SHENZHEN B-LINK ELECTRONICS CO., LTD.

Sample Approval Drawing

CUSTOME	Motic CHINA GROUP Co., LTD.		
Date	2023．10．10		
Product Type	110mm 2.4G & 5G FPC Antenna		
Part Number	1300704202111		
KESHARE			
工程 **ENGINEER**	品保 **QC**	业务 **SALES**	
XY Ding	Y Fang	HB Deng	
Motic			
工程 **ENGINEER**	品保 **QC**	生产 **MANUFACTORY**	采购 **PURCHASING**
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1. Product Profile

FPC antenna is a soft 2.4 GHz + 5.8 G dual-band FPC antenna. This antenna applies dipole antenna principle. Designed with high gain, high efficiency, omni-directional, good port matching and other characteristics. It is used in wireless terminals. The product can have large coverage area and good connection speed.

2. Applications

Intelligent TV, Intelligent Vehicle DVD Navigation, MID, Network Camera, Set Top Box GPS, E-book, Hard Disk Player, Network Radio, PSP and so on need to realize wireless networking equipment.

3. Main characteristics

- It meets the performance requirements of conventional PCB antenna and achieves near omni-directional coverage.
- The average gain is fuller and the coverage blind area is reduced.
- Good port matching improves the efficiency of transmitting and receiving.

4. Conventional specifications

I、Electrical parameters

Frequency Scope	2.4/5GHz
Characteristic Impedance	50Ω
Voltage Standing Wave Ratio	≤2.5:1
Peak Gain	2.4GHz:3.4dBi 5GHz: 4.89dBi
Power Capacity	2W
Polarized Form	Horizontal
Radiation direction	Omnidirectional

II、Mechanical parameters

Line Length	110MM +IPEX
Coaxial Cable	1.13 Grey Line

III、Working/Storage Temperature

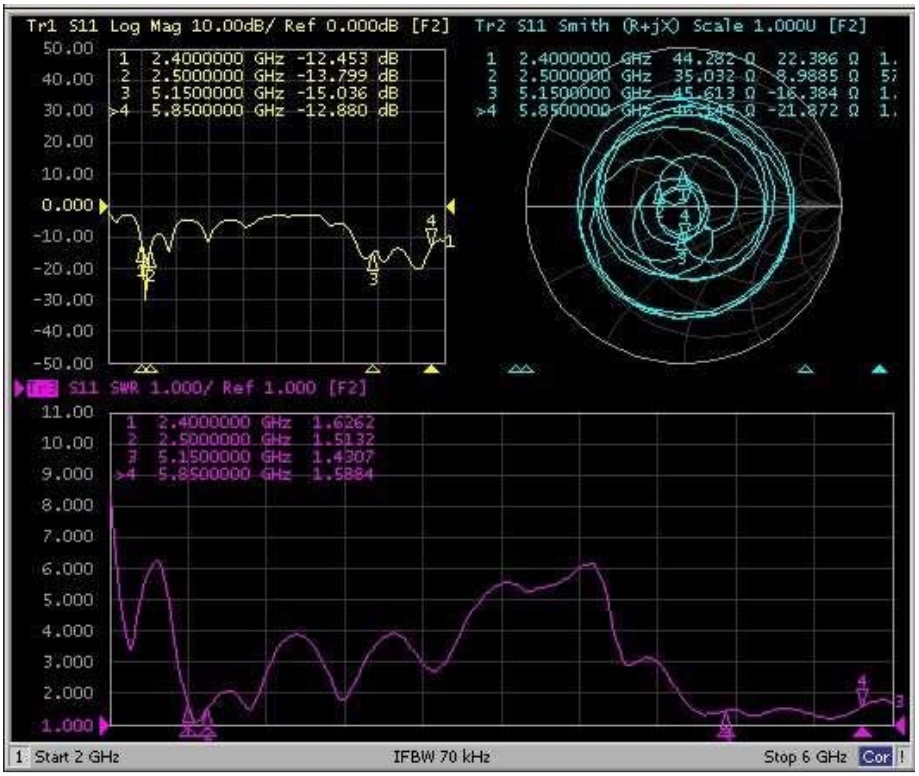
Working Temperature	-30℃～65℃
Storage Temperature	-30℃～75℃

IV、Environmental and Reliability Experiments

Project	Experimental Condition	Performance Requirement	Test/Rest Equipment
Cryogenic storage	Temperature-30 ℃ +2 ℃ /Humidity 0%/RH/Time 48H	No effect on appearance and function test after test	Constant Temperature and Humidity Testing Machine
High temperature and humidity storage	Temperature-70℃, Humidity 90-95%/RH 48H	No effect on appearance and function test after test	Constant Temperature and Humidity Testing Machine
Temperature shock	Product environment: - 35℃ 2H, 80℃2H, 12 cycles 48H	No effect on appearance and function test after test	Cold and Heat Shock Testing Machine

5、Test Data

I、Return Loss (2.4GHz-2.5GHz & 5.15GHz-5.85GHz)



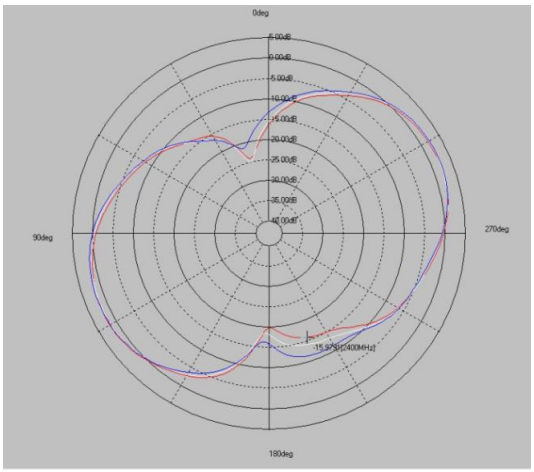
II、Benefits and Gains

Frequency	X-Y plane		Y-Z plane		X-Y plane		E-total	Efficiency	Retun Loss
	PHI=0		PHI=90		theta=90				
(Mhz)	Peak	Ayerage	Peak	Ayerage	Peak	Ayerage	(dbi)	(%)	
	Gain	Gain	Gain	Gain	Gain	Gain			
2400	3.11	-2.54	3.4	-3.05	2.62	2.45	2.65	70.00%	-12.31
2450	3.2	-2.21	3.13	-3.19	2.7	2.85	2.85	71.00%	-12.73
2500	3.32	-2.91	3.3	-3.18	2.63	2.9	2.9	72.00%	-12.29
5150	4.05	-3.78	4.12	-3.85	4.39	4.2	4.11	68.98%	-15.03
5250	4.03	-3.77	4.61	-3.82	4.89	4.15	4.06	66.80%	-14.89
5350	3.98	-3.66	3.99	-3.77	4.68	4.05	3.99	65.68%	-14.66
5450	3.76	-3.56	3.82	-3.68	4.55	4.01	3.86	66.85%	-14.82
5550	4.48	-4.08	4.05	-3.79	4.08	4.05	4.4	63.60%	-17.5
5650	4.32	-3.86	3.99	-3.68	3.89	3.88	4.21	64.55%	-16.5
5750	4.16	-3.72	3.83	-3.7	3.76	3.79	4.14	65.21%	-14.68
5850	4.31	-3.96	4.36	-3.95	4.88	4.66	4.78	66.57%	-12.88

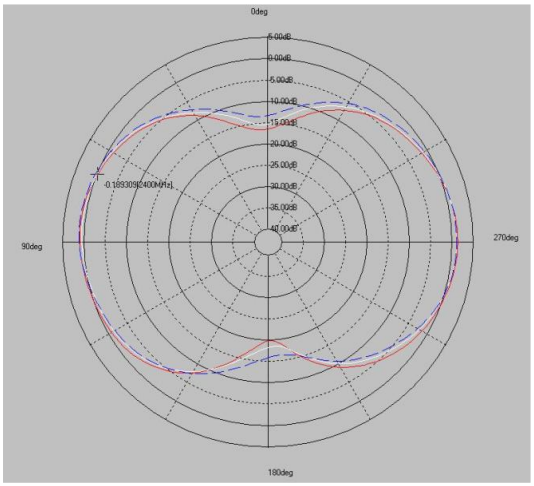
III、Direction Map

2.4G:

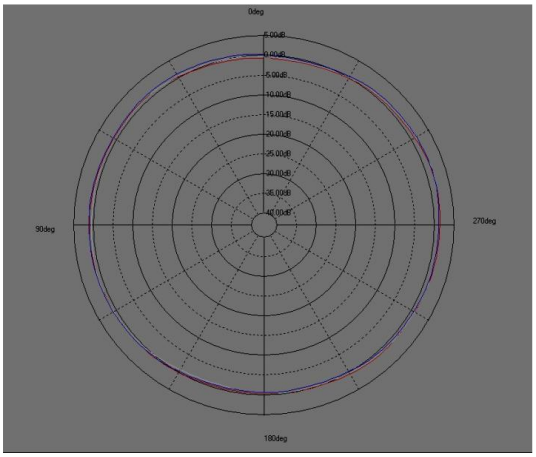
x-z plane

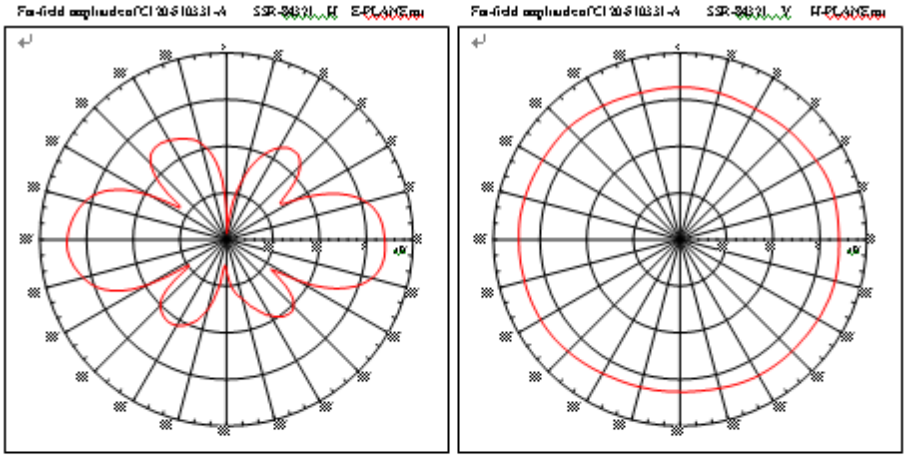


y-z plane

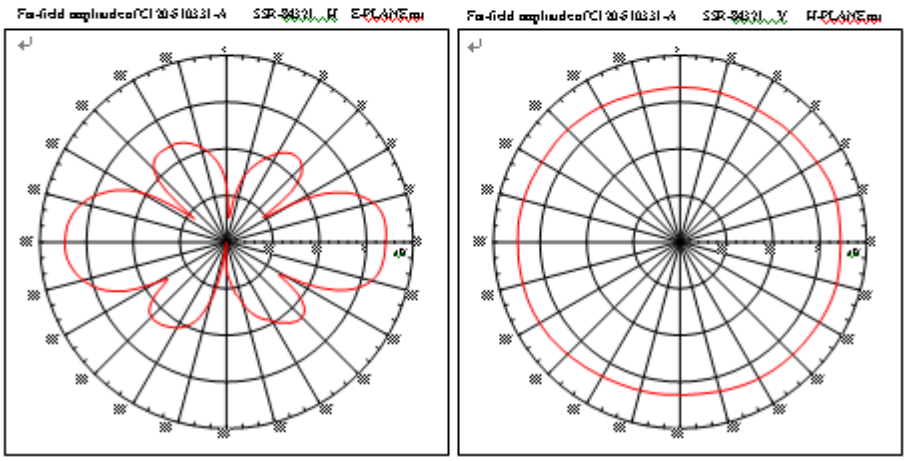


x-y plane





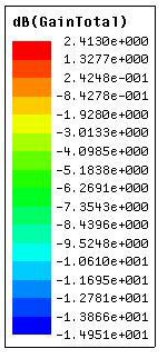
5.15 GHz Gain=4.11503 dBi 5.15 GHz Gain=4.39372 dBi

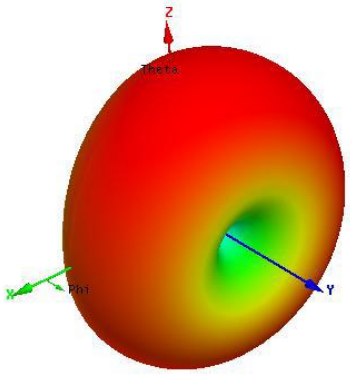


5.25 GHz Gain=4.6122 dBi 5.25 GHz Gain=4.88733 dBi

6. Product performance

The Agilent network analyzer E5071C 9KHz~8.5GHz is used to test the relevant port parameters of the antenna.





The far field pattern of the antenna is shown in the figure above. On the surface E, the radiation of the antenna is omni-directional.

7. Product Structure Diagram