

SWARD Antenna Debugging Report

Customer Name: Vastking

Project Name: CA151-15 inch plastic
shell advertising machine - AIC8800DL module

Date: 2026.01.09

Project Contact Information

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Project Introduction

1. Project Brief

Number of project antennas	Machine type
1	WIFI advertising machine
Material of the whole machine shell: 15 inch plastic shell	

2. Antenna Overview

Antenna number	name	Working frequency band/MHz	Material/Structure
1	WIFI&BT&5Gwifi	2400MHz ~ 2500MHz & 5.8GHz	FPC

Antenna layout



WIFI anttern S11

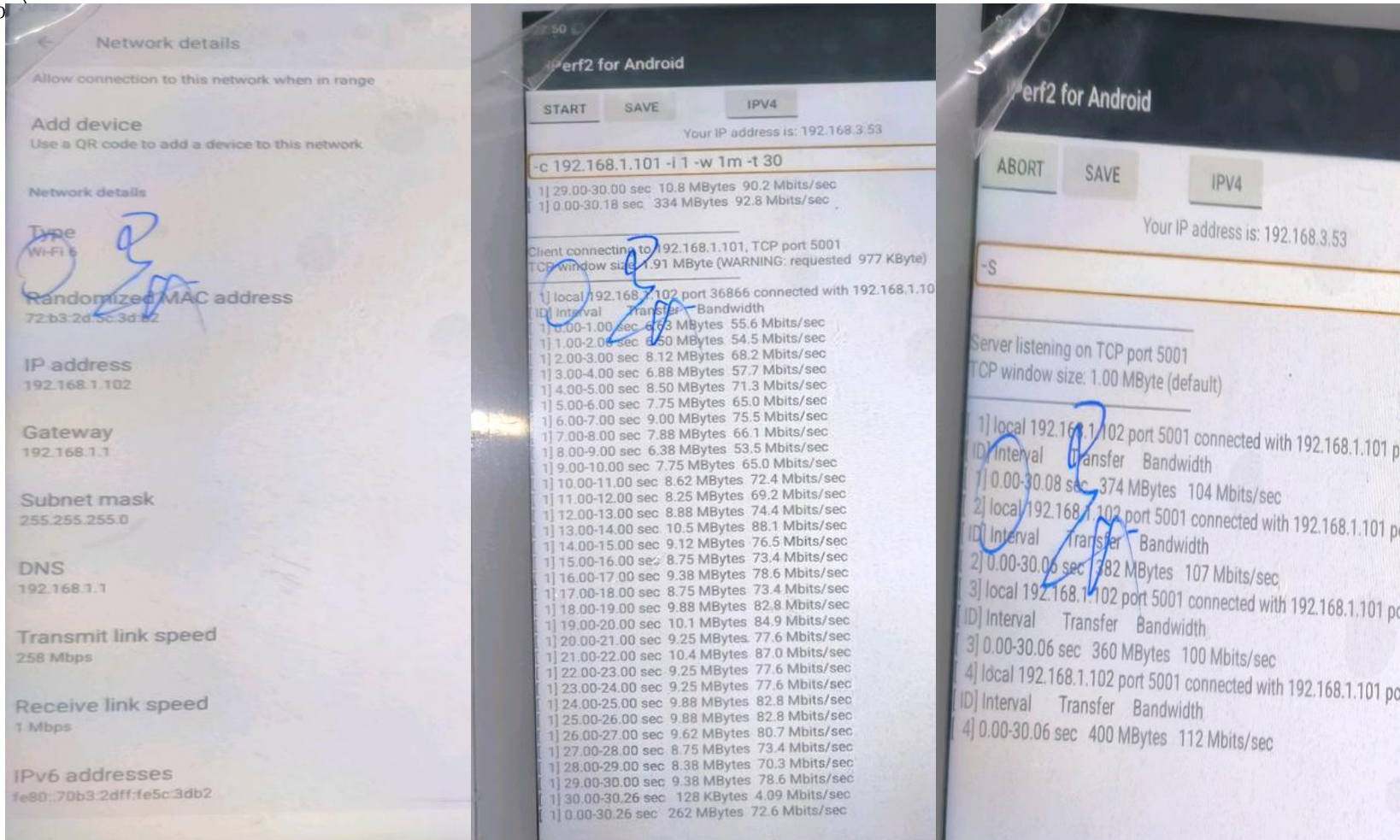


WiFi throughput

Iperf throughput test						
model	CA151	module	AIC8800DL module	software version	Windows_Iperf	
Model number	frequency band	distance	test angle	test data		remark
				(TX) 1min mean	(RX) 1min mean	(Number of packet drops)
1	2. 4G	2. 4G WIFI (Research and development testing 15m)	0°	104 Mbps	62.5 Mbps	0
			90°	107 Mbps	92.8 Mbps	0
			180°	100 Mbps	72.6 Mbps	0
			270°	102 Mbps	62.7 Mbps	0

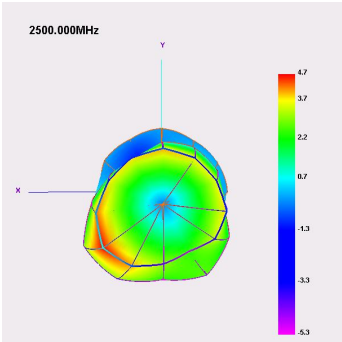
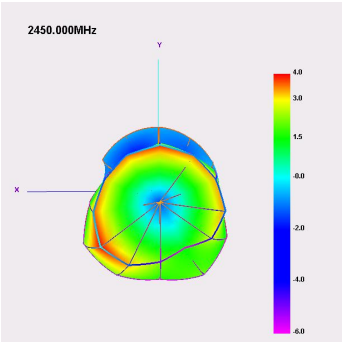
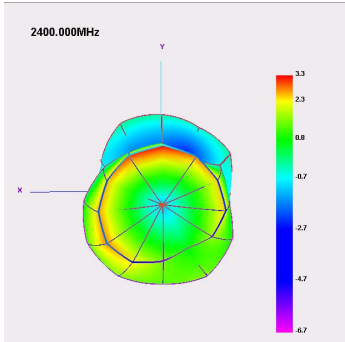
WIFI antenna throughput test (test image)

Test data: 2.4GHz WiFi (corresponding to a connection speed of 258 Mbp)

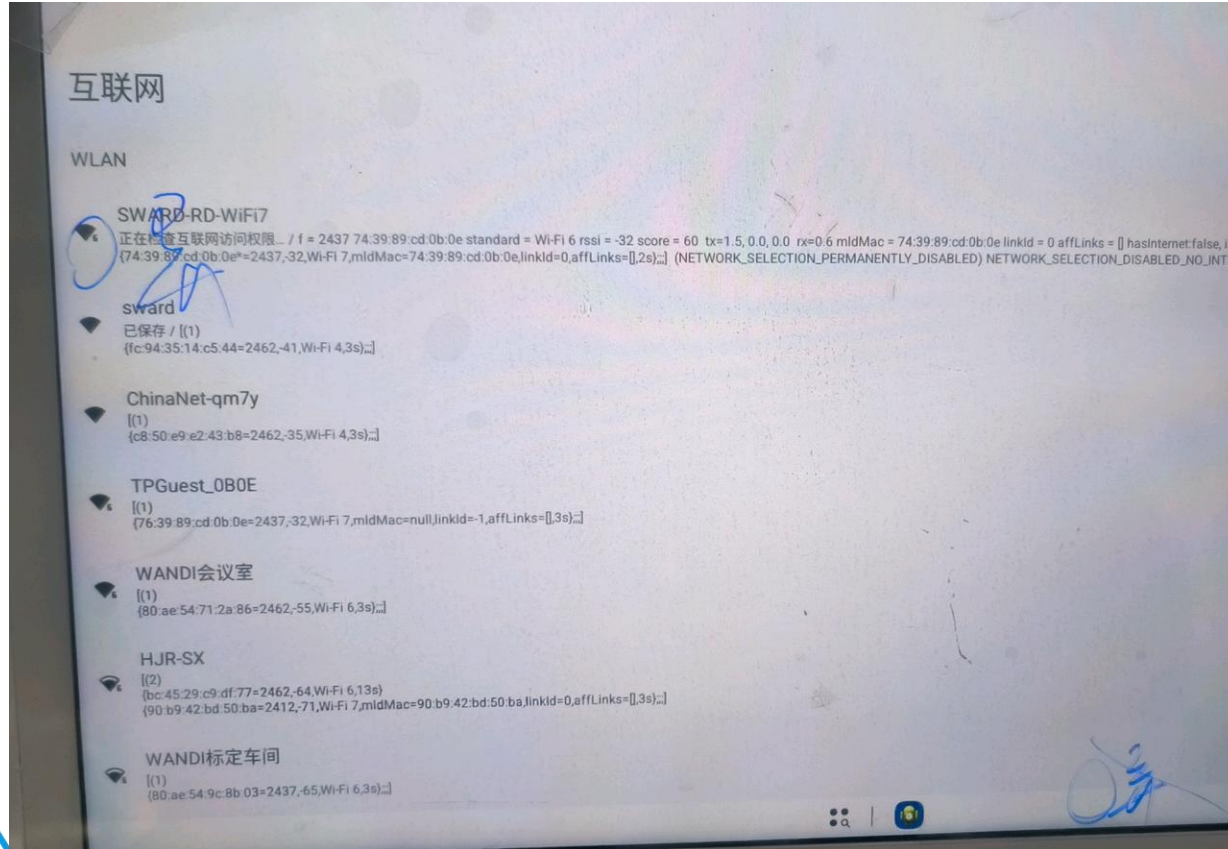


WIFI&BT antenna

Passive Test For 2.4Gwifi						
Freq	Effi	Effi	Gain	Gain	Max	Min
(MHz)	(%)	(dB)	(dBi)	(dBd)	(dB)	(dB)
2400	45.92	-3.38	3.33	1.18	3.33	-17.02
2410	49.1	-3.09	3.51	1.36	3.51	-14.72
2420	54.02	-2.67	3.76	1.61	3.76	-12.92
2430	58.69	-2.31	3.96	1.81	3.96	-11.81
2440	61.63	-2.1	4.04	1.89	4.04	-11.59
2450	59.68	-2.24	3.96	1.81	3.96	-11.74
2460	59.57	-2.25	4.03	1.88	4.03	-12.03
2470	51.47	-2.88	3.46	1.31	3.46	-12.94
2480	51.41	-2.89	3.52	1.37	3.52	-13.21
2490	53.23	-2.74	3.76	1.61	3.76	-13.38
2500	63.64	-1.96	4.67	2.52	4.67	-12.84



WIFI antenna signal strength measurement picture (data)



Test location: Our R&D office

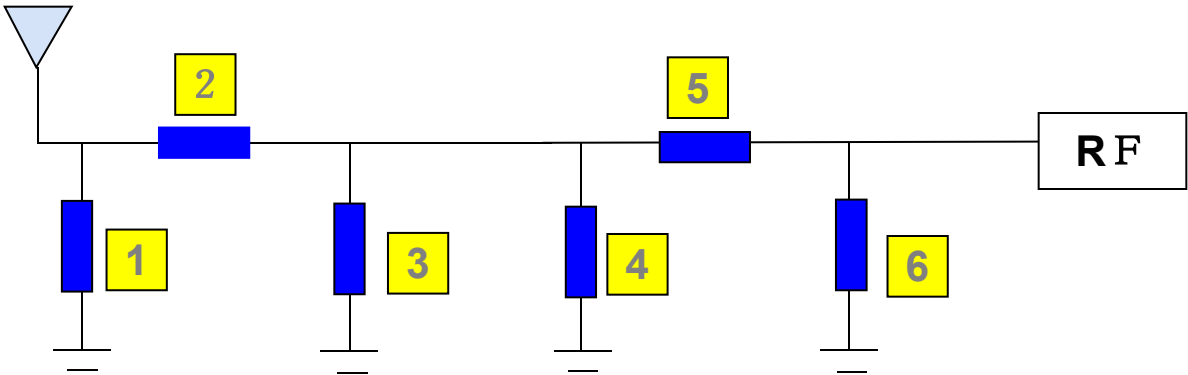
Test time: 19:00-19:30

Test distance: 10-15 meters

Signal strength: -41dBm to -48dBm

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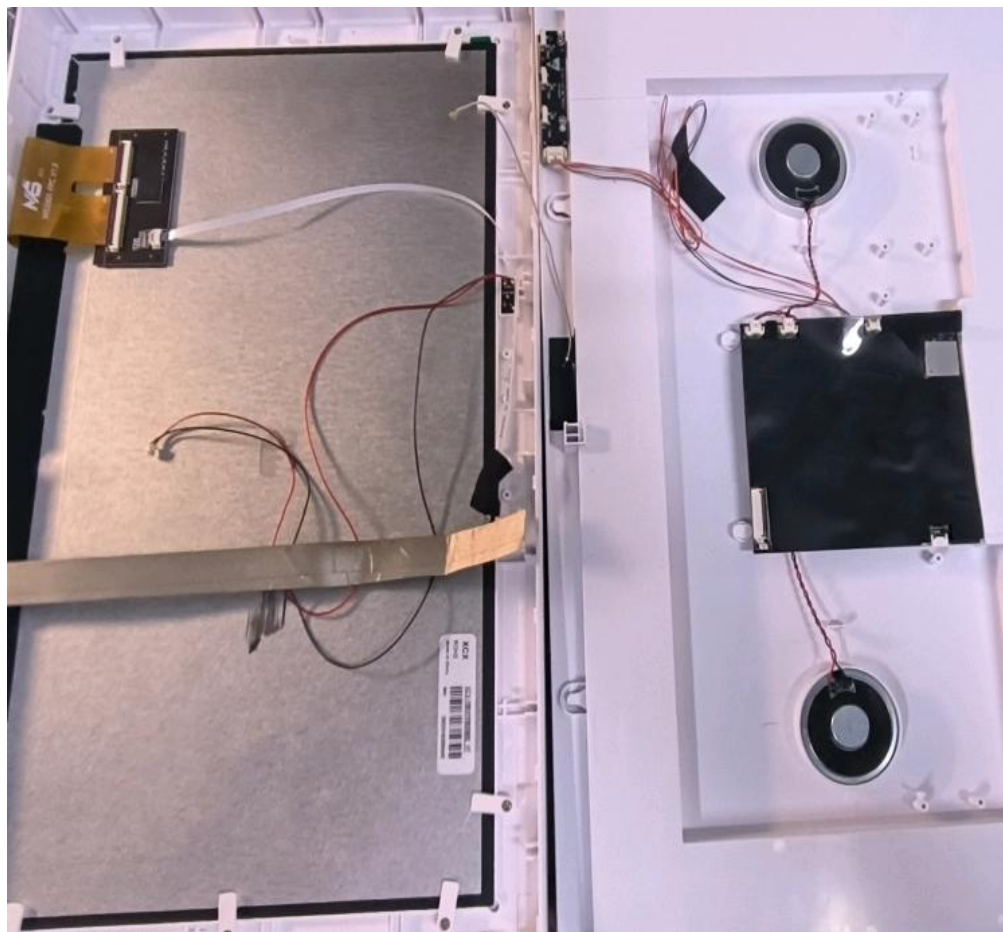
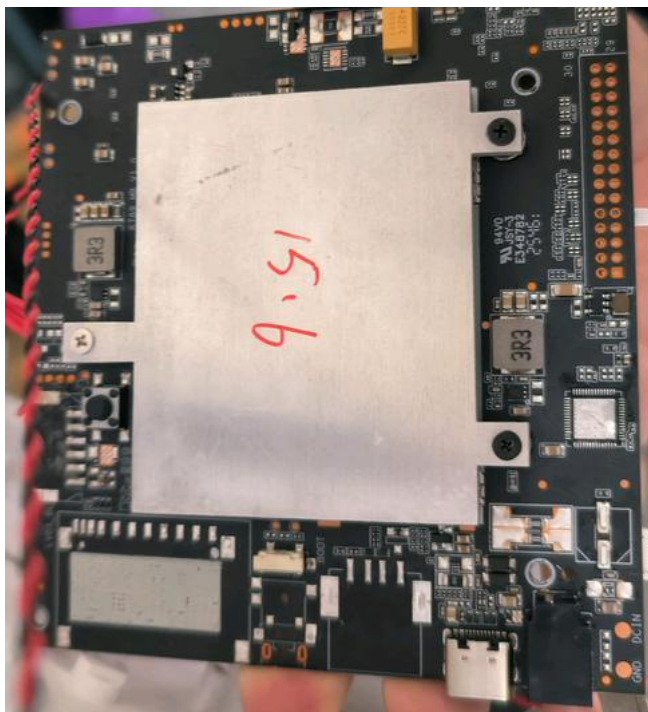
antenna matching



No antenna matching has been changed.

main antenna	1	2	3	4	5	6	remark
Original Match							
Change Matching							

Environmental treatment and assembly instructions



No changes to the original machine environment processing;

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Note: 1. This report is based on the actual debugging and testing of the prototype, including environmental treatment, antenna position, and assembly position of each component

Cannot be changed arbitrarily;

If there are any changes in the materials used in the prototype, please promptly provide feedback to our company for further verification;

3. List of sensitive components:

TP (Material, Coating, Wiring, etc.)

Screen (amplifier circuit, LED, cable design, etc.)

Shell material (antenna assembly method, structural interference, shell material, antenna position height and area, etc.)

Motherboard (motherboard conduction, RF circuit matching, PA, dual power, filtering, etc.)

LNA, Power supply circuit, etc

Camera, battery, motor MIC、Fingerprint recognition module, etc

4. Due to the small number or only one sample testing machine, some probabilistic issues cannot be fully identified. It is recommended to conduct a small batch trial production before mass production to investigate the problem points (such as flashing screens, speaker noise, TP jump points, black screen crashes, signal drops, etc.)