

Product Specification Sheet

Customer Name:	
Specification Description:	WIFI 2.4GHz,5GHz FPC Antennas
Part Number:	XHD-WIFI-FPC-1.13B-150-GFIPEX-1
Frequency Band:	2.4G,5G WIFI Antennas
Date:	2020-07-31
Manufacturer:	Suzhou Xunhede Communication Co., Ltd.
Address:	289 Qianqiao Road, Suzhou New District

Factory Seal:

Prepared	Reviewed	Approved
Gao Xiang	Wang Hong Jun	Chang Ai Jin

Customer Confirmation Seal:

Check	Reviewed	Approved

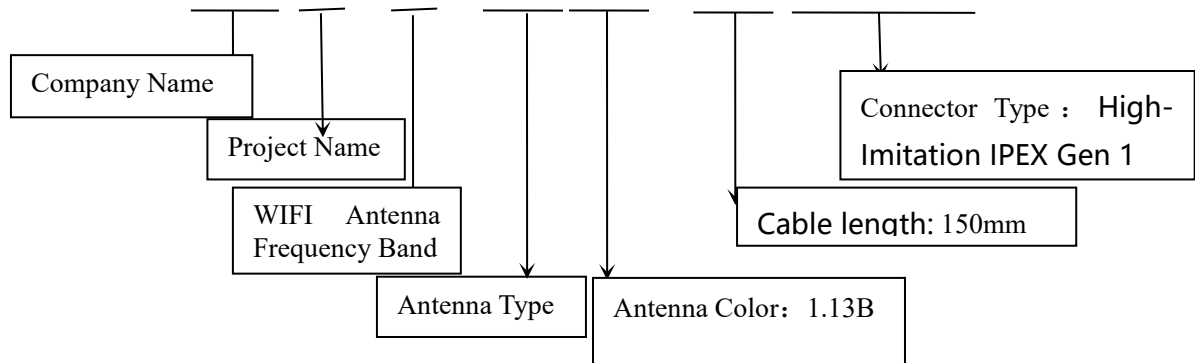
Contents

1 Definition and Description of Antenna Materials	5
2 Finished Product Packaging Instructions	6
3 Antenna Electrical Performance Test Data and Tuning Spectrum Characteristics	7
4 Theoretical Verification of Antenna Tuning Data (CST Simulation)10	
5 Conclusions	11

1 Definition and Description of Antenna Materials

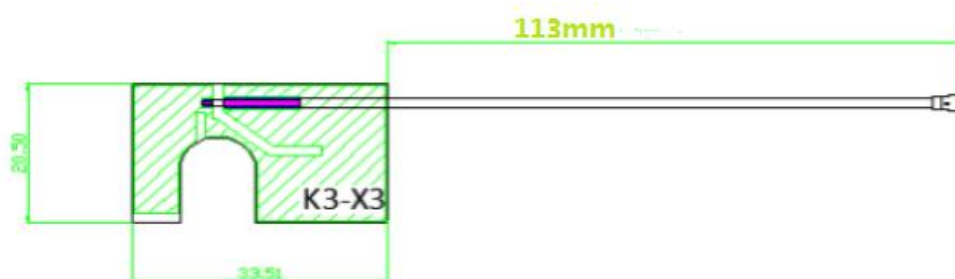
1.1 Part Number Coding

XHD-K3-WIFI- FPC- 1.13B- 150 - GFIPLEX-1

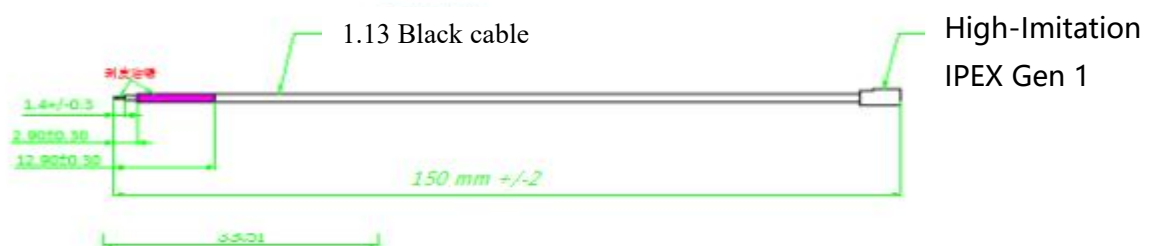


1.2 Product Structure Diagram

FPCB Antenna with 1.13Black Cable



1.3 Cable Diagram (Unit: mm)



2 Finished Product Packaging Instructions

50 pieces per bundle, 5000 pieces per carton. Soft padding must be placed inside the carton to prevent the antennas from being crushed.



3 Antenna Electrical Performance Test Data and Tuning Spectrum Characteristics

3.1 Antenna Electrical Performance Test Data and Tuning Spectrum Characteristics

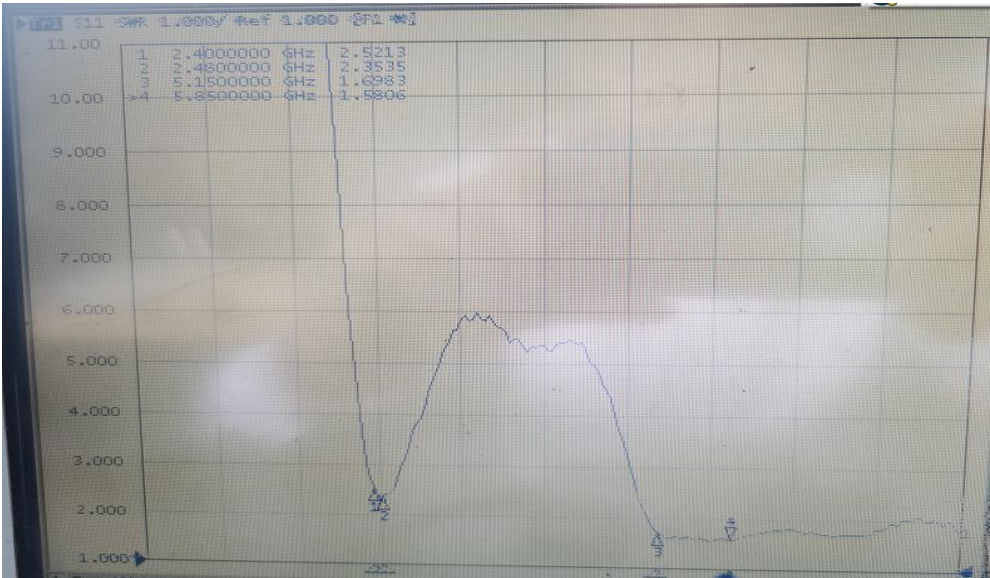
Electrical Parameters	
frequency range	2.4GHz and 5GHz WIFI Antennas
VSWR	≤2.5
Max gain	2.17dBi (2.4G), 2.97dBi (5G)
Input impedance	50 Ω
Polarization mode	Linear Polarization
Radiation direction	Omnidirectional
Mechanical parameters	
Antenna Color	1.13black
Input connector	High-Imitation IPEX Gen 1
Cable length	50mm
ANT Size	33.5*20.5MM
Operating temperature	-40℃ ~ +85℃
Working Humidity	20~80%

3.2 Antenna Passive Test Efficiency and Gain

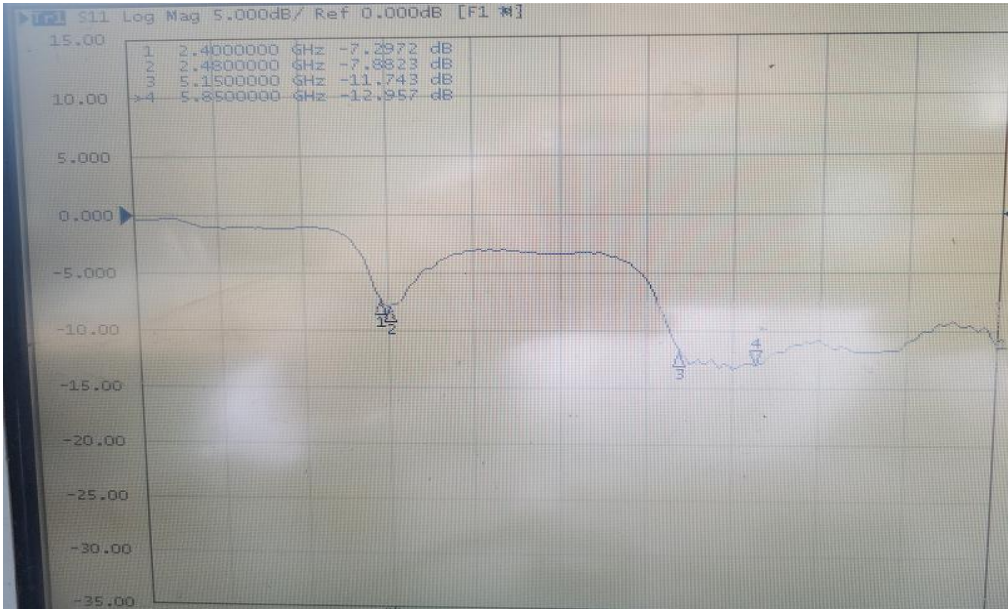
Frequency (MHz)	Efficiency (%)	Gain (dBi)	Frequency (MHz)	Efficiency (%)	Gain (dBi)	Frequency (MHz)	Efficiency (%)	Gain (dBi)
2400	46.66	1.96	5150	47.77	1.18	5550	56.05	1.57
2420	46.72	1.96	5190	45.38	1.46	5590	59.64	1.49
2430	46.67	2.17	5210	42.36	1.51	5610	62.99	1.95
2440	45.04	2.16	5230	42.01	1.39	5630	64.42	2.23
2450	50.27	1.97	5250	42.42	1.31	5650	67.27	2.65
2460	51.62	1.52	5270	40.47	0.68	5670	72.37	2.95
2470	54.19	1.28	5290	41.93	0.61	5690	71.58	2.93
2480	56.34	1.16	5310	42.1	0.37	5710	71.16	2.87
2490	58.04	1.41	5330	42.75	0.03	5730	71.78	2.97
2500	57.94	1.55	5350	40.12	-0.59	5750	65.81	2.41
			5370	42.05	-0.62	5770	61.55	1.87
			5390	46.31	-0.39	5790	58.52	1.58
			5410	48.24	-0.2	5810	61.62	1.68
			5430	48.36	-0.02	5830	62.21	1.63
			5450	52.08	0.24	5850	56.72	0.96
			5470	51.75	0.42			
			5490	51.94	0.79			
			5510	54.26	1.39			
			5530	55.79	1.69			

3.3 Antenna Passive Tuning Chart: Return Loss & VSWR

VSWR



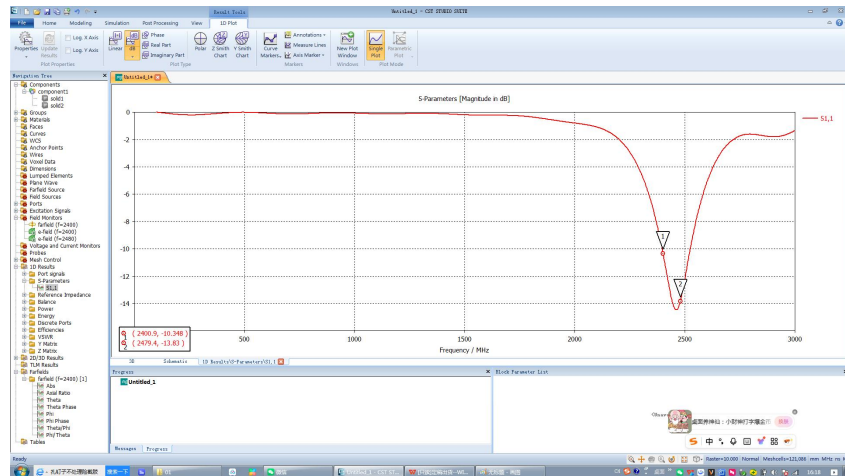
Return Loss



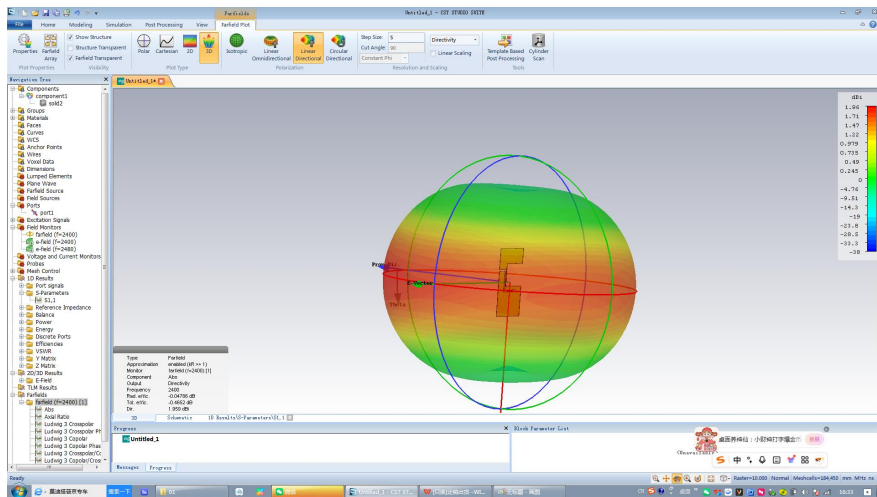
4 Theoretical Verification of Antenna Tuning Data (CST Simulation)

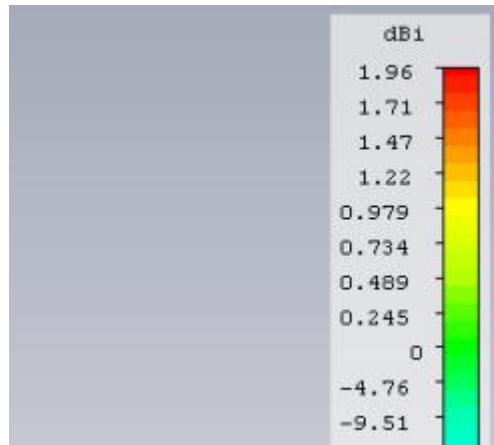
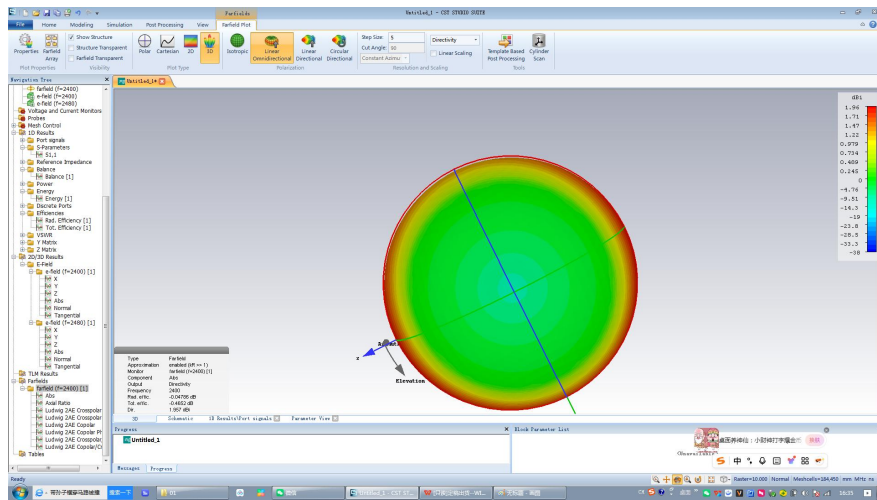
4.1 Antenna CST Simulation S11 Plot (2400-2480 MHz, {-10, -13.8} dB)

The figure below shows the modeling and simulation data plot of the antenna in the CST environment.



4.2 Antenna Radiation Pattern





peak gain=1.96

The test data is consistent with the simulation data.

5 Conclusions

The actual product's FPC antenna corresponds one-to-one with the CST simulation data. This antenna is a PIFA antenna with omnidirectional characteristics.