



Shenzhen Xingtong Wireless Technology Co., Ltd

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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 Wieress Technology Co., Ltd

Date:

2022-08-11

edition

A0

Document No.

XT-YF-004

Product Name

B3-wifi / ble antenna

Product No.

B3-APP-RA

## 1.Product Constrution:

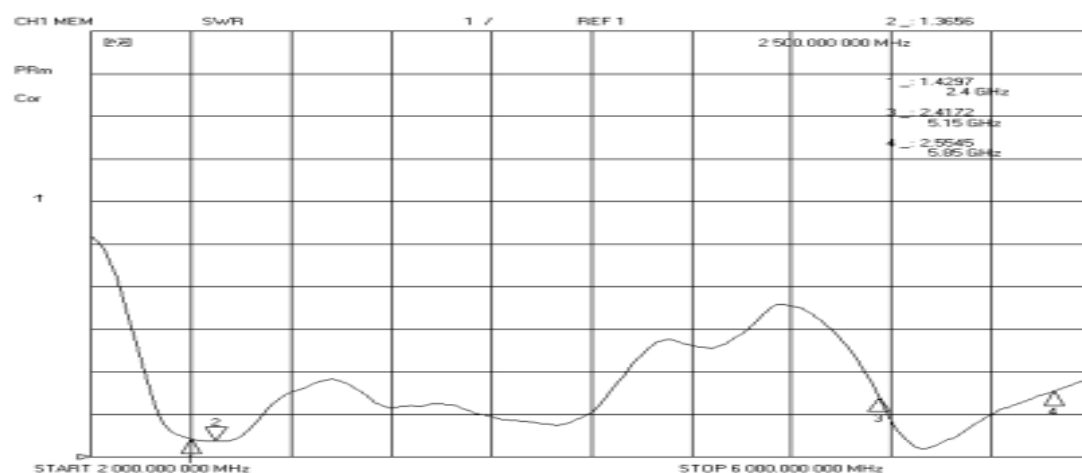
- 1.Antenna material: FPC
- 2.Back glue model: 3M9471
- 3.Antenna size: 51.05\*220.9
- 4.Coaxial line size: Wifi-135 \* 0.81 / ble-35 \* 0.81 single head third generation terminal (tolerance  $\pm 1.0\text{mm}$ )

## 2. parameters:

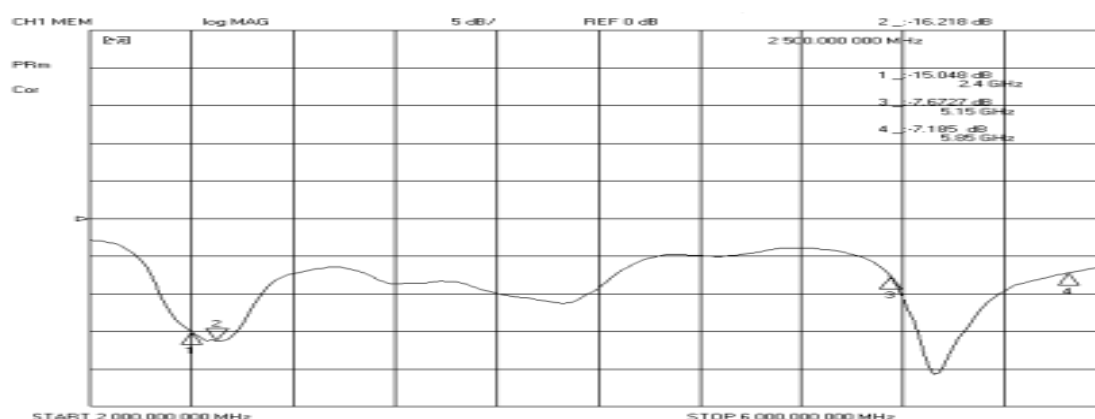
- Scope of use: customer supplied machine
- Antenna frequency: 2400-2500 5150-5850MHz
- Installation method: the terminal line is connected to the main board
- Packing method: PE bag + packing box

## 3.Antenna S11 value (S11)

- 3.1: Antenna standing wave ratio (WiFi)



- 3.2: Antenna return loss value (WiFi)





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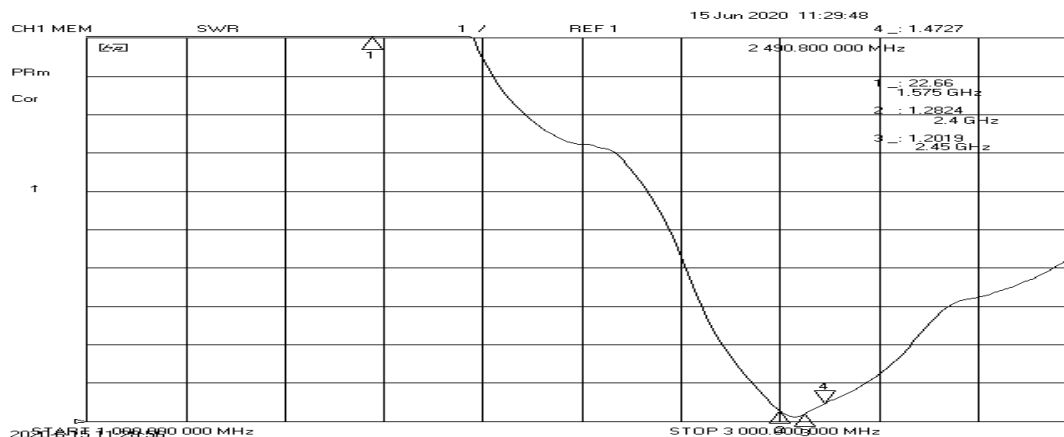
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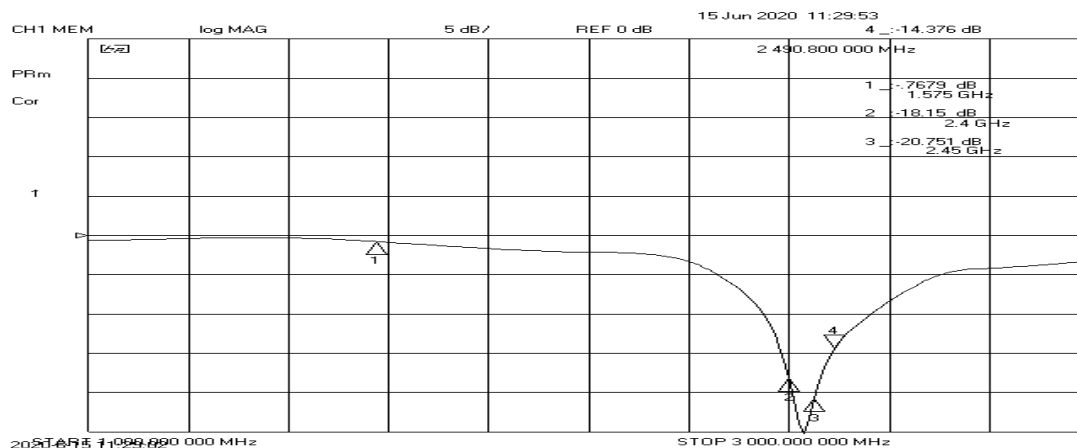
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### 3.3: Antenna standing wave ratio (ble)

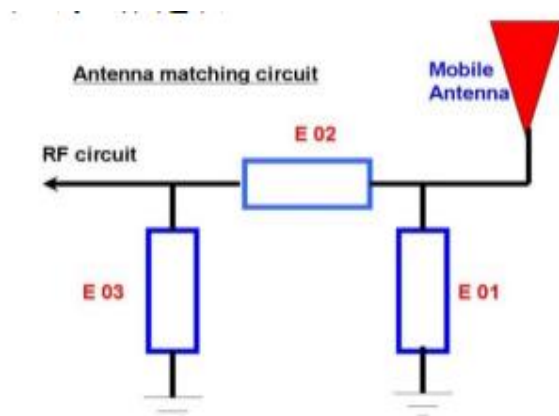


### 3.4: Antenna return loss value (ble)



## 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
Point Values											
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
Point Values											
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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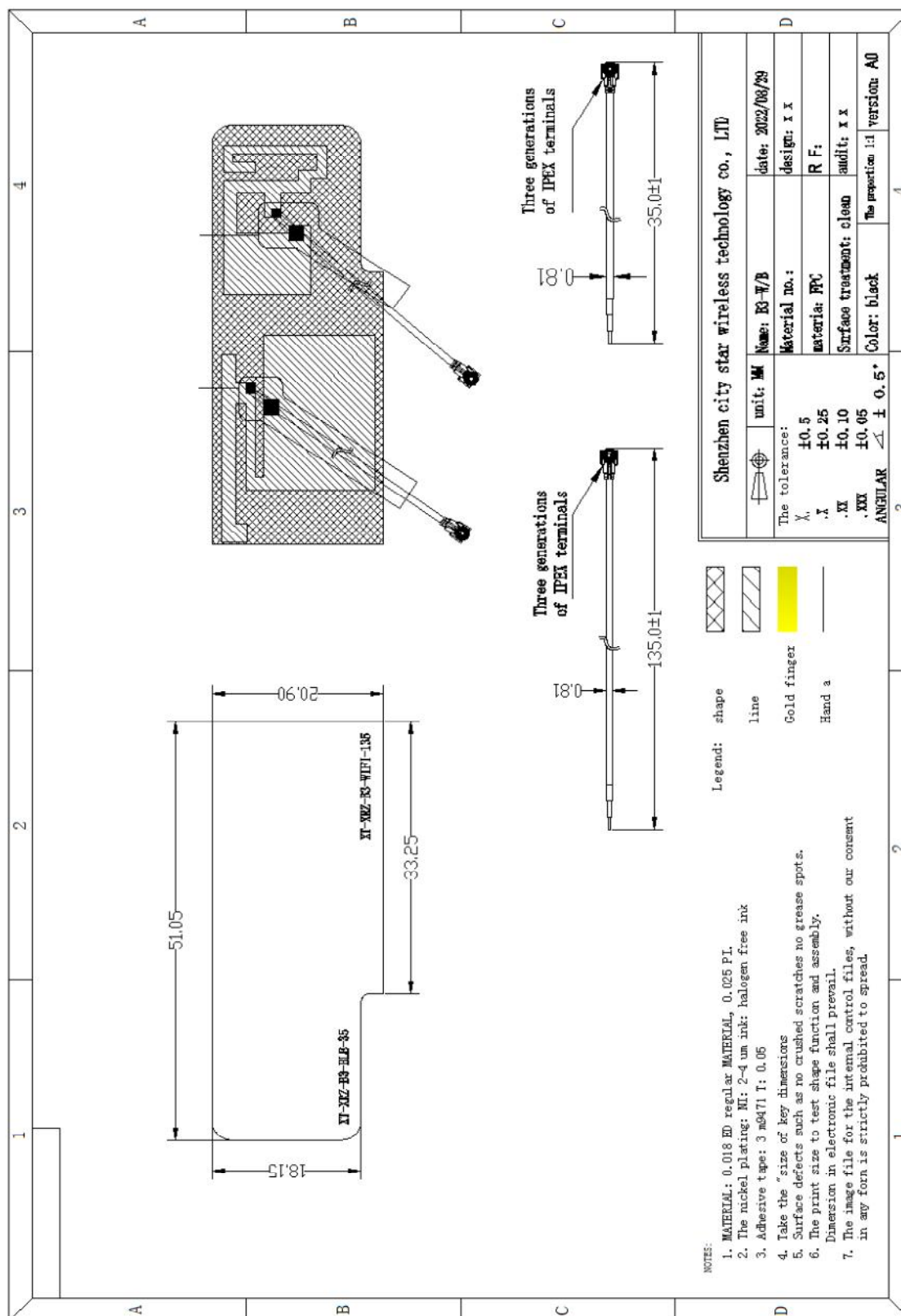
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## 5. Attached drawings:

### □ 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℃, 10S, no delamination, no foaming	Tin furnace	0k
2	weldability	245℃, 5s, smooth tin surface, solder surface $\geq 95\%$	Tin furnace	0k
3	Pulling force	N/A	tautness meter	0k
4	Reverse pulling force	N/A	tautness meter	0k
5	Peel strength (covering film)	$\geq 0.35\text{kg/cm}$	peel strength	0k
6	Peel strength (copper foil)	$\geq 0.8\text{kg/cm}$	peel strength	0k
7	Hot melt adhesive	0.1~0.15	/	0k

## 7. Matters needing attention:

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