

SPECIFICATION FOR APPROVAL

Name of the company : _____

Name of an article : 2.4G PCB antenna

Material code : HX-PCB24-379-120B1

Customer item number: _____

Specifications : See the specification

Date : 2023-01-03

Customer countersignature:

Department of Engineering	Quality department	Approve

Shen zhen hongxin technology electronics Co.Ltd:

Department of Engineering	Quality department	Approve
Zhuang Weifeng	Zhang Huan	Liu Lu

One:antenna parameters

Design Specifications	Typical	Units
Antenna form	PCB antenna	
working Frequency	2400-2500	MHZ
Gain	2.33	DBi
Antenna efficiency	35~80	%
VSWR	<1.8	
Ploriaztion	vertical polarization	
辐射方向 (Radiation pattern)	omnidirection	
impedance	50	ohm
Power handling	33	dbm
Interface	IPEX-1	
Overall dimensions	37*9	mm
Weight	No requirement	
Operatin Temp	-30-70	°C
Storing Temp	-30-70	°C

Two:Antenna physical diagram

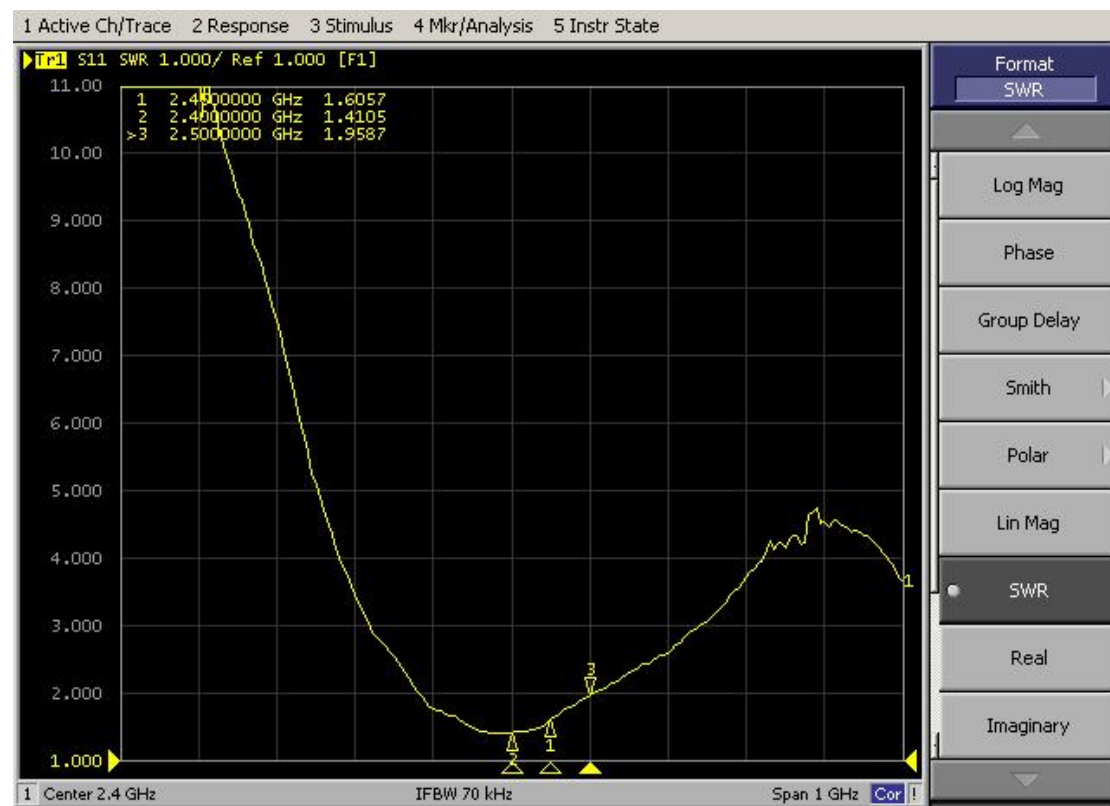


Fill: 1.The antenna parameters are tested according to the simulated environment, and there will be performance deviations for different products.

2.The function of the antenna is sensitive. Please inform us to evaluate if there is any change in the peripheral structure of the main body.

Three:VSWR/Return Loss/Smith Chart/Antenna Pattern/Gainand efficiency

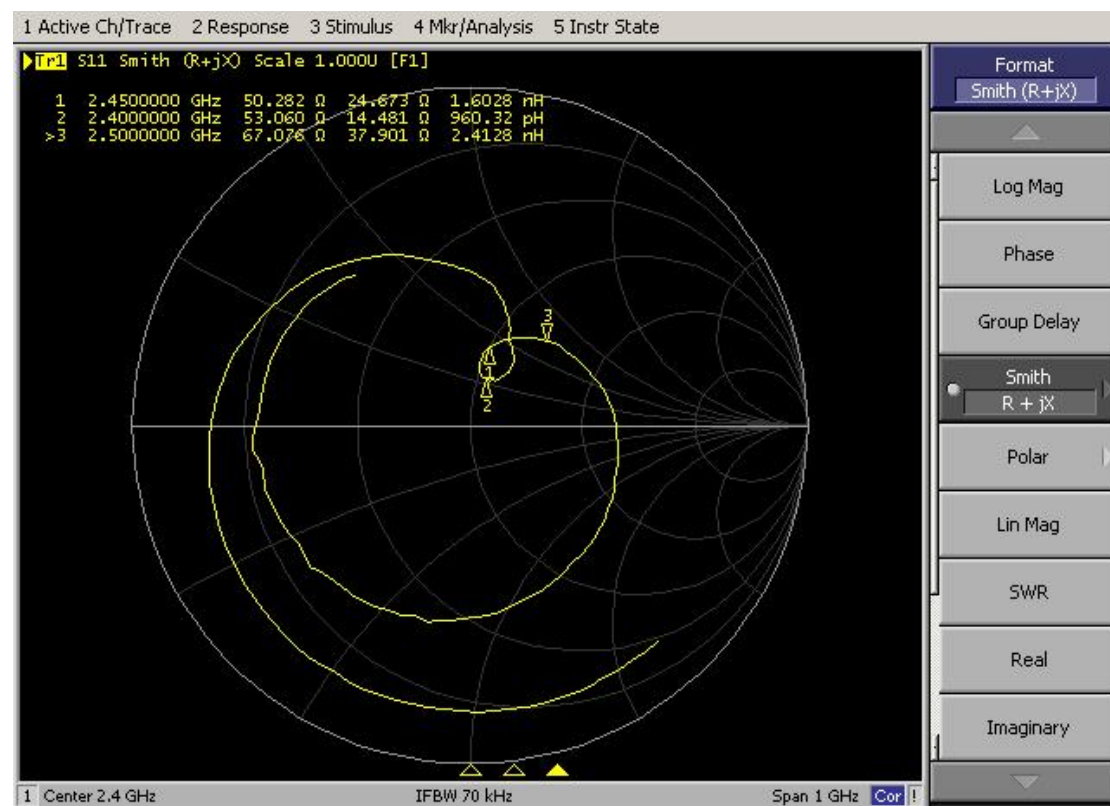
VSWR



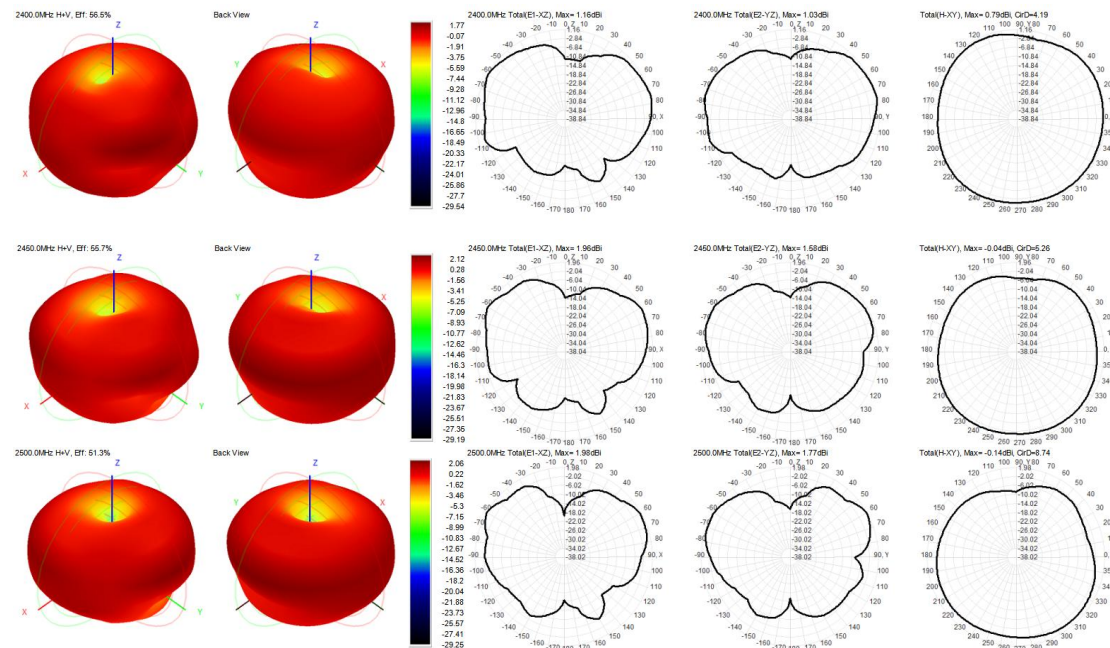
Return Loss



Smith Chart



Antenna Pattern



Gain and efficiency

Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency(MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Efficiency(dBi)	-2.48	-2.42	-2.49	-2.60	-2.59	-2.54	-2.58	-2.73	-2.77	-2.84	-2.89
Gain(dBi)	1.77	1.70	1.56	1.64	1.83	2.12	2.30	2.31	2.33	2.21	2.06
Efficiency(%)	56.51	57.24	56.38	55.01	55.08	55.72	55.15	53.38	52.79	52.02	51.35
Directivity(dB)	4.25	4.12	4.05	4.23	4.42	4.66	4.89	5.03	5.11	5.04	4.96
Peak Gain Position(Theta)	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00
Peak Gain Position(Phi)	60.00	60.00	180.00	195.00	195.00	195.00	195.00	195.00	195.00	195.00	195.00
Efficiency ThetaPol(%)	53.32	53.82	52.87	51.50	51.61	52.29	51.92	50.34	49.91	49.26	48.78
Efficiency PhiPol(%)	3.19	3.42	3.51	3.51	3.47	3.43	3.24	3.05	2.88	2.76	2.57
Upper Hem.Efficiency(%)	39.66	40.69	40.73	40.40	41.13	42.25	42.39	41.47	41.43	41.09	40.79
Lower Hem Efficiency(%)	16.85	16.55	15.65	14.61	13.95	13.48	12.77	11.91	11.35	10.93	10.56
T90(H)Roundness	4.19	4.19	4.02	4.22	4.60	5.26	5.98	6.71	7.60	8.18	8.74
Gain 15deg(dBi)											
E1(XZ)Lobe Width	58.00	39.00	38.00	36.00	30.00	29.00	27.00	25.00	25.00	25.00	25.00
E1(XZ)Front-to-Back Ratio	8.07	8.06	8.19	8.02	8.02	8.05	8.30	8.57	8.64	8.52	8.37
E2(YZ)Lobe Width	58.00	60.00	47.00	50.00	51.00	47.00	43.00	43.00	43.00	30.00	30.00
E2(YZ)Front-to-Back Ratio	11.89	11.00	10.40	9.80	9.47	9.55	9.70	9.74	9.65	9.80	9.78
Axial Ratio at Maximum Gain (P)	16.39	16.93	26.44	26.95	27.37	27.63	25.01	23.62	21.75	21.62	23.48
Axial Ratio at Vertex (Theta = 0)(P)	20.64	14.22	11.44	9.91	9.60	10.09	10.98	12.74	12.66	10.97	6.42
Axial Ratio at Elevation Angle (Theta=0°) (P)	68.27	94.81	88.29	74.24	69.28	74.04	74.38	67.04	87.84	57.37	55.32
Hc(XY) Lobe Width	230.00	231.00	234.00	239.00	242.00	245.00	253.00	204.00	194.00	195.00	193.00
Hc(XY)Front-to-Back Ratio	1.59	1.17	0.65	0.28	0.19	0.25	0.31	0.37	0.44	0.39	0.34
Left-Hand Circular Polarization Efficiency(%)	28.42	28.89	28.60	28.06	28.14	28.54	28.69	28.08	27.66	27.11	26.41
Right-Hand Circular Polarization Efficiency (%)	28.09	28.35	27.78	26.95	26.95	27.19	26.46	25.30	25.13	24.91	24.94

four: Storage environment

Working temperature: -30 to 70° C

reserve temperature: -30 to 70° C

five: Dimensions

