RF EXPOSURE EVALUATION

FCC ID:2AY3K-YFW-F191

Product Name:	3 in 1 Wireless Charing Station
Model No.:	YFW-F191
Serial No.:	F191, US_F191_B, US_F191_H, US_F191_RJ, US_F191_S, DE_F191_B, DE_F191_S, UK_F191_B, UK_F191_S
Model Difference:	All the model are the same circuit , only the model name are different.
Operation Frequency:	ANT 1&2: 115kHz ~ 205kHz ANT 3:300kHz ~ 350kHz
Modulation Type:	ASK
Antenna Type:	ANT 1&2&3: Loop Coil Antenna
Antenna Gain:	ANT 1&2&3: 0dBi
Power Supply:	Input: 5V⎓3A, 9V⎓3A Phone Output:: 5W, 7.5W, 10W, 15W Max Earphone Output: 5W Max Watch Output: 5W Max
Transmitting Mode:	Keep the EUT in continuously wireless charging mode
Date of Test:	May 06, 2025 to May 12, 2025
Date of issue:	May 12, 2025

EUT mode of operation before folding:

Test Modes:	Test Coil:	Description:
Mode 1	ANT 1	AC/DC Adapter + EUT + Phone 15W (Battery Status: <1%)
Mode 2		AC/DC Adapter + EUT + Phone 15W (Battery Status: 50%)
Mode 3		AC/DC Adapter + EUT + Phone 15W (Battery Status: >98%)
Mode 4		AC/DC Adapter + EUT + Phone 10W (Battery Status: <1%)
Mode 5		AC/DC Adapter + EUT + Phone 10W (Battery Status: 50%)
Mode 6		AC/DC Adapter + EUT + Phone 10W (Battery Status: >98%)
Mode 7		AC/DC Adapter + EUT + Phone 7.5W (Battery Status: <1%)
Mode 8		AC/DC Adapter + EUT + Phone 7.5W (Battery Status: 50%)
Mode 9		AC/DC Adapter + EUT + Phone 7.5W (Battery Status: >98%)
Mode 10		AC/DC Adapter + EUT + Phone 5W (Battery Status: <1%)
Mode 11		AC/DC Adapter + EUT + Phone 5W (Battery Status: 50%)
Mode 12		AC/DC Adapter + EUT + Phone 5W (Battery Status: >98%)
Mode 13	ANT 2	AC/DC Adapter + EUT + Earphone 5W (Battery Status: <1%)
Mode 14		AC/DC Adapter + EUT + Earphone 5W (Battery Status: 50%)
Mode 15		AC/DC Adapter + EUT + Earphone 5W (Battery Status: >98%)
Mode 16	ANT 3	AC/DC Adapter + EUT + Watch 5W (Battery Status: <1%)
Mode 17		AC/DC Adapter + EUT + Watch 5W (Battery Status: 50%)
Mode 18		AC/DC Adapter + EUT + Watch 5W (Battery Status: >98%)
Mode 19	ANT1 + ANT2+ANT3	AC/DC Adapter + EUT + Phone 15W + Earphone 5W +Watch 5W (Battery Status: <1%)
Mode 20		AC/DC Adapter + EUT + Phone 15W + Earphone 5W +Watch 5W (Battery Status: 50%)
Mode 21		AC/DC Adapter + EUT + Phone 15W + Earphone 5W +Watch 5W (Battery Status: >98%)
Mode 22	ANT1 + ANT2	AC/DC Adapter + EUT + Phone 15W + Earphone 5W (Battery Status: <1%)
Mode 23		AC/DC Adapter + EUT + Phone 15W + Earphone 5W (Battery Status: 50%)
Mode 24		AC/DC Adapter + EUT + Phone 15W + Earphone 5W (Battery Status: >98%)
Mode 25	ANT1 + ANT3	AC/DC Adapter + EUT + Phone 15W + Watch 5W (Battery Status: <1%)

Mode 26		AC/DC Adapter + EUT + Phone 15W + Watch 5W (Battery Status: 50%)
Mode 27		AC/DC Adapter + EUT + Phone 15W + Watch 5W (Battery Status: >98%)
Mode 28	ANT2 + ANT3	AC/DC Adapter + EUT + Earphone 5W +Watch 5W (Battery Status: <1%)
Mode 29		AC/DC Adapter + EUT + Earphone 5W +Watch 5W (Battery Status: 50%)
Mode 30		AC/DC Adapter + EUT + Earphone 5W +Watch 5W (Battery Status: >98%)

1 Measuring Standard

1.1 According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines. According to §1.1310 and §2.1091 RF exposure is calculated. According KDB 680106 D01 Wireless Power Transfer v04.

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y ±U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainly
1	H-filed	±0.93dB
2	E-filed	±0.51dB

2.1 Requirements

The EUT does comply with item 5.2 of KDB 680106 D01 V04:

a) The power transfer frequency is below 1 MHz.

Yes.The device operates in the frequency from ANT 1&2 is 110kHz to 205kHz,ANT 3 is 300kHz to 350kHz.

b) 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 15watts.

c) 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.

d) Only § 2.1091-Mobile exposure conditions apply (i.e., this provision does not cover § 2.1093-Portable exposure conditions).

Yes, the EUT is a Mobile Wireless Charger.

e) 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

Yes. The EUT coil is evaluated at maximum output power and the test results are less than 50% of the limit.

f) For systems with more than one radiating structure, the conditions specified in (e) 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. .

Yes, the EUT has two coil, all test modes met the conditions specified in (e).

2.2 Limits

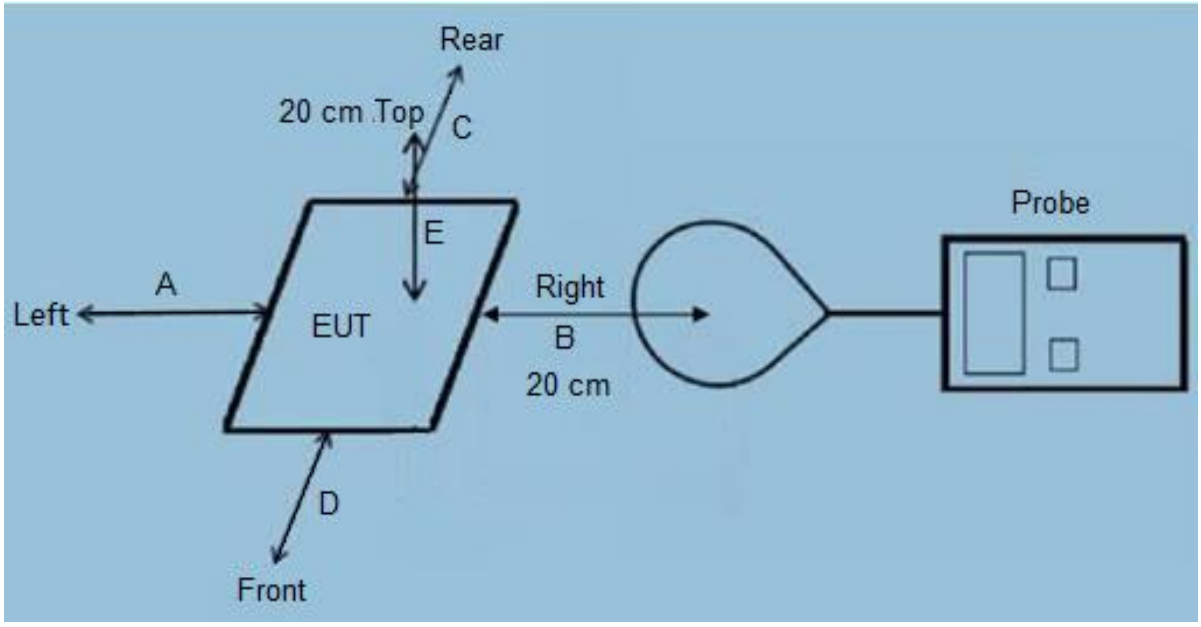
The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

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).

2.3 Test Setup



3 Test Procedure

1) The RF exposure test was performed on 360 degree turn table in anechoic chamber.
2) The measurement probe was placed at test distance (20 cm and above from all sides and Top) which is between the edge of the charger and the geometric centre of probe.
3) The turn table was rotated 360d degree to search of highest strength.
4) The highest emission level was recorded and compared with limit as soon as measurement of each points were completed.
5) The EUT were measured according to the dictates of KDB 680106 D01 V04.

4.1 Test Instruments list

Test Equipment	Manufacturer	Model No.	SN.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
Exposure Level Tester	Narda	ELT-400	180ZX10220	Sep. 29, 2024	Sep. 28, 2025
Magnetic field probe 100cm^2	Narda	ELT probe 100cm^2	M0675	Sep. 29, 2024	Sep. 28, 2025

4.2 Test*auxiliary equipment.list*

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	3 in 1 Wireless Charing Station	N/A	YFW-F191	N/A	EUT
E-2	AC/DC Adapter	HUAWEI	HW-200200CP1	N/A	Auxiliary
E-3	Phone	Apple	iPhone 13 Por Max	N/A	Auxiliary
E-4	Watch	Apple	iWatch SE	N/A	Auxiliary
E-5	Earphone	Apple	AirPods 2	N/A	Auxiliary

5 Test Result

(iPhone Coil 15W)

H-Filed Strength at 20 cm from the edges surrounding the EUT (uT):

Battery Level:	Frequency Range (MHz)	Test Position Left	Test Position Right	Test Position Rear	Test Position Front	Test Position Top
<1% Battery	0.115-0.205	0.32	0.29	0.27	0.28	0.33
50% Battery	0.115-0.205	0.32	0.29	0.27	0.28	0.33
>98% Battery	0.115-0.205	0.32	0.29	0.27	0.28	0.33

The Magnetic field strength (A/m) conversion results are on the next page.

H-Filed Strength at 20 cm from the edges surrounding the EUT (A/m)

Battery Level:	Frequency Range (MHz)	Test Position Left	Test Position Right	Test Position Rear	Test Position Front	Test Position Top	Limits 50% (A/m)	Limits (A/m)
<1% Battery	0.115-0.205	0.26	0.23	0.22	0.22	0.26	0.815	1.63
50% Battery	0.115-0.205	0.26	0.23	0.22	0.22	0.26	0.815	1.63
>98% Battery	0.115-0.205	0.26	0.23	0.22	0.22	0.26	0.815	1.63

Remark: A/m = uT/1.25

(Earphone Coil)

H-Filed Strength at 20 cm from the edges surrounding the EUT (uT):

Battery Level:	Frequency Range (MHz)	Test Position Left	Test Position Right	Test Position Rear	Test Position Front	Test Position Top
<1% Battery	0.115-0.205	0.27	0.28	0.27	0.24	0.26
50% Battery	0.115-0.205	0.27	0.28	0.27	0.24	0.26
>98% Battery	0.115-0.205	0.27	0.28	0.27	0.24	0.26

The Magnetic field strength (A/m) conversion results are on the next page.

H-Filed Strength at 20 cm from the edges surrounding the EUT (A/m)

Battery Level:	Frequency Range (MHz)	Test Position Left	Test Position Right	Test Position Rear	Test Position Front	Test Position Top	Limits 50% (A/m)	Limits (A/m)
<1% Battery	0.115-0.205	0.22	0.22	0.22	0.19	0.21	0.815	1.63
50% Battery	0.115-0.205	0.22	0.22	0.22	0.19	0.21	0.815	1.63
>98% Battery	0.115-0.205	0.22	0.22	0.22	0.19	0.21	0.815	1.63

Remark: A/m = uT/1.25

(Watch Coil)

H-Filed Strength at 20 cm from the edges surrounding the EUT (uT):

Battery Level:	Frequency Range (MHz)	Test Position Left	Test Position Right	Test Position Rear	Test Position Front	Test Position Top
<1% Battery	0.3-0.350	0.27	0.26	0.26	0.29	0.28
50% Battery	0.3-0.350	0.27	0.26	0.26	0.29	0.28
>98% Battery	0.3-0.350	0.27	0.26	0.26	0.29	0.28

The Magnetic field strength (A/m) conversion results are on the next page.

H-Filed Strength at 20 cm from the edges surrounding the EUT (A/m)

Battery Level:	Frequency Range (MHz)	Test Position Left	Test Position Right	Test Position Rear	Test Position Front	Test Position Top	Limits 50% (A/m)	Limits (A/m)
<1% Battery	0.3-0.350	0.22	0.21	0.21	0.23	0.22	0.815	1.63
50% Battery	0.3-0.350	0.22	0.21	0.21	0.23	0.22	0.815	1.63
>98% Battery	0.3-0.350	0.22	0.21	0.21	0.23	0.22	0.815	1.63

Remark: A/m = uT/1.25

(iPhone Coil 15W + Earphone Coil + Watch Coil)

H-Filed Strength at 20 cm from the edges surrounding the EUT (uT):

Battery Level:	Frequency Range (MHz)	Test Position Left	Test Position Right	Test Position Rear	Test Position Front	Test Position Top
<1% Battery	0.115-0.350	0.35	0.31	0.32	0.30	0.33
50% Battery	0.115-0.350	0.35	0.31	0.32	0.30	0.33
>98% Battery	0.115-0.350	0.35	0.31	0.32	0.30	0.33

The Magnetic field strength (A/m) conversion results are on the next page.

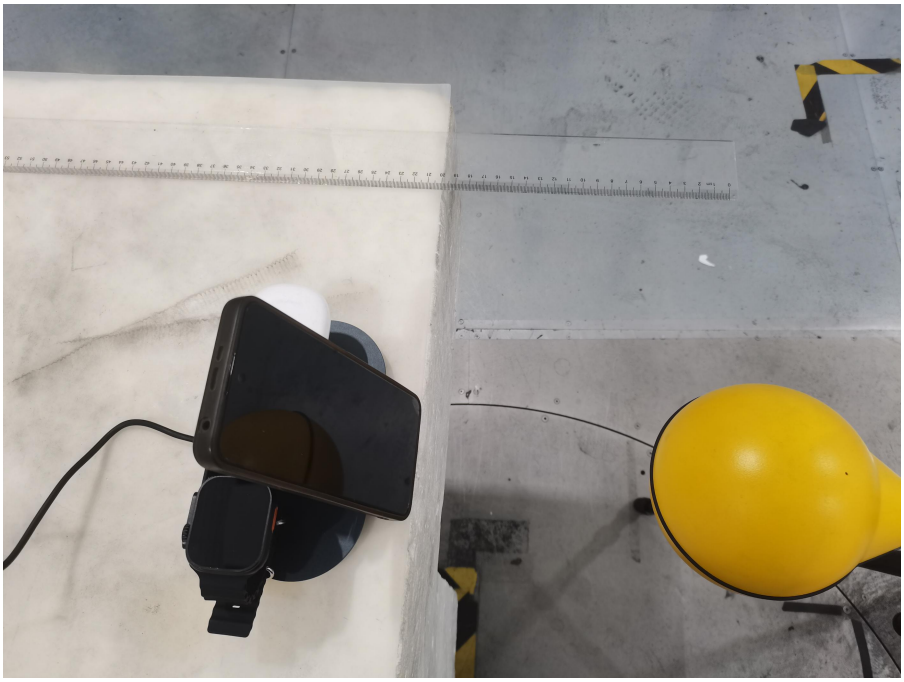
H-Filed Strength at 20 cm from the edges surrounding the EUT (A/m)

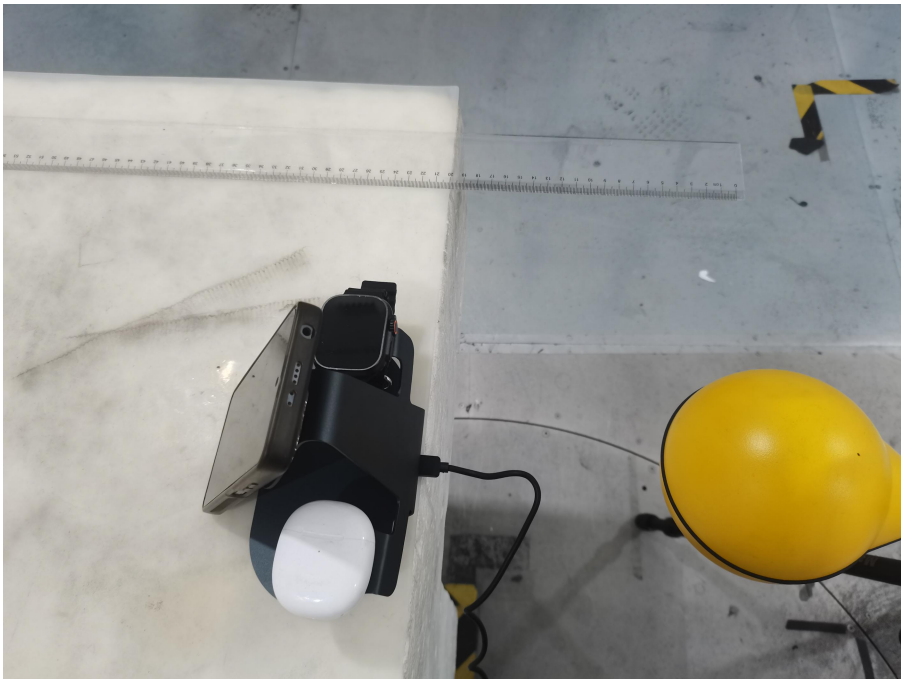
Battery Level:	Frequency Range (MHz)	Test Position Left	Test Position Right	Test Position Rear	Test Position Front	Test Position Top	Limits 50% (A/m)	Limits (A/m)
<1% Battery	0.115-0.350	0.28	0.25	0.26	0.24	0.26	0.815	1.63
50% Battery	0.115-0.350	0.28	0.25	0.26	0.24	0.26	0.815	1.63
>98% Battery	0.115-0.350	0.28	0.25	0.26	0.24	0.26	0.815	1.63

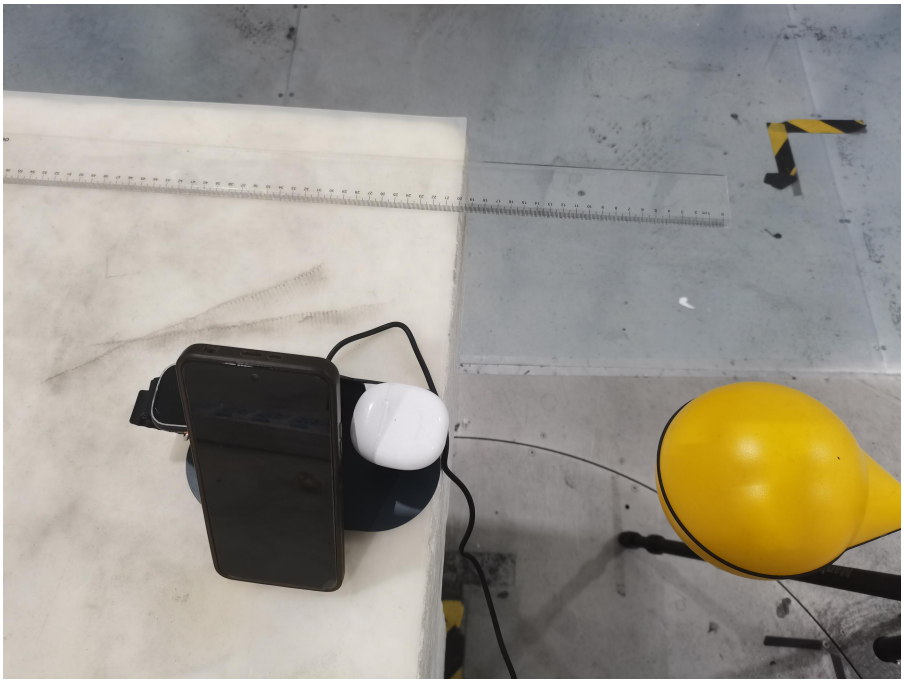
Remark: A/m = uT/1.25

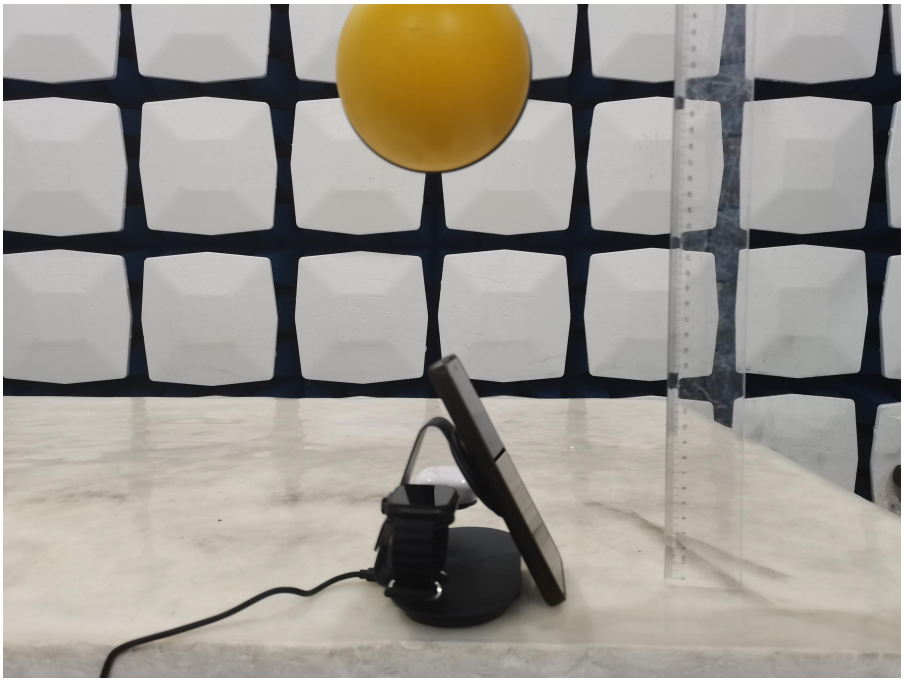
6 Test Set-up Photo

Probe	Length	Width	Radius
	11cm	11cm	5.5cm









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