Applicant name: ADATA Technology Co., Ltd.

FCC ID: RLY-R100MAGNETIC

Product Type: Rechargeable Li-Polymer Power Bank

Basic Model name: ADATA

KDB document for 680106 D01 Wireless Power Transfer v04

Editor: Nick.Chen

This document is to run the ECR process for portable Wireless charging devices, according to KDB 680106 D01 Wireless Power Transfer v04 instructions to provide the following four pieces of information:

1. **WPT operating frequency (or frequencies).**

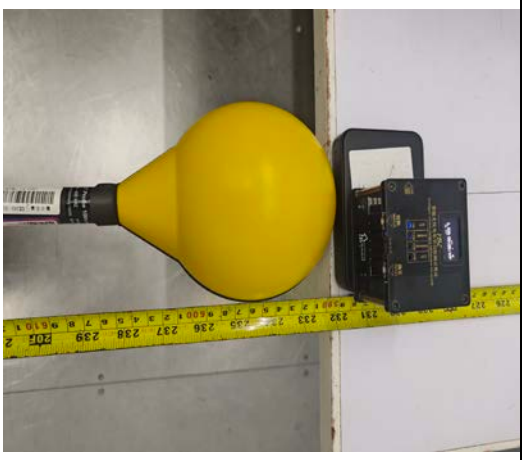
   Operation Frequerncy：110kHz-205kHz

2. **Conducted power for each radiating structure.**

   Wireless Output:15W Max

3. **§ 2.1091-Mobile or § 2.1093-Portable demonstrated scenarios of operation, including RF exposure compliance information.**

The probe sensor and the EUT surface from 6cm (0 cm for the probe housing and EUT surface), see test photo:

A(Front)	B(Right)
	
C(Back)	**D(Left)**
	
E(Top)	**F(Bottom)**
	

The test instrument is:

Human Exposure					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	B-Field Probe	narad	ELT-400	O-0203	Nov. 19, 2024

The distance from the center of the probe sensor to the surface of the EUT coil is 6cm. Then, with a testing step of 1cm, a total of 9 sets of data were tested. By calculating these 9 sets of data, obtain the maximum percentage of H and E fields per centimeter to estimate the H and E-field values at 12cm to 6cm and 14cm to 8cm from the center of the probe sensor to the surface of the tested device coil, and thus estimate the ratio of the electric field strength to the magnetic field strength of the probe sensor located at 0cm and 2cm on the surface of the tested device coil. After calculation, the percentage of H field at 0cm is 16.10%, and the percentage of E field is 7.93%; The H field percentage at 2cm is 21.81%, and the E field percentage is 26.30%. The percentage change in magnetic field intensity calculated above is within 30% of the requirement of KDB 680106 D01 wireless power transmission v04.

1. The center of the probe sensor is 6cm and 7cm away from the surface of the EUT coil, and the maximum percentage of the H-field is 11.50%
2. The center of the probe sensor is 13cm and 14cm away from the surface of the EUT coil, and the maximum percentage of the E-field is 9.79%

Through actual testing, we calculated the percentage deviation of entry strength for each step. The data is as follows: :

Actual test value from probe sensor to EUT surface:

The center of the probe sensor is 6cm away from the surface of the EUT coil	Deviation	The center of the probe sensor is 7cm away from the surface of the EUT coil	Deviation	The center of the probe sensor is 8cm away from the surface of the EUT coil
H-field (A/m)		H-field (A/m)		H-field (A/m)
0.3103	11.50%	0.2746	10.92%	0.2446
E-field (V/m)		E-field (V/m)		E-field (V/m)
0.1651	8.66%	0.1508	6.37%	0.1412

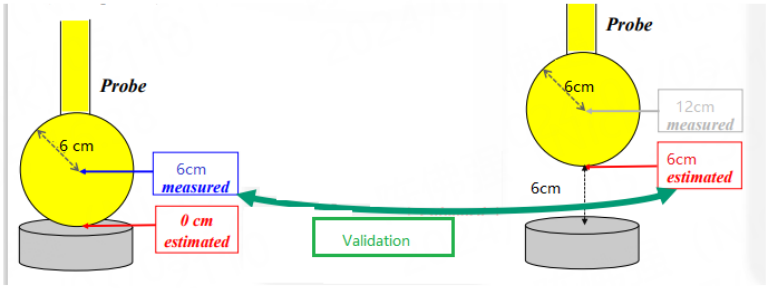
The center of the probe sensor is 8cm away from the surface of the EUT coil	Deviation	The center of the probe sensor is 9cm away from the surface of the EUT coil	Deviation	The center of the probe sensor is 10cm away from the surface of the EUT coil
H-field (A/m)		H-field (A/m)		H-field (A/m)
0.2446	9.44%	0.2215	1.58%	0.2180
E-field (V/m)		E-field (V/m)		E-field (V/m)
0.1412	6.52%	0.1320	5.15%	0.1252

The center of the probe sensor is 10cm away from the surface of the EUT coil	Deviation	The center of the probe sensor is 11cm away from the surface of the EUT coil	Deviation	The center of the probe sensor is 12cm away from the surface of the EUT coil
H-field (A/m)		H-field (A/m)		H-field (A/m)
0.2180	7.66%	0.2013	4.47%	0.1923
E-field (V/m)		E-field (V/m)		E-field (V/m)
0.1252	5.03%	0.1189	7.99%	0.1094

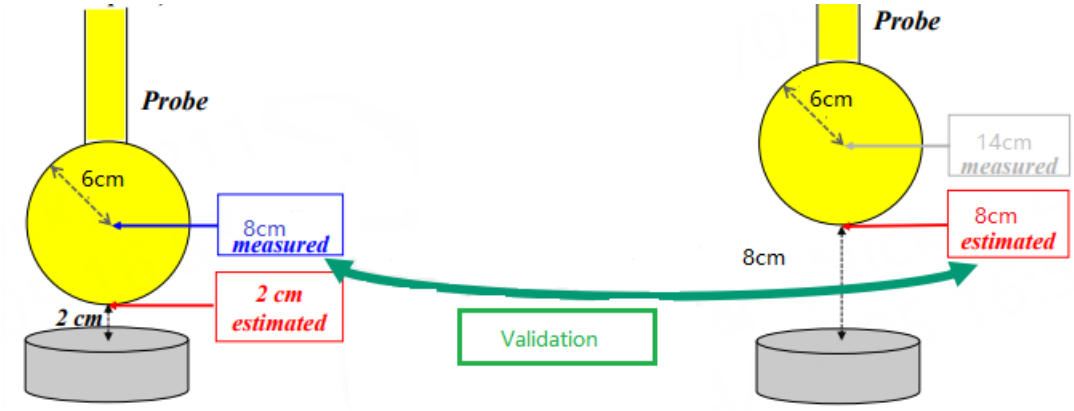
The center of the probe sensor is 12cm away from the surface of the EUT coil	Deviation	The center of the probe sensor is 13cm away from the surface of the EUT coil	Deviation	The center of the probe sensor is 14cm away from the surface of the EUT coil
H-field (A/m)		H-field (A/m)		H-field (A/m)
0.1923	9.72%	0.1736	6.22%	0.1628

E-field (V/m)		E-field (V/m)		E-field (V/m)
0.1094	9.41%	0.0991	9.79%	0.0894

We obtained the maximum percentage of electric and magnetic fields from the center of the probe sensor to the surface of the EUT coil. The estimated data based on the maximum percentage is as follows:



1. By calculation, the percentage of estimated H-field value at a distance of 0cm from the EUT coil on the surface of the probe sensor=(estimated H-field value (6cm) - actual measured H-field value (6cm))/estimated H-field value (6cm) * 100%; The estimated percentage of the E-field at a distance of 0cm from the EUT coil on the surface of the probe sensor=(estimated E-field value (6cm) - actual measured E-field value (6cm))/estimated E-field value (6cm) * 100%



2.By calculation, the percentage of estimated H-field value at a distance of 2cm from the EUT coil on the surface of the probe sensor=(estimated H-field value (8cm) - actual measured H-field value (8cm))/estimated

H-field value (8cm) * 100%; The estimated percentage of the E-field at a distance of 0cm from the EUT coil on the surface of the probe sensor=(estimated E-field value (8cm) - actual measured E-field value (8cm))/estimated E-field value (8cm) * 100%

The estimated distance between the center of the probe sensor and the surface of the EUT coil, ranging from 12cm to 6cm, is as follows:

The center of the probe sensor is 12cm away from the surface of the EUT coil		Estimated distance between the center of the probe sensor and the surface of the EUT coil at 11cm		Estimated distance between the center of the probe sensor and the surface of the EUT coil at 10cm
H-field (A/m)		H-field (A/m)		H-field (A/m)
0.1923		0.2144		0.2391
E-field (V/m)		E-field (V/m)		E-field (V/m)
0.1094		0.1072		0.1165

Estimated distance between the center of the probe sensor and the surface of the EUT coil at 9cm		Estimated distance between the center of the probe sensor and the surface of the EUT coil at 8cm		Estimated distance between the center of the probe sensor and the surface of the EUT coil at 7cm
H-field (A/m)		H-field (A/m)		H-field (A/m)
0.2666		0.2972		0.3314
E-field (V/m)		E-field (V/m)		E-field (V/m)
0.1266		0.1376		0.1495

Estimated distance between the center of the probe sensor and the surface of the EUT coil at 6cm
H-field (A/m)
0.3695
E-field (V/m)
0.1625

The estimated distance between the center of the probe sensor and the surface of the EUT coil, ranging from 14cm to 8cm, is as follows:

The center of the probe sensor is 14cm away from the surface of the EUT coil		Estimated distance between the center of the probe sensor and the surface of the EUT coil at 13cm		Estimated distance between the center of the probe sensor and the surface of the EUT coil at 12cm
H-field (A/m)		H-field (A/m)		H-field (A/m)
0.1628		0.1815		0.2024
E-field (V/m)		E-field (V/m)		E-field (V/m)
0.0894		0.1201		0.1319

Estimated distance between the center of the probe sensor and the surface of the EUT coil at 11cm		Estimated distance between the center of the probe sensor and the surface of the EUT coil at 10cm		Estimated distance between the center of the probe sensor and the surface of the EUT coil at 9cm
H-field (A/m)		H-field (A/m)		H-field (A/m)
0.2257		0.2516		0.2806
E-field (V/m)		E-field (V/m)		E-field (V/m)
0.1448		0.1590		0.1745

Estimated distance between the center of the probe sensor and the surface of the EUT coil at 8cm
H-field (A/m)
0.3128
E-field (V/m)
0.1916

Similarly, through calculation, the estimated magnetic field strength at the 0cm point is H field=0.5963 (A/m), and the electric field E field=0.2892 (V/m).

Among them, the above calculation is only calculated for the worst surface D(Left).

4. **Maximum distance from the WPT transmitter at which, by design, a load can be charged (including slow-charging operations)**

   By design, the maximum distance of the load to the WPT transmitter Is 6.3mm.

According to the characteristics of portable Wireless charging, combined with KDB 680106 D01 Wireless Power Transfer v04 3.3, we have carried out the above tests and calculated the RF exposure of this device. This device is considered to meet the requirements of KDB 680106 D01 Wireless Power Transfer v04 and, of course, we will also test other test items other than RF exposure in accordance with Part 18+Part 15 to ensure full compliance. As mentioned above, please confirm whether our current evaluation and testing of this portable wireless charger is sufficient? In addition, the probe of the test instrument we used is ELT-400, and the sensitive element is located 6cm from the surface of the probe.