



Shenzhen Xingtong Wieress Technology Co.,Ltd

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Product Specification

Product Name: S81-WiFi-antenna

Antenna product part number: SYX. 1. 2. 002

Producer	Review	Date
Huang Jiajun	Wu Yanlong	2025-10-20

 Shenzhen Xingtong Wireless Technology Co., Ltd		Date	2025-10-20
		Version	A0
		File Number	XT-YF-004
Product Name	S81-WiFi-antennaantenna	Product Number	S81-APP-RA.1

1.Product Constrution)

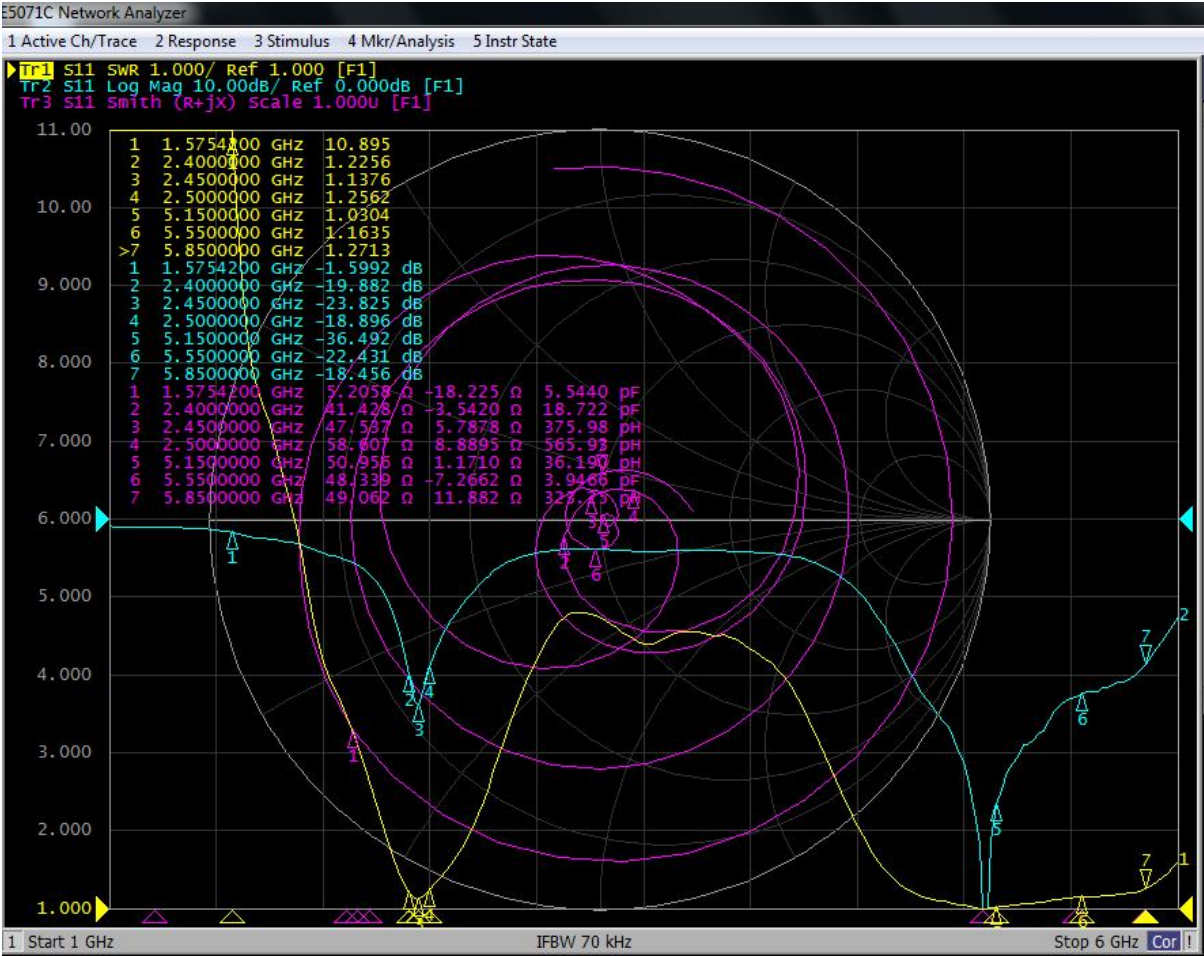
- 1.Antenna material: FPC
- 2.Packaging process: Welding
- 3.Antenna size: 25.5 * 20 (tolerance ± 1mm)
- 4.Product description: 2.4G+5.8GDual band WiFi antenna, IPEX-1 generation

2. (parameters)

- Scope of use: Customer supplied machines
- Antenna frequency: 2400-2500Mhz 5150-5850Mhz
- ANT VSWR: 2.4G<1.2 5G<1.2
- Free space gain of antenna: 2.4≥2.83dbi 5.8≥2.57dbi
- Antenna impedance: 50 Ω
- Antenna Type: IPEX antenna

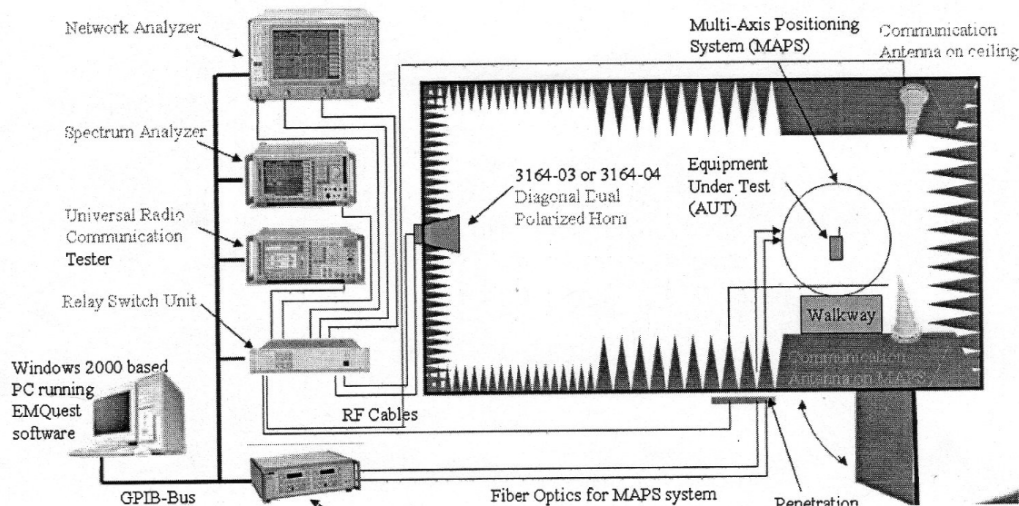
3.ANT S11 Value (S11)

- 3.1: Antenna standing wave ratio/return loss value/Smith



4. Antenna (OTA) testing environment

■ 4.1: Testing environment and instruments: 3D microwave anechoic chamber, network analyzer, PC testing software, engineering samples, 10db attenuator



■ 4.2: Antenna efficiency/gain

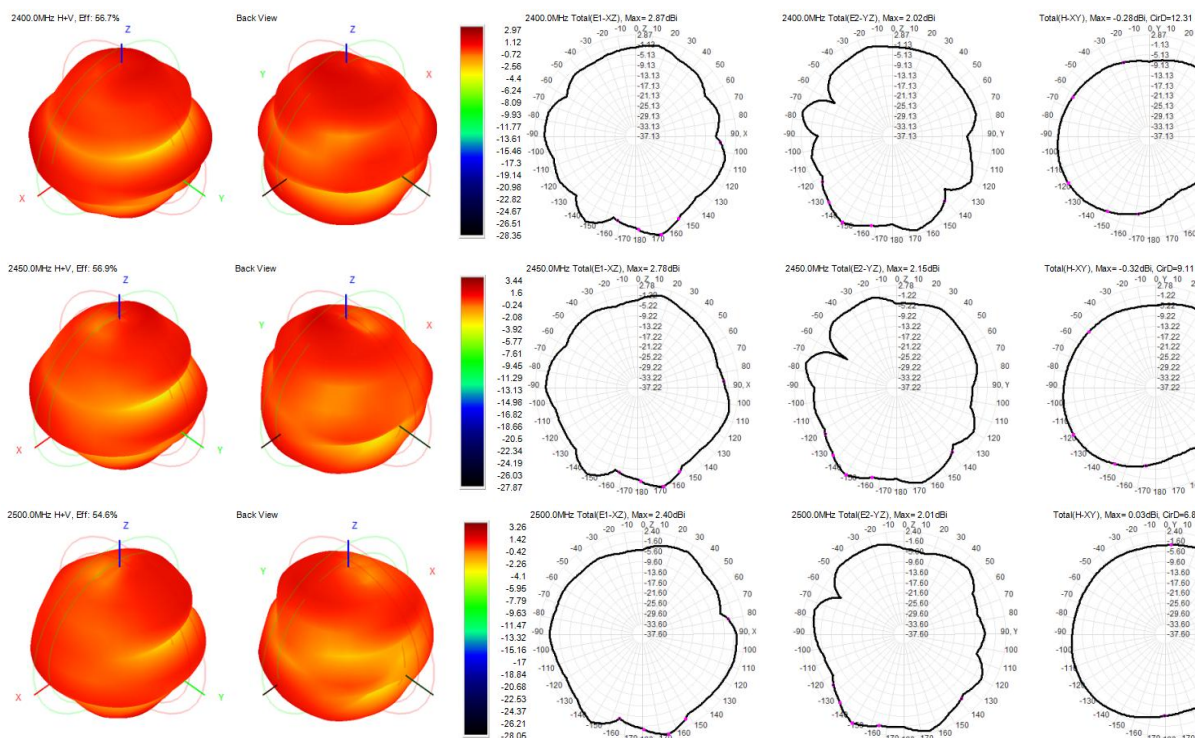
2.4G-OTA

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
Efficiency (dBi)	-2.47	-2.53	-2.31	-2.35	-2.67	-2.45	-2.57	-2.74	-2.37	-2.53	-2.63
Gain (dBi)	2.97	2.83	3.04	3.14	3.05	3.44	3.49	3.36	3.65	3.41	3.26
Efficiency (%)	56.65	55.84	58.80	58.27	54.08	56.87	55.38	53.19	58.00	55.90	54.61
Directivity (dB)	5.43	5.36	5.35	5.49	5.72	5.90	6.06	6.10	6.02	5.93	5.89
Peak Gain Position (Theta)	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00
Peak Gain Position (Phi)	330.00	330.00	330.00	330.00	330.00	330.00	330.00	330.00	330.00	330.00	330.00
Efficiency ThetaPol (%)	30.66	30.25	32.06	31.30	28.44	28.76	27.57	26.85	29.28	28.61	28.38
Efficiency PhiPol (%)	25.99	25.60	26.74	26.97	25.64	28.11	27.81	26.34	28.72	27.29	26.23
Upper Hem. Efficiency (%)	25.34	24.81	25.99	25.77	23.82	24.88	23.84	22.49	24.42	23.53	23.03
Lower Hem. Efficiency (%)	31.31	31.03	32.81	32.49	30.26	31.99	31.54	30.70	33.59	32.37	31.58

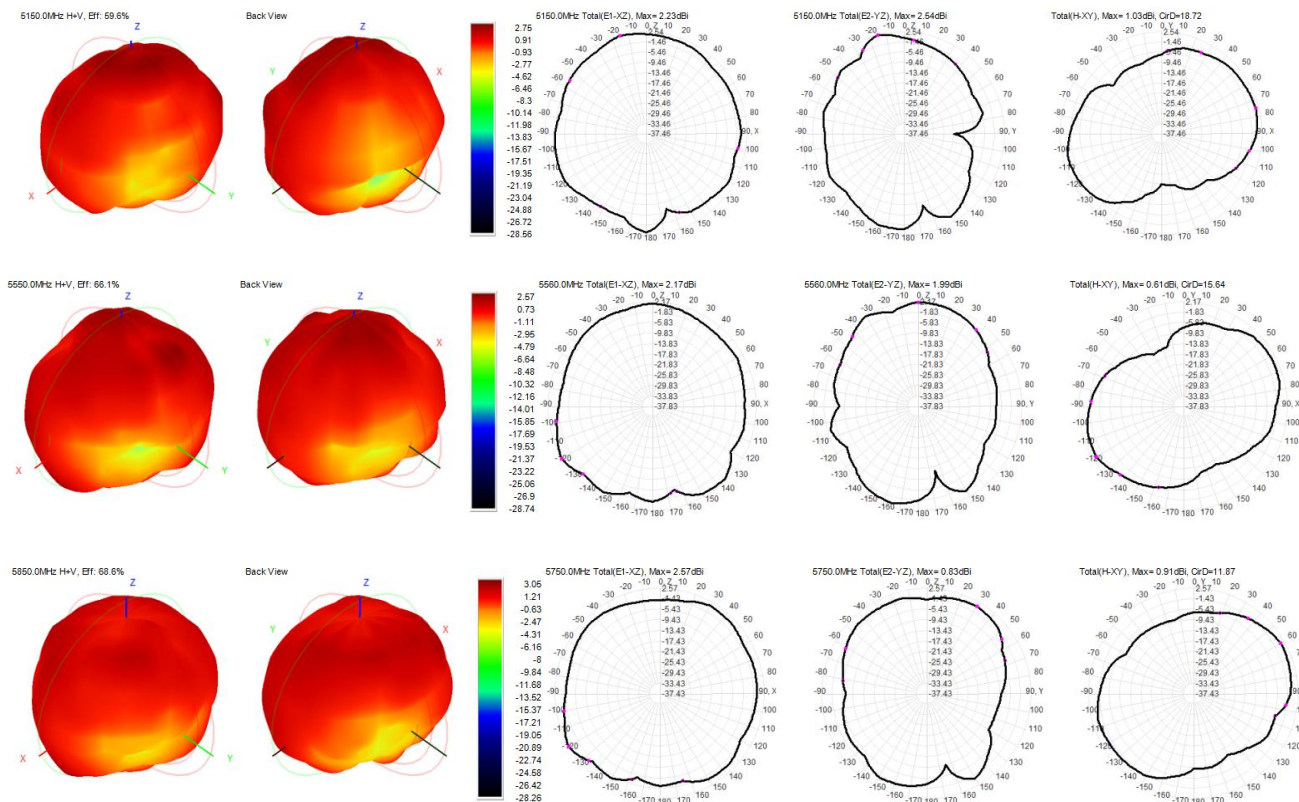
5G-OTA

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)	-2.25	-1.90	-1.99	-2.21	-1.79	-1.91	-1.96	-1.80	-1.60	-1.81	-2.05	-2.07	-1.60	-1.61	-1.64
Gain (dBi)	2.75	2.94	3.15	3.00	3.38	3.15	2.82	2.57	3.47	2.80	2.69	2.62	2.59	3.42	3.05
Efficiency (%)	59.60	64.63	63.27	60.18	66.28	64.46	63.74	66.13	69.13	65.87	62.36	62.08	69.19	69.08	68.58
Directivity (dB)	5.00	4.84	5.14	5.21	5.17	5.06	4.77	4.37	5.07	4.62	4.74	4.69	4.18	5.02	4.69
Peak Gain Position (Theta)	120.00	15.00	135.00	120.00	30.00	120.00	150.00	150.00	120.00	15.00	135.00	120.00	135.00	120.00	135.00
Peak Gain Position (Phi)	135.00	45.00	330.00	150.00	75.00	345.00	150.00	150.00	345.00	255.00	330.00	345.00	330.00	345.00	330.00
Efficiency ThetaPol (%)	15.31	18.42	20.89	19.53	22.80	20.67	20.43	20.18	21.43	21.42	20.89	20.67	22.44	22.63	21.92
Efficiency PhiPol (%)	44.30	46.21	42.38	40.66	43.48	43.79	43.31	45.95	47.71	44.45	41.47	41.42	46.75	46.45	46.66
Upper Hem. Efficiency (%)	31.38	34.61	32.37	32.41	35.24	34.13	33.07	33.45	37.82	33.34	32.05	35.81	37.82	35.63	36.66
Lower Hem. Efficiency (%)	28.23	30.02	30.90	27.77	31.05	30.33	30.67	32.68	31.32	32.53	30.31	26.28	31.38	33.45	31.92

4.3: ANT OTA-2.4G-3D

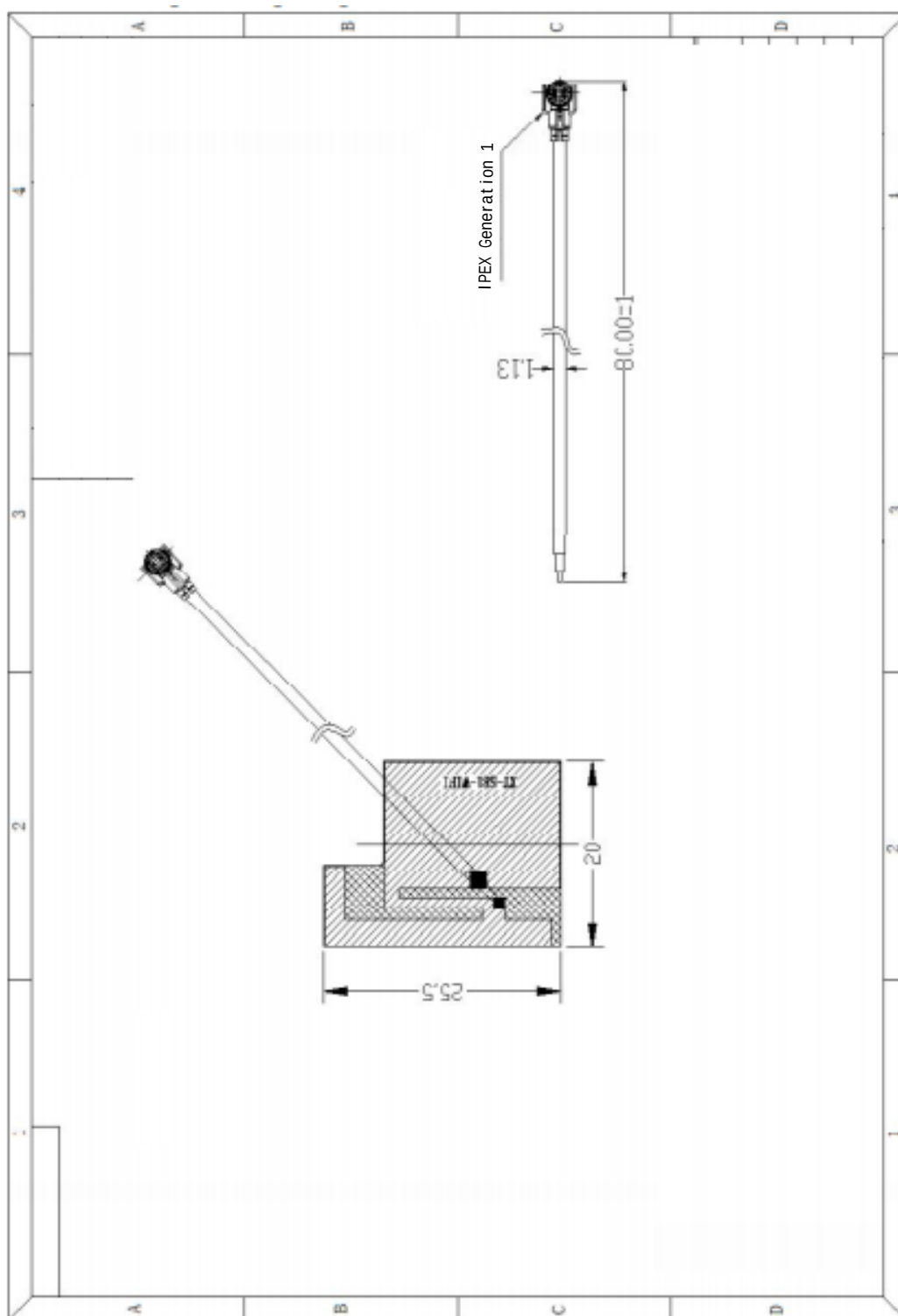


4.4: ANT OTA-5.8G-3D



5. attached figure:

■ 5.1: Antenna engineering diagram



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6. Maintenance Verification:

Experiment/ Test Project	Maintaining power	Inspection Number
Product Name/ Specification	S81-WiFi-antenna	Number of tests: 5PCS
Submission Date: 2025-10-20		Completion Date: 2025-10-20

Testing/Inspection Equipment:

1. Conduct 5 tests with a tensile tester. (Test meter as shown in the figure)



Note: Constant speed testing is required, and rapid speed testing is not allowed.

project condition	The maintenance force between SMA head and cable is $\geq 0.6\text{kgf}$				
Test count	1	2	3	4	5
Test results	0.6	0.7	0.7	0.9	0.7

Test/Inspection Result: PASS

Test/Inspection Judgment: ☒ PASS ☐ Fail ☐ no judgment

Test: Zhu Yongjian

Reviewed by: Wu Yanlong

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7. Reliability test:

Num	Test project	Test requirements	Test tool	Test results
1	Tin melt resistance	288 °C, 10S, no layering, no foaming	solder pot	Ok
2	solderability	245°C, 5s, Smooth solder surface, solder surface Accumulation $\geq 95\%$	solder pot	Ok
3	Pulling force	N/A	tension meter	Ok
4	Reverse pulling force	N/A	tension meter	Ok
5	Peel strength (covering film)	$\geq 0.35\text{kg/cm}$	Peel strength tester	Ok
6	Peel strength (copper foil)	$\geq 0.8\text{kg/cm}$	Peel strength tester	Ok
7	Hot melt adhesive fluidity	0.1~0.15	/	Ok

After opening, please carefully check if the item is intact. If there is any damage, please contact us immediately.