RF Exposure Evaluation

FCC ID: 2A4HK-DI-158D-BL

1. Client Information

Applicant	:	Shanxilinkedianzikejiyouxiangongsi
Address	:	wankelanshan2qi10haolou2danyuan202shi hepingnanlu, wanbolinqu taiyuanshi shanxisheng, China
Manufacturer	:	Shanxilinkedianzikejiyouxiangongsi
Address	:	wankelanshan2qi10haolou2danyuan202shi hepingnanlu, wanbolinqu taiyuanshi shanxisheng, China

2. General Description of EUT

EUT Name	:	3 in 1 Charging Station	
Model(s)	:	DI-158D-BL, DI-158D-RG, DI-158D-SG, DI-158D-SL, DI-158D-DB, DI-158D-L, DI-158D-G, DI-158D-PR, DI-158D-WH, DI-158D-GR, DI-158D-PK, DI-158DCP	
Sample ID	:	202202-0061_01-01-5	
Model Difference	:	All PCB boards and circuit diagrams are the same, color and model are different, the internal structure is the same.	
Product Description	:	Operation Frequency:	300KHz-350KHz
		Modulation Type:	ASK
		Antenna:	Coil Antenna
Power Supply	:	For Adapter: Input: AC 100-240V~ 50/60Hz Output: DC 5V, 2.1A-3A Phone: DC 5V, 2A (Max) Watch: DC5V, 500mA (Max) Earphone:5V, 500mA (Max) Wireless Charging: 2.5W(Max)	
Software Version	:	V1.0	
Hardware Version	:	V1.2	
Connecting I/O Port(S)	:	Please refer to the User's Manual	
Accessories	:	Apple Watch	

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 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).

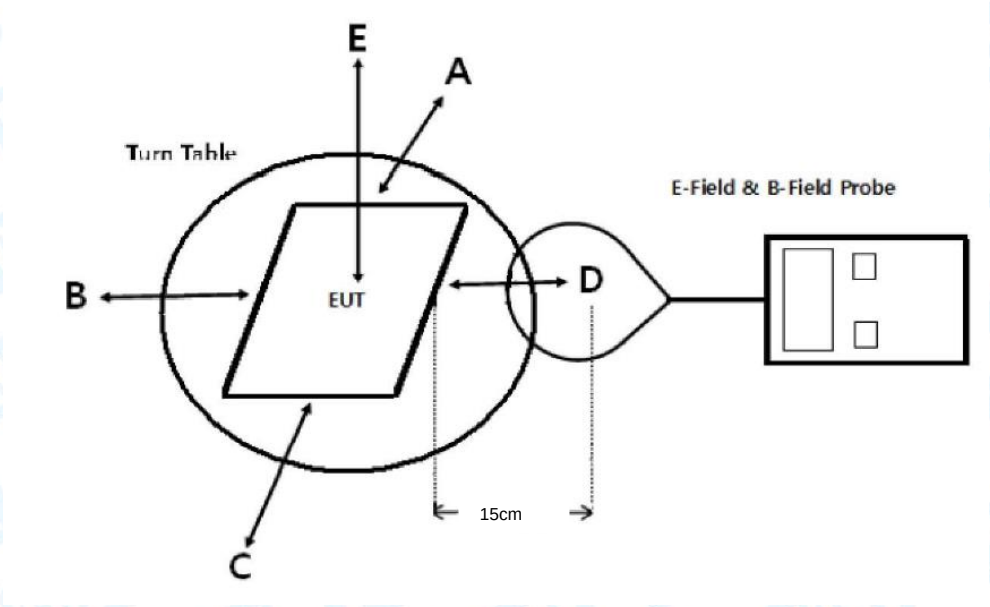
(6) The aggregate H-field strengths anywhere at or beyond 15 cm surrounding the device, and 20 cm away from the surface from all coils that by design can simultaneously transmit, and while those coils are simultaneously energized, are demonstrated to be less than 50% of the applicable MPE limit.

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: The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface.

4.Test Procedure

1) The RF exposure test was performed in anechoic chamber.
2) The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface.
3) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed.
4) The EUT was measured according to the dictates of KDB 680106 D01 v03.

Remark:
The EUT's test position A, B, C, D and E is valid for the E and H field measurements.

5. Test Equipment List

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Magnetic field meter	NARDA	ELT-400	EE030	Sep. 10, 2021	Sep. 09, 2022

6. Deviation From Test Standard

No deviation

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

Test Modes:		
TM1	AC/DC Adapter + EUT + Mobile Phone (Battery Status: <1%)	record
TM2	AC/DC Adapter + EUT + Mobile Phone (Battery Status: <50%)	record
TM3	AC/DC Adapter + EUT + Mobile Phone (Battery Status: <99%)	record

8. Test Result

E-Filed Strength at 15 cm from the edges surrounding the EUT and 15 cm above the top surface

Charging Battery Level	Frequency Range (MHz)	Measured E-Field Strength Values (V/m) Test Position					E-Field Strength 50% Limits (V/m)	E-Field Strength Limits (V/m)
		A	B	C	D	E		
1%	0.324	42.612	43.348	61.462	43.745	47.127	307.0	614.0
50%	0.324	46.741	42.967	49.381	47.128	42.975	307.0	614.0
99%	0.324	61.073	49.374	42.962	34.671	41.842	307.0	614.0

Note: V/m= A/m *377

H-Filed Strength at 15 cm from the edges surrounding the EUT and 15 cm above the top surface

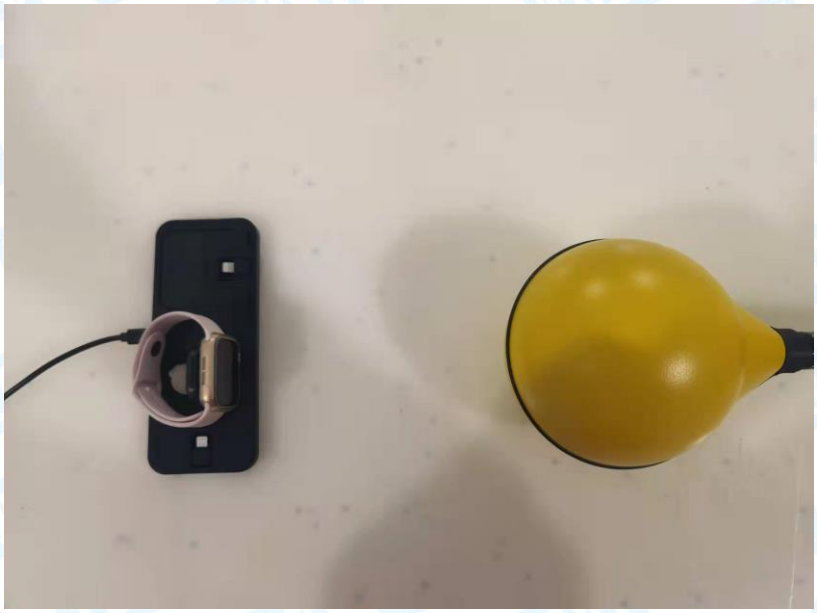
Charging Battery Level	unit	Frequency Range (MHz)	Measured H-Field Strength Values (A/m) Test Position					H-Field Strength 50% Limits (A/m)	H-Field Strength Limits (A/m)
			A	B	C	D	E		
1%	uT	0.324	0.1411	0.1432	0.2036	0.142	0.1562	--	--
1%	A/m	0.324	0.112	0.115	0.169	0.117	0.124	0.815	1.63
50%	uT	0.324	0.153	0.1423	0.1632	0.1558	0.1424	--	--
50%	A/m	0.324	0.124	0.114	0.133	0.123	0.112	0.815	1.63
99%	uT	0.324	0.2024	0.1632	0.1424	0.1151	0.1387	--	--
99%	A/m	0.324	0.163	0.131	0.113	0.091	0.111	0.815	1.63

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

Charging Battery Level	Unit	Frequency Range (MHz)	Measured H-Field Strength Values (A/m) Test Position E	FCC H-Field Strength 50% Limits (A/m)	FCC H-Field Strength Limits (A/m)
1%	uT	0.324	0.1341	--	--
1%	A/m	0.324	0.102	0.815	1.63
50%	uT	0.324	0.1225	--	--
50%	A/m	0.324	0.092	0.815	1.63
99%	uT	0.324	0.1371	--	--
99%	A/m	0.324	0.12	0.815	1.63

Note: A/m=uT/1.25

9. Test Set-up Photo

Test Set-up Photo


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