



Shenzhen Qianmu Communication Technology Co., Ltd. Shenzhen Qianmu Communication Technology Co., Ltd.

Specializing in antenna solutions, design, and production

client :

Project: X500

Date: 2024.12.06

Frequency: XU JUN JIE



Project Image



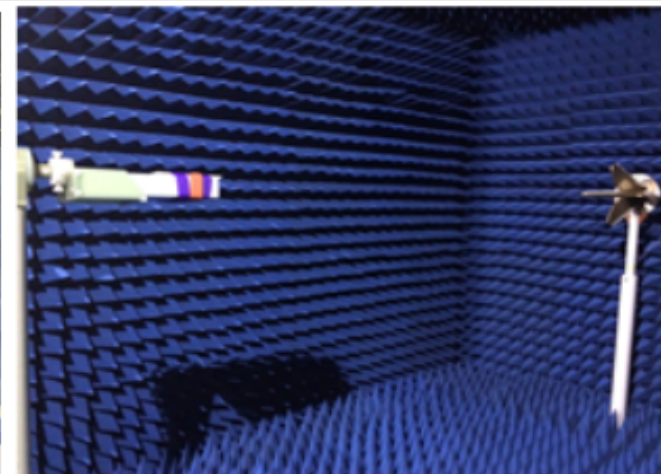
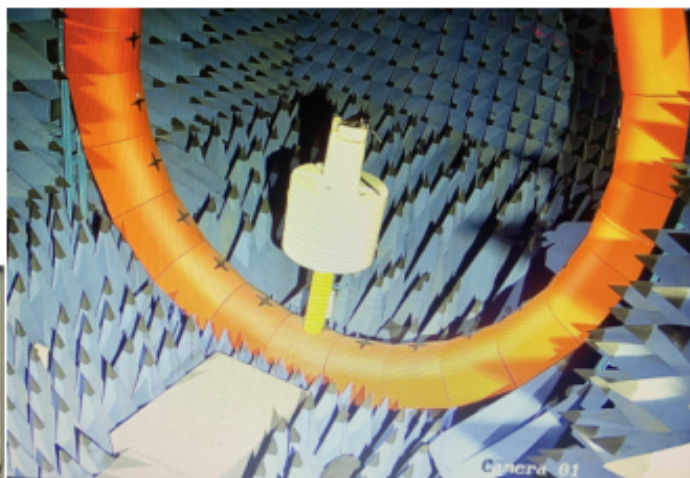
catalogue

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testing environment

	test item	equipment
1. S-parameter (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. Reception Sensitivity (TIS) 3.frequency error 4.Screen off, screen on	1. Dark chamber: Feitu 7x4x3 m (24-probe 3D) Chamber 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. Darkroom: Feitu 7x4x3 m (24-probe 3D) Chamber ETS 5x3x3 m (3D) Chamber 2. Network Analyzer: Agilent E5071B





Description of previous debugging records

date	edition	Pattern	Debugging Record Note
2024.12.6	A		FPC-like, prototype debugging sample

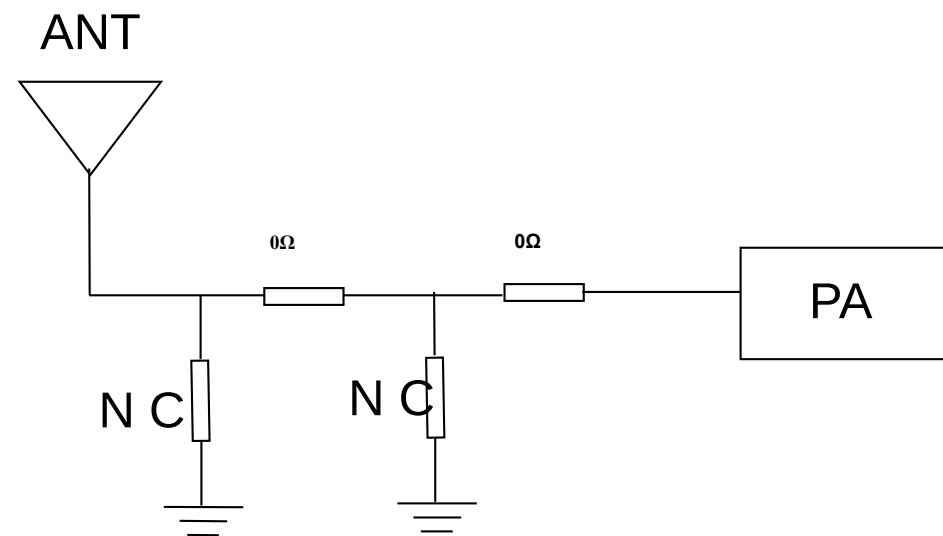


Complete System Debugging Instructions

type	projector						
Pattern	motherboard						
Antenna Overview	main antenna	frequency range		Antenna Status	Antenna Type	Design Area	Match Change
		2G	N/A	N/A	N/A	N/A	N/A
		3G	N/A				
		4G	N/A				
	Other Antennas	WIFI/BT	2. 4/5G	FPC appearance	PIFA	Shell material	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-Antenna



The matching circuit remains unchanged.



Active-TRP/TIS

Antenna Status	FPC appearance		
WiFi 2400–2500MHz 802.11b 11Mbps			
Channel	1	6	11
TRP	14.23	14.07	14.19
TIS	−79.23	−79.56	−80.21
WiFi 5000–5800MHz 802.11a 54Mbps			
Channel	64	161	165
TRP	12.39	12.17	12.36
TIS	−68.78	−69.36	−69.31



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)	-4.74	-4.64	-4.60	-4.56	-4.49	-4.26	-4.04	-3.90	-3.82	-3.66	-3.53
Peak EIRP (dBm)	1.61	1.70	1.98	2.19	2.35	2.43	2.28	1.93	2.09	2.29	2.37
Directivity (dBi)	6.35	6.34	6.58	6.75	6.84	6.69	6.32	5.84	5.91	5.95	5.91
Efficiency (dB)	-4.74	-4.64	-4.60	-4.56	-4.49	-4.26	-4.04	-3.90	-3.82	-3.66	-3.53
Efficiency (%)	33.60	34.30	34.70	35.00	35.60	37.50	39.40	40.70	41.50	43.10	44.30
Gain (dBi)	1.61	1.70	1.98	2.19	2.35	2.43	2.28	1.93	2.09	2.29	2.37
NHPRP $\pm$ Pi/4 (dBm)	-6.69	-6.63	-6.58	-6.47	-6.35	-6.08	-5.82	-5.65	-5.54	-5.35	-5.23
NHPRP $\pm$ Pi/6 (dBm)	-8.37	-8.32	-8.22	-8.07	-7.94	-7.68	-7.44	-7.30	-7.21	-7.04	-6.92
NHPRP $\pm$ Pi/8 (dBm)	-9.62	-9.58	-9.46	-9.29	-9.17	-8.94	-8.74	-8.63	-8.54	-8.36	-8.23
Upper Hem. PRP (dBm)	-7.96	-7.67	-7.50	-7.42	-7.38	-7.20	-7.01	-6.90	-6.86	-6.73	-6.59
Lower Hem. PRP (dBm)	-7.55	-7.63	-7.73	-7.71	-7.61	-7.35	-7.09	-6.92	-6.81	-6.61	-6.50
Upper Hem. PRP (%)	16.01	17.09	17.79	18.10	18.26	19.06	19.92	20.40	20.60	21.25	21.91
Lower Hem. PRP (%)	17.57	17.24	16.86	16.93	17.34	18.42	19.52	20.31	20.86	21.83	22.40

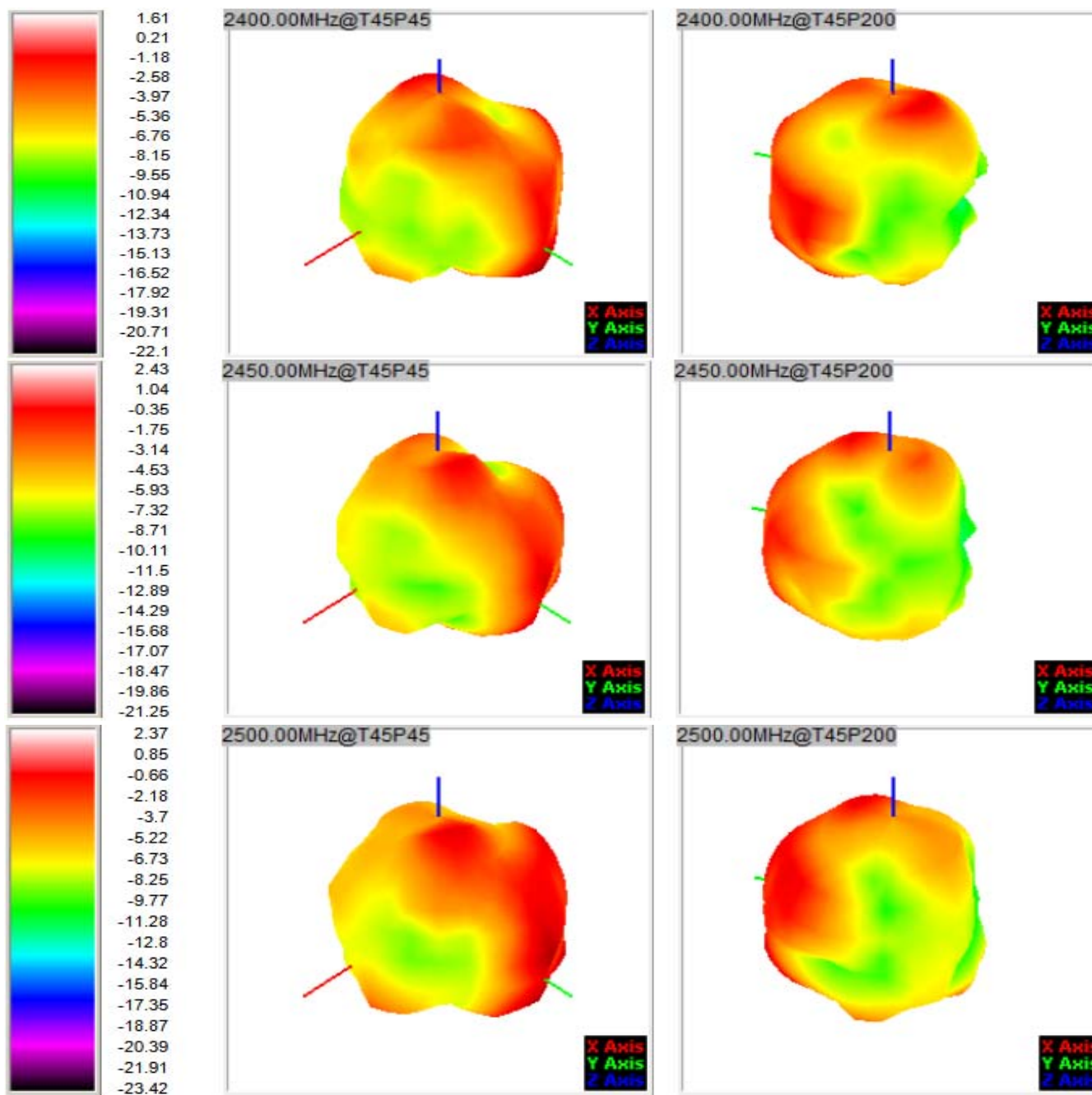


Passive Efficiency/Gain

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)	-4.26	-4.26	-4.22	-3.83	-4.35	-4.68	-4.06	-4.45	-4.52	-4.12	-4.38	-4.21	-3.90	-4.15	-3.79
Peak EIRP (dBm)	1.91	1.69	1.28	1.54	1.55	2.11	3.13	2.67	2.27	1.76	1.68	2.08	2.66	2.34	3.51
Directivity (dBi)	6.17	5.95	5.49	5.37	5.90	6.78	7.19	7.13	6.78	5.89	6.06	6.29	6.56	6.49	7.30
Efficiency (dB)	-4.26	-4.26	-4.22	-3.83	-4.35	-4.68	-4.06	-4.45	-4.52	-4.12	-4.38	-4.21	-3.90	-4.15	-3.79
Efficiency (%)	37.50	37.50	37.90	41.40	36.80	34.10	39.20	35.90	35.30	38.70	36.50	37.90	40.70	38.50	41.80
Gain (dBi)	1.91	1.69	1.28	1.54	1.55	2.11	3.13	2.67	2.27	1.76	1.68	2.08	2.66	2.34	3.51
NHPRP $\pm\pi/4$ (dBm)	-5.57	-5.66	-5.74	-5.26	-5.83	-6.33	-5.61	-5.96	-5.97	-5.47	-5.75	-5.51	-5.21	-5.46	-5.07
NHPRP $\pm\pi/6$ (dBm)	-7.18	-7.35	-7.45	-6.83	-7.42	-8.03	-7.16	-7.48	-7.52	-6.94	-7.25	-7.01	-6.70	-6.94	-6.57
NHPRP $\pm\pi/8$ (dBm)	-8.49	-8.81	-8.94	-8.11	-8.70	-9.31	-8.30	-8.62	-8.72	-8.08	-8.47	-8.24	-7.89	-8.11	-7.75
Upper Hem. PRP (dBm)	-7.30	-7.27	-7.37	-7.11	-7.47	-7.83	-7.41	-7.91	-8.12	-7.72	-7.86	-7.89	-7.67	-7.75	-7.50
Lower Hem. PRP (dBm)	-7.24	-7.28	-7.08	-6.59	-7.25	-7.55	-6.76	-7.06	-7.01	-6.62	-6.96	-6.65	-6.26	-6.64	-6.21
Upper Hem. PRP (%)	18.63	18.77	18.30	19.47	17.91	16.49	18.17	16.20	15.42	16.90	16.36	16.27	17.09	16.78	17.80
Lower Hem. PRP (%)	18.86	18.69	19.58	21.90	18.85	17.58	21.07	19.66	19.93	21.78	20.13	21.64	23.64	21.68	23.95

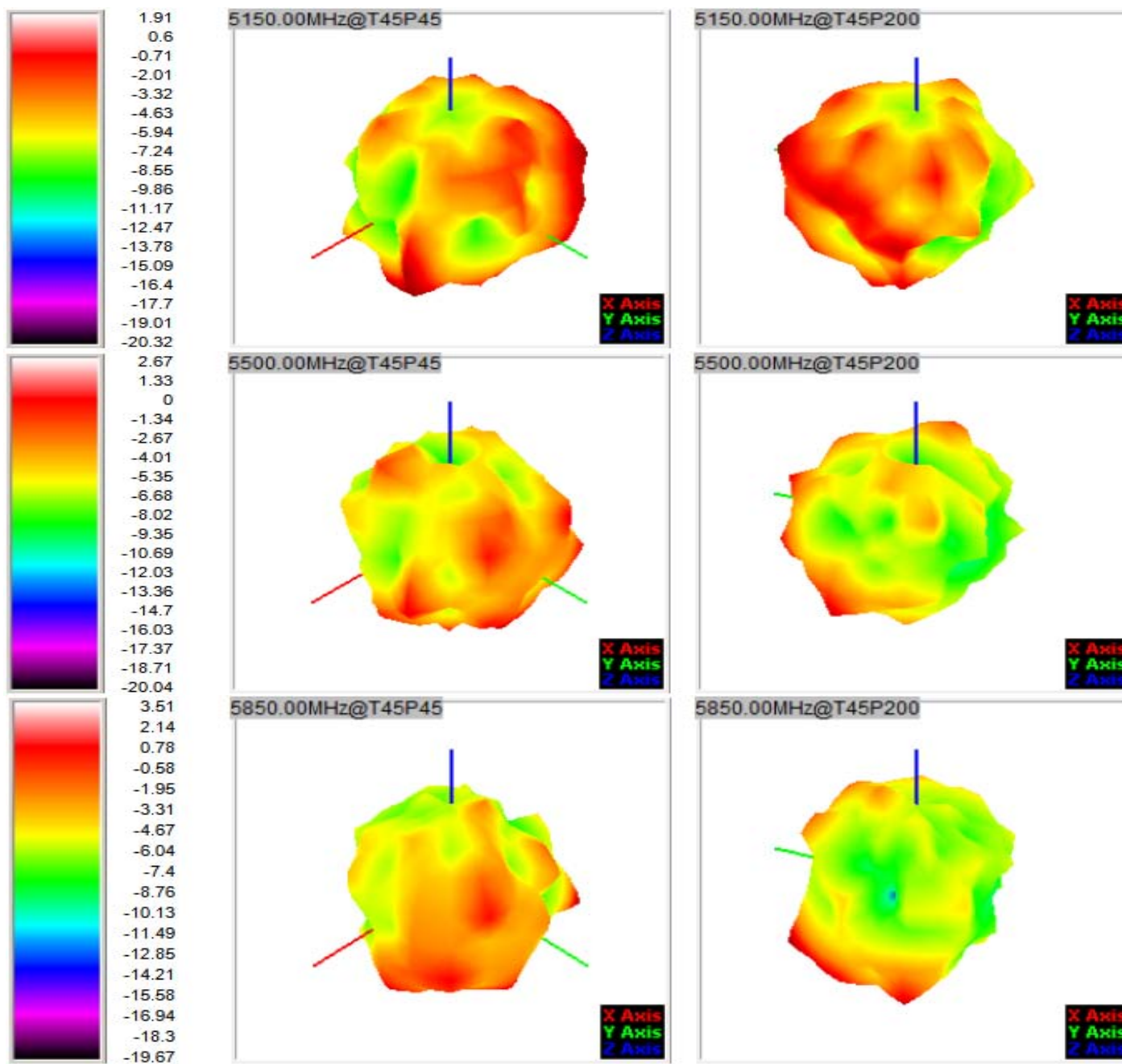


Passive 3D Pattern



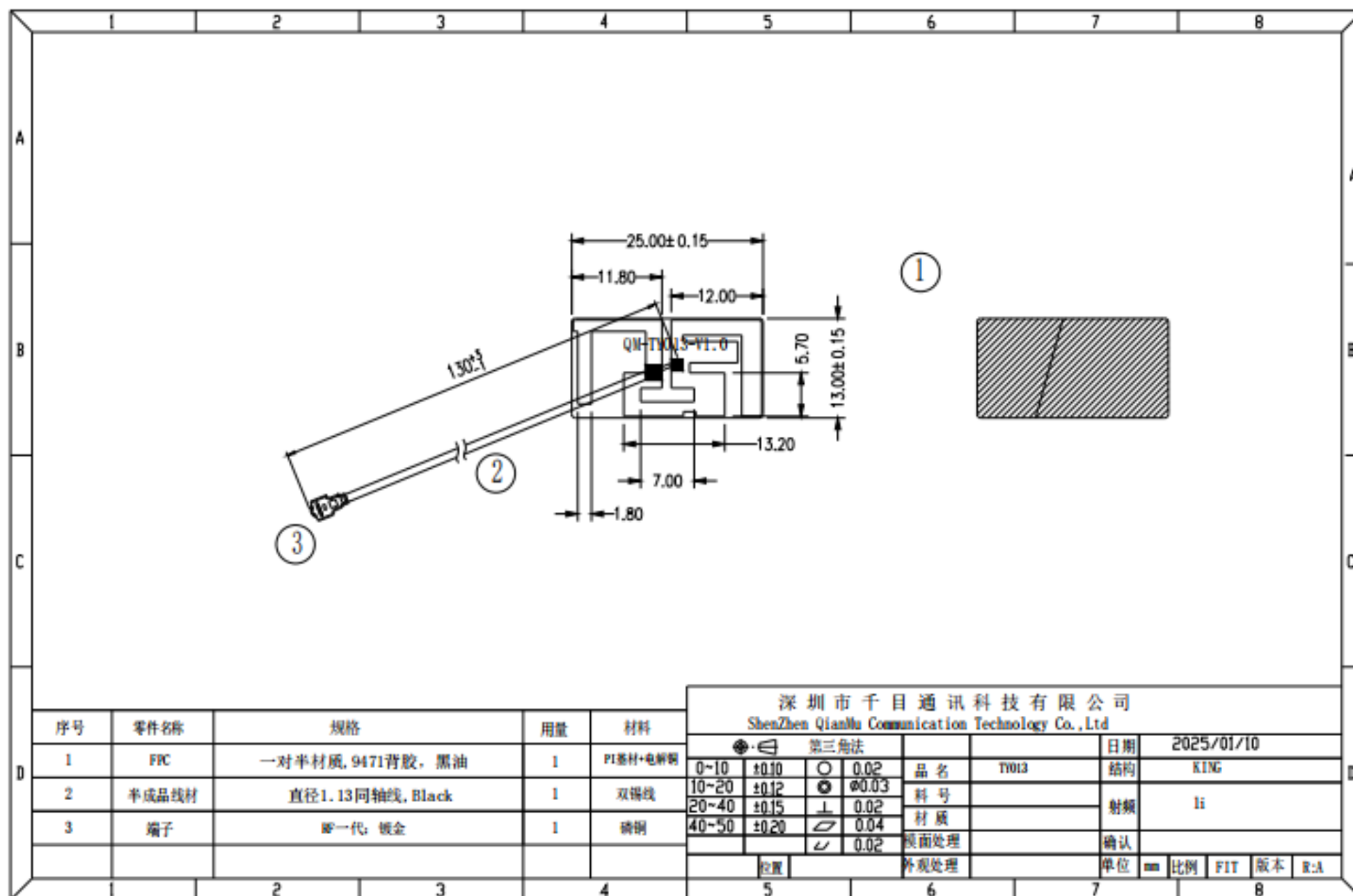


Passive 3D Pattern





Antenna size diagram:





Prompt Description

1. This data pertains solely to the data generated during the clients prototype testing phase and does not reflect the final mass-production status.
2. Please carefully review the modifications to the matching circuit and the environmental treatment instructions in our companys report.
3. Prior to mass production, please provide trial production prototypes for our companys secondary verification; any changes to materials, software, or operating environment must be documented accordingly.
Please inform us in advance regarding any processing requirements.
4. If the customer requires third-party retesting or needs the sample to be tested, please have it verified by our company before submitting the prototype to prevent machine malfunctions.
It differs from the debugging machine.
5. Our company does not accept machine data obtained outside our debugging processes or data from tests conducted in other darkrooms; however, such data may be referenced for reference purposes.
Except for the certification darkroom, if any discrepancies are found in the data, the debugging machine shall be used as the definitive reference to identify the cause.



thanks !

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