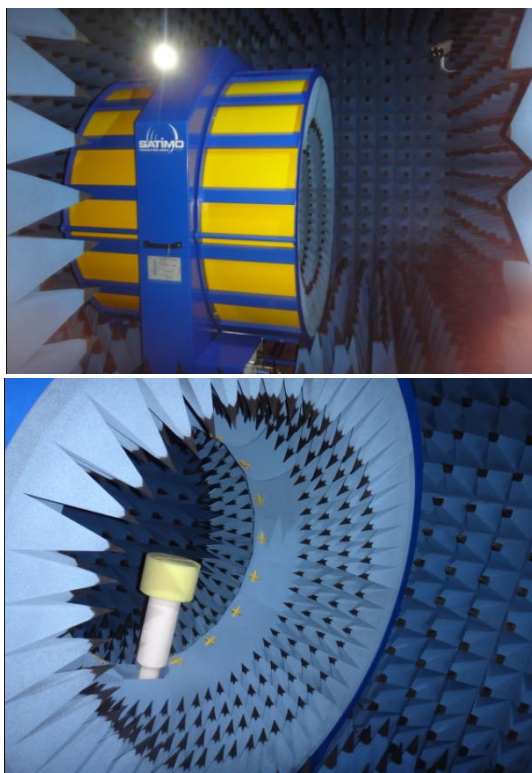


Specifications for TEN 2.4G Antenna

Customer Name	Shishe (Shenzhen) Technology Co., Ltd.	antenna Name	TEN 2.4G Antenna
Test frequency band	2.4G	antenna type	Onboard Antenna
RF Engineer	Zhuang Gong	Structural Engineer	
Date	May 26, 2025	Tabulator	Zou Gong



Imported from France's SATIMO StarLab 3D laboratory, it can accurately and quickly test the TRP, TIS, efficiency, gain, apple chart, directional chart and other parameter data of communication terminal products such as mobile phones, tablets and laptops.

Test environment and instruments and equipment

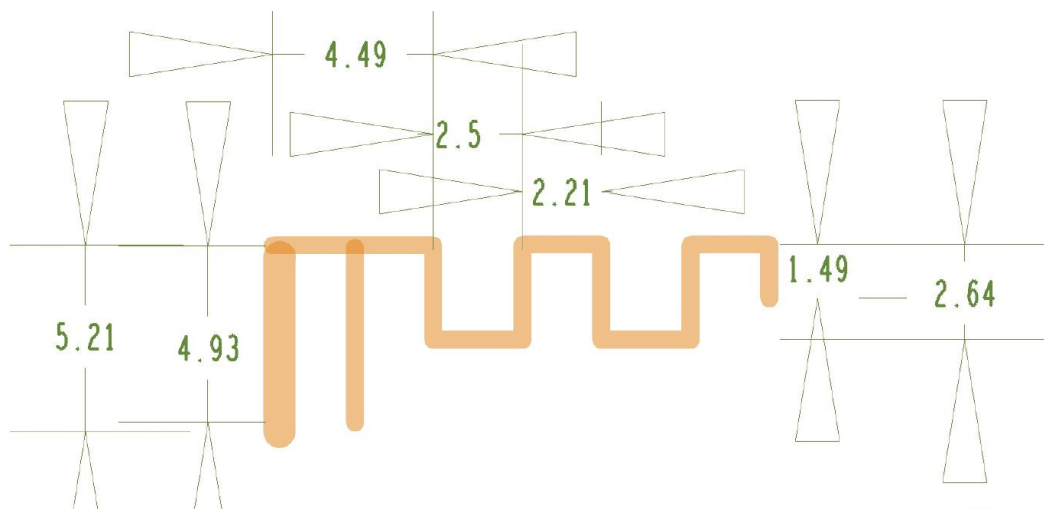
Test environment:	Test equipment:
Temperature: 10℃-- +30℃	5071C network analyzer
Relative humidity: ≤80%(+40℃)	ETS microwave dark room
Atmospheric pressure: 750mmkg±30mmkg	

- ❑ Summary of Report Version
- ❑ Physical image of antenna
- ❑ Antenna standing wave ratio and return loss
- ❑ Antenna matching circuit
- ❑ Gain, efficiency, radiation pattern

1: Summary of Report Version

version	date	Content Overview
V1.0	2025/05/26	Initial version

2: Physical image of antenna

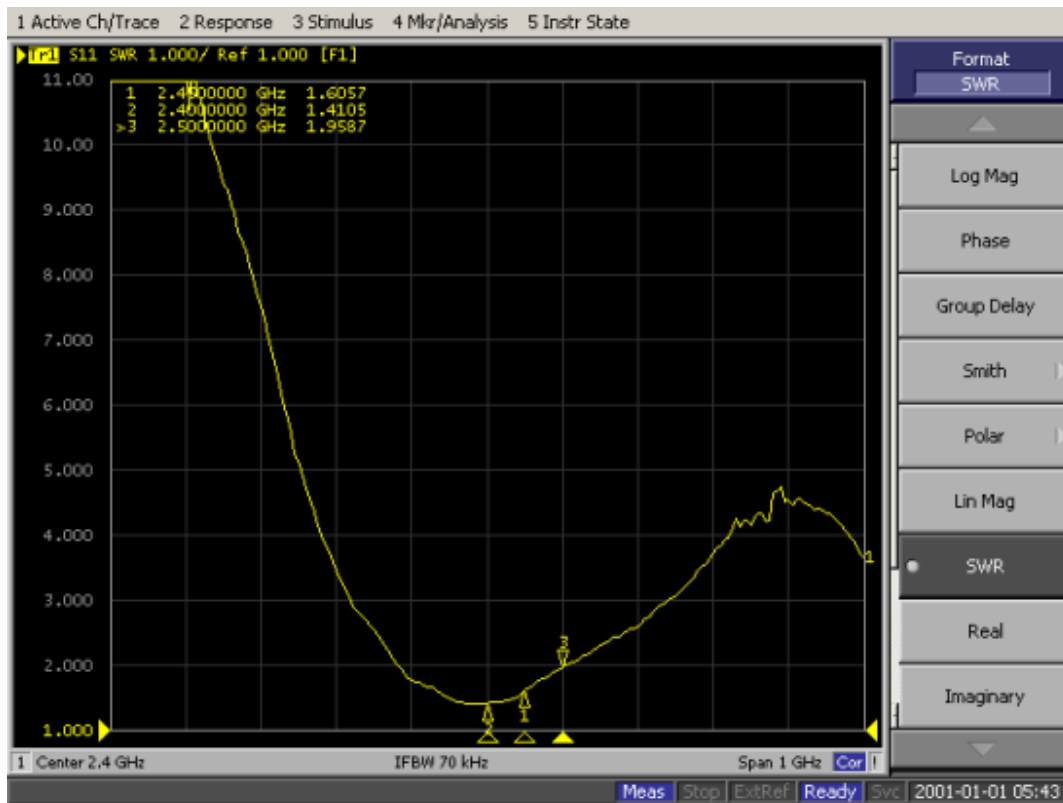


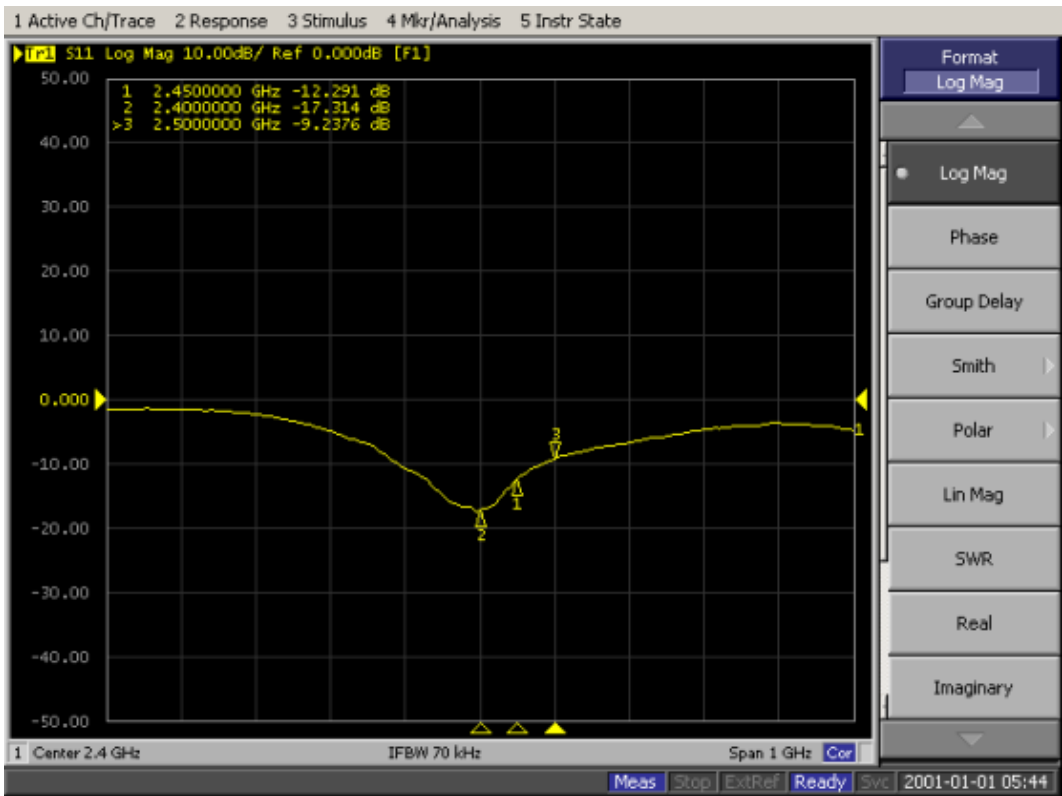
Unit: mm

3: General product specifications

NO.	ITEMS	DETAILS
1	Frequency band	2400-2500MHz
2	VSWR	≤2.0
3	GAIN	1.35 dBi
4	Impedance	50Ω
5	Antenna type	Onboard Antenna
6	operating temperature	-20℃ to +65℃
7	storage temperature	-30℃ to 75℃

4: Antenna standing wave ratio and return loss

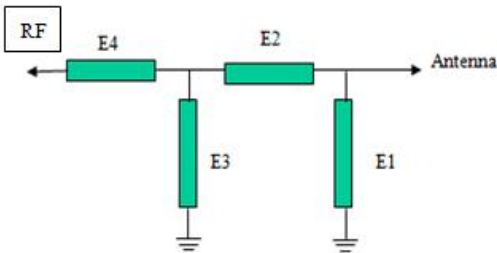




5: Antenna matching circuit

Element	E1	E2	E3	
Value	NC	0 R	NC	

Our company has not made any modifications to the matching circuit!



6: Gain, efficiency, radiation pattern

Frequency ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Frequency (MHz)	2400	2405	2410	2415	2420	2425	2430	2435	2440	2445	2450	2455	2460	2465	2470	2475	2480	2485	2490	2495	2500
Efficiency (dBi)	-4.69	-4.52	-4.47	-4.41	-4.30	-4.23	-4.20	-4.18	-4.14	-4.08	-4.01	-4.03	-4.10	-4.12	-4.13	-4.17	-4.16	-4.13	-4.08	-4.02	-4.02
Gain (dBi)	1.09	1.24	1.20	1.26	1.31	1.34	1.30	1.30	1.27	1.28	1.35	1.30	1.21	1.16	1.14	1.06	1.05	1.04	1.04	1.18	1.23
Efficiency (%)	33.95	35.29	35.70	36.19	37.13	37.72	38.03	38.23	38.53	39.13	39.75	39.58	38.94	38.68	38.61	38.33	38.34	38.63	39.04	39.66	39.67
Directivity (dB)	5.78	5.77	5.67	5.67	5.61	5.58	5.50	5.48	5.41	5.36	5.35	5.33	5.30	5.29	5.27	5.22	5.21	5.17	5.12	5.19	5.25
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	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
Peak Gain Position (Phi)	150.00	150.00	150.00	150.00	150.00	150.00	135.00	150.00	135.00	135.00	135.00	135.00	135.00	135.00	135.00	135.00	135.00	135.00	135.00	120.00	120.00
Efficiency ThetaPol (%)	21.88	22.92	23.41	23.69	24.70	25.26	25.60	25.81	26.03	26.40	26.77	26.58	26.09	25.85	25.79	25.63	25.72	25.95	26.31	26.77	26.83
Efficiency PhiPol (%)	12.07	12.37	12.29	12.30	12.44	12.46	12.43	12.42	12.50	12.72	12.98	13.00	12.86	12.83	12.82	12.70	12.62	12.68	12.73	12.89	12.84
Upper Hem. Efficiency (%)	17.69	18.44	18.74	19.08	19.70	20.09	20.33	20.46	20.62	20.90	21.14	20.91	20.40	20.09	19.86	19.56	19.47	19.55	19.77	20.17	20.30
Lower Hem. Efficiency (%)	16.25	16.85	16.97	17.10	17.43	17.62	17.70	17.77	17.91	18.23	18.61	18.67	18.54	18.59	18.75	18.77	18.87	19.08	19.27	19.49	19.37
T90(H)回波	9.16	8.96	8.90	9.23	9.58	9.86	10.03	10.33	10.65	10.97	11.30	11.65	12.06	12.61	13.03	13.34	13.96	14.41	14.78	15.13	14.95
Gain 15deg (dBi)																					
E1(XZ)波瓣宽度	26.00	27.00	28.00	29.00	30.00	30.00	37.00	37.00	35.00	36.00	35.00	36.00	35.00	35.00	35.00	34.00	34.00	34.00	33.00	78.00	78.00
E1(XZ)前后比	4.66	4.71	4.82	4.82	4.94	4.97	4.94	4.94	4.92	4.90	4.80	4.74	4.74	4.67	4.63	4.58	4.54	4.53	4.44	4.51	4.52
E2(YZ)波瓣宽度	42.00	41.00	39.00	35.00	33.00	31.00	30.00	31.00	31.00	32.00	32.00	32.00	31.00	31.00	31.00	31.00	31.00	31.00	30.00	30.00	21.00
E2(YZ)前后比	1.02	1.17	1.13	1.13	1.24	1.34	1.43	1.50	1.72	1.84	2.07	2.27	2.44	2.58	2.74	2.83	2.92	2.90	2.84	2.69	2.59
最大增益外轴比(P)	11.39	11.36	11.45	11.51	11.96	12.25	9.85	12.83	10.00	10.00	9.98	9.56	9.38	9.12	8.86	8.80	8.77	8.77	8.85	9.52	9.77
倾角(Theta=0)外轴比(P)	7.42	7.99	8.60	9.83	11.36	12.58	14.31	16.14	17.89	18.73	19.40	19.59	19.27	19.62	19.44	22.55	27.80	19.23	16.72	13.65	11.83
仰角10度最差(大)轴比(P)	55.92	61.39	78.00	56.02	72.22	72.05	51.44	52.38	66.03	59.99	52.48	55.31	48.98	47.75	51.67	46.43	49.61	50.15	50.97	48.91	47.18
Hc(XY)波瓣宽度	84.00	84.00	86.00	86.00	87.00	87.00	88.00	88.00	89.00	89.00	89.00	89.00	89.00	89.00	88.00	88.00	87.00	86.00	86.00	84.00	83.00
Hc(XY)前后比	6.22	6.08	5.84	5.76	5.68	5.65	5.60	5.60	5.55	5.50	5.58	5.51	5.49	5.42	5.46	5.39	5.34	5.34	5.54	5.54	5.72
左旋圆极化效率(%)	19.60	20.60	20.90	21.20	21.74	22.07	22.29	22.57	22.92	23.50	24.11	24.29	24.04	24.09	24.08	23.98	24.19	24.32	24.51	24.84	24.82
右旋圆极化效率(%)	14.35	14.68	14.80	14.99	15.40	15.64	15.74	15.66	15.61	15.63	15.64	15.30	14.90	14.59	14.53	14.35	14.15	14.31	14.53	14.82	14.85

