

TEST REPORT

Reference No..... : WTH24X11280273W002
FCC ID : 2AP5Z-MAG5RGB
Applicant : Shenzhen Yelangu Technology Co., Ltd
Address : Floor 2 Building.D KaiHuiMao Industrial Park, LiYuan Road FuHai Town
Bao'an District, Shenzhen, China
Manufacturer : The same as Applicant
Address : The same as Applicant
Product Name : RGB Charge Double-sided light
Model No..... : MAG5 RGB
Standards : KDB 680106 D01 V04
Date of Receipt sample : 2024-11-29
Date of Test..... : 2024-11-29 to 2024-12-19
Date of Issue : 2024-12-19
Test Report Form No. : WTX_KDB 680106_D01_V04W
Test Result..... : **Pass**

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

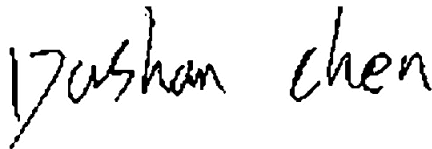
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Report version

Version No.	Date of issue	Description
Rev.00	2024-12-19	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT	
Product Name:	RGB Charge Double-sided light
Trade Name:	/
Model No.:	MAG5 RGB
Adding Model(s):	/
Battery Capacity	4000mAh
<i>Note: The test data is gathered from a production sample, provided by the manufacturer.</i>	

Technical Characteristics of EUT	
Frequency Range:	110-205kHz
Modulation Type:	ASK
Antenna Type:	Coil Antenna
Antenna Gain	0dBi
Rated Voltage:	Type C Input: 5V Type C Output: 5V
Rated Current:	Input : 1A Output : 3A
Rated Power:	Wireless Output : 5W, 7.5W, 10W,15W Total Output: 15W Max
<i>Note The Antenna Gain is provided by the customer and can affect the validity of results.</i>	

1.2 Auxiliary Equipment List and Details

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
wireless charging tester	YBZ	YBZ wireless charging tester	/
Adapter	Xiaomi	MDY-08-ES	/
Smart phone	Apple	iPhone 15	/

EUT Cable List and Details

Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
Type-C Cable	0.95	Unshielded	Without Ferrite

1.3 Test Equipment List and Details

Description	Manufacturer	Model	Serial No.	Cal Date	Due Date
ELECTRIC AND MAGNETIC FIELD ANALYZER	Narda	EHP-200AC	180ZX10226	2024-03-05	2025-03-04
Note: The deviation response is 0.8dB.					

2. RF Exposure Test Report

2.1 Standard Applicable

According to §1.1310 system operating under the provisions of this section shall be operating in a manner that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

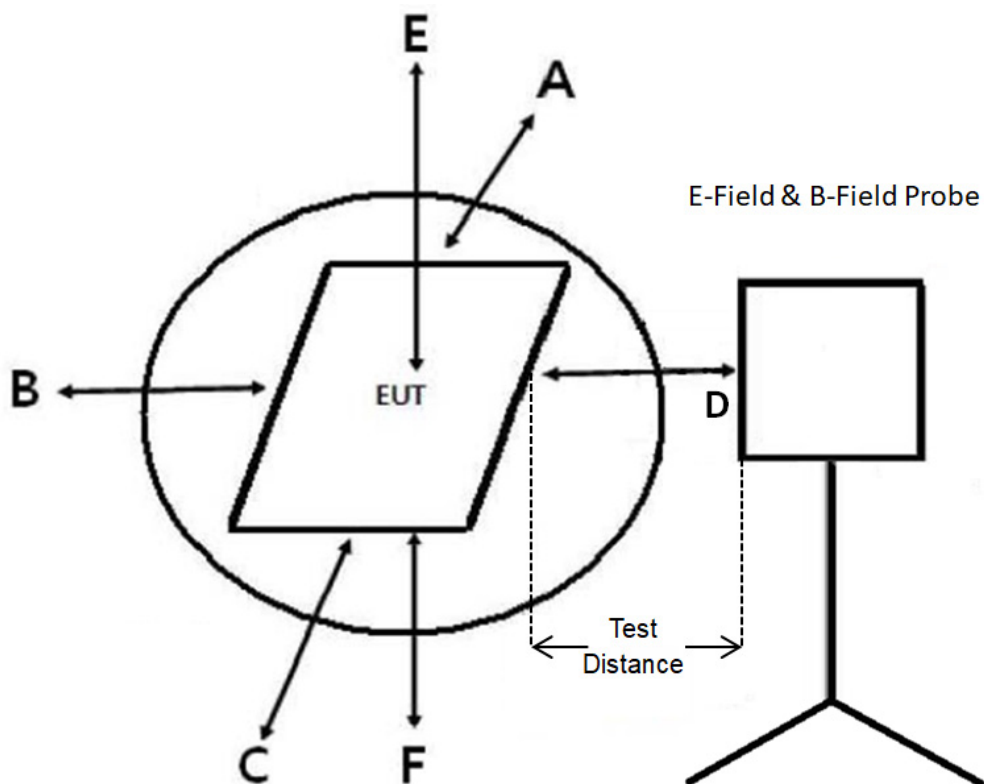
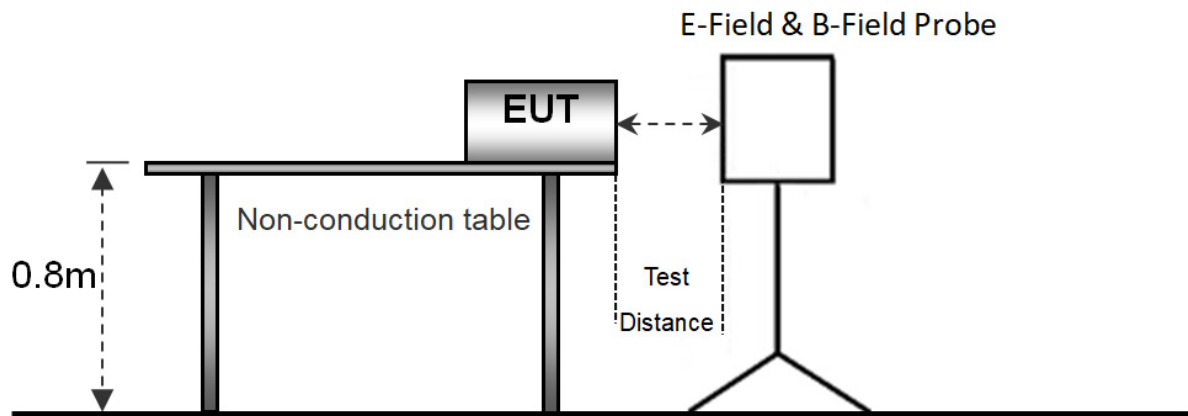
f = frequency in MHz * = Plane-wave equivalent power density

2.2 Test Conditions

Test Mode	Description	Remark
AC adapter Mode:		
TM1	Wireless Charging	Input : 5V/2.4A, 9V2A, 12V1.5A Wireless Output : 5W
Battery Mode(2cm):		
TM2	Wireless Charging	Wireless Output : 5W
TM3	Wireless Charging	Wireless Output : 10W
TM4	Wireless Charging	Wireless Output : 15W
Battery Mode(4cm):		
TM5	Wireless Charging	Wireless Output : 5W
TM6	Wireless Charging	Wireless Output : 10W
TM7	Wireless Charging	Wireless Output : 15W
Battery Mode(6cm):		
TM8	Wireless Charging	Wireless Output : 5W
TM9	Wireless Charging	Wireless Output : 10W
TM10	Wireless Charging	Wireless Output : 15W
Battery Mode(8cm):		
TM11	Wireless Charging	Wireless Output : 5W
TM12	Wireless Charging	Wireless Output : 10W
TM13	Wireless Charging	Wireless Output : 15W
Battery Mode(10cm):		
TM14	Wireless Charging	Wireless Output : 5W
TM15	Wireless Charging	Wireless Output : 10W
TM16	Wireless Charging	Wireless Output : 15W
Battery Mode(12cm):		
TM17	Wireless Charging	Wireless Output : 5W
TM18	Wireless Charging	Wireless Output : 10W
TM19	Wireless Charging	Wireless Output : 15W
Battery Mode(14cm):		
TM20	Wireless Charging	Wireless Output : 5W
TM21	Wireless Charging	Wireless Output : 10W
TM22	Wireless Charging	Wireless Output : 15W
Battery Mode(16cm):		
TM23	Wireless Charging	Wireless Output : 5W
TM24	Wireless Charging	Wireless Output : 10W
TM25	Wireless Charging	Wireless Output : 15W
Battery Mode(18cm):		
TM26	Wireless Charging	Wireless Output : 5W

TM27	Wireless Charging	Wireless Output : 10W
TM28	Wireless Charging	Wireless Output : 15W
Battery Mode(20cm):		
TM29	Wireless Charging	Wireless Output : 5W
TM30	Wireless Charging	Wireless Output : 10W
TM31	Wireless Charging	Wireless Output : 15W
Note: For test AC Adapter, the device is designed for desktop, the test should be performed on each points (only A, B, C, D, E) at test distance (15 cm). For test by Battery, the device is designed for portable, the test should be performed on each points (A, B, C, D, E, F) at test distance (2 ~20cm). The EUT was tested with empty load, half load, and full load, and recorded the worst mode (full load) data in the report.).		
Measurement Distance:	0~20 cm	

2.3 Test Procedure



- The measurement probe was placed at test distance (15 cm for A, B, C, D, F and 20 cm for E) which is between the edge of the charger and the geometric center of probe.
- The highest emission level was recorded at the measurement points (A, B, C, D, E, F).
- The EUT was measured according to the distance of KDB 680106 D01 v04.

2.4 Test Result

The EUT complies with item 5.2 of KDB 680106 D01V04

- (1) The power transfer frequency is below 1 MHz.
Yes, the device operate in the frequency range from 110kHz to 205kHz.
- (2) The output power from each transmitting element (e.g., coil) is less than or equal to 15 watts.
Yes, the maximum output power of the primary coil is equal to 15W.
- (3) A client device providing the maximum permitted load is placed in physical contact with the transmitter (i.e., the surfaces of the transmitter and client device enclosures need to be in physical contact)
Yes, Client device is placed directly in contact with the transmitter.
- (4) Only § 2.1091-Mobile exposure conditions apply (i.e., this provision does not cover § 2.1093-Portable exposure conditions).
Yes, It is mobile exposure conditions only.
- (5) The E-field and H-field strengths, at and beyond 20 cm surrounding the device surface, are demonstrated to be less than 50% of the applicable MPE limit, per KDB 447498, Table 1. These measurements shall be taken along the principal axes of the device, with one axis oriented along the direction of the estimated maximum field strength, and for three points per axis or until a 1/d (inverse distance from the emitter structure) field strength decay is observed. Symmetry considerations may be used for test reduction purposes. The device shall be operated in documented worst-case compliance scenarios (i.e., the ones that lead to the maximum field components), and while all the radiating structures (e.g., coils or antennas) that by design can simultaneously transmit are energized at their nominal maximum power.
Yes, The EUT field strength levels are less than 50% of the MPE limit, refer to test TM1, TM2, TM3 list.
- (6) For systems with more than one radiating structure, the conditions specified in (5) must be met when the system is fully loaded (i.e., clients absorbing maximum power available), and with all the radiating structures operating at maximum power at the same time, as per design conditions. If the design allows one or more radiating structures to be powered at a higher level while other radiating structures are not powered, then those cases must be tested as well. For instance, a device may use three RF coils powered at 5 W, or one coil powered at 15 W: in this case, both scenarios shall be tested.
Yes, The EUT field strength levels are less than 50% of the MPE limit, refer to test list; and the coils can't transmitted simultaneous.

Test Mode: TM1

Test distance: 15 cm

Electric Field Emissions			
Test Position	Measure Value (V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.0468	614	307
Point F	0.0517	614	307
Point A	0.0413	614	307
Point B	0.0362	614	307
Point C	0.0370	614	307
Point D	0.0335	614	307
Magnetic Field Emissions			
Test Position	Measure Value (A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.0349	1.63	0.815
Point F	0.0325	1.63	0.815
Point A	0.0362	1.63	0.815
Point B	0.0457	1.63	0.815
Point C	0.0461	1.63	0.815
Point D	0.0429	1.63	0.815

Test Mode: TM2

Test distance: 2cm

Electric Field Emissions			
Test Position	Measure Value (V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.3987	614	307
Point F	0.1627	614	307
Point A	0.1956	614	307
Point B	0.1672	614	307
Point C	0.1897	614	307
Point D	0.3576	614	307
Magnetic Field Emissions			
Test Position	Measure Value (A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.1762	1.63	0.815
Point F	0.0764	1.63	0.815
Point A	0.0886	1.63	0.815
Point B	0.0765	1.63	0.815
Point C	0.0812	1.63	0.815
Point D	0.0985	1.63	0.815

Test Mode: TM5

Test distance: 4cm

Electric Field Emissions			
Test Position	Measure Value (V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.1270	614	307
Point F	0.0563	614	307
Point A	0.0674	614	307
Point B	0.0532	614	307
Point C	0.0579	614	307
Point D	0.1167	614	307
Magnetic Field Emissions			
Test Position	Measure Value (A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.0565	1.63	0.815
Point F	0.0234	1.63	0.815
Point A	0.0276	1.63	0.815
Point B	0.0259	1.63	0.815
Point C	0.0248	1.63	0.815
Point D	0.0367	1.63	0.815

Test Mode: TM8

Test distance: 6cm

Electric Field Emissions			
Test Position	Measure Value (V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.0584	614	307
Point F	0.0296	614	307
Point A	0.0234	614	307
Point B	0.0225	614	307
Point C	0.0241	614	307
Point D	0.0429	614	307
Magnetic Field Emissions			
Test Position	Measure Value (A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.0239	1.63	0.815
Point F	0.0324	1.63	0.815
Point A	0.0329	1.63	0.815
Point B	0.0351	1.63	0.815
Point C	0.0362	1.63	0.815
Point D	0.0349	1.63	0.815

Test Mode: TM11

Test distance: 8cm

Electric Field Emissions			
Test Position	Measure Value (V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.0319	614	307
Point F	0.0314	614	307
Point A	0.0379	614	307
Point B	0.0357	614	307
Point C	0.0340	614	307
Point D	0.0309	614	307
Magnetic Field Emissions			
Test Position	Measure Value (A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.0272	1.63	0.815
Point F	0.0386	1.63	0.815
Point A	0.0374	1.63	0.815
Point B	0.0365	1.63	0.815
Point C	0.0411	1.63	0.815
Point D	0.0382	1.63	0.815

Test Mode: TM14

Test distance: 10cm

Electric Field Emissions			
Test Position	Measure Value (V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.0179	614	307
Point F	0.0165	614	307
Point A	0.0134	614	307
Point B	0.0174	614	307
Point C	0.0132	614	307
Point D	0.0170	614	307
Magnetic Field Emissions			
Test Position	Measure Value (A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.0265	1.63	0.815
Point F	0.0348	1.63	0.815
Point A	0.0321	1.63	0.815
Point B	0.0361	1.63	0.815
Point C	0.0428	1.63	0.815
Point D	0.0430	1.63	0.815

Test Mode: TM17

Test distance: 12cm

Electric Field Emissions			
Test Position	Measure Value (V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.0156	614	307
Point F	0.0190	614	307
Point A	0.0171	614	307
Point B	0.0155	614	307
Point C	0.0149	614	307
Point D	0.0171	614	307
Magnetic Field Emissions			
Test Position	Measure Value (A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.0299	1.63	0.815
Point F	0.0415	1.63	0.815
Point A	0.0382	1.63	0.815
Point B	0.0418	1.63	0.815
Point C	0.0439	1.63	0.815
Point D	0.0424	1.63	0.815

Test Mode: TM20

Test distance: 14cm

Electric Field Emissions			
Test Position	Measure Value (V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.0167	614	307
Point F	0.0201	614	307
Point A	0.0162	614	307
Point B	0.0176	614	307
Point C	0.0153	614	307
Point D	0.0194	614	307
Magnetic Field Emissions			
Test Position	Measure Value (A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.0315	1.63	0.815
Point F	0.0426	1.63	0.815
Point A	0.0349	1.63	0.815
Point B	0.0477	1.63	0.815
Point C	0.0452	1.63	0.815
Point D	0.0393	1.63	0.815

Test Mode: TM23

Test distance: 16cm

Electric Field Emissions			
Test Position	Measure Value (V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.0182	614	307
Point F	0.0217	614	307
Point A	0.0180	614	307
Point B	0.0193	614	307
Point C	0.0165	614	307
Point D	0.0221	614	307
Magnetic Field Emissions			
Test Position	Measure Value (A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.0346	1.63	0.815
Point F	0.0407	1.63	0.815
Point A	0.0411	1.63	0.815
Point B	0.0435	1.63	0.815
Point C	0.0493	1.63	0.815
Point D	0.0384	1.63	0.815

Test Mode: TM26

Test distance: 18cm

Electric Field Emissions			
Test Position	Measure Value (V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.0197	614	307
Point F	0.0182	614	307
Point A	0.0196	614	307
Point B	0.0201	614	307
Point C	0.0180	614	307
Point D	0.0246	614	307
Magnetic Field Emissions			
Test Position	Measure Value (A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.0309	1.63	0.815
Point F	0.0382	1.63	0.815
Point A	0.0371	1.63	0.815
Point B	0.0414	1.63	0.815
Point C	0.0439	1.63	0.815
Point D	0.0327	1.63	0.815

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Test Mode: TM29

Test distance: 20cm

Electric Field Emissions			
Test Position	Measure Value (V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.0216	614	307
Point F	0.0191	614	307
Point A	0.0215	614	307
Point B	0.0234	614	307
Point C	0.0176	614	307
Point D	0.0238	614	307
Magnetic Field Emissions			
Test Position	Measure Value (A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.0261	1.63	0.815
Point F	0.0372	1.63	0.815
Point A	0.0356	1.63	0.815
Point B	0.0386	1.63	0.815
Point C	0.0394	1.63	0.815
Point D	0.0215	1.63	0.815

Using Biot-Savart Law, the value of 0cm can be estimated through the test results of 2cm:

Distance: 0cm

Electric Field Emissions			
Test Position	Valuation(V/m)	Limit(V/m)	50% Limit (V/m)
Point E	1.6715	614	307
Point F	0.6821	614	307
Point A	1.5648	614	307
Point B	1.3376	614	307
Point C	1.5176	614	307
Point D	2.8608	614	307
Magnetic Field Emissions			
Test Position	Valuation(A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.7387	1.63	0.815
Point F	0.3203	1.63	0.815
Point A	0.7088	1.63	0.815
Point B	0.6120	1.63	0.815
Point C	0.6496	1.63	0.815
Point D	0.7880	1.63	0.815

Using Biot-Savart Law, the value of 2cm can be estimated through the test results of 4cm:

Distance: 2cm

Electric Field Emissions			
Test Position	Valuation(V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.4231	614	307
Point F	0.1876	614	307
Point A	0.2275	614	307
Point B	0.1796	614	307
Point C	0.1954	614	307
Point D	0.3939	614	307
Magnetic Field Emissions			
Test Position	Valuation(A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.1882	1.63	0.815
Point F	0.0780	1.63	0.815
Point A	0.0932	1.63	0.815
Point B	0.0874	1.63	0.815
Point C	0.0837	1.63	0.815
Point D	0.1239	1.63	0.815

$$B = \frac{\mu_0 I R^2}{2(R^2 + x^2)^{\frac{3}{2}}}$$

Biot-Savart Law :

Agreement Ratio

Distance: 2cm

Electric Field Emissions				
Test Position	Measure Value (V/m)	Valuation(V/m)	Agreement ratio	Limit
Point E	0.3987	0.4231	5.94%	30%
Point F	0.1627	0.1876	15.08%	30%
Point A	0.1956	0.2275	7.15%	30%
Point B	0.1672	0.1796	2.96%	30%
Point C	0.1897	0.1954	9.66%	30%
Point D	0.3576	0.3939	14.22%	30%
Magnetic Field Emissions				
Test Position	Measure Value (A/m)	Valuation(A/m)	Agreement ratio	Limit
Point E	0.1762	0.1882	6.59%	30%
Point F	0.0764	0.0780	2.07%	30%
Point A	0.0886	0.0932	5.06%	30%
Point B	0.0765	0.0874	13.30%	30%
Point C	0.0812	0.0837	3.03%	30%
Point D	0.0985	0.1239	22.84%	30%

Note: this EUT was tested in 3 orthogonal positions and the worst case position (D point) data was reported.

2.5 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
Electric Field Emissions	Radiated	± 1.56 (V/m)
Magnetic Field Emissions	Radiated	± 0.08 (A/m)

2.6 Test Photos



APPENDIX PHOTOGRAPHS

Please refer to “ANNEX”

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