ShenZhen Aihui Technology Co.， Ltd

Antenna datasheet

Antenna Sample Confirmation From

Vendor Name	**ShenZhen Aihui Technology Co.， Ltd**				
Customer Name	**Jay Hong**				
Sample Name	**RW31E-LD_E863W**				
Part Number					
Specification	main antenna; RW31E-LD_E863W-3G-AH cable length; 175mm (0.81) 4 generation 3-in-1; RW31E-LD_E863W-WGB-AH ejector				
Inspection Item	**Performance**	**Total Appearance**	**structure**	**Others**	**Inspection Result**
Remark					
QA Audit		**Engineer Audit**	**Chen Yichu**	**Sales Confirm**	
The following are filled by Customer					
Customer Evaluation					
Signation/ Chapter by Customer	**date:2023.08.22**				

-

Address: Shenzhen Baoan District Xixiang Gushu Nanchang
TEL：0755- FAX：0755-23203435

Antenna Test Report

Test by： ShenZhen Aihui Technology Co.， Ltd

Material	**FPC**		
Antenna Type	**MonopoleType**	**Polarization mode**	**Linear**
Application			
Band	**GSM/WCDMA/ 2.4 WiFi/BT/GPS**	**VSWR**	**≤2**
Power	**Max：2W**	**Impedance**	**50Ω**
dBi	**≥1dBi**		
Test Equipment	**HPE5071C、Shielding Room、3D automatic turntable**		

Antenna Description:：

1. Grounding processing and picture description: no

2. Need to change the motherboard to match: no

- Test voltage: 3.6V, check the antenna contact is good before testing.
- The RF cable of the integrated tester is kept in a natural state and can not be curled.

Specification:test the specified power level, all indicators must conform to the specifications.

1. Project

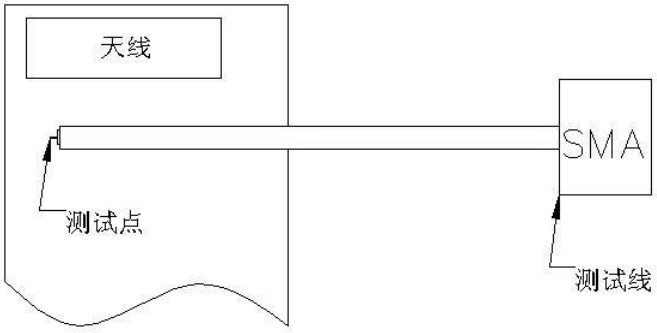
picture None

Note: The customer's final verification of antenna performance prototype is kept in our company for at least one year, which is convenient to analyze and solve abnormal situations in the mass production of antennas **and ensure the quality of antenna shipments**

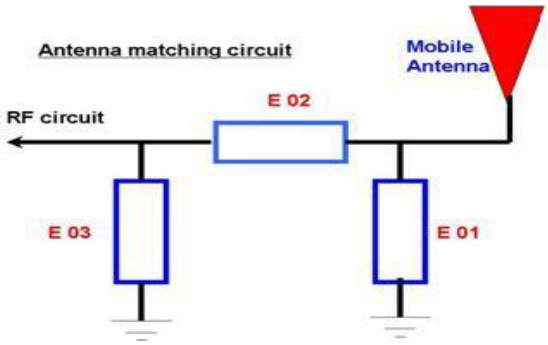
2. Test tools

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

Production method: The hand tool is made of a 50 ohm coaxial cable, one end is connected to the test point at the back of the matching circuit (the front end of the RF test hole) of the mobile phone motherboard, and the other end is connected to the SMA connector. The schematic diagram is as follows:



3. Antenna matching circuit



Modify point/Modify

E01	E02	E03
No	No	No

Note: The match is not modified.

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4. S11 test

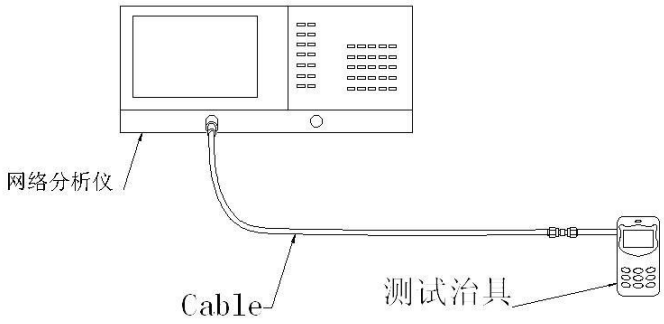
4.0 S11 Test Method

Description Test equipment:

Network analyzer (E5071C).

Test method: Exit a 50 ohm CABLE cable from the instrument test port, use calibration pieces to connect the SMA connector of the handset, and record the return loss and VSWR corresponding to the relevant frequency point.

The test diagram is as follows:



Test schematic

5. Darkroom test equipment and data

5.0 Test Equipment

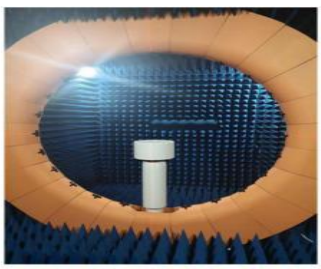
Test System:

Shielded chamber

Test environment: temperature 22° C±3° C, humidity 50%±15%.

Test equipment: When testing passive data, use the network analyzer AgilentE5071C

When testing active data, use the CMW500



5.1 Antenna active test data

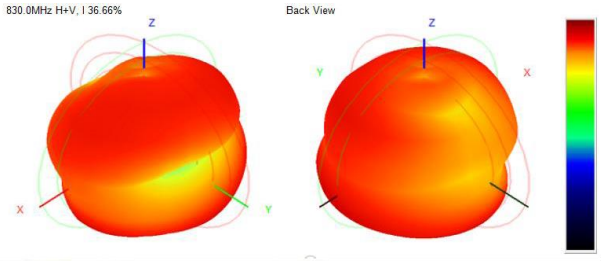
Frequency Band	GSM850			900		
channel	L	M	H	L	M	H
TRP	25.7	26.3	25.6	25.51	25.1	25.2
TIS			-103.3			-102.8
Frequency Band	1800			1900		
channel	L	M	H	L	M	H
TRP	27.5	27.1	27.2	26.5	26.4	26.6
TIS			-104.5			-104.7
Frequency Band	W2			W5		
channel	L	M	H	L	M	H
TRP	18.6	18.3	18.1	16.5	17.1	17.8
TIS			-104.2			-1021

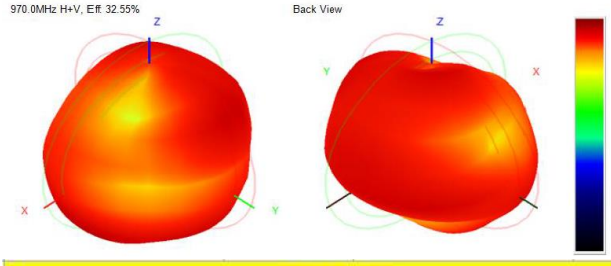
Frequency Band	2.4G-WIFI B模			2.4G-WIFI G模		
channel	L	M	H	L	M	H
TRP	10.2	10.3	10.1	8.3	8.1	8.5
TIS			-78.7			-66.3
Frequency Band	2.4G-WIFI N模					
channel	L	M	H			
TRP	8.2	8.6	8.4			
TIS			-67.55			

5.1 Antenna passive test data

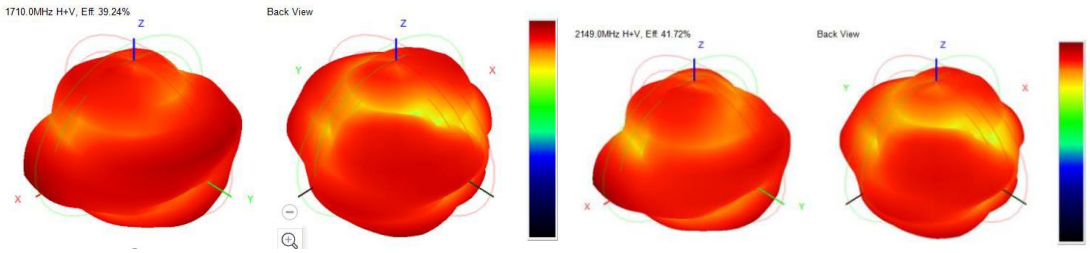
Main antenna

增益和效率			
frequency 频率(Hz)	gain 增益(dB)	efficiency 效率(dB)	efficiency 效率
810M	1.12	-2.76	37.96%
830M	1.15	-2.95	36.66%
850M	1.34	-3.04	35.64%
870M	1.55	-2.82	39.26%
890M	1.46	-3.25	38.36%
910M	1.25	-3.47	35.96%
930M	1.54	-3.04	33.62%
950M	1.21	-3.19	34.16%
970M	1.17	-3.81	32.55%





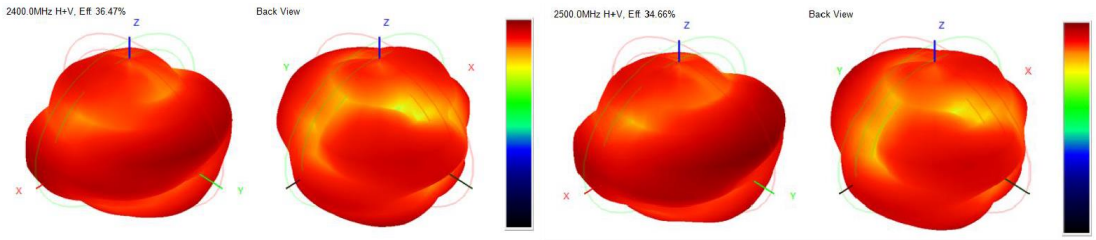
Gain&Efficiency 增益和效率			
frequency 频率(Hz)	gain 增益(dB)	efficiency 效率(dB)	efficiency 效率
1710M	1.04	-4.06	39.24%
1743M	1.2	-4.07	39.16%
1777M	1.05	-3.87	40.99%
1811M	1.16	-4.08	39.1%
1845M	1.51	-4.27	37.38%
1878M	1.3	-3.94	40.34%
1912M	1.73	-3.72	42.45%
1946M	1.77	-3.94	40.38%
1980M	1.51	-3.86	41.08%
2014M	1.64	-3.45	45.19%
2047M	1.36	-3.65	43.18%
2081M	1.18	-3.62	43.49%
2115M	1.2	-3.35	46.28%
2149M	1.45	-3.8	41.72%
2183M	0.89	-4.56	34.98%

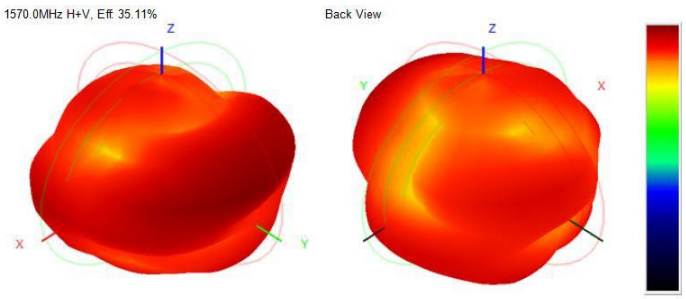


Three-in-one dayline

Gain&Efficiency 增益和效率			
frequency 频率(Hz)	gain 增益(dB)	efficiency 效率(dB)	efficiency 效率
2400M	1.36	-3.96	36.47%
2410M	1.32	-3.88	37.16%
2420M	1.14	-3.93	35.11%
2430M	1.52	-3.97	35.21%
2440M	1.26	-3.85	36.03%
2450M	1.39	-3.84	37.41%
2460M	1.33	-3.96	35.74%
2470M	1.48	-3.92	36.38%
2480M	1.53	-3.91	37.37%
2490M	1.23	-4.25	35.28%
2500M	1.34	-4.16	34.66%

Gain&Efficiency 增益和效率			
frequency 频率(Hz)	gain 增益(dB)	efficiency 效率(dB)	efficiency 效率
1550M	1.3	-3.58	35.47%
1560M	1.21	-3.14	32.16%
1570M	1.43	-3.34	35.11%
1580M	1.36	-3.19	36.21%
1590M	1.72	-3.28	35.03%





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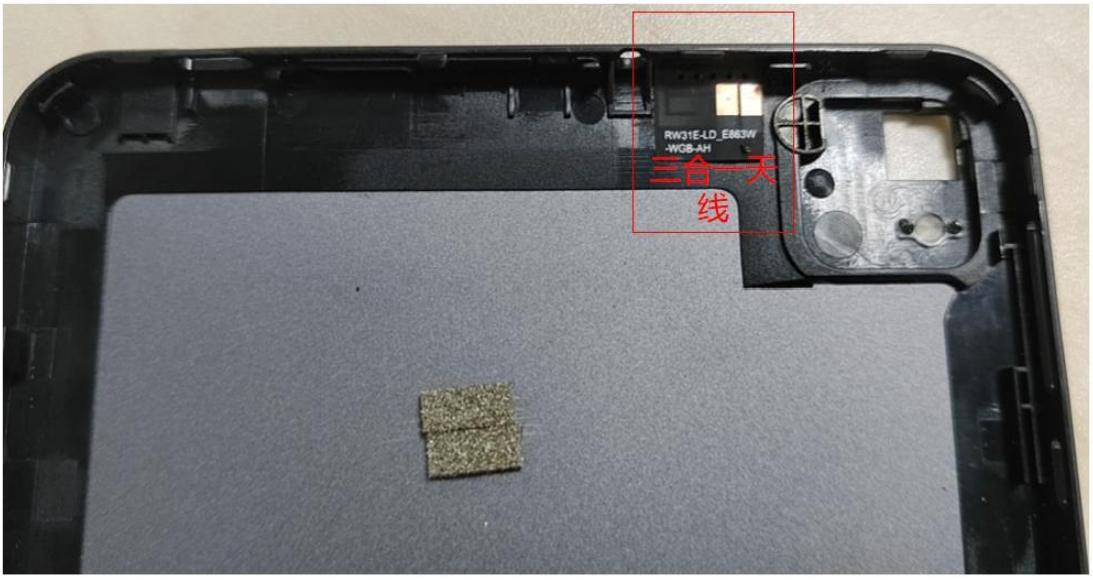
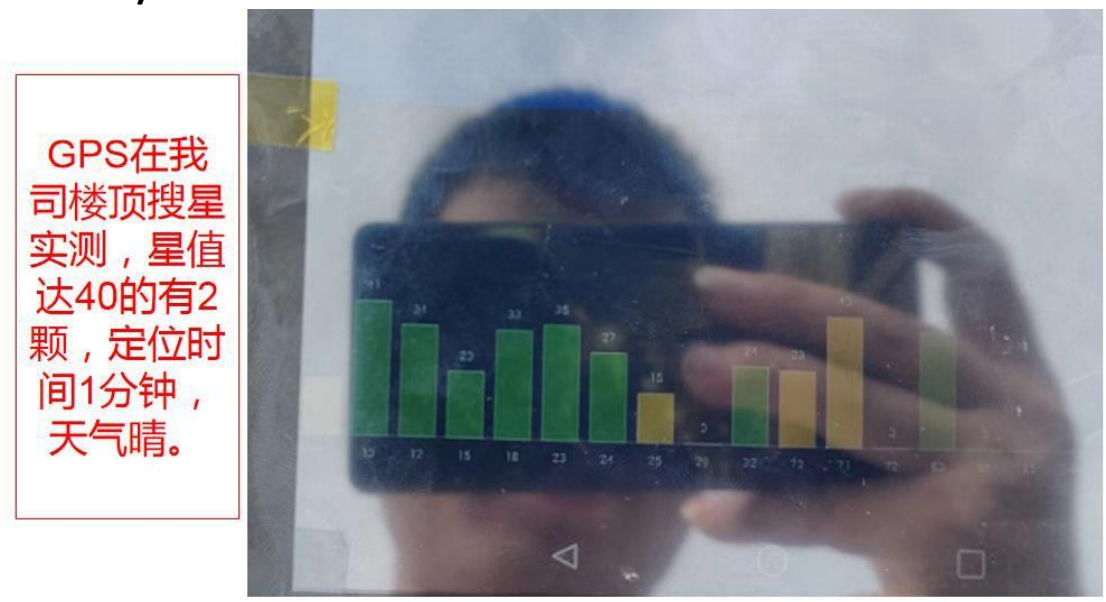
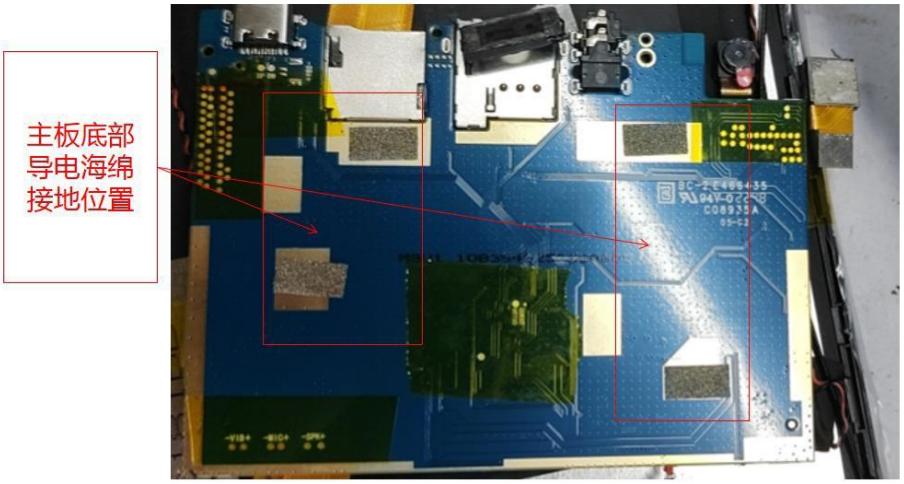
6.1 Antenna Location



6.2 WIFI/GPS measurement



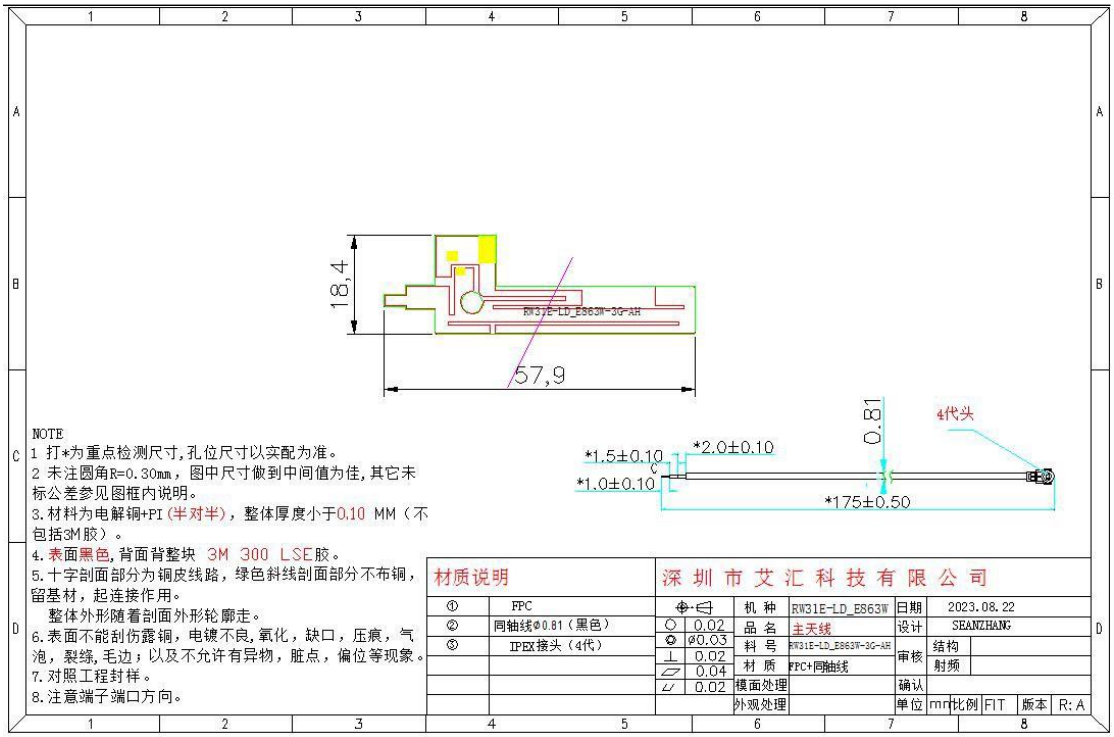
7. Environmental treatment



8. Antenna mass production indicators When the antenna is mass-produced, the VSWR is used as the mass production test standard。 According to the differences of the project itself, The following criteria can be given:

Frequency rate	Mass production standards
824MHZ-2170MHZ	V SW R (PRODUCTION PERFORMANCE) < VSW R
1575MHZ	V SW R (PRODUCTION PERFORMANCE) < VSW R
2400MHZ -2500MHZ	V SW R (PRODUCTION PERFORMANCE) < VSW R

9. Structural drawings



NOTE
1 打*为重点检测尺寸,孔位尺寸以实配为准。
2 未注圆角R=0.30mm，图中尺寸做到中间值为佳,其它未标公差参见图框内说明。
3.材料为电解铜+PI(半对半)，整体厚度小于0.10 MM（不包括3M胶）。
4.表面黑色,背面背整块 3M 300 LSE胶。
5.十字剖面部分为铜皮线路，绿色斜线剖面部分不布铜，留基材，起连接作用。
整体外形随着剖面外形轮廓走。
6.表面不能刮伤露铜，电镀不良,氧化，缺口，压痕，气泡，裂缘,毛边；以及不允许有异物，脏点，偏位等现象。
7.对照工程封样。
8.注意端子端口方向。

材质说明		深 圳 市 艾 汇 科 技 有 限 公 司					
①	FPC	⊕ M	机 种	RW31E-LD_ES63W	日期	2023.08.22	
②	同轴线Φ0.81（黑色）	○ 0.02	品 名	主天线	设计	SEANZHANG	
③	IPEX接头（4代）	◎ Φ0.03	料 号	RW31E-LD_ES63W-3G-AH	审核	结构	
		⊥ 0.02	材 质	FPC+同轴线		射频	
		▱ 0.04	模面处理		确认		
		∠ 0.02	外观处理		单位	mm 比例 FIT	版本 R:A

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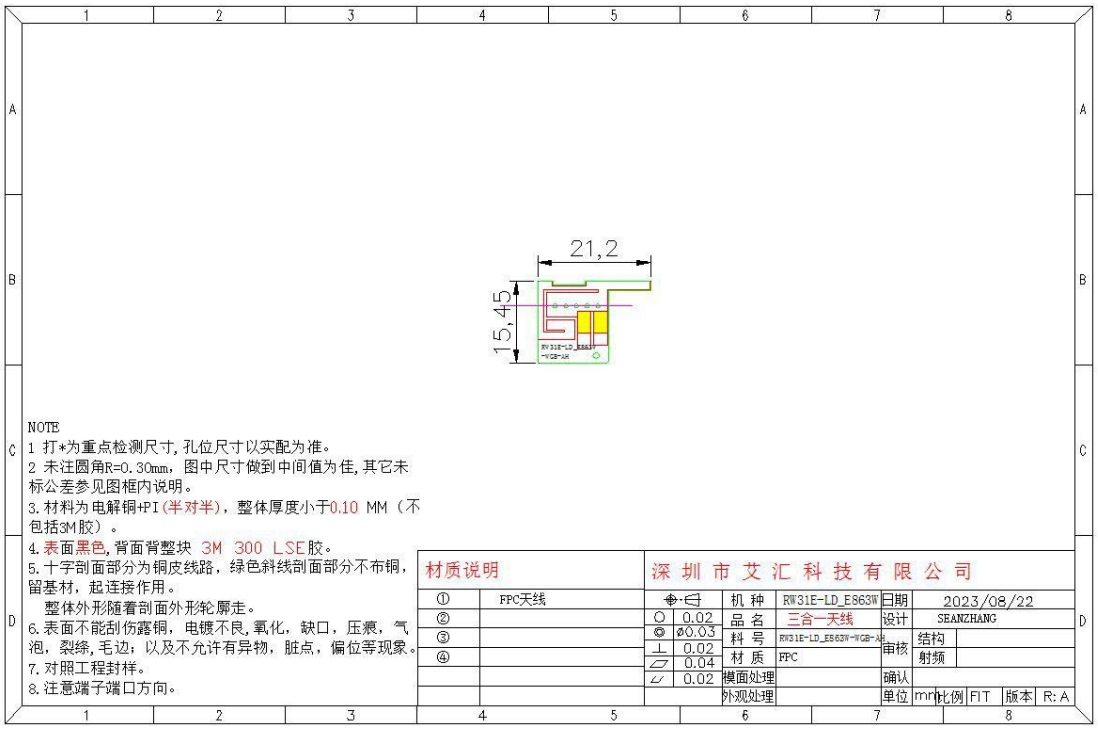

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