

Product Specifications

File No.: CGRF20230014

BLUETOOTH INTERNAL ANTENNA

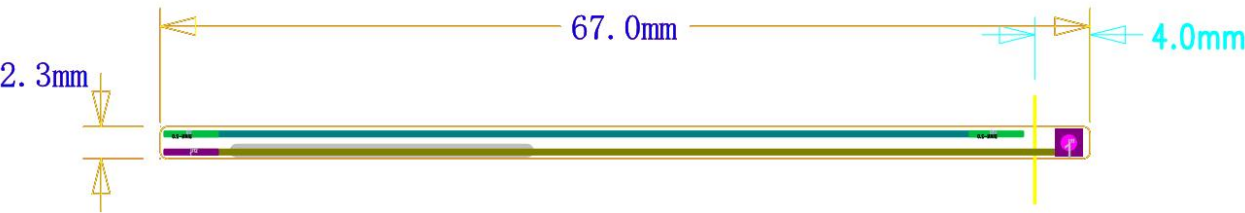
Design	Audit	Approved
Yang	Yu	Qiu
Chenglin	Jianhua	Hengshou
2023-5-7	2023-5-7	2023-5-7



1、 Product parameter:

Item	Specification
Model	HF_PCB_ANT_1.0
Frequency range	2400 ~ 2480MHz
Maximum gain	3.46dBi
Impedance	50Ω
Antenna interface	Soldering
Board material	PCBHigh-frequency PCB
Board size	W2.3mm*L67mm*T0.3mm
Operating temp.	-60℃~300℃
Manufacturer	Shenzhen Weka Circuit Co., Ltd.
Add.	3rd floor, Building D, 3rd Industrial Zone, Songgang Street, Bao'an District, Shenzhen City.

2、 Engineering drawing



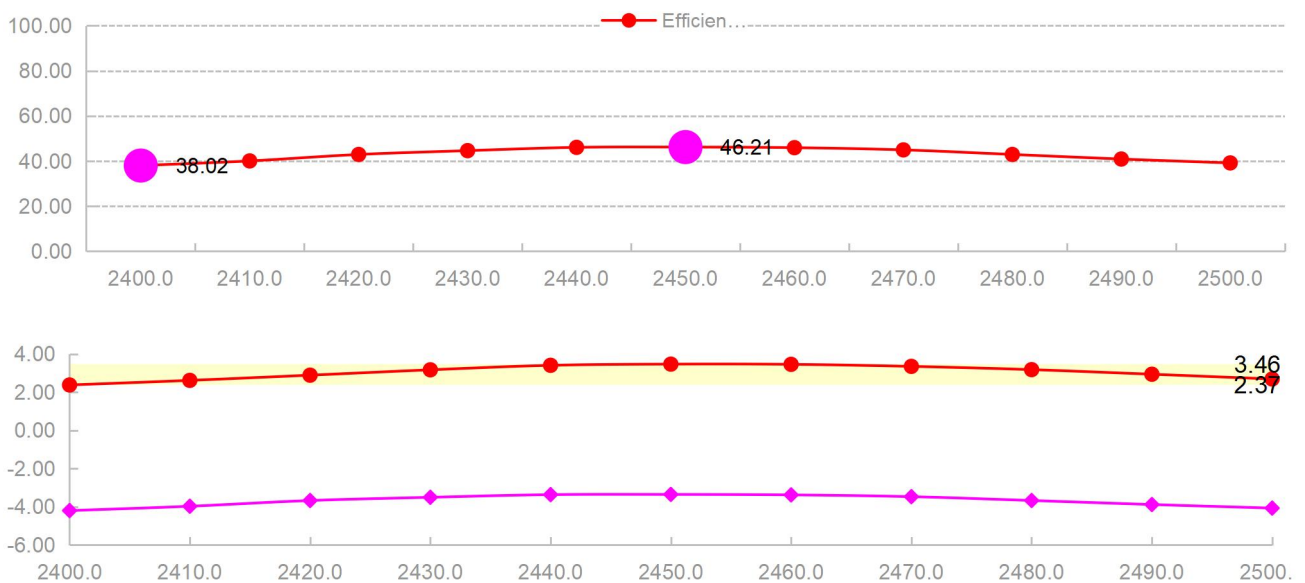
3、Antenna gain testing

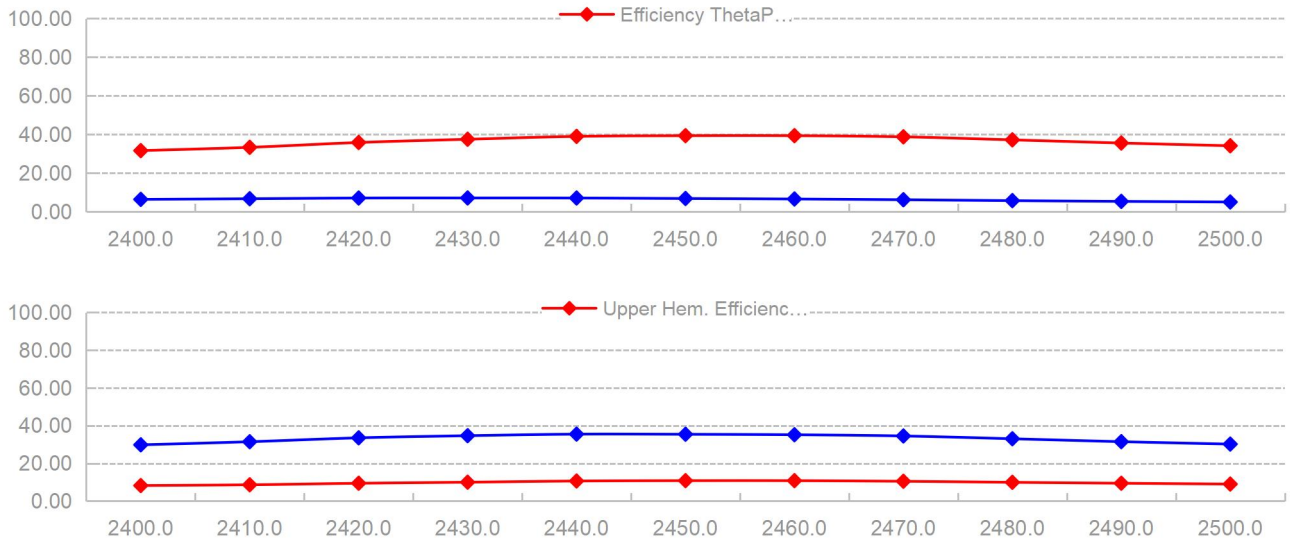
Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Efficiency (dBi)	-4.20	-3.97	-3.67	-3.50	-3.36	-3.35	-3.38	-3.47	-3.67	-3.88	-4.07
Gain (dBi)	2.37	2.61	2.89	3.17	3.40	3.46	3.45	3.35	3.18	2.94	2.69
Efficiency (%)	38.02	40.07	42.93	44.63	46.08	46.21	45.95	44.97	42.94	40.91	39.19
Directivity (dB)	6.57	6.59	6.56	6.67	6.77	6.82	6.83	6.82	6.85	6.82	6.75
Peak Gain Position (Theta)	150.00	150.00	150.00	149.00	149.00	149.00	148.00	148.00	148.00	148.00	149.00
Peak Gain Position (Phi)	12.00	14.00	17.00	21.00	22.00	23.00	25.00	25.00	25.00	26.00	26.00
Efficiency ThetaPol (%)	31.61	33.32	35.81	37.48	38.96	39.34	39.33	38.74	37.17	35.54	34.12
Efficiency PhiPol (%)	6.41	6.76	7.12	7.14	7.12	6.87	6.61	6.23	5.77	5.37	5.06
Upper Hem. Efficiency (%)	8.23	8.64	9.44	10.00	10.63	10.82	10.81	10.49	9.94	9.45	9.01
Lower Hem. Efficiency (%)	29.79	31.43	33.49	34.63	35.46	35.39	35.14	34.48	33.00	31.46	30.18

T90(H)Roundness	9.26	9.08	9.05	9.24	9.59	9.91	10.20	10.33	10.09	9.38	8.74
Gain 15deg (dBi)											
E1(XZ)Beamwidth	21.00	21.00	22.00	21.00	21.00	21.00	22.00	22.00	22.00	22.00	22.00
E1(XZ)Front-to-Back Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E2(YZ)Beamwidth	34.00	33.00	34.00	35.00	37.00	39.00	39.00	38.00	39.00	39.00	38.00
E2(YZ)Front-to-Back Ratio	1.37	1.30	1.12	0.85	0.76	0.90	1.18	1.47	1.50	1.42	1.35

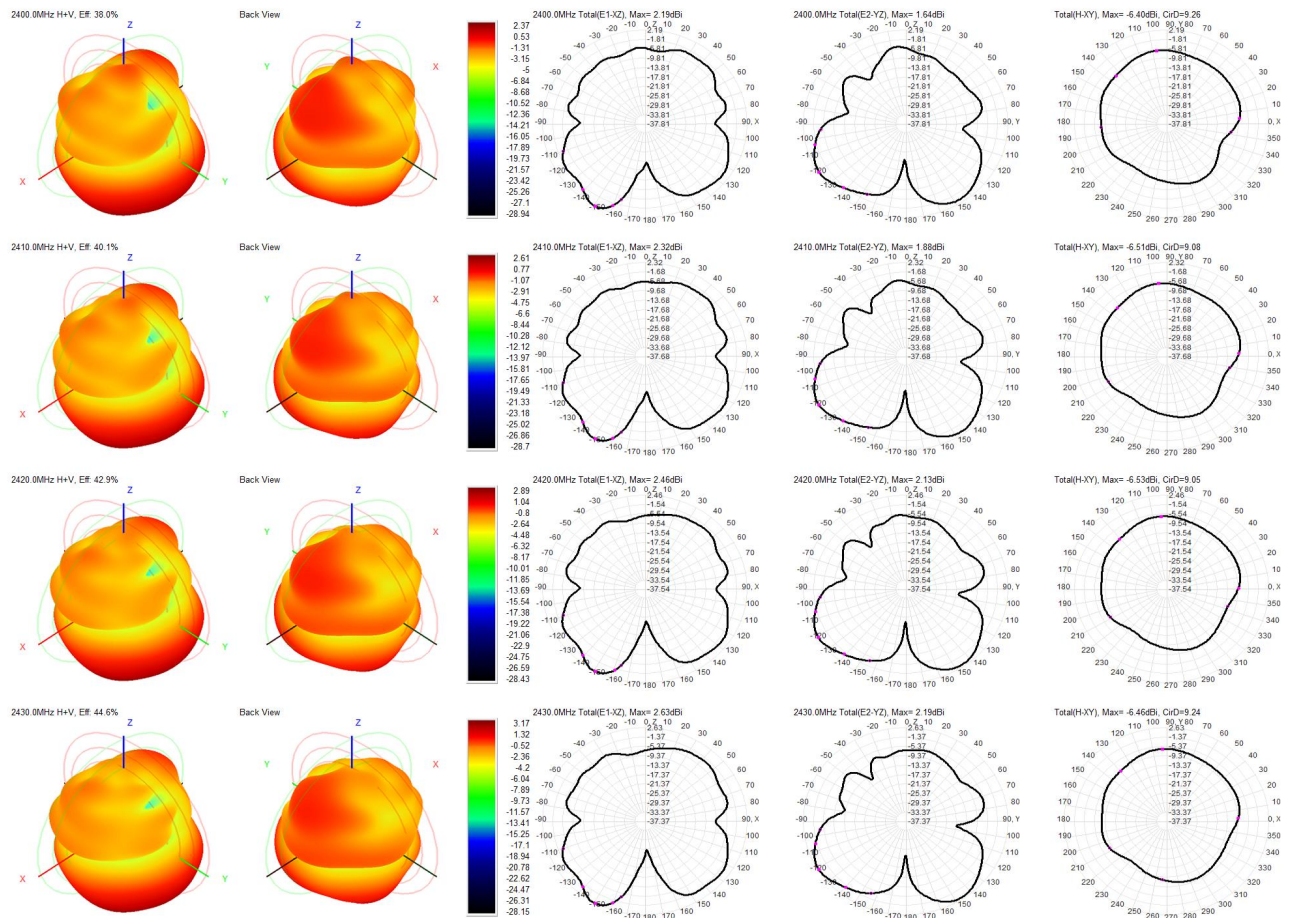
Axial ratio at maximum gain(P)	5.06	5.30	5.61	6.19	6.35	6.55	7.08	7.39	7.82	8.16	7.92
Vertex(Theta=0)Axial ratio(P)	13.06	12.72	12.49	12.62	13.61	15.31	16.08	15.58	14.16	12.30	10.48
(P)Worst (maximum) axial ratio (P) at 10 degrees elevation angle	46.43	54.73	49.58	59.09	47.11	47.73	51.24	45.79	46.72	60.94	45.56
Hc(XY)Beamwidth	129.00	130.00	130.00	127.00	125.00	128.00	132.00	135.00	134.00	131.00	127.00
Hc(XY)Front-to-Back Ratio	4.21	3.88	3.81	4.09	4.58	5.08	5.40	5.14	4.47	3.66	3.24
Left-hand circular polarization efficiency(%)	18.94	19.98	21.35	22.01	22.46	22.29	22.03	21.52	20.62	19.76	19.00
Right-hand circular polarization efficiency(%)	19.09	20.09	21.59	22.61	23.63	23.92	23.92	23.44	22.32	21.15	20.18
Cross-polar ratio (CPR) at maximum gain (+/-45 polarization)	0.44	0.29	0.35	0.64	0.61	0.51	0.52	0.42	0.45	0.68	0.81
Cross-polar ratio (CPR) at maximum gain (horizontal/vertical polarization)	5.03	5.29	5.59	6.12	6.29	6.51	7.04	7.37	7.79	8.08	7.81
60 degree Phi the worst polarity ratio in a circle (+/-45 polarization)	0.03	0.04	0.08	0.03	0.01	0.08	0.07	0.03	0.01	0.05	0.03
T60 degree Phi the worst polarity ratio	0.00	0.01	0.05	0.10	0.02	0.21	0.77	0.36	0.02	0.06	0.03

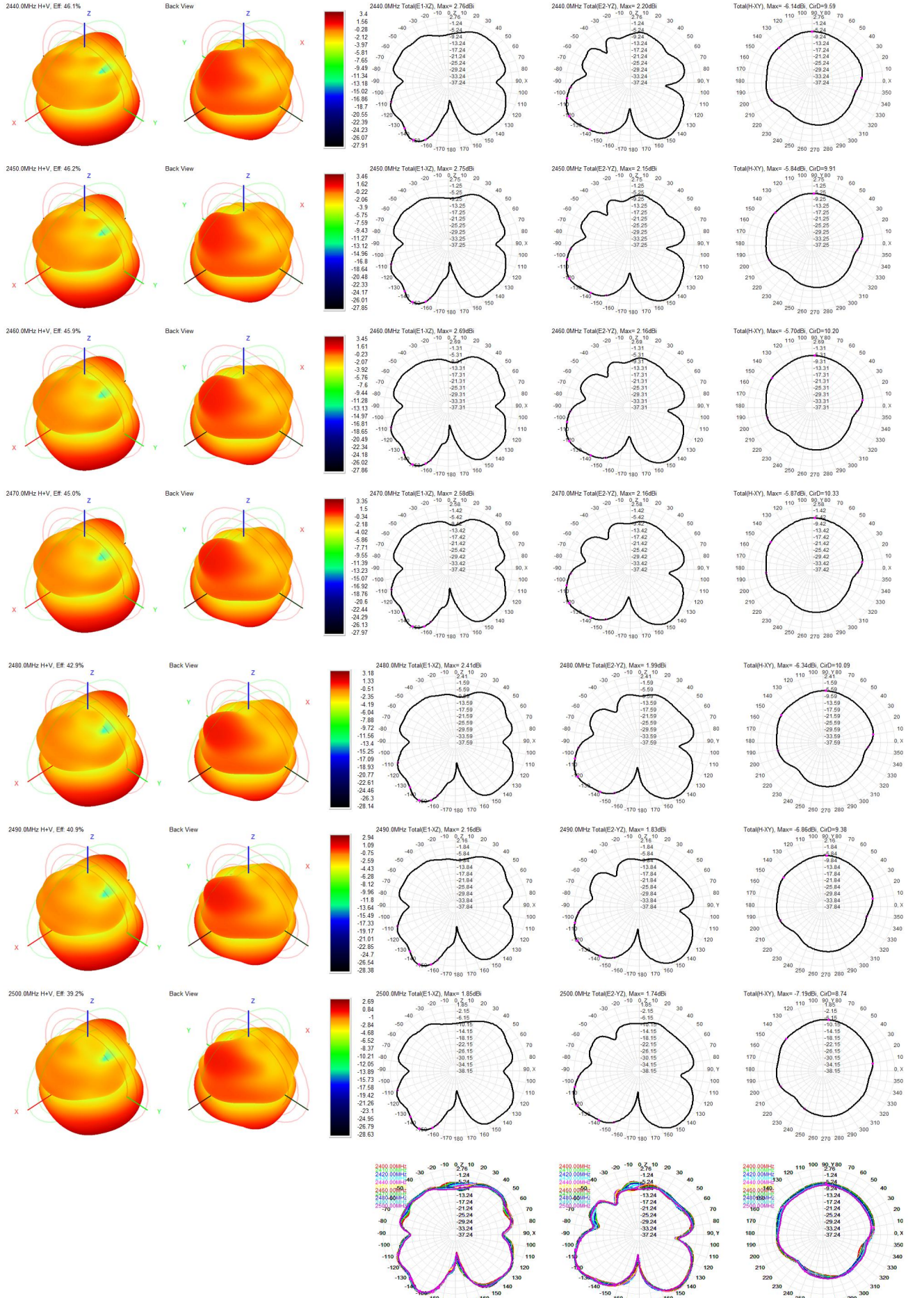
in a circle(horizontal/vertical polarization)											
T90 degree Phi the worst polarity ratio in a circle (+/-45 polarization)	0.01	0.01	0.00	0.00	0.02	0.05	0.03	0.04	0.00	0.03	0.03
T90 degree Phi the worst polarity ratio in a circle(horizontal/vertical polarization)	0.06	0.08	0.00	0.05	0.00	0.02	0.00	0.01	0.01	0.02	0.02
Parameter of axial symmetry antenna dip angle											
Main-lobe downdip angle (AVG)	-47.28	-47.98	-48.41	-48.84	-49.35	-49.71	-49.55	-49.26	-49.28	-49.37	-49.24
Empty											





4、Antenna gain 2D&3D





5、Change record

Version	Change date	Change content	Editor	Approved
——	2021-05-09	First edition	Yang Chenglin	Qiu Hengshou