

Project number: 2022022200001

DATE: 2022.02.22

Version: A1

APPROVAL SHEET

Manufacturer: Shenzhen AtomStack Technologies Co., Ltd.

Address: 17th Floor, Building 3A, Phase II, Intelligent Park, No. 76, Baohe Avenue, Shenzhen, 518172, China.

Customer Material code: _____

Sunhow Material code: SX-Little Pepper 2.4G

Specification description: 2.4G black WIFI little chili antenna

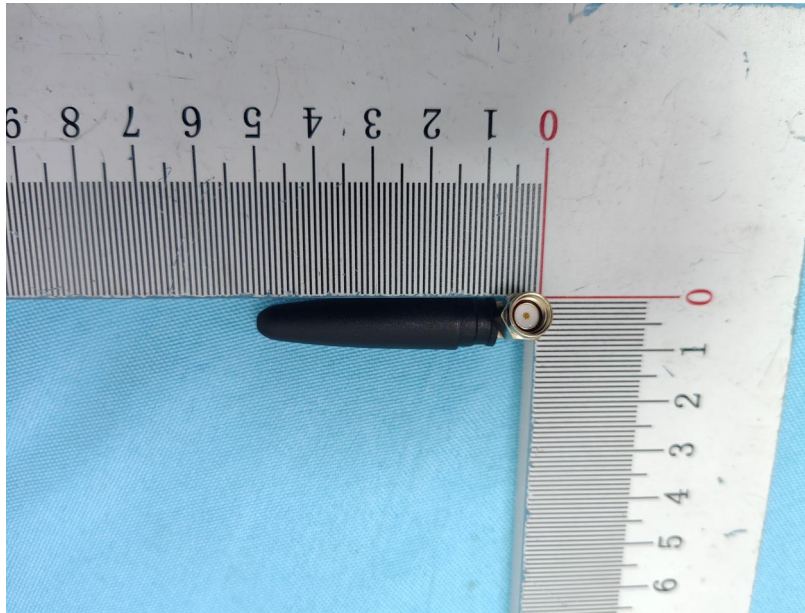
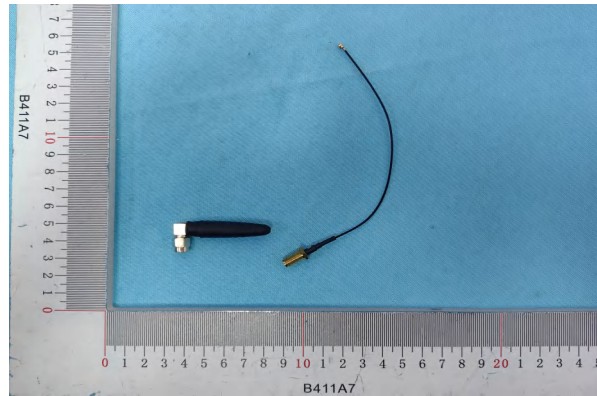
Factory seal:

Producer	Reviewer	Approval

Customer confirmation:

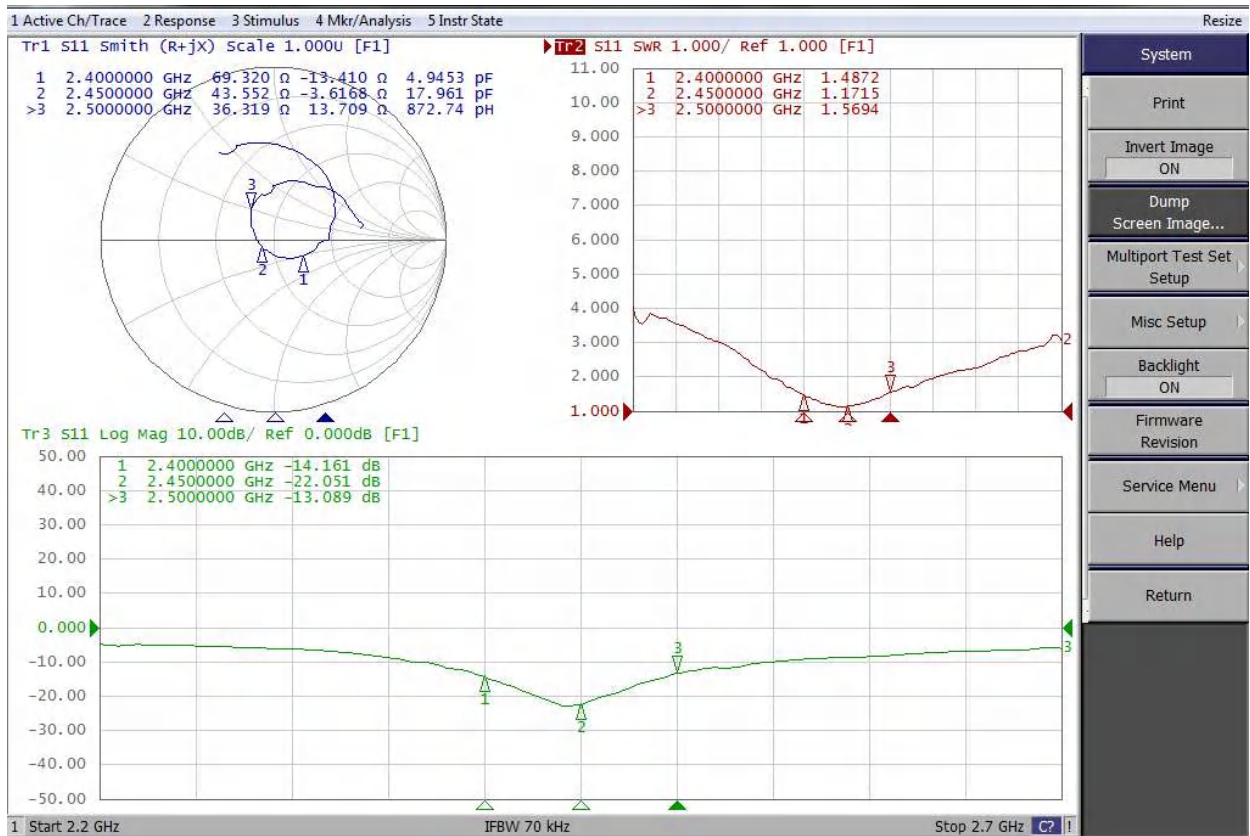
Check	Reviewer	Approval

2. Product image



3. Parameter for Source-Free Performance Testing

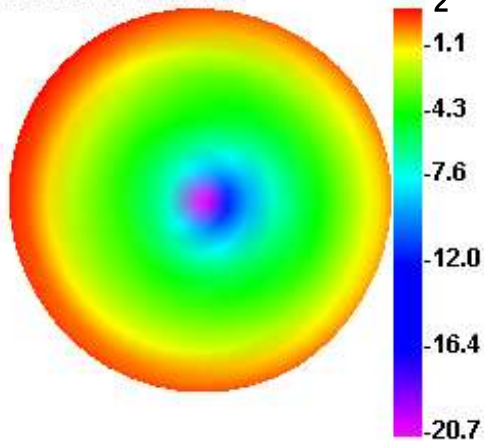
Frequency (MHz)	2400	2450	2500
VSWR	1.4872	1.1715	1.5694



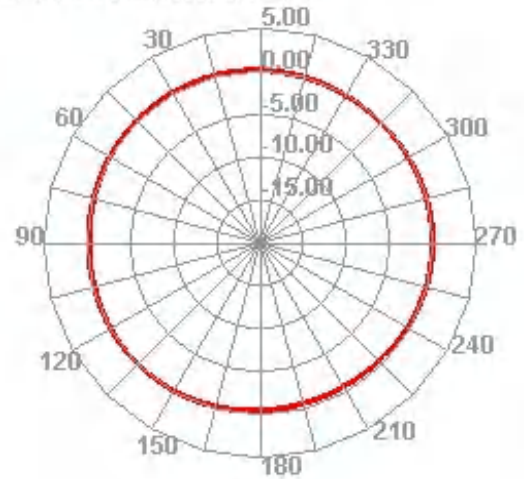
4. 2D and 3D performance charts

	A	B	C	D	E	F	G	H	I	J	K
1	Passive Test For WIFI2.4										
2	Freq	Effi	Effi	Gain	Gain	UHS	DHIS	Max	Min	Attenut	Attenut
3	(MHz)	(%)	(dB)	(dBi)	(dBd)	(%)	(%)	(dB)	(dB)	Hor	Ver
4	2400	71.18	-1.48	2	0.86	46.066	25.118	3.01	-27.09	48.68	48.95
5	2410	74.88	-1.26	1.96	0.96	48.109	26.77	3.11	-24.05	48.6	49.03
6	2420	78.87	-1.03	1.33	0.99	50.195	28.673	3.14	-20.92	48.66	49.12
7	2430	80.35	-0.95	1.57	0.87	50.662	29.688	3.02	-21.67	48.73	49.16
8	2440	82.39	-0.84	1.08	0.85	51.589	30.797	3	-21.52	48.9	49.33
9	2450	82.32	-0.84	0.58	0.87	51.258	31.064	3.02	-22.94	49.02	49.47
10	2460	80.02	-0.97	0.09	0.9	49.739	30.277	3.05	-21.36	49.12	49.5
11	2470	75.02	-1.25	1.87	0.8	46.693	28.323	2.95	-19.34	49.1	49.75
12	2480	72.97	-1.37	0.91	0.81	45.663	27.304	2.96	-19.39	49.33	49.67
13	2490	75.82	-1.2	1.28	1	47.614	28.209	3.15	-20.36	49.49	50.01
14	2500	80.91	-0.92	0.22	1.18	50.758	30.15	3.33	-19.36	49.73	50.17

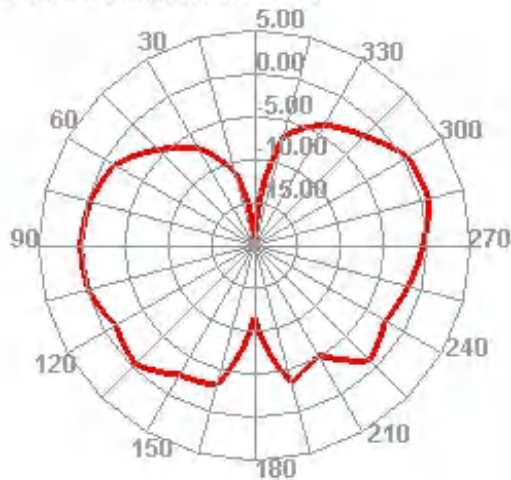
2400.000MHz



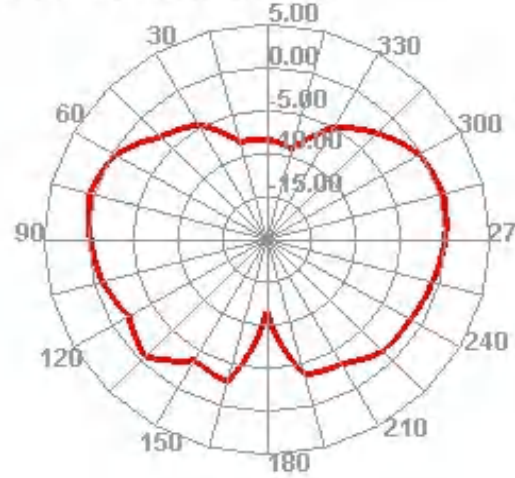
2400.000MHz H



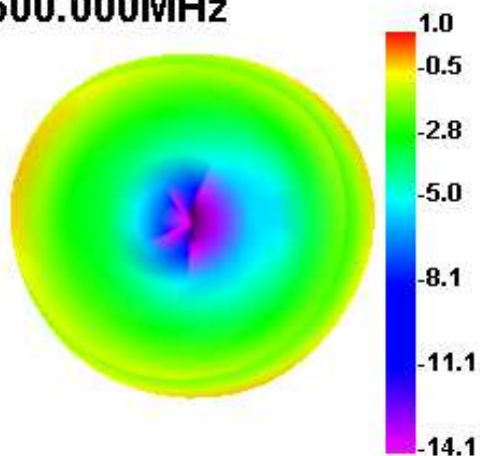
2400.000MHz E1



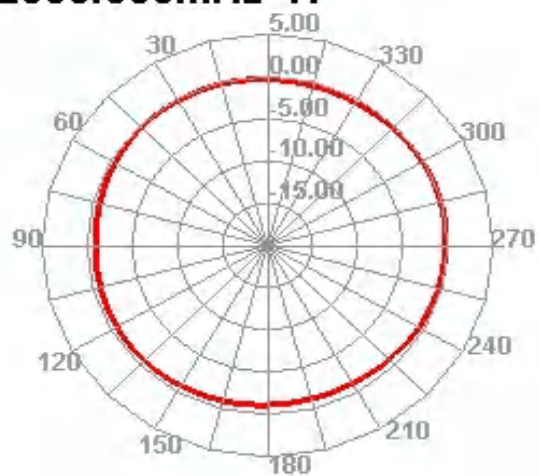
2400.000MHz E2



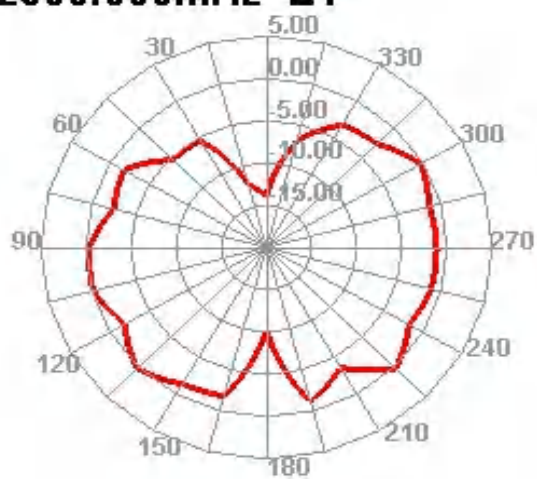
2500.000MHz



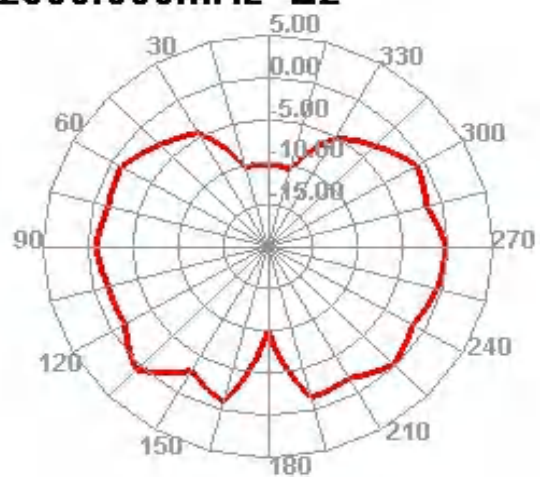
2500.000MHz H



2500.000MHz E1



2500.000MHz E2



5. Electrical performance parameters

Project \ Name	2.4G 天线	Name	2.4G Antenna
频率范围 (MHz)	2400~2500	Frequency (MHz)	2400~2500
带宽 (MHz)	100	Bandwidth (MHz)	100
极化方式	线极化	Polarization Type	linear polarization
天线增益 (dBi)	2	Gain (dBi)	2
辐射方向	全向	Radiation Patten	Omni directional
电压驻波比	≤ 2	VSWR	≤ 2
输入阻抗 (Ω)	50	Input Impedance (Ω)	50
电缆线长度 (mm)	100	Cable length (mm)	100
电缆线颜色	黑色	Cable Colour	Black
接口形式	一代端子	Connector Type	IPEX MHF 1
工作温度 ($^{\circ}\text{C}$)	-40~+85	Operation temperature ($^{\circ}\text{C}$)	-40~+85
存储温度 ($^{\circ}\text{C}$)	-40~+85	Store temperat ($^{\circ}\text{C}$)	-40~+85

6. Reliability Test Report

Sustaining power

Experiment/Experimental Project	Sustaining power		Inspection Order Number		
Product name/specifications	SX-Little Pepper 2.4G		Number of trials : 5PCS		
Submission Date :2022-02-20			Completion date : 2022-02-22		
Testing/inspection equipment :					
1. Tensile tester					
Testing/Inspection Conditions :					
1. Temperature : 18-25℃					
2. Humidity ≤65%RH					
Inspection item	Before constant temperature and humidity testing	After constant temperature and humidity testing	Defect description	Judgment result	
Appearance	No discoloration, cracking, deformation, or delamination on the surface.	Appearance without discoloration, cracking, deformation, or delamination.	None	Qualified	
Electrical performance	Antenna voltage standing wave ratio test Qualified	Antenna voltage standing wave ratio test Qualified	None	Qualified	
Test/inspection result: Qualified					
Project	The holding force between the terminal and the cable. ≥1kgf				
Conditions					
Number of tests	1	2	3	4	5
Test	1.	1.03	1.1	1.05	1.12
Note :					
Testing/Inspection Determination : ☒ Qualified ☐ unqualified ☐ no judgment made.					
Test: Qian Minyi			Reviewed by: Huang Xiaolin		

Constant temperature and humidity test

Experiment/Experimental Project	Constant temperature and humidity test		Inspection Order Number	
Product Name/Specification	SX-Little Pepper 2.4G		Number of samples: 5PCS	
Inspection date: 2022-02-20			Completion date: 2022-02-22	
Testing/Inspection Equipment:: 1. Programmable Constant Temperature and Humidity Test Chamber 2. 8753ES Network Analyzer				
Testing/Inspection Conditions: 1. Constant temperature test at -20° C for 12 hours. 2. Test at 40° with 65-70% RH for 12 hours, a total of 12 hours.				
Experimental Results				
Judgment criteria:: 1. The metal surface coating should be free of peeling, cracks, wrinkles, separation, etc.; the non-metallic parts should not have discoloration, cracking, deformation, delamination, or other defects. 2. Electrical testing must meet standard requirements: The voltage standing wave ratio test must pass.				
Inspection item	Before constant temperature and humidity testing	After constant temperature and humidity testing	Defect description	Judgment result
Appearance	No discoloration, cracking, deformation, or delamination on the appearance.	Appearance without discoloration, cracking, deformation, or delamination.	None	Qualified
Electrical performance	Antenna voltage standing wave ratio testQualified	Antenna voltage standing wave ratio test qualified	None	Qualified
Testing/Inspection Determination : ☒ Qualified ☐ unqualified ☐ no judgment made.				
Test: Qian Minyi		Reviewed by: Huang Xiaolin		

High and low temperature thermal shock

Experiment/Experiment Item	High and low temperature thermal shock		Inspection order number	
Product Name/Specification	SX-Little Pepper 2.4G		Number of samples: 5PCS	
Inspection date: 2022-02-20			Completion date: 2022-02-22	
Testing/Inspection Equipment: 1. High and low temperature alternating humidity box 2. 8753ES Network Analyzer				
Testing/Inspection Equipment: -40°C (2H) --- interval 80°C (2H), 6 cycles, total 12 hours				
Experimental Results				
Judgment criteria: 1. The metal surface coating should be free from peeling, cracks, wrinkles, separation, etc.; the non-metallic parts should not exhibit discoloration, cracking, deformation, delamination, or other defects; 2. Electrical test meets the standards: voltage standing wave ratio test is qualified.				
Inspection items	Before the experiment	After the experiment	Defect description	Judgment result
Appearance	No discoloration, cracking, deformation, or delamination on the exterior.	No discoloration, cracking, deformation, or delamination on the exterior.	None	Qualified
Electrical performance	Antenna Voltage Standing Wave Ratio Test: Qualified	Antenna voltage standing wave ratio test: Qualified	None	Qualified
Testing/Inspection Determination: ☒ Qualified ☐ Not qualified ☐ No judgment				
Test: Qian Minyi		Reviewed by: Huang Xiaolin		

Salt spray test

Experiment/Experimental Project	Salt spray test	Inspection order number: 5PCS
Product Name/Specification	SX-Little Pepper 2.4G	Number of samples: 5PCS
Inspection date: 2022-02-20		Completion date: 2022-02-22
Testing/Inspection Equipment: 1. HL-60-SS Salt Spray Test Chamber		
Testing/Inspection Conditions: 1.1. The temperature inside the salt spray chamber is $35\pm 2^{\circ}\text{C}$; the laboratory temperature is between $22\sim 30^{\circ}\text{C}$. 2.2. The salt spray deposition rate after 12 hours of spraying is 1-2ML/h per 80cm area, with a sodium chloride concentration of $50\pm 10\text{g/L}$ and a pH value of 6.5/7.2.		
试验/检验结果：合格		
Sample number	evaluation grade	defect description
1	Qualified	
2	Qualified	
3	Qualified	
4	Qualified	
5	Qualified	
Testing/Inspection Determination:: ☒ Qualified ☐ Not qualified ☐ No judgment		
Test: Qian Minyi		Reviewed by: Huang Xiaolin

7. Packaging specifications

Product Part Number: SX-Little Chili 2.4G

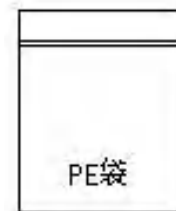
Product specifications: 2.4G black WIFI small pepper antenna

Packing requirements

Homework instructions:

1. Inner packaging: Products packed in small bags by PCS, Products packed in large bags by PCS.

2. Outer packaging: Based on actual packaging, quantity per box is PCS.



Notes:

- Whether to add partitions and pearl cotton;
- Affixing of labels, etc.;



纸箱

