FPC antenna specification acknowledgement

Product Specifications for Approval

Company name:Shenzhen Huasheng Electronics Co., LTD

Company Address：3rd Floor, No. 70, Baotong South Road, Henggang Sub-district, Longgang District, Shenzhen City

Antenna band：2400-2500/5150-5850MHz

Edition: A0

FPC antenna ID：HS-NZ-FPC-001

Date of manufacture: 2024-09-20

Structure:		**Radio frequency:**	
Review:		**Approved:**	
Customer confirmation			
Customer audit:		**Customer approval:**	

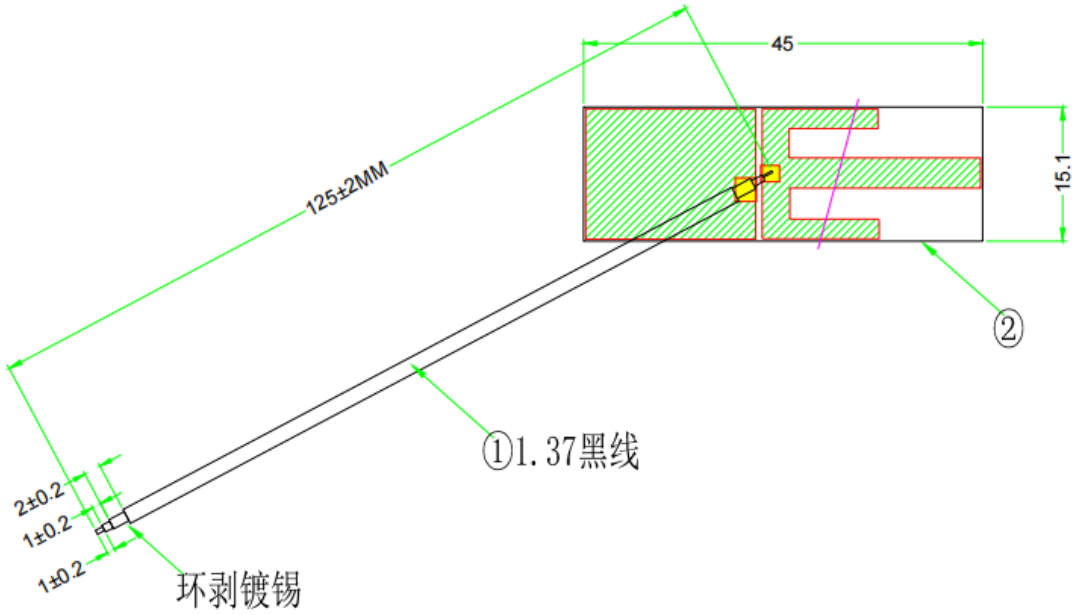
INDEX.

Modification record

Edition	Date	Engineer	Modify content
A0	2024-09-20		

PARTS DRAWING 零件图 | ROHS Compliant

REV	PRODUCT NO.	DATE	NAME	DESCRIPTION
A0	HS-NZ-FPC-001	2024.09.20		初始发行



要求
1. 线材外被无破皮.损伤。
2. 成品须100%测试导通 OK。
3. 成品须100%全检OK.
4. 采用环保制程.成品符合ROHS要求。
5. 未注公差请以一般公差为准。

测试条件
额定电压：AC 60V
接触阻抗：20-Ohm
耐电压：AC300V
绝缘阻抗;500m-Ohm
特性阻抗：50 Ohm

工作频段 (Frequency Range)	2400-2500/5150-5850MHZ
增益 (Gain)	2DBi
电压驻波比 (VSWR)	对比波形
极化方式 (Polarization)	垂直
特性阻抗 (Impedance)	50 Ω

工作温度：-45℃~85℃
储存温度：-45℃~85℃

角法 ANGLE PROJECTION

公差 GENERAL TOLERANEC

100~200：	± 3.00
50~100：	± 2.00
25~50：	± 0.20
10~25：	± 0.15
1~10：	± 0.1

NO	Code	Name	Description	Q'ty
3				1
2		FPC	表面黑油	1
1		线材	1.37线 单银 黑色 L=125MM	1

产品名称（PRODUCT NAME）					
内置FPC-WIFI-环剥镀锡-1.37线-黑色-单银-L=125MM					
产品料号		单位（UNIT）	M M	比例（SIZE）	1:3
HS-NZ-FPC-001		页数（PAGE）	1 OF 1	幅面（FORNMT）	A4
业务		仓库		深圳市华圣电子有限公司	
PMC		生产			
采购		品质			

Product characteristic specification sheet

一、Product basic features:

Product type: FPC antenna -WIFI dual frequency - ring stripping tin-1.37 wire - double tin wire - Black -L=125MM	
DESCRIPTION	**VALUE**
Frequency range	2400-2500/5150-5850MHz
Impedance	50Ω
V.S.W. R	Contrast sample waveform
Gain	2DBi
Radiation	Omni-directional
Polarization	linear Vertical
Admitted power	1W
Connector	/
Operating temp	-45℃~+85℃
Storage temp	-45℃~+85℃

1. Summary：

This report to account for the measurement setup and result of the Antenna. The measurement setup includes s-parameter, The measured data for Antenna are presented and analysis.

2. S-Parameter Measurement：

A. Reflection coefficient:

(a) Instrument： Network Analyzer.

(b) Setup：

(1) Calibrate the Network Analyzer by one port calibration using O.S.L. calibration kits.

(2) Connect the antenna under test to the Network Analyzer.

(3) Measure the S11(reflection coefficient) shown in Fig. 1.

(4) Generally, the S11 is less than –10dB to ensure the 90% VSWR 2.0:1 power into antenna and only less than 10% power back to system.

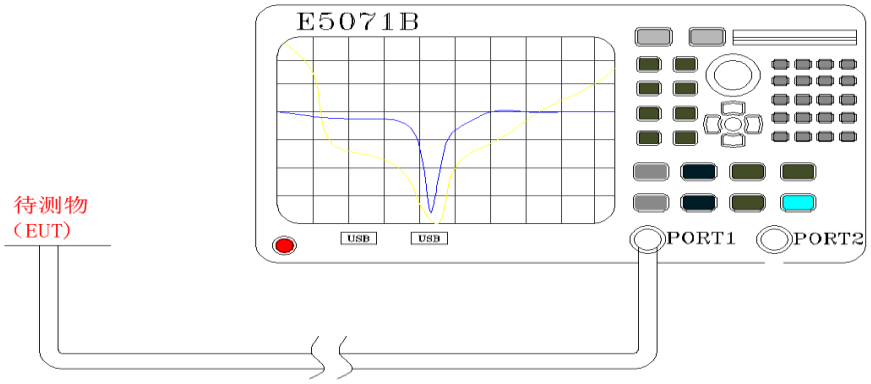


Fig.1 Antenna measured in Network Analyzer

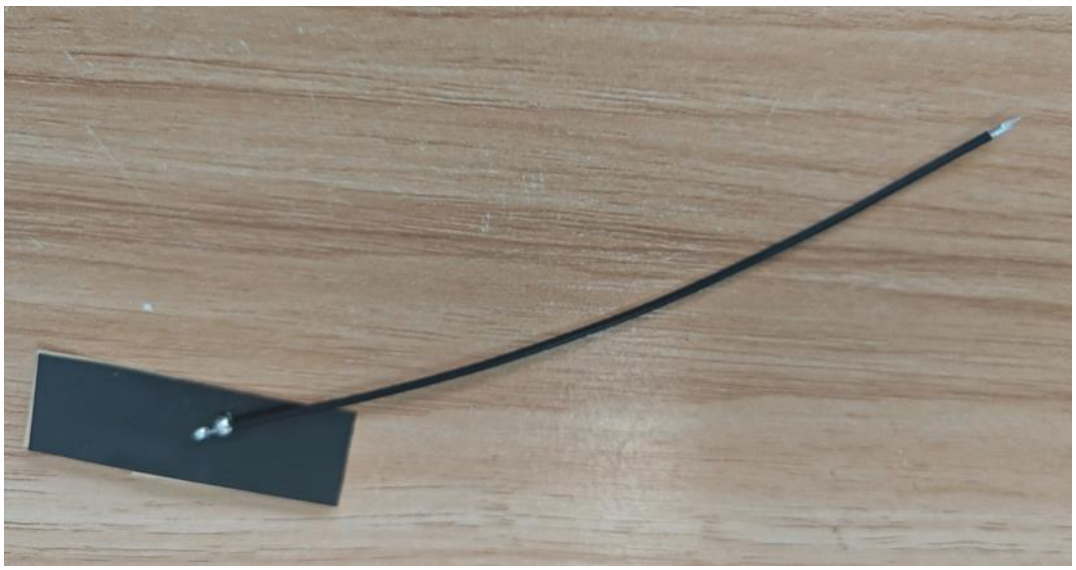
3. S-Parameter Measurement Result：

S-Parameter test data：

Frequency MHz	2400	2450	2500	5150	5850
V.S.W.R 驻波比	1.41	1.48	1.61	1.53	1.66

S-Parameter test image：

Physical drawing：

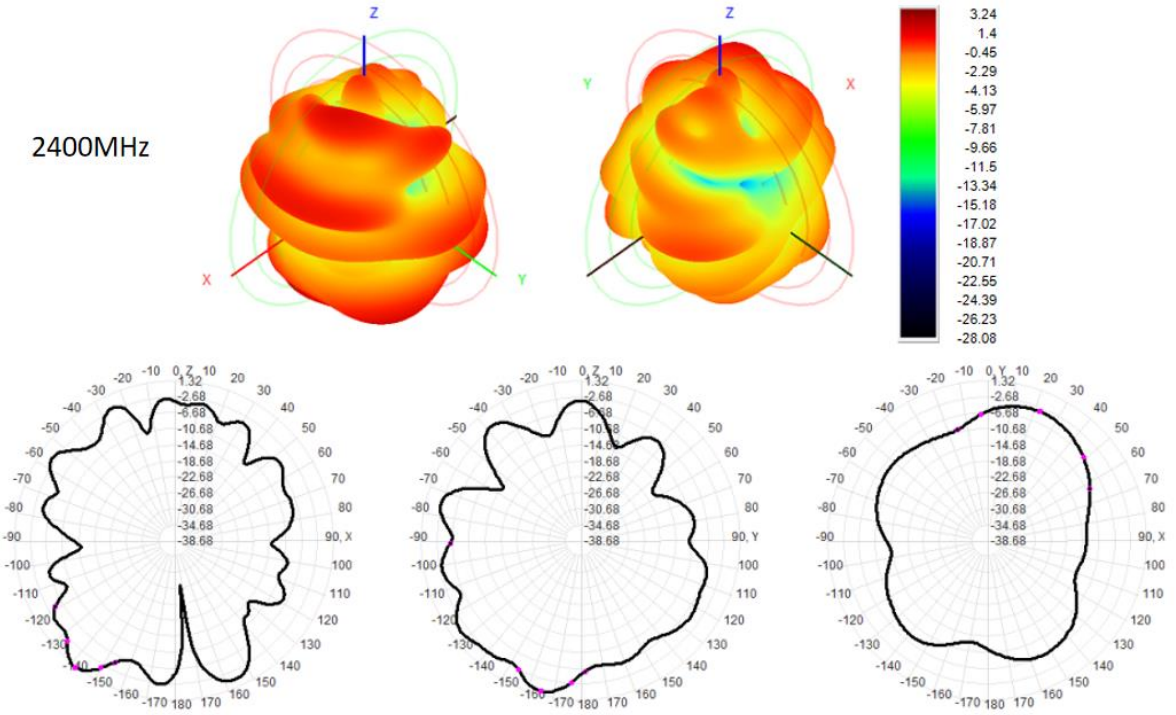


Passive value:

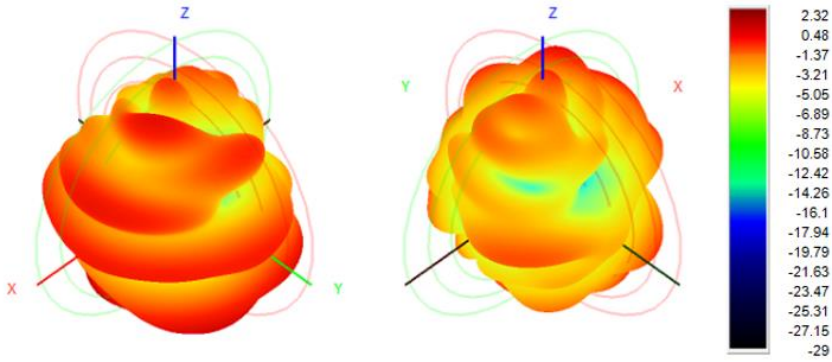
Frequency (MHz) （工作频段）	Efficiency (%) （效率）	Peak GAIN (dBi) （增益）
2400	28.37	1.71
2450	23.71	1.83
2500	29.70	1.88
5150	32.45	1.94
5850	40.68	2.02

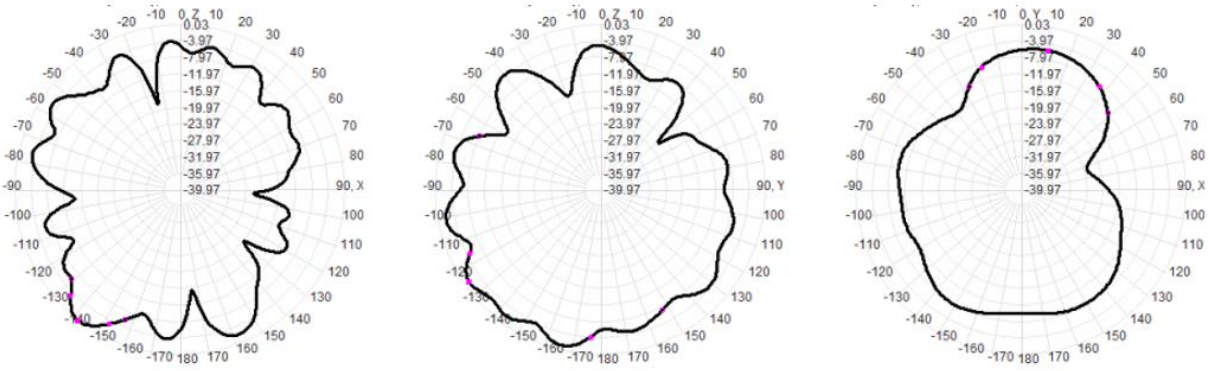
2D/3D

2400MHz

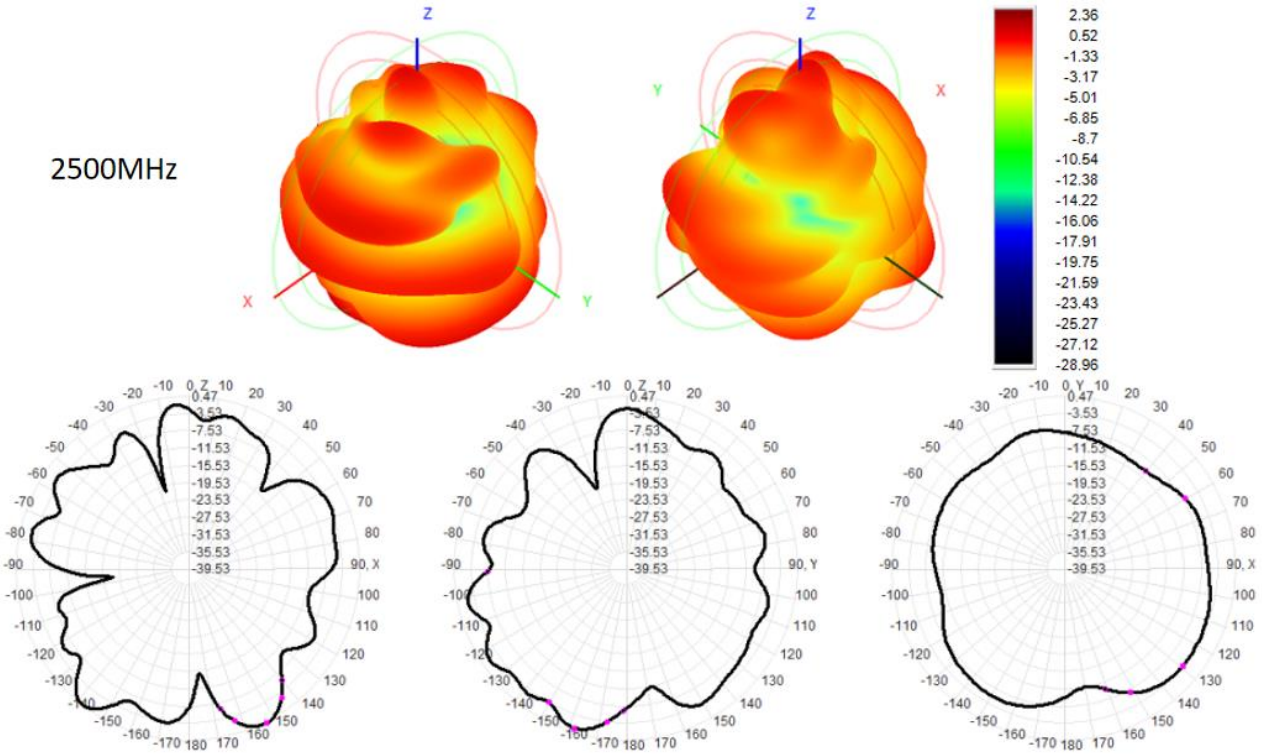


2450MHz

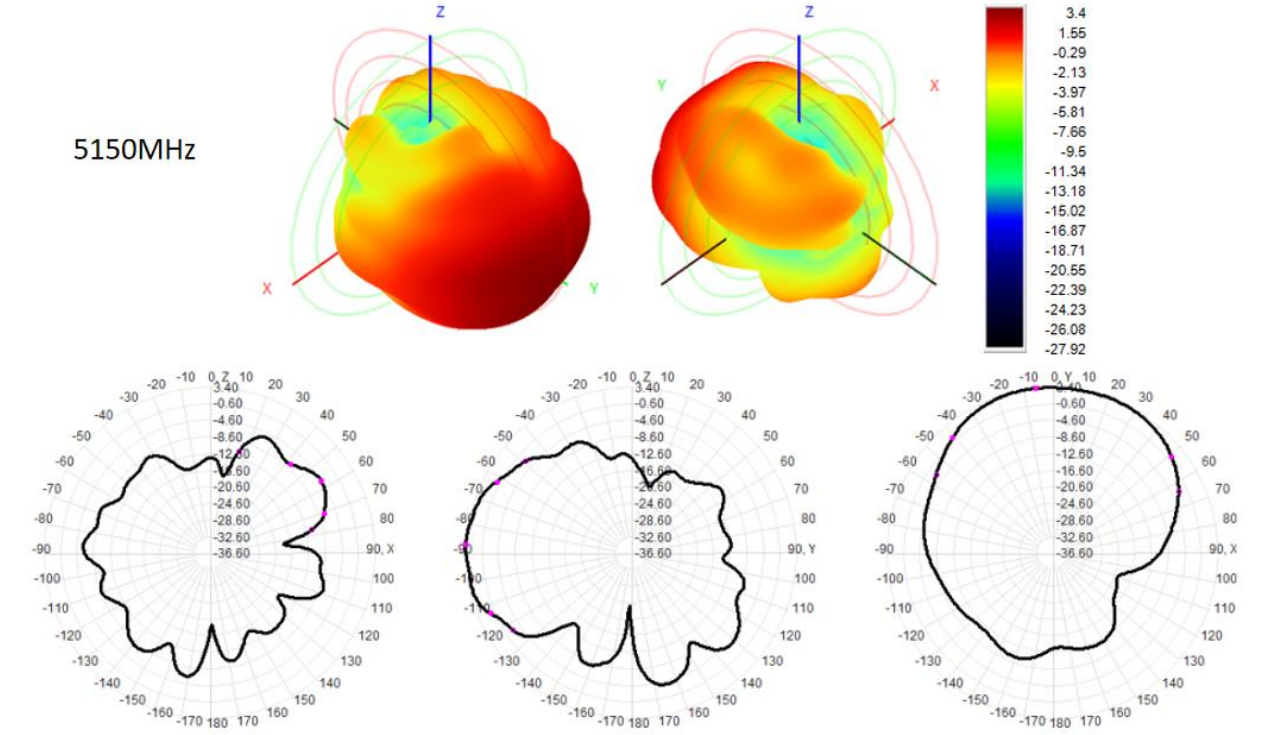




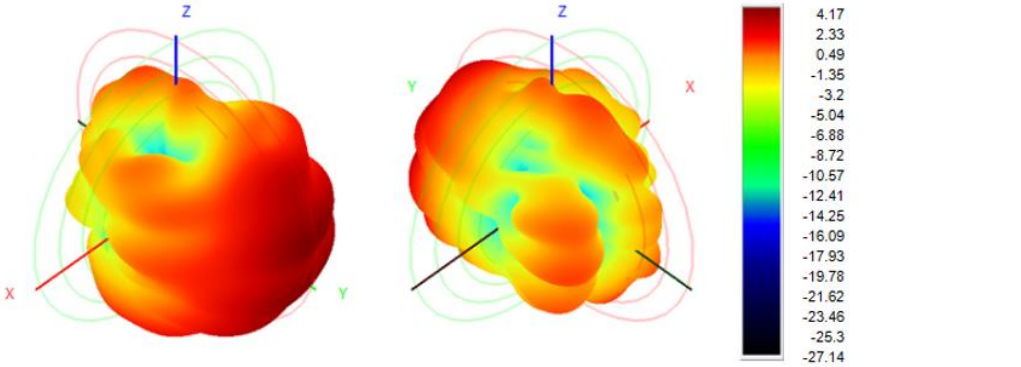
2500MHz

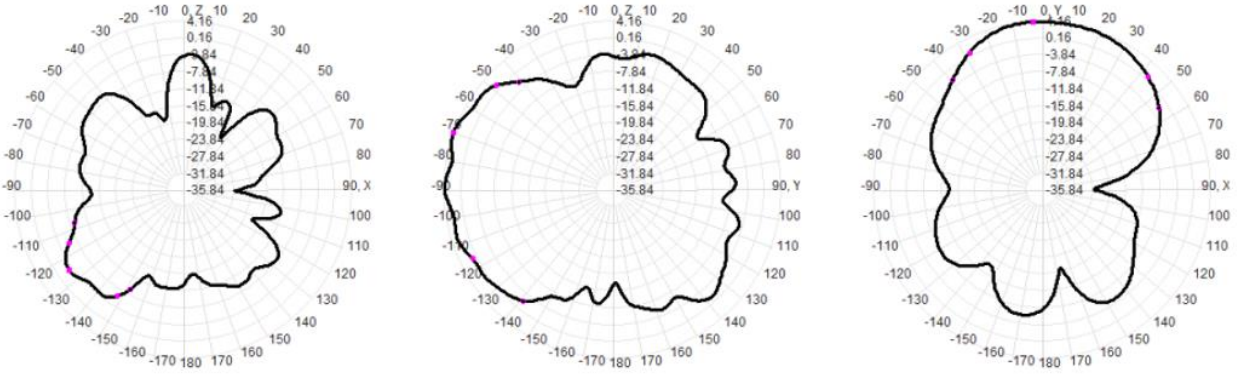


5150MHz



5850MHz


Z
X
Y
Z
Y
X
4.17
2.33
0.49
-1.35
-3.2
-5.04
-6.88
-8.72
-10.57
-12.41
-14.25
-16.09
-17.93
-19.78
-21.62
-23.46
-25.3
-27.14


0, Z
90, X
0, Z
90, Y
0, Y
90, X

Environmental test requirements

sequence	Test item	Test methods and conditions	Test equipment	Test result
1	Temperature and humidity test	Refer to EIA 364-31 Method 3, Test Condition A. The purpose of this test procedure is to evaluate in detail the standard test methods used in the products, which are affected by high humidity and heat, affecting the properties of the materials. Requirements: Temperature: 85℃ Humidity: 90~95% (R.H) Time: 72 hours	K.SON INS THS-A4L-150	Pass
2	Low temperature test	Refer to electronic test specification: The sample should be placed in a constant temperature environment, the temperature is set at -45 ℃ Requirements: Time: 24 hours	K.SON INS THS-A4L-150	Pass
3	High temperature test	Refer to electronic test specification: The sample should be placed in a constant temperature environment, the temperature is set at 85℃. Requirements: Time: 24 hours	K.SON INS THS-A4L-150	Pass
4	Thermal shock	Refer to electronic test specification: The sample should be placed in a fixed environment with a temperature set at -45~85℃. Requirements: More than 8 hours. (30 minutes/time, 12 cycles)	K.SON INS THS-A4L-150	Pass
5	Salt spray test	Refer to Feisheng Electronic test specification: The tested sample shall be placed in a fixed environment under its requirements: NaCL concentration: 40-60g/1Kg PH value: 6.5-7.2 Test time: 24H	Salt spray testing machine	Pass

		1.Gold plated products are not allowed to rust peeling 2.Other nickel-plated tin-plated galvanized products shall not have more than two rust points on the same axis or surface.		

Mechanical test requirements

sequence	Test item	Test methods and conditions	Test equipment	Test result
1	Vibration test	Test condition A The purpose of this test procedure is to evaluate in detail the standard test methods used in products, which are affected by movement or movement of materials. Requirements: Vibration range: 10-55HZ Displacement amplitude: 0.35mm Acceleration amplitude: 50.0M/S **Frequency sweep cycle: 30 times**	Vibration testing machine	Pass
2	Drop test	Refer to electronic test specification: The measured sample should be placed at a certain height, its height is set at 1M, and it should be freely dropped 3 times in the direction of 6 faces Requirements: The mechanical properties of the product are normal after the drop test Refer to electronic test specification: The object to be measured is fixed by the fixture, and the product assembly cannot fall off after applying a certain	Drop test fixture	Pass

		force in the opposite direction.		
3	Tension test	Requirements: 1. The product assembly shall not fall off. 2. Minimum tension: 1.2KG	Tensile testing machine	Pass

Note: The above mechanical and environmental parameters are tested electronically before R & D and trial production.