

Antenna Specification for Approval

Manufacturer: Shantou City Happy Cow Toys Industrial Co.,Ltd

Address: #7th Bldg, Chousha Company Yard, Lao shanfen road,
Chenghai district, Shantou city

● Specification Summary

A. Electrical Characteristics	
Frequency	2400MHz ~2500MHz
VSWR	< 2.1 dbi
Efficiency	>40%
Peak Gain	0.8 dbi
Impedance	50 Ohm
Polarization	Line
B. Material & Mechanical Characteristics	
Material of Radiator	Cu
Cable Type	/
Connector Type	/
Dimension	At Attachment
Heat-durability	280±5°C, 10sec.
C. Environmental Characteristics	
Operation Temperature	- 20 °C ~ + 80 °C
Storage Temperature	- 30 °C ~ + 85 °C

● Test Equipment & Conditions

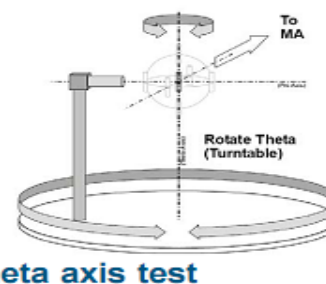
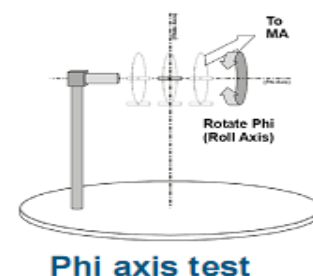
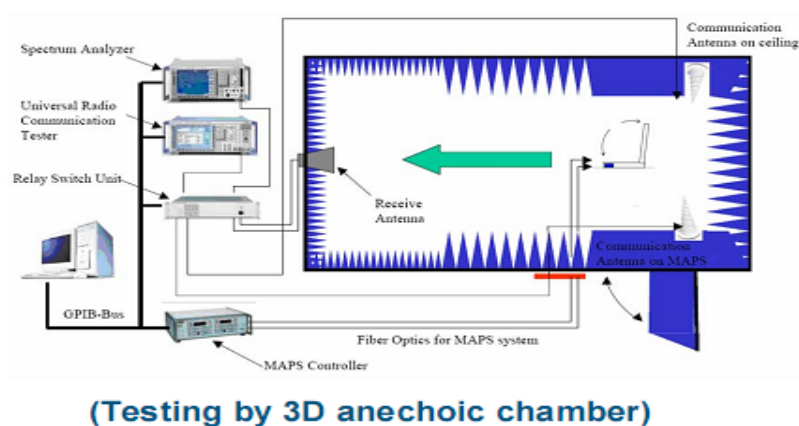
1. Network Analyzers :

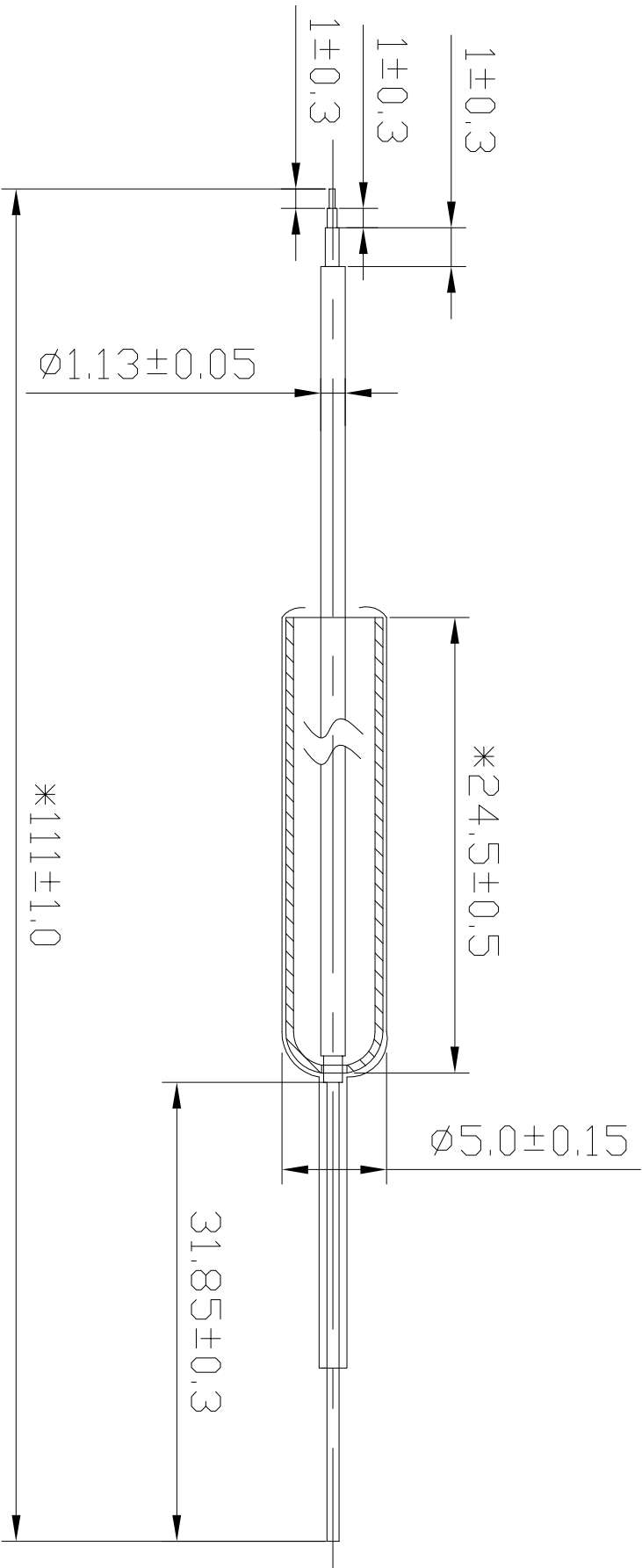
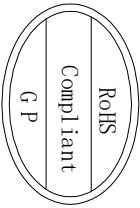
Agilent 8753D 5071B

Communications Test Set:

Agilent E5515C CMW500

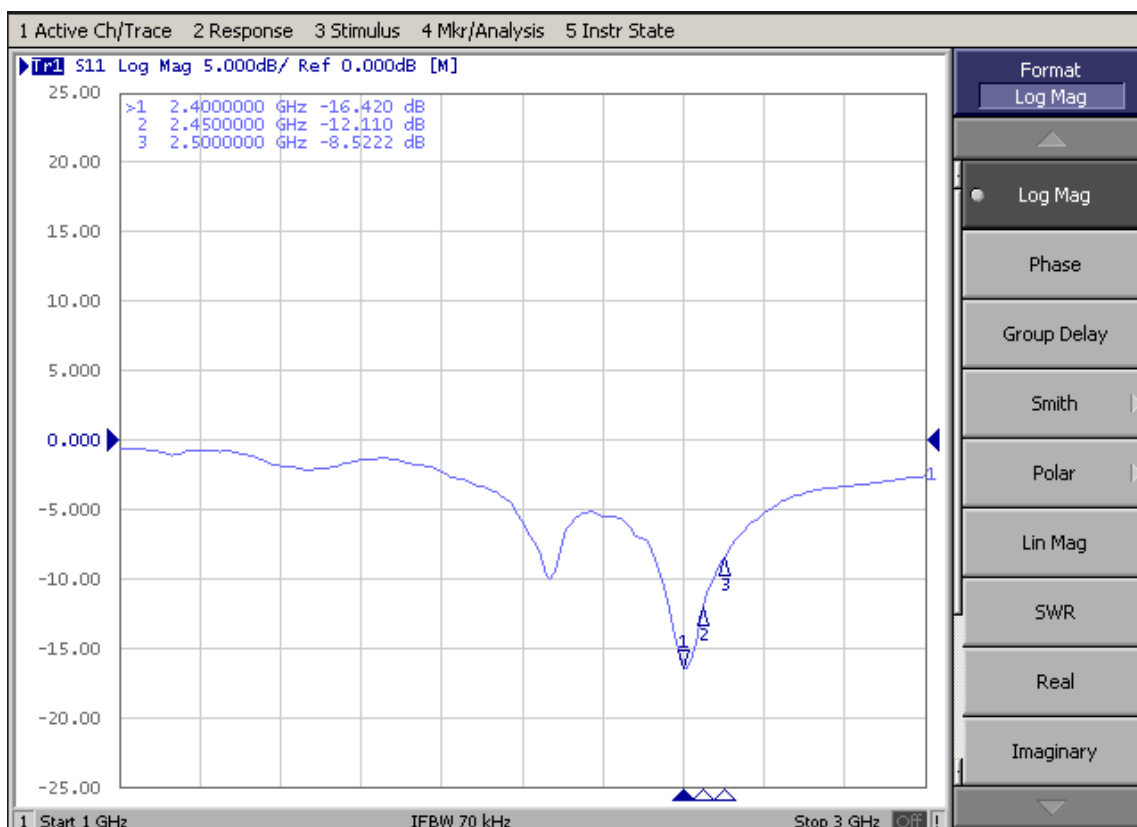
2. 3D Chamber Test System



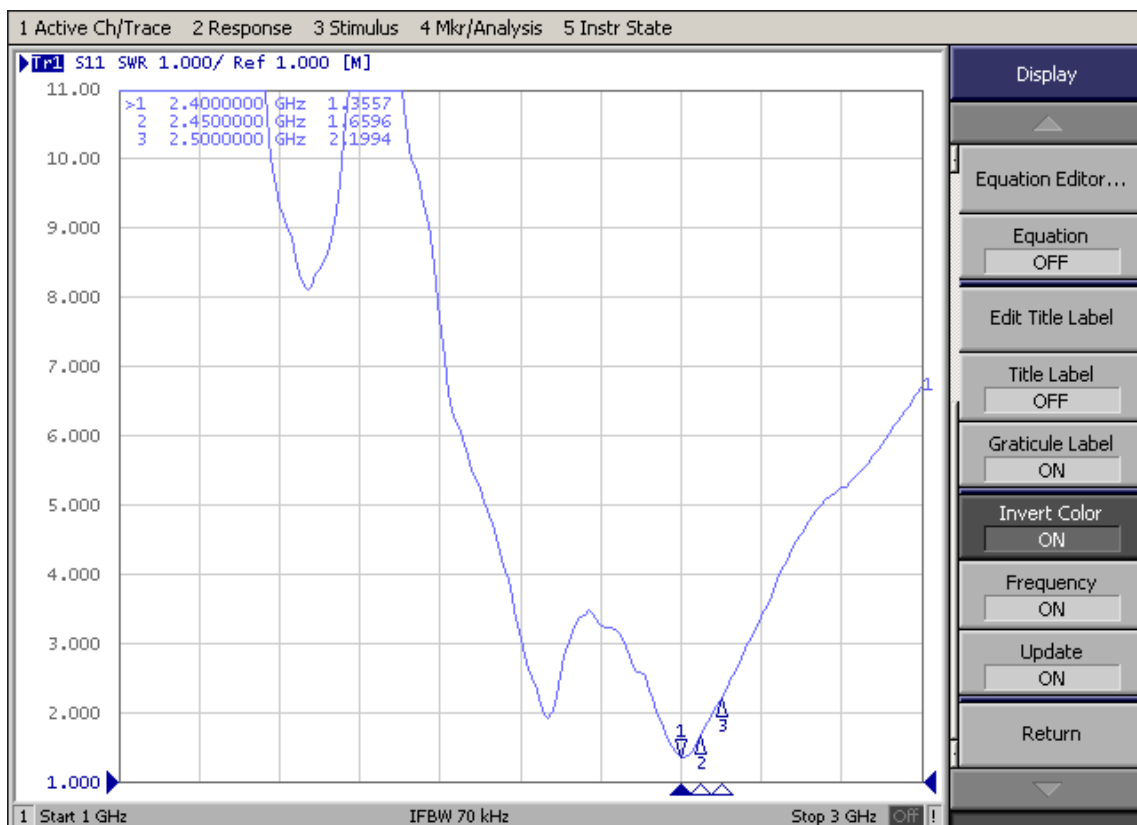


SHEN ZHEN SKYlink CO., LTD											
				Third Angle		Project		Date			
				0~10 ±0.05		○ 0.02				2025-02-21	
				10~18 ±0.10		◎ ∅.03		Designed by			
				18~30 ±0.12		⊥ 0.02		Part No. WF15B. C113. 111B. 123185. 111. W		MD	
A				30~40 ±0.15		∇ 0.04		Material		RF	
				40~ ±0.20		Angle ±0.5°					
Rev				Description		Date		Remark		Approved by	
1				2		3		4		Unit mm	
				5		6		7		Scale 1:1	
										Rev A	

◆ Return Loss



◆ VSWR

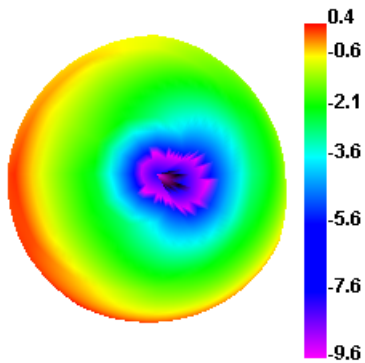


◆ Gain & Efficiency

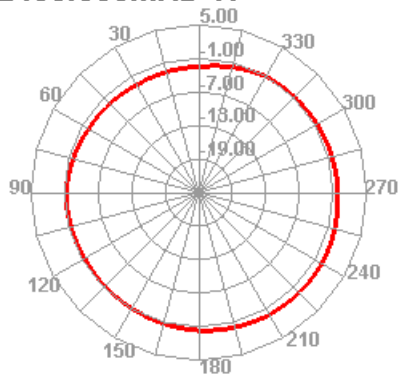
Freq (MHz)	Effi (%)	Gain (dBi)
2400	57.17	0.4
2410	54.27	0.36
2420	57.37	0.78
2430	54.63	0.73
2440	51.34	0.49
2450	45.47	-0.16
2460	44.84	-0.44
2470	46.45	-0.31
2480	48.17	0.16
2490	50.77	0.63
2500	47.29	0.35

◆ Radiation Pattern

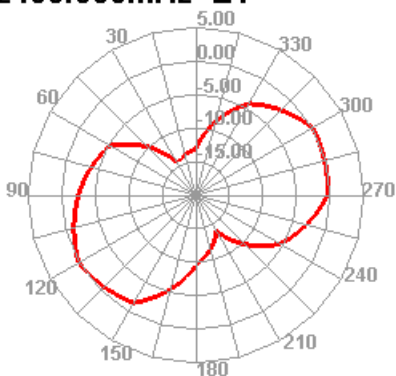
2400.000MHz



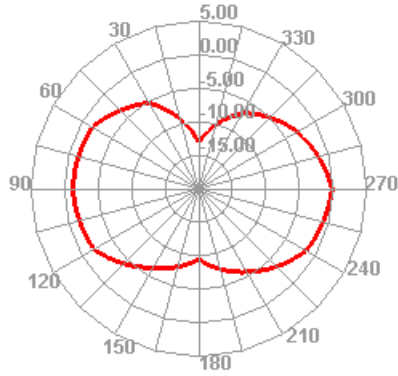
2400.000MHz H



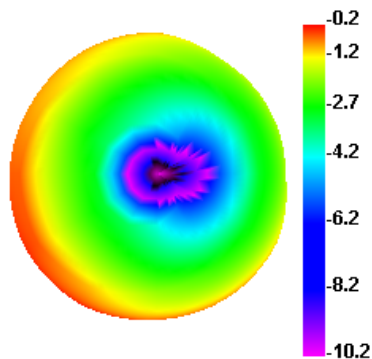
2400.000MHz E1



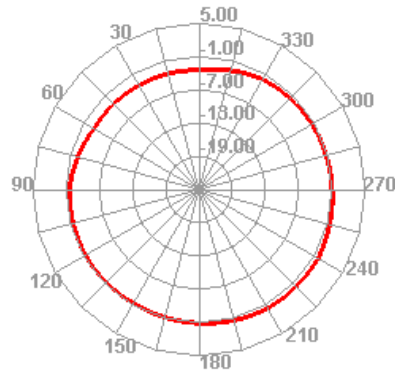
2400.000MHz E2



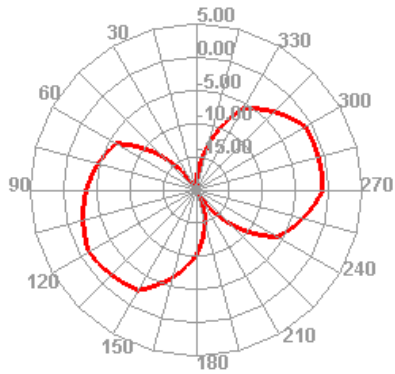
2450.000MHz



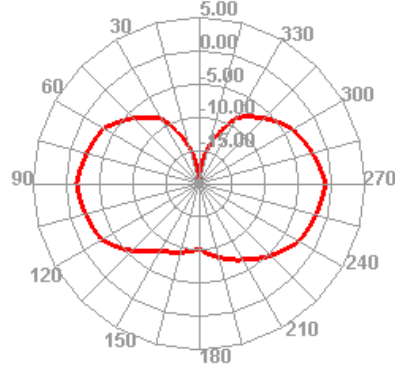
2450.000MHz H



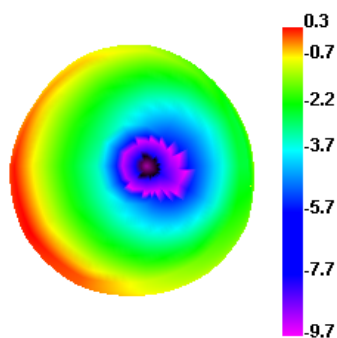
2450.000MHz E1



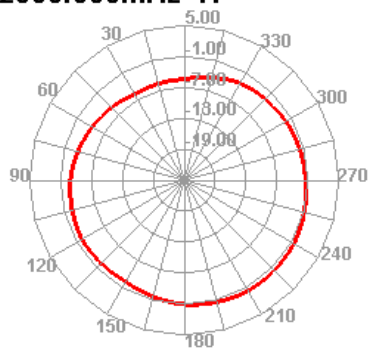
2450.000MHz E2



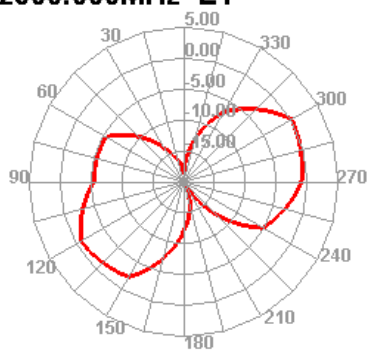
2500.000MHz



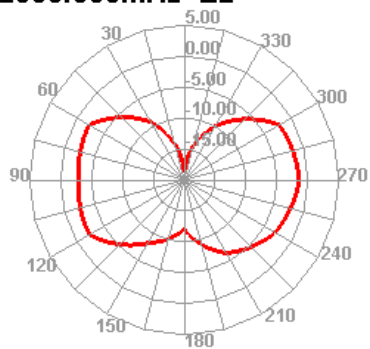
2500.000MHz H



2500.000MHz E1



2500.000MHz E2



◆ Reliability Test

Test Item		Test condition	Equipment	Specification	Result
1	Low Temp. Storage Test	Temperature: -30℃, Time:48hrs Test condition: Placing antenna in a Low/High Temperature Chamber, keep the temp is 25℃ and humidity is 65% for one hour, then step-down the temp. to -30℃ in one hour, store antenna for 44 hours; step-up temp to 25℃,test antenna after 2 hours.	Temp.&Humi. Tester	No material deformation is allowed. Electronic Performance is ok .	PASS
2	High Temp./High Humid Storage Test	Temperature: 85℃ Humidity: 85% RH Time:48hrs Test condition: Placing antenna in a Low/High Temperature Chamber, keep the temp is 25℃ and humidity is 65% for one hour, then step-up the temp. to 80℃ and the humidity up to 85% in one hour, store antenna for 44 hours; step-down temp to 25℃,test antenna after 2 hours.	Temp.&Humi. Tester	No material deformation is allowed. Electronic Performance is ok .	PASS
3	Salt-Spray 6 pray Test	Placing antenna in the Salt-Spray Tester ,set the test condition , Temp: $35 \pm 2^{\circ}\text{C}$ Humidity: 85% NaCl salt spray :$5 \pm 1\%$.PH value :6.5~7.2 Test time:24hours	Salt-Spray Tester	No color change No appear rusting	PASS