Antenna Specification

Antenna specification for approval

Customer Name: Tianhao Model: A8

Material requirements: FPC Antenna Type: 4G Antenna/WIFI Antenna

Color: Black 4G Antenna Material: G2012A-1B2-A

WIFI Antenna Material Number: F1536A-1B2-A

Date of Production: 2025-04-25

Version:A

Acknowledgment Signature Admit that signature			
Yunxi admitted Confirmation Signature		**Customer acknowledges** Customer Approved	
Undertaker Responsible		**Undertaker Responsible**	
Quality QC		**Chief**	
Approved Approve		**Approved Approve**	
Date Date		**Date Date**	

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Directory

1: Overview

- **This approval sheet supports for MID project. FPC antennas include in this project. This report is for the performance of 4G+WIFI antenna.**
- **Antenna shape size:Meet the requirement of MID**
- **Antenna band:700MHz~960MHz,1700MHz~2700MHz,2400MHz~2500MHz,5150MHz~5850MHz**
- **Antenna material:Antenna material meet the requirement of MID**
- **Adhesive performance:Adhesive performance meet the requirement of MID**
- **Antenna performance meet the spec below:**

Description	700MHz ~ 960MHz 1700MHZ-2700MHZ, 2400MHZ-2500MHZ 5150MHz ~ 5850MHz		Units
VSWR	≤ 5.0	≤ 5	dB
Average Antenna Gain	≥-4.5	≥-4.0	%
Antenna Efficiency	≥ 20	≥ 20	

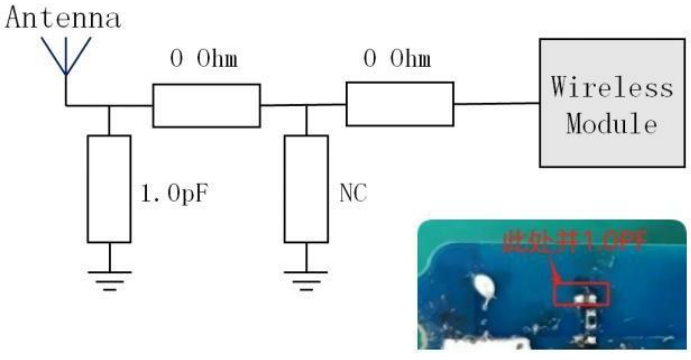
Feed Impedance	50 ohms
Operating Temperature	-40 to +85 deg C
Polarization / Azimuth	Linear / Omni-directional

- **Mechanical Information**

Mechanical Dimension	
Cable Length	**/**
Description	**4G+WIFI antenna**
Material	**FPC**
Coaxial Cable	**/**
Environmental	
Operation Temperature	**-40 to +85 deg C**
Storage Temperature	**-40 to +85 deg C**

2: matching circuit diagram, machine picture, antenna picture

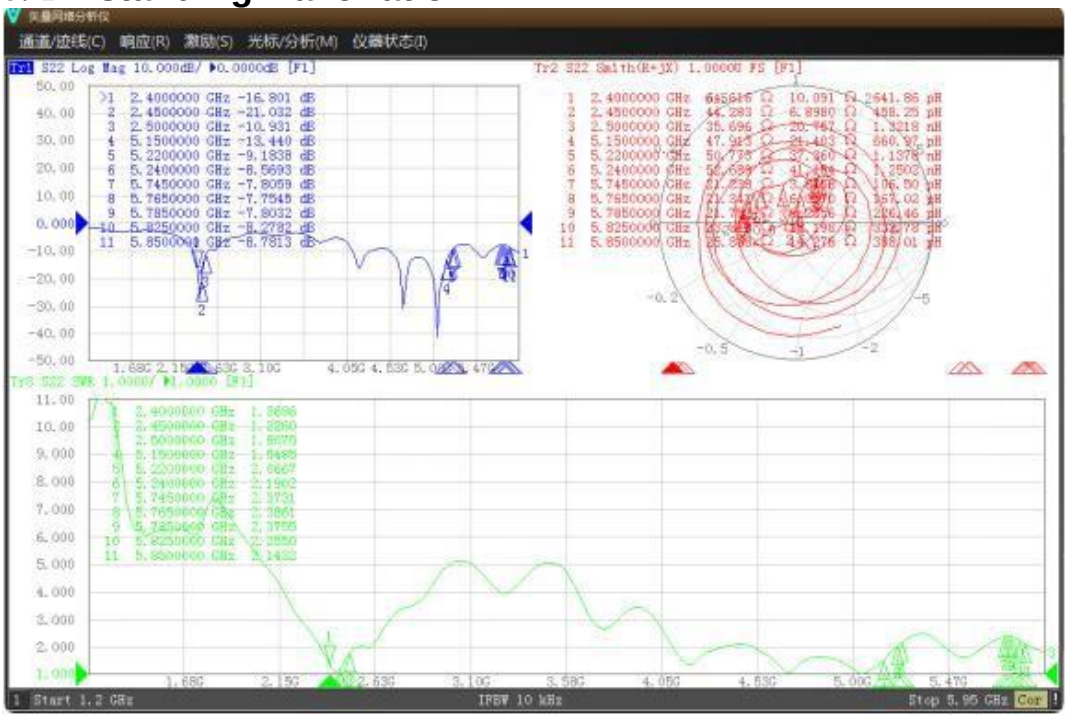
2.1 matching circuit diagram



2.2 machine pictures, antenna pictures

3: VSWR, test data

3.1 standing wave ratio



3.2 Test data

LTE												
Standard	FDD Band 2			FDD Band 4			FDD Band 5			FDD Band 12		
Channel	18650 /650	18900 /900	19150 /1150	20000 /2000	20175 /2175	20350 /2350	20450 /2450	20525 /2525	20600 /2600	23060 /5060	23095 /5095	23130 /5130
TRP (dBm)	18.2	17.6	16.9	16.5	17.1	17.9	15. 2	14.7	14.1	14.7	15.3	15.9
TIS (dBm)			-87.9			-86.4			-81.3			-86.8
Standard	FDD Band 13			FDD Band 17								
Channel		23230 /5230		23780 /5780	23790 /5790	23800 /5800						
TRP (dBm)		17.3		15.8	16.0	16.3						
TIS (dBm)		-85.9				-85.7						

Passive Test For WIFI			
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	24.6	-6.1	2.0
2410	23.1	-6.4	1.5
2420	25.1	-6.0	1.8
2430	26.9	-5.7	2.0
2440	29.3	-5.3	2.2
2450	32.1	-4.9	2.7
2460	32.7	-4.9	2.7
2470	30.3	-5.2	2.6
2480	29.4	-5.3	2.7
2490	28.9	-5.4	2.6
2500	28.0	-5.5	2.5
5150	27.9	-5.5	1.8
5200	27.5	-5.6	1.2
5250	29.0	-5.4	0.7
5300	35.7	-4.5	1.4
5350	34.2	-4.7	1.6
5400	34.4	-4.6	1.6
5450	36.6	-4.4	1.8
5500	33.9	-4.7	2.1
5550	32.5	-4.9	2.8
5600	33.8	-4.7	2.9
5650	33.0	-4.8	3.0
5700	33.5	-4.8	2.8
5750	34.5	-4.6	2.4
5800	32.3	-4.9	3.0
5850	35.9	-4.5	2.9

Passive Test For LTE			
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
700	20.4	-6.9	-2.2
720	22.0	-6.6	-1.9
740	21.7	-6.6	-1.5
760	22.4	-6.5	-1.1
780	22.7	-6.4	-0.8
800	23.5	-6.3	-0.7
820	24.7	-6.1	-1.0
840	25.3	-6.0	-0.6
860	27.8	-5.6	0.3
880	24.9	-6.0	0.4
900	24.3	-6.1	0.4
920	23.1	-6.4	0.5
940	22.8	-6.4	0.5
960	22.4	-6.5	0.7

Passive Test For LTE			
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
1700	38.0	-4.2	2.9
1730	39.4	-4.1	3.1
1760	36.6	-4.4	3.3
1790	38.4	-4.2	2.7
1820	32.6	-4.9	2.0
1850	35.9	-4.4	2.4
1880	31.1	-5.1	2.0
1910	31.9	-5.0	2.0
1940	35.3	-4.5	2.5
1970	33.7	-4.7	2.3
2000	37.3	-4.3	2.4
2030	40.9	-3.9	2.8
2060	38.3	-4.2	3.5
2090	40.4	-3.9	3.0
2120	39.5	-4.0	3.3
2150	39.3	-4.1	2.9
2180	36.3	-4.4	2.3

4: Structural Drawings