

Shenzhen HX Antenna Co., Ltd.

SPECIFICATION FOR APPROVAL

Name of the company : Shenzhen HX Antenna Co., Ltd.

Name of an article : 2.4G FPC antenna

Material code : HX-FPC24-289-8300D1

Customer item number:

Specifications : See the specification

Date : 2024-08-02

Customer countersignature:

Department of Engineering	Quality department	Approve

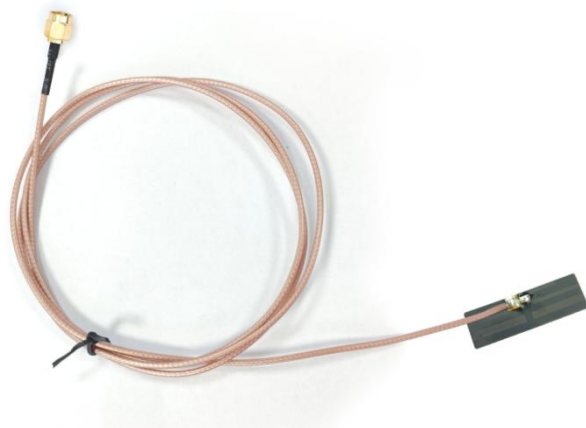
Shen zhen hongxin technology electronics Co.Ltd:

Department of Engineering	Quality department	Approve
Huang Xiaoyu	Zhang Huan	Zhuang Weifeng

一：Antenna parameter

Design Specifications	Typical	Units
天线形式(Antenna form)	FPC antenna	N/A
工作频率 (working Frequency)	2400-2500	MHZ
增益(Gain)	3.47	dBi
天线效率 (Antenna efficiency)	35~80	%
电压驻波比 (VSWR)	<1.8	N/A
极化方式 (Polarization)	vertical polarization	N/A
辐射方向 (Radiation pattern)	360°	N/A
馈电阻抗 (impedance)	50	ohm
功率容量 (Power handling)	33	dbm
天线接口 (Interface)	SMA Internal screw needle	N/A
天线尺寸 (Antenna size)	28*9	mm
重量 (Weight)	No requirement	N/A
工作温度 (Operating Temp)	-30-70	°C
储存温度 (Storing Temp)	-30-70	°C

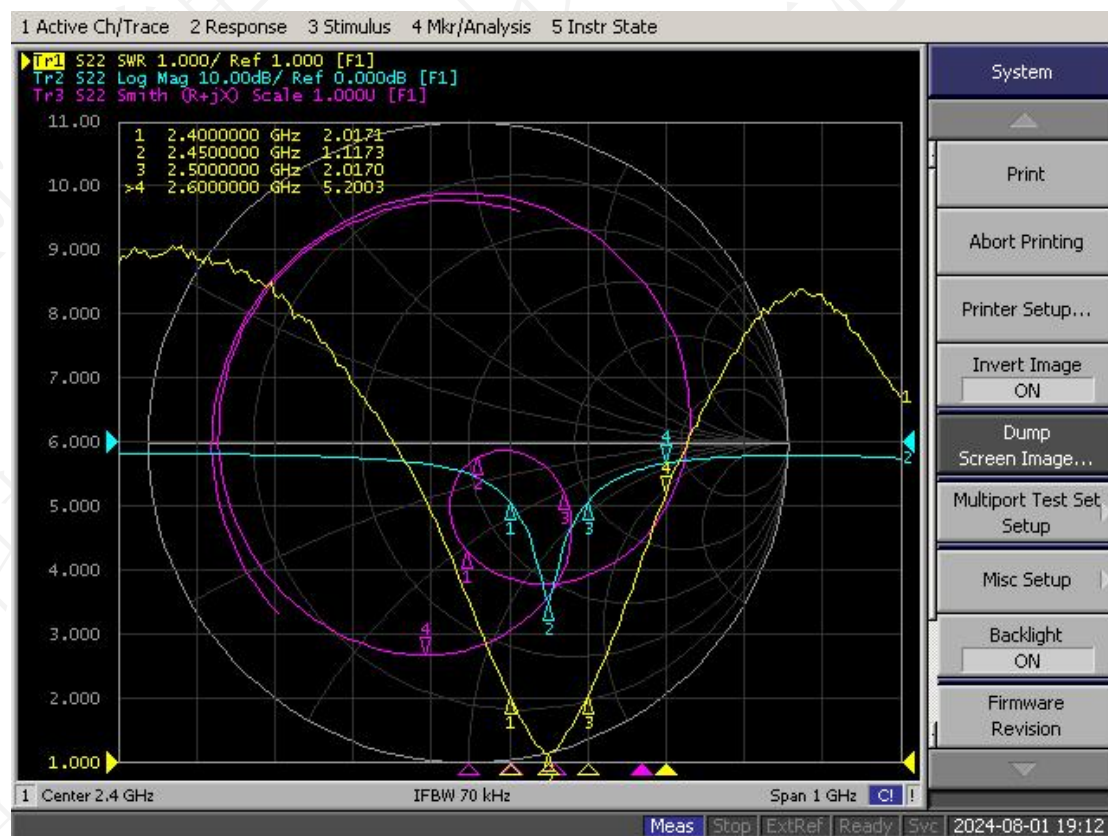
二: Antenna physical diagram



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.

三、VSWR（电压驻波比）/Return Loss（回波损耗）/Smith Chart（史密斯圆图）

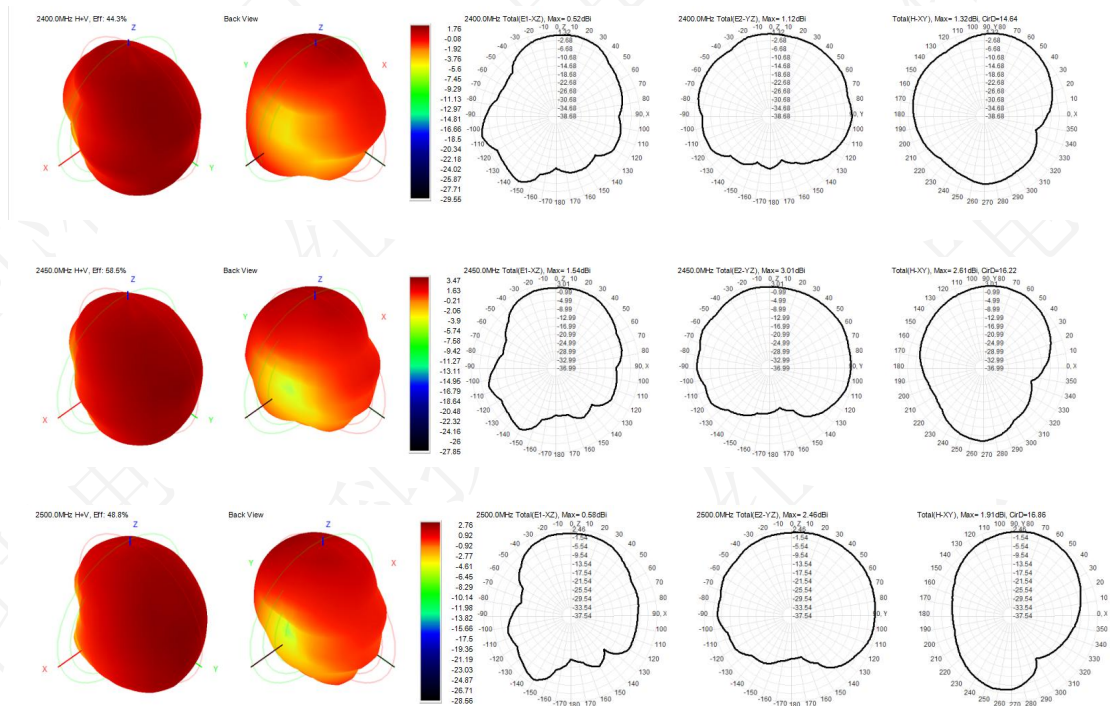


四：Gain、Efficiency、Radiation patten

4.1 Gain、Efficiency

Frequency ID	1	2	3	4	5	6	7	8	9	10	11	12	13
Frequency (MHz)	2380	2390	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Efficiency (dBi)	-3.95	-3.67	-3.54	-3.12	-2.92	-2.70	-2.58	-2.33	-2.37	-2.47	-2.63	-2.81	-3.11
Gain (dBi)	1.03	1.45	1.76	2.35	2.70	3.01	3.19	3.47	3.44	3.38	3.30	3.17	2.76
Efficiency (%)	40.28	42.96	44.31	48.73	51.05	53.76	55.16	58.48	57.97	56.67	54.61	52.42	48.83
Directivity (dB)	4.98	5.12	5.30	5.48	5.62	5.71	5.77	5.80	5.81	5.85	5.93	5.98	5.87
Peak Gain Position (Theta)	45.00	45.00	45.00	45.00	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	60.00	60.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
Efficiency ThetaPol (%)	14.83	15.01	14.98	15.70	15.79	15.79	15.59	15.72	15.08	14.07	13.17	12.24	11.82
Efficiency PhiPol (%)	25.45	27.95	29.33	33.03	35.27	37.97	39.56	42.76	42.89	42.61	41.44	40.17	37.00
Upper Hem. Efficiency (%)	25.94	28.27	29.68	33.16	35.23	37.64	39.21	42.19	42.41	41.86	40.49	38.64	35.39
Lower Hem. Efficiency (%)	14.33	14.69	14.63	15.57	15.82	16.12	15.95	16.28	15.56	14.81	14.12	13.78	13.43
T90(H) 圆度	12.83	13.98	14.64	14.90	15.12	15.34	15.69	16.22	16.39	16.30	16.85	17.00	16.86
Gain 15deg (dBi)													
E1(XZ) 波瓣宽度	61.00	63.00	66.00	67.00	70.00	76.00	80.00	83.00	83.00	84.00	81.00	81.00	80.00
E1(XZ) 前后比	3.75	3.68	3.64	3.87	4.28	4.63	5.01	5.26	5.44	5.48	5.13	4.72	4.28
E2(YZ) 波瓣宽度	135.00	136.00	136.00	136.00	136.00	137.00	138.00	142.00	146.00	147.00	146.00	145.00	147.00
E2(YZ) 前后比	11.18	12.58	13.76	14.62	14.79	14.49	14.34	14.57	15.48	16.60	16.36	15.62	15.00
最大增益处轴比(P)	45.41	53.37	48.55	67.84	31.73	32.23	34.78	37.95	50.19	39.58	49.95	34.01	24.10
顶点(Theta=0)处轴比(P)	9.07	9.33	10.11	10.93	11.87	12.99	14.28	15.72	17.30	19.32	20.66	23.12	29.46
仰角10度最差(大)轴比(P)	55.36	81.21	50.28	87.55	66.66	74.33	68.50	60.06	77.58	53.32	52.79	59.88	71.41
Hc(XY) 波瓣宽度	72.00	72.00	70.00	69.00	69.00	71.00	75.00	78.00	79.00	80.00	79.00	78.00	79.00
Hc(XY) 前后比	8.09	7.87	7.83	7.74	7.30	6.56	5.81	4.97	5.06	5.38	5.61	5.15	5.15
左旋圆极化效率(%)	19.01	20.53	21.49	23.74	24.84	26.34	27.16	28.79	28.64	27.95	27.30	26.92	26.01
右旋圆极化效率(%)	21.27	22.43	22.82	24.99	26.21	27.42	27.99	29.69	29.33	28.72	27.30	25.50	22.82

4.2 Radiation patten



五: Dimensions

