Approval Sheet

客户名称(Customer Name) Xiaoji Technology

产品名称(Specification) K10D10 antenna (GSM /GPS+WIFI+BT/LTE)

客户料号(Customer P/N) GSM antenna : K10D10.D.D24.007

GPS/WIFI/BT antenna: K10D10.D.D24.003-V2

DIV antenna : K10D10.D.D24.006

送样日期 (Date) 2025-04-22

BAND	GSM:2.3.5 8/ WCDMA:1,2.4.5.8 LTE : B1,2,3,4,5,7,8.12,17,20,25,26,28.34.38.39.40,41,66		
Version	V1	GSM Change the routing, +V1Version	
RF	Peng wei	Confirm	

Structural confirmation:	Antenna Factory Check	XiaoJi Project selection
1.The external dimensions meet the drawing dimensions		
2.The positioning of the golden finger is OK, ensuring that it can reach the top.		
3.The silk screen font is correct		
4.Color Effect OK		
5. There is no possibility of lifting the golden fingers		
6. The antenna will not block microphone holes, etc;		
7. The antenna will not come into contact with inaccessible areas, resulting in no signal		
8. The bending position has been perforated		
9. R angles are made at all corners to prevent tearing		
10. Important contact positions cannot be connected with conductive fibers!		
If there are any inspection items that our sampling personnel did not check, this acknowledgement letter is invalid. If the antenna factory produces goods without authorization, all responsibilities will be borne by the	Signature	Signature

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antenna factory!		

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

5.2 Antenna gain/Direction diagram

5.3 Auxiliary antenna

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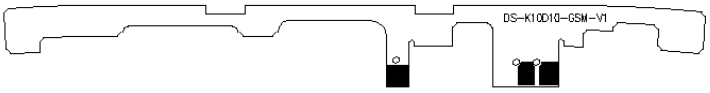
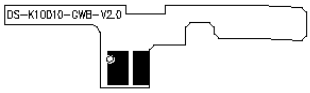
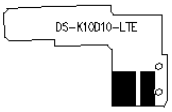
6.Structural drawings

1.Project image (for reference only)





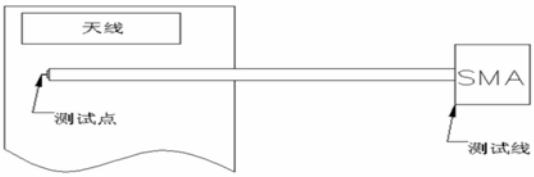


GSM antenna GPS/WIFI/BT antenna DIV antenna

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 K10D1mass-produced antennas：

K10D10 antenna				
	Frequency (MHz)	VSWR	Frequency (MHz)	VSWR
Frequency band	Transmitting end		Receiving end	
GSM850	824-849	≤3.5	869-894	≤3.0
DCS1800	1710-1785	≤3.0	1805-1880	≤2.5
PCS1900	1850-1910	≤2.8	1930-1990	≤3.2
WCDMA-2100	1710-1755	≤3.5	2110-2155	≤3.5
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
LTE-FDD-B1	1920-1980	≤2.0	2110-2170	≤2.0

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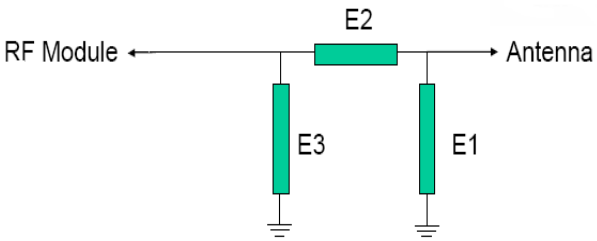
LTE-FDD-B2	1850-1910	≤2.8	1930-1990	≤3.2
LTE-TDD-B3	1710-1785	≤2.5	1805-1880	≤2.5
LTE-TDD-B5	824-849	≤3.5	869-894	≤3.0
LTE-TDD-B7	2505-2565	≤2.0	2625-2685	≤2.0
LTE-FDD-B8	880-913	≤2.0	930-955	≤2.0
LTE-FDD-B12	703-710	≤2.5	733-740	≤3.5
LTE-FDD-B17	709-711	≤3.0	739-741	≤3.0
LTE-FDD-B20	837-857	≤3.5	796-816	≤3.0
LTE-FDD-B25	1855-1910	≤3.5	1935-1990	≤3.0
LTE-FDD-B26	819-844	≤3.5	864-889	≤3.0
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
LTE-FDD-B66	1715-1775	≤3.5	2115-2175	≤3.0

3.Matching circuit



Element	Matching Value
E1	
E2	
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.

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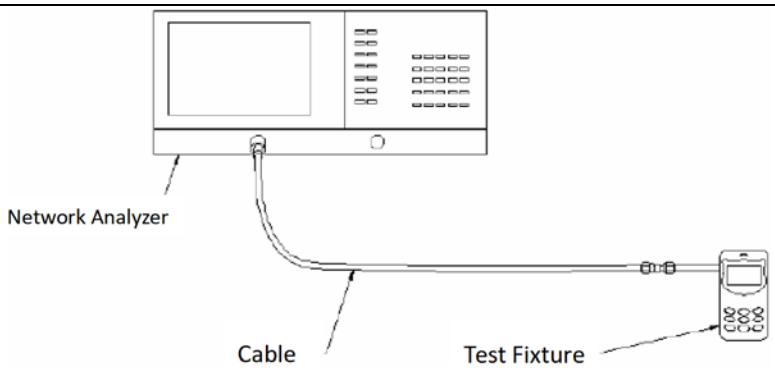

Test diagram

4.2 S11Parameter

The following table shows the standing wave ratio values at the edge frequency points of the K10D1 antenna operating frequency band. The waveform diagrams of Return Loss and VSWR obtained from the test are shown in the attachment.

Loss	K10D10 antenna			
Frequency(MHz)	824	960	1710	2685
Free space	2.6	2.1	2.4	2.1

4.3 S11

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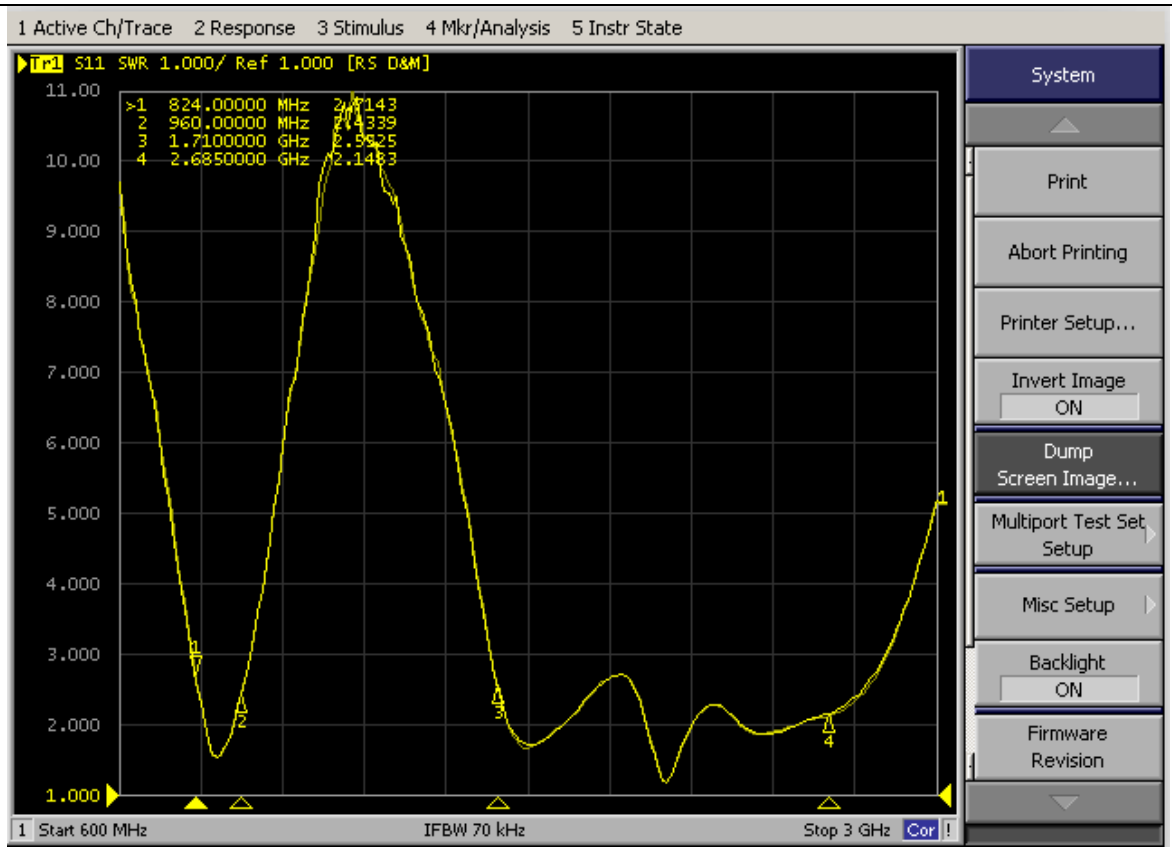

S11 Passive parameters

5. Power and sensitivity testing

5.1 Test data

BAND	GSM850			GSM900		
	CH128	CH192	CH251	CH1	CH62	CH124
TRP	25.11	25.88	26.30	26.87	26.01	25.49
TIS			-102.17			-100.19
BAND	DCS1800			PCS1900		
	CH512	CH698	CH885	CH512	CH661	CH810
TRP	24.24	24.67	25.11	24.80	24.26	23.72
TIS			-103.46			-103.53
BAND	WCDMA-2100			WCDMA-1900		
	CH10562	CH10730	CH10838	CH9663	CH9800	CH9938
TRP	17.58	16.81	16.36	17.95	17.71	17.11
TIS			-102.24			-103.57
BAND	WCDMA-850			WCDMA-1700		

	CH4357	CH4408	CH4458	CH1537	CH1638	CH1738
TRP	16.89	17.05	17.70	1655	16.79	17.05
TIS			-102.88			-102.89
BAND	WCDMA-900					
	CH2937	CH3013	CH3083			
TRP	17.04	16.59	16.07			
TIS			-100.52			
BAND	LTE-FDD-B1			LTE-FDD-B2		
	CH18050	CH18300	CH18550	CH18650	CH18900	CH19150
TRP	17.72	16.98	16.99	17.99	17.98	17.47
TIS			-91.74			-90.47
BAND	LTE-FDD-B3			LTE-FDD-B4		
	CH19250	CH19575	CH19900	CH20000	CH20175	CH20350
TRP	16.56	17.03	17.71	17.47	17.53	17.46
TIS			-89.94			-91.72
BAND	LTE-FDD-B5			LTE-FDD-B7		
	CH20450	CH20525	CH20600	CH20800	CH21100	CH21400
TRP	16.53	16.70	17.01	15.22	15.72	15.39
TIS			-90.52			-90.66

BAND	LTE-FDD-B8			LTE-FDD-B12		
	CH21500	CH21625	CH21750	CH23060	CH23095	CH23130
TRP	17.15	16.62	16.08	16.56	16.82	16.79
TIS			-89.82			-88.49
BAND	LTE-FDD-B17			LTE-FDD-B20		
	CH23780	CH23790	CH23800	CH24200	CH24300	CH24400
TRP	16.20	16.37	16.47	17.09	17.49	17.17
TIS			-87.89			-88.49
BAND	LTE-FDD-B25			LTE-FDD-B26		
	CH26090	CH26365	CH06640	CH26740	CH26865	CH26990
TRP	17.64	17.70	1754	16.25	16.53	16.73
TIS			-91.02			-89.65
BAND	LTE-FDD-B28			LTE-TDD-B34		
	CH27370	CH27435	CH27610	CH36250	CH36275	CH36300

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TRP	16.55	17.08	16.84	1637	16.31	16.24
TIS			-88.96			-92.41
BAND	LTE-FDD-B66					
	CH36250	CH36275	CH36300			
TRP	16.26	16.67	17.01			
TIS			-92.47			
BAND	LTE-TDD-B38			LTE-TDD-B39		
	CH37850	CH38000	CH38150	CH38350	CH38450	CH38550
TRP	15.25	15.61	15.73	17.42	17.39	17.07
TIS			-91.39			-90.89
BAND	LTE-TDD-B40			LTE-TDD-B41		
	CH38750	CH39150	CH39550	CH40340	CH40260	CH41140
TRP	17.36	16.72	15.34	15.25	15.46	15.76
TIS			-91.37			-91.46

5.2 Antenna gain/Direction diagram

Band	GAIN(dBi)	Band	GAIN(dBi)
GSM850	-0.8	LTE-B17	-0.8
EGSM900	-0.6	LTE-B20	-0.6
DCS1800	1.0	LTE-B25	0.8
PCS1900	0.8	LTE-B26	-0.6
W-Band1	0.8	LTE-B34	0.7
W-Band2	0.8	LTE-B38	0.4
W-Band4	1.1	LTE-B39	0.8
W-Band5	-0.6	LTE-B40	0.5
W-Band8	-0.6	LTE-B41	0.4
LTE-B1	0.8	LTE-B28A/B	-0.7
LTE-B2	0.8	LTE-B66	0.6
LTE-B3	1.0		
LTE-B4	1.1		
LTE-B5	-0.6		
LTE-B7	0.9		
LTE-B8	-0.5		
LTE-B12	-0.9		

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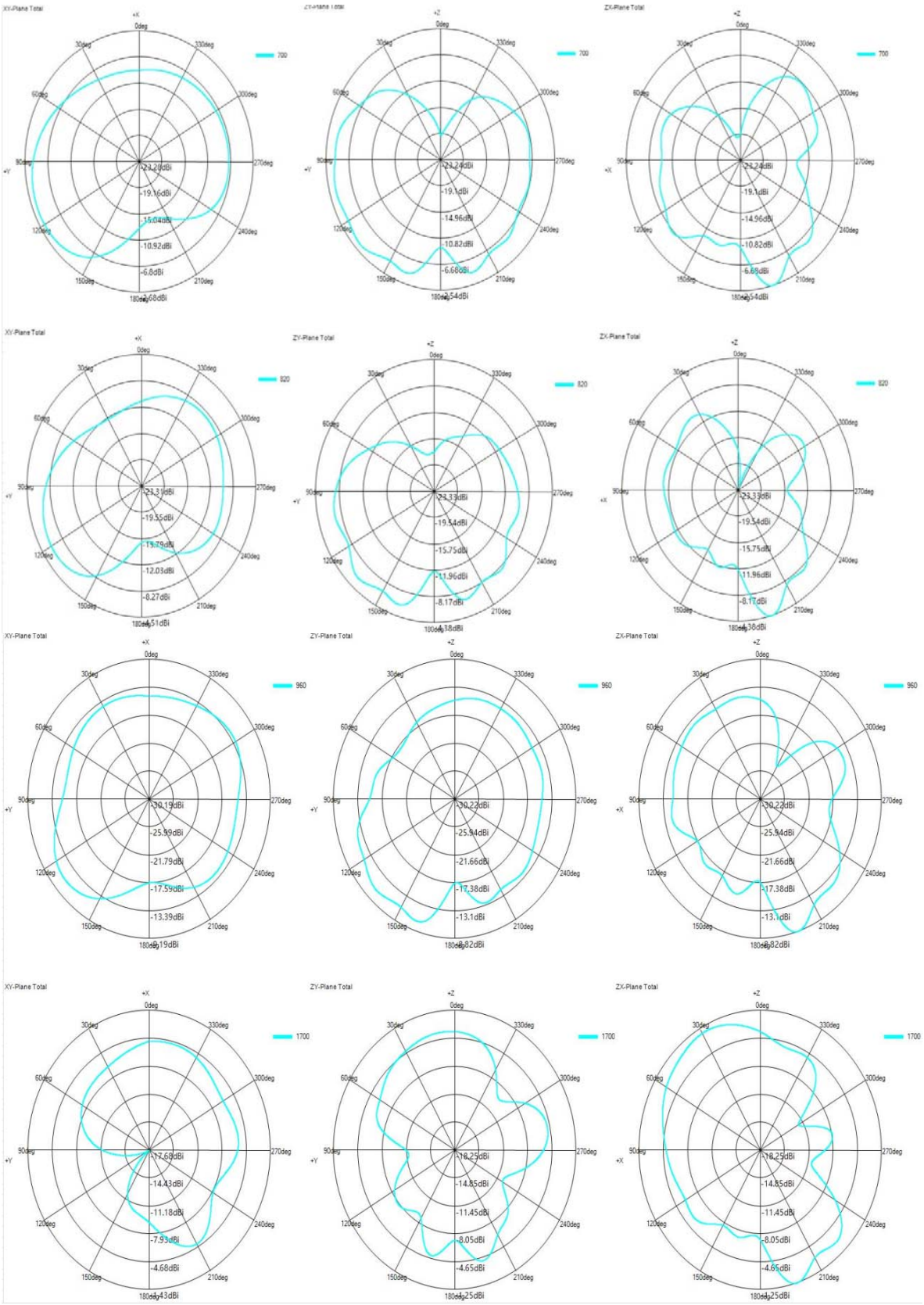

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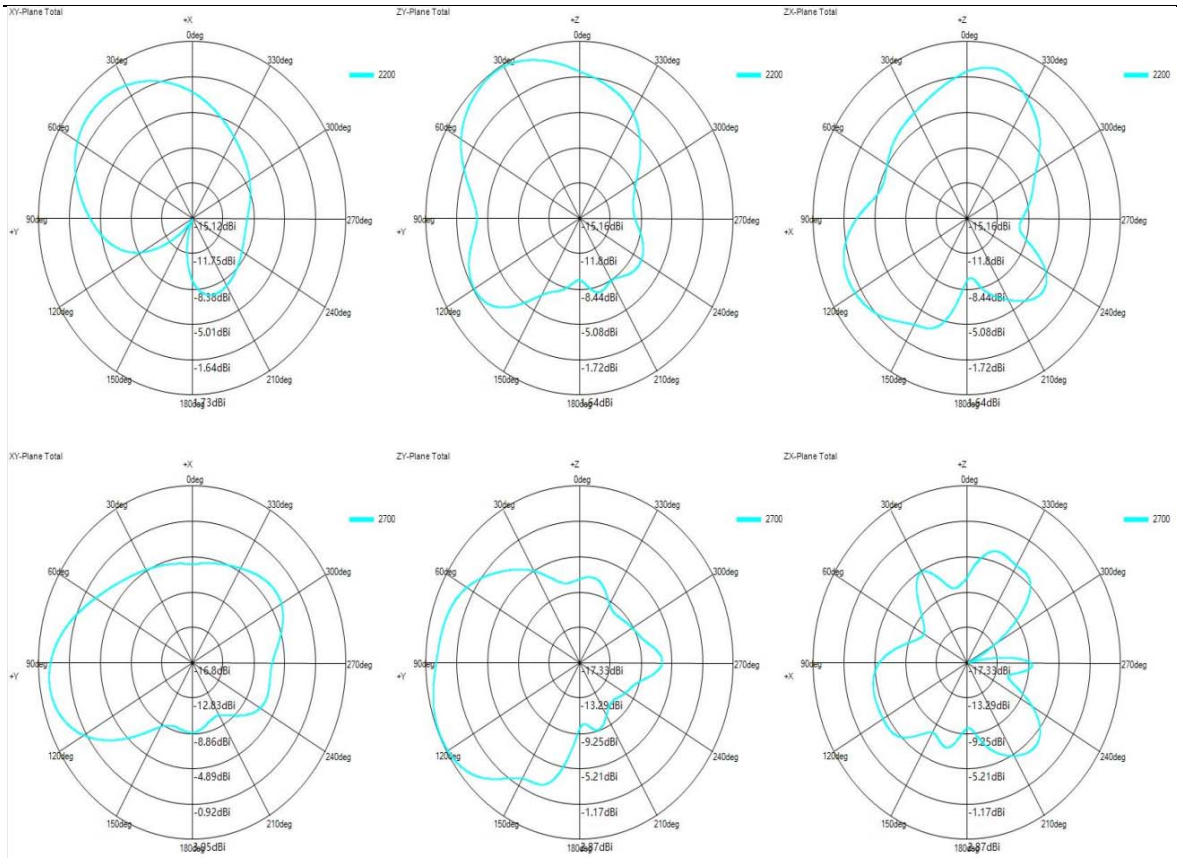

5.3 Auxiliary antenna：

Passive Test For 2400-2500				Passive Test For 5150-5850				Passive Test For GPS			
Freq	Effi	Gain	Effi	Freq	Effi	Gain	Effi	Freq	Effi	Gain	Effi
(MHz)	(dB)	(dBi)	(%)	(MHz)	(dB)	(dBi)	(%)	(MHz)	(dB)	(dBi)	(%)
2400	-5.27	-1.11	28.29	5150	-5.61	1.23	27.48	1565	-5.22	-0.56	30.05
2420	-5.05	-0.86	31.27	5250	-5.83	1.04	26.12	1570	-5.1	-0.45	30.87
2440	-4.94	-0.85	32.05	5350	-6.01	0.51	25.06	1575	-5.07	-0.46	31.11
2460	-4.63	-0.75	34.45	5450	-5.47	1.41	28.39	1580	-5.15	-0.58	30.55
2480	-4.57	-0.92	34.94	5550	-5.73	0.62	26.76	1585	-5.22	-0.61	30.04
2500	-4.52	-1.03	35.3	5650	-5.52	0.78	28.05				
				5750	-5.2	0.92	30.19				
				5850	-4.98	0.98	31.75				

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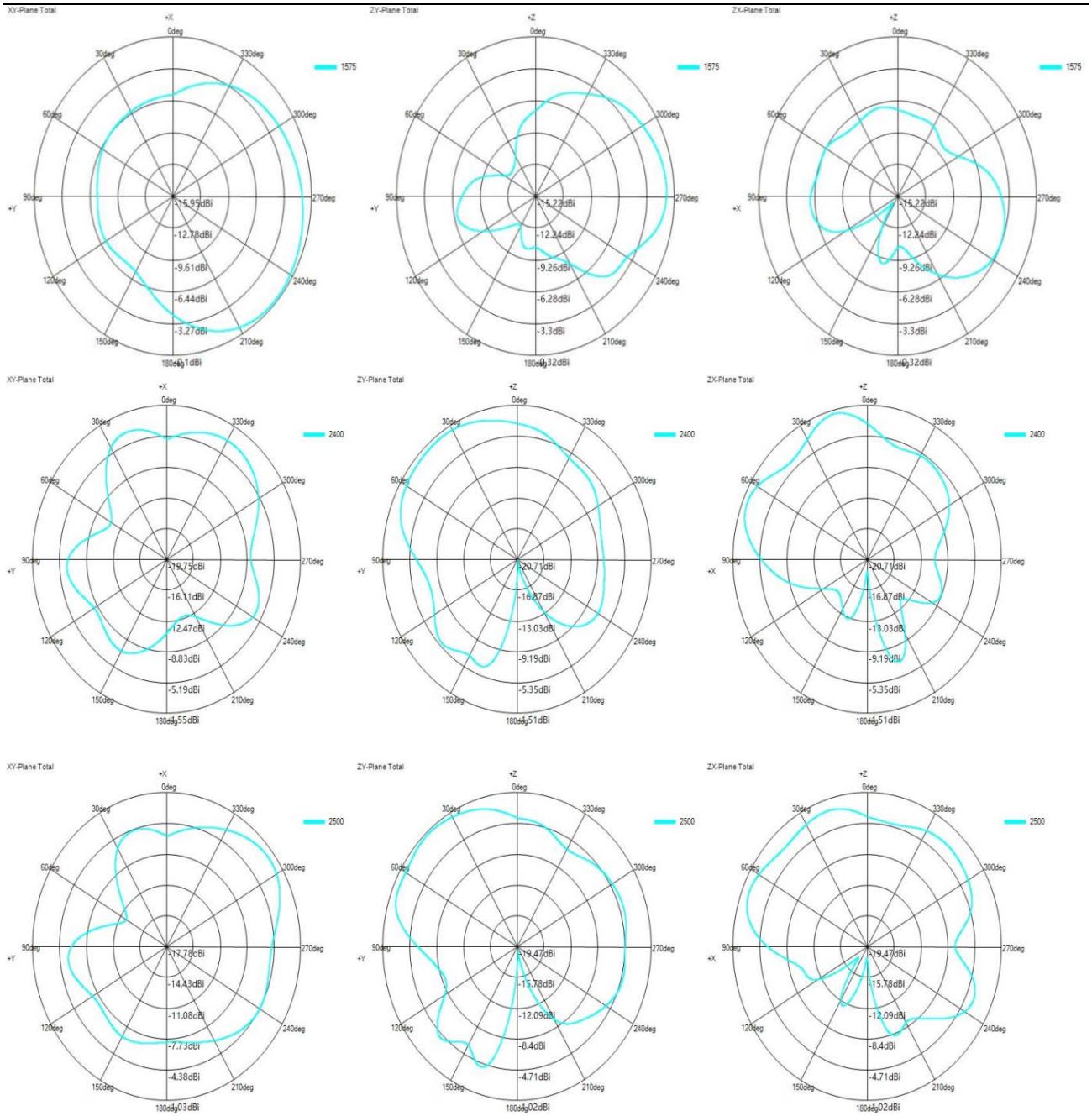

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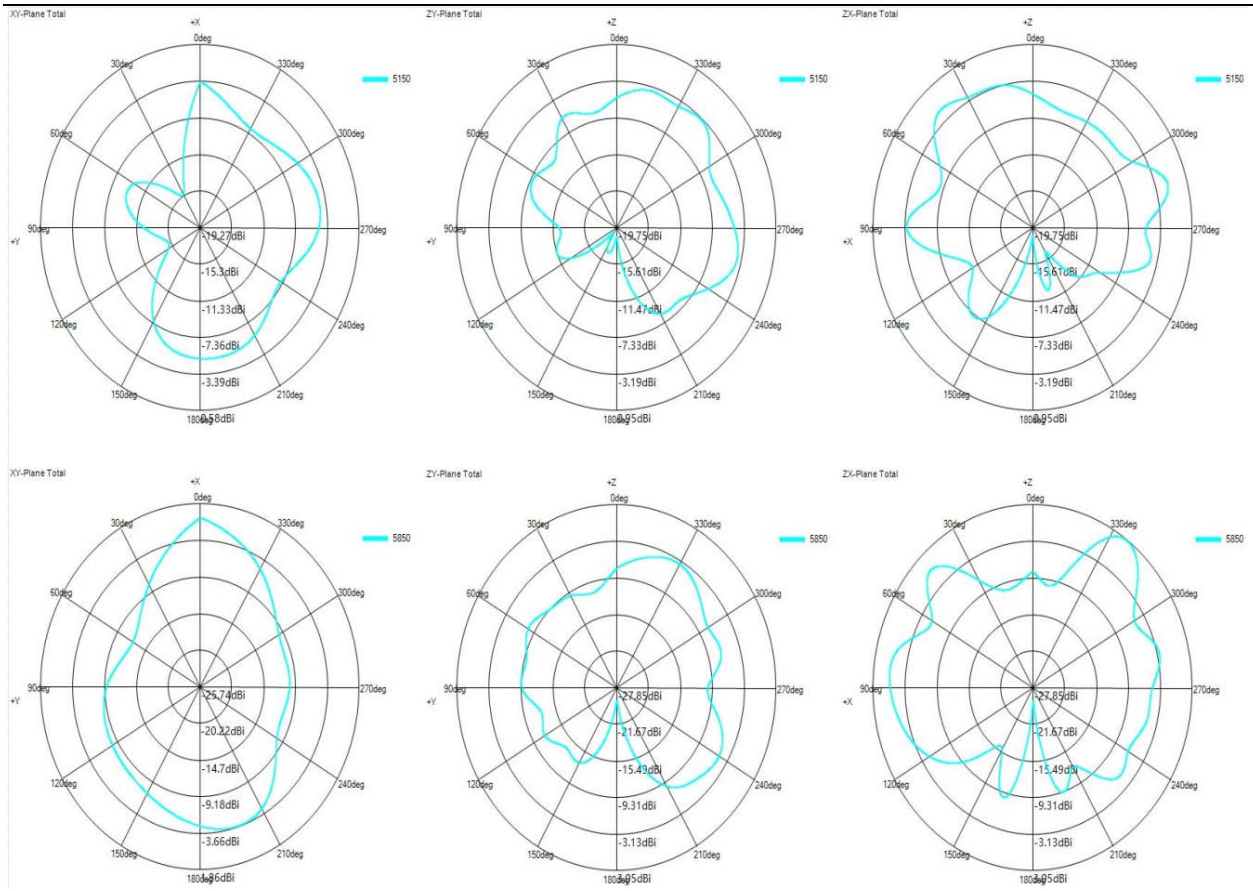

GPS	Maximum signal strength	Number of received stars	Average positioning time (s)	Weather conditions
	41	12	90-120	Sunny
WIFI	Normal internet distance (m)		Smooth distance for online browsing (m)	
	12-15		10-12	
BT	Clear call distance (m)			
	10-12			

GPS Outdoor testing effect :

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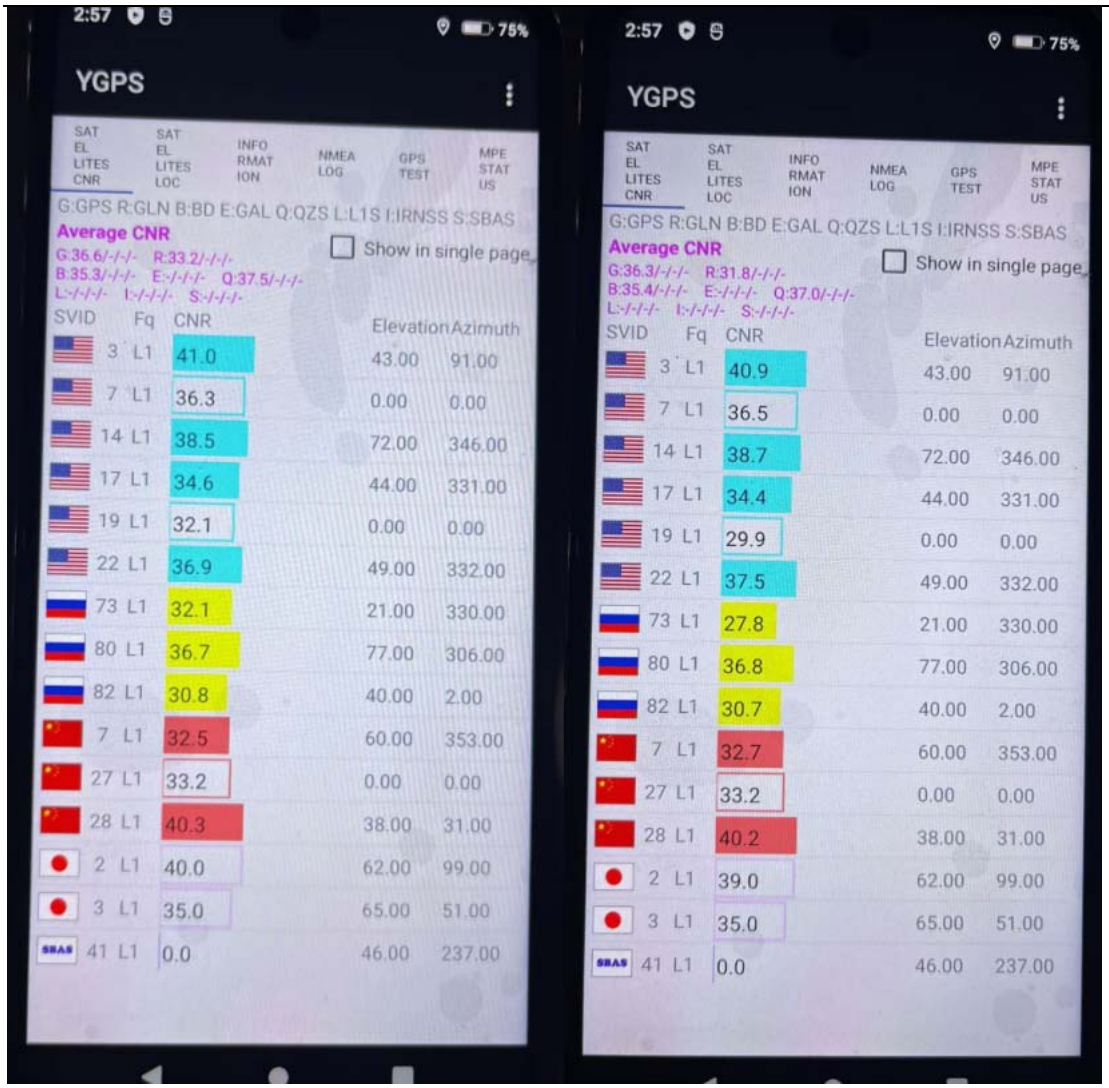

6.Structural drawings

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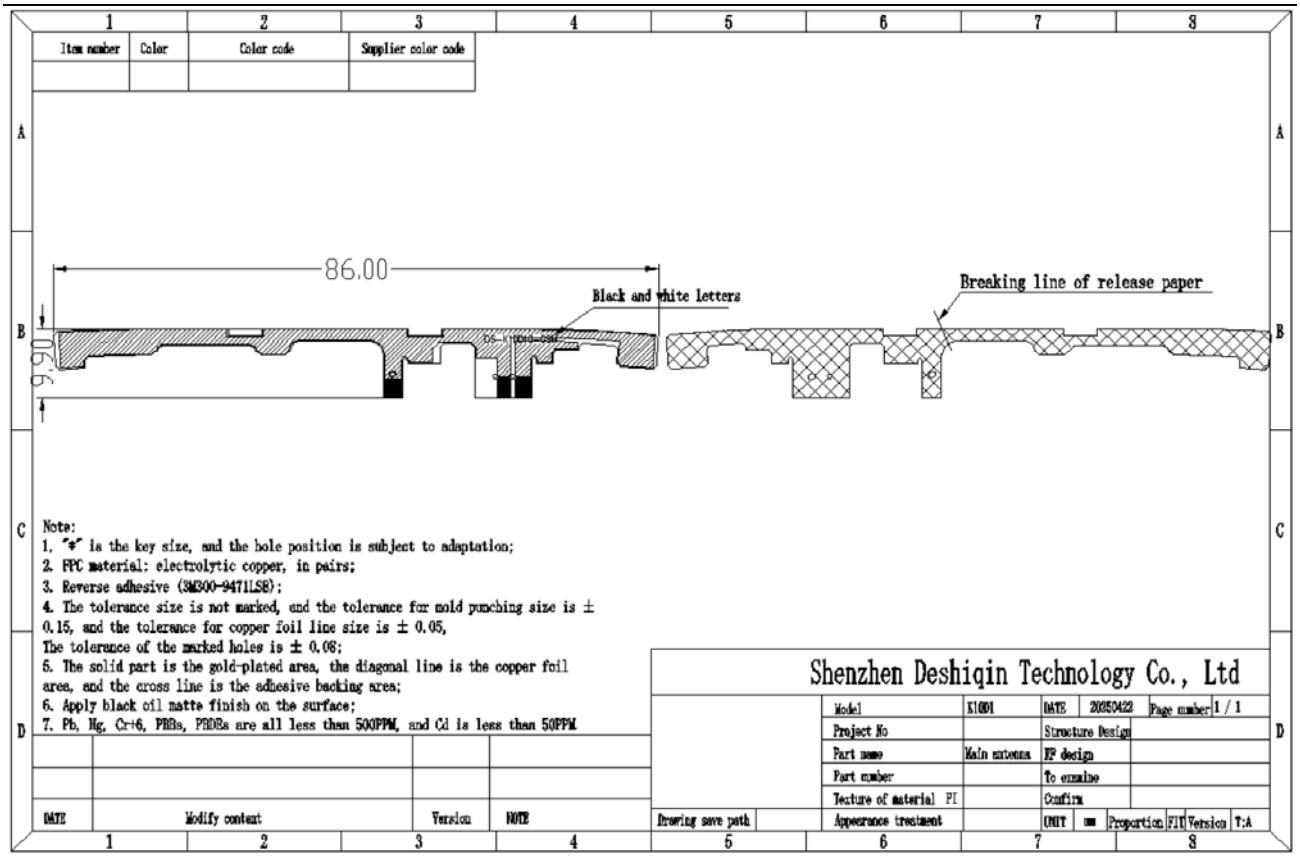

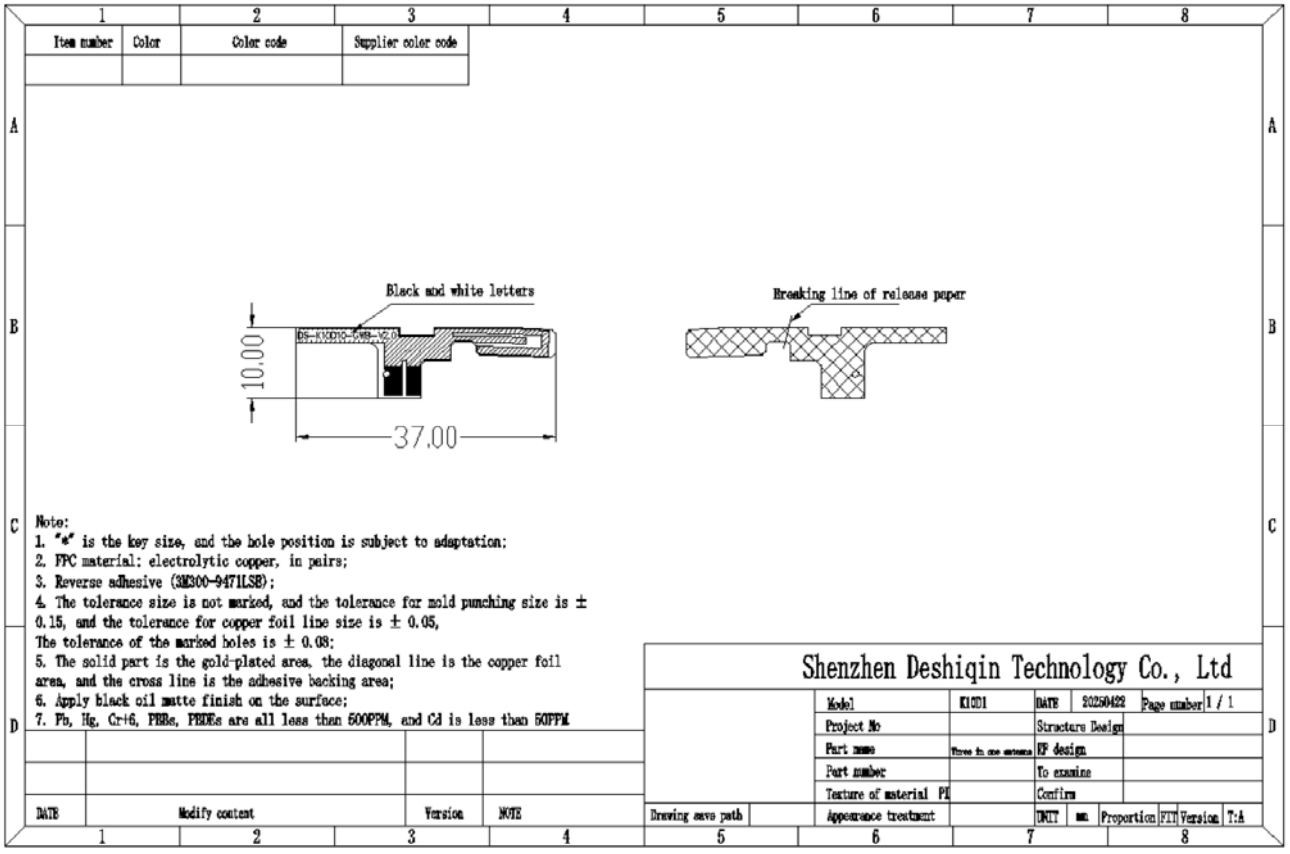

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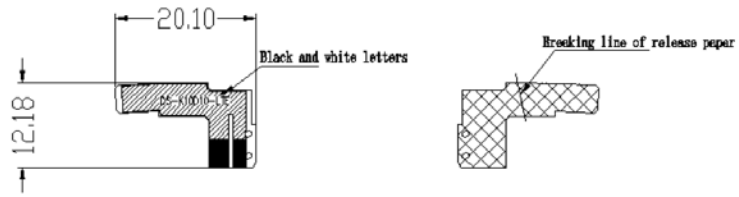
Item number	Color	Color code	Supplier color code



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 ± 0.15, 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 the gold-plated area, the diagonal line is the copper foil area, and the cross line is the adhesive backing area;
6. Apply black oil matte finish on the surface;
7. Pb, Hg, Cr+6, PBBs, PBDEs are all less than 500PPM, and Cd is less than 50PPM

DATE	Modify content	Version	NOTE

Shenzhen Deshiqin Technology Co., Ltd

Model	K1G01	DATE	20250423	Page number	1 / 1
Project No		Structure Design			
Part name	DIV antenna	RF design			
Part number		To examine			
Texture of material PI		Confirm			
Drawing save path	Appearance treatment	UNIT	mm	Proportion	FIT Version T:A

Dosking MicroElectronics Co.,Ltd
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