

**Dongguan Gaochang Electronic Technology Co., Ltd**

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Jinxing Road, Dongguan, China

## **Product specification**

**CUSTOMER:** \_\_\_\_\_

**CUSTOMER P/N:** \_\_\_\_\_

**OUR MODEL NO:** **ZD-2400N2076-L=260** \_\_\_\_\_

**SPECIFICATIONS:** \_\_\_\_\_

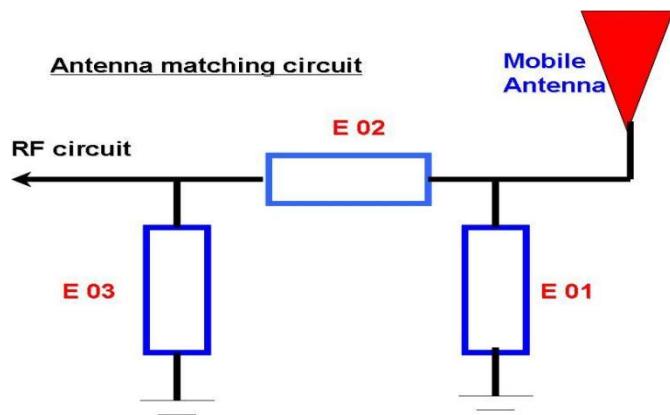
**Q' TY:** **2025-4-11** \_\_\_\_\_

			Customer acknowledges
Engineering	Quality	Approved	Signature (seal)
XieGong	Huanggon g	Gaogong	

## 1. Technical Specification

<b>A. Electrical Characteristics</b>	
<b>Working Frequency Range</b>	<b>2400~2500MHz</b>
<b>S.W.R.</b>	<b>2400~2500MHz:&lt;2.0</b>
<b>Antenna Gain( avg.)</b>	<b>2.0dBi</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



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

E3(0402) OPEN /

**Note: The match has not been changed.**

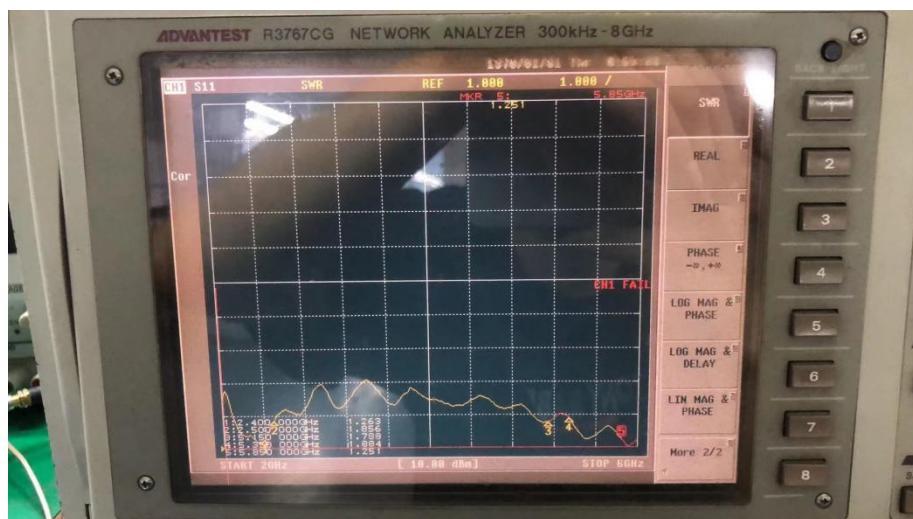
### 3. Curing antenna S11 Testing Result.

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 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.

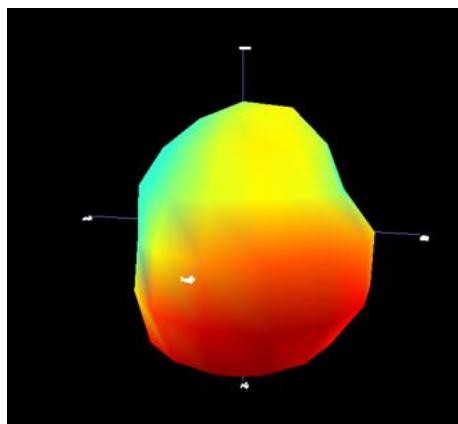
## VSWR



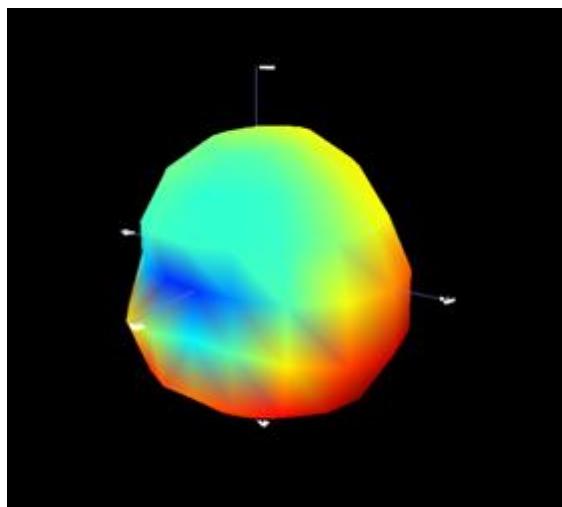
Marker	2400MHz	5000MHz	5800MHz
S.W.R		<2.0	

#### 4. Test data

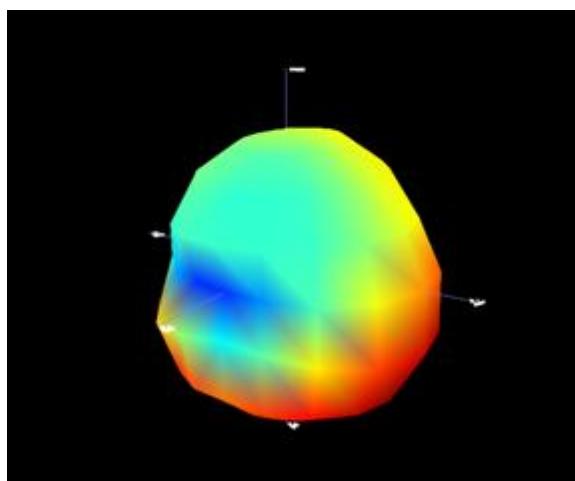
频率: 2400MHZ 增益: 1.87dbi



频率: 2450MHZ 增益: 2.00dbi

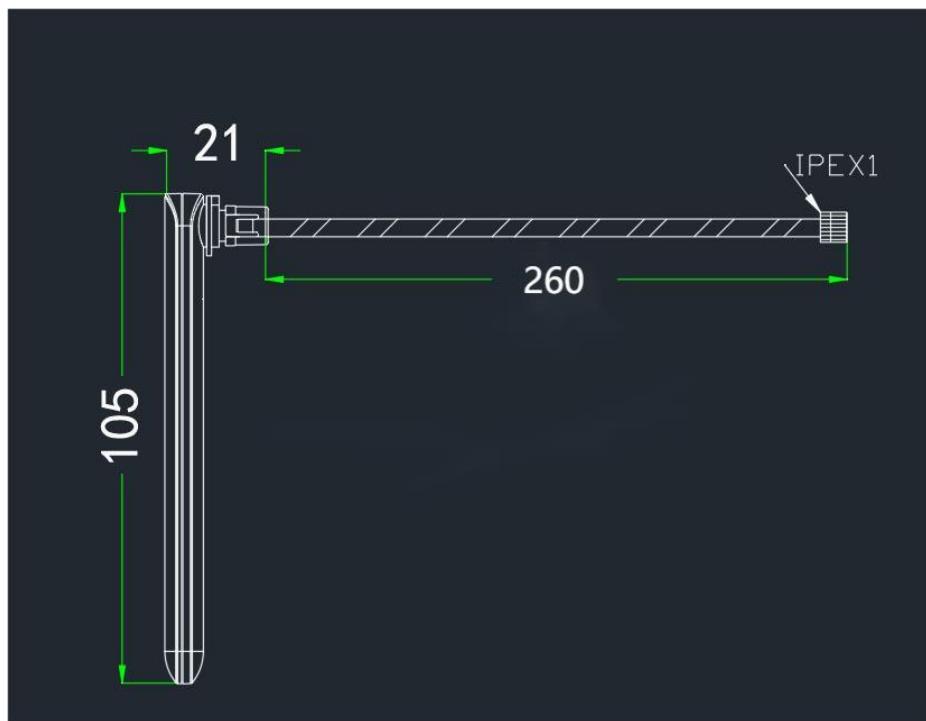


频率: 2500MHZ 增益: 1.64dbi



2.4G										
Fred (MHz)	Effi (%)	Effi (%)	Gain (dBi)	Gain (dBd)	UHIS (%)	DHIS (%)	Max (dB)	Min (dB)	Attenut (Hor)	Attenut (Ver)
2400	44.38	-2.79	1.97	1.57	40.28	13.32	1.97	-23.79	48.26	49.33
2410	44.63	-2.46	1.66	1.46	42.42	13.54	1.66	-21.29	48.66	49.58
2420	44.94	-2.12	1.82	1.53	40.96	14.77	1.82	-20.97	48.71	49.88
2430	44.27	-2.70	1.40	1.38	43.24	15.23	1.40	-22.77	48.21	49.35
2440	44.75	-2.39	2.00	1.58	40.71	15.79	2.00	-25.39	48.58	49.56
2450	44.82	-1.83	1.54	1.42	41.19	16.18	1.54	-21.98	49.11	49.99
2460	44.28	-2.63	1.13	1.29	42.39	18.25	1.13	-25.62	48.37	49.22
2470	44.49	-2.34	1.44	1.39	41.78	18.80	1.44	-24.31	48.50	49.54
2480	45.08	-2.23	1.36	1.36	40.89	19.05	1.36	-23.23	48.98	49.99
2490	44.21	-2.68	1.25	1.33	43.21	19.23	1.25	-21.77	48.24	49.20
2500	44.46	-2.32	1.59	1.44	40.44	19.62	1.44	-20.30	48.48	49.61

## 5. Product appearance diagram



**Product physical 1.13 gray L=260MM**

### 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)

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**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 remove it midway.**

**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		recognize	confirm	Test personnel
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.		appearan	Mechanical and electrical properties	
1#		N/A	meet the requirements	
2#		N/A	meet the requirements	
3#		N/A	meet the requirements	
4#		N/A	meet the requirements	
5#		N/A	meet the requirements	
After the experiment				
No.				
1#		N/A	meet the requirements	
2#		N/A	meet the requirements	
3#		N/A	meet the requirements	
4#		N/A	meet the requirements	
5#		N/A	meet the requirements	
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 $\pm 0.3$ , which meets the allowable testing requirements.. In summary, the dual frequency external antenna meets the requirements of salt spray testing.				