

			No.:
样品承认书			
Specification Acknowledgement			
客户名称: Customer:	思创捷 Shenzhen Think Power Technology Co., Ltd.		
供应商名称: Supplier:	深圳市广源发电子有限公司 SHENZHEN GUANGYUANFA ELECTRONIC CO.,LTD		
客户料号: Customer P/N:		Supplier P/N:	GYF-TL904D-BT-V1.0
产品描述: Antenna Description:	FPC: a pair of half material 3M9471 adhesive + 1.13 black coaxial line 50mm first generation terminal	配用机型: Product:	TL904D

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TL904D antenna

1 Specifications

1.1 Electrical specifications

This report mainly provides the test status of various electrical and structural performance parameters of TL904D antenna.

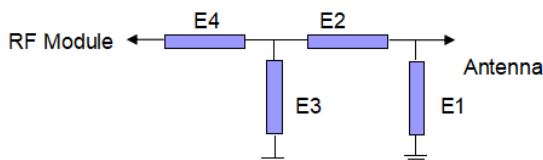
Type	P/N
BT antenna	GYF-TL904D-BT-V1.0

1.2 Frequency range

The following table shows the electrical performance indicators of the antennas designed and mass produced by Guangyuanfa Development.

Product	TL904D			
Antenna type	FPC			
Band & Material	Main	Band		Material
		2G	850/900/1800/1900	FPC
		3G		
		NB/eMTC	1/3/8/20	
		diversity	/	/
	Others	WiFi+BT	2.4G	FPC

2 Matching circuit diagram



Element	Value
E1 (0402)	N/A
E2 (0402)	0欧姆
E3 (0402)	N/A
E4 (0402)	0欧姆

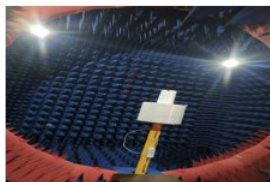
3 Structural form

3.1 Antenna composition

The antenna is mainly composed of flexible PCB + coaxial line.

4 Testing facility

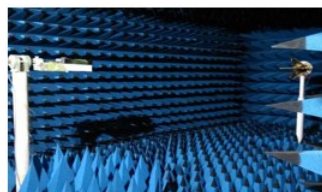
测试设备说明



24探头微波暗室



CWM500



7*4*3M ETS微波暗室



Agilent 8960



Agilent E5071B



高低温试验箱



MT8820C



HP8753ES

测试系统	测试环境	有源测试	无源测试
ETS 暗室 24探头OTA暗室	温度: 22℃±3℃ 湿度: 50%±15%	支持2G/3G/4G 支持NB-IoT/CAT-M/BT/WIFI	400MHz——6G

5 VSWR test connection

5.1 Test connection:

The connection of VSWR test device in turn is: R&S ZVL network analyzer → test line → test fixture

6 Testing

6.1 Test site:

Guangyuanfa microwave anechoic chamber. The test frequency range is 400MHz - 6GHz, the quiet zone range is 50cm circumference, and the reflectivity is less than - 50 dB.

6.2 Tested instruments:

Agilent5071B, CMW500, Agilent8960 E5515C, standard horn antenna, 24 probe OTA microwave anechoic chamber test system, printer, etc

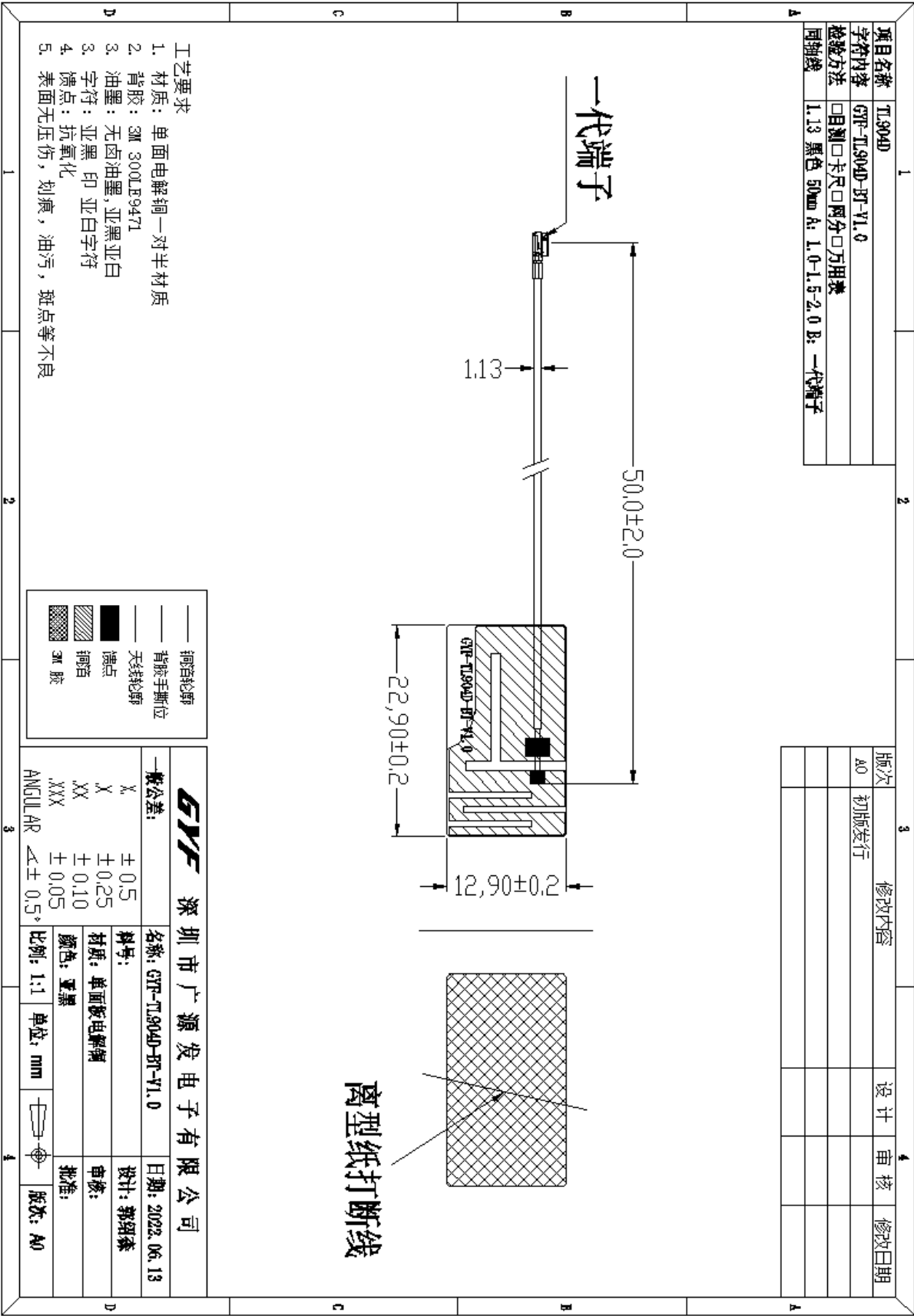
7 Antenna data

OTA数据----BT

 广源发电子 广源发天线											
Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Efficiency (dBi)	-7.28	-6.84	-6.87	-6.64	-6.74	-6.86	-6.65	-7.28	-7.05	-7.86	-7.66
Gain (dBi)	0.61	1.11	1.08	0.91	0.57	0.09	0.06	-0.35	-0.14	-1.24	-1.62
Efficiency (%)	18.72	20.72	20.54	21.68	21.18	20.59	21.62	18.72	19.71	16.38	17.13

8 Drawing specification

8.1 Drawing



8.2 Sample size inspection

Product	TL904D		P/N	GYF-TL904D-BT-V1.0		Date	2022.06.13	
No.	Spec.	Testing data					assessment	comment
		1	2	3	4	5		
1	22.90	22.99	22.92	22.95	22.97	22.93	OK	
2	12.90	12.95	12.98	12.91	12.93	12.97	OK	
3	1.13	1.10	1.12	1.13	1.11	1.12	OK	
4	50.00	50.21	50.09	50.25	50.06	50.18	OK	
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8.3 BOM

BOM

Product	TL904D	P/N	GYF-TL904D-BT-V1.0	Date	2022.06.13
BOM	Category	Material	SPEC.		Quantity
1	FPC antenna	half-half	22.90*12.90 mm		1
3	Coaxial line	copper	PCB, 1.13 cable ,IPX		1
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9 Product Storage Instructions

1. The exposed part of the gold finger conductor needs to be coated (rust-proof), such as gold plating/melting, OSP, tin plating, etc. The storage environment needs to avoid corrosive gases.
2. The antenna temperature shall be controlled at 21-38℃, and the humidity shall be controlled at 50-70%. If the temperature is too high, 3M adhesive will melt, resulting in poor antenna viscosity.
3. It is recommended that if the initial bonding temperature is lower than 10℃, it is not suitable for bonding, because the adhesive at this time is too hard to be firmly bonded to the object; However, if it has been bonded, the adhesion at low temperature is also satisfactory.
4. Under the conditions of 21 ℃ and 50% relative humidity, the shelf life in the original packaging is 24 months from the date of production.

10 Operating temperature

Assembly	Temperature
FPC body	-50~280℃
3M adhesive	-30-80℃