



Huizhou Boshejie Technology Co.,

LTD

Material acceptance certificate

customer name	Huizhou Boshejie Technology Co., LTD
project name	HW-C02G
product name	4G built-in antenna /FPC antenna
product model	Screen printing: YB-2305005/dimensions: 39.57*23.95*0.2
Customer part number	

Supplier information

Supplier name:	Dongguan Youbi Electronics Co., LTD
Supplier address:	No.9 Xinfu Road, Lin Village, Tangxia Town, Dongguan City, China. Building 79, New Sun Industrial City
contact number:	13686295193
EMAIL:	hhp@ub-rf.com

Supplier signature

RoHS, material ☒ non RoHS material ☐

department	fabrication	engineering department	Design department	quality department
signatory	Lu Yongxin	Loess release	Zha Zhifun	Li Shufei
Date of signature	2023/5/29	2023/5/29	2023/5/29	2023/5/29

Note: 1. RoHS materials, non-RoHS materials must be selected; 2. Engineering department and design department need to participate in the selection of material types according to the customers requirements and sign.

Huizhou Boshejie Technology Co., LTD

Acknowledge the status	☐ admit	☐ disallow
	☐ Conditions of recognition shall be met:	
	☐ Temporary quota recognition Limited purchase of PCS (signing of the special procurement process is required)	

depart	Responsib	☐ ID	☐ structure		☐ hardware		☐ quality	
			structu	Chief	hardware	Hardware	QPM	SQE

ment	le for procurement	departme nt	re PL	structura l designer	PL	Director		
Check items	date of delivery	Appearanc e and process	Structural dimensions and specifications		Electrical performance, specifications		Appearance and sample testing	
signat ory								
date								
1. Follow up the delivery date of purchased materials; 2. Sign ID for design appearance and process; 3. Sign the structure of mold and hardware shell materials; 4. Electronic components, modules and battery hardware signing; 5. PE department cooperates with quality inspection department to sign the appearance and sample test qualification.								

Form number: FORM-RD (H)-051-B3

Modification History

Version	Content Revision	Issued by	Date
A	Original version	Eddy	2023-5-29

Content

<i>Item</i>	<i>Description</i>
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2.	-----Test Items and Equipment
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6.	-----Active test data
7.	-----Antenna Matching Network
8.	-----Antenna installation diagram
9.	-----Mechanical Specification

1. Electrical Specification:

Characteristics	Specifications	Unit
Outline Dimensions	39.57x23.95	mm
Frequency	700-960 /1710-2700	MHz
Impedance	50	Ω
VSWR	< 5	
Polarization	Linear Polarization	
Gain	2 REF	d Bi
Efficiency	< 70	%
Connector Type	/	
Operating temperature	-20℃~+85℃	
Storage Temp	-20℃~+50℃	

2. Test Items and Equipment

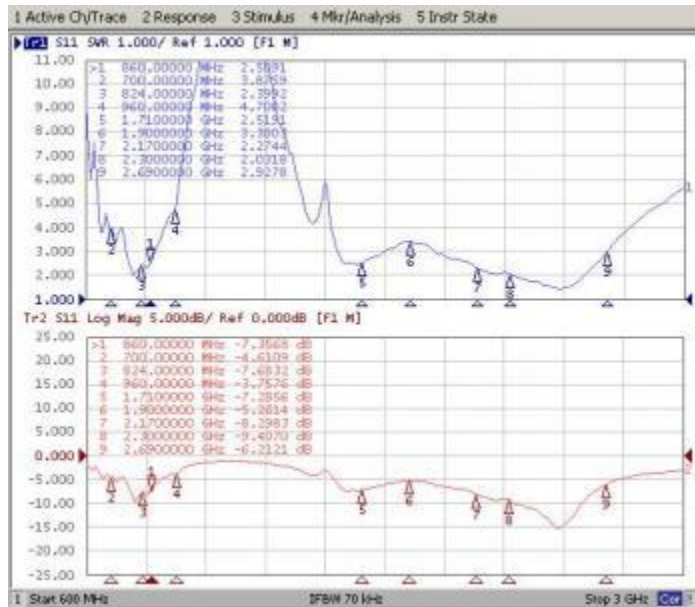
	Test items	Test equipment
S Parameter	1.Return Loss 2.VSWR	Network analyzer (Agilent E5071B)
The whole machine of Passive parameters	1.Frequency 2.Gain 3.Radiation Pattern	1.3D microwave darkroom(5m*5m*5m) 2.Network analyzer (Agilent E5071B)
The whole machine	1.TRP 2.TIS	1.3D microwave darkroom(5m*5m*5m) 2.Comprehensive test in strument (CMW500)



3. S Parameter

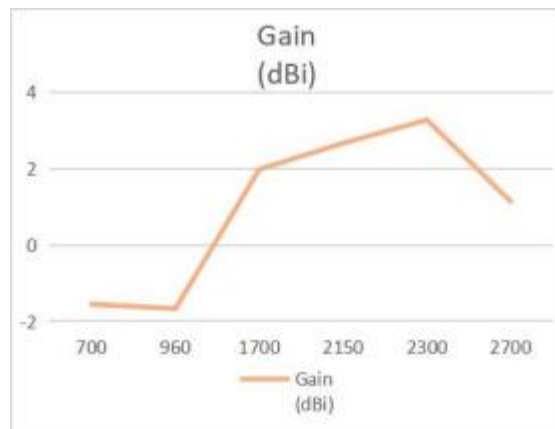
Frequency (MHz)	Return Loss (dB)	VSWR
700	-4.61	3.87
824	-7.68	2.39
960	-3.75	4.70
1710	-7.28	2.51
1900	-5.26	3.38
2170	-8.29	2.27
2300	-9.40	2.03
2690	-6.21	2.92

* Voltage Standing Wave Ratio (VSWR) Return Loss(RL)
 $RL = 20 * \log_{10}[(VSWR+1)/(VSWR-1)]$



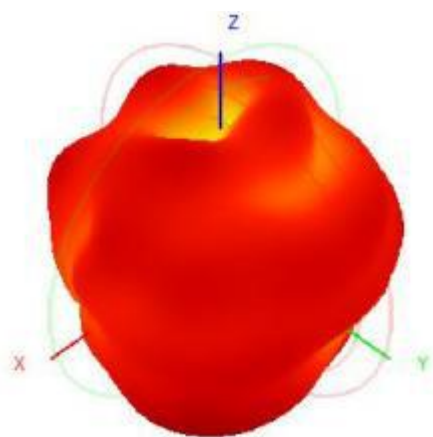
4. Efficiency and Gain

Frequency (MHz)	850	960	1900	2150	2300	2700
Efficiency (%)	21.69	20.07	50.85	48.86	61.23	42.07
Gain (dBi)	-1.55	-1.67	1.98	2.67	3.28	1.14

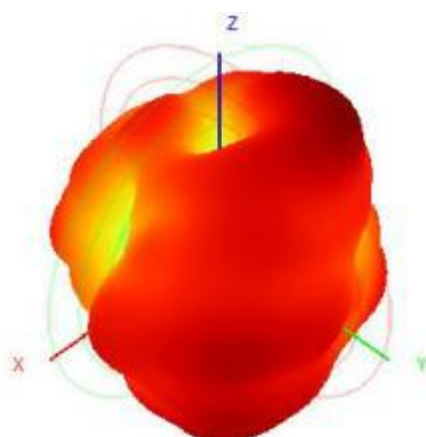


5. Radiation Pattern

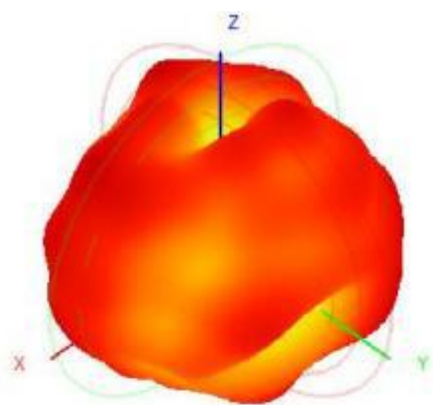
5-1 Antenna 3D Radiation Pattern



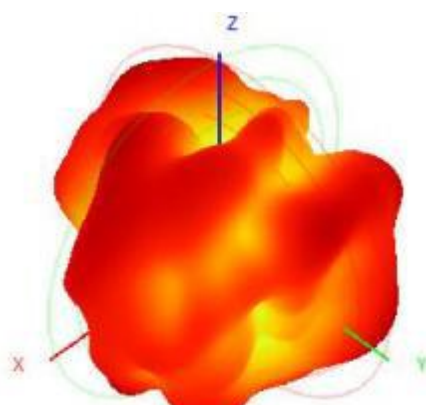
700MHz



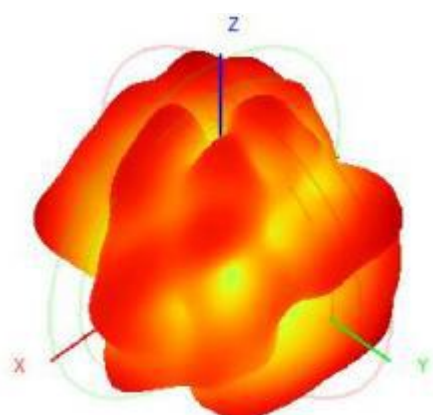
960MHz



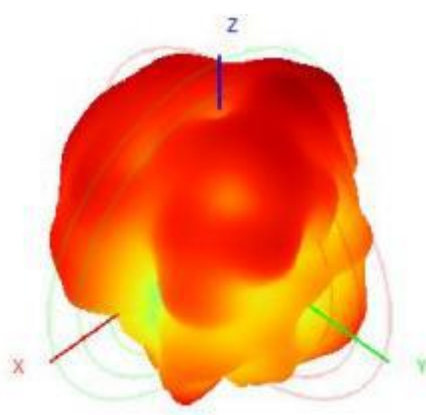
1700MHz



2150MHz

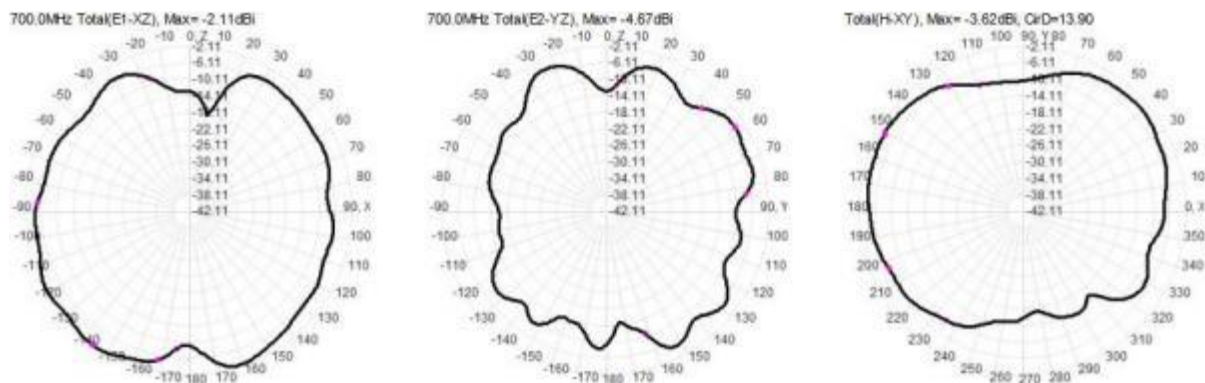


2300MHz

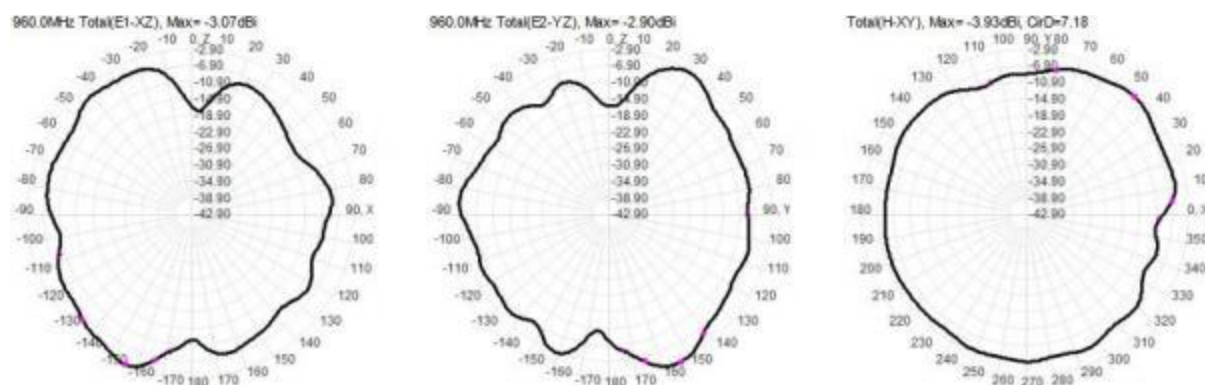


2700MHz

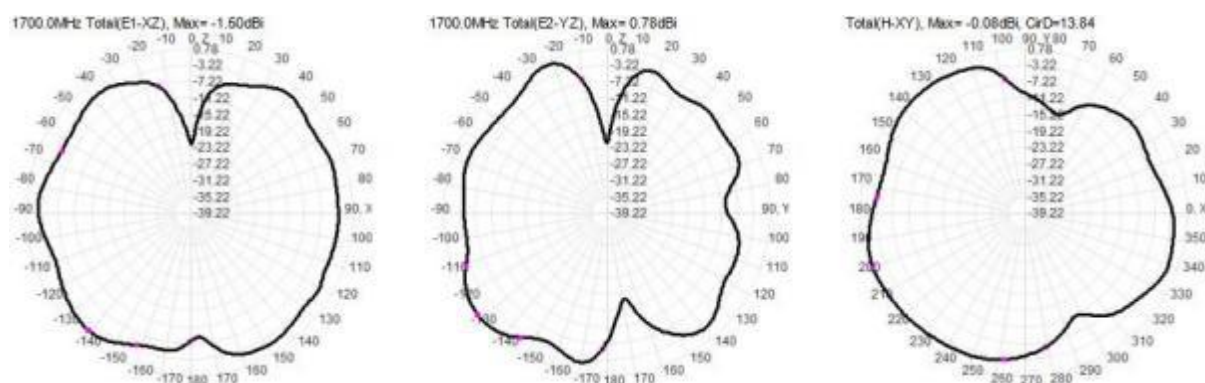
5-2 Antenna 2D Radiation Pattern



700MHz

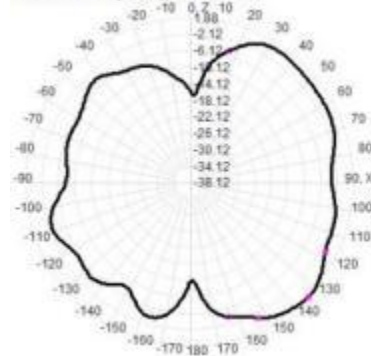


960MHz

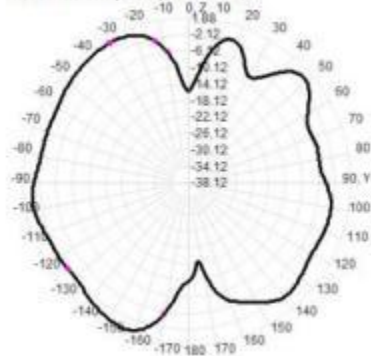


1700MHz

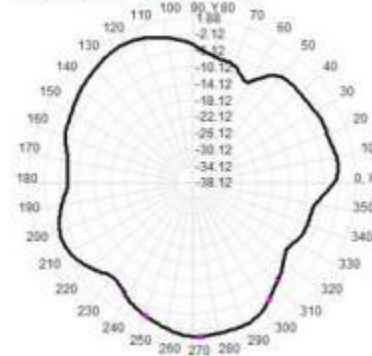
2150.0MHz Total(E1-XZ), Max=1.88dBi



2150.0MHz Total(E2-YZ), Max=0.67dBi

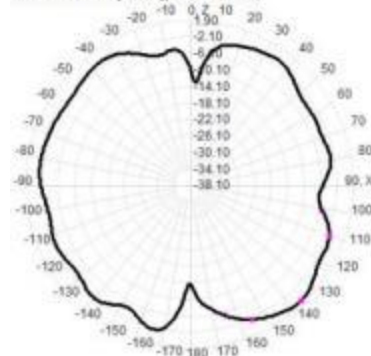


Total(H-XY), Max=-0.73dBi, CrD=9.81

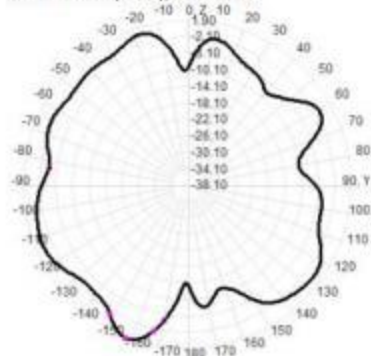


2150MHz

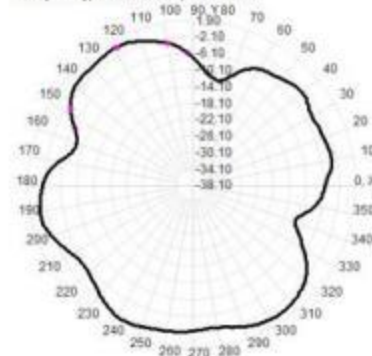
2300.0MHz Total(E1-XZ), Max=0.90dBi



2300.0MHz Total(E2-YZ), Max=1.90dBi

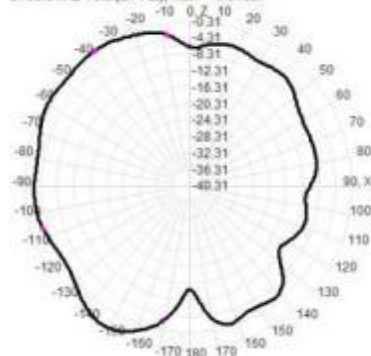


Total(H-XY), Max=0.08dBi, CrD=12.08

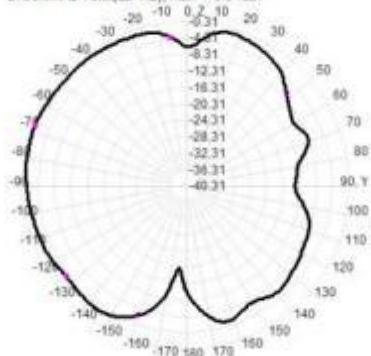


2300MHz

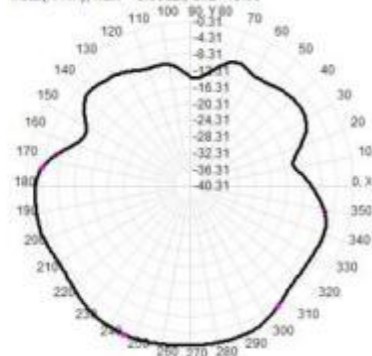
2700.0MHz Total(E1-XZ), Max=-0.31dBi



2700.0MHz Total(E2-YZ), Max=-0.84dBi



Total(H-XY), Max=-0.86dBi, CrD=13.85



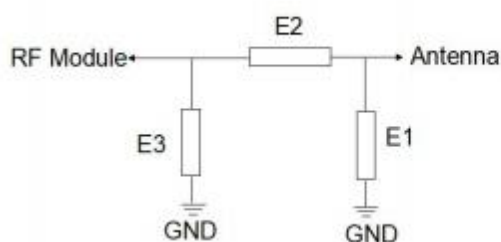
2700MHz

6.Active test data

Band	Channel	TRP	TIS	Band	Channel	TRP	TIS		
GSM850	L	27.63	-100.63	B1 (10MHz)	L	18.42	-92.93		
	M	27.58			M	20.16			
	H	28.12			H	19.37			
GSM900	L	26.56	-100.31	B2 (10MHz)	L	18.31	-92.76		
	M	26.02			M	18.65			
	H	26.14			H	18.34			
DCS1800	L	26.63	-104.36	B3 (10MHz)	L	19.12	-91.86		
	M	26.54			M	19.54			
	H	26.36			H	20.14			
PCS1900	L	26.12	-105.32	B4 (10MHz)	L	18.76	-94.34		
	M	25.83			M	17.26			
	H	25.74			H	18.54			
				B5 (10MHz)	L	18.52	-89.19		
					M	18.04			
					H	19.12			

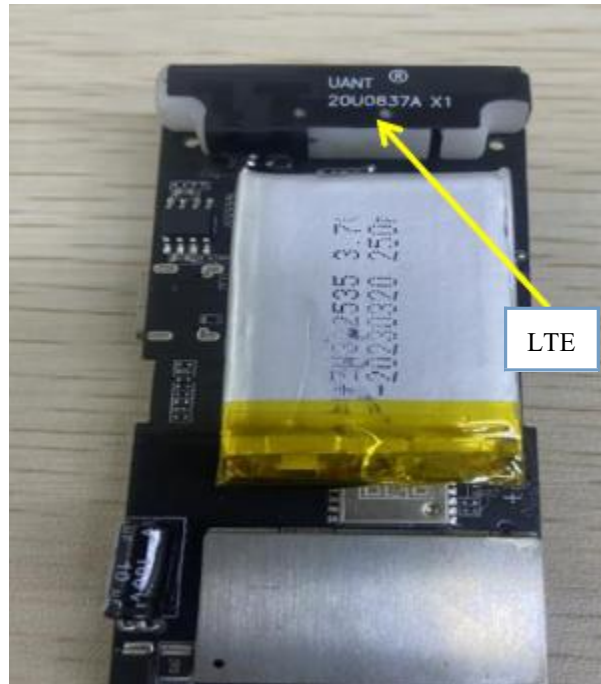
Band	Channel	TRP	TIS	Band	Channel	TRP	TIS
B7 (10MHz)	L	20.31	-94.37	B66 (10MHz)	L	18.63	-92.68
	M	20.53			M	18.21	
	H	20.68			H	17.13	
B8 (10MHz)	L	15.58	-89.31	B38 (20MHz)	L	20.12	-92.48
	M	16.34			M	20.36	
	H	17.04			H	20.54	
B20 (10MHz)	L	16.85	-89.2	B39 (20MHz)	L	20.31	-91.32
	M	18.26			M	20.76	
	H	17.47			H	20.68	
B28 (10MHz)	L	16.56	-88.69	B40 (20MHz)	L	20.56	-90.4
	M	16.21			M	20.54	
	H	16.46			H	20.87	
B34 (10MHz)	L	18.12	-92.71	B41 (20MHz)	L	20.79	-92.36
	M	18.24			M	20.93	
	H	17.63			H	19.26	

7.Antenna Matching Net work



Element	Value
E1	NC
E2	0Ω
E3	NC

8. Antenna installation diagram



9. Mechanical Specification

