Shenzhen Yesheng Communication Technology Co.,Ltd

Specification for built-in Antenna

QS1035 Main Antenna/Diversity Antenna/ GWB Antenna/Antenna Coaxial line Product Confirmation

Client	深圳时骏物联科技有限公司 山西时骏物联科技有限责任公司	**Freq-Band**	GSM 四频 WCDMA/1900/1700/850 LTE-B2/B4/B5/B7/B12/B17/ B66/B71 GPS-WIFI-BT
Product Name	QS1035	**Version**	YST-V1.0-A
Item Number	YST-20221119-0S1035	**Copies**	**5**
Sample type	FPC Antenna	**Colour**	**Black**
RF Designer		**Structural design**	
Department Manager		**Date**	**December 20，2022**
Supplementary notes: **The large goods order shall be produced and made according to the confirmation. If there is any change, the confirmation shall be provided again before production and making.**			
Client confirms：			
Customer Item No： **QS1035 Main Antenna Material code：910204948** **QS1035 Diversity Antenna Material code ： 910204949** **QS1035 GWB Antenna Material code ： 910204950** **QS1035 Antenna Coaxial line Material code :910204947**			

Producer: Ying Jia Bing

address: Room 308, building 64, Jin Long Industrial City (Tianmawei building) , 88 Daxin road, Majarong, Nanshan district, Shenzhen. Tel: 0755-22678821 fax: 0755-22678890

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1. Technical Information

1.1 Testing company

Testing company:	Shenzhen Yesheng Communication Technology Co.,Ltd
Test address:	Room 308, building 64, Jin Long Industrial City (Tianmawei building) , 88 Daxin road, Majarong, Nanshan district, Shenzhen
Test date:	2022-12-20

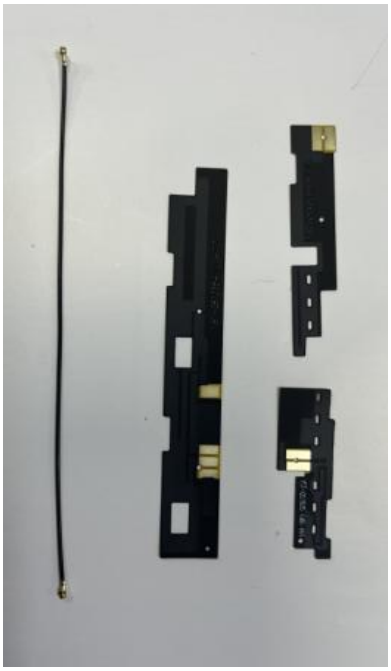
1.2Test information

WireLess type:	Main antenna/Diversity antenna/ GWB antenna /Antenna Coaxial line
Freq-Band：	GSM 四频 WCDMA/1900/1700/850 LTE-B2/B4/B5/B7/B12/B17/B66/B71 GPS-WIFI-BT
Antenna:	PIFA
Product Name：	QS1035

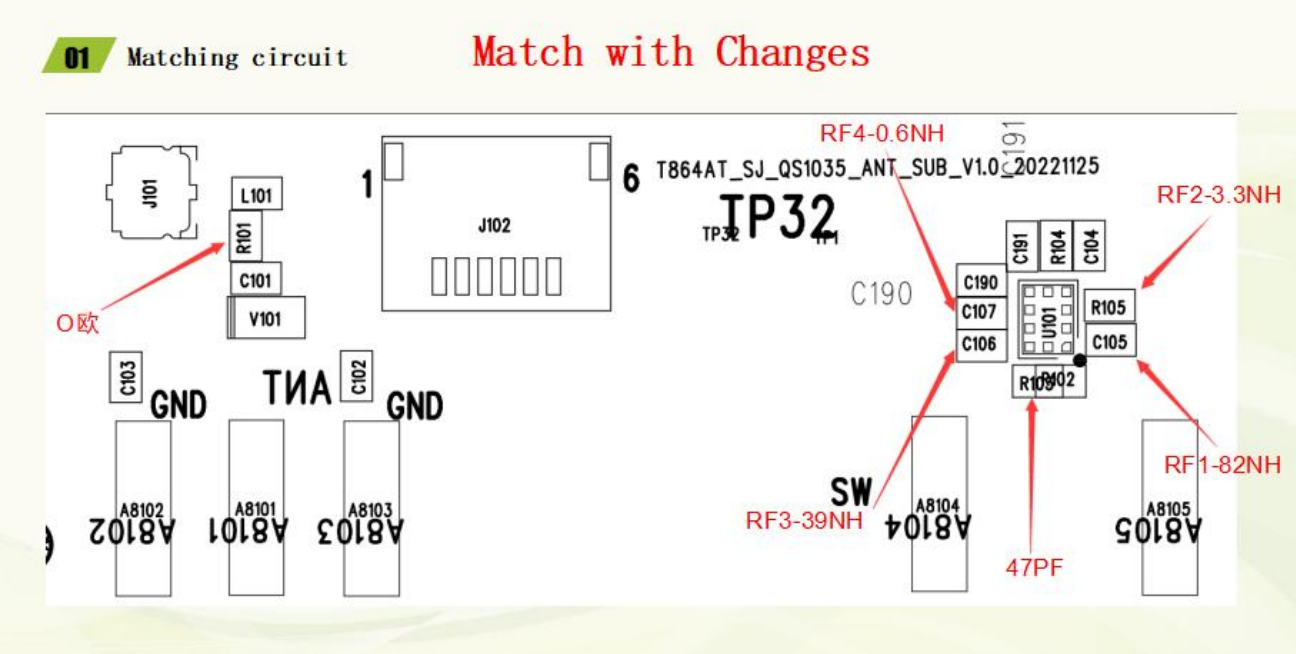
2. Antenna

2.0 Picture of antenna and prototype

Q1035-Antenna Machines Picture



2.1 Matching circuit



02 tuner天线开关逻辑

RF1;DCS1800-PCS1900 WCDMA-B2-B4 LTE-B2-B4-B7-B66-B71
RF2;GSM850 WCDMA-B5 LTE-B5
RF3;LTE/B12/B17
RF4;GSM900

2.2 Antenna specifications

1、Antenna Composition:

Main antenna, FPC black, Screen Printing：YST-QS1035-MAIN-ANT
diversity antenna，FPC black, Screen Printing：YST-QS1035-DIV-ANT
GWB antenna，FPC black, Screen Printing：YST-QS1035-GW*B*-ANT
Antenna Coaxial line， Double head four generation terminal wire black, wire diameter 0.81mm, length 115.2mm

2、Packing Method

Main antenna, diversity antenna, GWB antenna, Antenna Coaxial line，packaged and shipped.

2.3 Test Conditions

Test Environment Conditions：**Darkroom temperature** （16-25）°C

3. Antenna Test

3.1、Test Environment：

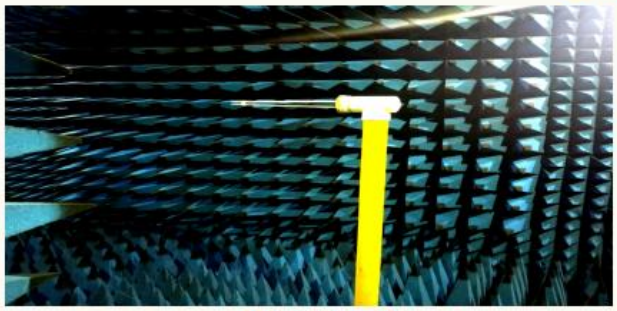
Test was conducted in free space condition (microwave unreflected chamber).

Satimo 3D Chamber 6×4×4(m)

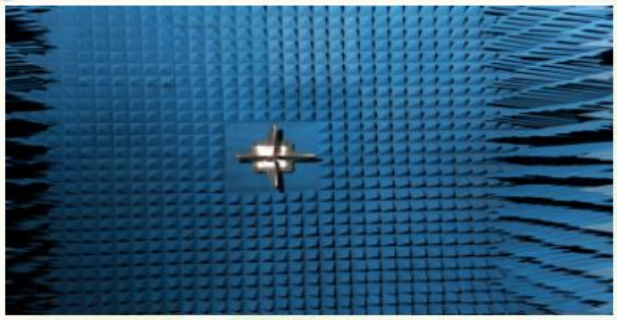
gilent 8960 8753ES CMW500

twork analyzer-R&S ZVL

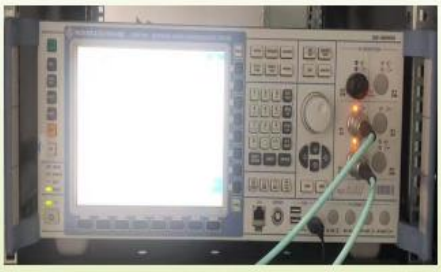
ETS

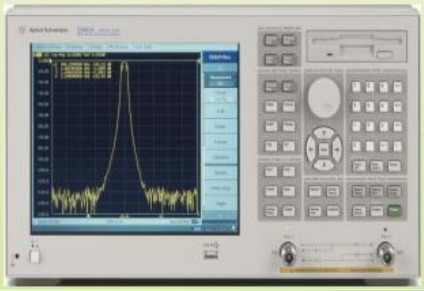


SATIMO--24



罗德斯瓦茨屏蔽箱





测试系统	有缘测试	无源测试
SATIMO ETS	支持2G/3G/4G/WIFI	600MHZ-----6G

3.2、 The turn of VSWR test equipment connection is：

R&S ZVLwork analyzer→ test line→Test fixture→ actual measurement（See figure）。

3.3、Gain,efficiency,power（TRP）,sensitivity（TIS）：

microwave unreflected chamber：
test frequency range 400MHz—6GHz， Quiet zone range is 50cm around，

reflectivity less than-50 dB

3.4、Test instrument

R&S ZVL work analyzer、Agilent8960 Agilent8753ES CWM500/MT8820C Standard horn antenna etc。

3.5. Points to notea

This antenna is only suitable for debugging prototype, any change of motherboard version or RF MATERIAL, any change of mobile phone accessories such as camera.

4.Test Results lists

In microwave unreflected chamber，the power and sensitivity are listed below：

4.1 3D Test Data

Band	Channel	TRP	TIS	亮屏TIS
GSM900	CH1	25.7		
	CH62	25.5		
	CH124	25.0	-101.0	
DCS1800	CH512	25.5		
	CH698	26.3		
	CH885	26.7	-103.6	
GSM850	CH128	29.0		
	CH190	28.2		
	CH251	27.1	-103.1	
PCS1900	CH512	26.6		
	CH661	25.7		
	CH810	24.7	-104.0	

Band	Channel	TRP	TIS	亮屏TIS
WCDMA-1900	CH9662	19.2		
	CH9800	18.5		
	CH9938	18.0	-105.0	
WCDMA-1700	CH1537	18.2		
	CH1637	18.6		
	CH1738	19.0	-103.2	
WCDMA-850	CH4357	18.0		
	CH4407	17.8		
	CH4458	18.2	-103.8	

4.2 3D Test Data

Band	Channel	TRP	TIS	亮屏TIS
LTE B2 (10MHz)	CH650	19.3		
	CH900	18.8		
	CH1150	18.3	-93.5	
LTE B4 (10MHz)	CH37850	18.5		
	CH38000	18.9		
	CH38150	19.2	-93.0	
LTE B5 (10MHz)	CH2450	18.0		
	CH2525	17.9		
	CH2600	17.8	-93.7	
LTE B7 (10MHz)	CH2800	18.4		
	CH3100	18.3		
	CH3400	18.5	-91.9	

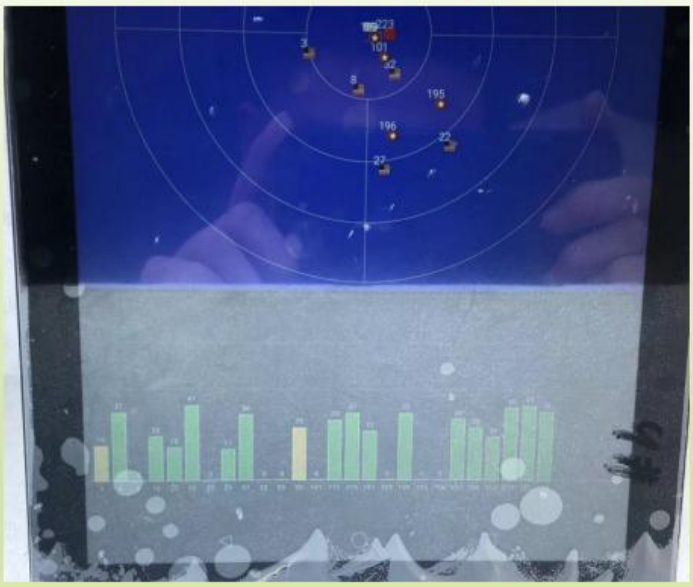
Band	Channel	TRP	TIS	亮屏TIS
LTE B12 (10MHz)	CH5060	17.0		
	CH5095	17.2		
	CH5130	18.0	-93.9	
LTE B17 (10MHz)	CH5780	17.6		
	CH5790	17.7		
	CH5800	18.2	-93.8	
LTE B66 (10MHz)	CH66436	18.8		
	CH66786	19.3		
	CH67135	19.5	-93.1	
LTE B71 (10MHz)	CH68636	15.5		
	CH68760	16.8		
	CH68885	17.6	-92.3	

4.3 WIFI-BT Test Data

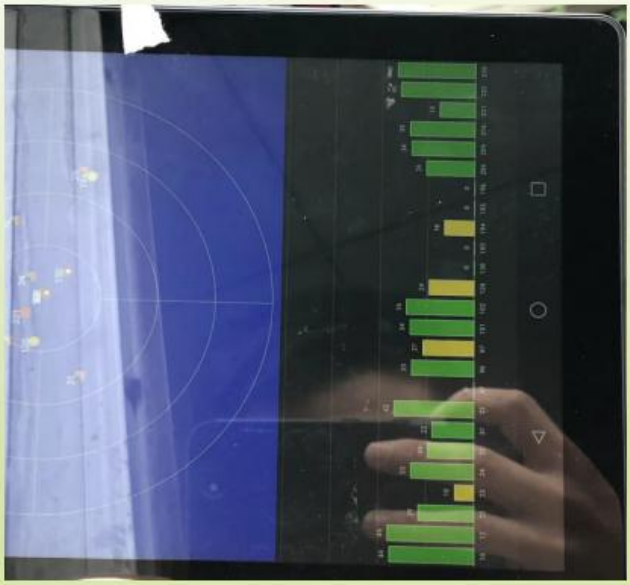
Band	Channel	TRP	TIS
WIFI2.4G-B-11Mbps	CH1	8.8	-79.5
	CH6	8.0	-78.2
	CH11	9.1	-79.3
WIFI5G-A - 54Mbps	CH36	7.4	-67.9
	CH64	7.3	-67.1
	CH165	7.0	-66.8
BT	实测连接华为蓝牙耳机无障碍清晰听音乐距离		
	15m		

4.4 GPS Window measured Tata

Vertical survey



Cross survey



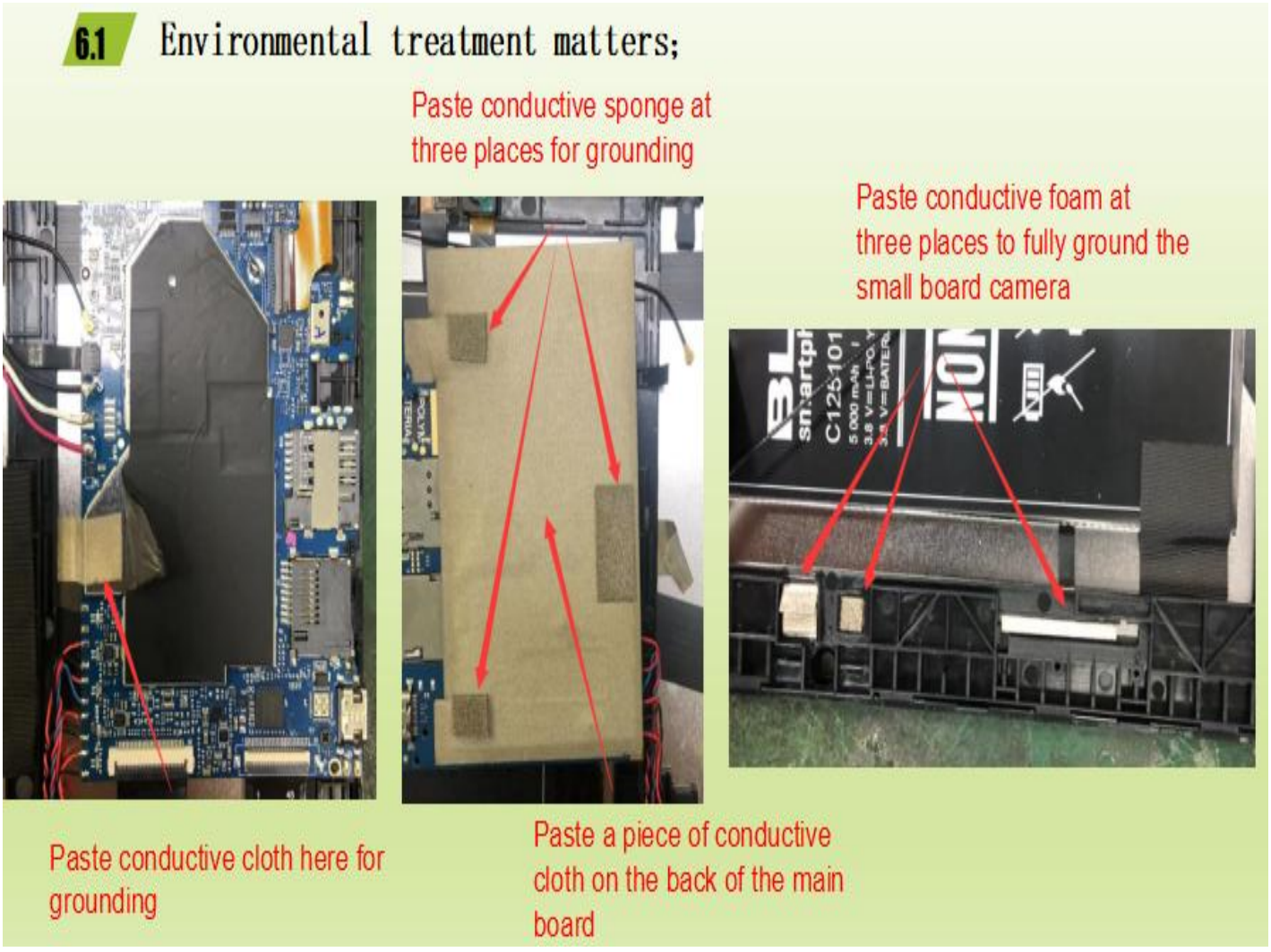
4.5 One PIFA antenna for GSM /WCDMA / LTE /WIFI/GPS/BT

Band	Gain
GSM850	Maximum Gain is-0.7dBi
GSM900	Maximum Gain is -0.8dBi
DCS1800	Maximum Gain is 1.2dBi
PCS1900	Maximum Gain is 1.4dBi
WCDMA Band II	Maximum Gain is 1.4dBi
WCDMA Band IV	Maximum Gain is 1.2dBi
WCDMA Band V	Maximum Gain is -0.8dBi
LTE Band 2	Maximum Gain is 1.4dBi
LTE Band 4	Maximum Gain is 1.2dBi
LTE Band 5	Maximum Gain is -0.8dBi
LTE Band 7	Maximum Gain is 1.8dBi
LTE Band 12	Maximum Gain is -0.9dBi
LTE Band 17	Maximum Gain is -0.9dBi
LTE Band 66	Maximum Gain is 1.2dBi
LTE Band 71	Maximum Gain is -1.1dBi.
Band GPS	Maximum Gain is 1.3dBi
Band WIFI2.4G	Maximum Gain is 1.6dBi.
Band WIFI5G	Maximum Gain is 1.4dBi
Band BT	Maximum Gain is 1.6dBi

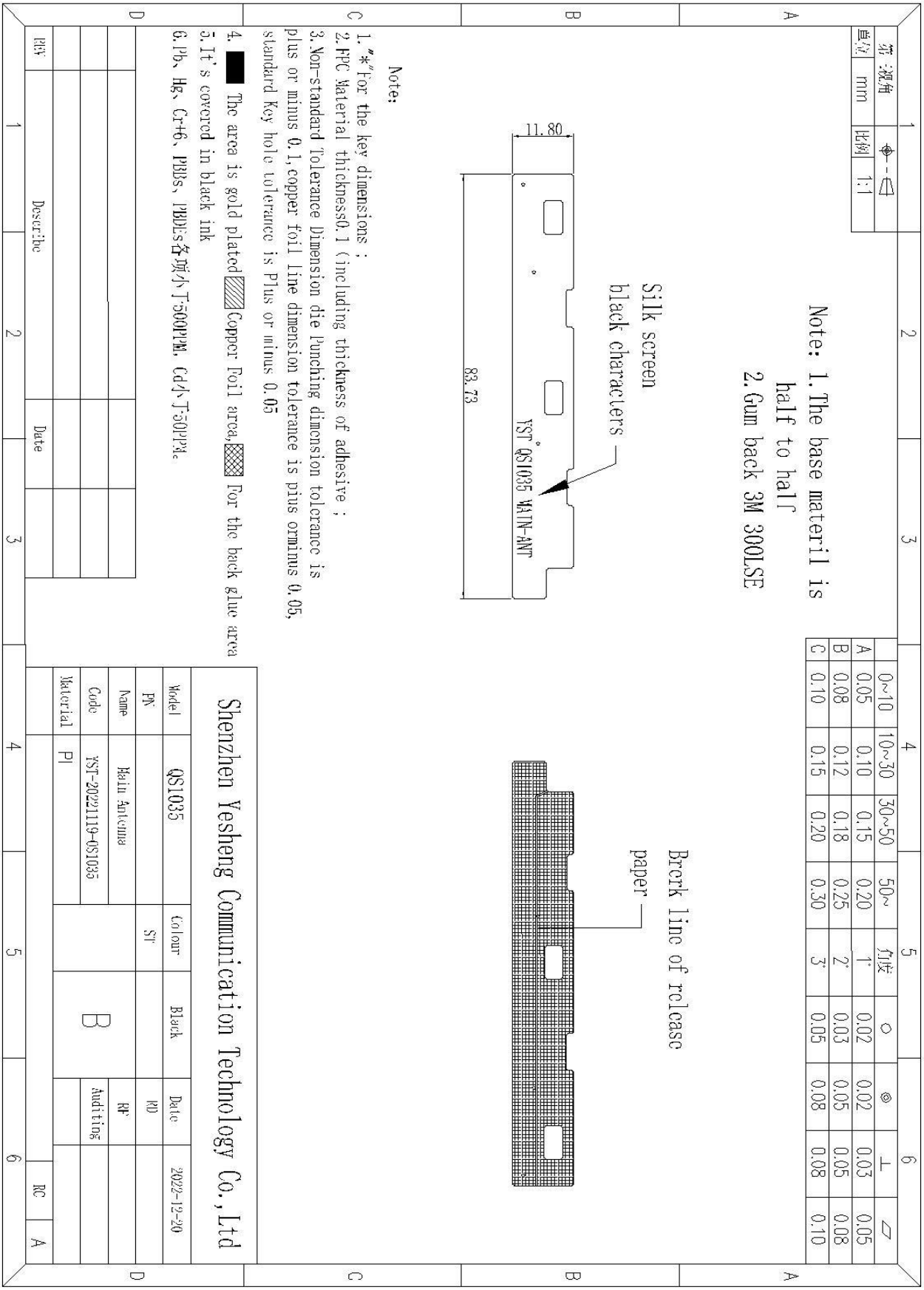
5. Conclusion

This antenna is designed on the basis of the prototype provided by the customer. The electrical performance parameters and structure have met the customer's technical requirements, please confirm! The original antenna matching has been changed.

6. Environmental treatment



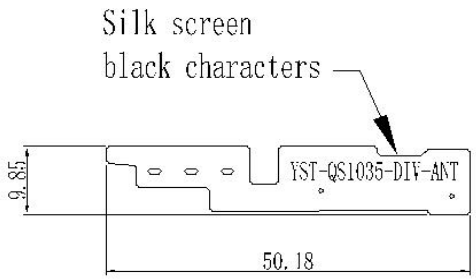
二、Engineering drawing

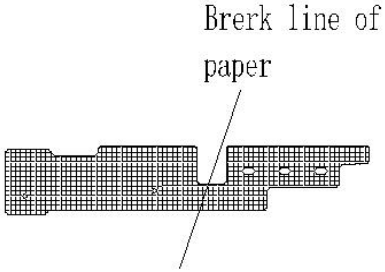


第三视角			
单位	mm	比例	1:1

	0~10	10~30	30~50	50~	角度	○	◎	⊥	▱
A	0.05	0.10	0.15	0.20	1°	0.02	0.02	0.03	0.05
B	0.08	0.12	0.18	0.25	2°	0.03	0.05	0.05	0.08
C	0.10	0.15	0.20	0.30	3°	0.05	0.08	0.08	0.10

Note: 1. The base materil is half to half
2. Gum back 3M 300LSE





Note:
1. "*"For the key dimensions ;
2. FPC Material thickness0.1 (including thickness of adhesive ;
3. Non-standard Tolerance Dimension dic Punching dimension tolerance is plus or minus 0.1, copper foil line dimension tolerance is pius orminus 0.05, standard Key hole tolerance is Plus or minus 0.05
4. ■ The area is gold plated ▨ Copper Foil area, ▩ For the back glue area
5. It's covered in black ink
6. Pb、Hg、Cr+6、PBBs、PBDEs各项小于500PPM，Cd小于50PPM。

REV	Describe	Date	

Shenzhen Yesheng Communication Technology Co.,Ltd

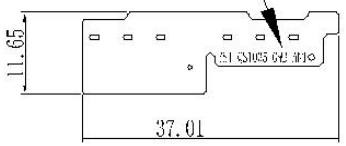
Model	QS1035	Colour	Black	Date	2022-12-20
PN		ST		RD	
Name	Diversity Antenna		B	RF	
Code	YST-20221119-QS1035			Auditing	
Material	PI				
				RC	A

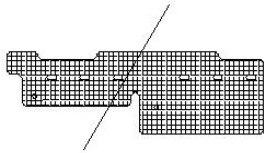
第三视角		比例	1:1
单位	mm		

	0~10	10~30	30~50	50~	角度	○	◎	⊥	▱
A	0.05	0.10	0.15	0.20	1°	0.02	0.02	0.03	0.05
B	0.08	0.12	0.18	0.25	2°	0.03	0.05	0.05	0.08
C	0.10	0.15	0.20	0.30	3°	0.05	0.08	0.08	0.10

Note: 1. The base materil is half to half
2. Gum back 3M 300LSE

Silk screen
black characters





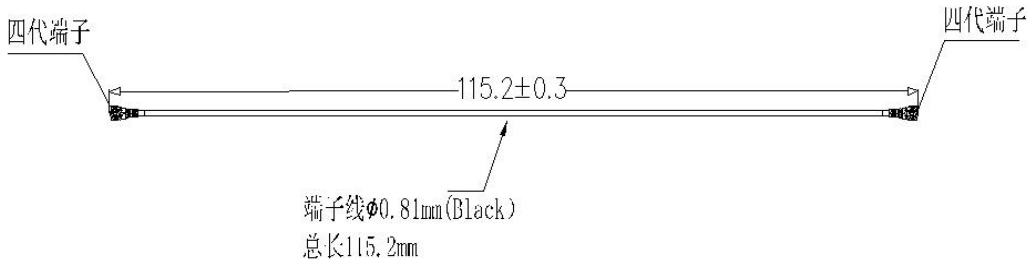
Note:
1. "*"For the key dimensions ;
2. FPC Material thickness0.1 (including thickness of adhesive ;
3. Non-standard Tolerance Dimension die Punching dimension tolerance is plus or minus 0.1, copper foil line dimension tolerance is pius orminus 0.05, standard Key hole tolerance is Plus or minus 0.05
4. ■ The area is gold plated ▨ Copper Foil area, ▩ For the back glue area
5. It's covered in black ink
6. Pb、Hg、Cr+6、PBBs、PBDEs各项小于500PPM，Cd小于50PPM。

REV	Describe	Date	

Shenzhen Yesheng Communication Technology Co.,Ltd

Model	QS1035	Colour	Black	Date	2022-12-20
PN		ST		RD	
Name	G+B天线		B	RF	
Code	YST-20221119-QS1035			Auditing	
Material	PI				
				RC	A

第三视角	
单位 mm	比例 1:1



Technical requirements:
1. Material: the fourth generation of socket, with wire diameter of 0.81mm and black color.
2. The length tolerance shall be ± 0.3m;
3. The maximum rotation angle of the top plane of two connectors shall not exceed 30 ° ;
4. Product materials must meet ROHS environmental protection requirements;

REV	Describe	Date	

Shenzhen Yesheng Communication Technology Co.,Ltd

Model	QS1035	Colour	Black	Date	2022-12-20
PN		ST		RD	
Name	Antenna Coaxial line		B	RF	
Code	YST-20221119-QS1035			Auditing	
Material	PI				
				RC	A