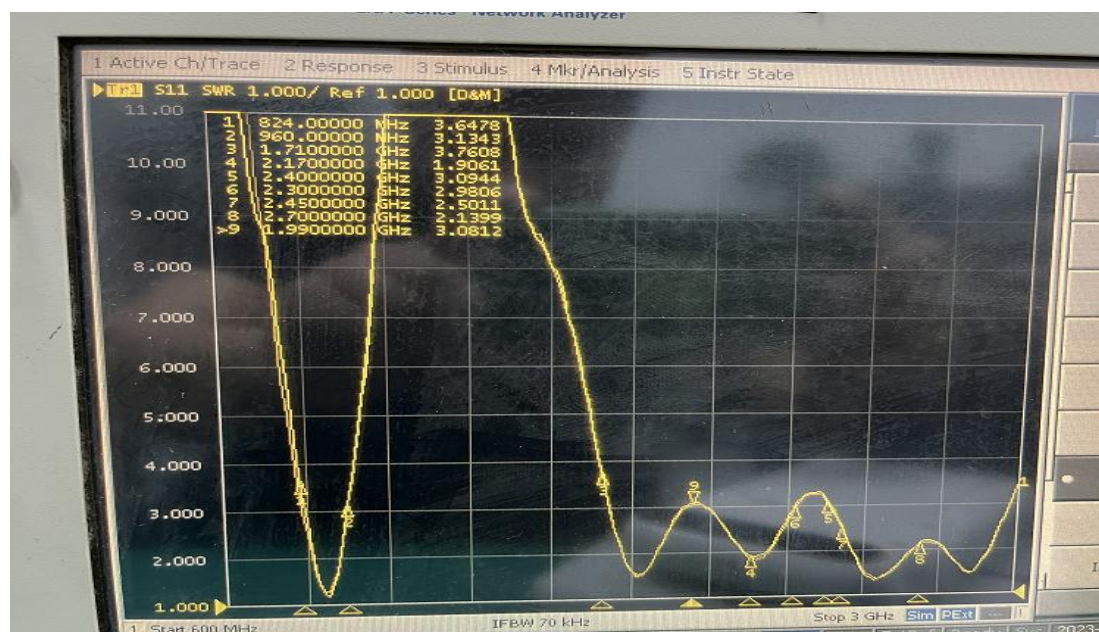
Test diagram

4.2 S11Parameter

The following table shows the standing wave ratio values at the edge frequency points of the ME61 antenna operating frequency band. The waveform diagrams of Return Loss and VSWR obtained from the test are shown in the attachment.

	S7XF Antenna				
Frequency(MHz)	824	960	1710	1990	2700
Free space	3.6	3.3	3.7	1.9	2.1

4.3 S11





5. Power and sensitivity testing

5.1 Test data

Band	CH	FS			CH	FS			CH	FS			CH	FS	
		TRP	TIS			TRP	TIS			TRP	TIS			TRP	TIS
GSM850	128	24.05		B1	18050	17.46		B17	23780	14.07		B40	38750	15.52	
	190	24.35			18300	16.49			23790	24.37			39150	16.17	
	251	24.81	-100.6		18550	16.247	-88.03		23800	14.41	-87.88		39550	16.38	-85.66
EGSM900	1	24.19		B2	18650	16.77		B20	24200	14.45		B41	40240	15.51	
	62	24.84			18900	16.81			24300	15.38			40620	15.65	
	124	24.97	-100.7		19150	16.67	-88.03		24400	14.77	-86.5		41140	14.98	-85.32
DCS1800	512	24.42		B3	19250	16.16		B25	26065	16.65		B66	132022	16.55	
	698	25.09			19575	16.84			26365	16.72			132322	16.89	
	885	25.51	-101.45		19900	16.53	-89.73		26665	17.02	-88.62		132622	16.92	-87.12
PCS1900	512	23.56		B4	20000	16.68		B26	26715	14.09					
	661	24.35			20175	17.02			26763	14.65					
	810	24.89	-102.18		20350	16.69	-88.45		27015	15.03	-86.75				
WCDMA Band1	10562	17.02		B5	20450	13.86		B28A	27300	13.53					
	10700	16.78			20525	14.16			27370	14.32					
	10838	16.32	-100.12		20600	14.77	-85.75		27430	14.78	-84.5				
WCDMA Band2	9662	16.07		B7	20800	16.86		B28B	27590	14.03					
	9800	16.13			21100	16.37			27600	14.65					
	9938	16.9	-101.26		21140	15.65	-85.8		27610	14.72	-85.8				
WCDMA Band4	1312	17.68		B8	21500	14.12		B34	1312	15.06					
	1413	17.11			21625	14.36			1413	14.78					
	1513	16.82	-100.36		21750	14.47	-87.5		1513	14.55	-88.9				
WCDMA Band5	4357	14.48		B12	23060	14.88		B38	27590	15.32					
	4408	15.12			23095	14.54			27600	15.45					
	4458	15.36	-101		23130	14.47	-85.4		27610	15.12	-85.65				
WCDMA Band8	2937	15.09						B39	38350	16.25					
	3013	15.24							38450	16.68					
	3088	15.51	-102.2						38550	17.02	-87.2				



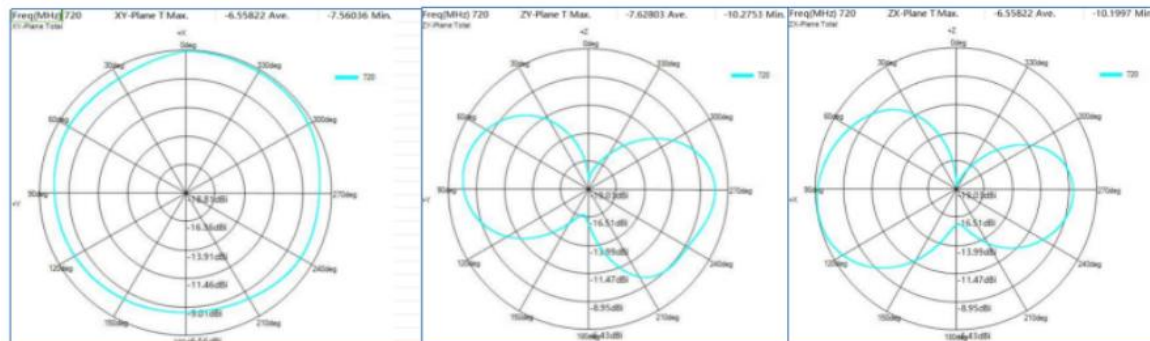
5.2 Antenna gain

Band	增益(dBi)	Band	增益(dBi)
GSM850	-1.42	LTE-B17	-1.72
EGSM900	-1.45	LTE-B20	-1.45
DCS1800	0.39	LTE-B25	0.39
PCS1900	0.46	LTE-B26	-1.42
W-Band1	0.55	LTE-B34	0.55
W-Band2	0.56	LTE-B38	1.07
W-Band4	0.46	LTE-B39	0.72
W-Band5	-1.42	LTE-B40	0.72
W-Band8	-1.45	LTE-B41	1.07
LTE-B1	0.46	LTE-B28A/B	-1.65
LTE-B2	0.46	LTE-B66	0.39
LTE-B3	0.39		
LTE-B4	0.35		
LTE-B5	-1.42		
LTE-B7	1.07		
LTE-B8	-1.45		
LTE-B12	-1.72		

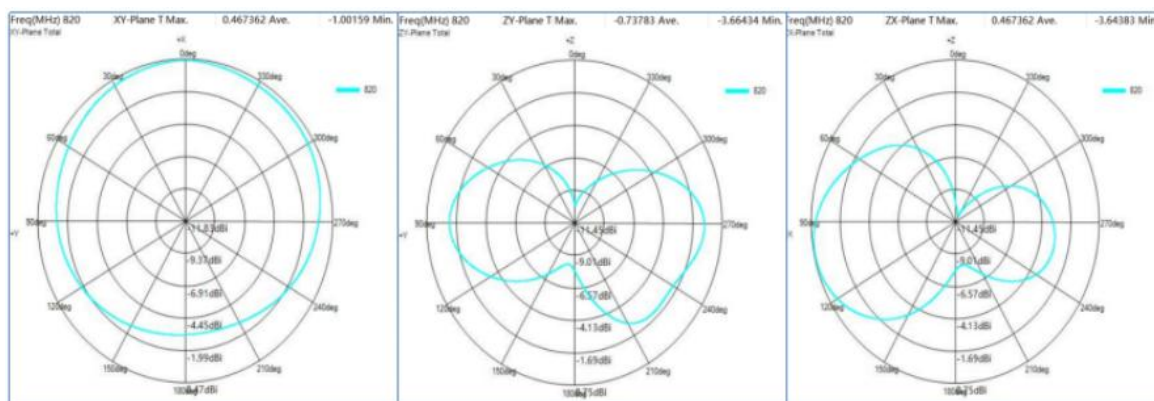


5.3 - 天线 2D 方向图

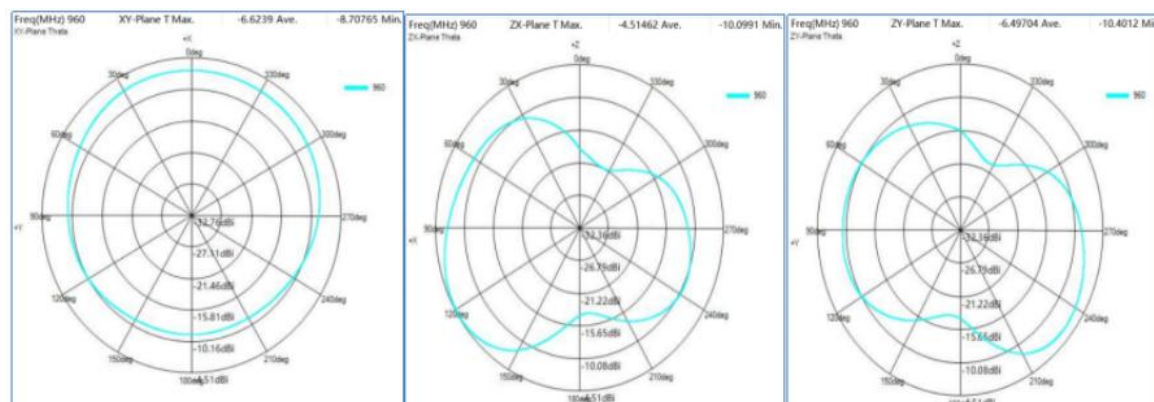
1. 700



2. 800

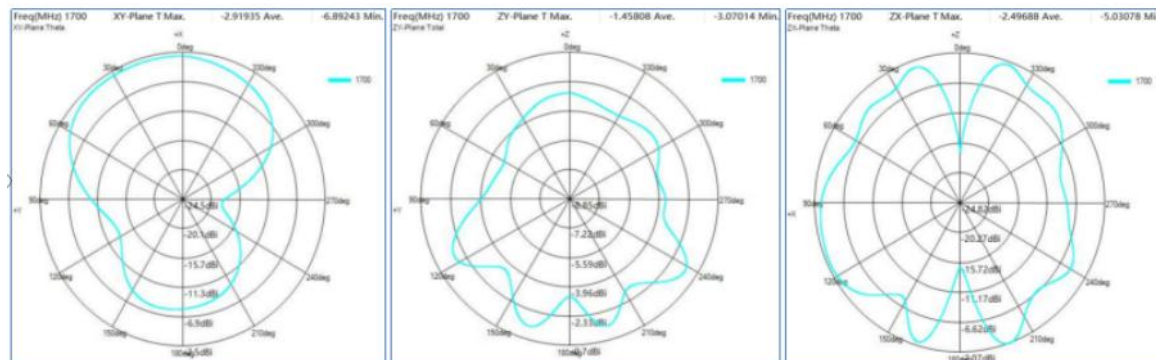


3. 900

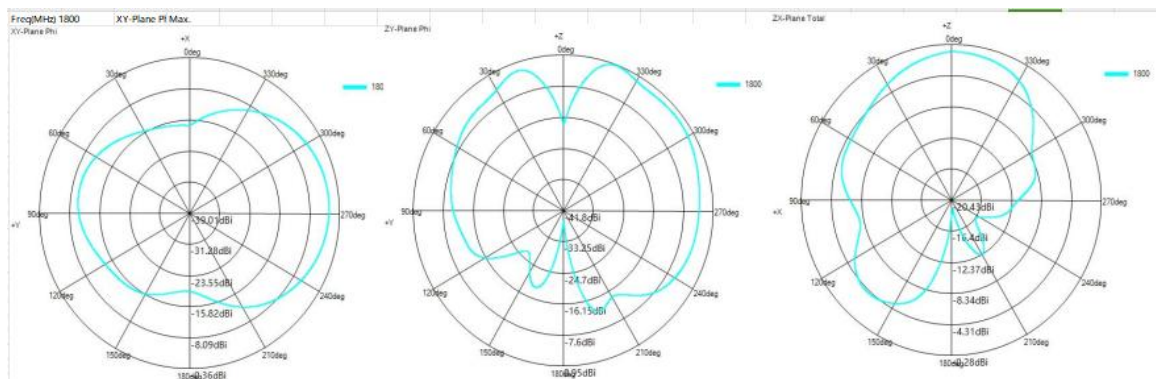




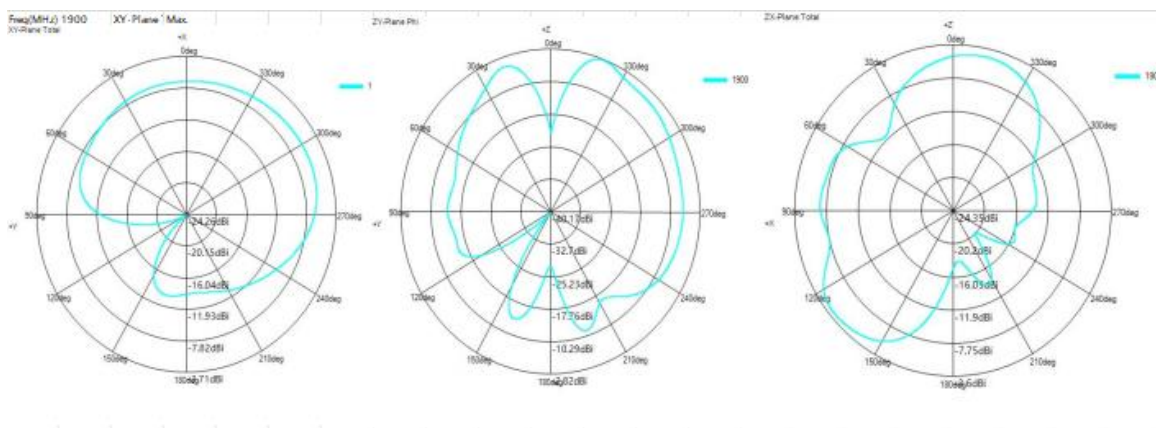
4. 1700



5. 1800

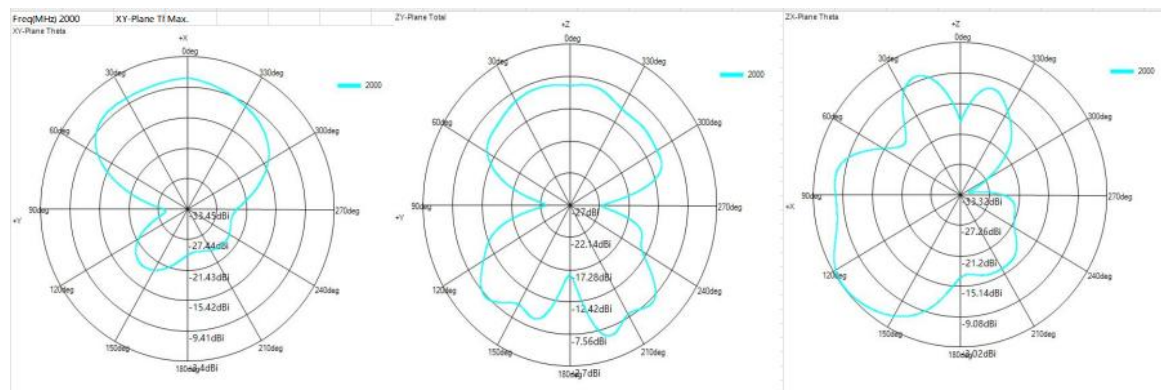


6. 1900

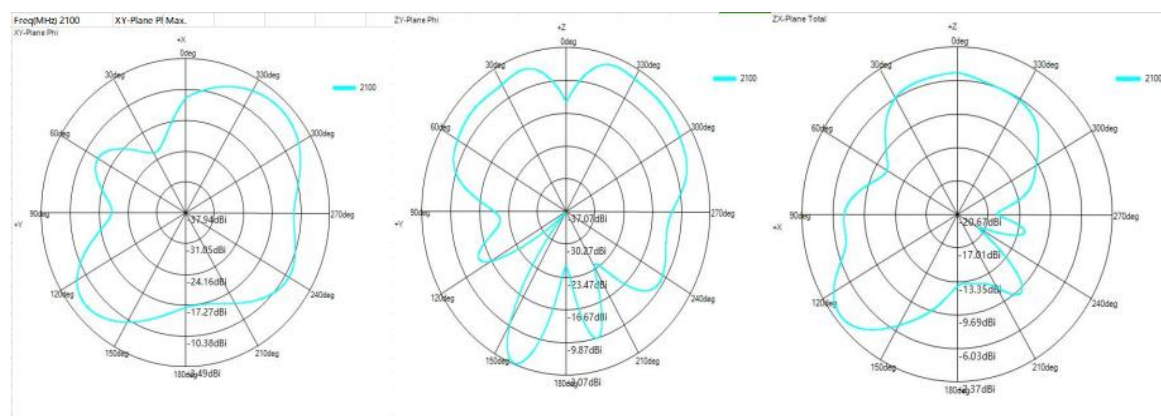




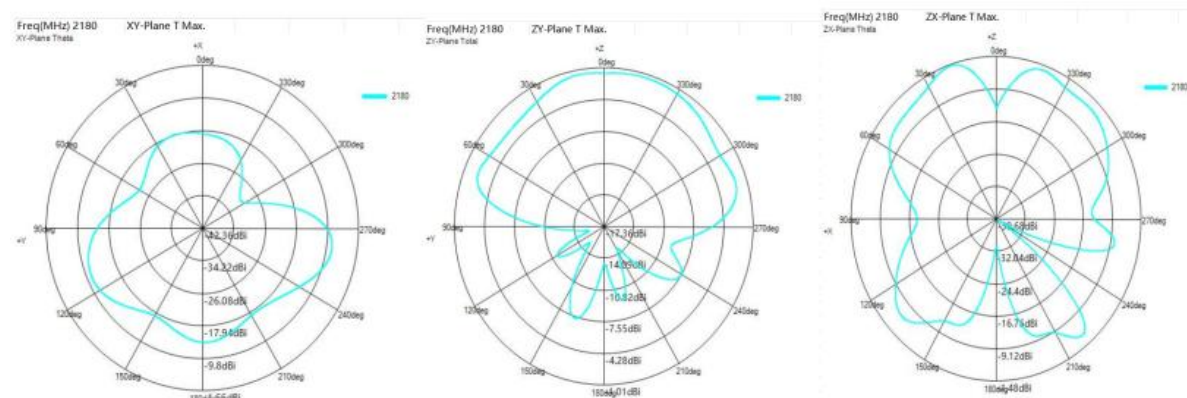
7. 2000



8. 2100

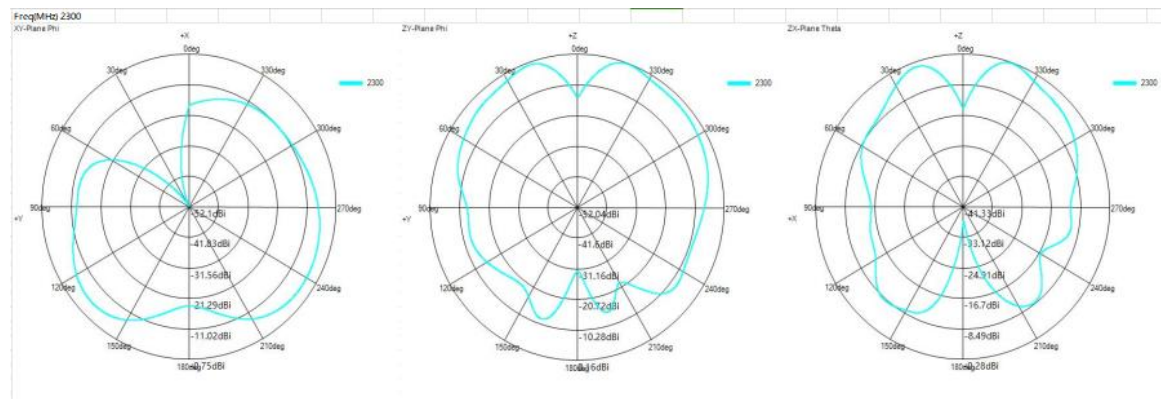


9. 2200

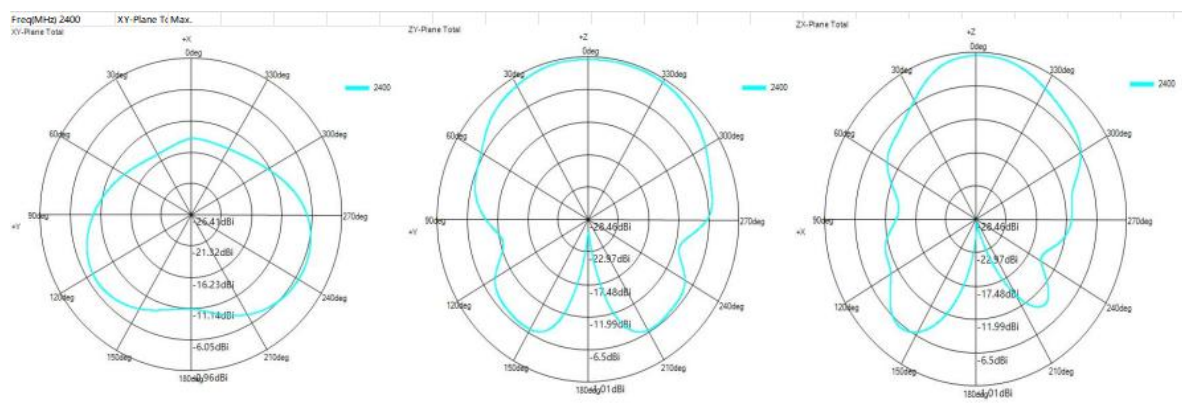




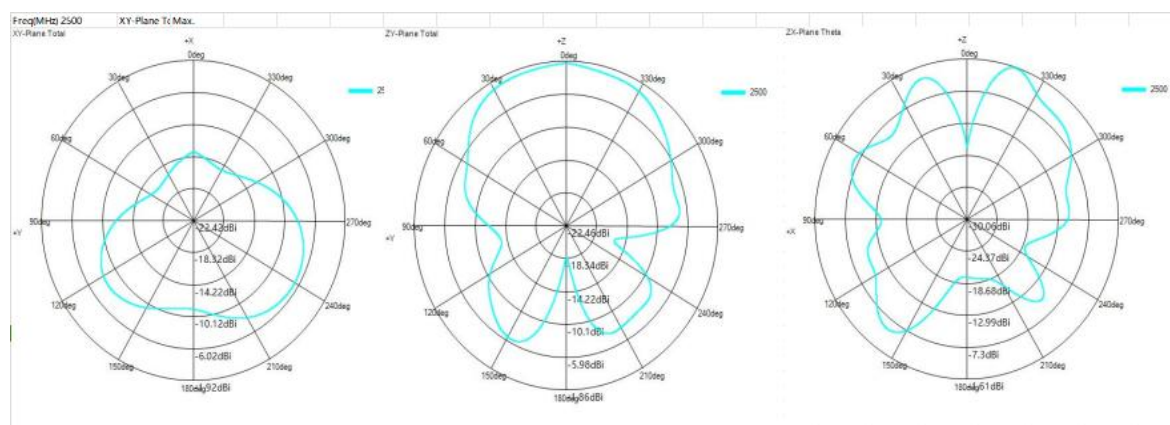
10. 2300



11. 2400

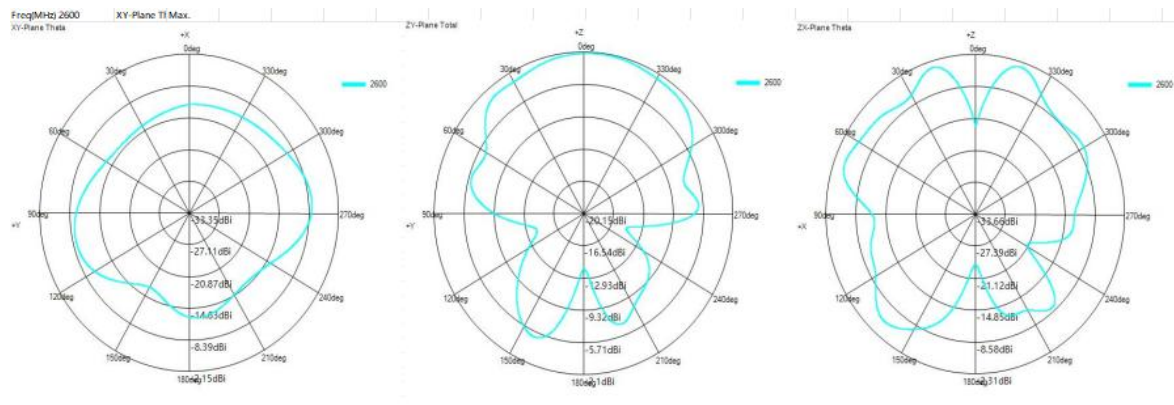


12. 2500

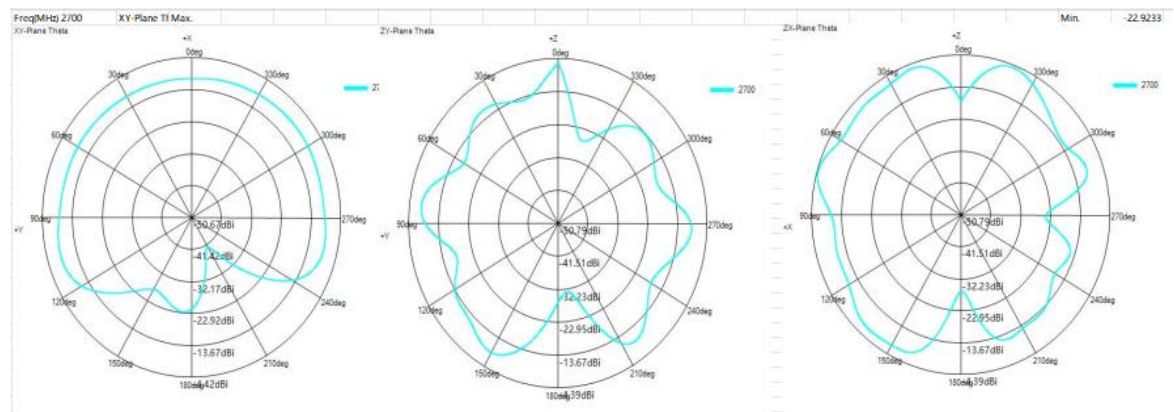




13. 2600



14. 2700





5.4GPS/WIFI+BTAntenna Test

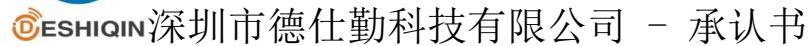
WIFI-2400-2500			GPS-1575		
Freq (MHz)	Effi (%)	Gain (dBi)	Freq (MHz)	Effi (%)	Gain (dBi)
2400	27.51	-1.81	1555	28.82	-1.33
2420	29.81	-1.71	1565	30.77	-1.07
2440	29.84	-1.61	1575	30.11	-1.56
2460	28.84	-1.77	1585	29.52	-1.42
2480	26.62	-1.66	1595	27.78	-1.16
2500	25.2	-1.52			

GPS/WIFI I/BT 注:	GPS	Maximum signal strength	Number of received stars	Average positioning time (s)	Weather conditions	
		41	7-12	60-80	晴	
	WIFI	Normal internet distance (m)		Smooth distance for online browsing (m)		
		10-12		10-12		
	BT	Clear call distance (m)				
		10				



The actual test





	1	2	3	4	5	6	7	8
料号	颜色	色号	供应黄色号					

A
A

B
B

Note:

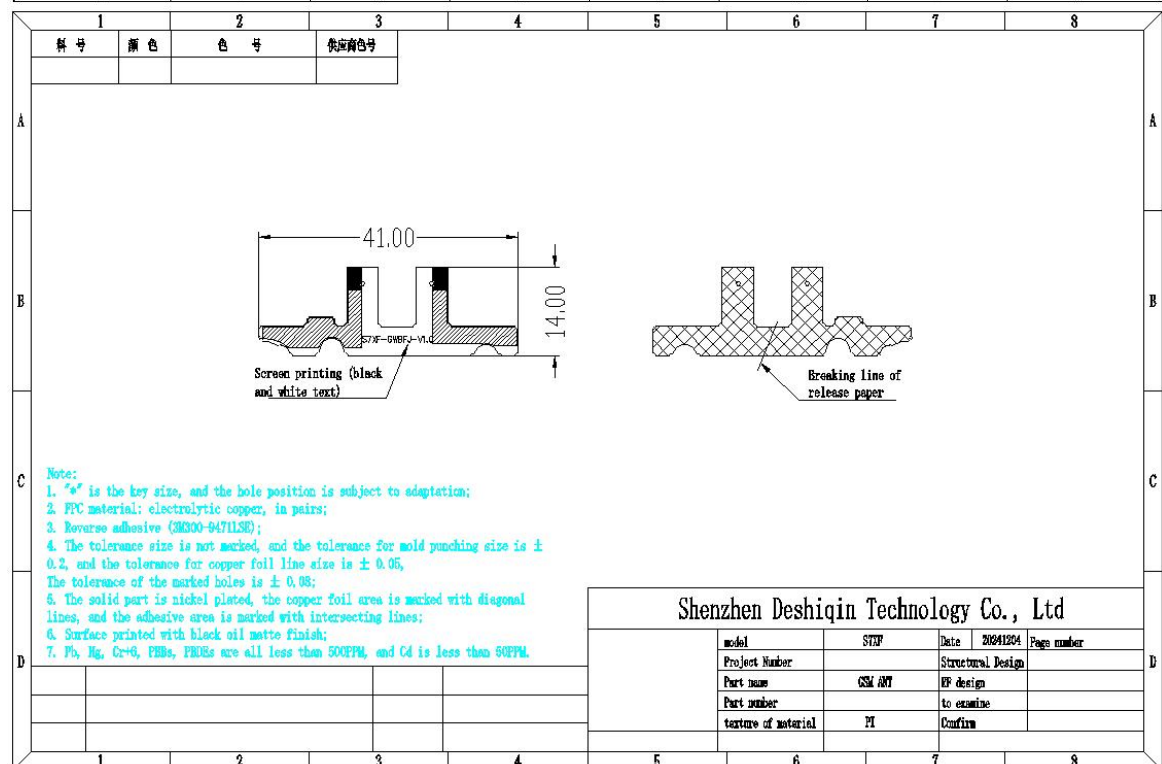
1. "*" is the key size, and the hole position is subject to adaptation;
2. FPC material: electrolytic copper, in pairs;
3. Reverse adhesive (3M300-9471LSE);
4. The tolerance size is not marked, and the tolerance for mold punching size is ± 0.2 , and the tolerance for copper foil line size is ± 0.05 ,
The tolerance of the marked holes is ± 0.08 ;
5. The solid part is nickel plated, the copper foil area is marked with diagonal lines, and the adhesive area is marked with intersecting lines;
6. Surface printed with black oil matte finish;
7. Pb, Hg, Cr+6, PBBs, PBDEs are all less than 500PPM, and Cd is less than 50PPM.

C
C

	1	2	3	4

Shenzhen Deshiqin Technology Co., Ltd				
Model	STXF	Date	20241204	Page number
Project Number		Structural Design		1 / 1
Part name	CSM ANT	RF design		
Part number		to examine		
texture of material	PI	Confirm		

D
D



15

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