Cicent 思讯通信

Antenna Part Specification

Customer name:	Cosonic Intelligent Technologies Co.，Ltd.
Project name:	Recorder Pen
Material category:	FPC
Antenna type:	Dipole
Version:	V2.0
Date:	2024.10.25
Manufacturer:	Shenzhen Cicent Communication Technology Co., Ltd.
Manufacturer Address:	505-506 ,ABlock,Donglian Building,Chuangye 2 road,Baoan District,Shenzhen,Guangdong,P.R china

Contents

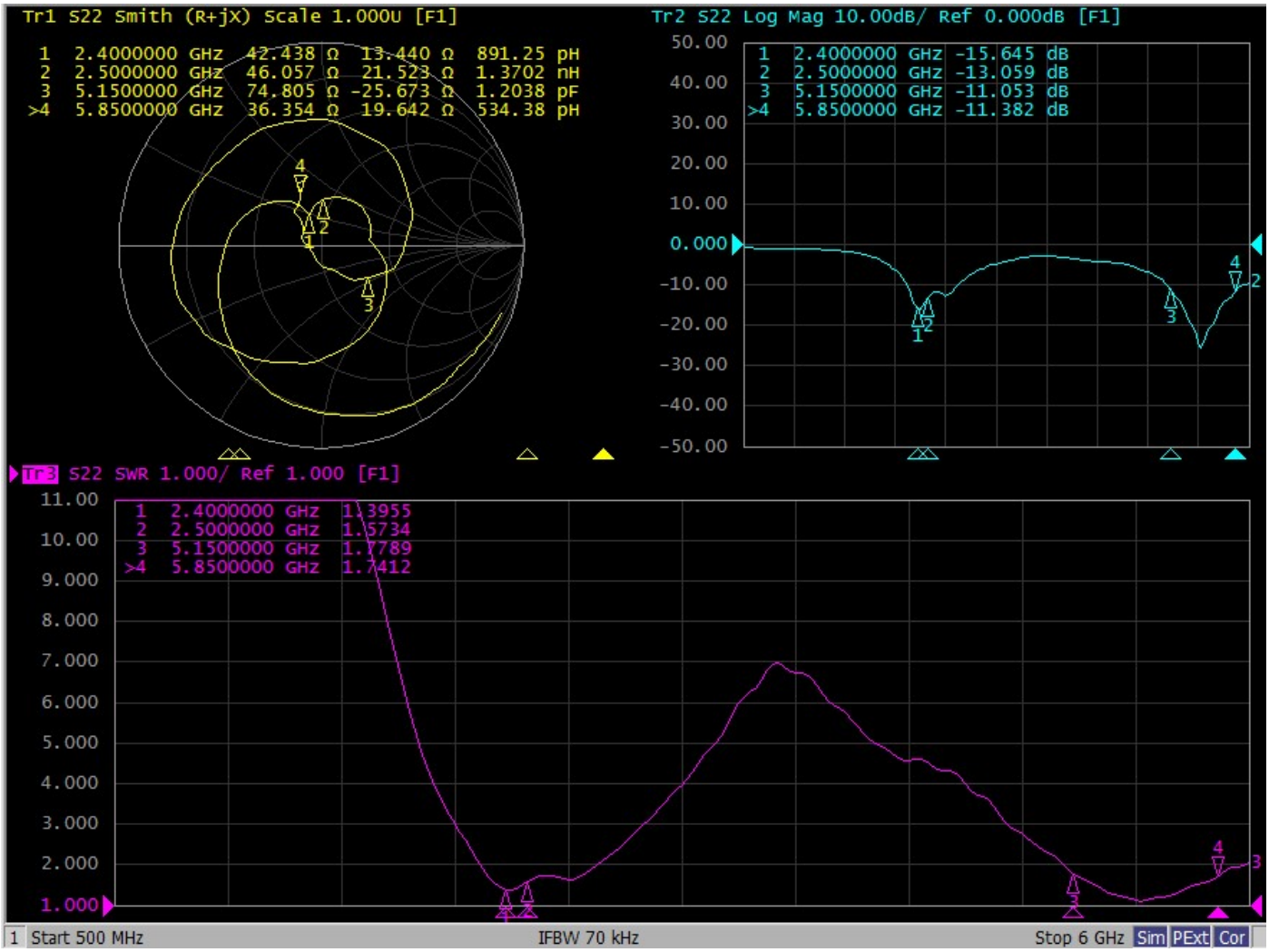
I: The report of passive data 2
II：3D Active test report of antenna 9
III：Matching circuit 9
IV：Structure file 10

Change record			
Compile / change date	Reason for change	Changed content	Version
2024.09.19	First edition	First edition	V1.0
2024.10.25	Mass production and production status	Mass production and production status	V2.0

I: The report of passive data

Angilent E5071C

Antenna S11 parameters:

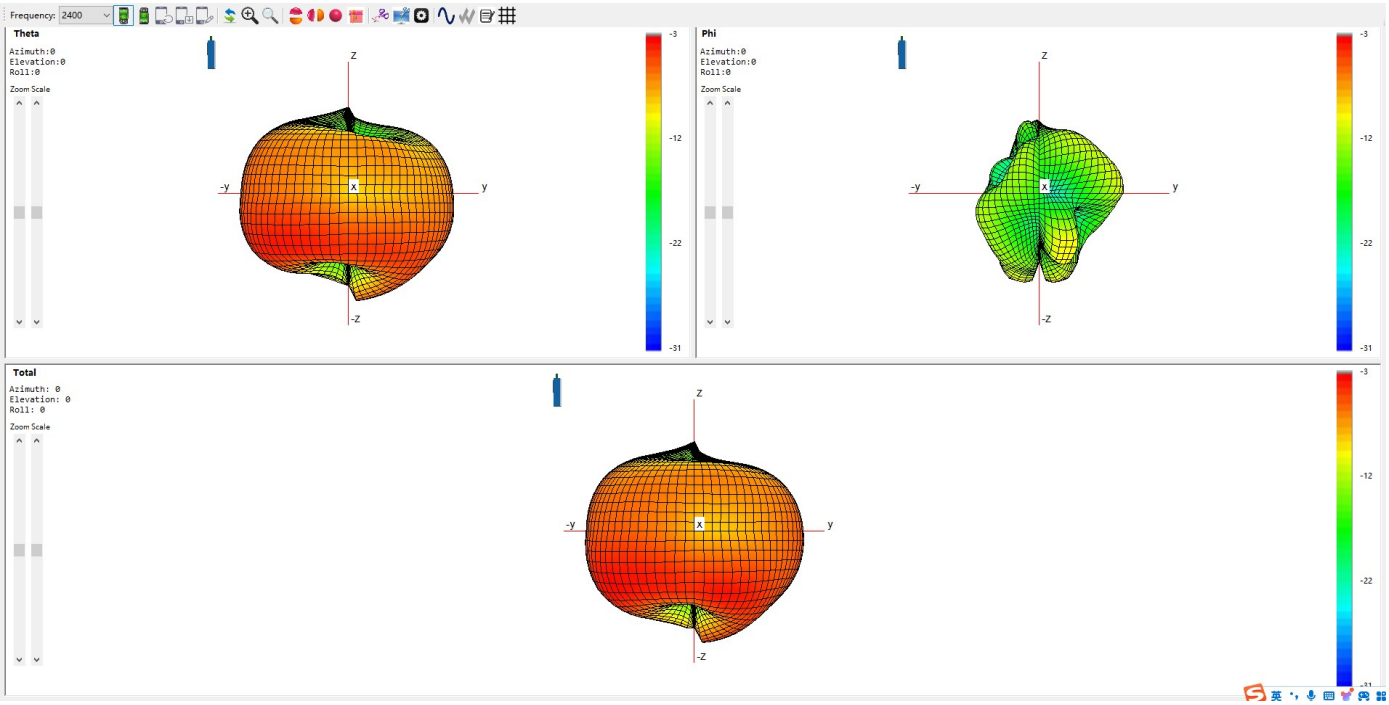


Antenna efficiency and gain:

2.4GHz			
Frequency MHz	Gain（dBi）	efficiency (dB)	efficiency %
2400	-3.4	-4.1	38.5
2410	-3.4	-4.1	38.6
2420	-3.5	-4.1	38.6
2430	-3.9	-4.3	37.0
2440	-4.3	-4.5	35.4
2450	-4.2	-4.5	35.5
2460	-4.4	-4.6	34.6
2470	-4.4	-4.6	34.9
2480	-4.4	-4.6	35.0
2490	-4.5	-4.7	33.7
2500	-4.6	-4.8	33.0
Average value	-4.1	-4.5	35.9

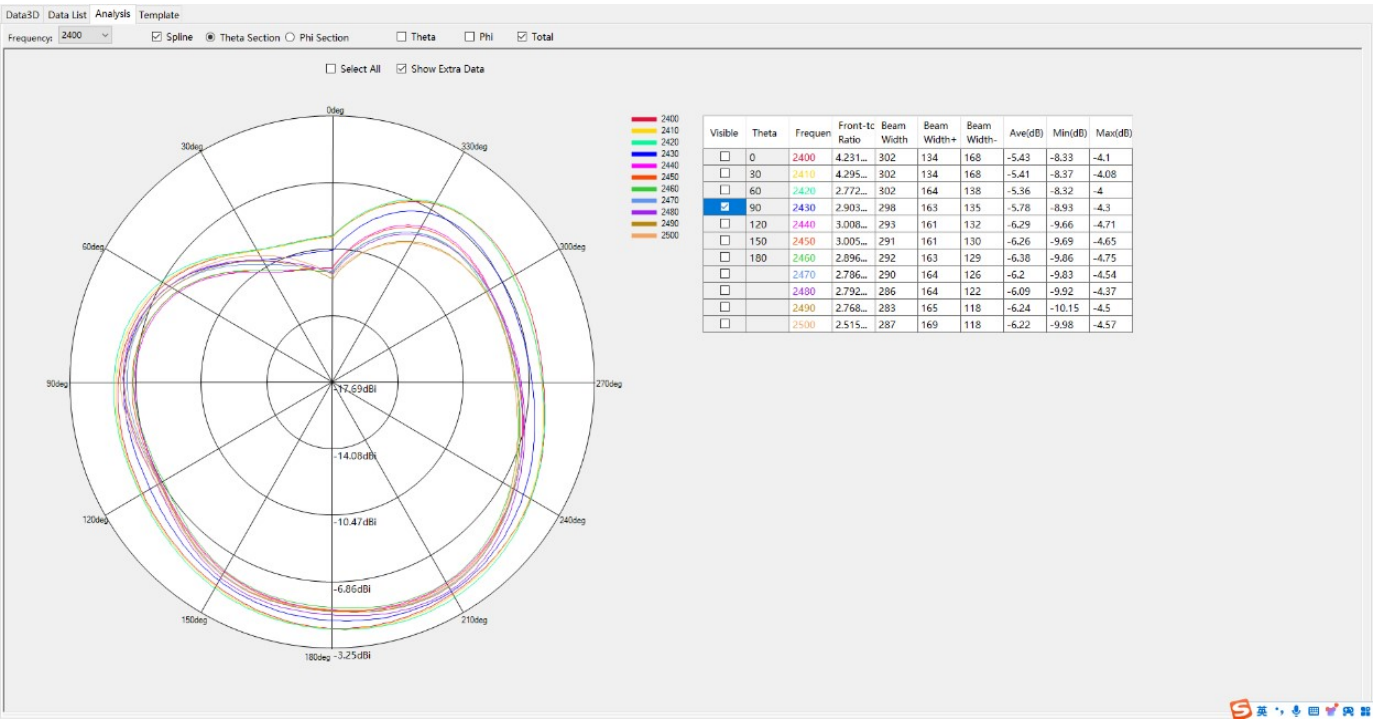
5.15GHz-5.85GHz			
Frequency MHz	Gain（dBi）	efficiency (dB)	efficiency %
5150	-7.1	-6.0	25.1
5200	-6.6	-5.9	25.6
5250	-5.4	-5.8	26.2
5300	-4.2	-5.5	28.5
5350	-3.6	-5.5	28.0
5400	-2.7	-5.3	29.7
5450	-3.1	-5.2	30.3
5500	-3.2	-5.1	31.1
5550	-3.0	-4.9	32.6
5600	-2.6	-4.6	34.8
5650	-2.7	-4.8	33.4
5700	-1.9	-4.3	36.8
5750	-0.3	-4.6	34.6
5800	0.4	-4.6	34.6
5850	0.3	-4.5	35.9
Average value	-3.0	-5.1	31.1

2.4G antenna 3D directional diagram:



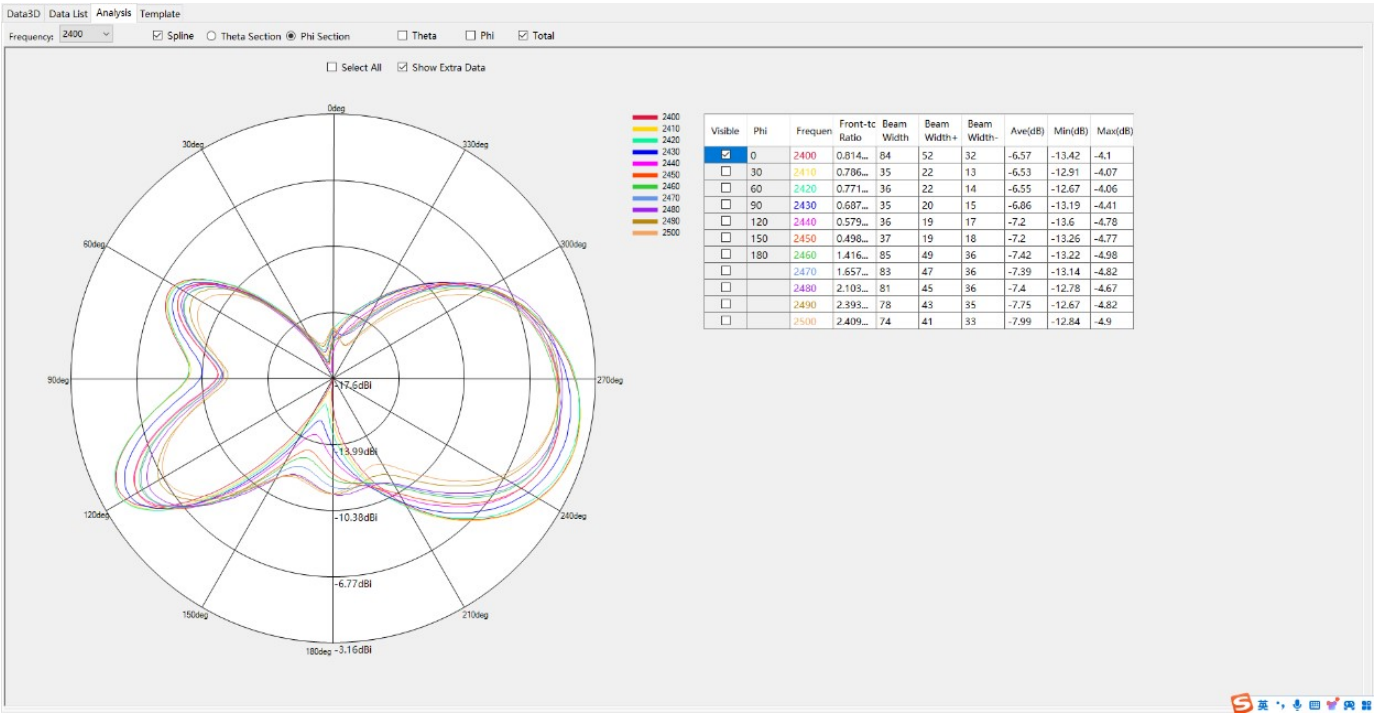
2.4G antenna 2D directional diagram:

Theta=90.00deg



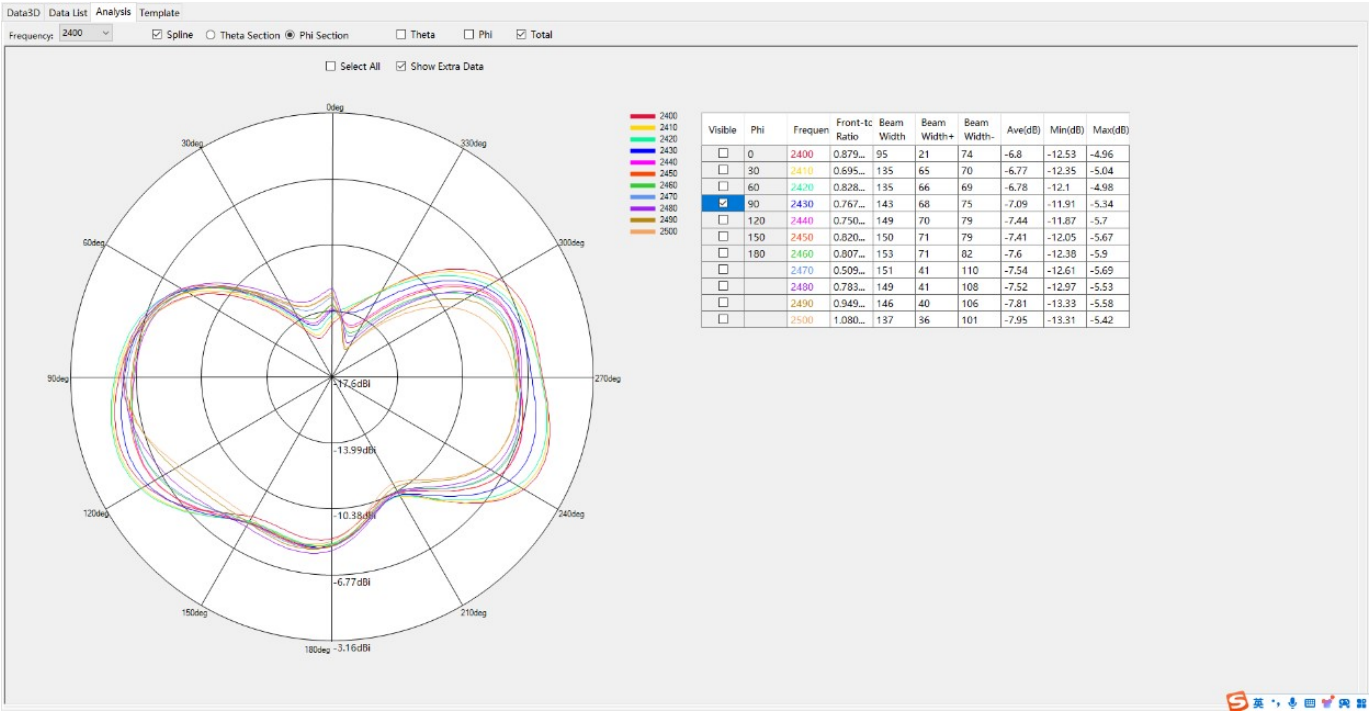
Visible	Theta	Frequen	Front-to Ratio	Beam Width	Beam Width+	Beam Width-	Ave(dB)	Min(dB)	Max(dB)
☐	0	2400	4.231...	302	134	168	-5.43	-8.33	-4.1
☐	30	2410	4.295...	302	134	168	-5.41	-8.37	-4.08
☐	60	2420	2.772...	302	164	138	-5.36	-8.32	-4
☑	90	2430	2.903...	298	163	135	-5.78	-8.93	-4.3
☐	120	2440	3.008...	293	161	132	-6.29	-9.66	-4.71
☐	150	2450	3.005...	291	161	130	-6.26	-9.69	-4.65
☐	180	2460	2.896...	292	163	129	-6.38	-9.86	-4.75
☐		2470	2.786...	290	164	126	-6.2	-9.83	-4.54
☐		2480	2.792...	286	164	122	-6.09	-9.92	-4.37
☐		2490	2.768...	283	165	118	-6.24	-10.15	-4.5
☐		2500	2.515...	287	169	118	-6.22	-9.98	-4.57

Phi=0.00deg



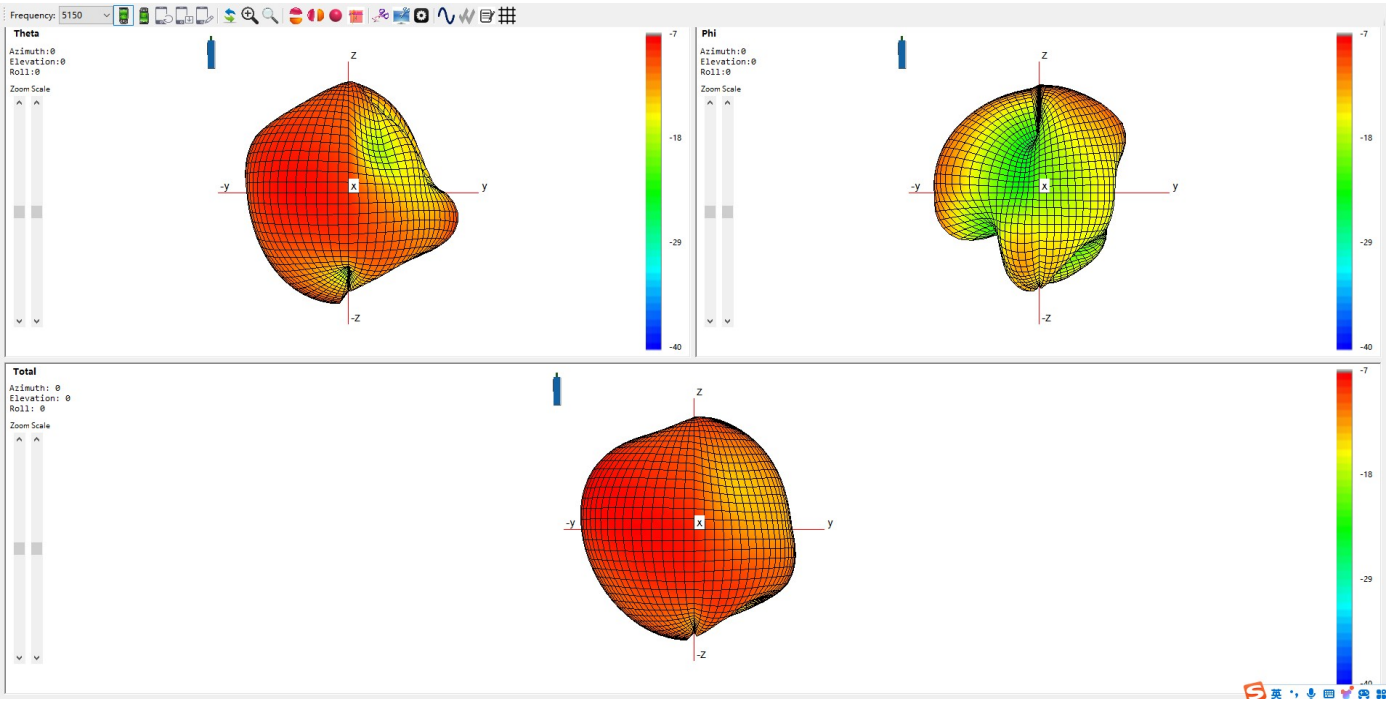
Visible	Phi	Frequen	Front-to Ratio	Beam Width	Beam Width+	Beam Width-	Ave(dB)	Min(dB)	Max(dB)
☑	0	2400	0.814...	84	52	32	-6.57	-13.42	-4.1
☐	30	2410	0.786...	35	22	13	-6.53	-12.91	-4.07
☐	60	2420	0.771...	36	22	14	-6.55	-12.67	-4.06
☐	90	2430	0.687...	35	20	15	-6.86	-13.19	-4.41
☐	120	2440	0.579...	36	19	17	-7.2	-13.6	-4.78
☐	150	2450	0.498...	37	19	18	-7.2	-13.26	-4.77
☐	180	2460	1.416...	85	49	36	-7.42	-13.22	-4.98
☐		2470	1.657...	83	47	36	-7.39	-13.14	-4.82
☐		2480	2.103...	81	45	36	-7.4	-12.78	-4.67
☐		2490	2.393...	78	43	35	-7.75	-12.67	-4.82
☐		2500	2.409...	74	41	33	-7.99	-12.84	-4.9

Phi=90.00deg



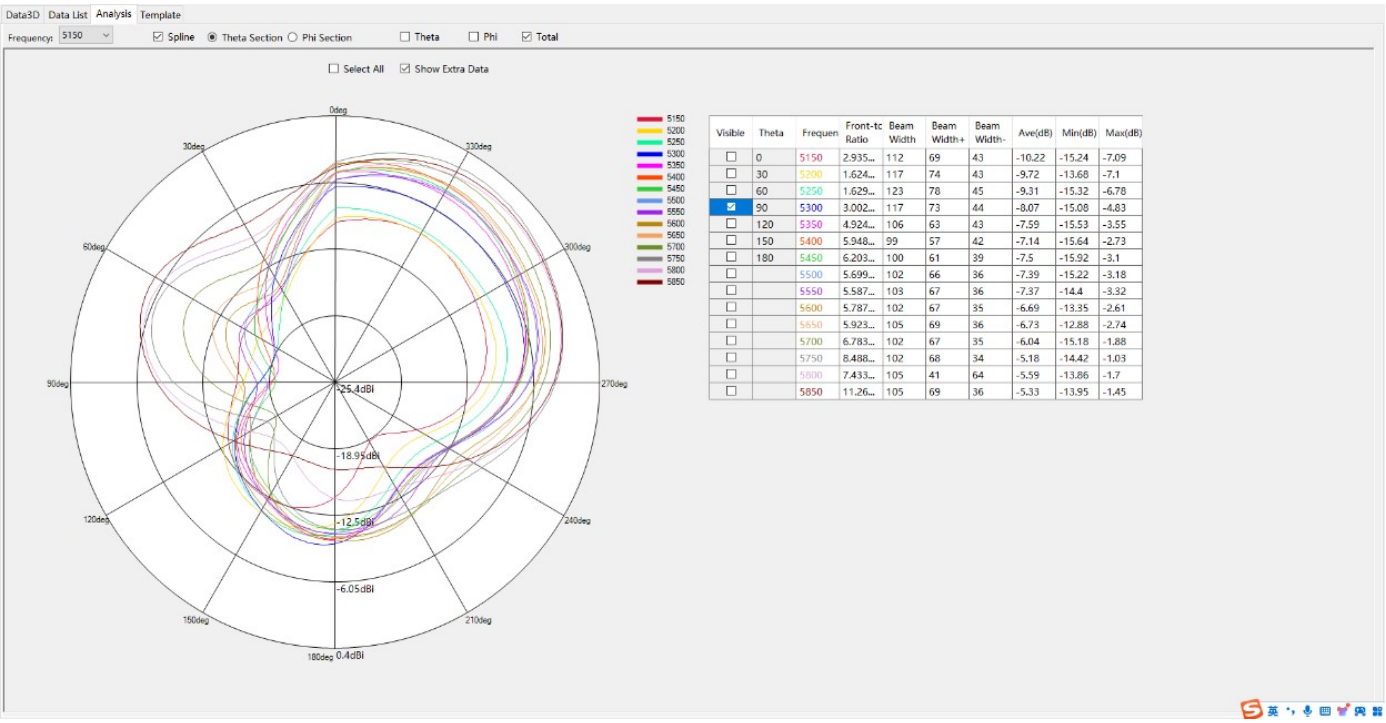
Visible	Phi	Frequen	Front-to Ratio	Beam Width	Beam Width+	Beam Width-	Ave(dB)	Min(dB)	Max(dB)
☐	0	2400	0.879...	95	21	74	-6.8	-12.53	-4.96
☐	30	2410	0.695...	135	65	70	-6.77	-12.35	-5.04
☐	60	2420	0.828...	135	66	69	-6.78	-12.1	-4.98
☑	90	2430	0.767...	143	68	75	-7.09	-11.91	-5.34
☐	120	2440	0.750...	149	70	79	-7.44	-11.87	-5.7
☐	150	2450	0.820...	150	71	79	-7.41	-12.05	-5.67
☐	180	2460	0.807...	153	71	82	-7.6	-12.38	-5.9
☐		2470	0.509...	151	41	110	-7.54	-12.61	-5.69
☐		2480	0.783...	149	41	108	-7.52	-12.97	-5.53
☐		2490	0.949...	146	40	106	-7.81	-13.33	-5.58
☐		2500	1.080...	137	36	101	-7.95	-13.31	-5.42

5G antenna 3D directional diagram:



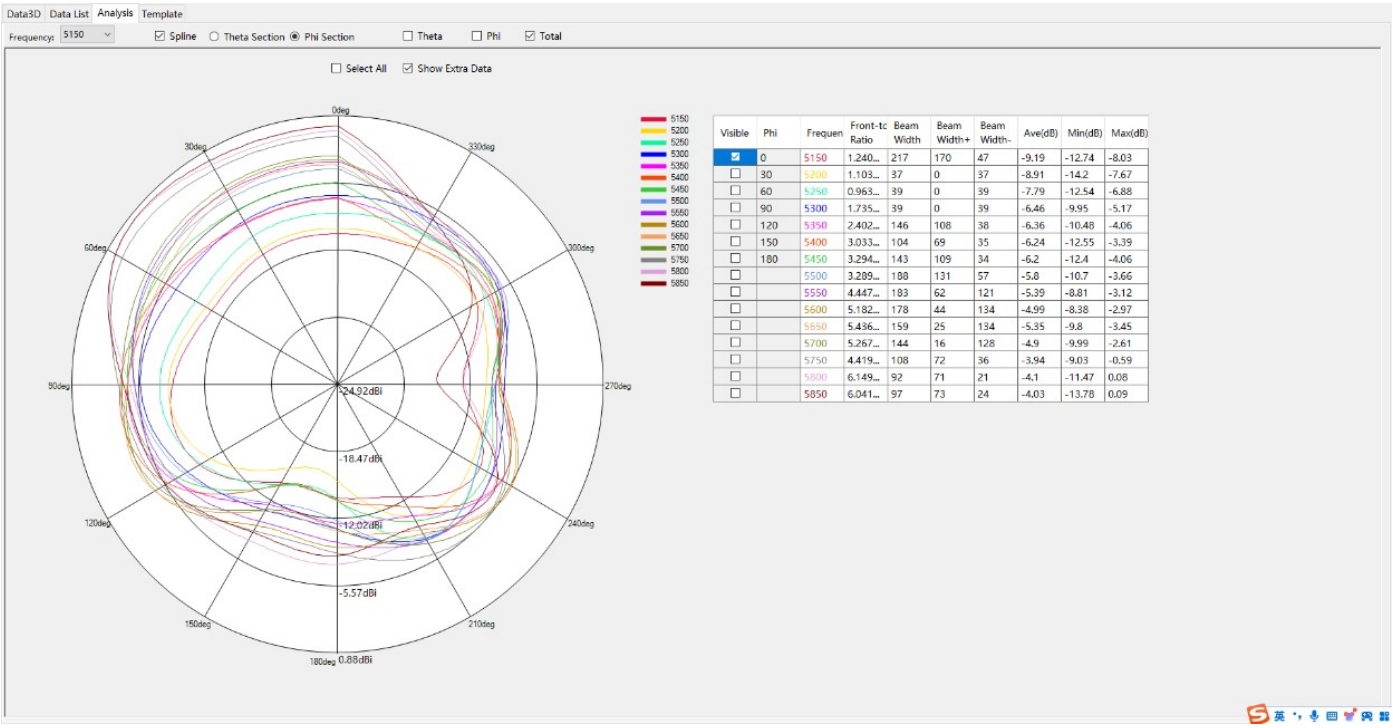
5G antenna 2D directional diagram:

Theta=90.00deg



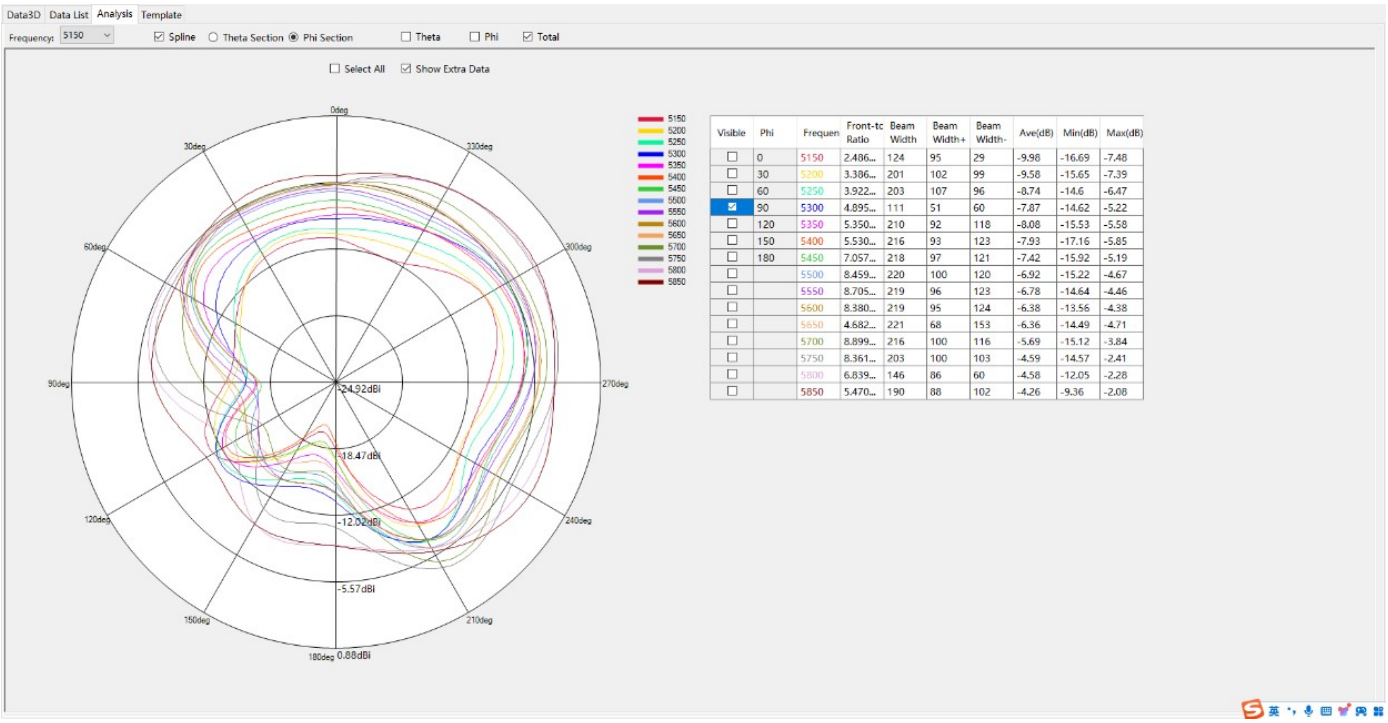
Visible	Theta	Frequen	Front-to Ratio	Beam Width	Beam Width+	Beam Width-	Ave(dB)	Min(dB)	Max(dB)
☐	0	5150	2.935...	112	69	43	-10.22	-15.24	-7.09
☐	30	5200	1.624...	117	74	43	-9.72	-13.68	-7.1
☐	60	5250	1.629...	123	78	45	-9.31	-15.32	-6.78
☑	90	5300	3.002...	117	73	44	-8.07	-15.08	-4.83
☐	120	5350	4.924...	106	63	43	-7.59	-15.53	-3.55
☐	150	5400	5.948...	99	57	42	-7.14	-15.64	-2.73
☐	180	5450	6.203...	100	61	39	-7.5	-15.92	-3.1
☐		5500	5.699...	102	66	36	-7.39	-15.22	-3.18
☐		5550	5.587...	103	67	36	-7.37	-14.4	-3.32
☐		5600	5.787...	102	67	35	-6.69	-13.35	-2.61
☐		5650	5.923...	105	69	36	-6.73	-12.88	-2.74
☐		5700	6.783...	102	67	35	-6.04	-15.18	-1.88
☐		5750	8.488...	102	68	34	-5.18	-14.42	-1.03
☐		5800	7.433...	105	41	64	-5.59	-13.86	-1.7
☐		5850	11.26...	105	69	36	-5.33	-13.95	-1.45

Phi=0.00deg



Visible	Phi	Frequen	Front-to Ratio	Beam Width	Beam Width+	Beam Width-	Ave(dB)	Min(dB)	Max(dB)
☑	0	5150	1.240...	217	170	47	-9.19	-12.74	-8.03
☐	30	5200	1.103...	37	0	37	-8.91	-14.2	-7.67
☐	60	5250	0.963...	39	0	39	-7.79	-12.54	-6.88
☐	90	5300	1.735...	39	0	39	-6.46	-9.95	-5.17
☐	120	5350	2.402...	146	108	38	-6.36	-10.48	-4.06
☐	150	5400	3.033...	104	69	35	-6.24	-12.55	-3.39
☐	180	5450	3.294...	143	109	34	-6.2	-12.4	-4.06
☐		5500	3.289...	188	131	57	-5.8	-10.7	-3.66
☐		5550	4.447...	183	62	121	-5.39	-8.81	-3.12
☐		5600	5.182...	178	44	134	-4.99	-8.38	-2.97
☐		5650	5.436...	159	25	134	-5.35	-9.8	-3.45
☐		5700	5.267...	144	16	128	-4.9	-9.99	-2.61
☐		5750	4.419...	108	72	36	-3.94	-9.03	-0.59
☐		5800	6.149...	92	71	21	-4.1	-11.47	0.08
☐		5850	6.041...	97	73	24	-4.03	-13.78	0.09

Phi=90.00deg



Visible	Phi	Frequen	Front-to Ratio	Beam Width	Beam Width+	Beam Width-	Ave(dB)	Min(dB)	Max(dB)
☐	0	5150	2.486...	124	95	29	-9.98	-16.69	-7.48
☐	30	5200	3.386...	201	102	99	-9.58	-15.65	-7.39
☐	60	5250	3.922...	203	107	96	-8.74	-14.6	-6.47
☑	90	5300	4.895...	111	51	60	-7.87	-14.62	-5.22
☐	120	5350	5.350...	210	92	118	-8.08	-15.53	-5.58
☐	150	5400	5.530...	216	93	123	-7.93	-17.16	-5.85
☐	180	5450	7.057...	218	97	121	-7.42	-15.92	-5.19
☐		5500	8.459...	220	100	120	-6.92	-15.22	-4.67
☐		5550	8.705...	219	96	123	-6.78	-14.64	-4.46
☐		5600	8.380...	219	95	124	-6.38	-13.56	-4.38
☐		5650	4.682...	221	68	153	-6.36	-14.49	-4.71
☐		5700	8.899...	216	100	116	-5.69	-15.12	-3.84
☐		5750	8.361...	203	100	103	-4.59	-14.57	-2.41
☐		5800	6.839...	146	86	60	-4.58	-12.05	-2.28
☐		5850	5.470...	190	88	102	-4.26	-9.36	-2.08

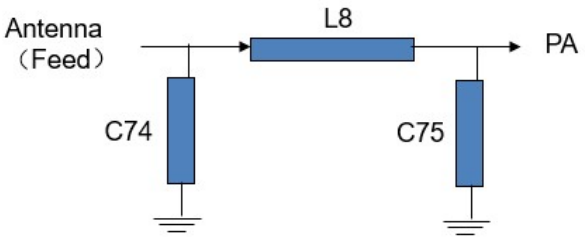
II：3D Active test report of antenna

6M	Channel	TRP（dBm）	TIS（dBm）
WIFI A	CH 36	4.8	-82.8
	CH 40	4.7	-83.6
	CH 48	3.8	-83.7

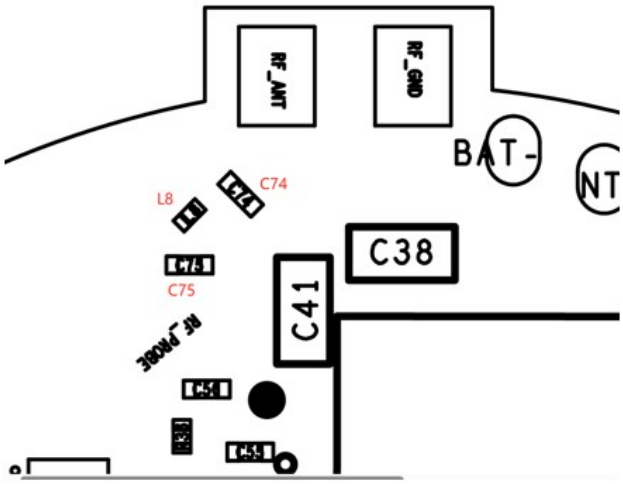
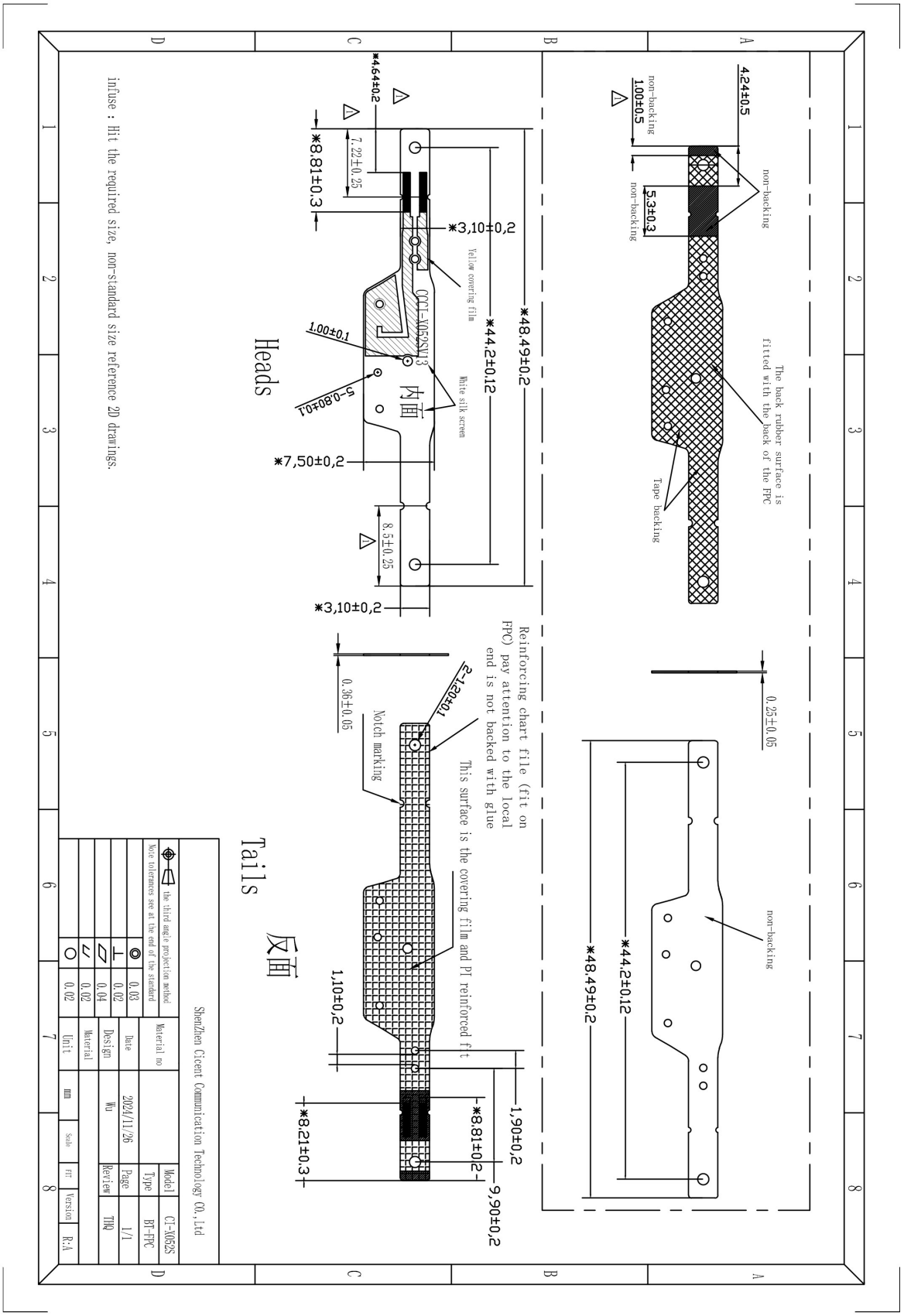
11M	Channel	TRP（dBm）	TIS（dBm）
WIFI B	CH 1	14.7	-82.8
	CH 6	14.8	-80.7
	CH 11	15.2	-82.4

OTA Standard Chamber

III：Matching circuit



Element	Value
C74(01005)	N/C
L8(01005)	2.0pF
C75(01005)	N/C



IV：Structure file