规格承认书

Approval Sheet

客户名称 VK

(Customer Name)

产品名称 S7TQ (GSM /GPS+WIFI+BT/LTE)

(Specification)

客户料号

(Customer P/N)

产品料号

(O/I)

送样日期 2024-12-05

（Date）

Frequency band	2G：2.3.5.8 / 3G：1.2.4.5.8 4G：1.2.3.4.5.7.8.12.17.20.28.38.39.40.41		
Version	A		
RF	Peng Wei	Confirm	
Structural Engineer	Yang Xue Zhong		
Customer confirmation			
Date			

深圳市德仕勤科技有限公司
Dosking 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

Catalogue

1. Project image

2. Test fixture

3.Matching circuit

4. S11Test electrical performance

4.1 S11Test Method Description Specification Standards

4.2 S11Parameter

4.3 S11Parameter image

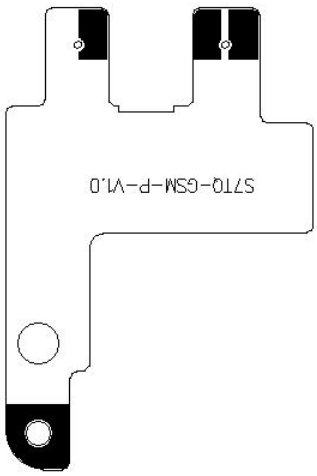
5.Power and sensitivity testing

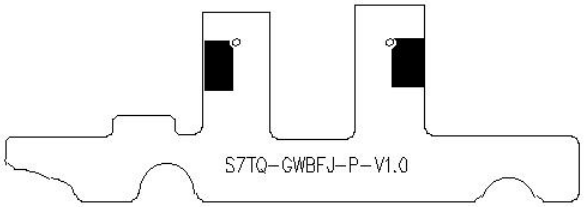
5.1 Test data

6. Structural drawings

深圳市德仕勤科技有限公司
Dosking 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

1.Project image (for reference only)



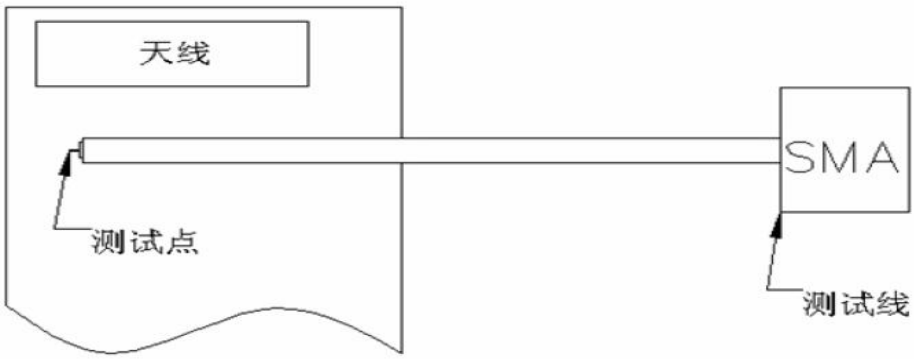


GSM Antenna GPS/WIFI+BT/DIV Antenna

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:

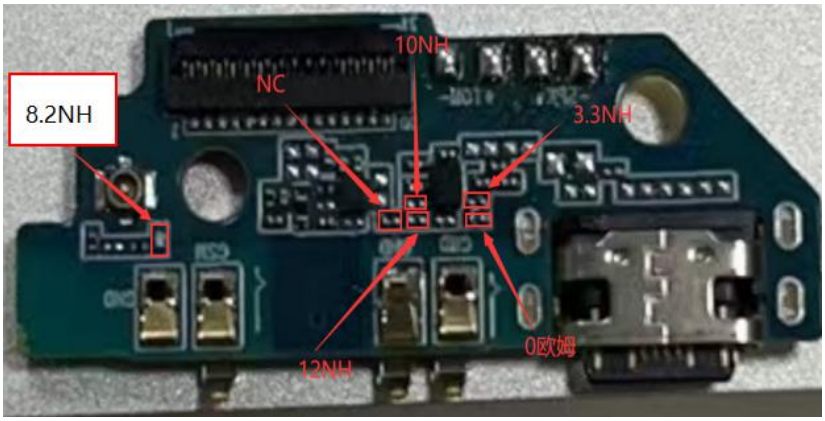


深圳市德仕勤科技有限公司
Dosking MicroElectronics Co.,Ltd
地址：深圳市南山区西丽大学城民企科技园 2 栋（港鸿基大厦）西座 403
TEL:0755-88602767 FAX:0755-82793883

The following table shows the performance test indicators for S7TQ-4Gmass-produced antennas：：

S7TQ				
	Frequency (MHz)	VSWR	Frequency (MHz)	VSWR
Frequency band	Transmitting end		Receiving end	
GSM850	824-849	≤3.5	869-894	≤3.0
GSM900	880-915	≤3.5	925-960	≤3.5
DCS1800	1710-1785	≤3.0	1805-1880	≤2.5
PCS1900	1850-1910	≤2.8	1930-1990	≤3.2
WCDMA-850	824-849	≤3.5	869-894	≤3.5
WCDMA-1700	1710-1755	≤3.5	2110-2155	≤3.5
WCDMA-1900	1850-1910	≤2.8	1930-1990	≤3.2
WCDMA-2100	1710-1755	≤3.5	2110-2155	≤3.5
WCDMA-900	880-915	≤3.5	925-960	≤3.5
LTE-FDD-B1	1920-1980	≤2.0	2110-2170	≤2.0
LTE-FDD-B2	1850-1910	≤2.8	1930-1990	≤3.2
LTE-TDD-B3	1710-1785	≤2.5	1805-1880	≤2.5
LTE-TDD-B5	824-849	≤3.5	869-894	≤3.0
LTE-TDD-B7	2505-2565	≤2.0	2625-2685	≤2.0
LTE-FDD-B8	880-913	≤2.0	930-955	≤2.0
LTE-FDD-B12	703-710	≤2.5	733-740	≤3.5
LTE-FDD-B17	709-711	≤3.0	739-741	≤3.0
LTE-FDD-B20	837-857	≤3.5	796-816	≤3.0
LTE-FDD-B28	708-743	≤2.0	763-798	≤2.0
LTE-TDD-B38	2570-2620	≤2.0	2570-2620	≤2.0
LTE-TDD-B39	1880-1920	≤2.5	1880-1920	≤2.5
LTE-TDD-B40	2310-2390	≤2.0	2310-2390	≤2.0
LTE-TDD-B41	2550-2660	≤2.0	2550-2660	≤2.0

3.Matching circuit



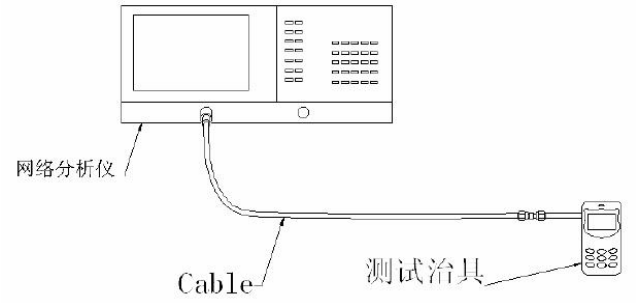
深圳市德仕勤科技有限公司
Dosking MicroElectronics Co.,Ltd
地址：深圳市南山区西丽大学城民企科技园 2 栋（港鸿基大厦）西座 403
TEL:0755-88602767 FAX:0755-82793883

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.



测试示意图

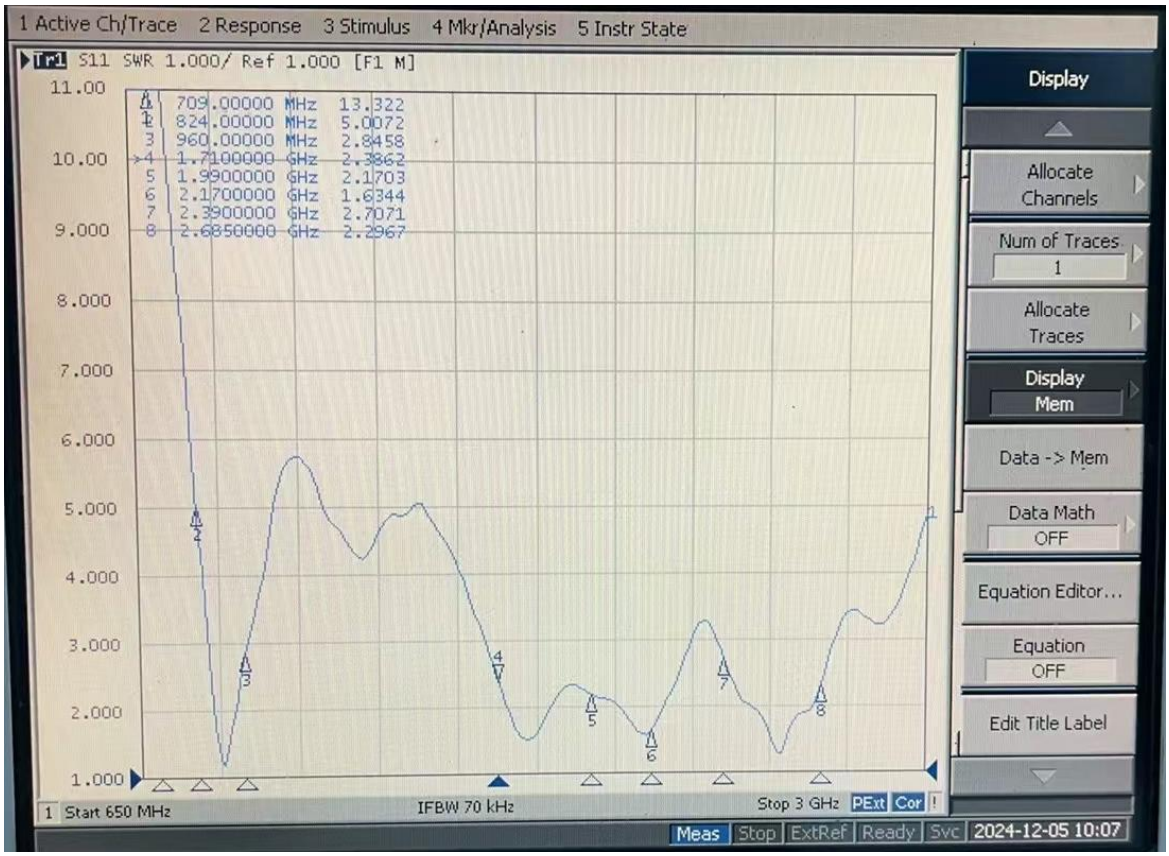
4.2 S11Parameter

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.

	S7TQ Antenna				
Frequency(MHz)	700	900	1710	1990	2680
Free space	4.1	2.2	6.0	5.7	3.6

深圳市德仕勤科技有限公司
Dosking 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

4.3 S11



VSWR

5. Power and sensitivity testing

5.1 Test data

Band	GSM850			GSM900		
	CH128	CH192	CH251	CH1	CH62	CH124
TRP	24.06	24.61	25.05	24.59	25.12	25.27
TIS			-100.76			-101.18
Band	DCS1800			PCS1900		
	CH512	CH698	CH885	CH512	CH661	CH810
TRP	24.06	24.65	23.86	23.39	23.32	23.33
TIS			-102.86			-102.49

Band	WCDMA-2100			WCDMA-1900		
	CH10562	CH10730	CH10838	CH9662	CH9800	CH9938
TRP	15.83	16.11	16.60	15.23	15.61	15.73
TIS			-100.42			-101.72
Band	WCDMA-1700			WCDMA-850		
	CH1537	CH1638	CH1738	CH4357	CH4408	CH4458
TRP	16.47	15.99	15.83	14,87	15.34	15.48
TIS			-102.81			-101.75
Band	WCDMA-B8			LTE-FDD-B1		
	CH2937	CH3013	CH3083	CH18050	CH18300	CH18550
TRP	15.75	15.80	15.47	15.39	16.24	16.86
TIS			-101.13			-89.15
Band	LTE-FDD-B2			LTE-FDD-B3		
	CH18650	CH18900	CH19150	CH19250	CH19575	CH19900
TRP	15.99	16.27	16.63	16.58	16.26	15.67
TIS			-89.03			-90.80
Band	LTE-FDD-B4			LTE-FDD-B5		
	CH20000	CH20175	CH20350	CH20450	CH20525	CH20600
TRP	17.16	16.67	16.15	15.02	15.66	15.25
TIS			-90.13			-89.65
Band	LTE-FDD-B7			LTE-FDD-B8		
	CH20800	CH21100	CH21400	CH21500	CH21625	CH21750
TRP	16.43	16.36	16.05	15.21	15.48	15.26
TIS			-90.30			-89.73
Band	LTE-FDD-B12			LTE-FDD-B17		
	CH23060	CH23095	CH23130	CH23780	CH23790	CH23800
TRP	14.39	14.69	14.87	14.51	15.95	15.05
TIS			-88.71			-88.09
Band	LTE-FDD-B20			LTE-FDD-B28		
	CH24200	CH24300	CH24400	CH27260	CH27300	CH27370
TRP	15.35	15.72	16.03	14.71	14.71	15.11
TIS			-89.75			-87.36

深圳市德仕勤科技有限公司
Dosking 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

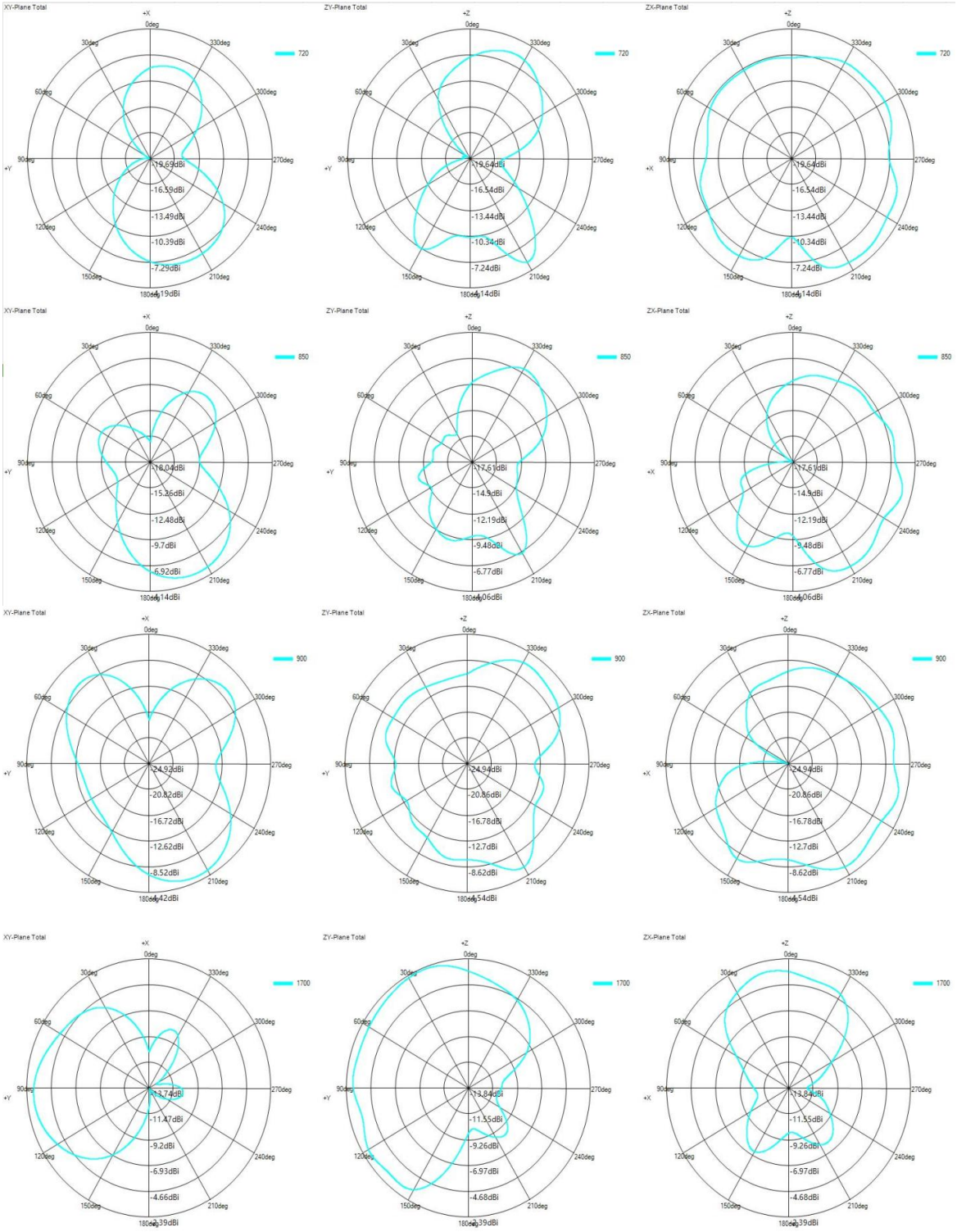
Band	LTE-TDD-B38			LTE-TDD-B39		
	CH37850	CH38000	CH38150	CH38350	CH38450	CH38550
TRP	16.34	16.27	16.97	15.64	15.91	15.92
TIS			-87.65			-89.21
Band	LTE-TDD-B40			LTE-TDD-B41		
	CH38750	CH39150	CH39550	CH40340	CH40620	CH41140
TRP	15.27	15.86	15.89	16.82	16.18	15.81
TIS			-87.54			-87.33

5.2 Antenna gain

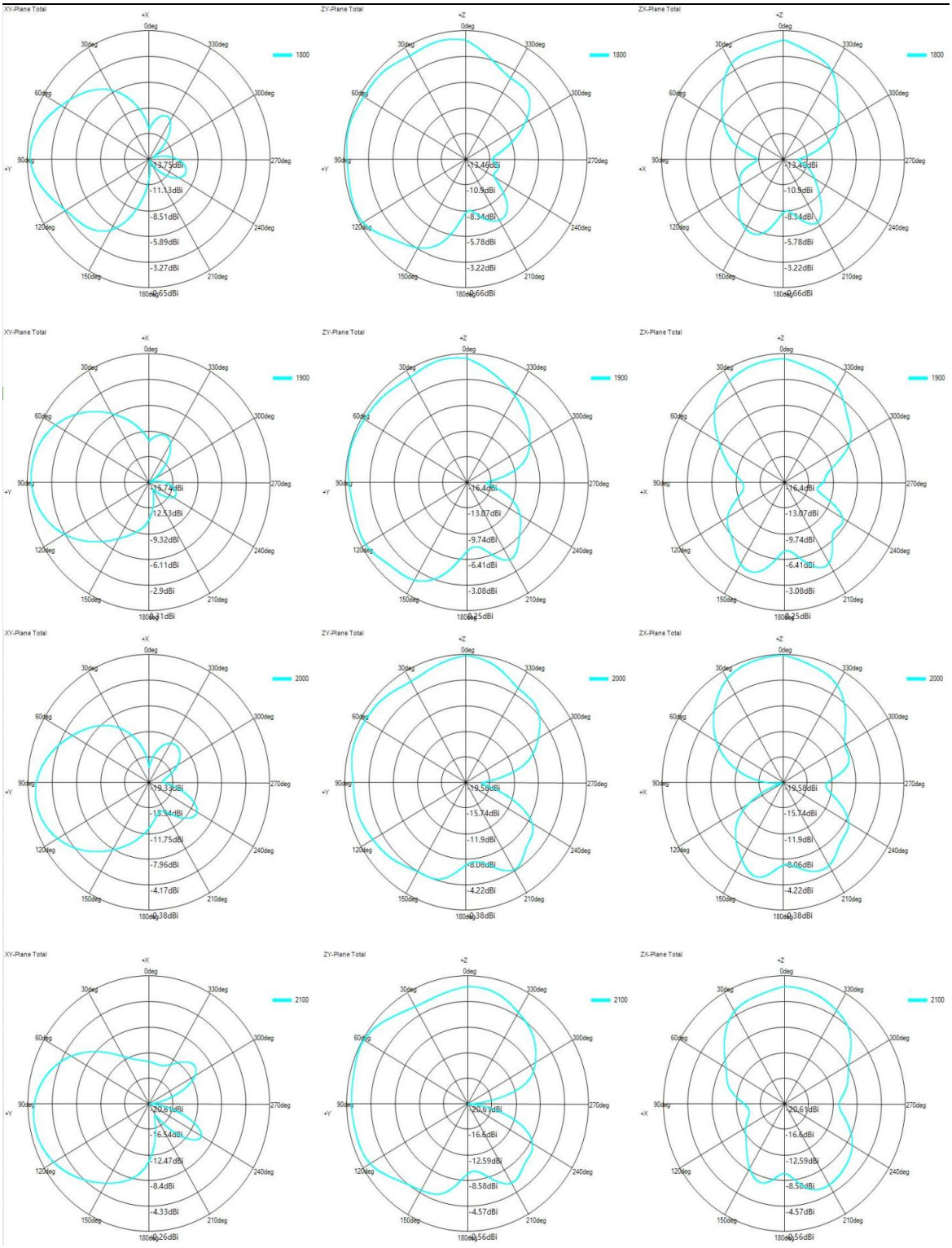
Band	Gain(dBi)	Band	Gain(dBi)
GSM850	-1.16	LTE-B17	-1.81
EGSM900	-1.54	LTE-B20	-1.28
DCS1800	0.23	LTE-B25	0..27
PCS1900	0.29	LTE-B26	-1.28
W-Band1	0.58	LTE-B34	0.20
W-Band2	0.34	LTE-B39	0.64
W-Band4	0.25	LTE-B40	0.58
W-Band5	-1.38	LTE-B41	0.73
W-Band8	-1.54	LTE-B28A/B	-1.74
LTE-B1	0.56	LTE-B66	0.32
LTE-B2	0.31		
LTE-B3	0.24		
LTE-B4	0.26		
LTE-B5	-1.25		
LTE-B7	0.69		
LTE-B8	-1.51		
LTE-B12	-1.78		

深圳市德仕勤科技有限公司
Dosking 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

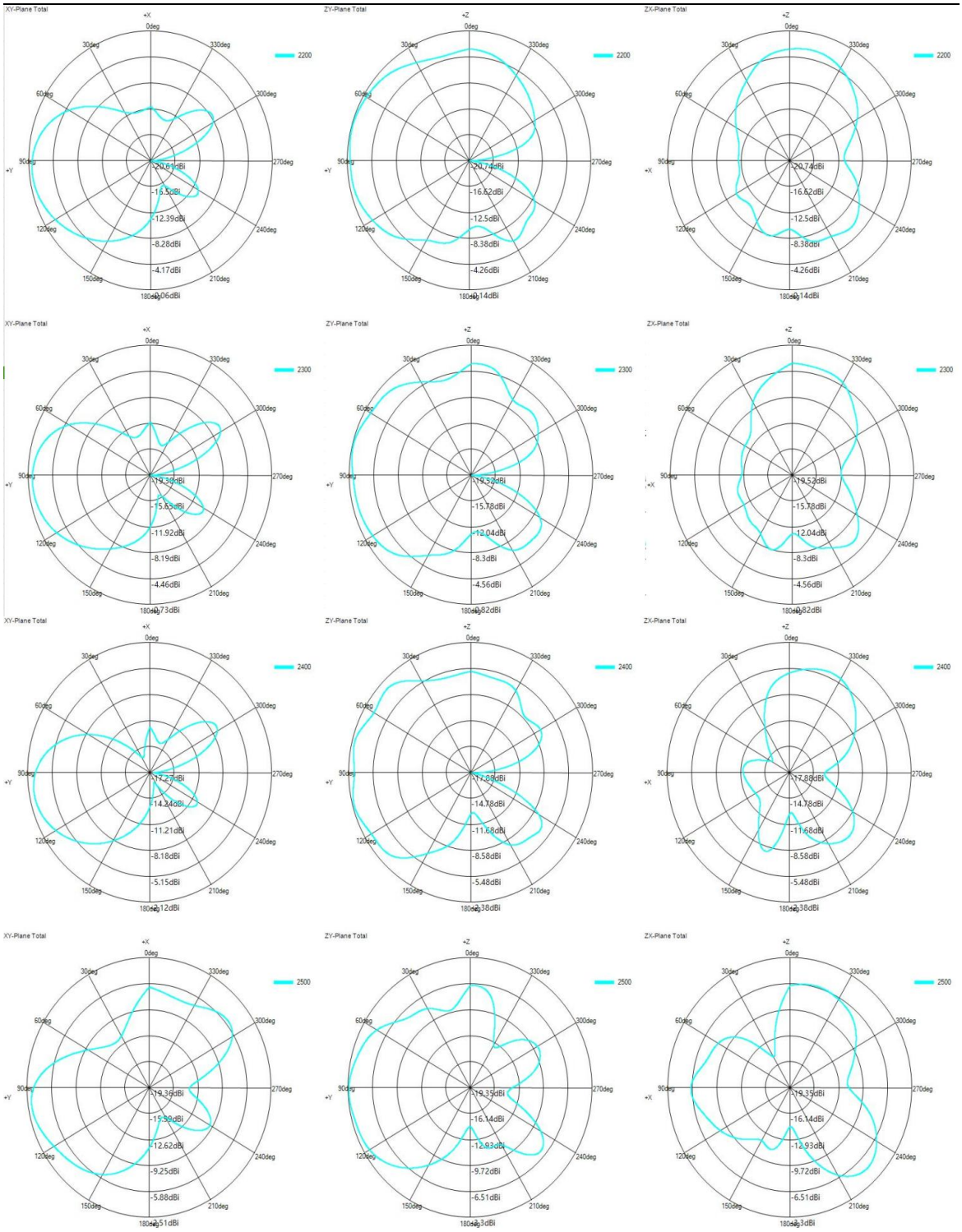
5.3 Direction diagram



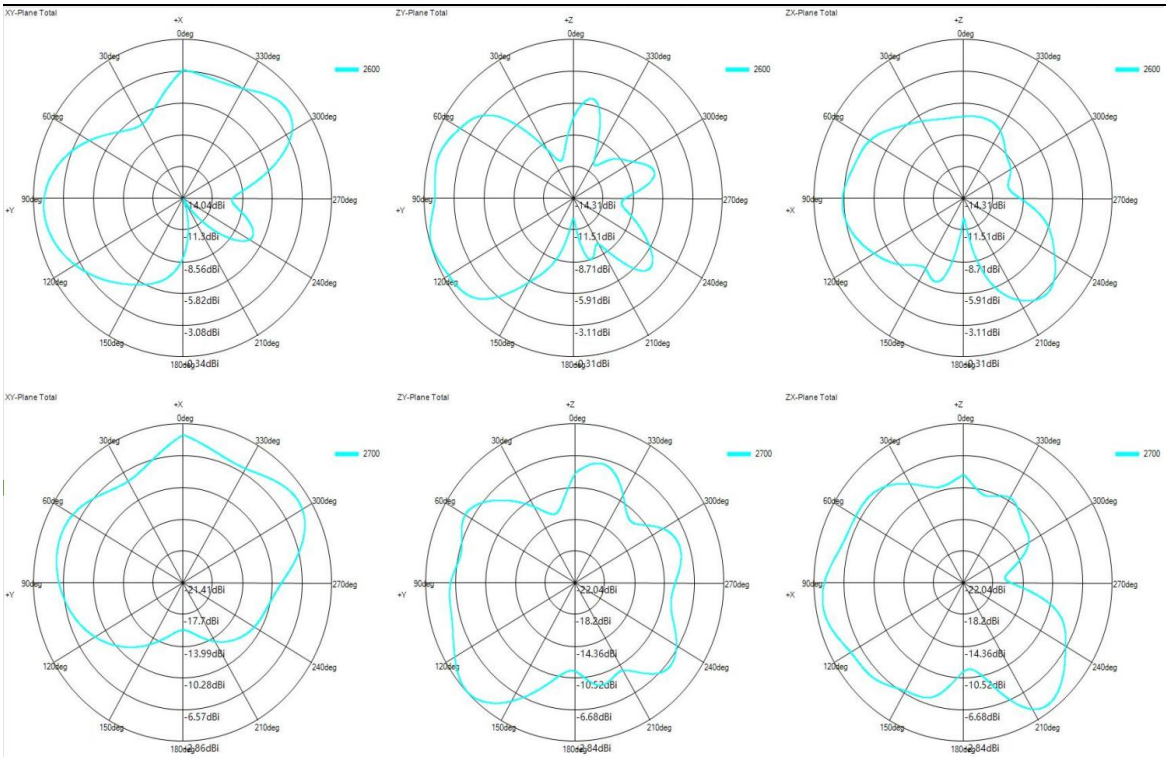
深圳市德仕勤科技有限公司
Dosking MicroElectronics Co.,Ltd
地址：深圳市南山区西丽大学城民企科技园 2 栋（港鸿基大厦）西座 403
TEL:0755-88602767 FAX:0755-82793883



深圳市德仕勤科技有限公司
Dosking 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



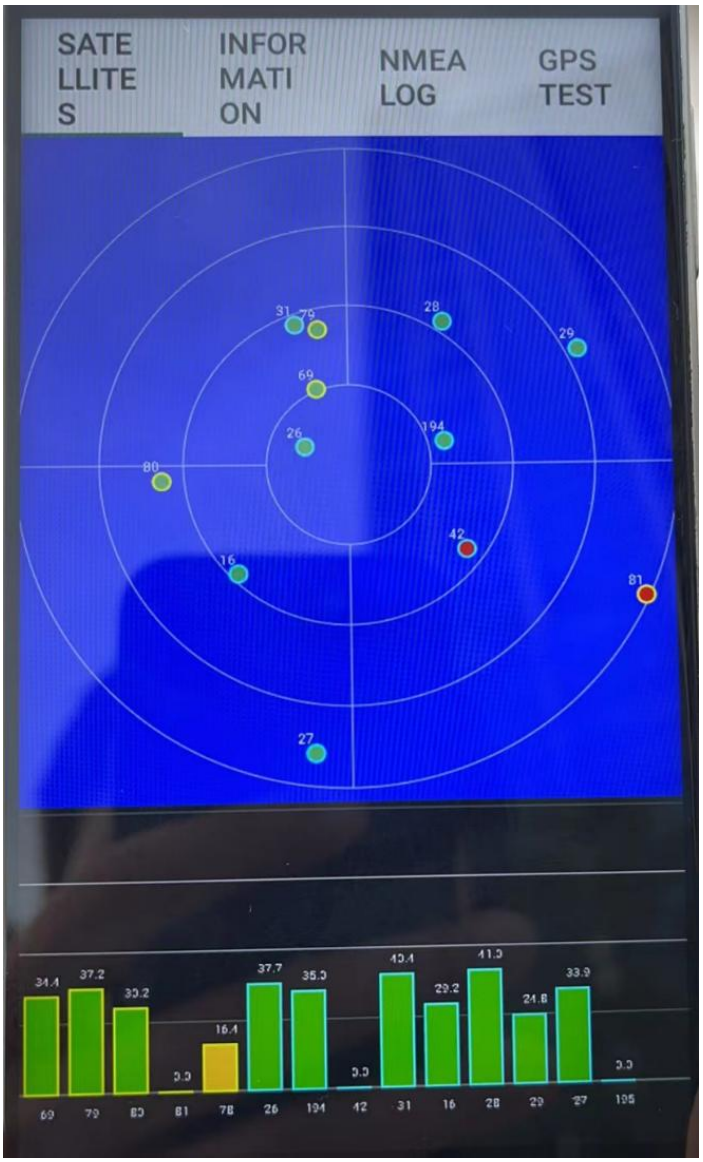
深圳市德仕勤科技有限公司
Dosking MicroElectronics Co.,Ltd
地址：深圳市南山区西丽大学城民企科技园 2 栋（港鸿基大厦）西座 403
TEL:0755-88602767 FAX:0755-82793883



5.4 GPS/WIFI+BT Antenna Test

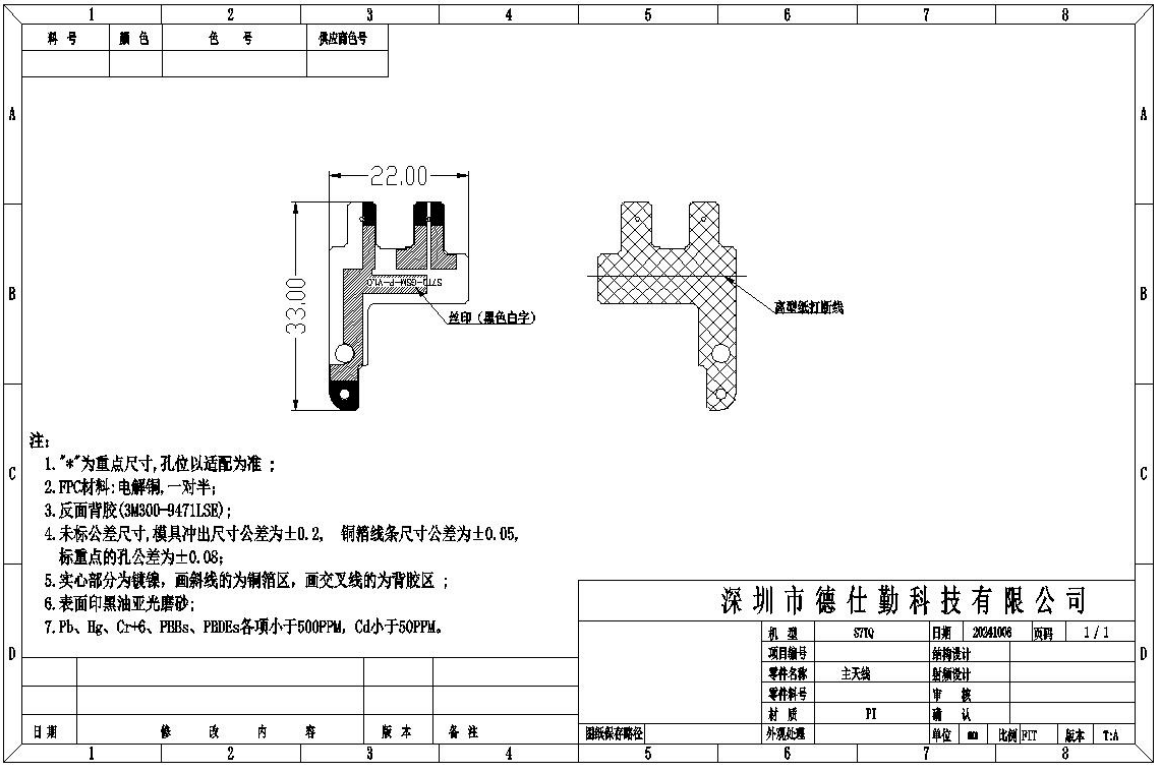
GPS-1575MHz			2.4G WIFI			5G WIFI		
Freq	Effi	Gain	Freq	Effi	Gain	Freq	Effi	Gain
(MHz)	(%)	(dBi)	(MHz)	(%)	(dBi)	(MHz)	(%)	(dBi)
1555	32.24	-0.95	2400	29.05	-1.19	5150	31.60	0.64
1565	33.31	-0.78	2420	28.93	-1.55	5250	30.92	0.66
1575	34.12	-0.5	2440	28.46	-1.38	5350	31.75	0.89
1585	34.27	-0.21	2460	27.89	-1.56	5450	31.34	0.56
1595	34.3	-0.2	2480	26.63	-1.61	5550	29.27	0.44
			2500	25.33	-1.97	5650	30.45	0.61
						5750	30.24	0.52
						5850	29.84	0.40

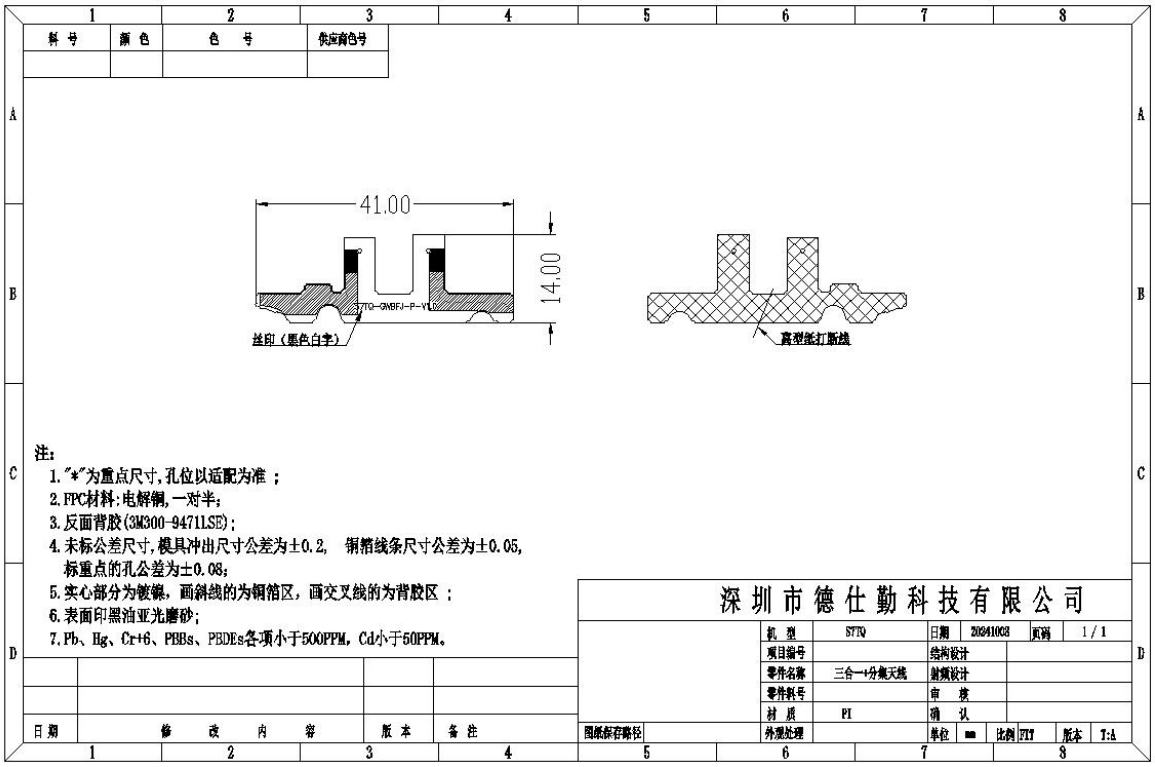
GPS/WIFI /BT 注:	GPS	Maximum signal strength	Number of received stars	Average positioning time（s）	Weather conditions
		41	10	90-120	晴
	WIFI	Normal internet distance（m）		Smooth distance for online browsing（m）	
		10-12		10-12	
	BT	Clear call distance（m）			
		10			



深圳市德仕勤科技有限公司
Dosking 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

6.Structural drawings





深圳市德仕勤科技有限公司
Dosking 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