

Antenna Report

Supplier Name: Yunxi Technology Co., Ltd.

Customer Name: Shenzhen Hailan Electronics Co., Ltd.

HAILAN Material Number: 001030616

Material name: Bluetooth & WIFI antenna

Supplier part number: F1216D-1D24B-480-A/F1216D-1D24G-480-A

Supplier Contact Person: Nian Wang

Supplier's Address: Building A1, 3rd Floor, New Garden Industrial Park, Shangwei, Xixiang Subdistrict, Bao'an District, Shenzhen City

Production date: 2023-09-08

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一: Overview

- This approval sheet supports for MID project. FPC antennas include in this project. This report is for the performance of WLAN antenna.
- Antenna shape size: Meet the requirement of MID
- Antenna band: 2400MHz~2500MHz,5150MHz-5850MHz
- Antenna material: Antenna material meet the requirement of MID
- Adhesive performance: Adhesive performance meet the requirement of MID
- Antenna performance meet the spec below:

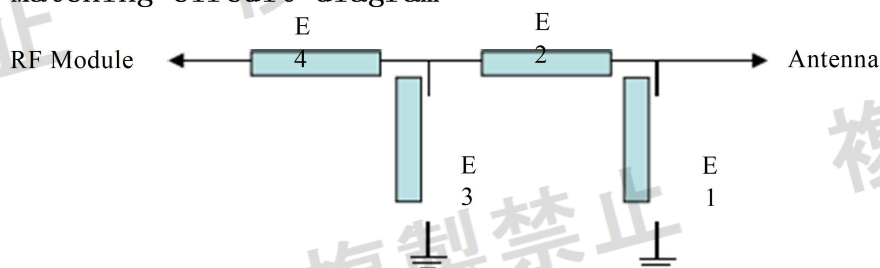
Description	2.4GHz~2.5GHz , 5.15G—5.85G	Units
VSWR	≤ 2.0	
Average Antenna Gain	≥ -4.5	dB
Antenna Efficiency	≥ 40	%
Feed Impedance	50 ohms	
Operating Temperature	-40 to +85 deg C	
Polarization / Azimuth	Linear / Omni-directional	

• Mechanical Information

Mechanical Dimension	
Cable Length	480mm/Black/Gray
Description	WLAN antenna
Material	FPC
Coaxial Cable	50Ohm/O.D.0.81mm
Environmental	
Operation Temperature	-40 to +85 deg C
Storage Temperature	-40 to +85 deg C

二: Match the circuit diagrams, machine pictures, and antenna pictures

2.1 Matching circuit diagram



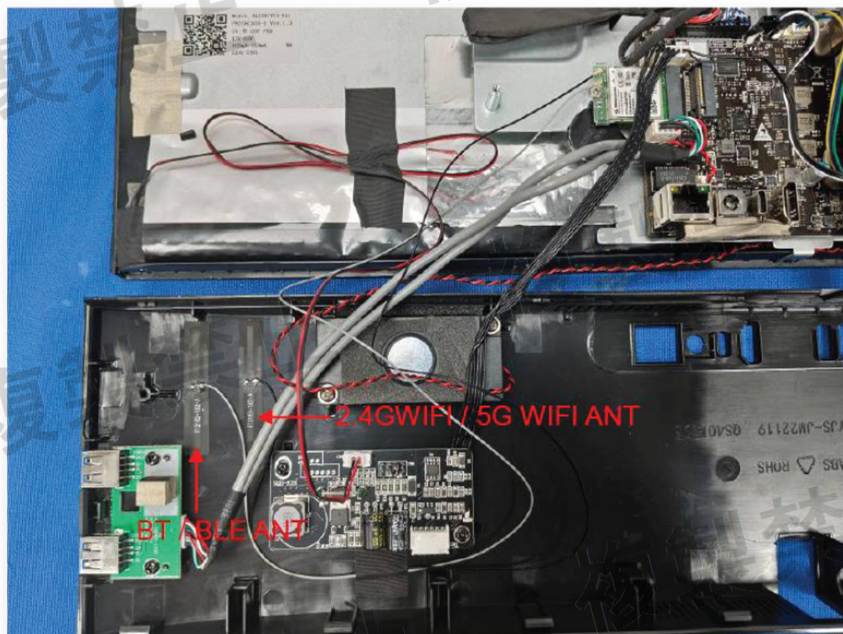
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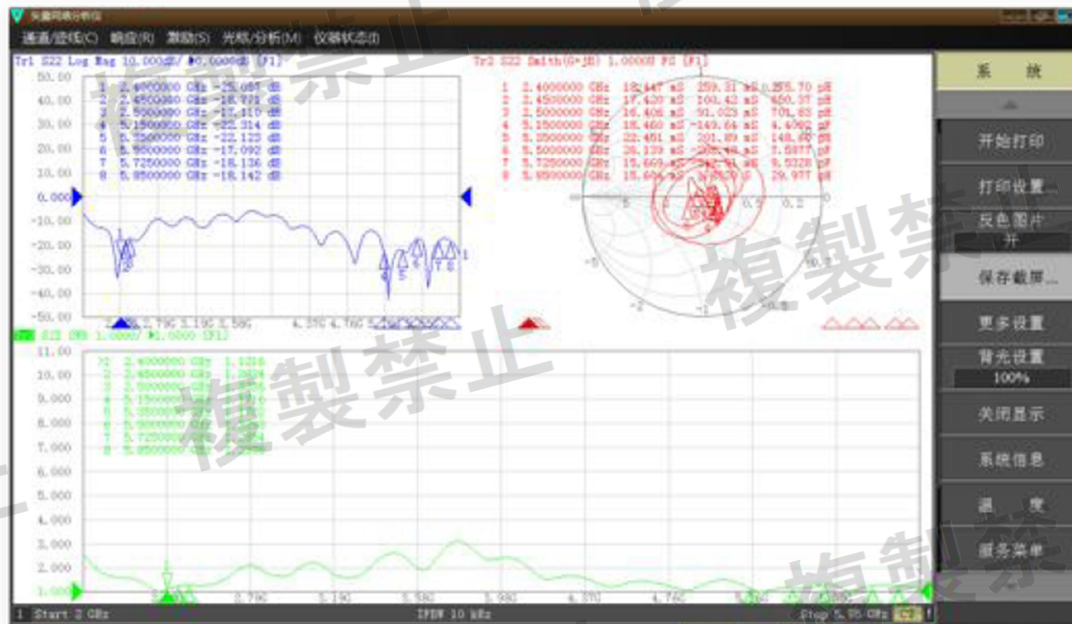
2.1 Machine pictures, antenna pictures



三：驻波比（VSWR）、效率

3.1 驻波比

WIFI



BT / BLE



3.2. Efficiency, gain

Passive Test For WIFI			
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	50.1	-3.0	2.3
2410	50.3	-3.0	2.4
2420	51.1	-2.9	2.5
2430	52.2	-2.8	2.2
2440	53.3	-2.7	2.0
2450	53.4	-2.7	1.9
2460	52.9	-2.8	2.1
2470	52.9	-2.8	2.1
2480	51.9	-2.8	2.1
2490	50.2	-3.0	2.2
2500	49.1	-3.1	2.2
5150	46.8	-3.3	2.3
5200	44.1	-3.6	2.1
5250	43.3	-3.6	2.3
5300	42.8	-3.7	1.9
5350	43.3	-3.6	2.1
5400	46.6	-3.3	2.2
5450	43.4	-3.6	1.8
5500	42.9	-3.7	1.8
5550	41.6	-3.8	1.8
5600	41.9	-3.8	1.9
5650	42.4	-3.7	1.7
5700	42.7	-3.7	1.7
5750	43.7	-3.6	1.9
5800	44.5	-3.5	2.1
5850	47.4	-3.2	2.2

Passive Test For BT/BLE			
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	44.3	-3.5	1.8
2410	44.8	-3.5	1.9
2420	45.2	-3.4	2.1
2430	46.7	-3.3	2.2
2440	46.4	-3.2	2.2
2450	46.7	-3.1	2.0
2460	49.9	-3.0	2.1
2470	49.3	-3.1	2.1
2480	48.4	-3.2	1.9
2490	47.2	-3.3	2.0
2500	45.9	-3.4	2.2
5150	43.8	-3.6	2.1
5200	42.8	-3.7	1.9
5250	41.6	-3.8	1.8
5300	44.1	-3.6	1.8
5350	45.9	-3.4	1.7
5400	46.1	-3.2	2.1
5450	44.6	-3.5	2.1
5500	43.3	-3.6	2.0
5550	45.2	-3.4	1.9
5600	44.7	-3.5	2.0
5650	47.9	-3.2	1.7
5700	51.8	-2.9	2.1
5750	51.9	-2.8	2.0
5800	53.3	-2.7	1.7
5850	46.4	-3.3	1.7

Active Test For WIFI					
Band	Channel	Data Rate	TRP	Data Rate	TIS
WIFI2.4G 802.11b	1	11Mbps	12.1	11Mbps	-81.1
	7		12.5		-81.5
	11		12.3		-80.2
WIFI5.8G 802.11a	149	54Mbps	11.0	54Mbps	-69.9
	157		11.1		-68.7
	165		10.4		-68.5

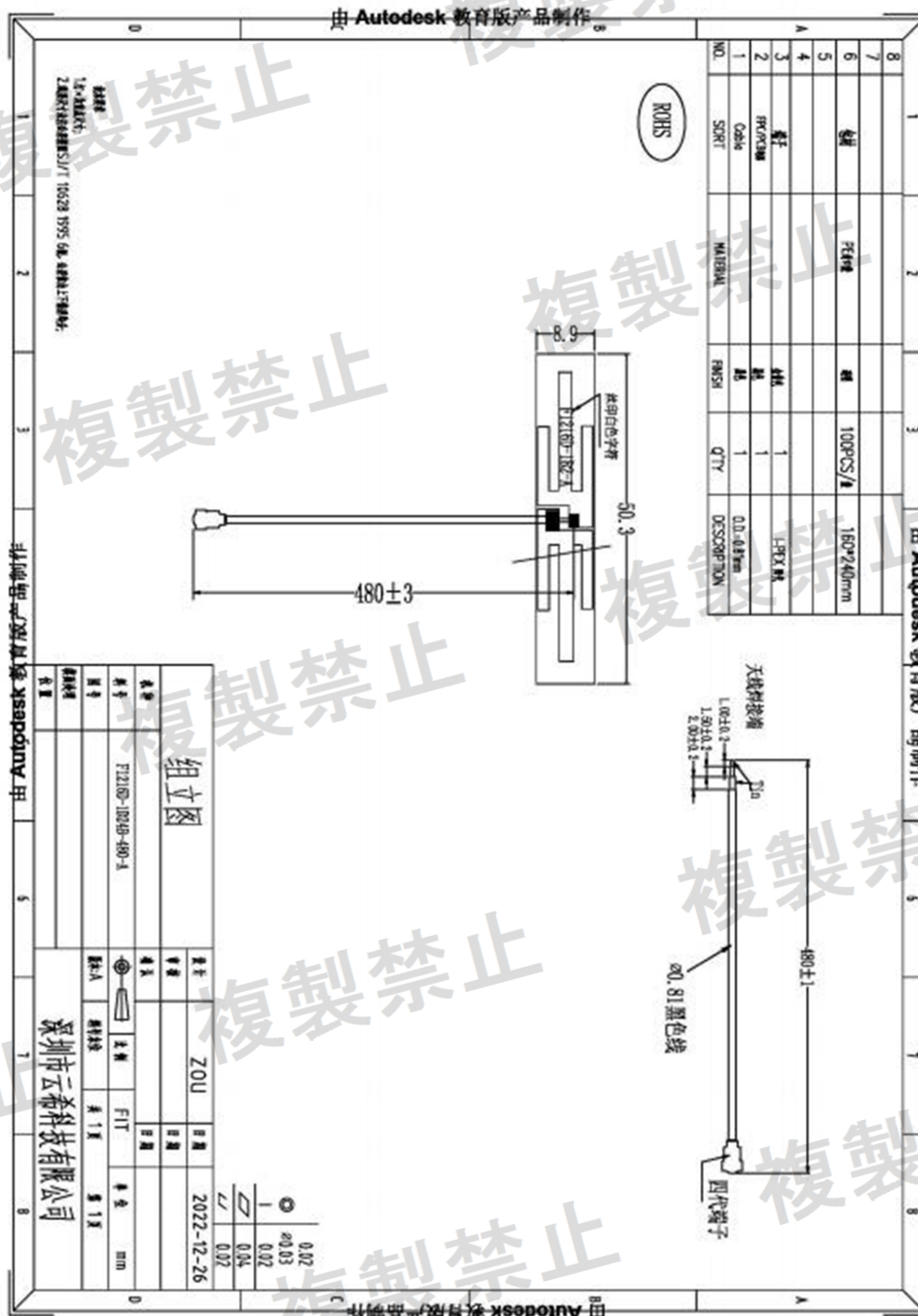
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四 : Structural drawing



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