RF Exposure Evaluation

FCC ID: 2AX9S-RBW100UVC

1. Client Information

Applicant	:	Molonlave Group LLC
Address	:	36-20 34th Street, Long Island City, NY 11106, USA
Manufacturer	:	Molonlave Group LLC
Address	:	36-20 34th Street, Long Island City, NY 11106, USA

2. General Description of EUT

EUT Name	:	disinfectant charger	
Models No.	:	RBW100UVC	
Sample ID	:	20201028-04_1-01	
Model Difference	:	N/A	
Product Description	:	Operation Frequency:	110KHz-205KHz
		Modulation Type:	ASK
		Antenna:	Coil Antenna
Power Rating	:	Input: DC 5V/3.1A Output: DC 5V/3.1A	
Battery:	:	Li-Polymer/10000mAh	
Software Version	:	1.1	
Hardware Version	:	1.1	
Connecting I/O Port(S)	:	Please refer to the User's Manual	

Note: More test information about the EUT please refer the RF Test Report.

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RF Exposure Considerations

1. Measuring Standard

KDB 680106 D01 RF Exposure Wireless Charging App v03.

2. Requirements

According to the item 5.2 of KDB 680106 D01v03:
Inductive wireless power transfer applications that meet all of the following requirements are excluded from submitting an RF exposure evaluation:

(1) Power transfer frequency is less than 1 MHz.

(2) Output power from each primary coil is less than or equal to 15 watts.

(3) The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.

(4) Client device is placed directly in contact with the transmitter.

(5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).

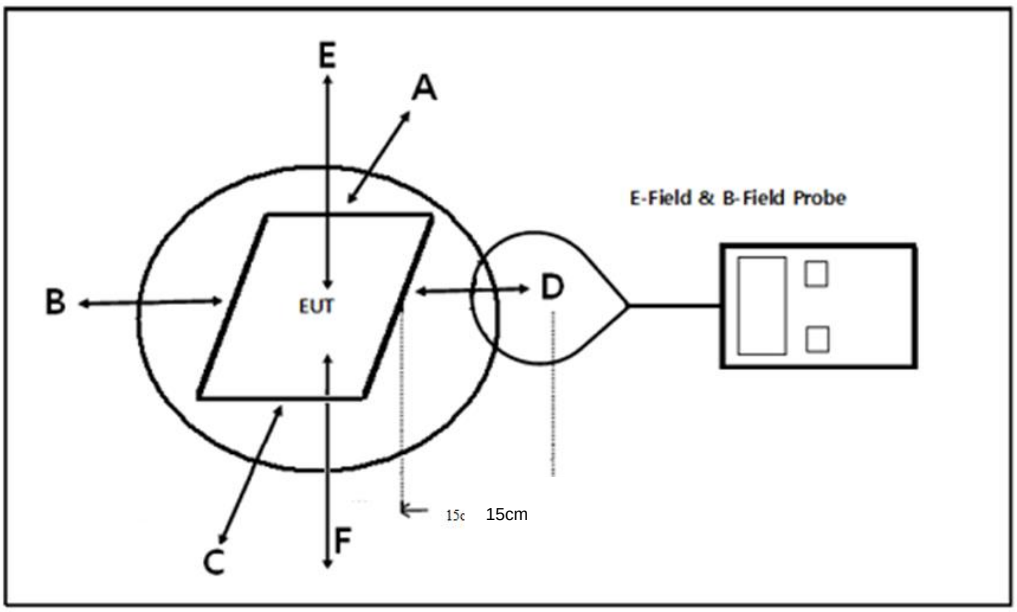
(6) The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

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 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
300-1500	/	/	f/300	6
1500-100,000	/	/	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
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

F=frequency in MHz
*=Plane-wave equivalent power density
RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).

3. Test Setup



Note: 1) For mobile RF exposure condition, due to installation limitations no tests from the underside of the charging device are required.
2)For portable RF exposure, need measure all sides.

4.Test Procedure

For mobile RF exposure:

a) The RF exposure test was performed on 360 degree turn table in anechoic chamber.
b) The measurement probe was placed at test distance (15cm) which is between the edge of the charger and the geometric center of probe.
c) The turn table was rotated 360d degree to search of highest strength.
d) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed.
e) The EUT were measured according to the dictates of KDB 680106D01v03.

For portable RF exposure:

a) The RF exposure test was performed on 360 degree turn table in anechoic chamber.
b) The measurement probe was placed at test distance (0cm) which is between the edge of the charger and the geometric center of probe.
c) The turn table was rotated 360d degree to search of highest strength.
d) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E, F) were completed.
e). Repeated measured (a) – (d) at measure distance 5cm and 10cm.
f) The EUT were measured according to the dictates of KDB 680106D01v03.

5. Test Equipment List

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Magnetic field meter	NARDA	ELT-400	EE030	Sep. 11, 2020	Sep. 10, 2021

5.4 Deviation From Test Standard

No deviation

6. Mode of operation during the test / Test peripherals used

Test Conditions	Description	Exposure conditions	
TM1	AC/DC Adapter + EUT + Mobile Phone (Battery Status: <1%)	☒ Mobile	Record
TM2	AC/DC Adapter + EUT + Mobile Phone (Battery Status: <50%)	☒ Mobile	Record
TM3	AC/DC Adapter + EUT + Mobile Phone (Battery Status: 100%)	☒ Mobile	Record
TM4	EUT + Mobile Phone (Battery Status: <1%)	☒ Portable	Record
TM5	EUT + Mobile Phone (Battery Status: <50%)	☒ Portable	Record
TM6	EUT + Mobile Phone (Battery Status: 100%)	☒ Portable	Record
Note: All test modes were pre-tested, but we only recorded the worst case in this report.			

7. Test Result

EUT was tested with empty load, half load and full load, the full load is the worst case and we listed the results in the report.

For mobile exposure:

H-Field Strength at 15 cm from the edges surrounding the EUT

Test mode	Charging Battery Level	Frequency Range (MHz)	Measured H-Field Strength Values (A/m)					H-Field Strength 50% Limits (A/m)	H-Field Strength Limits (A/m)
			Test Position A	Test Position B	Test Position C	Test Position D	Test Position E		
TM1	1%	0.131	0.104	0.093	0.105	0.135	0.127	0.815	1.63
TM2	50%	0.131	0.098	0.094	0.101	0.091	0.136	0.815	1.63
TM3	99%	0.131	0.074	0.078	0.082	0.082	0.125	0.815	1.63

H-Field Strength at 20cm from the top surface of the EUT

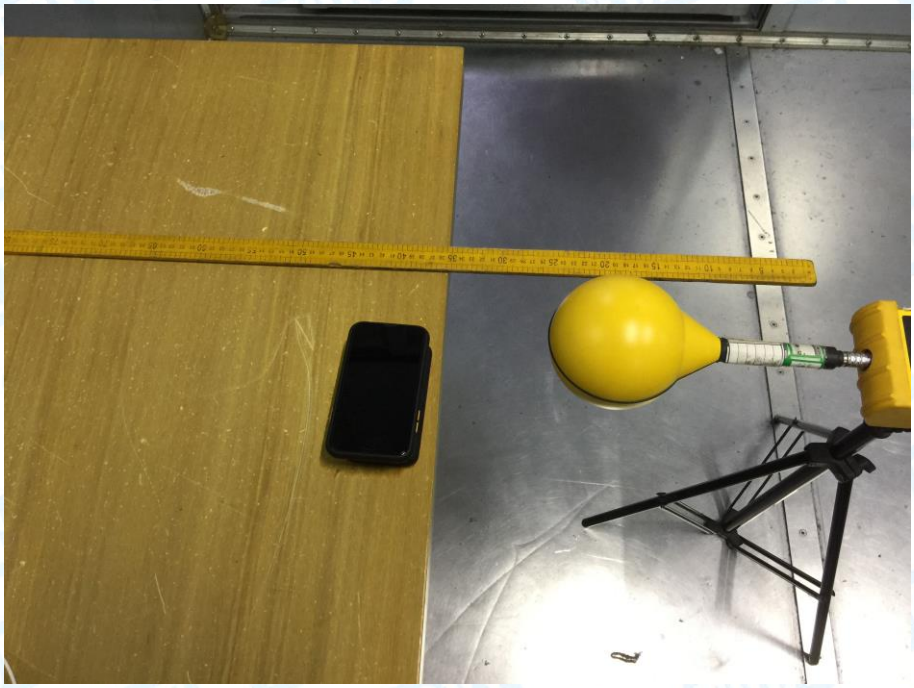
Test mode	Charging Battery Level	Frequency Range (MHz)	Measured H-Field Strength Values (A/m)	H-Field Strength 50% Limits (A/m)	H-Field Strength Limits (A/m)
			Test Position E		
TM1	1%	0.131	0.096	0.815	1.63
TM2	50%	0.131	0.097	0.815	1.63
TM3	99%	0.131	0.089	0.815	1.63

For portable exposure:

H-Field Strength at all sides of the EUT

Test mode	Charging Battery Level	Measured Distance (cm)	Frequency Range (MHz)	Measured H-Field Strength Values (A/m)						H-Field Strength Limits (A/m)
				Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Test Position F	
TM4	1%	0	0.131	1.234	1.267	1.322	1.304	1.323	1.236	1.63
TM5	50%	0	0.131	1.211	1.245	1.254	1.284	1.274	1.145	1.63
TM6	99%	0	0.131	1.204	1.132	1.124	1.132	1.135	1.104	1.63
TM4	1%	5	0.131	0.545	0.524	0.544	0.535	0.539	0.522	1.63
TM5	50%	5	0.131	0.514	0.515	0.508	0.518	0.518	0.505	1.63
TM6	99%	5	0.131	0.442	0.435	0.436	0.445	0.436	0.415	1.63
TM4	1%	10	0.131	0.325	0.312	0.337	0.321	0.331	0.327	1.63
TM5	50%	10	0.131	0.299	0.281	0.301	0.294	0.289	0.284	1.63
TM6	99%	10	0.131	0.284	0.269	0.275	0.228	0.247	0.273	1.63

8. Test Set-up Photo

Test Set-up Photo


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