

Antenna Approval Antenna specification for approval

Customer Name Customer name	Youcheng
Model Model	SP-X1
Antenna Frequency Band Antenna band	BT2. 4G
Antenna Type Antenna type	FPC
Antenna Material material	Electrolytic Copper
FPC Color FPC color	Black (White Silkscreen)
Part Number Material number	SP-X1-V1
Manufacturer Approval Stamp Baren accepted the signature	Customer Approval Stamp Client acknowledges signature
Structure structure	Procurement Purchase
Quality QC	Structure structure
RF radio frequency	Engineering engineering
Audit To examine	Quality QC
Date	Seal area
Date	Seal area

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Phone: 13530576606

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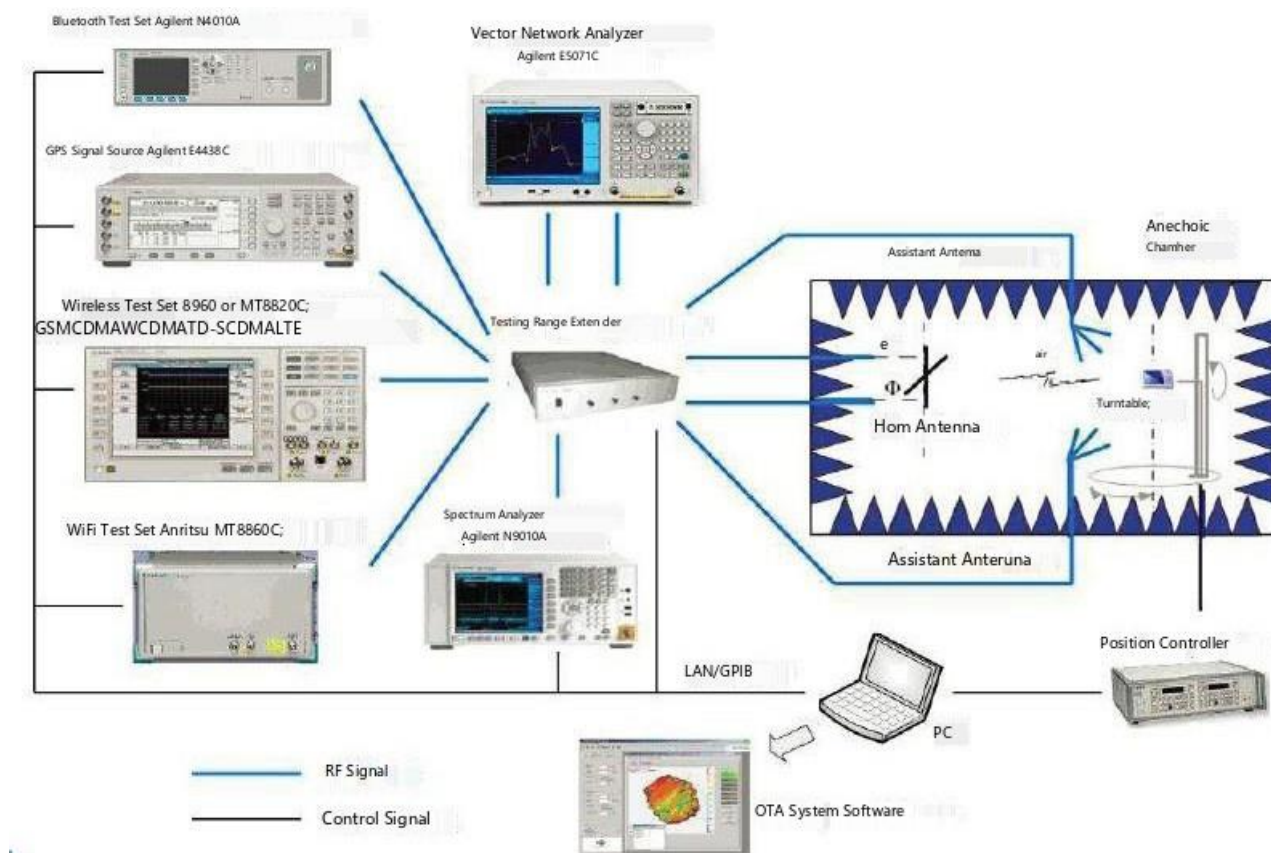
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I: Equipment Support & Testable Antenna Types



Antenna function	scope	testing instrument	test	test standard
2G Antenna (GSM)	824MHz-960MHz, 1710MHz-1990MHz	5071B, 8960, OTA darkroom	Active test, passive test	Soward Standards, Customer Requirements
3G antenna (WCDMA/TDSCDMA/CDMA-EVDO/2000)	824MHz-960MHz, 1710MHz-2170MHz	5071B, 8960, OTA darkroom	Active test, passive test	Soward Standards, Customer Requirements
4G antenna (LTE-FDD/LTE-TDD)		5071B, CMW500, SP8011, OTA Darkroom	Active test, passive test	Soward Standards, Customer Requirements
WIFI antenna	2. 4GHz-2.48 GHz, 5. 15GHz-5.35 GHz, 5.725 GHz-5.825 GHz	5071B, CMW500, OTA darkroom, router . PC	Active test, passive test . APK measurement, throughput test	Soward Standards, Customer Requirements
BT antenna	2. 4GHz-2.48 GHz	5071B, OTA Darkroom . Bluetooth speaker	Passive test	Soward Standards, Customer Requirements
Positioning Antennas (GPS, GLONASS, North Dou, Galileo)	1575.42 MHz ± 10 MHz 1602MHz + 0.5625 MHz 1561MHz + 2.046MHz	5071B, OTA Darkroom . APK	Passive test	Soward Standards, Customer Requirements
NFC antenna	13. 56MHz	5071B, dedicated test fixtures, OTA darkroom, APK	Passive test	Soward Standards, Customer Requirements
remote control antenna	433MHz	5071B, OTA Darkroom	Passive test	Soward Standards, Customer Requirements

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II: Overview

(1)Antenna performance

1. This approval sheet supports for MID project. FPC antennas include in this project. This report is for the performance of BT antenna.
2. Antenna shape size: Meet the requirement of MID
3. Antenna band: 2400MHz~2500MHz
4. Antenna material: Antenna material meet the requirement of MID
5. Adhesive performance: Adhesive performance meet the requirement of MID
6. Antenna performance meet the spec below:

Description	BT2.4	Units
VSWR	≤ 2	
Average Antenna Gain	≥ -3	dB
Antenna Efficiency	≥ 30	%
Feed Impedance	50 ohms	
Operating Temperature	-40 to +85 deg C	
Polarization / Azimuth	Linear / Omni-directional	

(2)Mechanical Information

Mechanical Dimension	
Cable Length	NA
Description	BT2.4
Material	FPC
Coaxial Cable	NA
Environmental	
Operation Temperature	-40 to +85 deg C
Storage Temperature	-40 to +85 deg C

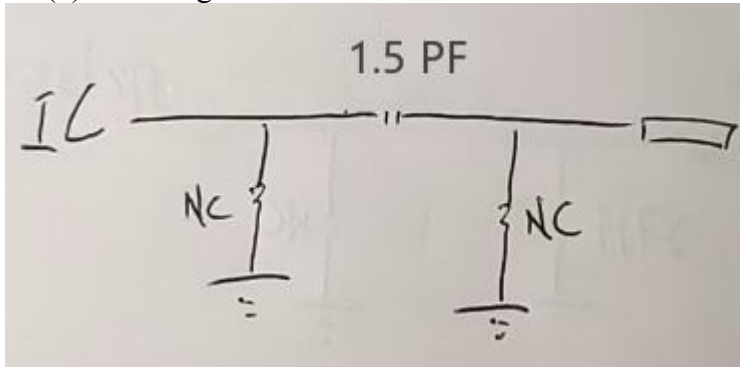
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Three: Matching Circuit Diagram & Machine Images & Antenna Images

(1) Matching Circuit

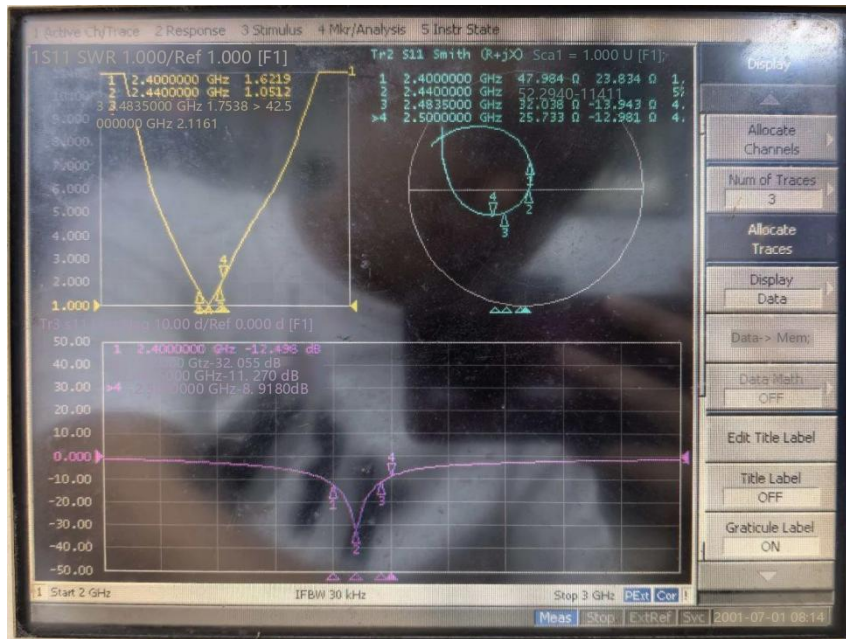


(2) Machine Images & Antenna Images

1: Gold-plated OSP; 3: Matte black ink on the surface; 4: Meets the latest environmental protection requirements: RoHS & REACH;

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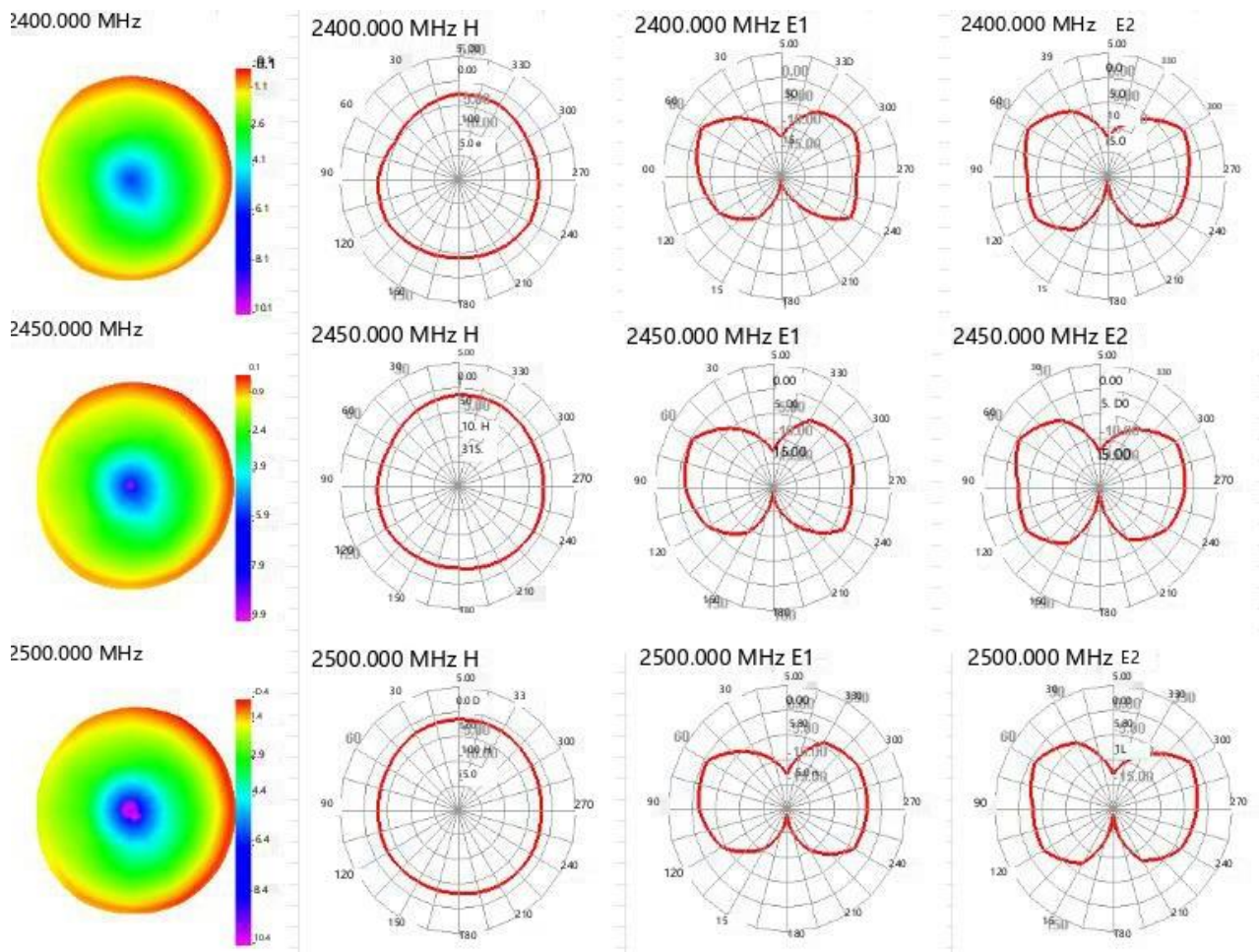
FOUR: BT 2.40G-2.48G (VSWR)

Frequency (MHz)	VSWR
2400	1.6
2440	1.0
2480	1.7

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Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)
2400	44.7	-3.5	-0.11	-2.26
2410	49.62	-3.04	0.24	-1.91
2420	40.6	-3.91	-0.66	-2.81
2430	47.93	-3.19	0.02	-2.13
2440	47.72	-3.21	-0.06	-2.21
2450	50.14	-3	0.1	-2.05
2460	55.5	-2.56	0.49	-1.66
2470	42.58	-3.71	-0.72	-2.87
2480	53.73	-2.7	0.21	-1.94
2490	49.4	-3.06	-0.14	-2.29
2500	46.63	-3.31	-0.43	-2.58



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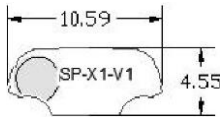
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VI: Structural Drawings

1	E	3	4	5	6
Environmental requirements: .ROSH ☐ REACH ☐ None					

A



B

C

Technical Requirements:
1. * indicates mandatory and key dimensions. All dimensions of the copper trace should have a tolerance of ± 0.05 .
The tolerance of the die-cutting dimensions should not exceed ± 0.1 . Dimensions not specified are subject to the drawing.
2. Substrate 12.5% nitrile, copper foil 18 μ TI, tin foil 1.5~5%, tin foil; gold foil 0.050~0.075 μ TI; the surface of the trace surface, except for the pads, is matte black, not gold foil.
3. Fluorescence test: Salt spray test (48H), rubber friction test, alcohol resistance test, constant product? Circulation and thermal shock test, gold finger pin bending test.
4. Character requirements: white background; font: red; font size see illustration:
5. One is the wiring area. is the gold area.

D

T&A JingE Quan Tun

Shenzhen Biyongcheng International Technology Co., Ltd.
Shenzhen Yotuncheng International Technology Co., Ltd

Mark 1 Wenshen Date 1 Changer

2

Valley
note

CC