RF Exposure Evaluation
FCC ID: 2A9G4-HK001

1 General Information

Product Name:	Wireless Charger Pad
Product Model No.:	HKWP1132C-15E
Serial No.:	23132
Model Difference:	All the models are the same circuit and module, except the model name.
Test Auxiliary:	iPhone 12 pro, Adapter
Model No.:	N/A
Transmitting mode	Keep the EUT in continuously wireless charging mode
Power supply:	Input: DC 5V/2A, 9V/2A Wireless Output: 5W/15W
Test description:	Phone Battery>98%, =50%and <1% are tested, and the worst is <1%.

Test Auxiliary					
A1	Adapter	HONOR	/	/	Auxiliary
A2	iPhone 12 pro	Apple Inc.	/	/	Auxiliary
Transmitting mode		Keep the EUT in continuously wireless charging mode			

2 Test Modes

Test Modes		
Mode 1	Wireless Output(5W)	Record
Mode 2	Wireless Output(15W)	Record

Note: all modes of the equipment have been evaluated and tested, and the report only reflects the data of the worst mode.

3 Measuring Standard

KDB 680106 RF Exposure Wireless Charging Apps v03r01

4 Requirements

According to the item 5 of KDB 680106 v03r01:

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 1MHz.

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

(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.

(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 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.

Remark: Meet all the above requirements.

Limits

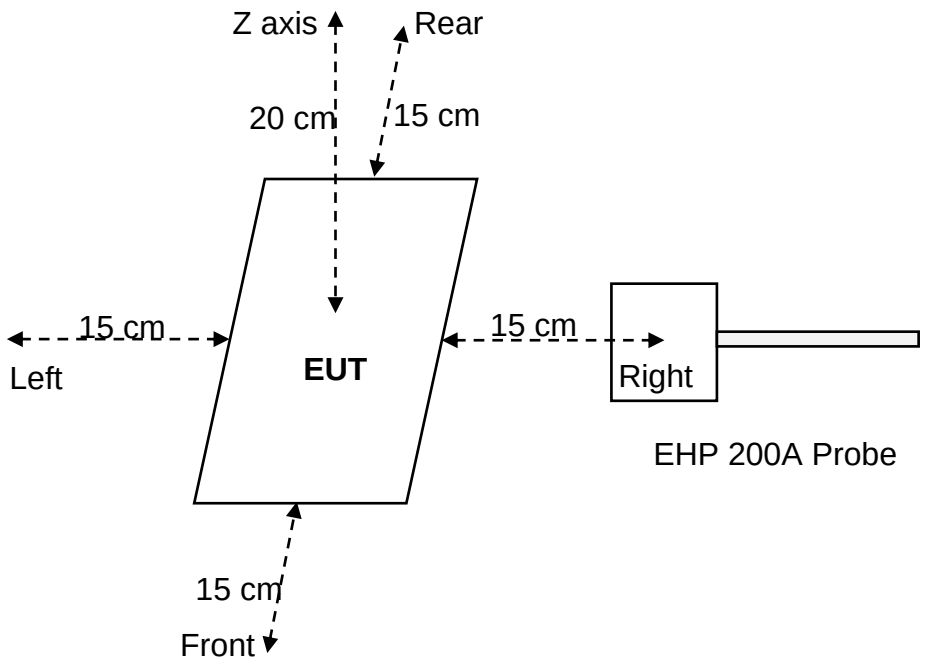
The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

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).

5 Test Setup



6 Test Procedure

E and H-field measurements should be made with the center of the probe at a distance of 15 cm surrounding the device and 20 cm above the top surface of the primary/client pair.

These measurements should be repeated for three different client battery levels, 1%, 50%, and 99%.

Record the test results.

KDB 680106 D01 RF Exposure Wireless Charging Apps v03r01:

(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 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.
(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 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.
Note: The device is in compliance with KDB 680106 D01 RF Exposure Wireless Charging Apps v03r01 6 conditions.

7 Test Instruments list

Test Equipment	Manufacturer	Model No.	SN.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
Electric and Magnetic Field Analyzer	Narda	EHP-200A	180ZX11013	May. 26 2022	May. 25 2023

8 Test Result

Test condition 1: Mode 2 operating mode with client device (1 % battery status of client device)

Maximum permissible Exposure				
Battery levels	Test sides	Test distance(cm)	E –field(V/m)	H–field(A/m)
<1%	Top	20	3.6221	0.0787
<1%	Left	15	2.0090	0.0470
<1%	Right	15	1.9330	0.0454
<1%	Front	15	1.6974	0.0554
<1%	Back	15	0.7851	0.0470
Limit			614	1.63
Margin Limit (%)			0.59%	4.83%

Test condition 2: Mode 2 operating mode with client device (50% battery status of client device)

Maximum permissible Exposure				
Battery levels	Test sides	Test distance(cm)	E –field(V/m)	H–field(A/m)
<50%	Top	20	3.6205	0.0776
<50%	Left	15	2.0869	0.0455
<50%	Right	15	1.9315	0.0436
<50%	Front	15	1.6966	0.0539
<50%	Back	15	0.7846	0.0461
Limit			614	1.63
Margin Limit (%)			0.59%	4.76%

Test condition 3: Mode 2 operating mode with client device (99% battery status of client device)

Maximum permissible Exposure				
Battery levels	Test sides	Test distance(cm)	E –field(V/m)	H–field(A/m)
<99%	Top	20	3.6195	0.0766
<99%	Left	15	2.0854	0.0448
<99%	Right	15	1.9307	0.0431
<99%	Front	15	1.6958	0.0532
<99%	Back	15	0.7832	0.0452
Limit			614	1.63
Margin Limit (%)			0.59%	4.70%

9 Test Set-up Photo

Reference to the appendix I - Test Setup Photos.

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