



Shenzhen xingtong wireless technology co.,  
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Address: 3/F, Building A1, Qiangrongdong Industrial Zone,  
Jiuwei, Xixiang, Baoan District, Shenzhen

# Product specification

Product number: MT019-WiFi

Product name: MT019-FPC-WIFI/BT-ANT

Product item number:ANT-MT019-WIFI-RF1-XT001

Producer	Audit	Date
Huangjiajun	Wu Yanlong	2024-02-21

Customer confirmation:

Customer name: Shenzhen Xinruizhi Industrial Co., Ltd
Approval :
Date :
Notes :

Please accept your signature and seal and return one copy to our company for filing. Thank you for your cooperation!



Shenzhen Xingtong Wieress Technology Co., Ltd

Date

2024-02-21

Version

A0

File number

XT-YF-004

Product model

MT019-WIFI -Antenna

Product number

MT019-ANT-APP

### 1.Product Constrution:

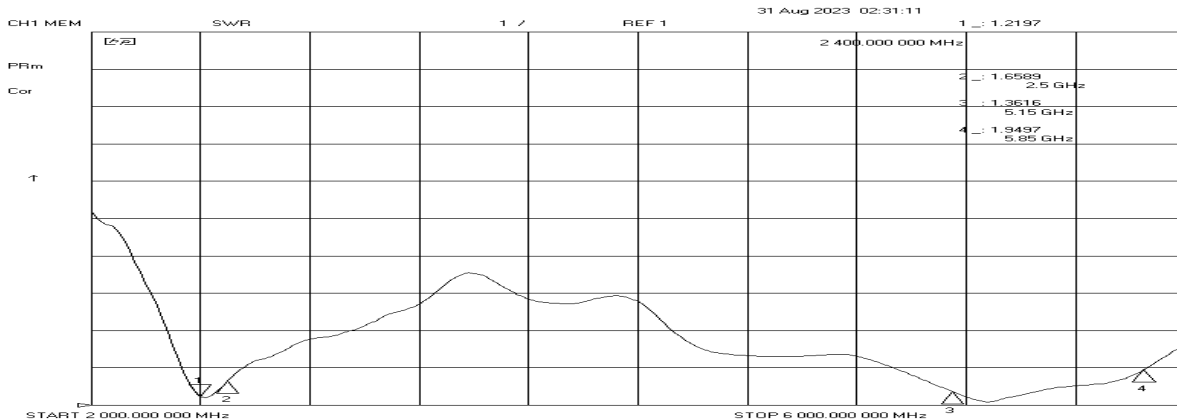
- 1. Antenna material: FPC
- 2. Back glue model: 3M300LE
- 3. Antenna size: 28.5 \* 17 (tolerance ± 0.1)
- 4. Coaxial line size: 83mm ∅ 0.81-3rd generation IPEX
- 5. Appearance treatment: Surface antioxidant treatment

### 2. parameters

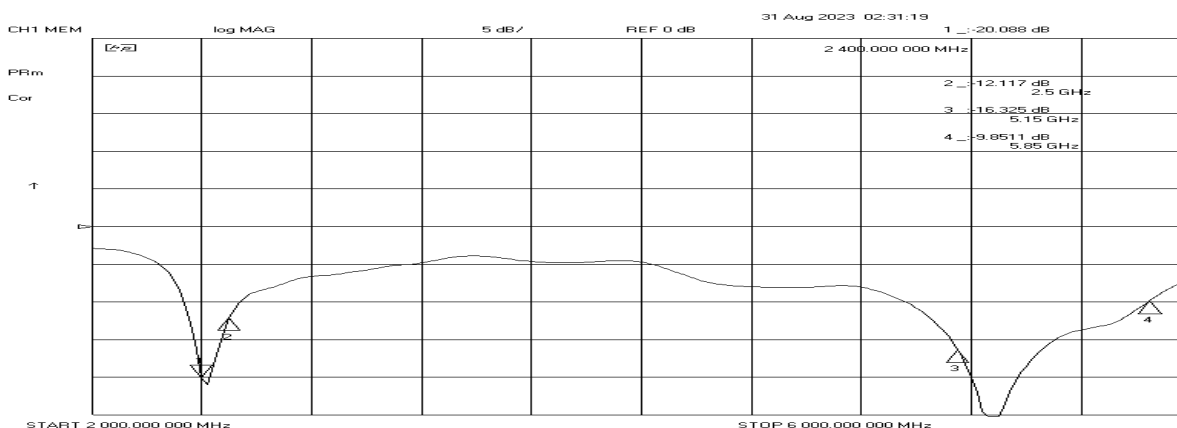
- Scope of use: Customer supplied machines
- Antenna frequency: 2400-2484mhz 5150-5850mhz
- Antenna free space average gain: 2.4G ≥ 1.2dbi 5.8G ≥ 1.85dbi
- Antenna impedance: 50 ohms
- Polarization mode: horizontal/vertical
- Installation method: Connect the IPEX terminal wire to the motherboard
- Packaging method: Use PE bags and packaging boxes

### 3.S11 value of antenna (S11)

#### ■ 3.1: antenna standing wave ratio



#### ■ 3.2: Antenna return loss value





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3.2: 天线参数:

Frequency point	2400mhz	2500mhz	5150Mhz	5850Mhz
SWR(dbm)	1.21	1.63	1.36	1.94
LOG (dbm)	-20.08	-12.11	-16.32	-9.85

4. Antenna performance (OTA)

4.1: Antenna matching recommendations

Matching without modification

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

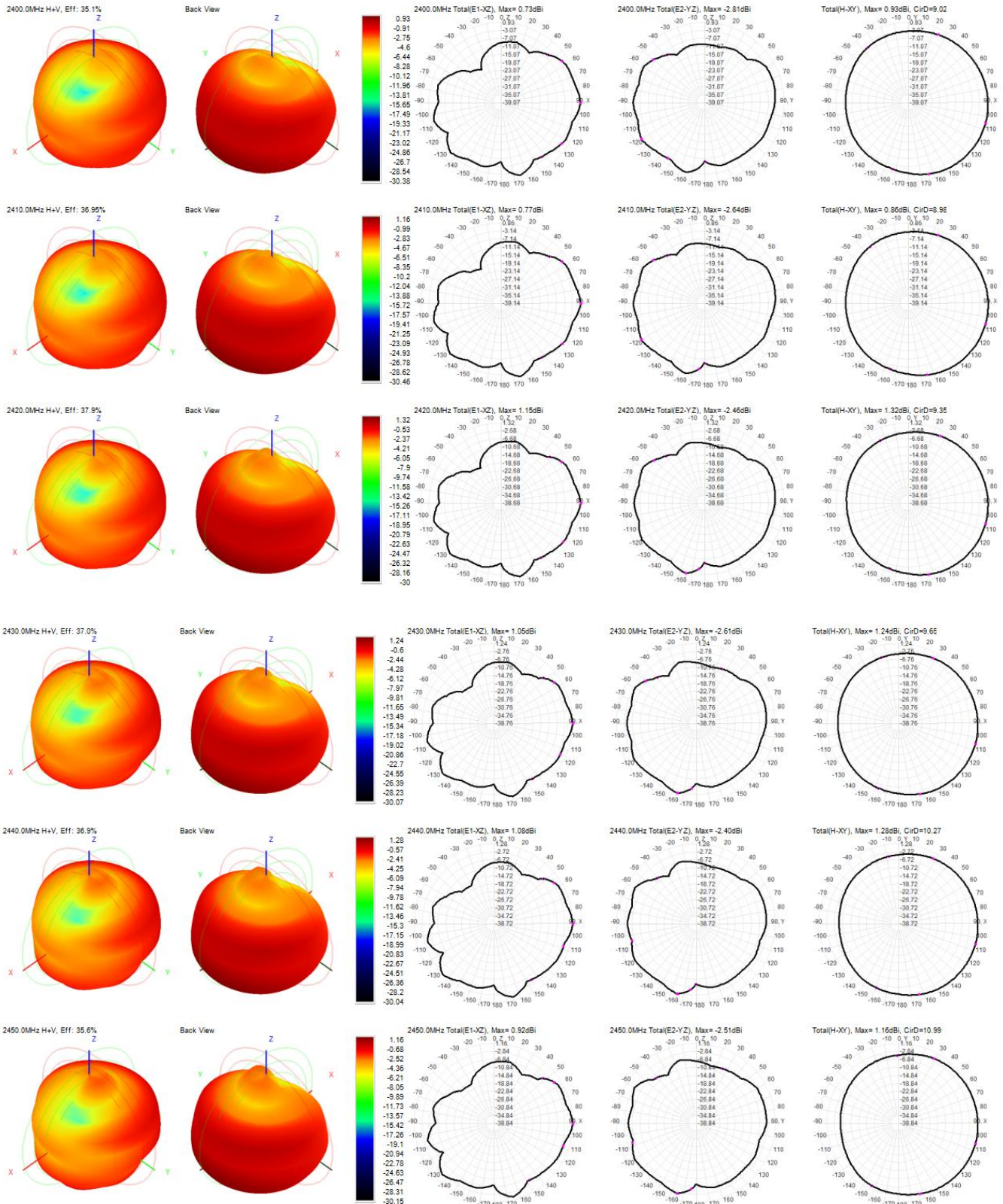
4.2.1: 2.4G-WIFI/BT-2D

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
Efficiency (dBi)	-4.55	-4.32	-4.21	-4.32	-4.33	-4.48	-4.57	-4.80	-5.03	-5.43	-5.91
Gain (dBi)	0.93	1.16	1.32	1.24	1.28	1.16	1.11	0.92	0.73	0.37	-0.06
Efficiency (%)	35.06	36.95	37.93	36.97	36.94	35.63	34.90	33.14	31.42	28.64	25.67
Directivity (dB)	5.48	5.42	5.53	5.56	5.60	5.64	5.68	5.71	5.76	5.80	5.85
Peak Gain Position (Theta)	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
Peak Gain Position (Phi)	195.00	195.00	195.00	195.00	195.00	195.00	195.00	195.00	195.00	195.00	180.00
Efficiency ThetaPol (%)	32.32	33.02	34.69	33.51	33.32	31.72	30.85	29.19	27.40	24.84	22.04
Efficiency PhiPol (%)	2.74	2.93	3.25	3.46	3.62	3.91	4.05	3.95	4.02	3.80	3.63
Upper Hem. Efficiency (%)	16.04	17.80	17.06	16.61	16.56	15.86	15.36	14.36	13.49	12.24	10.99
Lower Hem. Efficiency (%)	19.01	19.15	20.88	20.36	20.37	19.77	19.54	18.78	17.94	16.40	14.69

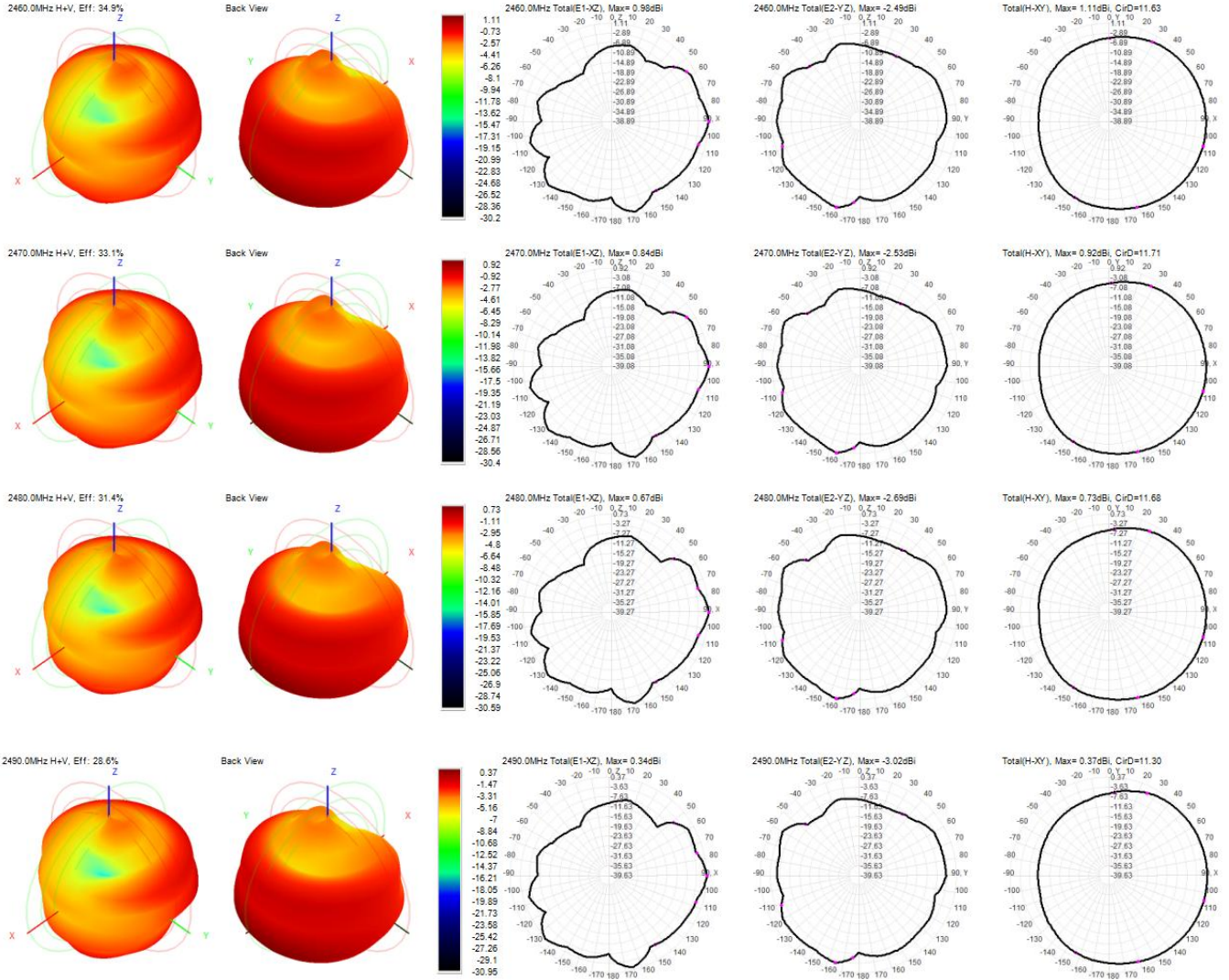
4.2.2: 5.8G-WIFI-2D

Frequency ID	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Frequency (MHz)	5150.0	5200.0	5250.0	5300.0	5350.0	5400.0	5450.0	5500.0	5550.0	5600.0	5650.0	5700.0	5750.0	5800.0	5850.0
Efficiency (dBi)	-4.01	-3.20	-2.97	-3.78	-3.44	-2.95	-4.02	-3.85	-2.83	-4.12	-4.02	-3.08	-3.77	-4.46	-2.86
Gain (dBi)	1.48	1.46	2.08	1.48	2.53	2.48	2.00	2.09	3.08	1.78	1.28	1.79	1.64	1.02	2.58
Efficiency (%)	39.72	47.88	50.52	41.86	45.26	50.72	39.61	41.21	52.17	38.73	39.61	49.22	42.00	35.78	51.72
Directivity (dB)	4.49	4.66	5.05	5.26	5.97	5.43	6.02	5.94	5.90	4.90	5.30	4.86	5.40	5.48	5.44
Peak Gain Position (Theta)	90.00	75.00	75.00	90.00	75.00	60.00	60.00	60.00	60.00	90.00	90.00	60.00	75.00	90.00	75.00
Peak Gain Position (Phi)	30.00	15.00	30.00	30.00	30.00	15.00	15.00	15.00	15.00	45.00	45.00	15.00	165.00	45.00	45.00
Efficiency ThetaPol (%)	17.62	21.75	22.62	19.00	20.53	24.15	19.63	20.98	27.15	20.38	20.82	26.50	21.82	18.75	27.28
Efficiency PhiPol (%)	22.10	26.14	27.90	22.86	24.73	26.57	19.97	20.23	25.02	18.35	18.79	22.72	20.17	17.03	24.44
Upper Hem. Efficiency (%)	23.41	28.09	29.68	24.56	25.90	28.34	21.49	22.60	27.92	20.56	21.28	26.28	22.55	19.10	26.29
Lower Hem. Efficiency (%)	16.31	19.79	20.83	17.29	19.36	22.38	18.12	18.60	24.26	18.17	18.33	22.94	19.44	16.68	25.43

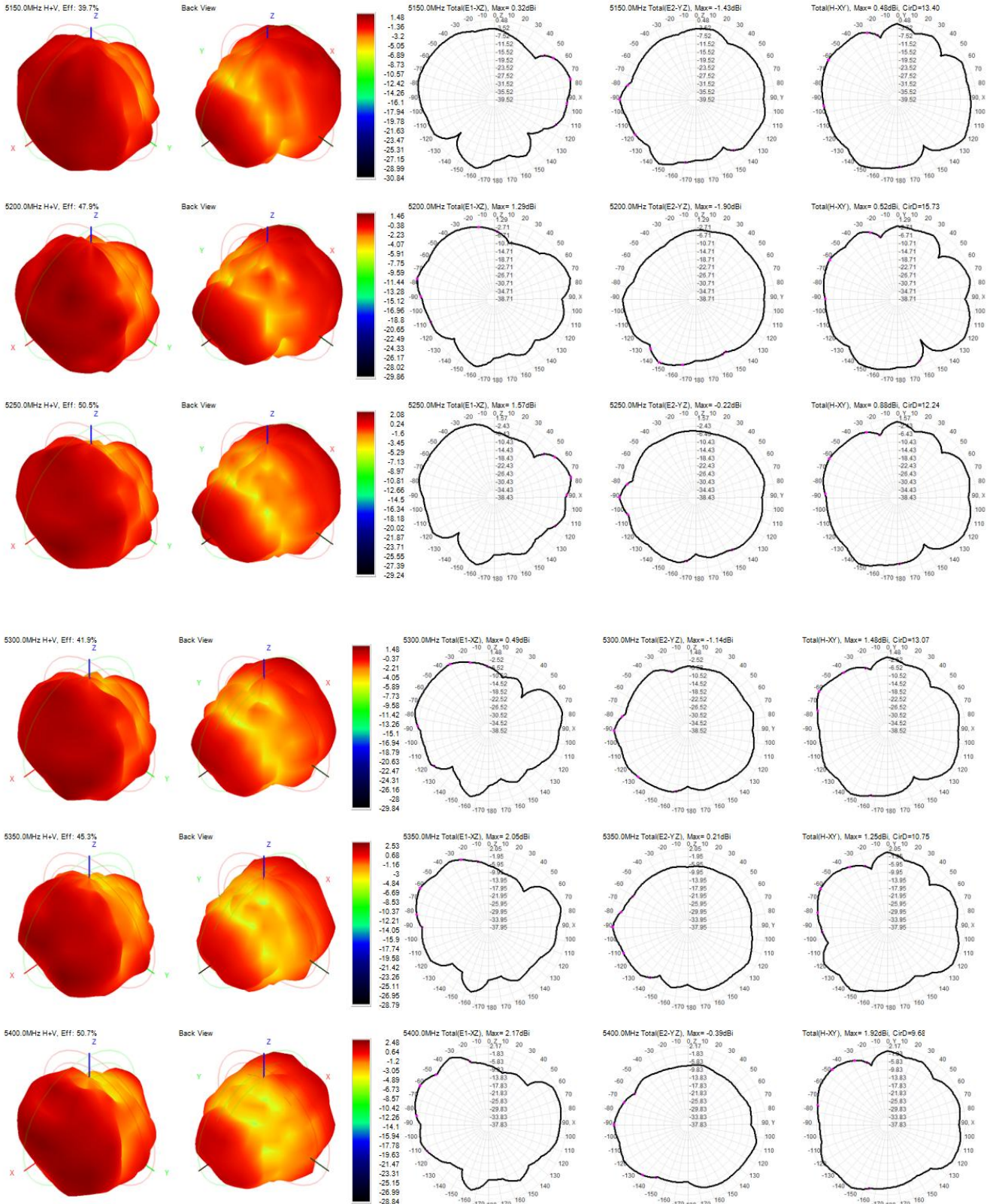
4.2.3: WIFI OTA-2.4G-3D



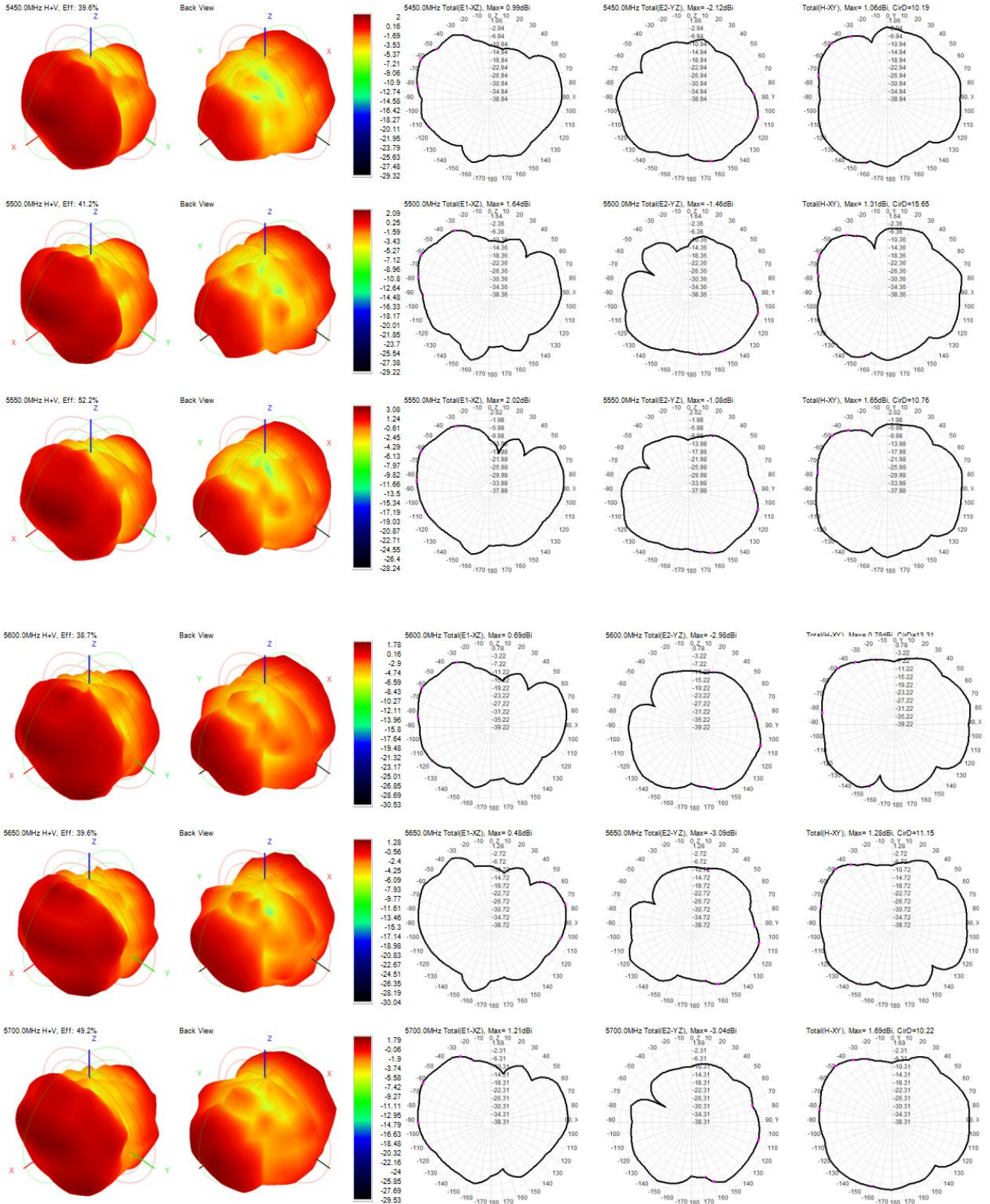




4.2.4: WIFI-OTA-5.8G-3D









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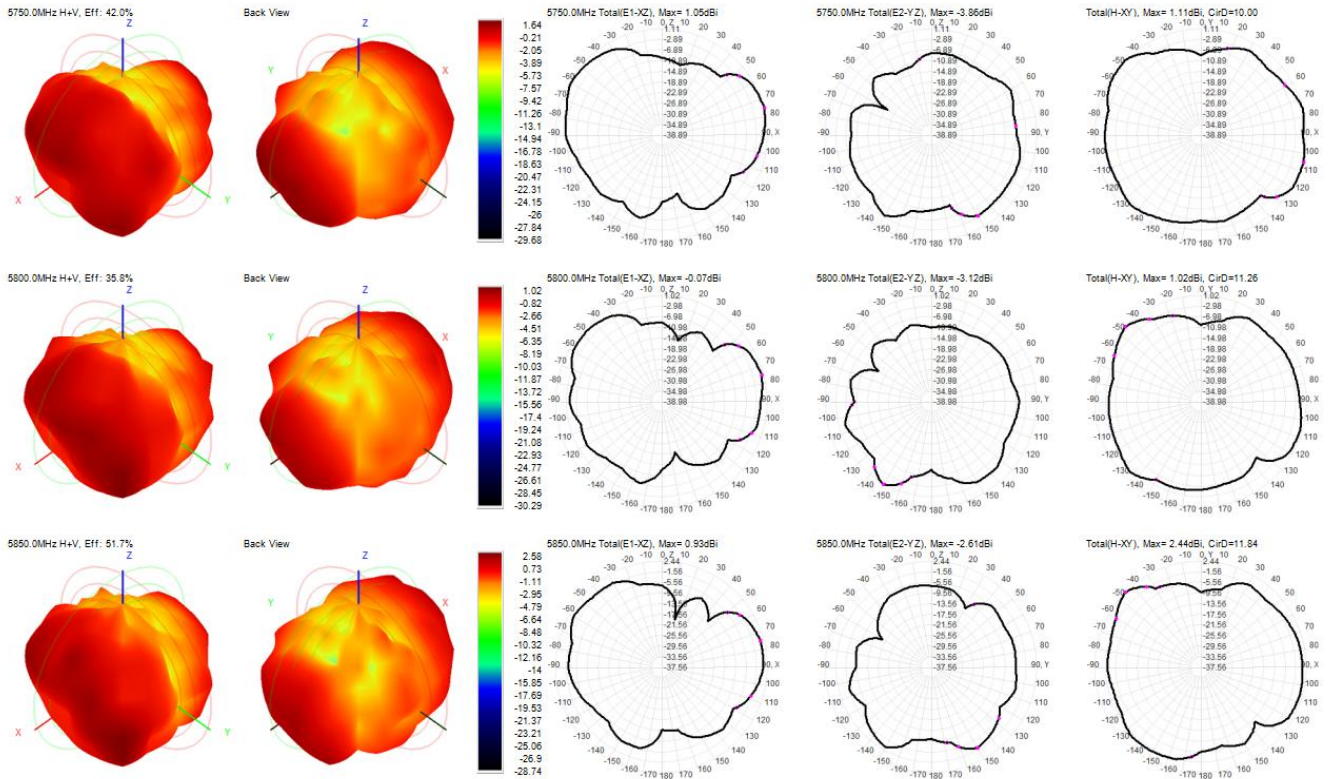
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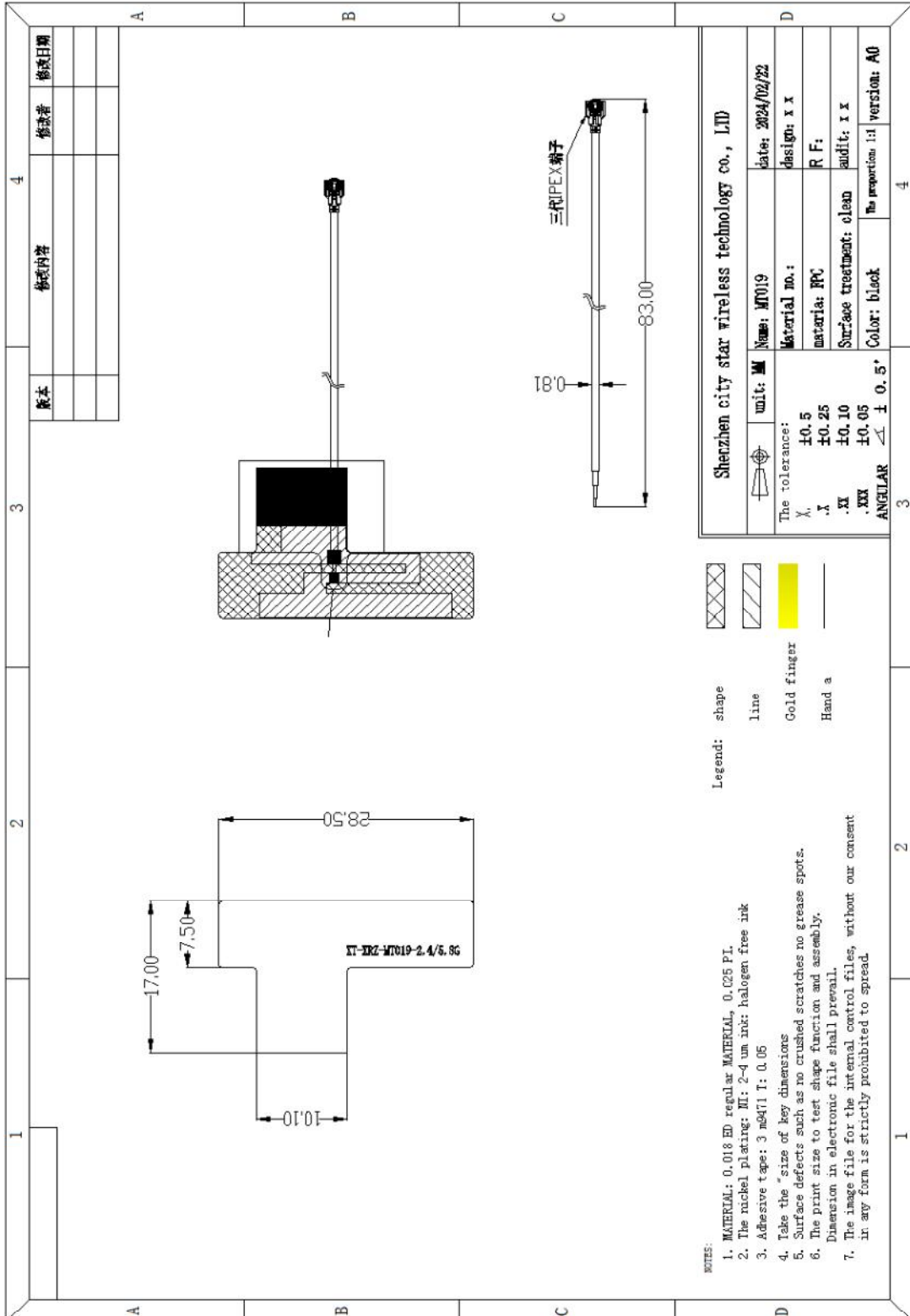
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5. Attached figure:

5.1: Finished antenna drawing



**6. Maintenance verification:**

Tests/test items	Maintainability	Inspection order number
Product name/specification	WiFi built-in fpc antenna	Test quantity: 5PCS
Date of inspection: 2024/02/20		Completiondate: 2024/02/21

Test/inspection equipment:

1. The tensile tester tests 5 times. (The tester is shown in the figure)



Note: Uniform speed test is required, not extreme speed test.

Projects Condition	Maintaining force between terminal and cable $\geq 0.6\text{kgf}$ .				
Test times	1	2	3	4	5
test result	0.6	0.7	0.7	0.9	0.7

Test/inspection result: acceptable

Test/inspection judgment:

Qualified

Unqualified

Make no judgment

Test: Zhu Yongjian

Audit: Wu Yanlong



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### 7. 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 fluidity	0.1~0.15	/	Ok



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### 7. Matters needing attention:



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