

			文件编号:
样品承认书			
Specification For Approval			
客户名称: Customer:	玩视科技 Wanshi technology		
供应商名称: Customer:	深圳市广源发电子有限公司 SHENZHEN GUANGYUANFA ELECTRONIC CO., LTD		
Customer part number:		Supplier part number:	GYF-HDH-TSWP06AR-UK0892 -WIFI-V2.0
Product Description:		Equipped model:	HDH-TSWP06AR-UK0892
Supplier acknowledges (seal):		The customer acknowledges (with seal):	
Produced by: Chen Weiyuan	Structure: Huang Wangchun		
Review: Chen Weiyuan	Date: 2025.4.1		

目录

1. Specifications
 - 1.1 Electrical specifications
 - 1.2 Antenna frequency range
2. Matching circuit diagram
3. Structural form
 - 3.1 Antenna composition
4. Testing equipment
5. VSWR test connection
 - 5.1 Test Connection
6. Testing
 - 6.1 Testing Site
 - 6.2 Testing Instruments
 - 6.3 Passive antenna test standing wave
 - 6.4 Passive antenna data
 - 6.5 Active data of antenna
7. Drawing specifications
 - 7.1 Drawings
 - 7.2 Sample size testing
 - 7.3 Bill of Materials
8. Reliability testing
 - 8.1 Reliability Test Report
 - 8.2 Product Storage Instructions
9. Working temperature

1.规格

1.1 Electrical specifications

This report mainly provides the testing status of various electrical and structural performance parameters of the HDH-TSWP06AR-UK0892 project antenna.

Specification Model	Guangyuan Issue Number
WIFI antenna	GYF-HDH-TSWP06AR-UK0892-WIFI-V2.0

1.2 Antenna frequency range

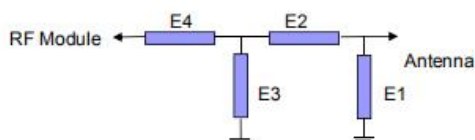
The following table shows the electrical performance indicators of Guangyuanfa's designed and mass-produced antennas

Antenna type	FPC			
Frequency band and antenna material	Main antenna	frequency band		texture of wood
		2G	/	/
		3G	/	
		LTE	/	
	Other antennas	分集	/	/
		WIFI	2. 4G/5. 8G	FPC
performance requirement	Perform according to customer's requirements			

2. Matching circuit diagram

匹配电路说明

天线匹配无更改



主天线	Element	Value
	E1 (0402)	
	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 printed circuit boards welded with coaxial lines.

4. Testing equipment

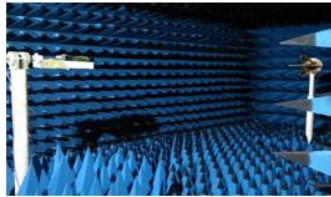
测试设备说明



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°C±3°C 湿度: 50%±15%	支持2G/3G/4G 支持NB-IoT/CAT-M/BT/WIFI	400MHz——6G

5. VSWR test connection

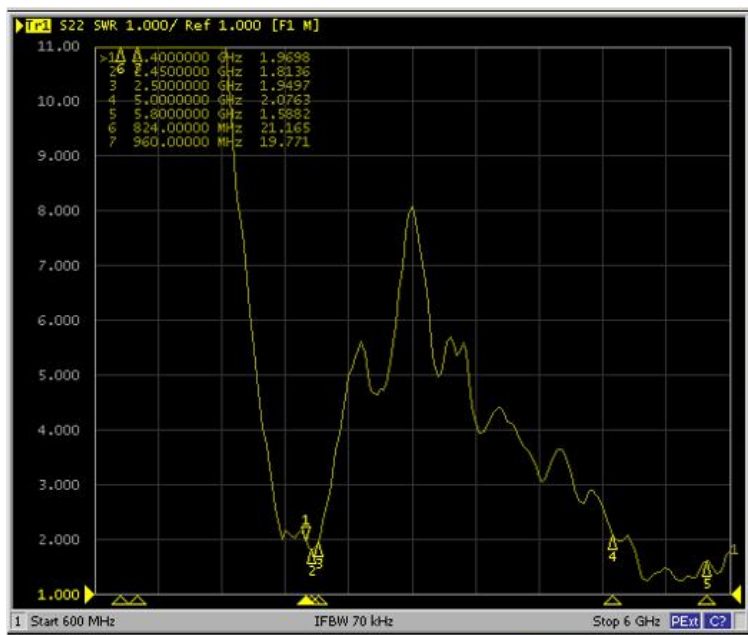
5.1 Test Connection: The VSWR testing device is sequentially connected as follows: R&S ZVL network analyzer → test line → test fixture

6. Testing

6.1 Testing site: Guangyuanfa Microwave Chamber. The testing frequency range is 400MHz to 6GHz, the quiet zone range is 50cm circumference, and the reflectivity is less than -50 dB.

6.2 Tested instruments: Agilent 5071B, CMW500, Agilent 8960 E5515C, standard horn antenna, 24 probe OTA microwave darkroom testing system, printer, etc

6.3 4G antenna passive test standing wave

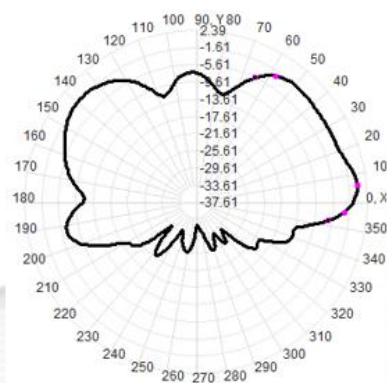
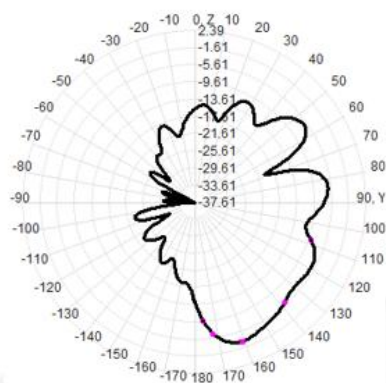
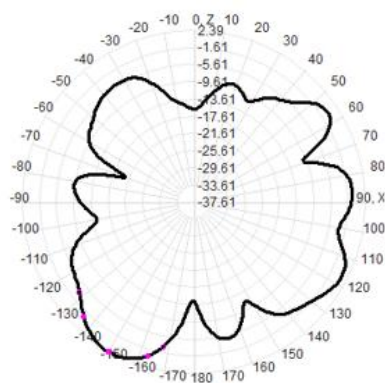
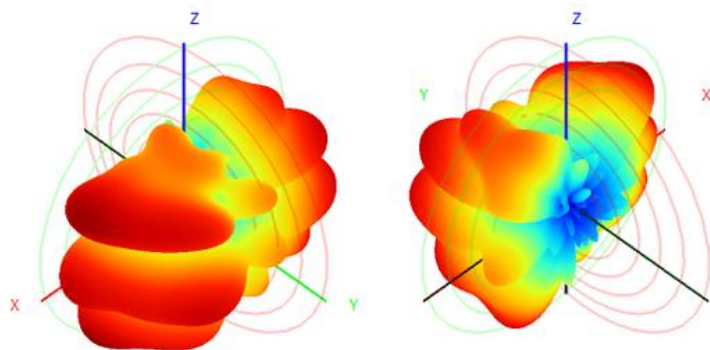


6.4 Passive test data for 4G antenna

BAND	WIFI B			WIFI A		
CH	1	6	11	36	64	161
TRP (dBm)	12.09	13.37	13.12	11.19	11.23	11.71
TIS (dBm)	-66.92	-67.1	-71.1	-60.19	-60.31	-61.47

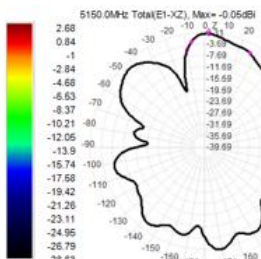
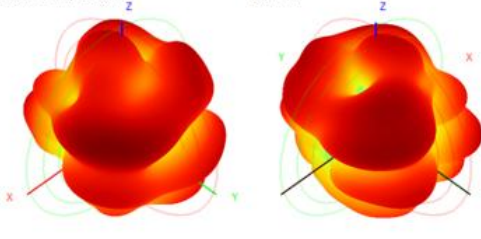
Frequency (MHz)	Efficiency (dBi)	Gain (dBi)	Efficiency (%)
2400.0	-4.98	0.98	31.74
2410.0	-4.71	1.37	33.78
2420.0	-4.78	1.27	33.24
2430.0	-4.25	1.48	37.55
2440.0	-4.95	0.19	31.99
2450.0	-4.44	0.58	35.98
2460.0	-4.81	0.92	33.05
2470.0	-4.73	1.20	33.65
2480.0	-4.76	1.49	33.43
2490.0	-4.64	0.96	34.38
2500.0	-4.50	1.04	35.44

Frequency (MHz)	Efficiency (dBi)	Gain (dBi)	Efficiency (%)
5150.0	-6.58	1.28	21.98
5200.0	-6.59	1.07	21.91
5250.0	-6.55	1.09	22.13
5300.0	-6.47	1.18	22.54
5350.0	-6.41	1.30	22.85
5400.0	-6.37	1.12	23.05
5450.0	-6.39	1.12	22.98
5500.0	-6.40	1.10	22.91
5550.0	-6.38	1.32	23.00
5600.0	-6.36	1.38	23.14
5650.0	-6.39	1.31	22.95
5700.0	-6.34	1.08	23.25
5750.0	-6.29	0.67	23.52
5800.0	-6.26	0.34	23.65
5850.0	-6.27	0.12	23.61

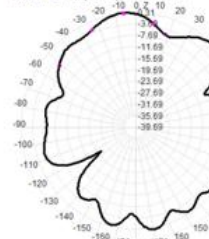


5150.0MHz Total Eff: 38.5%

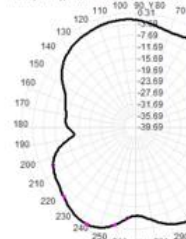
Back View



5150.0MHz Total(E1-XZ), Max=-0.05dBi



5150.0MHz Total(E2-YZ), Max=0.31dBi

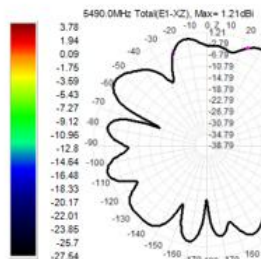
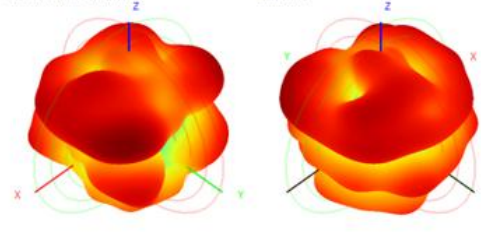


Total(H-XY), Max=-1.80dBi, CrD=16.38

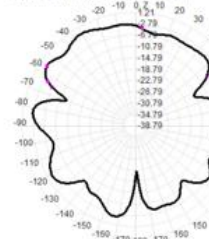


5490.0MHz Total Eff: 41.7%

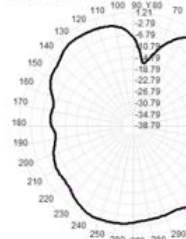
Back View



5490.0MHz Total(E1-XZ), Max=1.21dBi



5490.0MHz Total(E2-YZ), Max=-1.30dBi

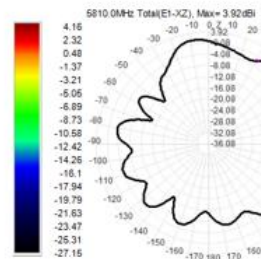
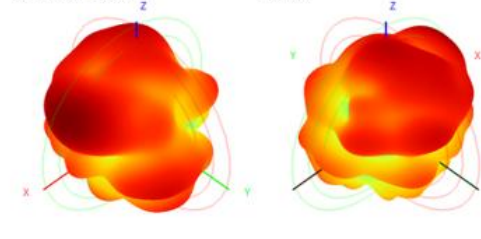


Total(H-XY), Max=-1.01dBi, CrD=15.58

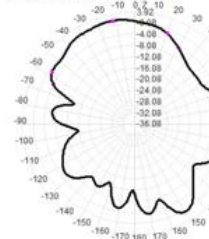


5810.0MHz Total Eff: 37.9%

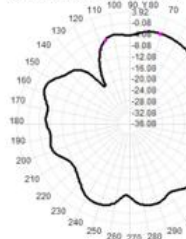
Back View



5810.0MHz Total(E1-XZ), Max=3.92dBi



5810.0MHz Total(E2-YZ), Max=1.51dBi

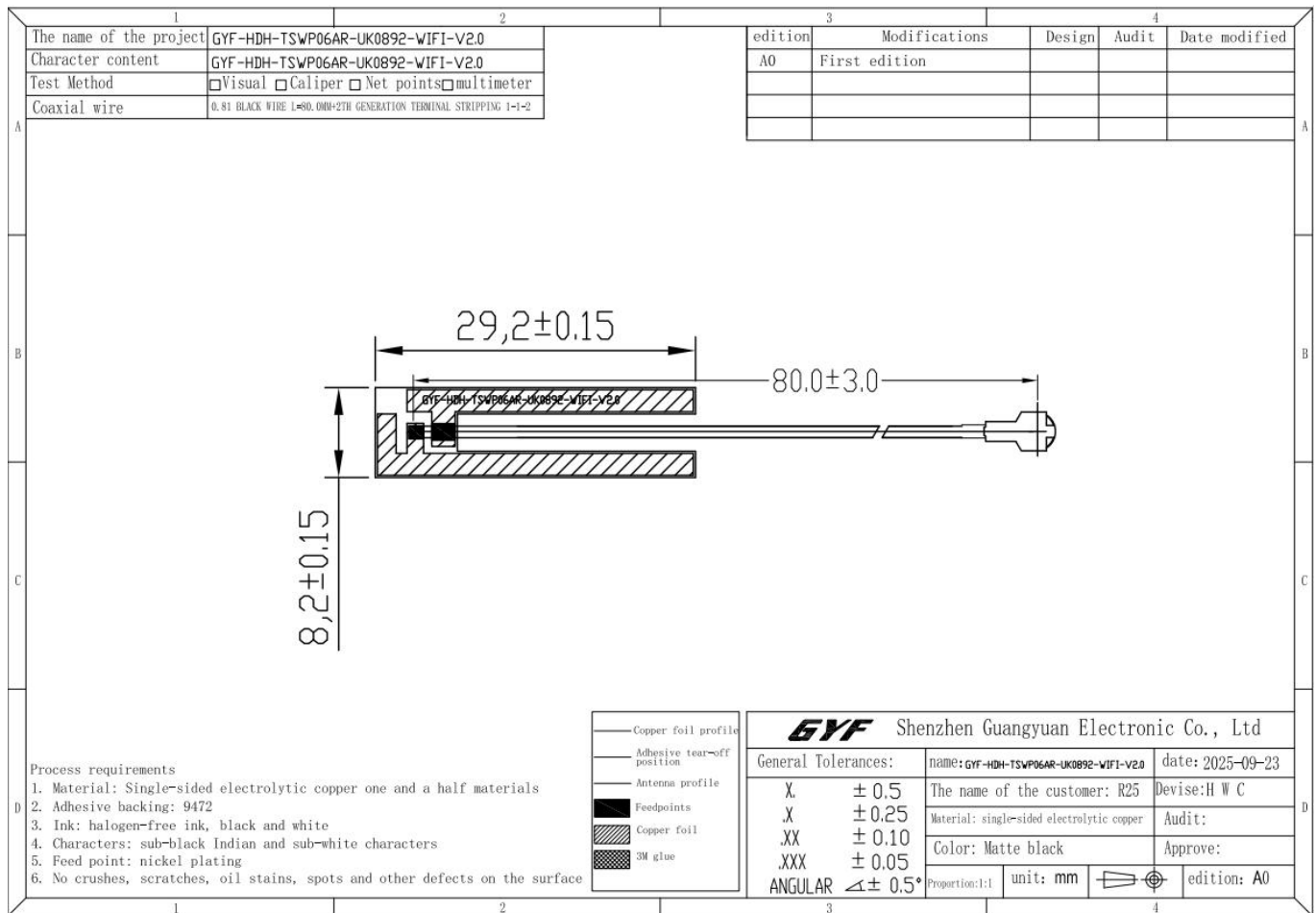


Total(H-XY), Max=-2.03dBi, CrD=18.19



7. Drawing specifications

7.1 Drawings



7.2 Sample size testing

Project Name	HDH-TSWP06AR-UK0892		Finished product part number	GYF-HDH-TSWP06AR-UK0892-WI FI-V2.0		date	2025-4-1	
item number	Specifica tions	measured data					judgment	Remarks
		1	2	3	4	5		
1	29.2	29.21	29.20	29.21	29.19	29.2	OK	
2	8.2	8.19	8.21	8.2	8.25	8.2	OK	
3	0.81	0.81	0.81	0.81	0.81	0.81	OK	
4	80	81	81	82	80	80	OK	
5								

7.3 Bill of Materials

Bill of Materials

Name	HDH-TSWP06AR-UK0892	Part numbe	GYF-HDH-TSWP06AR-UK0892- WIFI-V2.0	date	2025-4-1
Bill of Materials	category	Material	specification	Dosage	
1	FPC	One and a half	29.2*8.2	1	
2	coaxial cable	copper	80MM+2 代端子	1	

8. Reliability testing

8.1 Reliability Test Report

Name	HDH-TSWP06AR-UK0892	Part numbe	GYF-HDH-TSWP06AR-UK0892- WIFI-V2.0	date	2025-4-1
test quantity	15pcs	Completi on time	2025-03-26 09:15	Completi on time	2025-04-29 11:25

Test items	Test Standards	Test PCS	Test results	remark
Salt spray corrosion test	(1) Test temperature: 35°C±2°C for salt water test; Pressure drum 47°C±1°C (2) Test conditions/methods: brine concentration more than 5%, solution PH value: 6.5~7.2, air pressure: 1.0~1.2kg/c m², test time according to product requirements (3) After the test: after 2 hours, observe the oxidation and discoloration of the surface of the product, and the appearance of the coating falling off	5pcs	OK	Test time 48H
Low temperature test	1) Temperature: -30°C (-25°C--- pilot stage) (2) Test time: 20 hours / Packing condition: not packed (3) The tested product is not turned on and placed in the high and low temperature test chamber, the temperature in the chamber is adjusted to 25 °C, the humidity is 65%, and the temperature is kept warm for 1 hour, and the temperature is cooled to -30 °C within 1 hour, the humidity is turned off, the heat is kept for 20 hours, the temperature is raised for 1 hour to	5pcs	OK	Test time 20H

	normal temperature, and the performance test is carried out after 2 hours. Appearance and structure: The surface of the antenna appearance is free of defects, and the antenna should not be deformed, warped and damaged, and the performance is normal, and the VSWR ratio should not exceed 10% specified in the product standard			
High temperature test	(1) Temperature: +70°C (+65°C ---pilotstage) Humidity 85% (80%--- pilot stage) (2) Test time: 20 hours / Packing condition: not packed (3) The tested product is placed in the high and low temperature test chamber without booting, the temperature in the chamber is adjusted to 25 °C, the humidity is 65%, and the temperature is kept warm for 1 hour, the temperature is raised to +70 °C within 1 hour, the humidity is 85%, the temperature is kept warm for 20 hours, the cooling temperature is 1 hour to normal temperature, and the performance test is carried out after 2 hours. Appearance and structure: The surface of the antenna appearance is free of defects, and the antenna should not be deformed, warped and damaged, and the performance is normal, and the VSWR ratio should not exceed 10% specified in the product standard	5pcs	OK	

8.2 Product Storage Instructions

1. The exposed part of the gold finger conductor needs to undergo surface coating (rust prevention) treatment, such as gold plating/plating OSP、Tin plating, etc., the storage environment needs to avoid corrosive gases.
2. The antenna temperature should be controlled between 21-38 °C, and the humidity should be controlled between 50-70%. Excessive temperature can cause the 3M adhesive to melt, resulting in decreased antenna adhesion.
3. It is recommended that if the initial bonding temperature is below 10 °C, it is not suitable for bonding because the adhesive at this time is too hard to firmly bond to the object; However, if it has already been bonded, the adhesion at low temperatures is also satisfactory.
3. Under the conditions of 21 °C and 50% relative humidity, the shelf life of the original packaging is 24 months from the date of production.

9. Working temperature

component	temperature
Coaxial cable	-40~80℃
FPC body	-50~280℃
3m adhesive (already pasted onto the machine)	-30-80℃

Antenna position

