



Shenzhen Xingtong Wireless Technology Co., Ltd

Telephone: +86-755-27850514 Fax: +86-0755-27850514

Address: 3rd floor, building A1, qianrong East Industrial Zone, Jiuwei, Xixiang, Bao'an District, Shenzhen

# Product specification

Entry name: B3

Product Name: B3-WIFI/BLE antenna

Product item No. : 20220729-001B

producer	to examine	Date:
Huang Jiajun	Wu Yanlong	2022-08-11

Customer confirmation:

Customer Name: Shenzhen xinruizhi Industrial Co., Ltd
approval:
Date:
notes:

Please return one copy to our company for filing after signing and sealing. Thank you for your cooperation!



Shenzhen Xingtong Wireless Technology Co., Ltd

Date:

2022-08-11

edition

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Document No.

XT-YF-004

Product Name

B3-wifi / ble antenna

Product No.

B3-APP-RA

## 1.Product Constrution:

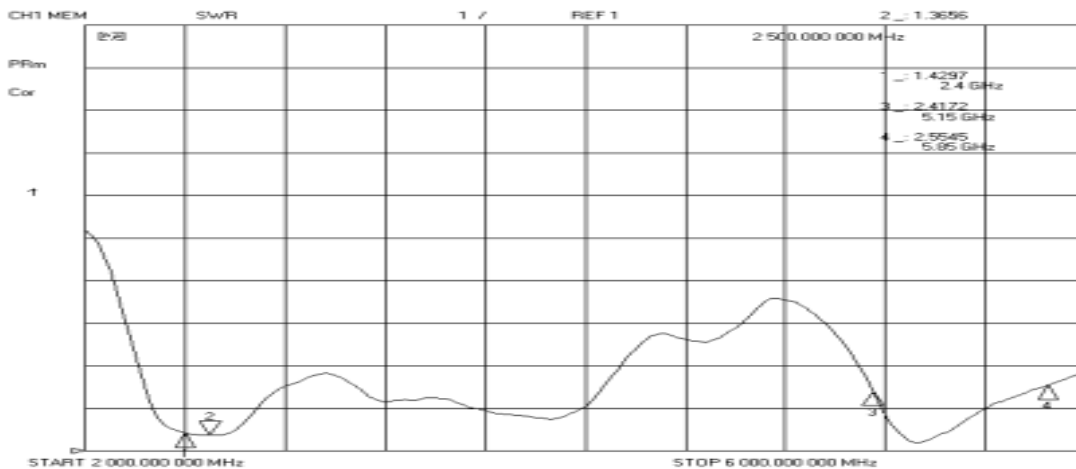
- 1. Antenna material: FPC
- 2. Back glue model: 3M9471
- 3. Antenna size: 51.05\*220.9
- 4. Coaxial line size: Wifi-135 \* 0.81 / ble-35 \* 0.81 single head third generation terminal (tolerance  $\pm 1.0\text{mm}$ )

## 2. parameters:

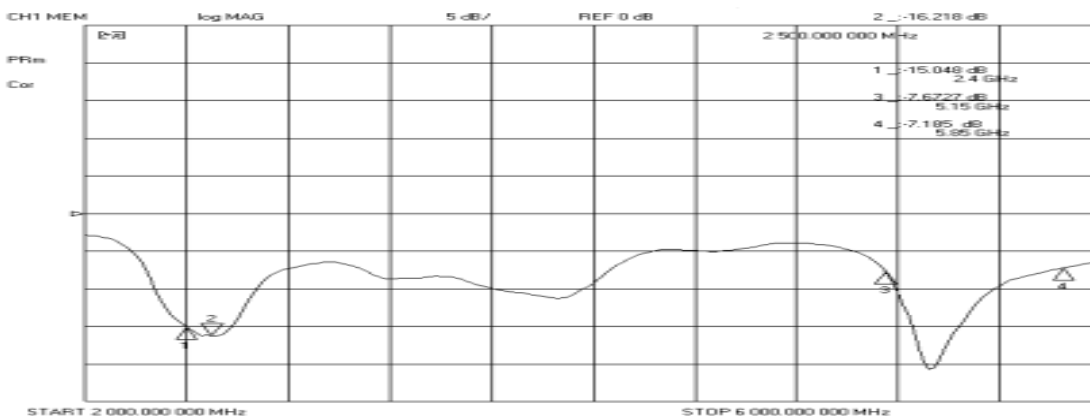
- Scope of use: customer supplied machine
- Antenna frequency: 2400-2500 5150-5850MHz
- Installation method: the terminal line is connected to the main board
- Packing method: PE bag + packing box

## 3.Antenna S11 value (S11)

- 3.1: Antenna standing wave ratio (WiFi)



- 3.2: Antenna return loss value (WiFi)





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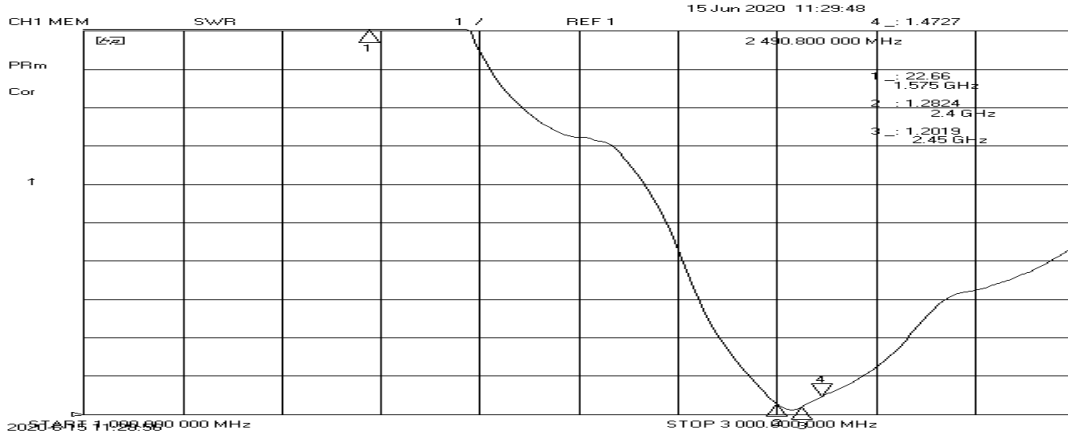
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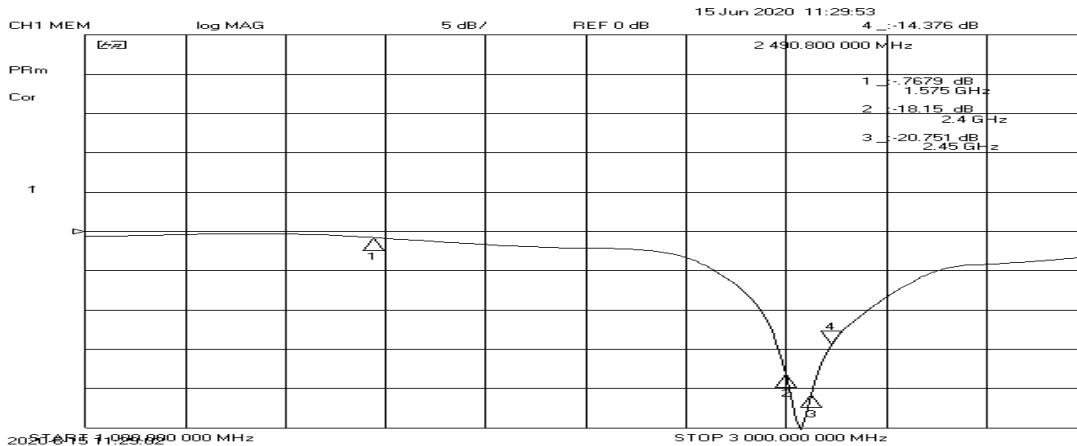
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### 3.3: Antenna standing wave ratio (ble)

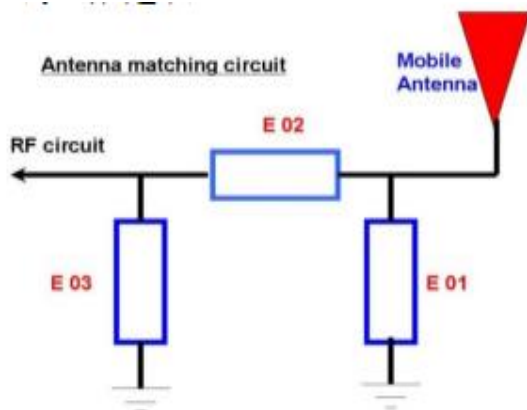


### 3.4: Antenna return loss value (ble)



## 4. Antenna performance (OTA)

### 4.1: Antenna matching suggestions



NFC Antenna	
Element	Value
E1 (0201)	
E2 (0201)	
E3 (0201)	
E4 (0201)	

Match (no modification)



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□ 4.2: Antenna efficiency gain (test instruments: network analyzer, oscilloscope, customer supplied engineering prototype, various standard cards, etc.)

4.2.1 WiFi/BLE-OTA:

Cell	Band	Channel	TRP	Cell	Band	Channel	TIS
WIFI/2.4G/TRP	802.11b (11M)	1	4.09	WIFI/2.4G/TIS	802.11b (11M)	1	-75.21
		6	3.95			6	-71.85
		11	4.19			11	-72.29
WIFI/5.8G/TRP	802.11a(6M)	36	3.45	WIFI/5.8G/TIS	802.11a(6M)	36	-87.32
		149	4.56			149	-86.14
		165	4.51			165	-85.31
BT/TRP/2LE	2402	0	2.58	BT/TIS/2LE	2402	0	-61.24
	2441	39	2.68		2441	39	-61.33
	2480	78	2.39		2480	78	-61.28

4.2.2 WiFi- passive OTA:

Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2420.0	2460.0	2480.0	5150.0	5250.0	5350.0	5450.0	5550.0	5650.0	5750.0	5850.0
<b>Point Values</b>											
Ant. Port Input Pwr. (dBm)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot. Rad. Pwr. (dBm)	-7.86	-7.67	-7.53	-6.85	-6.82	-6.88	-6.83	-6.69	-6.48	-6.09	-5.75
Peak EIRP (dBm)	-0.85	-0.83	-1.10	-2.20	-2.15	-2.09	-2.08	-2.09	-1.85	-1.46	-1.24
Directivity (dBi)	8.44	8.50	8.52	4.65	4.67	4.79	4.75	4.59	4.63	4.64	4.52
Efficiency (dB)	-7.86	-7.67	-7.53	-6.85	-6.82	-6.88	-6.83	-6.69	-6.48	-6.09	-5.76
Efficiency (%)	16.40	17.10	17.70	20.70	20.80	20.50	20.80	21.40	22.50	24.60	26.50
Gain (dBi)	-0.85	-0.83	-1.10	-2.20	-2.15	-2.09	-2.08	-2.09	-1.85	-1.46	-1.11
NHPRP ±Pi/4 (dBm)	-9.50	-9.29	-9.10	-7.66	-7.62	-7.66	-7.59	-7.44	-7.22	-6.84	-6.51
NHPRP ±Pi/6 (dBm)	-11.39	-11.18	-10.98	-8.68	-8.62	-8.65	-8.56	-8.41	-8.21	-7.84	-7.53
NHPRP ±Pi/8 (dBm)	-12.96	-12.75	-12.54	-9.44	-9.39	-9.41	-9.32	-9.19	-9.00	-8.66	-8.37
Upper Hem. PRP (dBm)	-14.85	-14.73	-14.64	-8.99	-8.96	-9.04	-9.08	-9.08	-9.01	-8.69	-8.36
Lower Hem. PRP (dBm)	-8.83	-8.62	-8.46	-10.94	-10.91	-10.95	-10.76	-10.41	-10.03	-9.56	-9.23
Upper Hem. PRP (%)	3.27	3.37	3.44	12.61	12.70	12.46	12.37	12.35	12.56	13.51	14.59
Lower Hem. PRP (%)	13.09	13.73	14.24	8.06	8.11	8.04	8.40	9.09	9.93	11.08	11.94

4.2.3 BLE- passive OTA:

Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
<b>Point Values</b>											
Ant. Port Input Pwr. (dBm)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot. Rad. Pwr. (dBm)	-8.34	-8.17	-8.01	-7.87	-7.72	-7.60	-7.54	-7.56	-7.57	-7.66	-7.65
Peak EIRP (dBm)	-2.73	-2.67	-2.59	-2.45	-2.34	-2.19	-2.21	-2.20	-2.25	-2.50	-2.60
Directivity (dBi)	5.61	5.51	5.42	5.42	5.38	5.42	5.34	5.36	5.32	5.16	5.05
Efficiency (dB)	-8.34	-8.17	-8.01	-7.87	-7.72	-7.60	-7.54	-7.56	-7.57	-7.66	-7.65
Efficiency (%)	14.60	15.20	15.80	16.30	16.90	17.40	17.60	17.50	17.50	17.10	17.20
Gain (dBi)	-2.73	-2.67	-2.59	-2.45	-2.34	-2.19	-2.21	-2.20	-2.25	-2.50	-2.60
NHPRP ±Pi/4 (dBm)	-10.26	-10.10	-9.96	-9.86	-9.74	-9.64	-9.58	-9.61	-9.62	-9.71	-9.69
NHPRP ±Pi/6 (dBm)	-11.97	-11.83	-11.71	-11.65	-11.56	-11.50	-11.47	-11.52	-11.54	-11.62	-11.57
NHPRP ±Pi/8 (dBm)	-13.28	-13.14	-13.05	-13.02	-12.96	-12.91	-12.91	-12.97	-12.95	-13.01	-12.92
Upper Hem. PRP (dBm)	-12.12	-11.79	-11.50	-11.27	-11.05	-10.89	-10.79	-10.82	-10.83	-10.93	-10.93
Lower Hem. PRP (dBm)	-10.71	-10.66	-10.59	-10.52	-10.44	-10.35	-10.33	-10.33	-10.33	-10.42	-10.41
Upper Hem. PRP (%)	6.14	6.63	7.08	7.46	7.85	8.14	8.33	8.29	8.25	8.07	8.08
Lower Hem. PRP (%)	8.50	8.60	8.73	8.87	9.04	9.22	9.28	9.26	9.26	9.08	9.10



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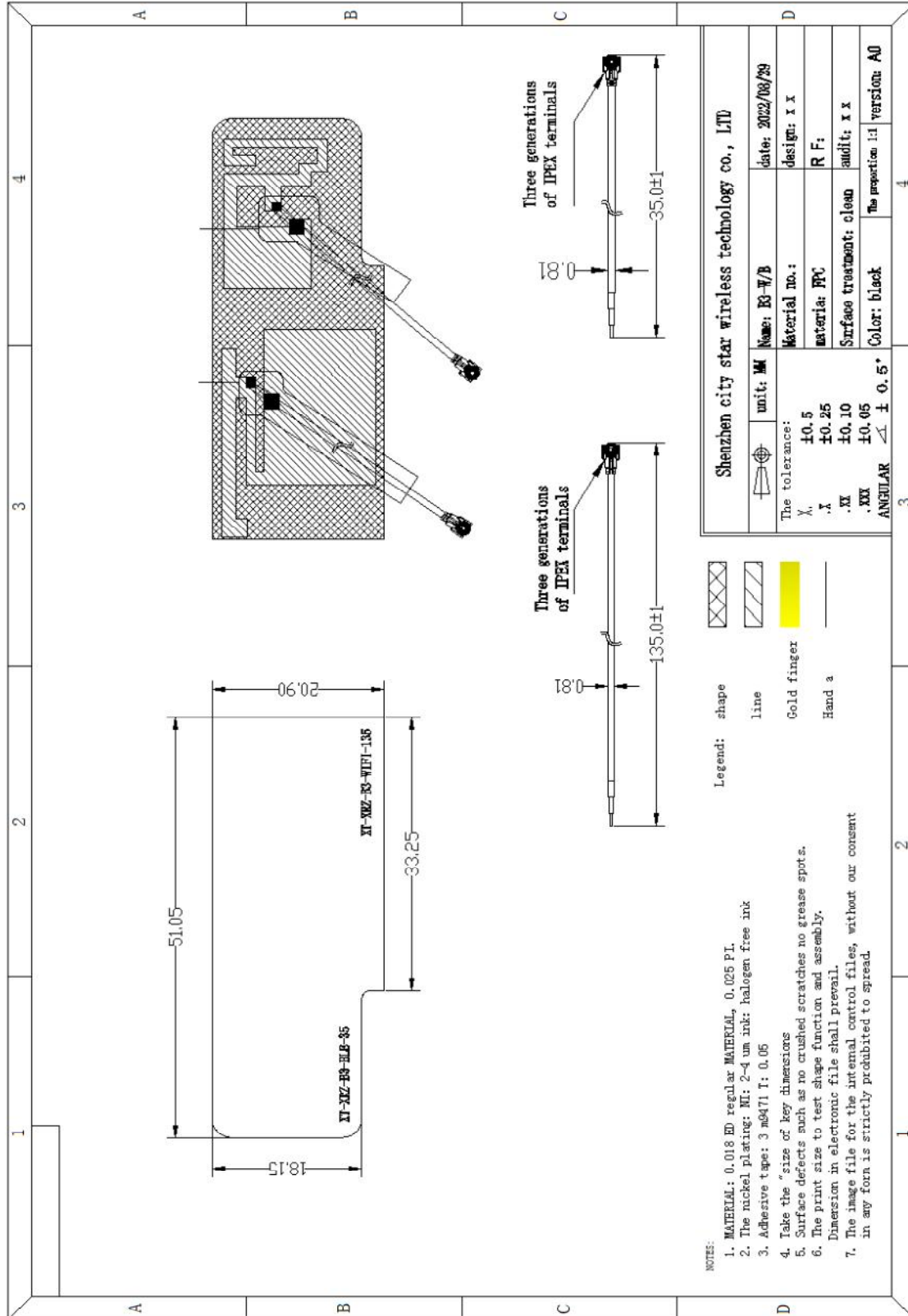
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### 5. Attached drawings:

#### □ 5.1: Finished antenna drawing





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## 6. Reliability test:

Serialnumber	test item	Test requirements	testing tool	test result
1	Resistance to tin melting	288°C, 10S, no delamination, no foaming	Tin furnace	Ok
2	weldability	245°C, 5s, smooth tin surface, solder surface $\geq 95\%$	Tin furnace	Ok
3	Pulling force	N/A	tautness meter	Ok
4	Reverse pulling force	N/A	tautness meter	Ok
5	Peel strength (covering film)	$\geq 0.35\text{kg/cm}$	peel strength	Ok
6	Peel strength (copper foil)	$\geq 0.8\text{kg/cm}$	peel strength	Ok
7	Hot melt adhesive	0.1~0.15	/	Ok

## 7. Matters needing attention:

After opening, please carefully check whether the goods are complete. If there is any damage, please contact us immediately.