

SPECIFICATION



ShenZhen TianDa Communication Co,LTD

DDA020 Antenna

Product Specification

Customer	KaiDishi	Frequency band	2400-2500MHz
Project name	DDA020	Edition	A
Item number	XM-BS-02-24-A	Colour	White
R F design	Wangxinchuang	Structural design	Zhouluhong
Date	2024.02.21		

Customer confirmation:

Whether the assembly meets your requirements: OK NG

ShenZhen TianDa Communication CO., LTD.

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一、WIFI Antenna

1、Specifications

The specification mainly provides the test status of electrical and structural performance parameters of 2.4G antenna in DDA020 project。 The picture below shows the 2.4G antenna designed by Tianda.



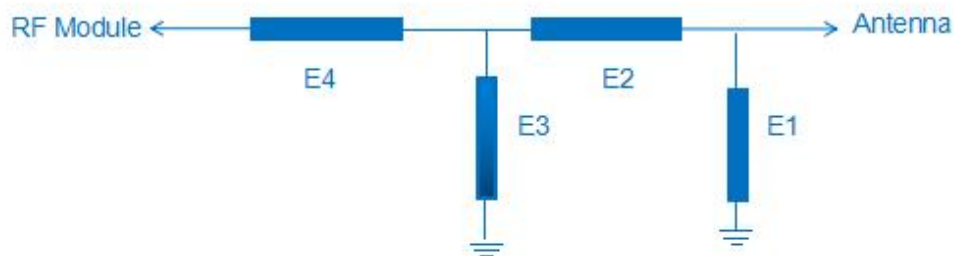
1.1、Electrical specifications

1.1.1、Electrical performance index

The operating frequency band of the antenna 2400MHz—2500MHz, The following is the electrical performance index of the antenna designed and produced by Tianda.

WIFI		
Frequency band	Frequency (MHz)	VSWR
2.4G	2400~2500	≤2.0

1.1.2、Matching circuit diagram



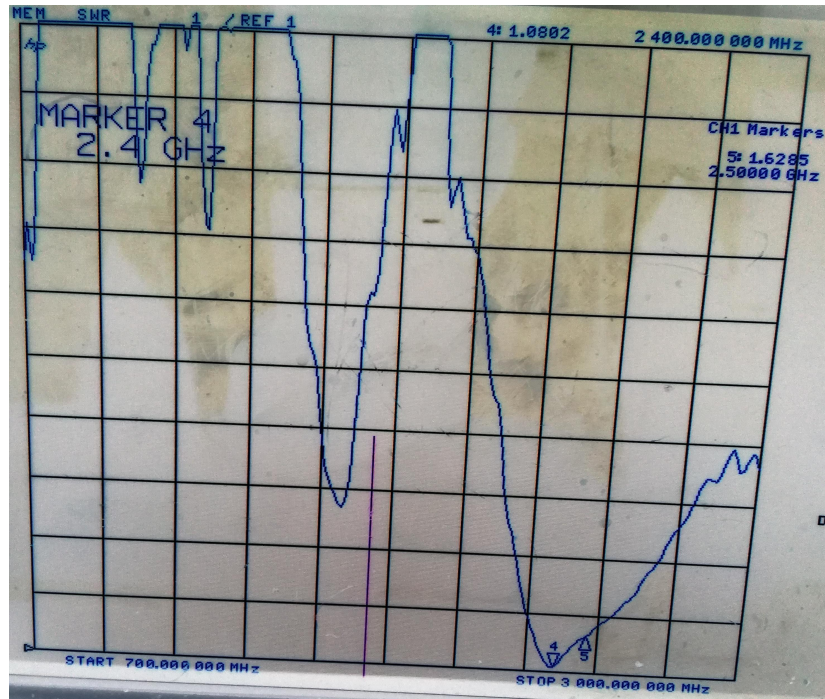
The matching circuit of the WIFI antenna is the original matching circuit of the motherboard.

1.2、 Testing

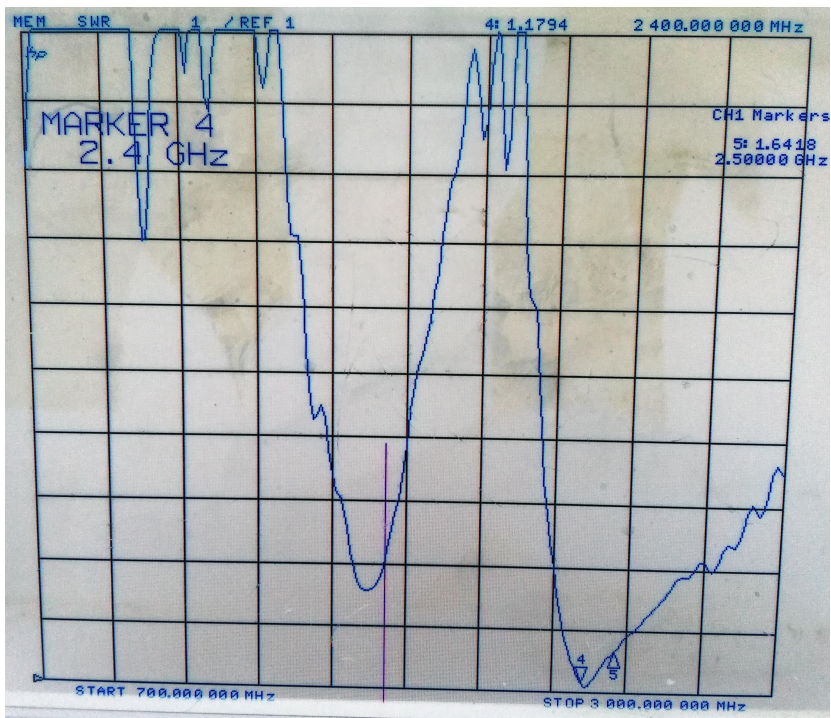
1.2.1、 Passive test

1.2.1.1、 VSWR

Left Antenna



Right Antenna



1.2.1.2、 Antenna Gain and Efficiency

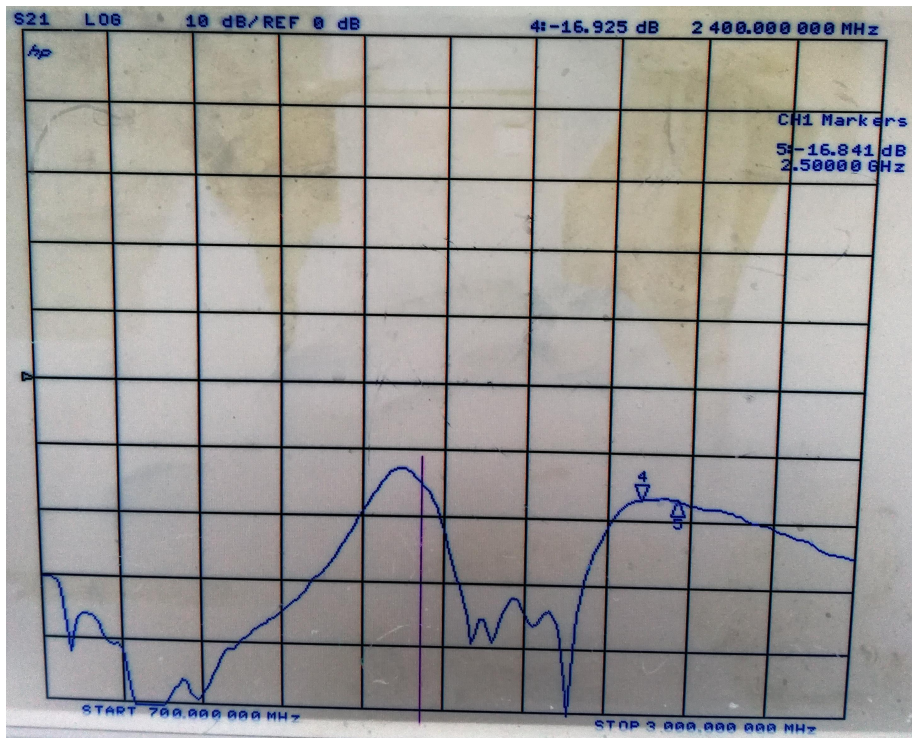
Left Antenna

Passive Test For 2.4GWIFI左									
Freq (MHz)	Effi (%)	Gain (dBi)	Gain (dBd)	UHS (%)	DHIS (%)	Max (dB)	Min (dB)	AttH (dB)	AttV (dB)
2400	62.56	2.4	0.25	33.833	28.723	2.4	-10.37	46.87	46.81
2410	64.94	2.64	0.49	35.202	29.741	2.64	-10.22	47.08	47.17
2420	64.02	2.58	0.43	34.714	29.31	2.58	-9.7	47.06	47.12
2430	65.21	2.45	0.3	35.282	29.931	2.45	-9.04	47	47.09
2440	67.78	2.28	0.13	36.538	31.244	2.28	-8.7	47.5	47.69
2450	68.05	2.01	-0.14	36.471	31.574	2.01	-8.42	47.48	47.63
2460	69.78	2.29	0.14	37.192	32.585	2.29	-8.19	47.73	47.89
2470	69.02	2	-0.15	36.496	32.52	2	-8.03	47.81	48.06
2480	68.09	2.03	-0.12	35.615	32.472	2.03	-7.84	47.79	47.96
2490	73.95	1.72	-0.43	38.286	35.66	1.72	-7.22	48.2	48.46
2500	65.11	1.04	-1.11	33.461	31.65	1.04	-7.25	47.83	48.01

Right Antenna

Passive Test For 2.4GWIFI右									
Freq (MHz)	Effi (%)	Gain (dBi)	Gain (dBd)	UHS (%)	DHIS (%)	Max (dB)	Min (dB)	AttH (dB)	AttV (dB)
2400	59.21	2.99	0.84	33.691	25.515	2.99	-11.18	46.87	46.81
2410	60.38	3.19	1.04	34.408	25.97	3.19	-10.98	47.08	47.17
2420	60	3.11	0.96	34.155	25.846	3.11	-10.73	47.06	47.12
2430	62.79	3.14	0.99	35.628	27.158	3.14	-9.74	47	47.09
2440	64.24	3.02	0.87	36.353	27.884	3.02	-9.89	47.5	47.69
2450	65.85	2.84	0.69	37.176	28.67	2.84	-9.89	47.48	47.63
2460	67.69	2.98	0.83	38.017	29.676	2.98	-9.54	47.73	47.89
2470	66.05	2.7	0.55	36.823	29.223	2.7	-8.87	47.81	48.06
2480	66.5	2.52	0.37	36.739	29.759	2.52	-8.57	47.79	47.96
2490	68.42	2.49	0.34	37.606	30.818	2.49	-7.8	48.2	48.46
2500	60.77	1.81	-0.34	33.045	27.729	1.81	-8.3	47.83	48.01

1.2.1.3、 Antenna Isolation



The isolation between antennas is - 16.9dB - 16.8dB.

1.2.2、OTA Date

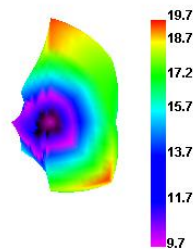
b (11M)	OTA		
Band	2.4G		
Channel	1	7	13
TRP	17.0	16.8	17.5
TIS	-85.1	-86.8	-87.1

g (54M)	OTA		
Band	2.4G		
Channel	1	7	13
TRP	16.3	16.2	16.4
TIS	-73.7	-74.3	-74.5

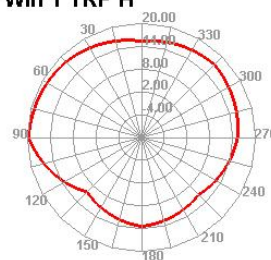
n (MCS7)	OTA		
Band	2.4G		
Channel	1	7	13
TRP	16.2	16.4	16.6
TIS	-70.4	-71.1	-71.0

1.2.3、Antenna pattern

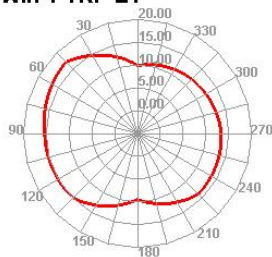
Wifi 1 TRP



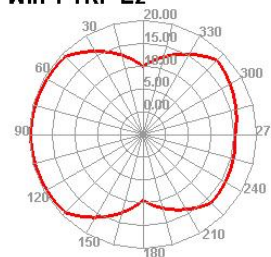
Wifi 1 TRP H



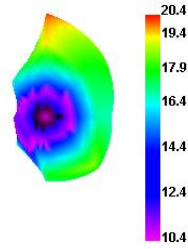
Wifi 1 TRP E1



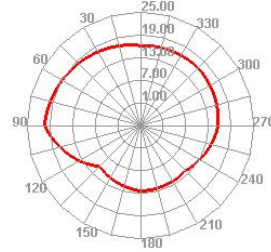
Wifi 1 TRP E2



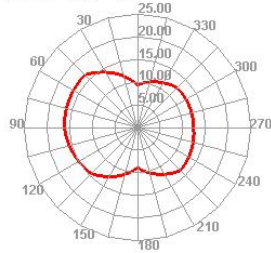
Wifi 7 TRP



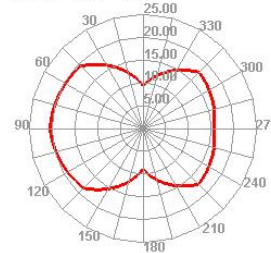
Wifi 7 TRP H



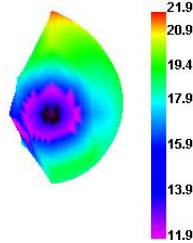
Wifi 7 TRP E1



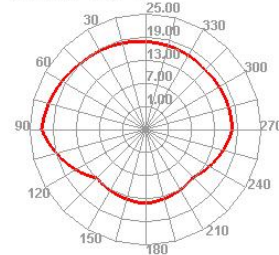
Wifi 7 TRP E2



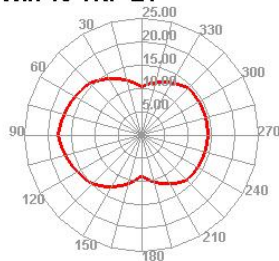
Wifi 13 TRP



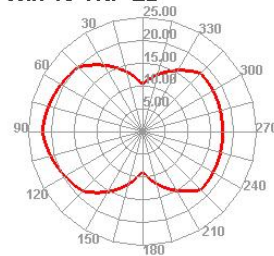
Wifi 13 TRP H



Wifi 13 TRP E1



Wifi 13 TRP E2



二、 Structural specifications

2.1、 Antenna composition

WIFI Antenna is mainly composed of Plastic shell+PCB+Cable line.

2.2、 Drawings

