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Specializing in antenna solutions, design, and manufacturing

Customer: Haigerson

project :

Date: 2025.11.15

Frequency: XU JUN JIE



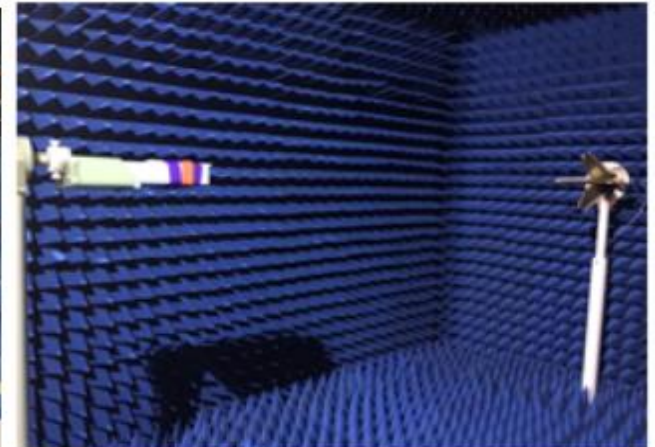
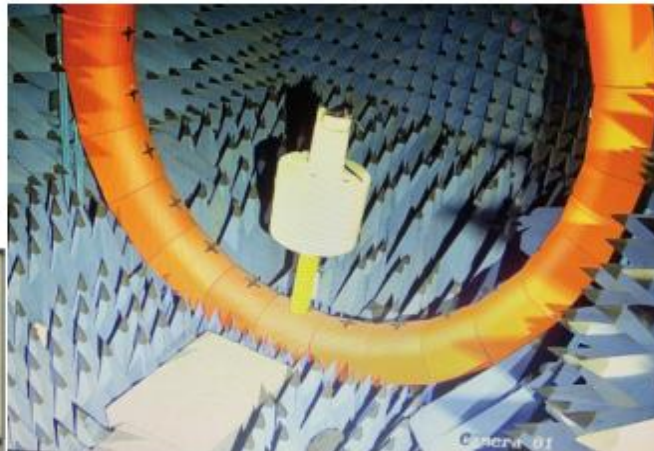
catalogue

1. testing environment
2. Description of previous debugging records:
3. Description of the matching circuit and the antennas external shape
4. Active Testing Data
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6. Simulation test of call current sound characteristics
7. Environmental Treatment Instructions
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10. sum up



testing environment

	test item	equipment
1. S Parameters (S-parameter)	1. Echo Loss (Log Mag) 2. Voltage Standing Wave Ratio (SWR)	Network Analyzer: Agilent E5071B × 2 HP 8753D PROTEK A338
2. Active Testing (Active)	1. Transmission Power (TRP) 2. Detection sensitivity (TIS) 3.frequency error 4.Screen Off, Screen On	1. Dark chamber: Feitu model, dimensions 7×4×3 m (equipped with 24 probes for 3D imaging) ETS 5x3x3 m (3D) Chamber 2. Comprehensive tester: Agilent 8960 × 2 CMW500 ×3/CMU200
3.Passive Testing (Passive)	1. Antenna Gain 2. Antenna Efficiency (Efficiency)	1. Dark chamber: Feitu model, dimensions 7×4×3 m (equipped with 24 probes for 3D imaging) ETS 5x3x3 m (3D) Chamber 2. Network Analyzer: Agilent E5071B





Description of previous debugging records:

date	edition	Pattern	Debugging Record Description
2025. 11. 15	A		Debugging Prototype

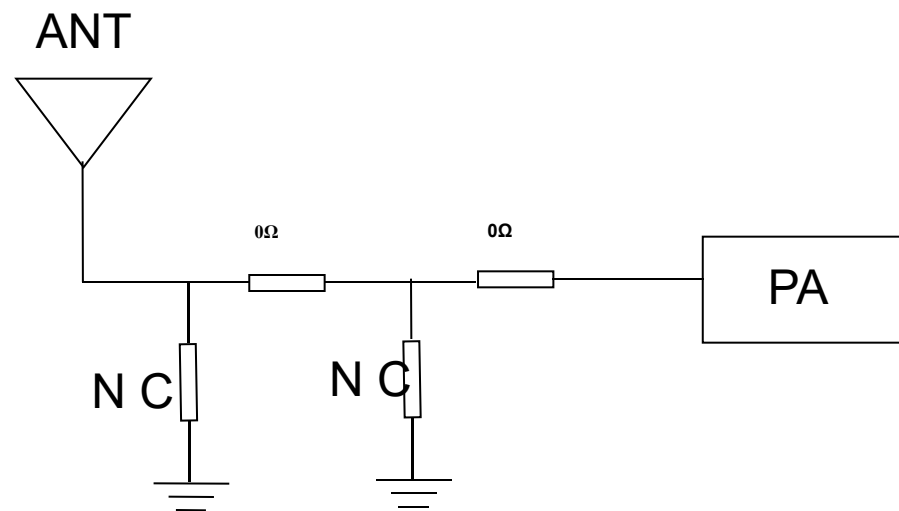


Complete System Debugging Instructions

type	projector						
Pattern	motherboard						
Antenna Overview	main antenna	frequency range		Antenna Status	Antenna Type	Design Area	Match Changes
		2G	N/A	N/A	N/A	N/A	N/A
		3G	N/A				
		4G	N/A				
	Other Antennas	WIFI/BT	2. 4/5G	/	Internal	motherboard	not have
		GPS	N/A				
		Episode	N/A	N/A	N/A	N/A	N/A
Prototype Status	Debugging Prototype			Environmental Treatment	not have		



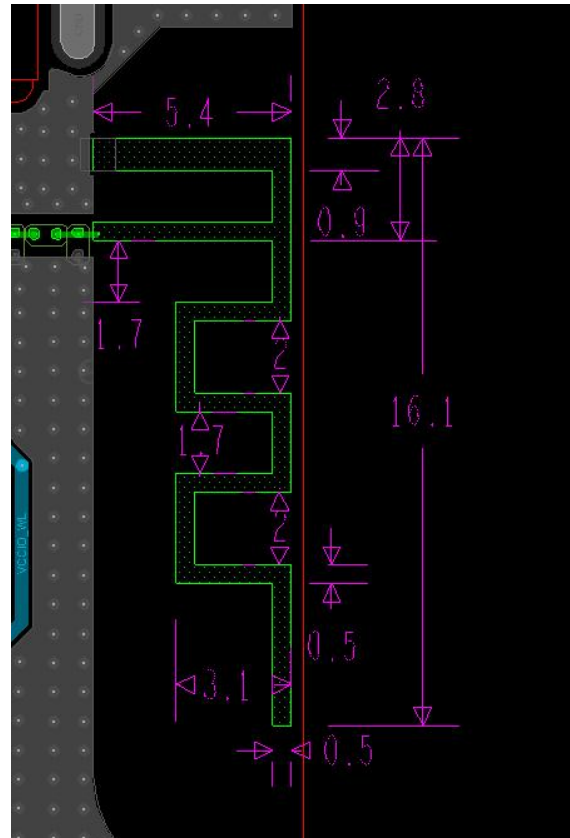
Matching Circuit Description



The matching circuit remains unchanged



Antenna Shape



Unit: mm

Antenna Type: Internal Antenna



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



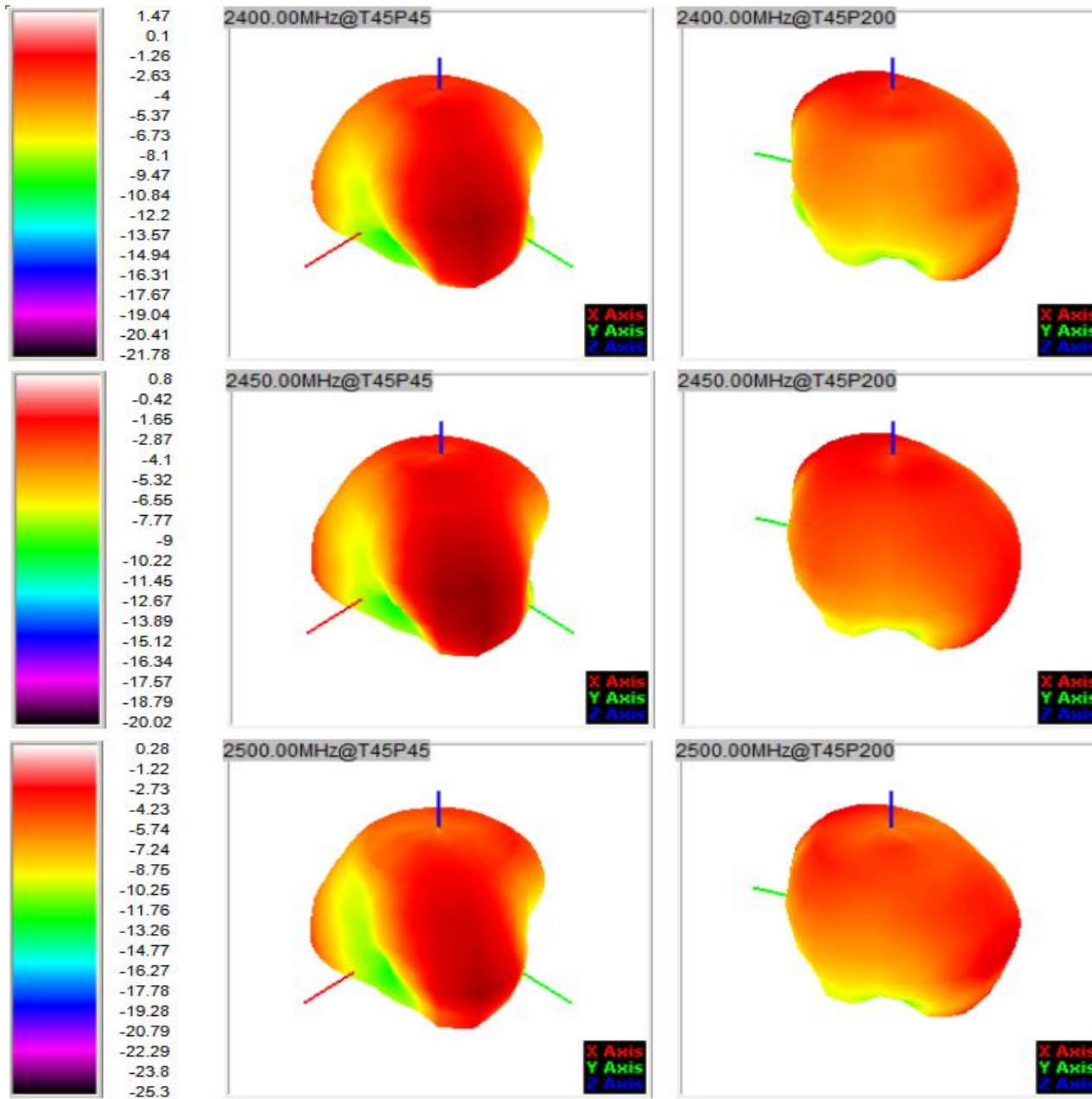
Passive Efficiency/Gain

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

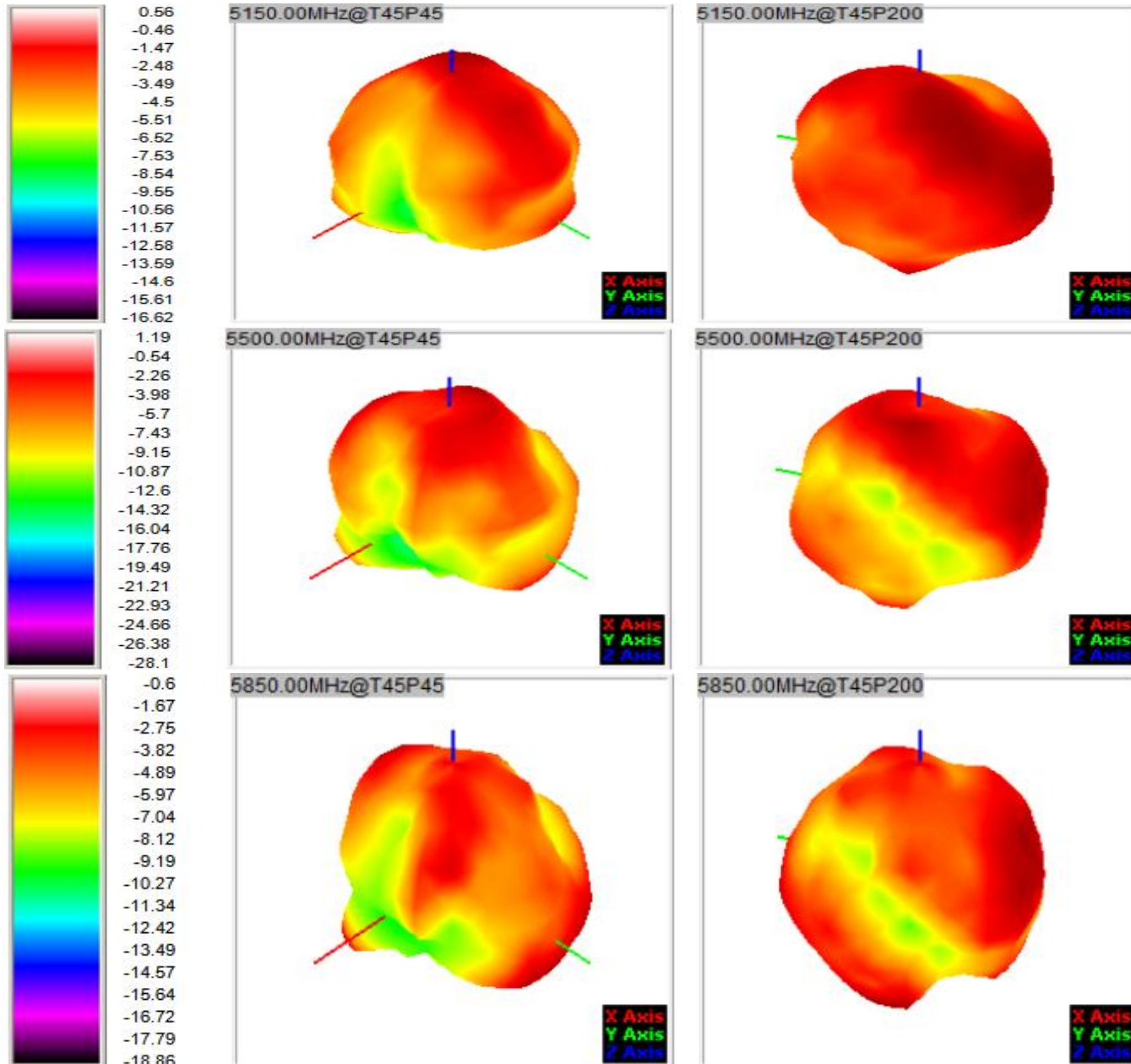


Passive 3D Pattern





Passive 3D Pattern





Prompt Description

1. This data refers solely to the information generated from customer-provided prototypes and does not represent the final mass production state.
2. Please carefully review the modifications to the matching circuit and environmental treatment instructions in our companys report.
3. Prior to mass production, please provide trial prototypes for our second verification; any changes in materials, software, or environment must be reported accordingly.
Please notify us in advance for processing.
4. If the customer requires third-party retesting or needs samples sent for testing, please have them verified at our company before submitting the sample to prevent issues with the machine.
Different from the debugging machine.
5. Our company does not accept machine data obtained outside debugging procedures or data from other darkroom tests, but such data may be referenced.
Except for the certification darkroom, if there are discrepancies in the data, refer to the debugging machine for the exact cause.



thanks !

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Shenzhen Qianmu Communication Technology Co.,Ltd.