

Shenzhen HaoTianCheng Wireless
Technology Co., Ltd

Name: Sample Approval

Ver: V1.0

date: 2024.01.11

Sample Approval Sheet

Project Name: WS02Sample Name: WIFI/BT 天线Sample SPEC: FPC material, gold-plated, 3M300 backing adhesive

Customer PN.:

Transfer Date: 2024.01.11

Supplier Confirm	Project	Engineer	Quality
	Xiao Qiang	Michael Huang	Gu Shuang
Date	2024.01.11	2024.01.11	2024.01.11

Customer confirm	PM	Electron	MD	PD	QE
Date					

conclusion	☐ MP	☐ Limits use () K
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☐ ROHS

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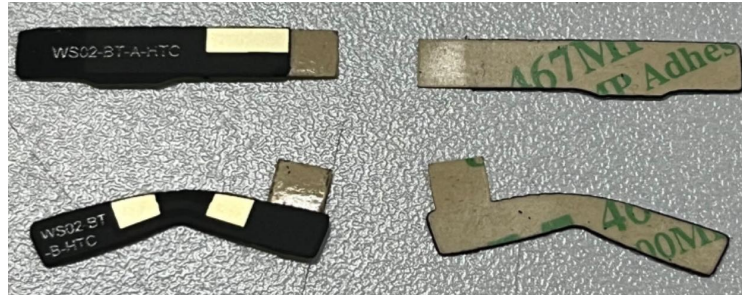
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1. Overview of Recognition Letter

This specification describes the condition of the built-in antenna of the Infinite WS02, and its frequency band WIFI/BT manufacturer is Shenzhen HaoTianCheng Wireless Technology Co., Ltd.

2. Appearance

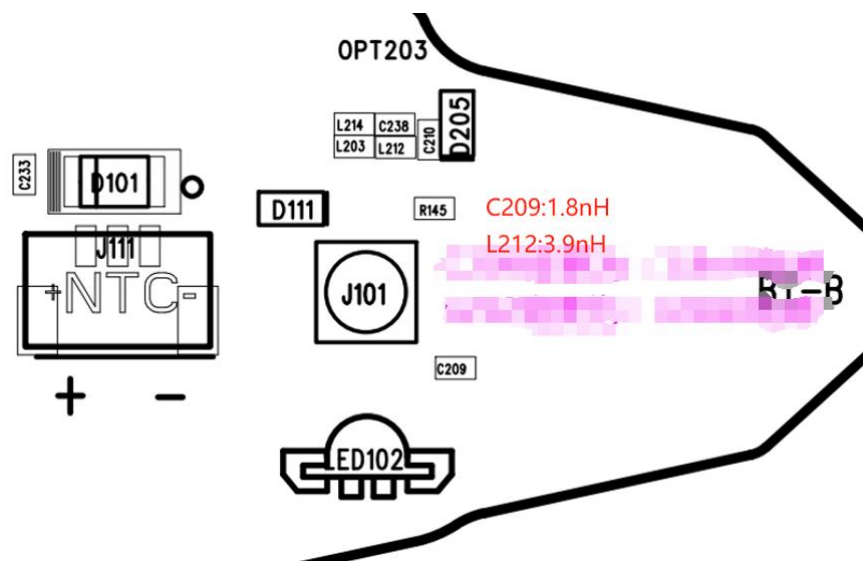


3. Electrical performance

3.1. Antenna frequency band

	WIFI/BT
transmit frequency band(MHz)	2400~2500
Receiving frequency band(MHz)	2400~2500

3.2. Matching circuit



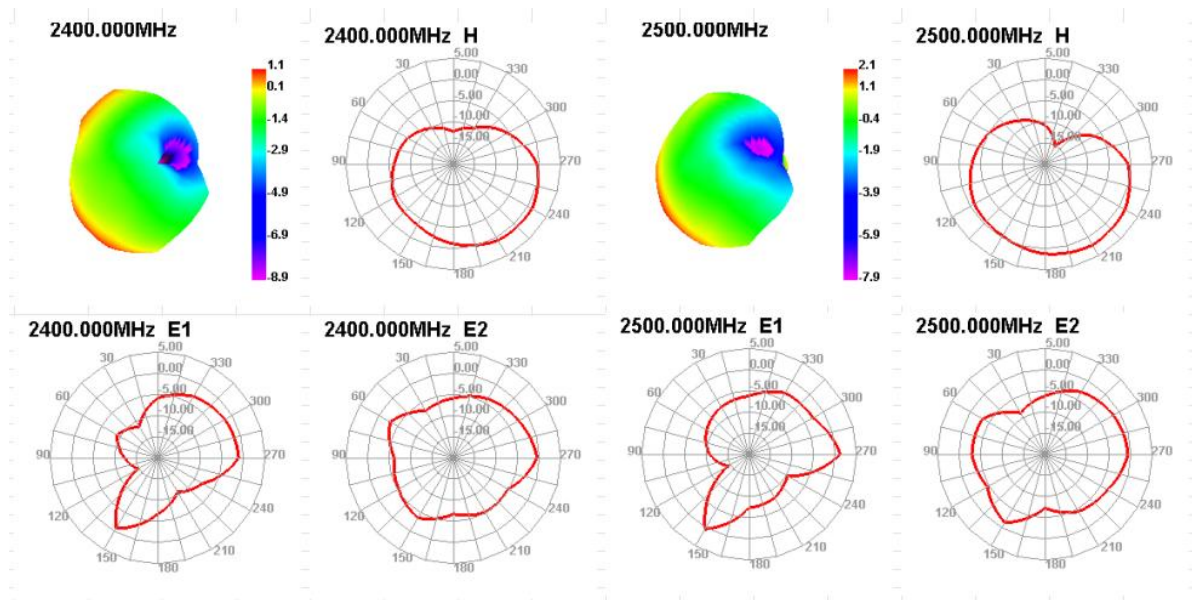
3.3. Impedance requirements

50 ohm

3.4. Passive gain efficiency of antenna and apple chart

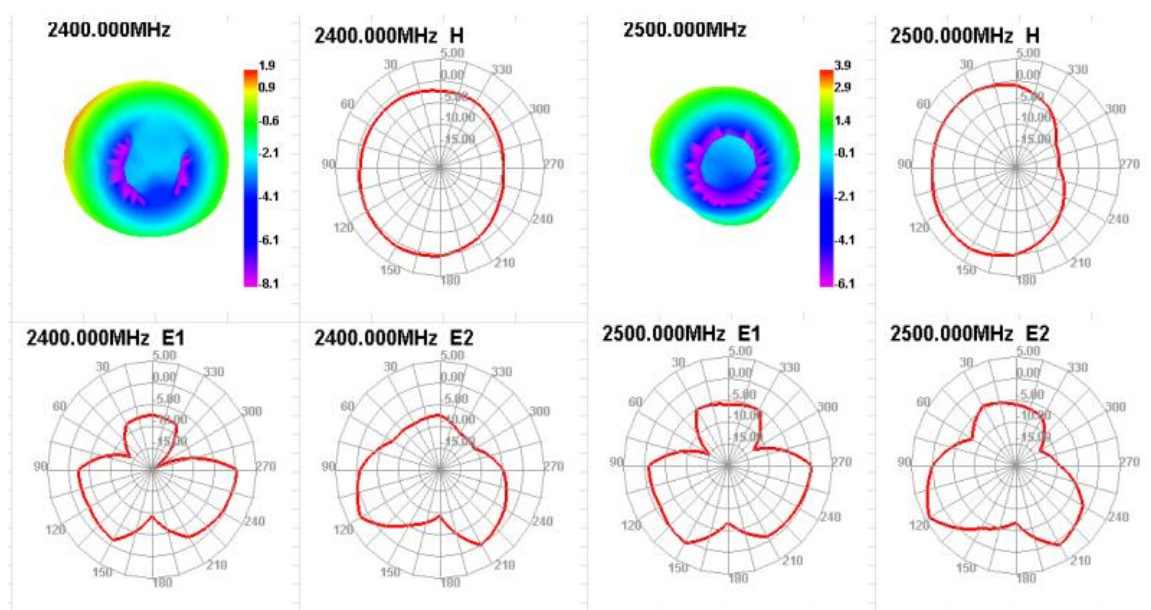
BT-A

Freq (MHz)	Effi (%)	Gain (dBi)
2400	38.82	1.13
2410	39.85	1.28
2420	40.44	1.36
2430	42.73	1.64
2440	44.12	1.84
2450	44.22	1.85
2460	46.04	2.02
2470	44.53	1.83
2480	45.24	1.89
2490	46.53	2.05
2500	47.38	2.09



BT-B

Freq (MHz)	Effi (%)	Gain (dBi)
2400	50.85	1.88
2410	51.84	2.03
2420	51.3	2.07
2430	53.28	2.33
2440	57.61	2.77
2450	58.57	2.91
2460	59.33	3.07
2470	58.67	3.14
2480	59.65	3.43
2490	58.43	3.79
2500	57.13	3.86



3.5. Antenna test data

Band	TRP/TIS	L	M	H
BT-A	TRP	2.26	2.48	2.62
	TIS			-91.55

Band	TRP/TIS	L	M	H
BT-B	TRP	19.68	19.71	19.92
	TIS			-93.30

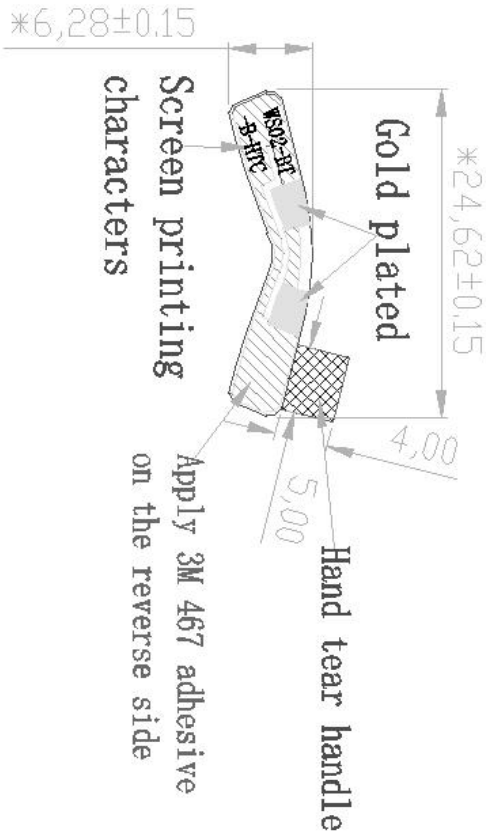
4 Appearance structure

4.1 Antenna material

Antenna material: FPC antenna, black ink, gold plated in exposed copper area.
Substrate+double-sided tape+release paper



BT-ANT B



NOTE:

- 1, does for match size, * for key dimensions, "trim" for the subsequent need to adjust the size ;
- 2, Star will size measurement, not standard size reference 3 d drawings; Other sizes will be subject to real match;
- 3, Base material 12.5 mm m, mooring 18 microns, copper plating thickness of 0.5 microns
- 4,  area for line area,  regional for welding plate (gold),  area as attached glue area (3 m300)le, viscosity in more than 300 mp)
- 5, FPC ink surface evenly, with no wrinkle gold-plated bad pair for a phenomenon.

Shenzhen HTC-wireless Co., Ltd

The third Angle		The project name		Date	2012/01/11	page	2/2
The name of the product		The name of the antenna		Design	HTC/MAG	audit	
is the following		P/N		audit	Engineering		
10~20		±0.12		Material		PI/half and half	
20~40		±0.15		Surface treatment		BLAZE	
More than 40		±0.20		Apparatus of processing		BLAZE	
Please do not measured drawings		Unit		Confirm		R&A	

DATE 修 改 内 容 版 本 备注

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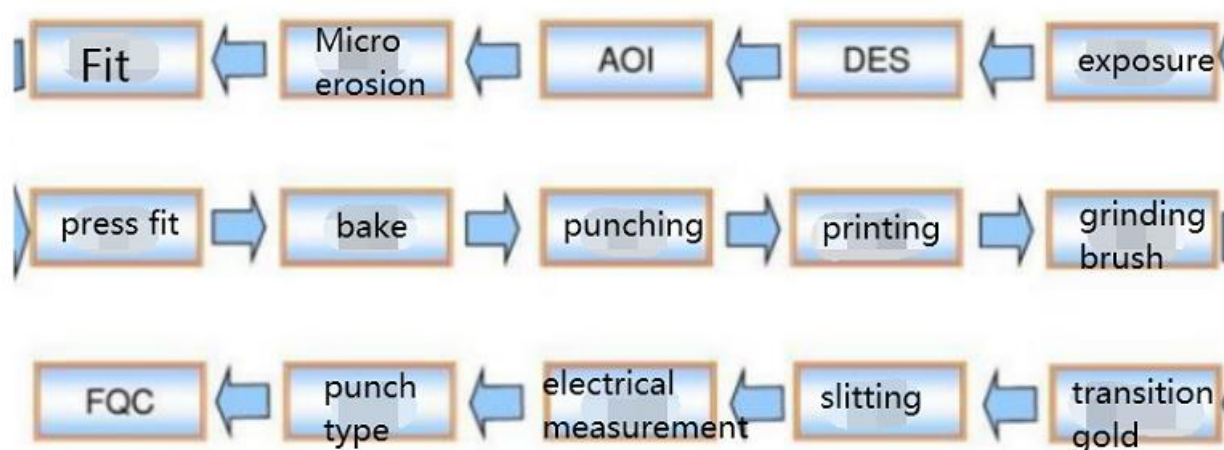
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5 Bill of Materials (BOM)

List of main materials

number	Product information						Test report	
	Code (component Code)	Product name	重量 (g)	Name of raw material	Raw material No Chemical registration number	Raw material supplier	Certification company	Report no
1	FPC antenna	Copper foil substrate (PI)	0.0542	CU	SP14-033405-SH	Cai lungeti	SGS	SHA16-245544-02
			0.03	polyimide film				
2		Ink (black)	0.005	PRINT INK (Printing ink)	P800	Youli	SGS	
3		Adhesive paper	0.1132	3M	3M9471LSE	Heilihua	SGS	
4		Electrogold	/	additive	JSTD8001	Kingsoft	SGS	CANEC1617433203

6 Production process diagram



7 Reliability Test Report

Shenzhen HaoTian Cheng Wireless Technology CO. Ltd

Reliability test report

customer	MAX	The customer model	WS012	Product model	BT A/B	DATE	2024/1/10	Inspector: GU
Number	Reliability project	The experimental method	Decision criteria	Cycle	number of experiments	1	2	3
1	Peel strength	Tension meter	From 70 to 80 n / 100 mm (paste) on ABS material	time/batch	5PCS	OK	OK	OK
2	The coating adhesion	Clean surface of FPC goldfinger, then on the surface of gold finger put new 3 m600 back glue, laminating surface to cover the surface of gold finger, and residual pressure must not have bubbles with his fingers. About 10 seconds, along with gold finger side into the direction of the Angle of 90 degrees quickly pull up the tape, and repeat this three times this action.	Check the surface gold finger without coating fall off phenomenon, there is no loss of coating film of adhesive tape.	1 time/batch	5PCS	OK	OK	OK
3	Salt fog	At 35 °C plus or minus 2 °C airtight environment, and the salt solution with a PH value of 6.5 to 7.25 (5% solution composition of 95% sodium chloride and distilled water) with 80 square centimeters to 10 cm in diameter of the atomizer in 16 hours average collection in 1 to 2 ml of spray amount, continuous spray after 48 hours to take out the test.	FPC not blister. Oxidation discoloration and rust.	1 time/batch	5PCS	OK	OK	OK
4	Bending test	Positive and negative bending 180 °, 30 times	Still conduction after bending, performance is good. No fracture	1 time/batch	5PCS	OK	OK	OK
5	High and low temperature impact	Will be set to high and low temperature test chamber cold - 30 °C, the temperature is set to + 70 °C, the switching speed for 30 seconds, each holding 0.5 H, is set to 32. After the test after back 2 hours at room temperature.	Good electrical	1 time/batch	5PCS	OK	OK	OK
6	High temperature and high humidity test	Test environment: temperature of 60 plus or minus 2 °C; Humidity is 93 + / - 3% (RH); Place for 48 hours; Recovery time: 2 hours.	Good electrical	1 time/batch	5PCS	OK	OK	OK

Prepared : GU

checked by :XIAO

Control number: SR-FM-QRA-008

8 Antenna and accessory material GP test report (ROHS. SGS. MSDS):



9 Packaging

The FPC antenna is welded, and the coaxial line is shipped in a single PCs, which is packed in a small bundle of 100pcs into PP bags and shipped in cartons; a small box of 10 bags of finished products is expected to have 1000 sets of antennas.

