

SPECIFICATION



ShenZhen TianDa Communication Co,LTD

DDA270X-2TXS3 Antenna

Product Specification

Customer	KaiDishi	Frequency band	2400-2500MHz
Project name	DDA270X-2TXS3	Edition	A
Item number	XM-DD-A2-00-A	Colour	Black
RF 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 WIFI antenna in DDA270X-2TXS3 project。 The picture below shows the WIFI antenna designed by Tianda.



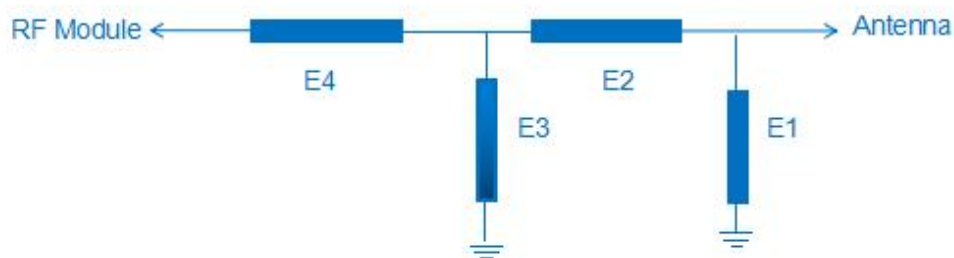
1.1、Electrical specifications

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

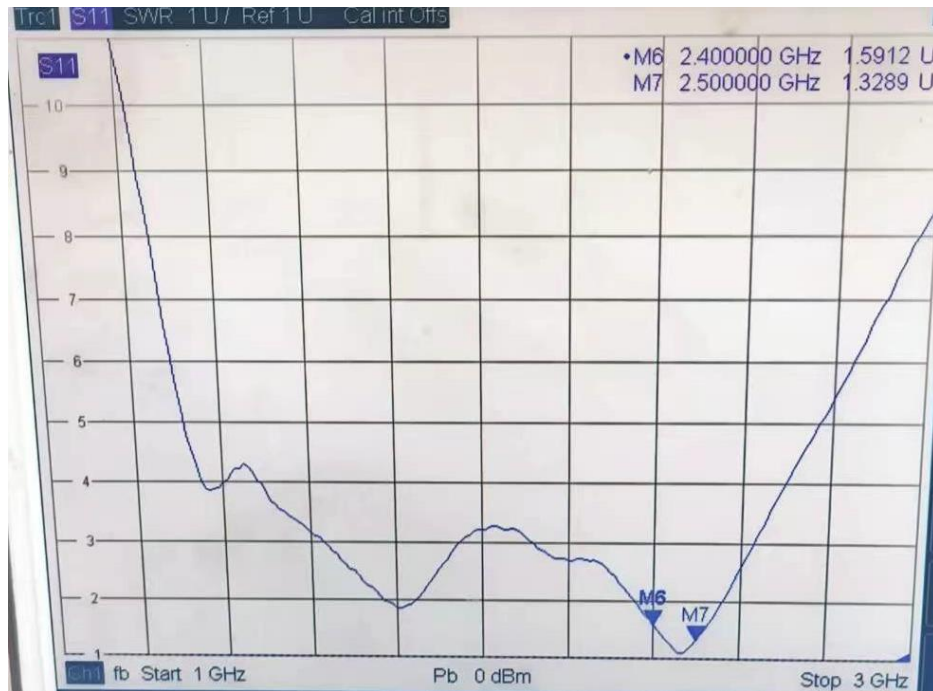


From the antenna direction, the WIFI antenna matching circuit is parallel 1.0pF capacitor, series 0 ohm resistance.

1.2、Testing

1.2.1、Passive test

1.2.1.1、VSWR



1.2.1.2、Antenna Gain and Efficiency

Passive Test For 2.4G-2.5G									
Freq (MHz)	Effi (%)	Gain (dBi)	Gain (dBd)	UHS (%)	DHIS (%)	Max (dB)	Min (dB)	AttH (dB)	AttV (dB)
2400	60.56	3.41	1.26	45.384	15.177	3.41	-17.83	46.87	46.81
2410	59.48	3.38	1.23	44.992	14.486	3.38	-18.03	47.08	47.17
2420	62.9	3.58	1.43	48.062	14.834	3.58	-17.25	47.06	47.12
2430	63.6	3.64	1.49	49.19	14.414	3.64	-16.62	47	47.09
2440	63.98	3.7	1.55	50.988	12.994	3.7	-21.25	47.5	47.69
2450	65.53	3.91	1.76	52.514	13.017	3.91	-24.66	47.48	47.63
2460	67.42	3.74	1.59	53.984	13.434	3.74	-20.24	47.73	47.89
2470	68.73	3.74	1.59	54.966	13.766	3.74	-20.97	47.81	48.06
2480	66.22	3.51	1.36	52.494	13.723	3.51	-24.02	47.79	47.96
2490	68.74	3.67	1.52	55.711	13.03	3.67	-25.63	48.2	48.46
2500	65.05	3.41	1.26	50.84	14.211	3.41	-24.09	47.83	48.01

1.2.2、OTA Date

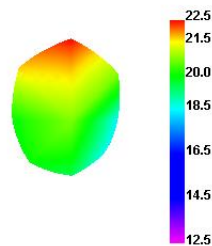
b (11M)	OTA		
Band	2. 4G		
Channel	1	7	13
TRP	17.5	18.2	18.5
TIS	-88.5	-89.0	-89.0

g (54M)	OTA		
Band	2. 4G		
Channel	1	7	13
TRP	14.7	15.3	15.8
TIS	-74.1	-74.9	-74.2

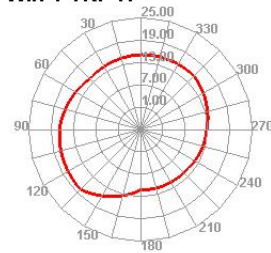
n (MCS7)	OTA		
Band	2. 4G		
Channel	1	7	13
TRP	14.7	15.1	15.6
TIS	-70.3	-72.3	-71.4

1.2.3、Antenna pattern

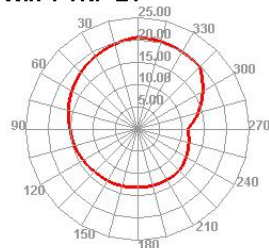
Wifi 1 TRP



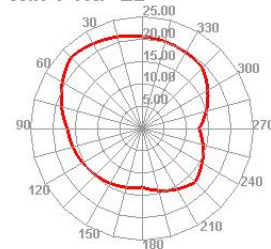
Wifi 1 TRP H



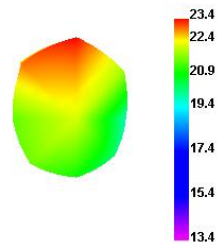
Wifi 1 TRP E1



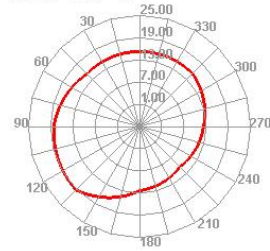
Wifi 1 TRP E2



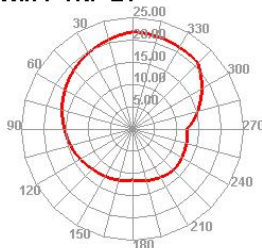
Wifi 7 TRP



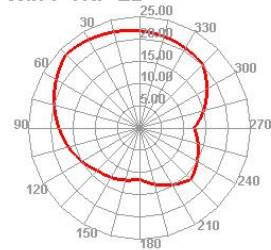
Wifi 7 TRP H



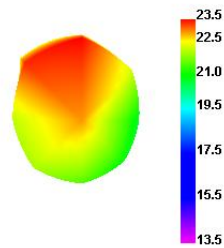
Wifi 7 TRP E1



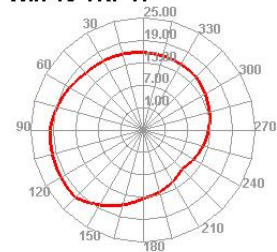
Wifi 7 TRP E2



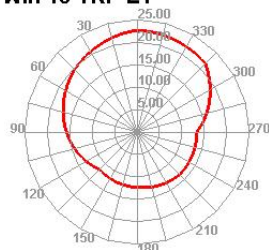
Wifi 13 TRP



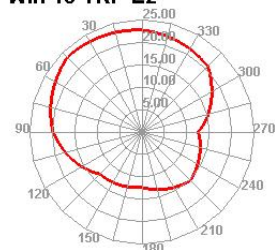
Wifi 13 TRP H



Wifi 13 TRP E1



Wifi 13 TRP E2

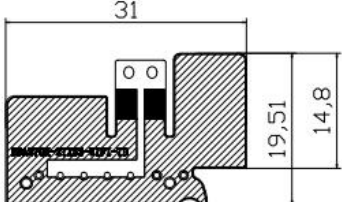
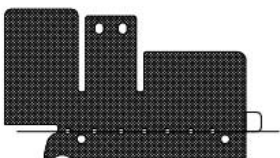


二、 Structural specifications

2.1、 Antenna composition

WIFI Antenna is mainly composed of FPC+Bracket.

2.2、Drawings

1	2	3	4	5	6	7	8																																												
A	 						A																																												
B	Notes: 1.FPC material: electrolytic copper, PI half-and-half material (18/12.5) . 2.Reverse adhesive (3M9471). 3.Unmarked tolerance dimensions,Die punch out dimensional tolerance is ± 0.1, The dimension tolerance of copper foil line is ± 0.05, The tolerance of the hole is ± 0.05. 4.The slash is copper foil, The feed point is the one that draws the cross line,Feed Point Gold plating. Feed Point Gold plating. 5.Surface black oil (matte),Screen printed white characters. 6.The contents of Pb, Hg, CR+6, PBBs and PBDEs are less than 500PPM, CD is less than 50PPM.						B																																												
C							C																																												
D							D																																												
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: center;">A</td> <td style="width: 60%;">New drawing</td> <td style="width: 10%; text-align: center;">20231123</td> <td style="width: 20%;"></td> </tr> <tr> <td style="text-align: center;">Rev</td> <td style="text-align: center;">Description</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Remark</td> </tr> <tr> <td style="text-align: center;">1</td> <td></td> <td></td> <td></td> </tr> </table>				A	New drawing	20231123		Rev	Description	Date	Remark	1				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;">  </td> <td colspan="2" style="text-align: center;">ShenZhen TianDa Communication Co.,Ltd</td> </tr> <tr> <td style="width: 15%; text-align: center;">Third Angle</td> <td style="width: 15%; text-align: center;">Project</td> <td style="width: 15%; text-align: center;">Date</td> <td style="width: 55%;"></td> </tr> <tr> <td style="text-align: center;">0~10 ± 0.05</td> <td style="text-align: center;">Part Name</td> <td style="text-align: center;">Designed by</td> <td></td> </tr> <tr> <td style="text-align: center;">10~18 ± 0.10</td> <td style="text-align: center;">Part No.</td> <td style="text-align: center;">Checked by</td> <td></td> </tr> <tr> <td style="text-align: center;">18~30 ± 0.12</td> <td style="text-align: center;">Material</td> <td style="text-align: center;">Approved by</td> <td></td> </tr> <tr> <td style="text-align: center;">30~40 ± 0.15</td> <td></td> <td style="text-align: center;">Unit</td> <td style="text-align: center;">mm</td> </tr> <tr> <td style="text-align: center;">40~ ± 0.20</td> <td></td> <td style="text-align: center;">Scale</td> <td style="text-align: center;">1:1</td> </tr> <tr> <td style="text-align: center;">Angle $\pm 0.5^\circ$</td> <td></td> <td></td> <td></td> </tr> </table>						ShenZhen TianDa Communication Co.,Ltd		Third Angle	Project	Date		0~10 ± 0.05	Part Name	Designed by		10~18 ± 0.10	Part No.	Checked by		18~30 ± 0.12	Material	Approved by		30~40 ± 0.15		Unit	mm	40~ ± 0.20		Scale	1:1	Angle $\pm 0.5^\circ$			
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