

OTA TEST REPORT

Application name: ERD

Address of application: No.390 Qingfeng RD, Qingxi TW, Dongguan, Guangdong, CHINA

Product name: Antenna

Trademark: WAC

Model No.: F-RCBT-WT

Electric rating: /

Receive product date: 2025-08-26

Tested date: 2025-08-26--2025-08-26

Revised date: /

Prepared by: _____

Reviewed by: _____

Approved by: _____

Note:

1. The results of this report are valid only for the samples.
2. This report shall not be reproduced except in full without written approval of the laboratory. The test results presented in this report relate only to the tested items.

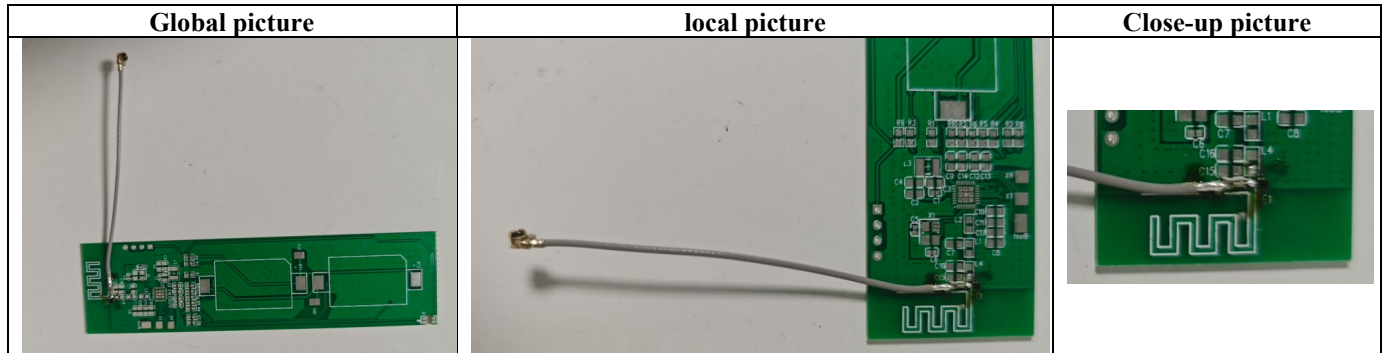
1.1 Summary:

No	Item	Reference standard	Result	Done
1	Active OTA TRP	CWG OTA Test Plan / YD/T 1484.1	/	☐
2	Active OTA TIS	CWG OTA Test Plan / YD/T 1484.1	/	☐
3	Passive OTA	IEEE Standard Test Procedures for antennas	PASS	☒
4				
5				
Remark				

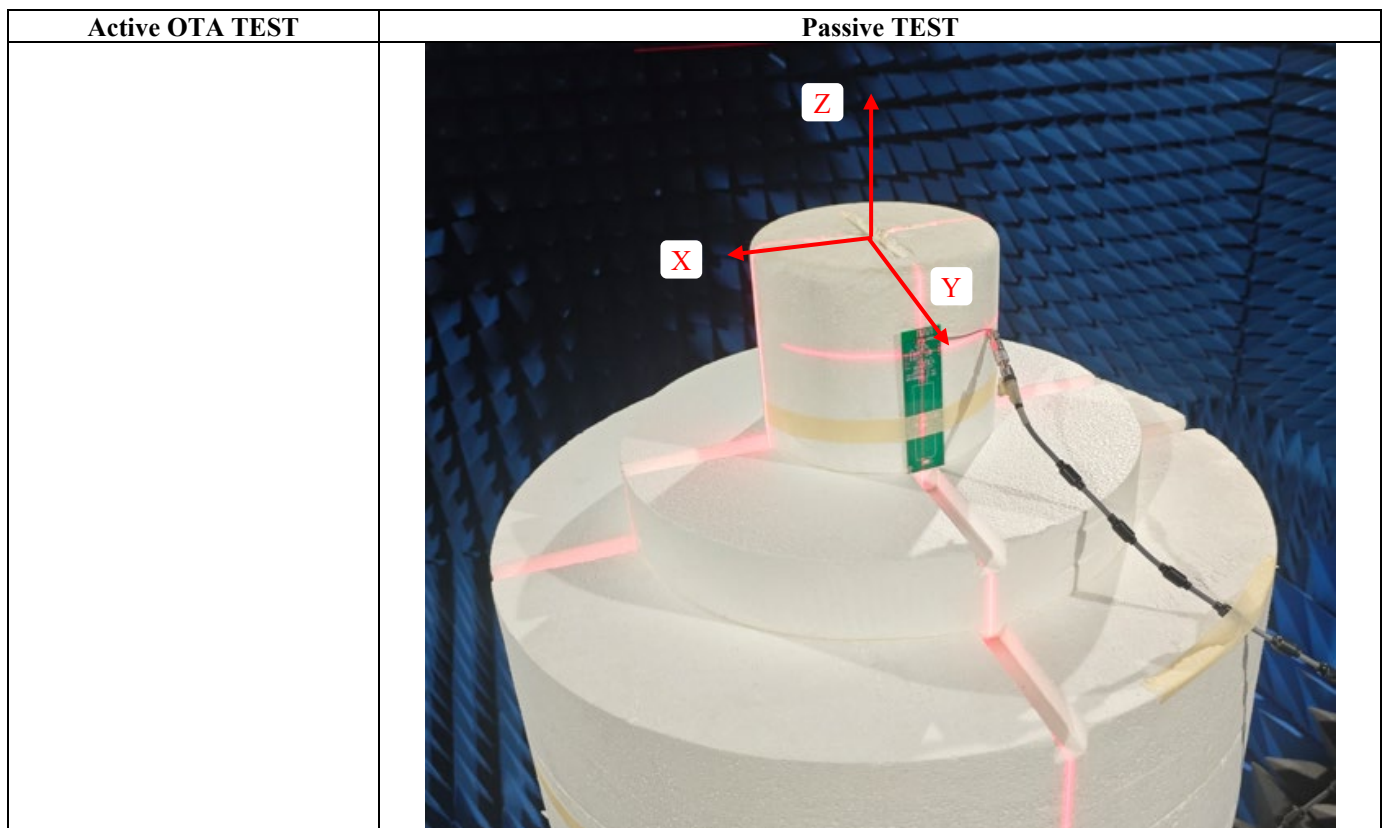
Note: WI-LA-XXXX is the LAB test Specification.

1.2 EUT PHOTO and TEST PHOTO:

EUT PHOTO:



EUT TEST PHOTO:

**TEST LAB OF WAC LIGHTING (DONGGUAN) CO.LTD**

Address: No.390 Qingfeng Rd, Qingxi Town, Dongguan City, Guangdong, China 523653

Tel: +86-769-87311200

Fax: +86-769-87311250

Form No.: CR-TE-035/C

1.3 Critical component list:

No	Component	Trade mark	Model No.	Technical parameters	Remark
1	antenna	WAC	F-RCBT-WT	2400-2500MHz	/
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					

1.4 Test equipment list:

No	Equipment	Manufacture	Model No.	Serial No.	Calibration due date	Used
1	Shielding room	zhongkeguoji	5*5*3.7	AC3400	2026-01-13	☒
2	SISO RF BOX	zhongkeguoji	Z9908A-N03	Z9908A-N03	2026-01-13	☒
3	SISO High speed switch box	zhongkeguoji	Z9908A-N02	Z9908A-N02-24	2026-01-13	☒
4	24 antenna probe	zhongkeguoji	Z9810A	Z9810A-24	2026-01-13	☒
5	Comprehensive test instrument	Rohde & Schwarz	CMW500	CMW500	2026-01-13	☐
6	network analyzer	Rohde & Schwarz	ZNL	ZNL6	2026-01-13	☒
7	Communication antenna	zhongkeguoji	--	--	2026-01-13	☐
8	6dB attenuator	Shuxi tongxun	MTA2-6-18-4T	21091306	2026-01-13	☒
9	10dB attenuator	Shuxi tongxun	MTA2-10-18-4T	21091305	2026-01-13	☐

1.5 Test condition:

No	Project	Condition
1	Ambient condition	Ambient temperature: (22 ± 2) °C ; Relative humidity ≤ 75 %
2	Voltage	Nominal Voltage: +/- 2%
3	Frequency	Nominal Frequency: +/- 2%
4	THD	Total Harmonic Distortion: 5% max

Remark: Unless specified otherwise in the individual Methods, the tests shall be conducted under the above environmental conditions.

1.6 Test standard:

No	Standard No.	Description	Used
1	UL8750	Light Emitting Diode (LED) Equipment for Use in Lighting Products	☐
2	YD/T 1484.1	Measurement method for radiated RF power and receiver performance of wireless device. Part 1: General requirement	☐
3	CWG OTA Test Plan	Test Plan for RF Performance Evaluation of Wi-Fi® Mobile Converged Devices	☐
4	IEEE Standard Test Procedures for antennas	IEEE Standard Test Procedures for Antennas	☒
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

1.7 Test sample(s) information:

Model No.	Input ☐ CC ☐ CV				Output ☐ CC ☐ CV		
	Voltage ☐ Vac ☐ Vdc	Frequency (Hz)	☐ Current (A) ☐ Power (W)	Power Factor	Voltage ☐ Vac ☐ Vdc	Frequency (Hz)	☐ Current (mA) ☐ Power (W)

1.8 Revision Summary:

Date	Project Handler	Section	Description of Change
		N/A	None

2.3 Passive OTA :

Reference standard: IEEE Standard Test Procedures for antennas;

Method:

The prototype (antenna) under test does not provide a signal source, but is fed by the network analyzer. The signal returns to the network analyzer through the antenna under test and the measuring antenna to form a test loop.

Tests were performed at 22 ± 2 °C ambient.

Take down the communication antenna, connect the cable with the antenna through the adapter (a 6dB attenuator is connected in the middle), place the antenna to be tested on the turntable, and align the phase center with the laser.

Requirements:

Bluetooth devices typically achieve an antenna gain in the range of -10 dBi to +10 dBi.

2.3, Passive OTA :

Reference standard: IEEE Standard Test Procedures for antennas;

Results:

Frequency(MHz)	2400	2440	2480
Gain(dBi)	2.066	1.563	0.707
Efficiency(%)	37.99%	34.82%	31.82%
AverageGain(dBi)	-10.135	-9.312	-8.227
Efficiency(dB)	-4.203	-4.582	-4.973
MaxGainSite	P 105°/ T 45°	P 120°/ T 45°	P 120°/ T 45°
Directivity(dBi)	6.269	6.145	5.68
TRP(dBm)	-4.203	-4.582	-4.973
RCPGain(dBi)	0	0	0
LCPGain(dBi)	0	0	0
Front Back Ratio(dB)	3.862	7.601	10.684
Axial Ratio(dB)	0	0	0
Upper hemisphere(%)	41.295	46.032	50.739
Roundness(dB)	5.288	8.632	7.628
Cross Polar Ratio(dB)	13.802	14.312	13.823
Roll Off Factor(dB)	5.634	5.144	5.149
3dB BeamWidth(Theta=90)	80	115	124
3dB BeamWidth(Phi=0)	36	35	35
3dB BeamWidth(Phi=90)	44	41	40

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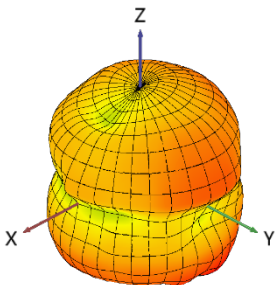
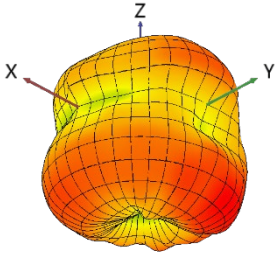
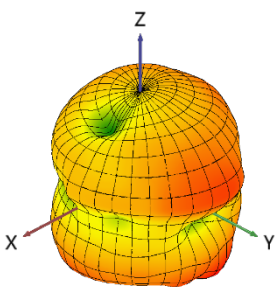
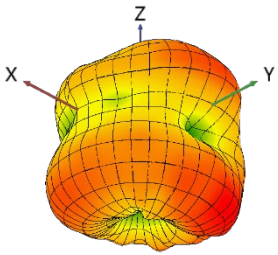
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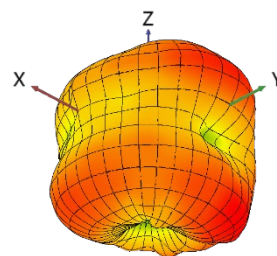
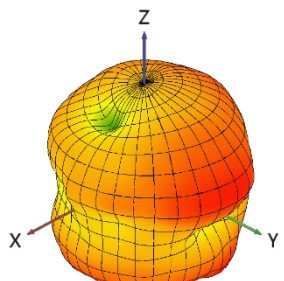
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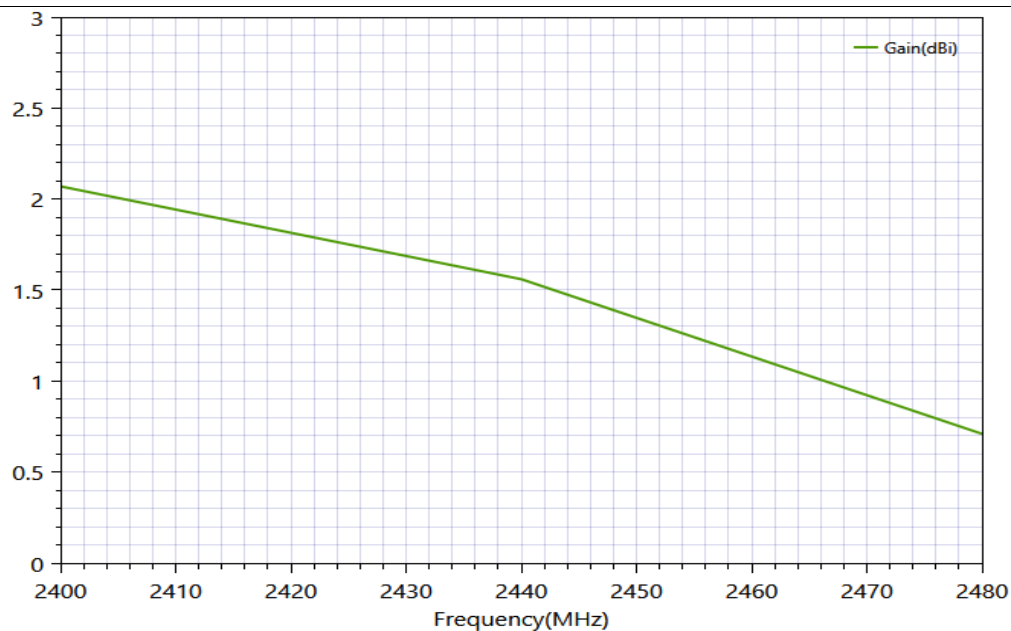
Form No.: CR-TE-035/C

AxialPositionGainTotal(dB)	-8.366	-7.603	-7.434
Upper Hem Efficiency (%)	15.69%	16.03%	16.15%
Lower Hem Efficiency (%)	22.30%	18.79%	15.68%
Efficiency ThetaPol (%)	31.17%	27.14%	24.01%
Efficiency PhiPol (%)	6.83%	7.68%	7.81%

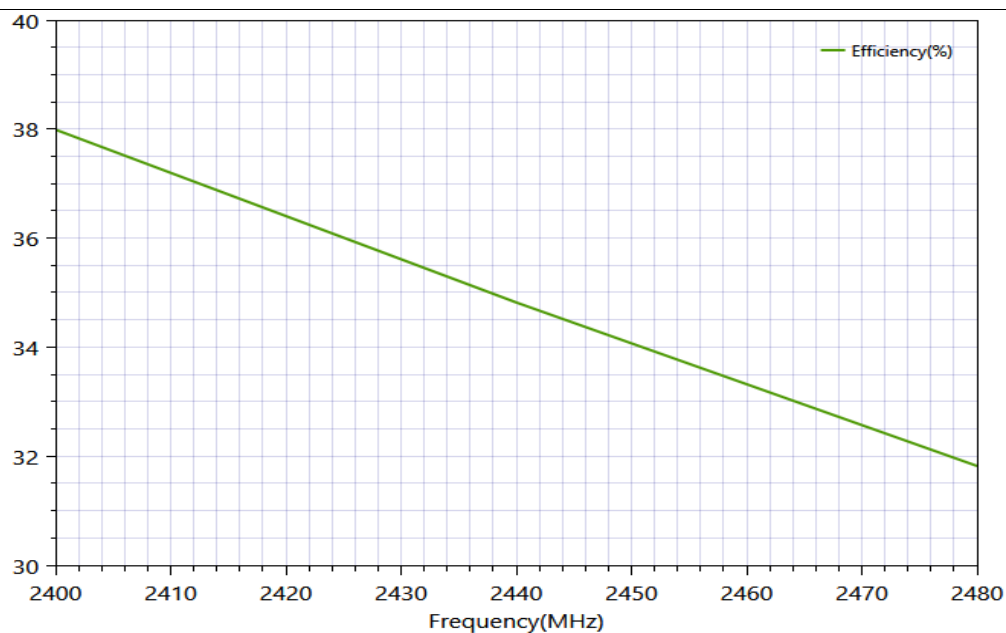
2400MHz 3D Front	2400MHz 3D Back
	
2440MHz 3D Front	2440MHz 3D Back
	
2480MHz 3D Front	2480MHz 3D Back



Gain:



EfficPercentage:



***** END OF THIS REPORT *****