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Shenzhen Qianmu Communication Technology Co., Ltd.

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Hangcheng Subdistrict, Bao'an District, Shenzhen

Antenna Type: Internal Antenna

Date: 2025.04.05

Radiofrequency: XU JUN JIE



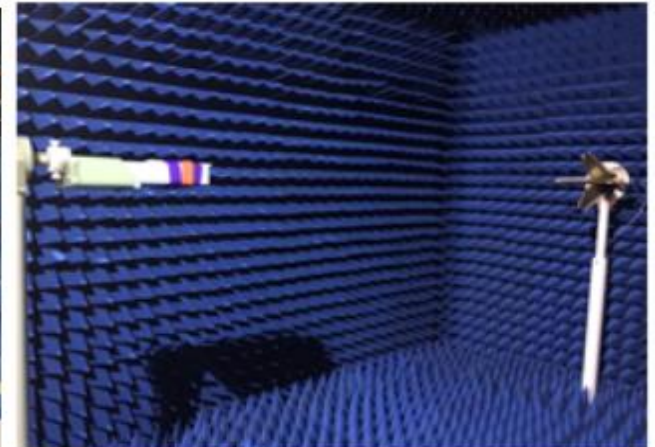
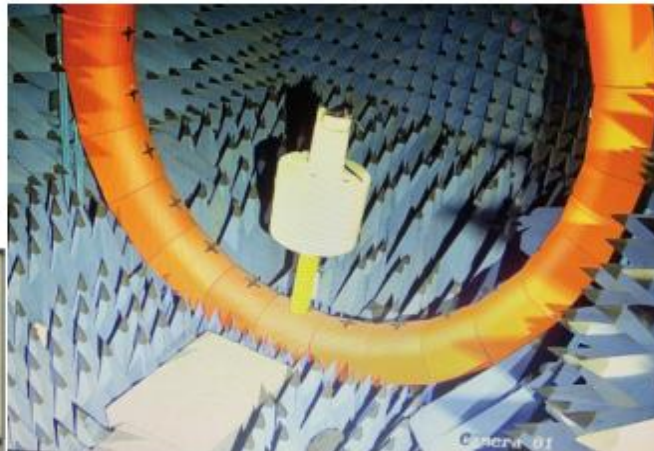
catalogue

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testing environment

	test item	equipment
1. S-parameters (S-parameter)	1. Return Loss (Log Magnitude) 2. Voltage Standing Wave Ratio (SWR)	Network Analyzer: Agilent E5071B × 2 HP 8753D PROTEK A338
2. Active testing (Active)	1. Transmitter Power (TRP) 2. Receiver Sensitivity (TIS) 3.frequency error 4.Screen off, Screen on	1. Darkroom: Feitu 7×4×3 m (24 probes, 3D) Chamber ETS 5x3x3 m (3D) Chamber 2. Comprehensive Test Instrument: Agilent 8960×2 CMW500 ×3/CMU200
3.Passive Testing (Passive)	1. Antenna Gain 2. Antenna Efficiency	1. Darkroom: Feitu 7×4×3 m (24 probe, 3D) Chamber ETS 5x3x3 m (3D) Chamber 2. Network Analyzer: Agilent E5071B





Records of Previous Commissioning Tests

date	edition	Cutting pattern	Troubleshooting Record Instructions
2025. 04. 05	A		Test prototype

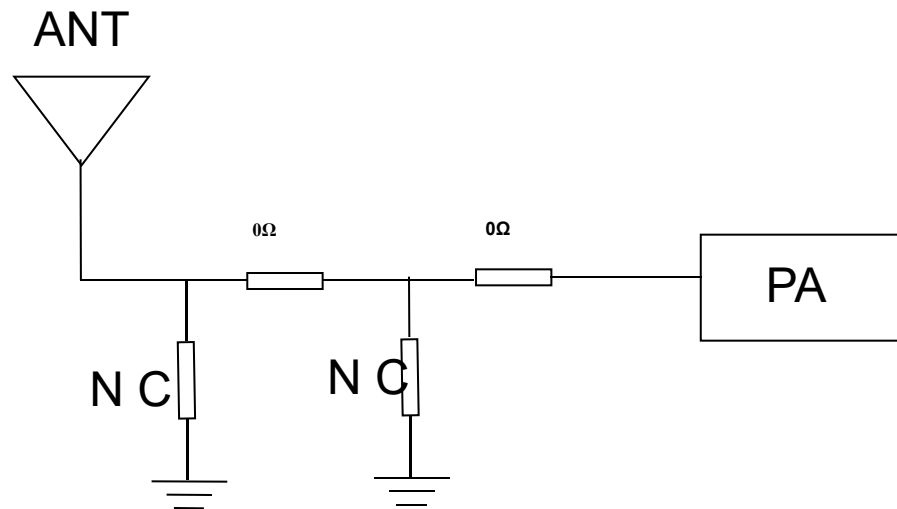


Full System Commissioning Instructions

type	projector						
Cutting pattern	motherboard						
Antenna Overview	main antenna	frequency range		Antenna Status	Antenna type	Design Area	Matching modifications
		2G	N/A	N/A	N/A	N/A	N/A
		3G	N/A				
		4G	N/A				
	Other antennas	WIFI/BT	2. 4/5G	/	PIFA	motherboard	not have
		GPS	N/A				
		Episodes	N/A	N/A	N/A	N/A	N/A
Prototype Status	Test prototype			Environmental Treatment	not have		



Matching Circuit – Antenna



Matching circuit remains unchanged



Passive – Efficiency/Gain

FEITUKEJI											
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)	-3.99	-4.08	-4.14	-4.29	-4.37	-4.42	-4.45	-4.62	-4.81	-4.87	-4.95
Peak EIRP (dBm)	1.47	1.36	1.24	1.02	0.89	0.80	0.87	0.79	0.65	0.51	0.28
Directivity (dBi)	5.46	5.44	5.39	5.32	5.26	5.22	5.31	5.41	5.45	5.38	5.23
Efficiency (dB)	-3.99	-4.08	-4.14	-4.29	-4.37	-4.42	-4.45	-4.62	-4.81	-4.87	-4.95
Efficiency (%)	39.90	39.10	38.50	37.20	36.60	36.10	35.90	34.50	33.10	32.60	32.00
Gain (dBi)	1.47	1.36	1.24	1.02	0.89	0.80	0.87	0.79	0.65	0.51	0.28
NHPRP $\pm \pi/4$ (dBm)	-5.48	-5.58	-5.65	-5.81	-5.89	-5.93	-5.95	-6.13	-6.32	-6.38	-6.48
NHPRP $\pm \pi/6$ (dBm)	-7.01	-7.10	-7.17	-7.31	-7.38	-7.42	-7.44	-7.62	-7.81	-7.88	-7.99
NHPRP $\pm \pi/8$ (dBm)	-8.20	-8.29	-8.34	-8.47	-8.53	-8.56	-8.57	-8.74	-8.92	-8.99	-9.12
Upper Hem. PRP (dBm)	-5.88	-5.94	-6.01	-6.18	-6.28	-6.35	-6.38	-6.57	-6.75	-6.79	-6.84
Lower Hem. PRP (dBm)	-8.50	-8.64	-8.71	-8.82	-8.86	-8.88	-8.89	-9.05	-9.24	-9.32	-9.47
Upper Hem. PRP (%)	25.81	25.44	25.04	24.07	23.57	23.19	23.00	22.05	21.16	20.92	20.71
Lower Hem. PRP (%)	14.13	13.67	13.47	13.13	13.01	12.94	12.92	12.43	11.91	11.70	11.30

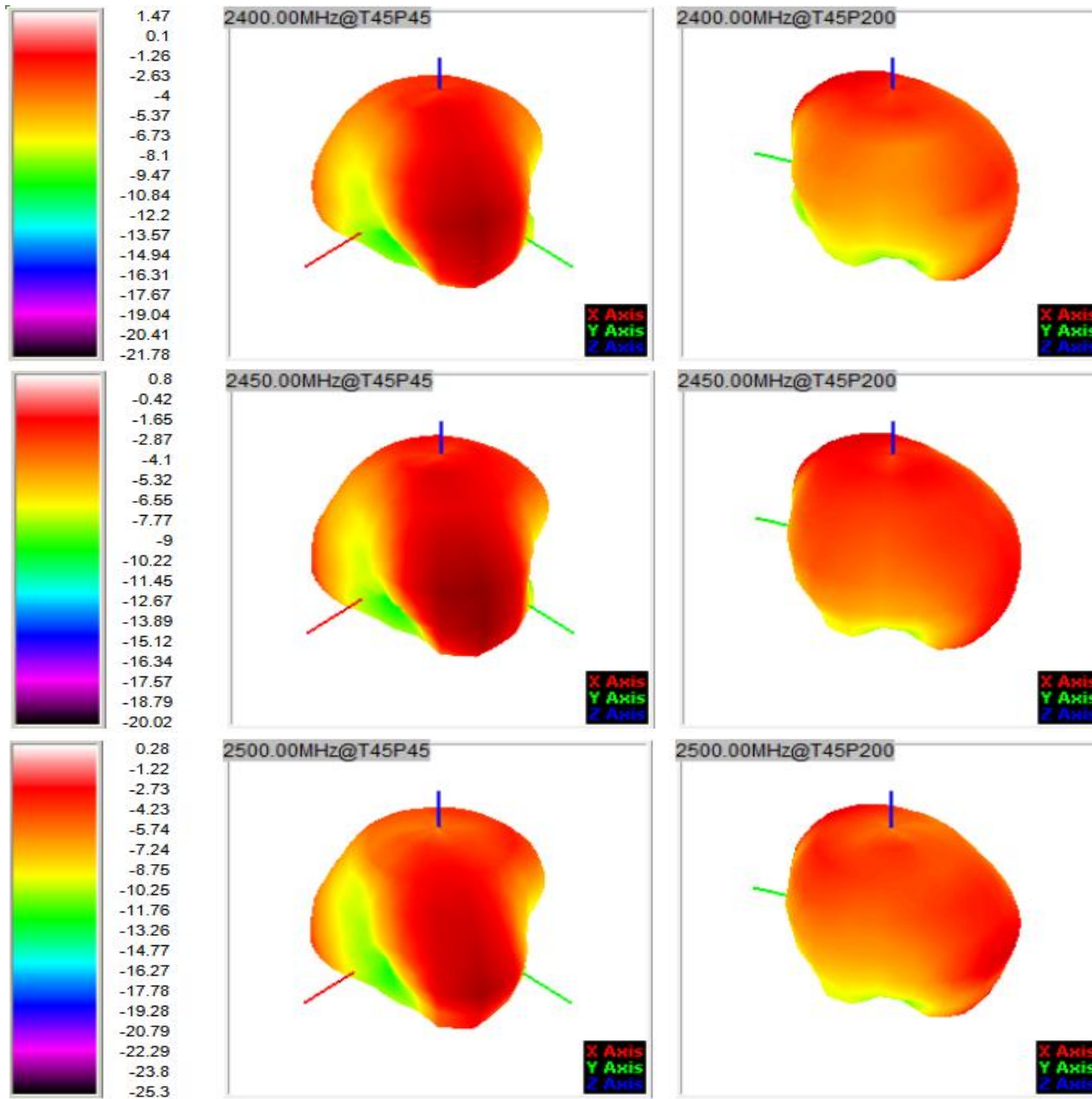


Passive – Efficiency/Gain

FEITUKEJI															
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
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	0.00	0.00	0.00	0.00
Tot. Rad. Pwr. (dBm)	-3.66	-3.38	-3.34	-3.00	-3.32	-3.72	-3.25	-3.66	-4.02	-4.03	-4.46	-4.66	-4.75	-5.28	-5.03
Peak EIRP (dBm)	0.56	1.15	1.31	1.82	1.77	1.48	1.93	1.19	0.48	0.34	0.46	0.30	-0.33	-0.72	-0.60
Directivity (dBi)	4.22	4.52	4.65	4.81	5.09	5.20	5.18	4.85	4.49	4.37	4.93	4.96	4.43	4.55	4.43
Efficiency (dB)	-3.66	-3.38	-3.34	-3.00	-3.32	-3.72	-3.25	-3.66	-4.02	-4.03	-4.46	-4.66	-4.75	-5.28	-5.03
Efficiency (%)	43.00	46.00	46.30	50.20	46.50	42.40	47.30	43.10	39.60	39.60	35.80	34.20	33.50	29.70	31.40
Gain (dBi)	0.56	1.15	1.31	1.82	1.77	1.48	1.93	1.19	0.48	0.34	0.46	0.30	-0.33	-0.72	-0.60
NHPRP $\pm\pi/4$ (dBm)	-5.29	-5.10	-5.09	-4.62	-5.01	-5.53	-4.99	-5.42	-5.73	-5.63	-6.08	-6.29	-6.36	-6.82	-6.54
NHPRP $\pm\pi/6$ (dBm)	-6.89	-6.77	-6.78	-6.24	-6.75	-7.36	-6.64	-7.12	-7.41	-7.23	-7.70	-7.89	-7.94	-8.39	-8.13
NHPRP $\pm\pi/8$ (dBm)	-8.16	-8.11	-8.11	-7.50	-8.17	-8.82	-7.95	-8.50	-8.78	-8.51	-9.01	-9.15	-9.20	-9.69	-9.43
Upper Hem. PRP (dBm)	-5.97	-5.52	-5.51	-5.35	-5.47	-5.86	-5.57	-5.92	-6.47	-6.62	-7.04	-7.35	-7.58	-8.10	-8.00
Lower Hem. PRP (dBm)	-7.51	-7.47	-7.39	-6.78	-7.41	-7.83	-7.08	-7.57	-7.68	-7.50	-7.96	-8.02	-7.96	-8.48	-8.08
Upper Hem. PRP (%)	25.32	28.07	28.11	29.15	28.39	25.94	27.71	25.57	22.57	21.77	19.77	18.43	17.46	15.48	15.84
Lower Hem. PRP (%)	17.73	17.91	18.24	21.00	18.14	16.49	19.60	17.49	17.07	17.79	16.01	15.78	16.01	14.19	15.56

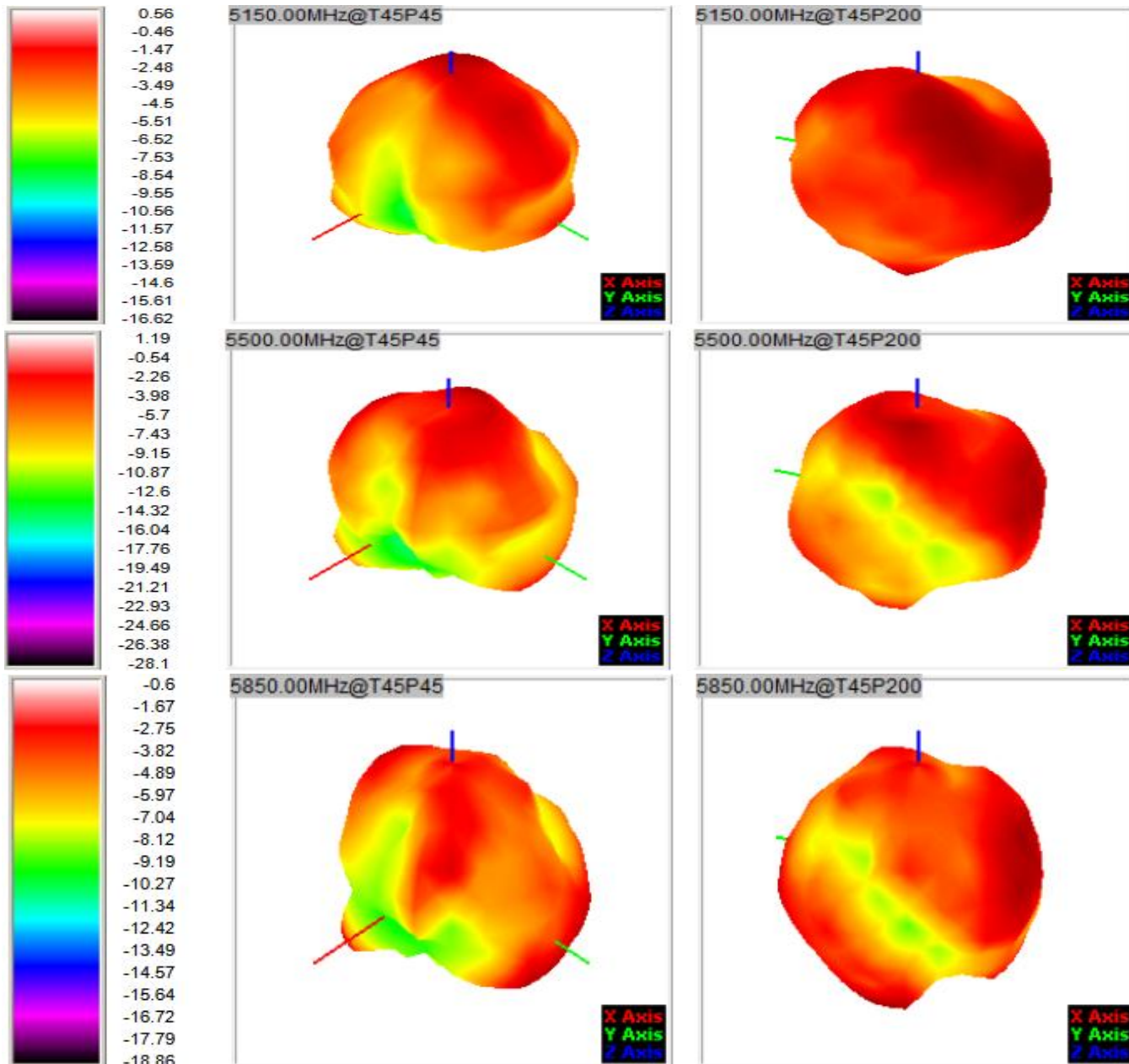


Passive 3D Pattern





Passive 3D Pattern





Technical drawing of a mechanical part with dimensions and a coordinate system. The part is shown in a 2D view with the following dimensions (in mm):

- Overall width: 26.1
- Overall height: 9.1
- Top left corner: 2.3 (vertical), 5.8 (horizontal)
- Top right corner: 4.1 (vertical)
- Internal horizontal dimensions: 17.1, 6.5, 3.5, 3.1, 1.6, 7, 1, 3.6
- Internal vertical dimensions: 2, 1.6, 3.6
- Coordinate system: Point 1 is at the bottom right corner, Point 2 is at the bottom left corner of the central rectangular feature.
- Reference lines: Two lines labeled "REF" are shown, one horizontal and one vertical, intersecting at the origin of the coordinate system.

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Tip Instructions

- I. This data is solely based on samples provided by the customer and does not represent the final mass-production version.
- II. We kindly ask the customer to carefully review the instructions for matching circuit modifications and environmental treatment provided in our report.
- III. Prior to mass production, please cooperate by providing trial production prototypes for our second verification; if any changes are made to materials, software, or operating environment:
For matters such as processing, please notify us in advance.
- IV. If the customer requires a third-party retest or wishes to send samples for testing, please first undergo verification at our company before submitting the samples; this measure is intended to prevent machine-related issues.
There are differences from the debugging machine.
- V. Our company does not accept machine data obtained through our calibration process or other data from darkroom testing; however, such data may be used as a reference.
Except for the certified darkroom test, if there are discrepancies in the data, the debugging device shall be used as the definitive reference to identify the root cause.



thanks !

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