

RF MEASUREMENT REPORT

IC: 2AZX2-MR000001
Applicant: An Energy Technology Co., Ltd
Product: Onboard 15W Wireless Charging
Model No.: W015CN-03
FCC Classification: Part 15 Low Power Transmitter Below 1705 kHz (DCD)
FCC Rule Part(s): FCC Part 2.1091
Test Date: March 10, 2022

Reviewed By:

Vincent Yu

Approved By:

Robin Wu



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
2112RSU027-U3	Rev. 01	Initial Report	04-02-2022	Valid

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1.4. Product Information

Product Name	Onboard 15W Wireless Charging
Model No.	W015CN-03
WPT Specification	120 ~ 130kHz
NFC Specification	13.56MHz
Test Sample ID	20211213Sample#14
Operating Temp.	-10 ~ 40°C
Input Voltage	DC 36V
Input Current	2A (MAX)
Output	15W (MAX)
Remark: The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.	

1.5. Radio Specification

Frequency Range	120 ~ 130kHz
Modulation	ASK
Antenna Type	Coil Antenna

Note: For other features of this EUT, test report will be issued separately.

2. Measuring Instrument

Instrument	Manufacturer	Model No.	Asset No.	Cali. Interval	Cali. Due Date	Test Site
Exposure Level Tester	narda	ELT-400	MRTSUE06920	3 year	2023/11/29	WZ-SR5
Broadband EM Field Meter	ar	SM40G	MRTSUE06358	3 year	2024/05/05	WZ-SR5
E-field sensor head	ar	SHE100K6z5G	MRTSUE06444	3 year	2024/05/05	WZ-SR5
Probe	narda	B-Field	MRTSUE06919	3 year	2024/02/14	WZ-SR5
Thermohygrometer	testo	608-H1	MRTSUE06402	1 year	2022/06/28	WZ-SR5

3. Measurement Uncertainty

Magnetic Field Emissions (A/m)
1Hz-10Hz: 12.74%
10Hz-120kHz: 2.91%
120kHz-400kHz: 3.98%
Electric Field Emissions (V/m)
100kHz-6.5GHz: 39.42%

4. Test Result

4.1. Summary

Equipment Approval Consideration	Product Technical Specification	Result
(1) Wireless power transfer frequency is below 1 MHz	120kHz ~ 130kHz	Complied
(2) The output power from each primary coil is less than or equal to 15 watts.	Max 15W	Complied
(3) The system may consist of more than one source primary coils, charging one or more clients. If more than one primary coil is present, the coil pairs may be powered on at the same time.	This device has two overlapping primary coils, and is only capable of wireless power transfer between one source and one client at a time, and allows wireless power transfer to take place between this zone and a single client device.	Complied
(4) Client device is placed directly in contact with the transmitter.	Placed directly	Complied
(5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).	Mobile exposure conditions only	Complied
(6) The aggregate H-field strengths anywhere at or beyond 15 cm surrounding the device, and 20 cm away from the surface from all coils that by design can simultaneously transmit, and while those coils are simultaneously energized, are demonstrated to be less than 50% of the applicable MPE limit.	The test result (Refer to clause 3.6) can meet the requirements.	Complied

4.2. Test Limits

§1.1310 Radiofrequency radiation exposure limits.

Below sets forth limits for Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields

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/ Control Exposures				
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 Exposures				
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

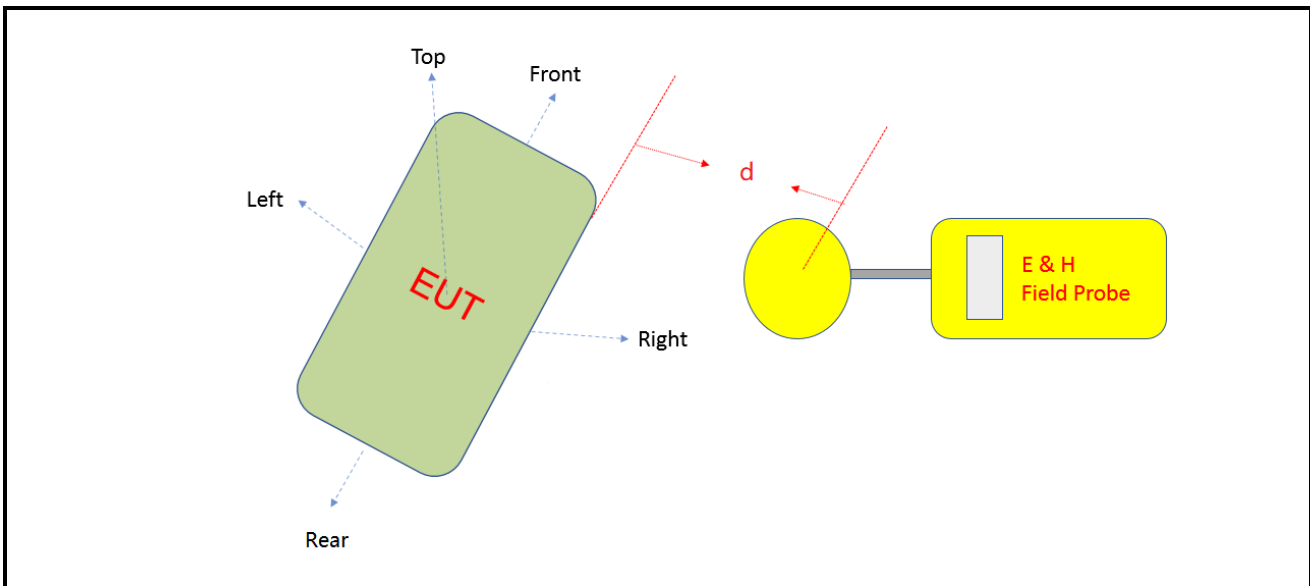
f= Frequency in MHz

* = Plane-wave equivalent power density

4.3. Test Mode

Test Mode
Mode 1: Standby, Idle mode
Mode 2: Charge the Load
Mode 3: Charge the iPhone

4.4. Test Setup



Note:

1. This shall be measured as the distance from the edge of the device to the center of the measurement probe.
2. d is the test distance at cm. Detailed information please refer to clause 3.6 of this report.

4.5. Test Environment Condition

Ambient Temperature	15 ~ 35°C
Relative Humidity	20 ~ 75%RH

4.6. Test Result

Test Site	WZ-SR5	Test Engineer	Amy Zhang
Test Date	2022/03/10	Test Mode	Mode 1

Electric Field Emissions					
Test Position	Test Distance (d) (cm)	Measure Value (V/m)	Limit (V/m)	50% Limit (V/m)	Result
Front	15	0.06	614	307	Pass
Rear	15	0.19	614	307	Pass
Left	15	0.14	614	307	Pass
Right	15	0.08	614	307	Pass
Top	20	0.31	614	307	Pass
Magnetic Field Emissions					
Test Position	Test Distance (d) (cm)	Measure Value (A/m)	Limit (A/m)	50% Limit (A/m)	Result
Front	15	0.071	1.63	0.815	Pass
Rear	15	0.141	1.63	0.815	Pass
Left	15	0.117	1.63	0.815	Pass
Right	15	0.113	1.63	0.815	Pass
Top	20	0.164	1.63	0.815	Pass

Test Site	WZ-SR5	Test Engineer	Amy Zhang
Test Date	2022/03/10	Test Mode	Mode 2

Electric Field Emissions					
Test Position	Test Distance (d) (cm)	Measure Value (V/m)	Limit (V/m)	50% Limit (V/m)	Result
Front	15	0.25	614	307	Pass
Rear	15	2.00	614	307	Pass
Left	15	1.45	614	307	Pass
Right	15	1.38	614	307	Pass
Top	20	1.45	614	307	Pass
Magnetic Field Emissions					
Test Position	Test Distance (d) (cm)	Measure Value (A/m)	Limit (A/m)	50% Limit (A/m)	Result
Front	15	0.334	1.63	0.815	Pass
Rear	15	0.392	1.63	0.815	Pass
Left	15	0.402	1.63	0.815	Pass
Right	15	0.381	1.63	0.815	Pass
Top	20	0.382	1.63	0.815	Pass

Test Site	WZ-SR5	Test Engineer	Amy Zhang
Test Date	2022/03/10	Test Mode	Mode 3

Electric Field Emissions					
Test Position	Test Distance (d) (cm)	Measure Value (V/m)	Limit (V/m)	50% Limit (V/m)	Result
Front	15	0.11	614	307	Pass
Rear	15	0.38	614	307	Pass
Left	15	0.48	614	307	Pass
Right	15	0.68	614	307	Pass
Top	20	0.34	614	307	Pass
Magnetic Field Emissions					
Test Position	Test Distance (d) (cm)	Measure Value (A/m)	Limit (A/m)	50% Limit (A/m)	Result
Front	15	0.073	1.63	0.815	Pass
Rear	15	0.066	1.63	0.815	Pass
Left	15	0.078	1.63	0.815	Pass
Right	15	0.113	1.63	0.815	Pass
Top	20	0.086	1.63	0.815	Pass

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