

SWARD Antenna Debugging Report

Customer Name: Vastking

Project Name: CA211-21 inch plastic
shell advertising machine - AIC8800DL module

Date: 2026. 1. 9

Project Contact Information

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Project Introduction

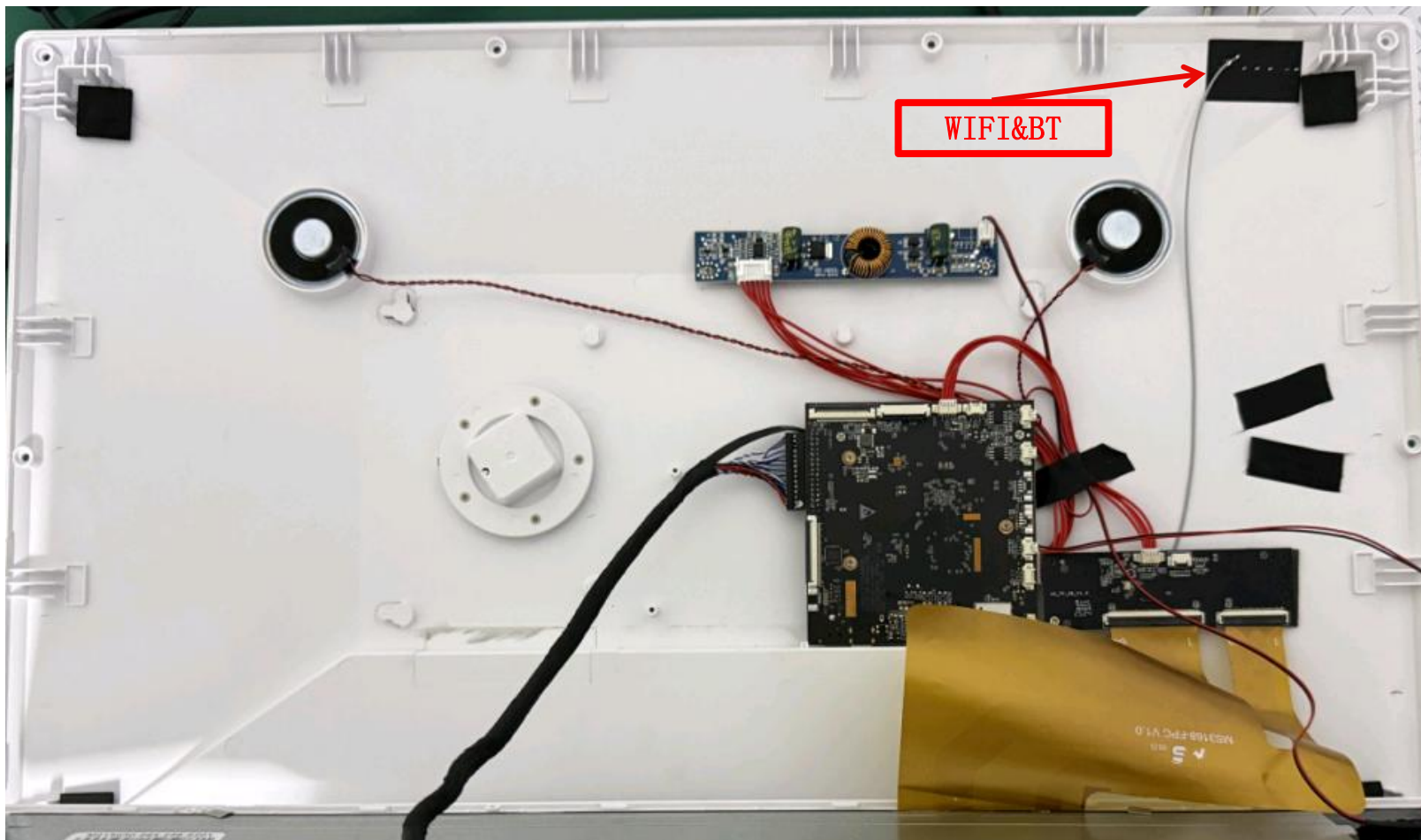
1. Project Brief

Number of project antennas	Machine type
1	WIFI advertising machine
Whole machine shell material: 21 inch plastic shell	

2. Antenna Overview

Antenna number	name	Working frequency band/MHz	Material/Struct ure
1	WIFI&BT	2400MHz ~ 2500MHz	FPC

Antenna layout



WIFI&BT S11



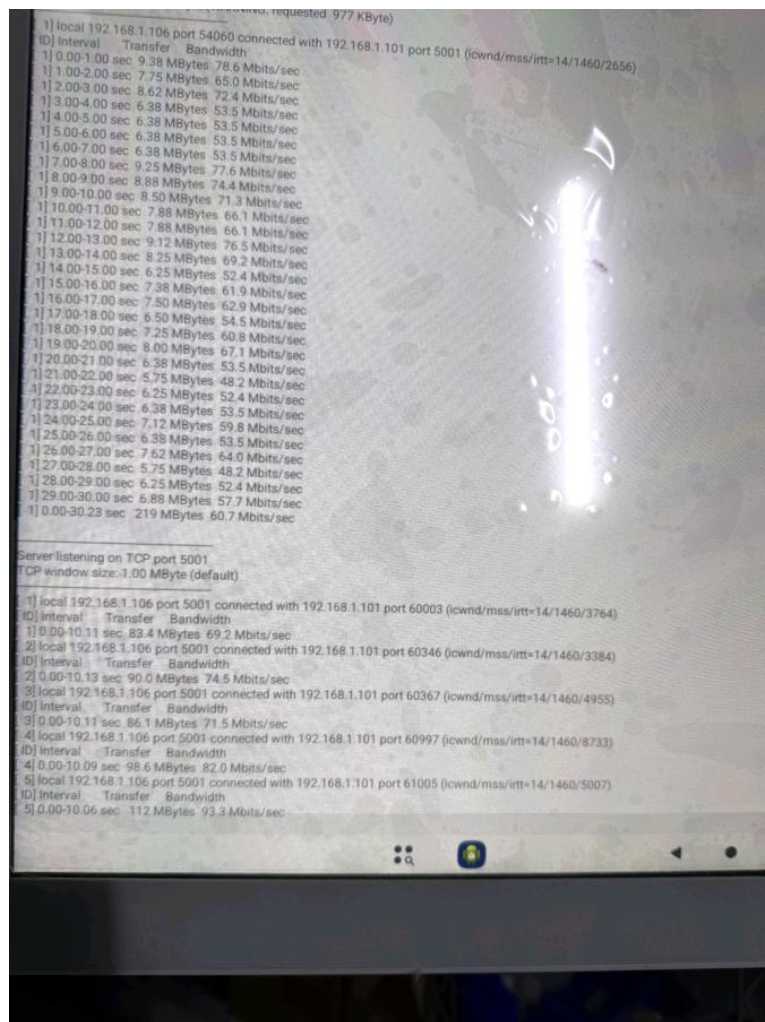
BT antenna measured distance

Actual test effect	
Model number	1
test environment	Soward R&D Center
test equipment	Huawei AM08
test distance	> 10 m

WiFi throughput

Iperf throughput test						
model	CA211	module	AIC8800DL module	software version	Iperf 2	
Model number	channel	distance	Test angle	Test data (TX) 1- minute mean	Test data (RX) 1- minute mean	Remarks (number of packet drops)
1	2. 4G	2. 4G WIFI (Research and development testing 15m)	0°	52. 0 Mbps	69. 2 Mbps	0
			90°	60. 7 Mbps	74. 5 Mbps	0
			180°	58. 9 Mbps	71. 5 Mbps	0
			270°	61. 4 Mbps	82. 0 Mbps	0
		-				

Test data 2.4GHz wifi



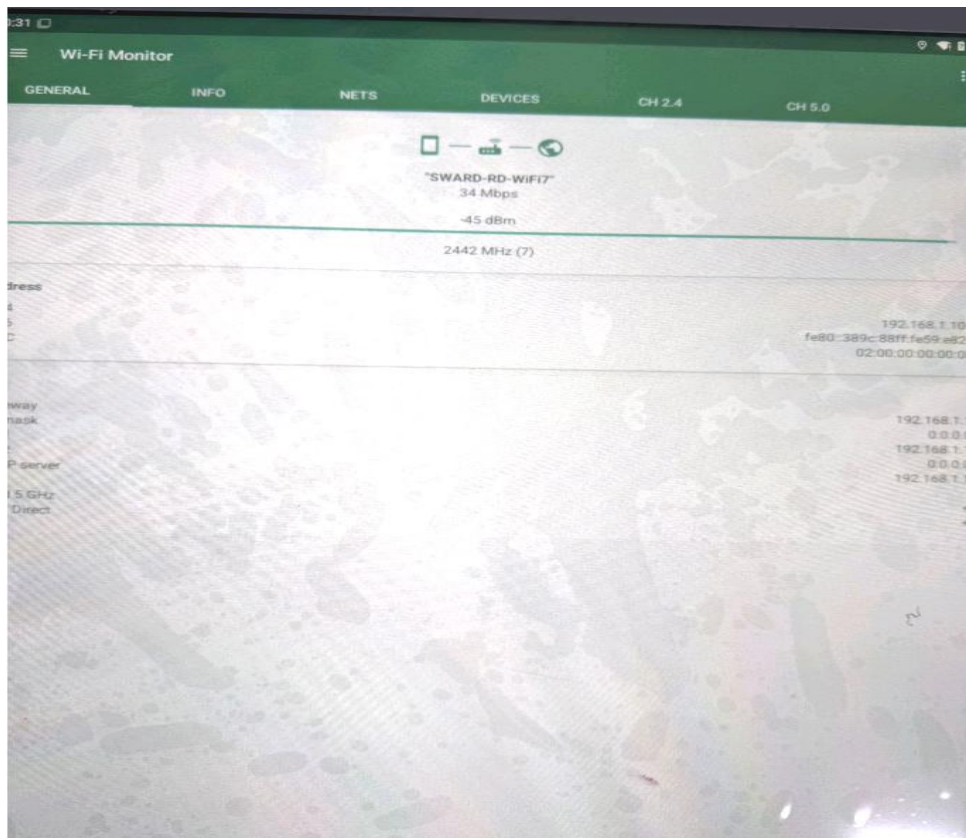
WIFI&BT antenna S11



WIFI&BT antenna efficiency

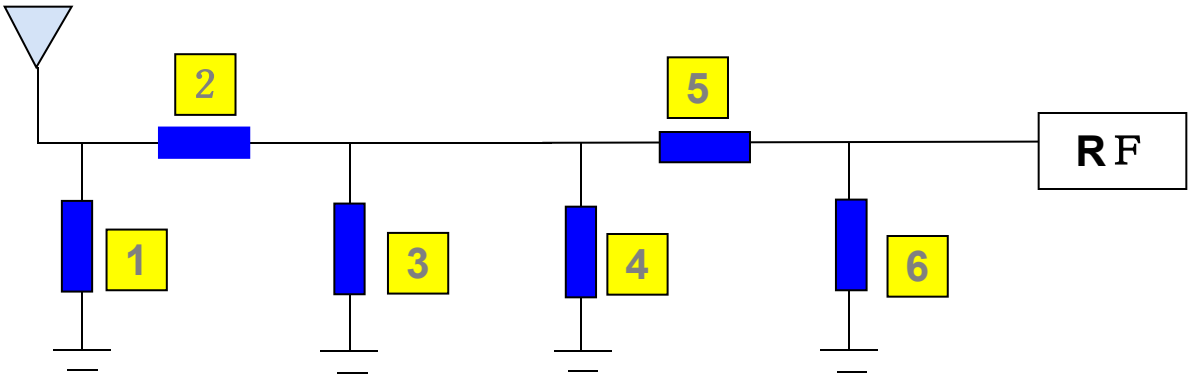
Passive Test For 2.4Gwifi						
Freq	Effi	Effi	Gain	Gain	Max	Min
(MHz)	(%)	(dB)	(dBi)	(dBd)	(dB)	(dB)
2400	30.35	-5.18	0.15	-2	0.15	-8.15
2410	29.9	-5.24	0.4	-1.75	0.4	-7.92
2420	35.94	-4.44	1.43	-0.72	1.43	-6.48
2430	38.36	-4.16	1.92	-0.23	1.92	-5.91
2440	42.1	-3.76	2.48	0.33	2.48	-5.56
2450	33.52	-4.75	1.61	-0.54	1.61	-6.54
2460	32.37	-4.9	1.63	-0.52	1.63	-6.43
2470	26.99	-5.69	1.04	-1.11	1.04	-7.8
2480	30.66	-5.13	1.78	-0.37	1.78	-8.09
2490	30.79	-5.12	1.99	-0.16	1.99	-8.89
2500	36.84	-4.34	3	0.85	3	-8.62

WIFI antenna signal strength measurement picture (data)



test location	Our R&D office	
Test group	2.4G - Distance of 15 meters	
test frequency	2.4Gwifi	
signal strength	-42dBm	

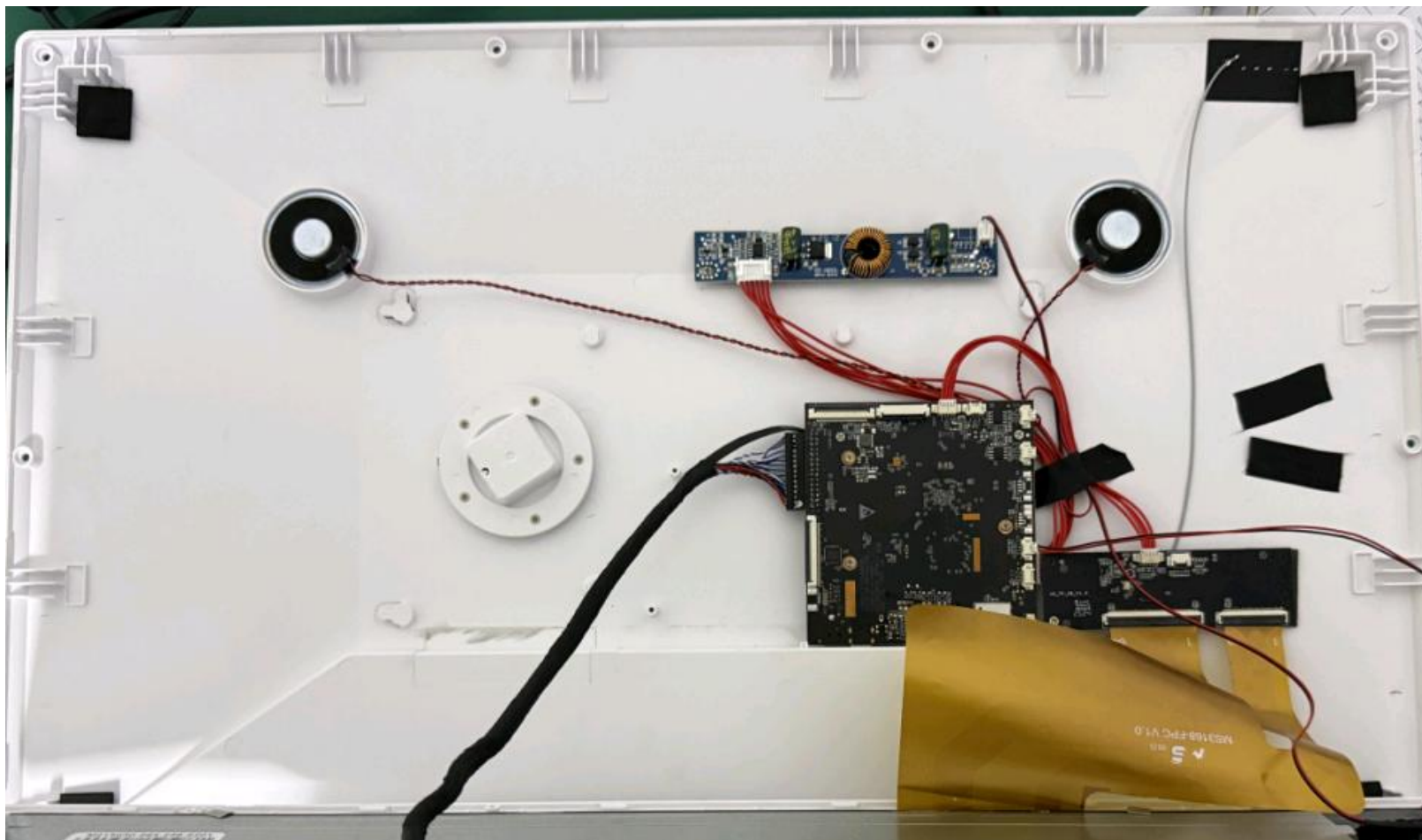
antenna matching



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;

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.)

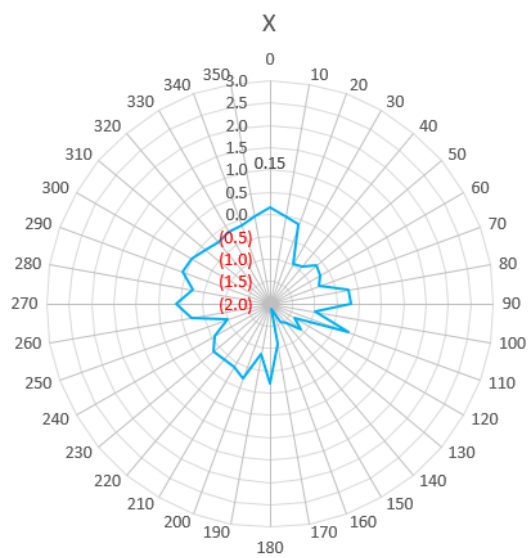
Motherboard (motherboard conduction, RF circuit matching, PA, dual power, filtering, etc.)

LNA, Power supply circuit, etc

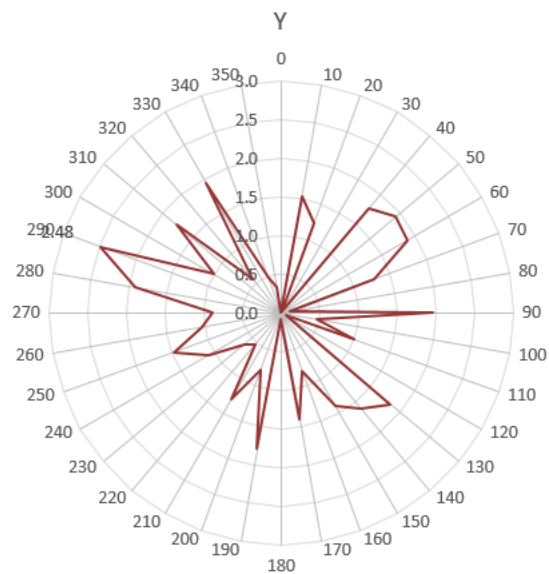
Camera, battery, motor MIC、Fingerprint recognition module, etc

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.)

2400MHZ



2450MHz



2500MHz

