



2.4GHz& 5GHz IFA PCB ANT Specification

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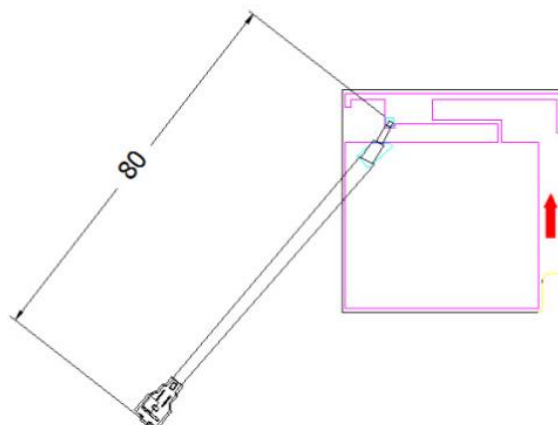
Web: www.b-link.net.cn

Product Name: 2.4GHz& 5GHz IFA PCB ANT	
Frequency: 2.4~2.5GHz and 5.15~5.85GHz	
Revision: V1.0	
Customer Approval:	
Company:	
Title:	
Signature:	Date:
BL-link Approval:	
Title:	
Signature:	Date:

Revision History

Revision	Summary	Release Date	Revised By
0.1	Initial release	2024-08-21	Zjh
1.0	Official release	2025-04-03	Zjh

1. Introduction



This antenna support 2.4GHz and 5GHz double frequency band. Designed by IFA antenna, theory almost Omni-directional radiation for far field.

Good port matching, low return loss, high efficiency can make communication more easily.

1.1 Features

- Operating Frequencies: 2400~2500MHz and 5150MHz~5850MHz
- Radiation: Omni-directional
- Modulation support: WLAN, BT, Zigbee
- Connect to host through IPEX1 connector

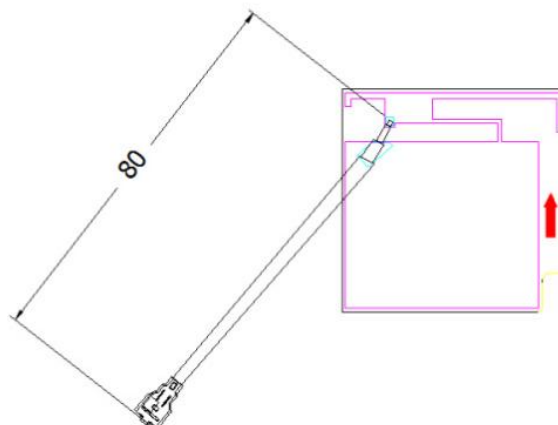
1.2 Applications

- IP Camera
- STB
- Smart TV
- Screen thrower
- Intelligent home furnishing
- Other devices which need to be supported by wireless network

1.3 General Specifications

Product Name	2.4GHz& 5GHz IFA PCB ANT
Frequency	2400~2500MHz and 5150MHz~5850MHz
Modulation support	WLAN/BT/Zigbee
VSWR	≤ 1.8
Return loss	$\leq -10\text{dB}$
Radiation	Omni-directional
Gain (peak)	3dBi
Polarization	Linear
Admitted Power	2W
Connector	IPEX1
Efficiency	45%~60%
Cable	RF $\Phi 1.13$ black cable and length is 80 mm

2. Mechanical Specifications



Antenna made by PCB material and fixed to customer' s product shell by bottom side adhesive,

Then through IPEX1 connector connect main board RF signal port.

RF $\Phi 1.13$ black cable length 80mm $\pm$ 3mm.

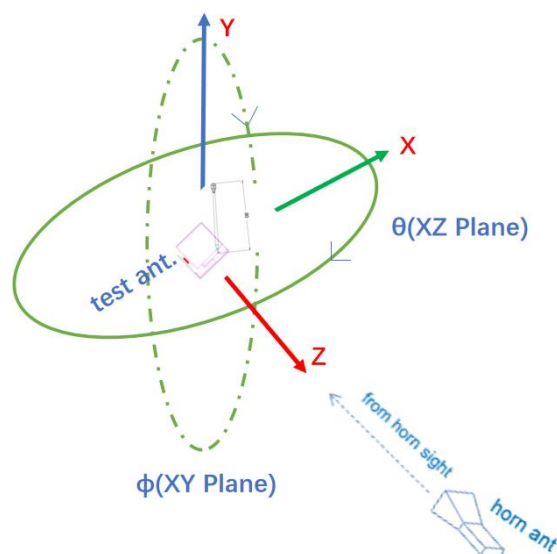
3. S-parameter



Return loss: $\leq -10\text{dB}$

VSWR: ≤ 1.8

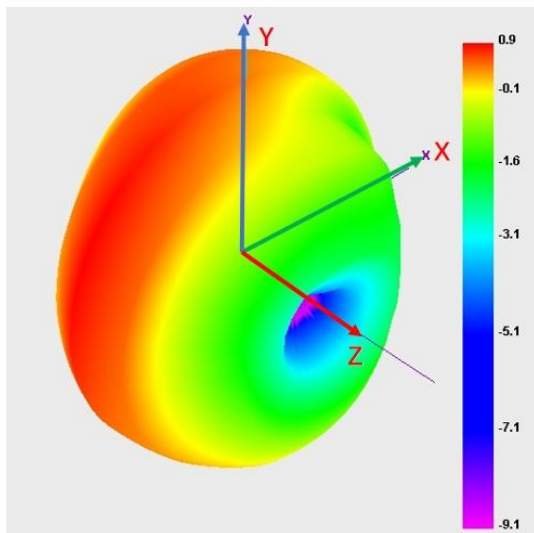
4. Radiation parameter



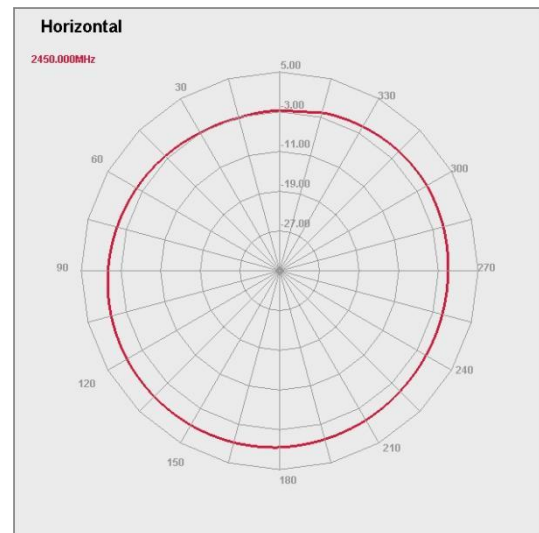
4.1 Gain and efficiency

Frequency	Gain	efficiency
2400~2500MHz	0~2dBi	45%~ 60%
5150~5850MHz	0~3dBi	45%~ 60%

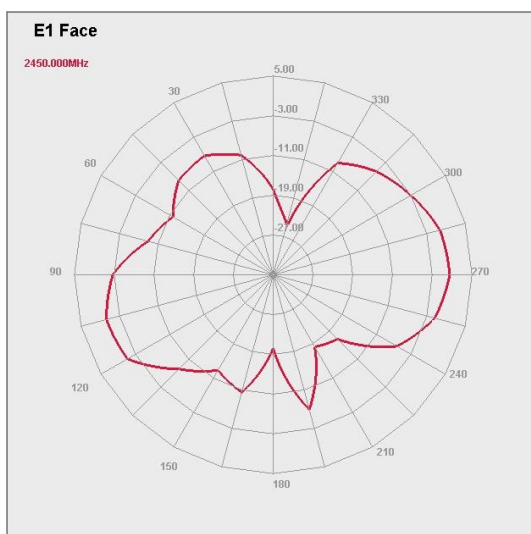
4.2 2.45GHz Radiation Pattern



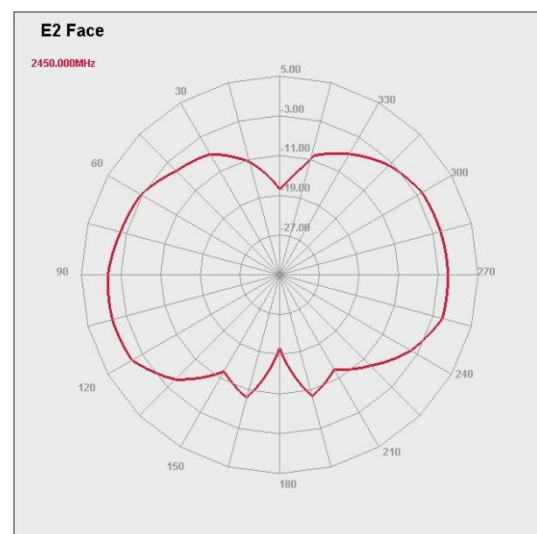
3D radiation



XY plane

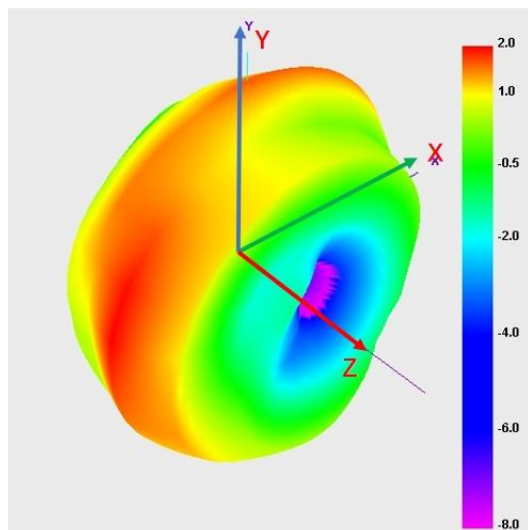


XZ plane

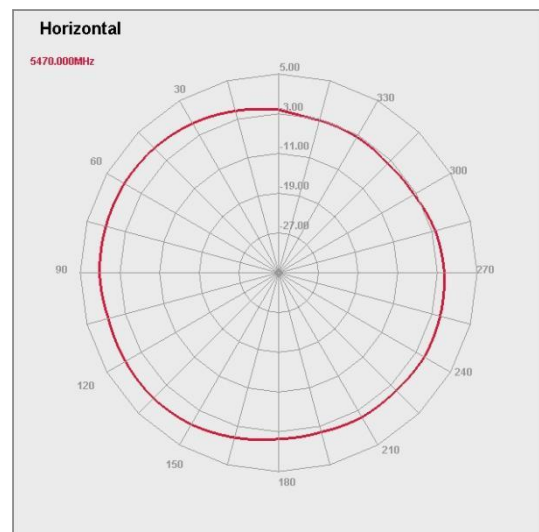


YZ plane

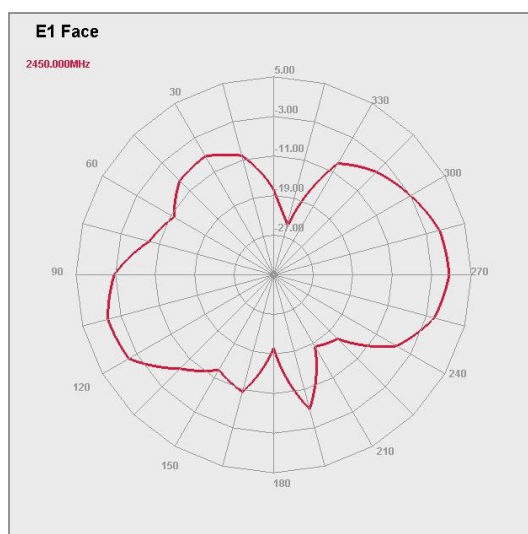
4.3 5.47GHz Radiation Pattern



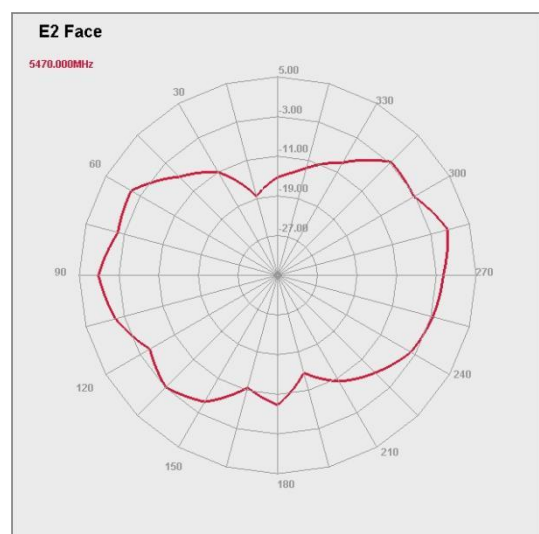
3D radiation



XY plane



XZ plane



YZ plane

5. Attachment

5.1 Full frequency Gain, Directivity & Efficiency table

Passive Test For 2G			
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	43.75	-3.59	1.56
2410	46.34	-3.34	1.79

2420	42.95	-3.67	1.41
2430	45.18	-3.45	1.58
2440	43.96	-3.57	0.59
2450	46.92	-3.29	0.86
2460	44.5	-3.52	0.54
2470	47.9	-3.2	0.8
2480	55.63	-2.55	1.51
2490	54.07	-2.67	1.41
2500	54.38	-2.65	1.46

Passive Test For 5G			
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
5150	48.54	-3.14	0.72
5160	51.08	-2.92	0.9
5170	51.55	-2.88	1.02
5180	50.02	-3.01	0.87
5190	47.2	-3.26	0.68
5200	47.41	-3.24	0.7
5210	51.78	-2.86	1.09
5220	49.42	-3.06	0.94
5230	49.14	-3.09	0.89
5240	46.64	-3.31	0.62
5250	50.59	-2.96	1.1
5260	52.34	-2.81	1.27
5270	48.91	-3.11	1.02
5280	49.36	-3.07	1.05
5290	49.89	-3.02	1.12
5300	48.25	-3.17	0.91
5310	50.71	-2.95	1.13
5320	55.33	-2.57	1.6
5330	50.66	-2.95	1.25
5340	48.71	-3.12	1.12
5350	52.24	-2.82	1.53
5360	53.71	-2.7	1.7
5370	55.22	-2.58	1.91
5380	50.31	-2.98	1.58
5390	47.52	-3.23	1.4
5400	54.81	-2.61	2.06
5410	54.71	-2.62	2.02
5420	58.43	-2.33	2.43
5430	54.8	-2.61	2.13

5440	48.84	-3.11	1.69
5450	45.98	-3.37	1.5
5460	50.85	-2.94	1.98
5470	50.7	-2.95	2.01
5480	48.27	-3.16	1.72
5490	47.29	-3.25	1.65
5500	46.64	-3.31	1.57
5510	46.5	-3.33	1.53
5520	46.94	-3.28	1.6
5530	54.86	-2.61	2.32
5540	50.87	-2.94	1.93
5550	47.47	-3.24	1.65
5560	48.21	-3.17	1.77
5570	50.25	-2.99	1.93
5580	49.92	-3.02	1.82
5590	48.84	-3.11	1.72
5600	51.34	-2.9	1.99
5610	46.45	-3.33	1.65
5620	43.88	-3.58	1.33
5630	48.07	-3.18	1.75
5640	50.28	-2.99	1.97
5650	50.9	-2.93	2.09
5660	45.88	-3.38	1.7
5670	47.24	-3.26	1.81
5680	47.29	-3.25	1.8
5690	48.26	-3.16	1.93
5700	50.39	-2.98	2.13
5710	49.13	-3.09	2.09
5720	48.2	-3.17	2.01
5730	47.59	-3.22	1.96
5740	53.17	-2.74	2.49
5750	54.44	-2.64	2.64
5760	51.58	-2.88	2.42
5770	50.43	-2.97	2.39
5780	51.35	-2.89	2.43
5790	52.27	-2.82	2.51
5800	52.82	-2.77	2.54
5810	54.45	-2.64	2.65
5820	52.64	-2.79	2.51
5830	51.45	-2.89	2.44