Dongguan Gaochang Electronic Technology Co., Ltd

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Product specification

CUSTOMER: **Macro-video**

CUSTOMER P/N: **P9-1307000114**

OUR MODEL NO: **GC-2400CSWP9-L=280MM**

SPECIFICATIONS: **2.4G 2nd Generation Dual-Bend Real Antenna Feeder Line with 280MM-IPEX Connector, White Antenna, Gray Feeder Line**

Q' TY:

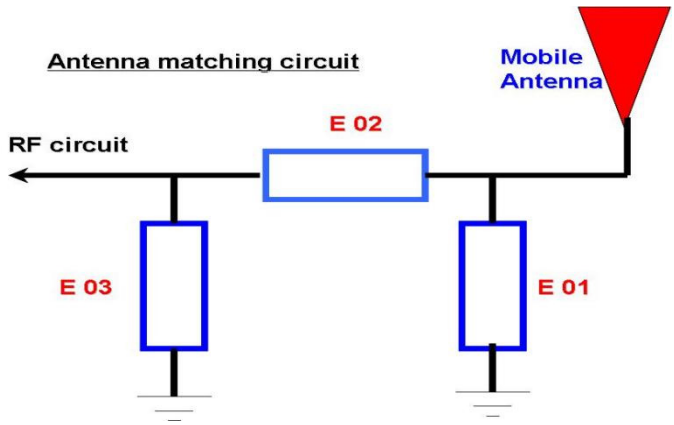
Date: **2025-3-31**

Dongguan Gaochang Electronic Technology Co., Ltd			Client acknowledges
Engineering	Quality	Approved	Signature (Seal)
Mr. Xie	Mr. Gao	Mr. Chen	

1. Technical Specification

A. Electrical Characteristics	
Working Frequency Range	**2400~2500MHz**
S.W.R.	**2400~2500MHz:<2.0**
Antenna Gain(avg.)	**2400~2500MHz: 3.87dBi**
Impedance	**50ohm**
B. Material	
brass	
C. Environmental	
Operation Temperature	**-45℃~+85℃**
Storage Temperature	**-45℃~+85℃**

2. Matching Circuits



Element	Value	Vender
E1(0402)	OPEN	/

E2(0402)	SHORT	50 Ω
E3(0402)	OPEN	/

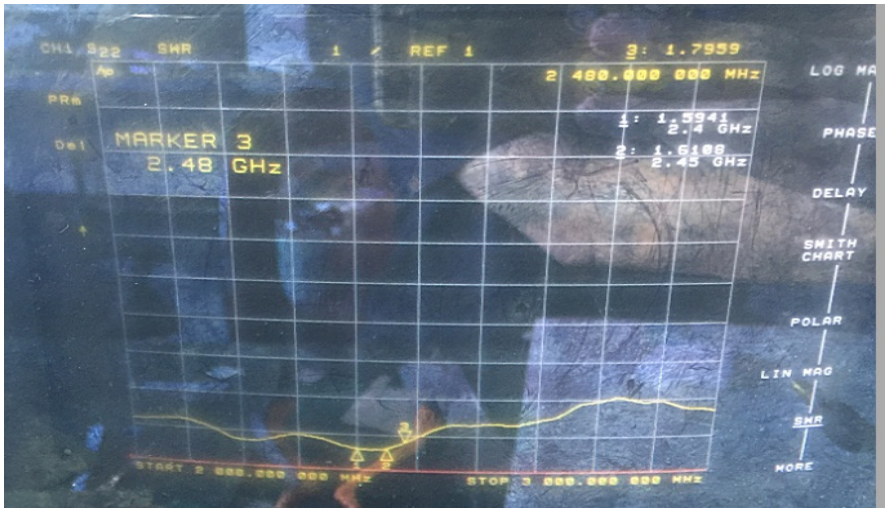
3. Curing antenna S11 Testing Result.

The S11 parameter was performed using a Agilent 8753D Network Analyzer and BEST'S test fixture that was using customer-providing device.

VSWR (Voltage standing wave ratio)

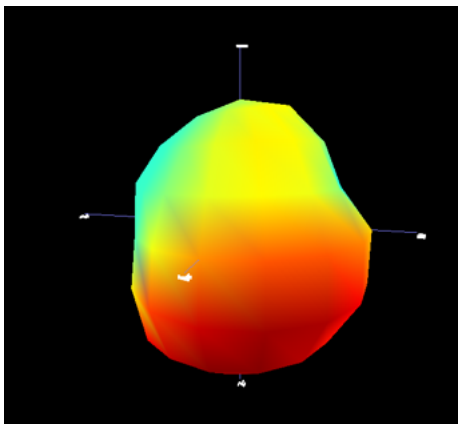
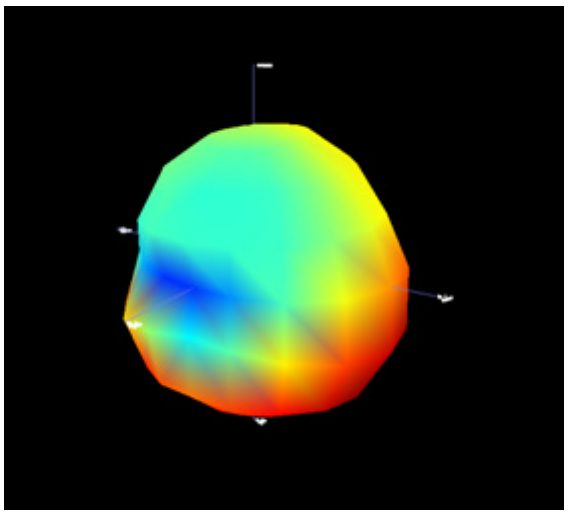
The Voltage Standing Wave Ratio (VSWR) is an indication of how good the impedance match is. VSWR is often abbreviated as SWR. If the transmission line and the antenna are not matched, the antenna will not accept all the power from the transmission line. The part it does not accept is reflected back and forth between the transmitter and the antenna. This sets up a fixed wave pattern along the line which we can measure and which is called the voltage standing wave ration(VSWR).The VSWR (ratio of maximum voltage to the minimum voltage along the line)expresses the degree of match between the transmission line and the antenna. When the VSWR is 1 to 1(1:1) the match is perfect and all the energy is transferred to the antenna prior to be radiated. When the VSWR is 1.5:1, 96% of the power reaches the antenna. By definition VSWR can never be less than 1.VSWR and reflected power are different ways of measuring and expressing the same thing. A high VSWR is indication that the signal is reflected prior to being radiated by the antenna.

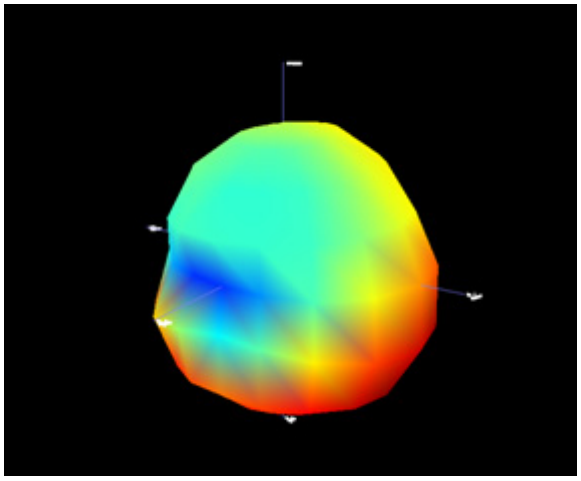
VSWR



Marker	2400MHz	2450MHz	2500MHz
S.W.R	<2.0		

4. 3D Test report

frequency: 2400MHZ gain: 3.87dbi

frequency: 2450MHZ gain: 2.85dbi

frequency: 2500MHZ gain: 2.41dbi



Passive Test For 2.4G												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHIS (%)	DHIS (%)	Max (dB)	Min (dB)	irectivit (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
2400	49.62	-3.04	3.87	1.72	27.051	22.568	3.87	-19.37	6.91	60	45.51	45.06
2450	49.47	-3.06	2.85	0.7	27.978	21.488	2.85	-18.07	5.9	150	45.36	44.92
2500	45.44	-3.43	2.41	0.26	25.559	19.878	2.41	-19.22	5.83	210	45.93	45.51

5. Product appearance diagram

The physical product has a 1.13mm wire with a length of 280mm.

Salt spray test

Test purpose: To test the antenna's resistance to salt spray corrosion

Test method:

Solution content: 5% sodium chloride solution (prepared with distilled water, 95ml distilled water+5g sodium chloride)

Place the antenna in the salt spray test chamber and hang it with a rope to prevent uneven solution spraying or surface failure.

The antenna needs to be immediately placed in the testing box. The experimental period is 48 hours. During the experiment, it is not allowed to be removed.

After the experiment, remove the antenna, clean it with cotton cloth and ion air gun, and let it dry at room temperature for 49 hours. Then, inspect the appearance, mechanical properties, and electrical properties of the antenna.

Test report	admit	confirm Mr.Dai	Test personnel Mr.Yang
Test content and antenna model: 2.4G external antenna			
Test objective: To test the appearance, mechanical properties, and electrical performance changes of the antenna in a salt spray environment.			
Test quantity: 5pcs			

Before the experiment				
NO.			appearance	Mechanical and electrical properties
1#			OK	OK
2#			OK	OK
3#			OK	OK
4#			OK	OK
5#			OK	OK

After the experiment				
NO.				
1#			OK	OK
2#			OK	OK
3#			OK	OK
4#			OK	OK
5#			OK	OK

Result judgment: The salt spray test has ended, the appearance is OK, the antenna is in good contact with the motherboard (multimeter test is conductive), and the mechanical properties have not changed. Signal testing shows that the standing wave varies within a range of ±0.3, which meets the allowable testing requirements. In summary, the 2.4G external antenna meets the requirements of salt spray testing.