

Antenna specification for approval

Customer name: Zhongnuoneng

Model: DOORLELL

Antenna type :2.4G Antenna

Antenna frequency band: 2.4G

Material : FPC

Color : Black

Material Number:F1352A-1L10B-060-A F1353A-1R10B-045-A

Production date:2023-04-13

Version: **A**

Admit that signature			
Confirmation Signature		Customer Approved	
Responsible		Responsible	
QC		Engineer	
Approve		Approve	
Date		Date	

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This approval sheet supports for DOORLELL project. FPC antennas include in this project. This report is for the performance of 2.4G antenna.

- Antenna shape size: Meet the requirement of DOORLELL project
- Antenna band: 2400MHz~2500MHz
- Antenna material: Antenna material meet the requirement of DOORLELL
- Adhesive performance: Adhesive performance meet the requirement of DOORLELL

Antenna performance SPEC overview

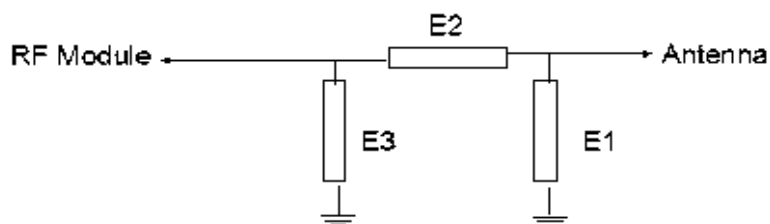
Description	2.4GHz~2.5GHz	Units
VSWR	≤2.0	
Average Antenna Gain	≥2.0	dB
Antenna Efficiency	≥50	%
Feed Impedance	50 ohms	
Operating Temperature	-40 to +85 deg C	
Polarization / Azimuth	Linear / Omni-directional	

● Mechanical Information

Mechanical Dimension	
Cable Length	060/045mm/Black
Description	2.4G antenna
Material	FPC
Coaxial Cable	50Ohm/O.D.1.13mm
Environmental	
Operation Temperature	-40 to +85 deg C
Storage Temperature	-40 to +85 deg C

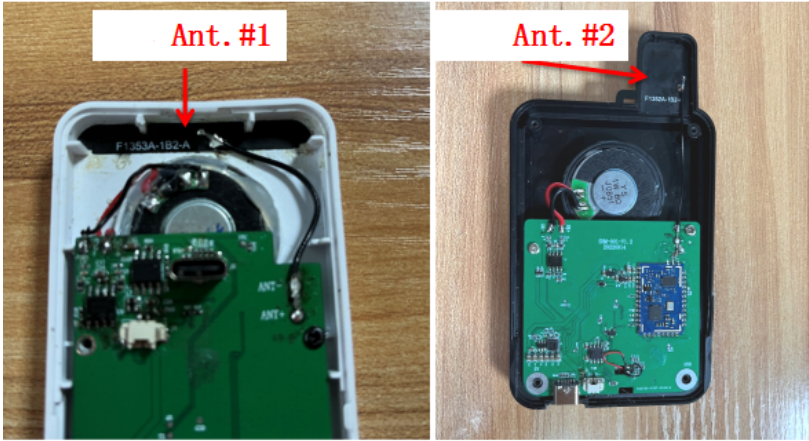
2: Match the circuit diagram, antenna images

2.1 Match the circuit diagram



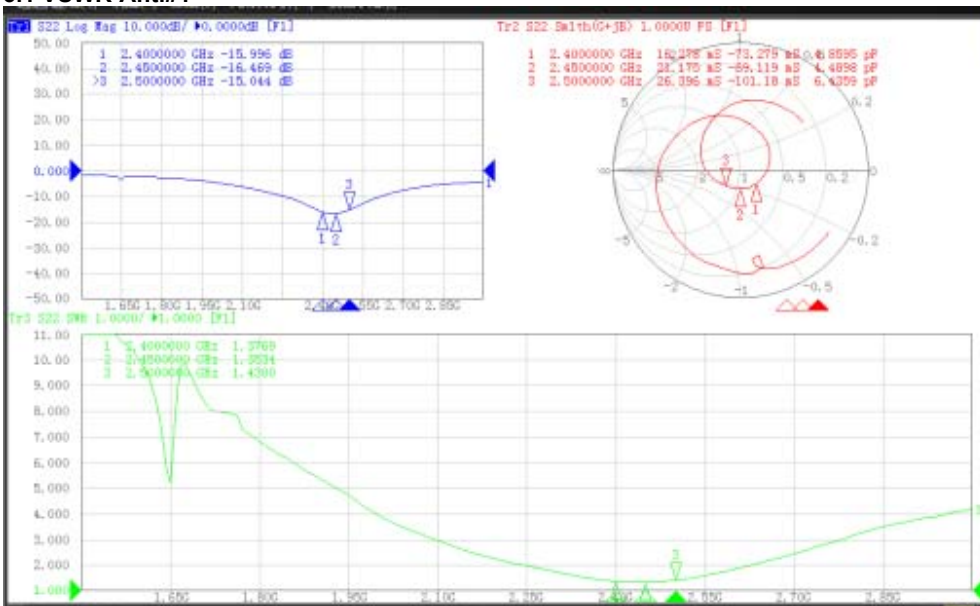
Our company did not modify the antenna matching

2.2 Machine and Antenna images

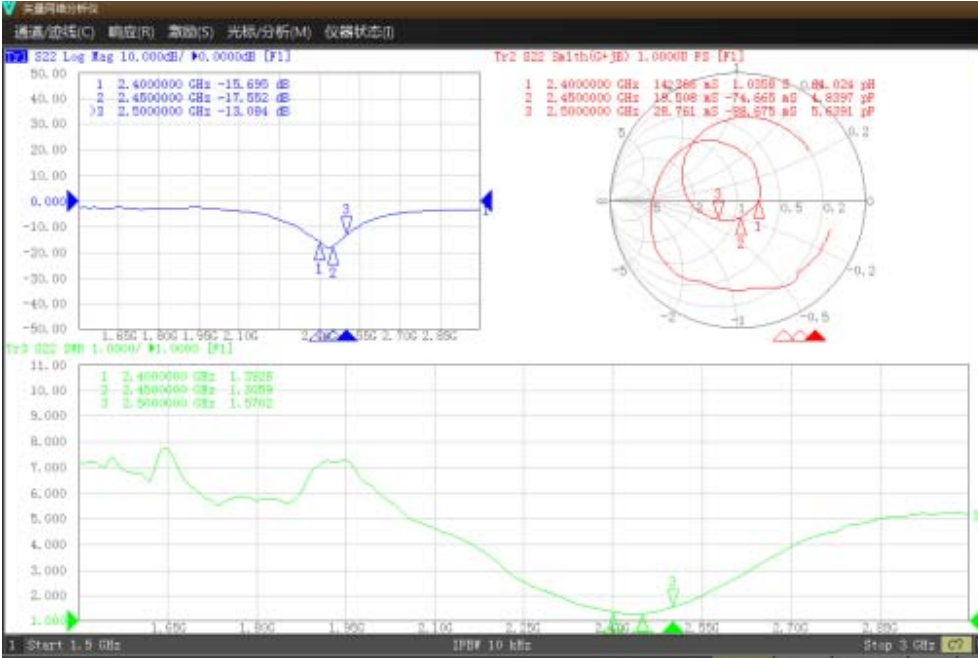


3: VSWR、Efficiency

3.1 VSWR-Ant.#1



VSWR-Ant.#2



3.2 Efficiency-Ant.#1 and Ant.#2

Passive Test For WIFI										
Freq (MHz)	Eff1 (%)	Eff1 (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	Attenut Hor	Attenut Ver
2400	66.32	-1.78	2.51	0.80	33.485	33.268	2.62	-12.03	48.17	48.27
2410	66.75	-1.76	2.62	0.90	37.895	38.041	3.16	-11.39	48.82	48.98
2420	69.56	-1.58	2.85	1.20	40.89	42.094	3.46	-11.6	49.21	49.73
2430	75.94	-1.20	3.16	1.30	30.126	31.114	2.08	-13.44	47.85	48.18
2440	71.41	-1.46	4.20	1.40	27.042	27.799	1.52	-14.13	47.45	47.61
2450	67.75	-1.69	3.33	1.50	26.666	27.401	1.45	-14.71	47.52	47.61
2460	67.13	-1.73	2.72	1.60	39.571	40.912	3.26	-13.74	49.2	49.47
2470	66.53	-1.77	2.63	1.50	32.692	33.629	2.51	-15.38	48.51	48.69
2480	63.07	-2.00	2.88	1.40	25.728	26.58	1.56	-16.6	47.62	47.62
2490	60.85	-2.16	2.27	1.40	26.14	27.285	1.71	-16.14	47.76	47.65
2500	57.60	-2.40	3.76	1.30	33.756	35.809	2.85	-14.16	48.93	48.83

Passive Test For WIFI										
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	Attenut Hor	Attenut Ver
2400	66.71	-1.76	3.16	1.01	33.485	33.268	2.62	-12.03	48.17	48.27
2410	67.22	-1.72	3.11	1.06	37.895	38.041	3.16	-11.39	48.82	48.98
2420	67.73	-1.69	3.26	1.11	40.89	42.094	3.46	-11.6	49.21	49.73
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2490	68.92	-1.62	3.60	1.45	26.14	27.285	1.71	-16.14	47.76	47.65
2500	63.62	-1.96	3.55	1.40	33.756	35.809	2.85	-14.16	48.93	48.83

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4:Structural drawings

