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Manufacturer: Shenzhen Zhouda Communication Electronics Co., Ltd.

# Product specification

**CUSTOMER:** Zhongxsd

**CUSTOMER P/N :** ZD-368

**OUR MODEL NO:** ZD 2400-5900CSW-L190

**SPECIFICATIONS:** (SQ02WIFI) -2.4G/5.8GDual-frequency White ultrasonic antenna 1.13 gray outlet 190MM with terminal

**QTY:** 5

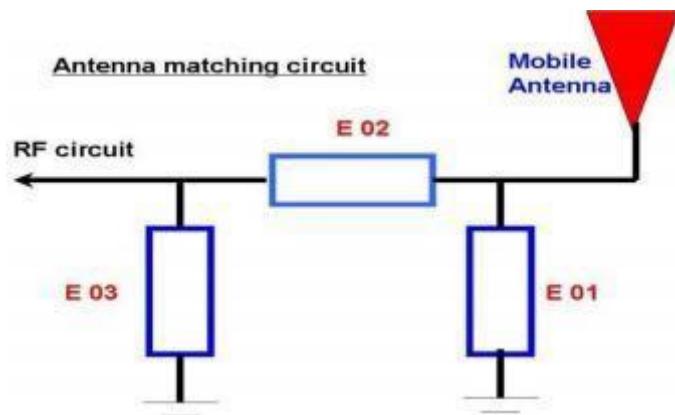
**DATE:** 2025-6-16

Shenzhen zhouda communication electronics co., ltd			Customer recognition
Engineering	Quality	Approved	Signature (seal)
xie	Huang	GAO GAO	

## 1. Technical Specification Technical specifications

<b>A. Electrical Characteristics</b>	
<b>Working Frequency Range</b>	<b>2400~5900MHz</b>
<b>S.W.R.</b>	<b>2400~5900MHz:&lt;2.0</b>
<b>Antenna Gain(avg.)</b>	<b>2400~5900MHz: 3.5dBi±0.5dBi</b>
<b>Impedance</b>	<b>50ohm</b>
<b>B. Material</b>	
brass	
<b>C. Environmental</b>	
<b>Operation Temperature</b>	<b>-45°C~+85°C</b>
<b>Storage Temperature</b>	<b>-45°C~+85°C</b>

## 2 Matching Circuits matching circuit



Element	Value	Vender
E1(0402)	OPEN	/
E2(0402)	SHORT	50 Ω
E3(0402)	OPEN	/

Note: Matching has not changed..

### 3. Curing antenna S11 Testing Result Passive testing

The S11 parameter was performed using a Agilent 8753D Network Analyzer

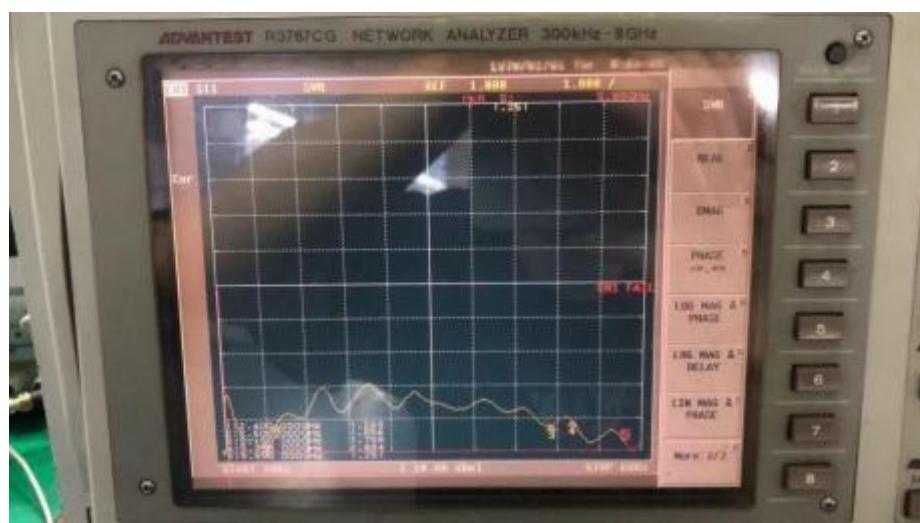
and BEST'S test fixture that was using customer-providing device.

**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 ratio(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.

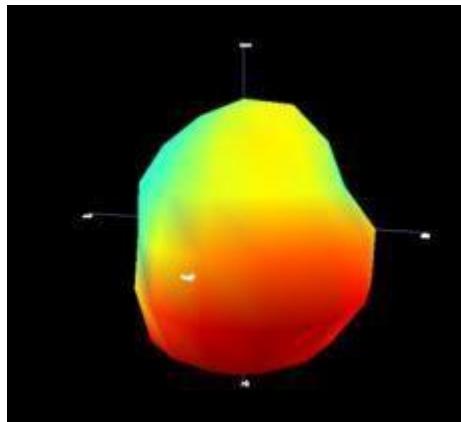
**standing wave VSWR**



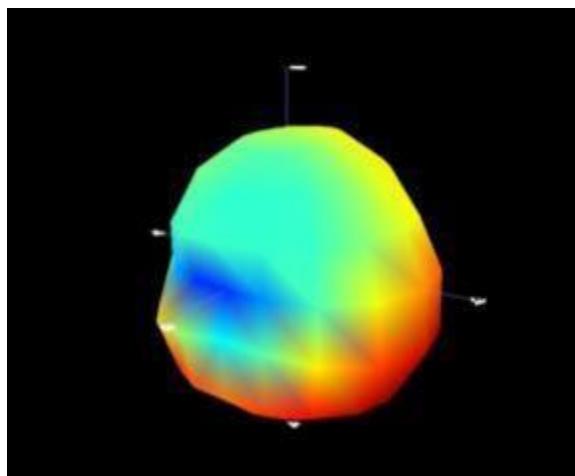
Marker	2400MHz	2450MHz	2500MHz	5100MHz	5900MHz
S.W.R	$\leq 2.0$				

## 4 Test 3D report

frequency: 2400 MHZ increase: 3.08 dbi



frequency: 5900 MHZ increase: 3.55 dbi

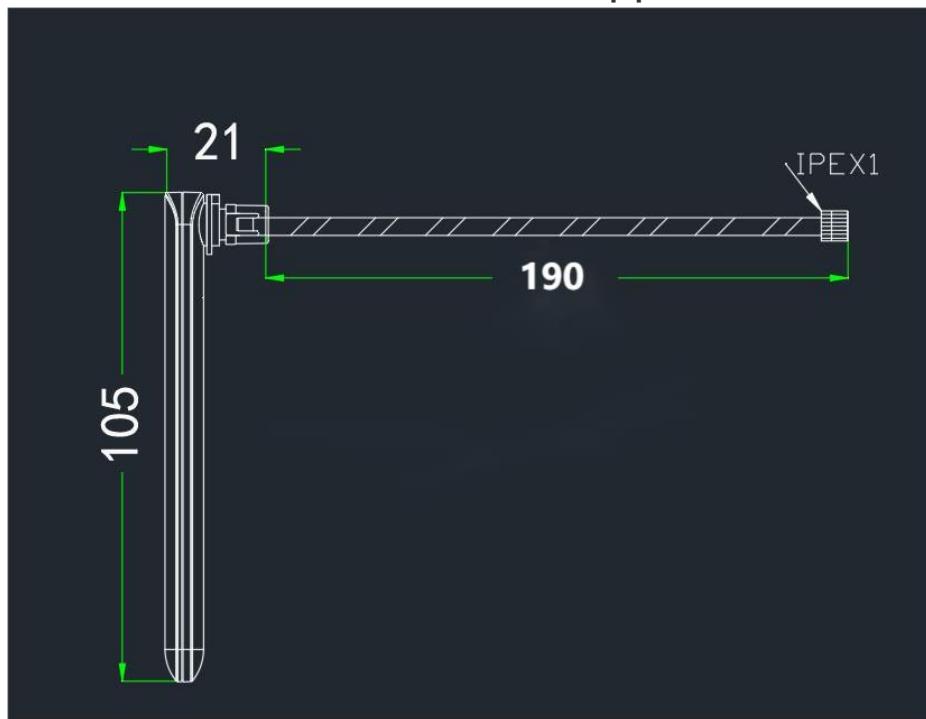


Passive test

data

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHIS (%)	DHIS (%)	Max (dB)	Min (dB)	irectivit (dBi)	Beamwidth (3dB)	AttH (dB)	AttW (dB)
2400	77.89	-1.08	3.08	1.93	35.089	42.805	4.08	-21.26	5.16	0	45.51	45.06
2450	77.87	-1.09	3.56	1.66	36.208	41.665	3.81	-17.77	4.89	0	45.36	44.92
2500	67.96	-1.68	3.23	3.08	30.232	37.727	5.23	-16.91	6.91	180	45.93	45.51
5100	53.48	-2.72	2.91	-1.24	26.525	26.959	0.91	-15.83	3.63	300	49.4	49.42
5800	68.49	-1.64	3.04	0.89	32.138	36.35	3.04	-9.53	4.68	90	50.5	50.47
5850	74.66	-1.27	3.29	1.14	34.367	40.297	3.29	-9.67	4.56	240	51.22	51.05
5900	75.46	-1.22	3.55	1.4	34.651	40.812	3.55	-10.43	4.77	240	50.81	50.68

## 6. Product appearance diagram



Product physical 2.4G-5.8G dual-frequency White ultrasonic antenna 1.13 gray line outlet length 190MM.

**Salt spray test** Test purpose: To test the salt spray corrosion resistance of the antenna. Test method: Solution content: 5% sodium chloride solution (prepared with distilled water, 95 ml distilled water +5 g sodium chloride) Put the antenna into the salt spray test box and hang it with a rope to avoid uneven spraying of the solution or missing the surface. The antenna should be put into the test box immediately. The experimental period is 48 hours. During the experiment, it shall not be taken out in the middle.

After the experiment, take out the antenna, clean it with cotton cloth and ion air gun, leave it for 49 hours and dry it at room temperature, and then check its appearance, mechanical properties and electrical properties.

laboratory report		admin	confi	Tester
Test content and antenna model: (SQ02WIFI)-2.4G/5.8G dual-frequency white ultrasonic antenna. 1.13 gray outlet 190MM with terminal		t	rm dai	yang
Test purpose: to test the changes of antenna appearance, mechanical properties and electrical properties in salt fog environment..				
Test quantity: 5pcs				
Before the test				
project	No.		exterior	Mechanical properties and electrical properties
1#			PASS	PASS
2#			PASS	PASS
3#			PASS	PASS
4#			PASS	PASS
5#			PASS	PASS
After the test				
project	No.			
1#			PASS	PASS
2#			PASS	PASS
3#			PASS	PASS
4#			PASS	PASS
5#			PASS	PASS
Results: After the salt spray test, the appearance is ok, the antenna is in good contact with the motherboard (multimeter test is conducted), and the mechanical properties have not changed. According to the signal test, the standing wave changes in the range of 0.3, which meets the allowable test requirements. . To sum up, the 2.4/5G external antenna meets the requirements of salt spray test..				