

EUT Specification

FCC ID: 2A44J- P500

Characteristics	Description
Product Name	PORTABLE POWER STATION
Model number	P500 Mini
Power Supply	AC120V/60Hz for adapter
Operating Frequency Range	110-205KHz
Modulation Technique	FSK
Antenna Type	Induction coil
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation) ☐ Others ____
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm ²) ☒ General Population/Uncontrolled exposure (S=1mW/cm ²)
Antenna diversity	☐ Single antenna ☒ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☐ Tx/Rx diversity
Evaluation applied	☒ MPE Evaluation ☐ SAR Evaluation

Applicable Standard:

FCC Part 1(1.1310) ,Part 2(2.1091) and KDB 680106 D01 RF Exposure
Wireless Charging Apps v03

Applicable Requirement:

Three different categories of transmitters are defined by the FCC in OET Bulletin 65.

These categories are fixed installation, mobile, and portable and are

defined as follows:

Fixed Installations: fixed location means that the device, including its antenna, is physically secured at a permanent location and is not able to be easily moved to another location. Additionally, distance to humans from the antenna is maintained to at least 2 meters.

Mobile Devices: a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to be generally used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structures and the body of the user or nearby persons. Transmitters designed to be used by consumers or workers that can be easily re-located, such as a wireless modem operating in a laptop computer, are considered mobile devices if they meet the 20 centimeter separation requirement. The FCC rules for evaluating mobile devices for RF compliance are found in 47 CFR §2.1091.

Portable Devices: a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user. Portable device requirements are found in Section 2.1093 of the FCC's Rules (47 CFR§2.1093).

The FCC also categorizes the use of the device as based upon the user's awareness and ability to exercise control over his or her exposure. The two categories defined are Occupational/ Controlled Exposure and General Population/Uncontrolled Exposure.

These two categories are defined as follows:

Occupational/controlled exposure limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when a person is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure. The phrase fully aware in the context of applying these exposure limits means that an exposed person has received written and/or verbal information fully explaining the potential for RF exposure resulting from his or her employment. With the exception of transient persons, this phrase also means that an exposed person has received appropriate training regarding work practices relating to controlling or mitigating his or her exposure. Such training is not required for transient persons, but they must receive written and/or verbal information and notification (for example, using signs) concerning their exposure potential and appropriate means available to mitigate their exposure. The phrase exercise control means that an exposed person is allowed to and knows how to reduce or avoid exposure by administrative or engineering controls and work practices, such as use of personal protective equipment or time averaging of exposure.

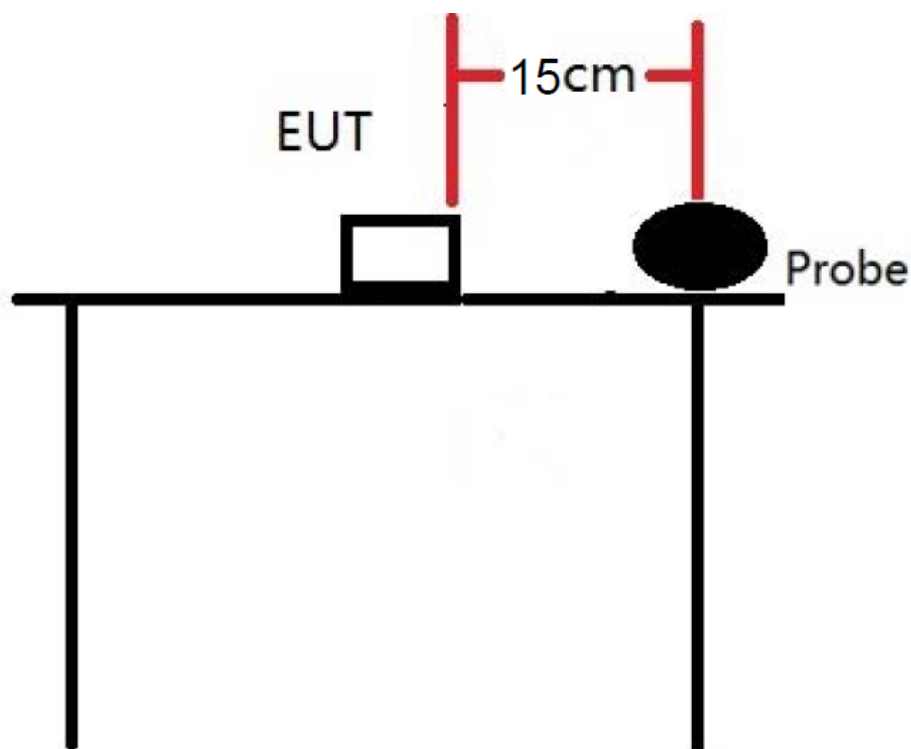
General population/uncontrolled exposure limits apply in situations in which the general public may be exposed, or in which persons who are

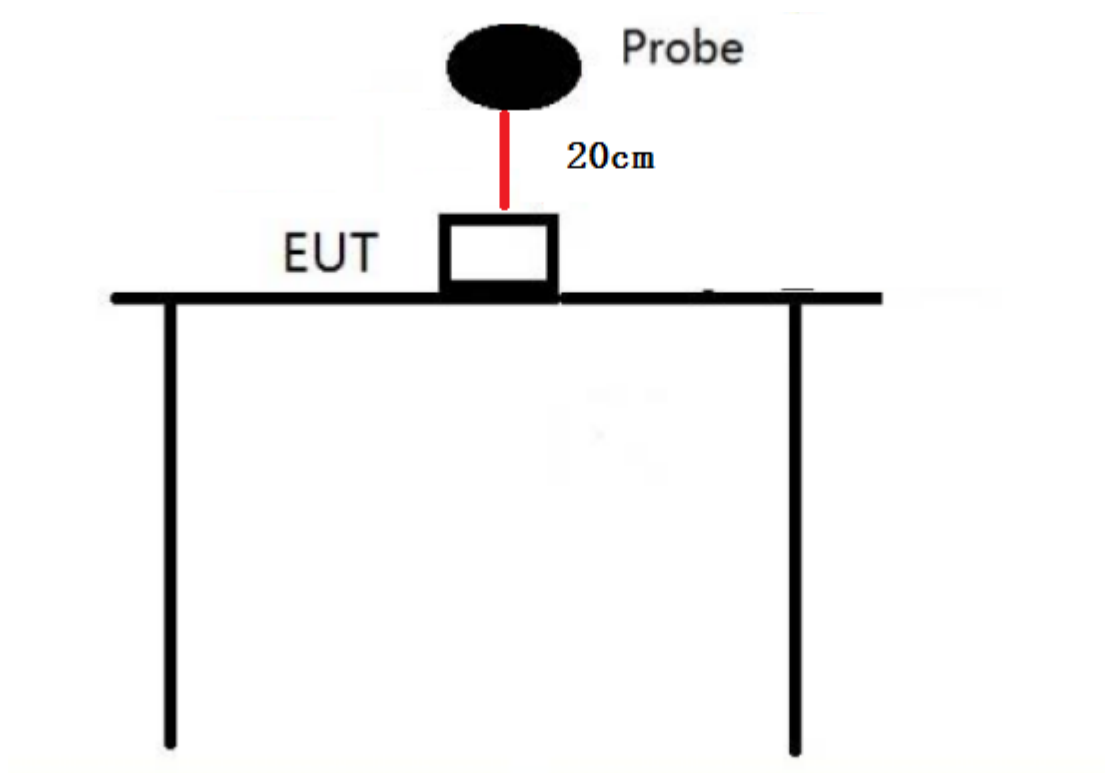
exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Licensees and applicants are responsible for compliance with both the occupational/controlled exposure limits and the general population/uncontrolled exposure limits as they apply to transmitters under their jurisdiction. Licensees and applicants should be aware that the occupational/controlled exposure limits apply especially in situations where workers may have access to areas in very close proximity to antennas and access to the general public may be restricted.

In lieu of evaluation with the general population/uncontrolled exposure limits, amateur licensees authorized under part 97 of this chapter and members of his or her immediate household may be evaluated with respect to the occupational/controlled exposure limits in this section, provided appropriate training and information has been provided to the amateur licensee and members of his/her household. Other nearby persons who are not members of the amateur licensee's household must be evaluated with respect to the general population/uncontrolled exposure limits.

Test Setup Block





Test Procedure

1. Connect the EUT and equipment as above diagram of test configuration.
2. EUT was placed on a table, and the measure probe was placed at a measurement distance of 15cm from the EUT to the center of the probe.
3. Power on the measuring probe, the EUT was set at the maximum field strength emission state.
4. The EUT was put in different directions (Left, Right, Front, Rear, Top and Bottom) toward to the measure probe. The distance from the top of the EUT to the probe is 20CM, and the distance from other directions is 15cm. Measure the value of field strength.
5. Record the worst data of the different directions.

Measuring Device And Test Equipment

Used	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
☒	Electric and magnetic field analyzer	Narda	EHP-200A	180ZX11012	2024-03-03
☒	Test Software	Narda	EHP-200-TS 2.07	N/A	N/A

Description of Support Device

iPhone : Manufacturer: Apple Inc.
M/N: A2404
S/N: N/A

Adapter : Model number: YN-90WA200400W1
Input: 100-240V~, 50/60Hz, 1.5A

Limits for Maximum Permissible Exposure(MPE)

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density(mW/cm ²)	Average Time
(A) Limits for Occupational/Control Exposures				
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	F/300	6
1500-100000	--	--	5	6
(B) Limits for General Population/Uncontrol Exposures				
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	F/1500	30
1500-100000	--	--	1	30

Note: f denotes for frequency in MHz.

* denotes for plane-wave equivalent power density.

Measurement Result

We pretested four modes (max load, mid load, min load, Standby) for EUT. The worst mode (max load) and worst test frequency(frequency: 127.54KHz)test data see the following.

Magnetic Field (H-Field) strength at 15cm from the boundaries of EUT, and 20cm from the top.

Test Mode: Wireless Charging 15w for 1% battery						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.177	0.089	1.63	0.815
Measurement Point 2	Back	15	0.165	0.084		
Measurement Point 3	Left	15	0.181	0.091		
Measurement Point 4	Right	15	0.167	0.076		
Measurement Point 5	Bottom	15	0.108	0.053		
Measurement Point 6	Top	20	0.192	0.114		

Test Mode: Wireless Charging 15w for 1% battery						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	117.124	58.563	614	307
Measurement Point 2	Back	15	116.985	58.493		
Measurement Point 3	Left	15	117.027	58.513		
Measurement Point 4	Right	15	114.025	57.014		
Measurement Point 5	Bottom	15	96.037	43.362		
Measurement Point 6	Top	20	124.268	62.135		

Test Mode: Wireless Charging 15w for 50% battery						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.181	0.090	1.63	0.815
Measurement Point 2	Back	15	0.167	0.085		
Measurement Point 3	Left	15	0.183	0.093		
Measurement Point 4	Right	15	0.169	0.077		
Measurement Point 5	Bottom	15	0.109	0.054		
Measurement Point 6	Top	20	0.194	0.116		

Test Mode: Wireless Charging 15w for 50% battery						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	117.129	58.566	614	307
Measurement Point 2	Back	15	116.988	58.497		
Measurement Point 3	Left	15	117.029	58.516		
Measurement Point 4	Right	15	114.027	57.018		
Measurement Point 5	Bottom	15	96.040	43.364		
Measurement Point 6	Top	20	124.271	62.134		

Test Mode: Wireless Charging 15w for 100% battery						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.183	0.092	1.63	0.815
Measurement Point 2	Back	15	0.169	0.087		
Measurement Point 3	Left	15	0.185	0.095		
Measurement Point 4	Right	15	0.170	0.078		
Measurement Point 5	Bottom	15	0.111	0.056		
Measurement Point 6	Top	20	0.196	0.117		

Test Mode: Wireless Charging 15w for 100% battery						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	117.131	58.567	614	307
Measurement Point 2	Back	15	116.992	58.502		
Measurement Point 3	Left	15	117.032	58.518		
Measurement Point 4	Right	15	114.029	57.021		
Measurement Point 5	Bottom	15	96.042	43.366		
Measurement Point 6	Top	20	124.273	62.137		

Test Mode: Wireless Charging 10w for 1% battery						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.159	0.078	1.63	0.815
Measurement Point 2	Back	15	0.156	0.072		
Measurement Point 3	Left	15	0.170	0.084		
Measurement Point 4	Right	15	0.162	0.072		
Measurement Point 5	Bottom	15	0.105	0.051		
Measurement Point 6	Top	20	0.184	0.105		

Test Mode: Wireless Charging 10w for 1% battery						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	115.113	58.563	614	307
Measurement Point 2	Back	15	115.385	58.293		
Measurement Point 3	Left	15	114.522	57.816		
Measurement Point 4	Right	15	113.025	56.704		
Measurement Point 5	Bottom	15	95.841	43.581		
Measurement Point 6	Top	20	123.718	61.847		

Test Mode: Wireless Charging 10w for 50% battery						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.162	0.074	1.63	0.815
Measurement Point 2	Back	15	0.159	0.073		
Measurement Point 3	Left	15	0.173	0.086		
Measurement Point 4	Right	15	0.166	0.074		
Measurement Point 5	Bottom	15	0.109	0.053		
Measurement Point 6	Top	20	0.185	0.107		

Test Mode: Wireless Charging 10w for 50% battery						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	115.145	58.574	614	307
Measurement Point 2	Back	15	115.393	58.296		
Measurement Point 3	Left	15	114.527	57.818		
Measurement Point 4	Right	15	113.026	56.706		
Measurement Point 5	Bottom	15	95.842	43.583		
Measurement Point 6	Top	20	123.719	61.852		

Test Mode: Wireless Charging 10w for 100% battery						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.164	0.075	1.63	0.815
Measurement Point 2	Back	15	0.161	0.076		
Measurement Point 3	Left	15	0.174	0.088		
Measurement Point 4	Right	15	0.167	0.077		
Measurement Point 5	Bottom	15	0.111	0.056		
Measurement Point 6	Top	20	0.189	0.109		

Test Mode: Wireless Charging 10w for 100% battery						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	115.158	58.581	614	307
Measurement Point 2	Back	15	115.415	58.306		
Measurement Point 3	Left	15	114.562	57.822		
Measurement Point 4	Right	15	113.074	56.714		
Measurement Point 5	Bottom	15	95.863	43.594		
Measurement Point 6	Top	20	123.736	61.874		

Test Mode: Wireless Charging 7.5w for 1% battery						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.147	0.073	1.63	0.815
Measurement Point 2	Back	15	0.149	0.071		
Measurement Point 3	Left	15	0.163	0.078		
Measurement Point 4	Right	15	0.158	0.074		
Measurement Point 5	Bottom	15	0.101	0.049		
Measurement Point 6	Top	20	0.176	0.103		

Test Mode: Wireless Charging 7.5w for 1% battery						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	114.316	57.858	614	307
Measurement Point 2	Back	15	114.891	57.742		
Measurement Point 3	Left	15	114.627	56.941		
Measurement Point 4	Right	15	113.636	55.846		
Measurement Point 5	Bottom	15	94.653	42.795		
Measurement Point 6	Top	20	122.467	60.579		

Test Mode: Wireless Charging 7.5w for 50% battery						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.148	0.074	1.63	0.815
Measurement Point 2	Back	15	0.152	0.073		
Measurement Point 3	Left	15	0.164	0.081		
Measurement Point 4	Right	15	0.159	0.076		
Measurement Point 5	Bottom	15	0.103	0.052		
Measurement Point 6	Top	20	0.178	0.105		

Test Mode: Wireless Charging 7.5w for 50% battery						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	114.321	57.862	614	307
Measurement Point 2	Back	15	114.906	57.754		
Measurement Point 3	Left	15	114.636	56.967		
Measurement Point 4	Right	15	113.674	55.869		
Measurement Point 5	Bottom	15	94.685	42.806		
Measurement Point 6	Top	20	122.478	60.591		

Test Mode: Wireless Charging 7.5w for 100% battery						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.151	0.076	1.63	0.815
Measurement Point 2	Back	15	0.154	0.075		
Measurement Point 3	Left	15	0.165	0.082		
Measurement Point 4	Right	15	0.161	0.079		
Measurement Point 5	Bottom	15	0.106	0.054		
Measurement Point 6	Top	20	0.179	0.106		

Test Mode: Wireless Charging 7.5w for 100% battery						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	114.348	57.872	614	307
Measurement Point 2	Back	15	114.925	57.768		
Measurement Point 3	Left	15	114.649	56.959		
Measurement Point 4	Right	15	113.697	55.876		
Measurement Point 5	Bottom	15	94.688	42.812		
Measurement Point 6	Top	20	122.493	60.608		

Test Mode: Wireless Charging 5w for 1% battery						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.141	0.064	1.63	0.815
Measurement Point 2	Back	15	0.142	0.062		
Measurement Point 3	Left	15	0.157	0.074		
Measurement Point 4	Right	15	0.152	0.069		
Measurement Point 5	Bottom	15	0.093	0.042		
Measurement Point 6	Top	20	0.168	0.100		

Test Mode: Wireless Charging 5w for 1% battery						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	113.446	56.741	614	307
Measurement Point 2	Back	15	113.754	56.869		
Measurement Point 3	Left	15	113.824	55.876		
Measurement Point 4	Right	15	112.587	54.764		
Measurement Point 5	Bottom	15	93.722	41.925		
Measurement Point 6	Top	20	121.398	59.414		

Test Mode: Wireless Charging 5w for 50% battery						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.143	0.065	1.63	0.815
Measurement Point 2	Back	15	0.145	0.064		
Measurement Point 3	Left	15	0.158	0.076		
Measurement Point 4	Right	15	0.154	0.071		
Measurement Point 5	Bottom	15	0.096	0.043		
Measurement Point 6	Top	20	0.169	0.101		

Test Mode: Wireless Charging 5w for 50% battery						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	113.559	56.768	614	307
Measurement Point 2	Back	15	113.767	56.882		
Measurement Point 3	Left	15	113.843	55.905		
Measurement Point 4	Right	15	112.607	54.788		
Measurement Point 5	Bottom	15	93.764	41.942		
Measurement Point 6	Top	20	121.416	59.436		

Test Mode: Wireless Charging 5w for 100% battery						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.145	0.066	1.63	0.815
Measurement Point 2	Back	15	0.146	0.065		
Measurement Point 3	Left	15	0.159	0.078		
Measurement Point 4	Right	15	0.155	0.073		
Measurement Point 5	Bottom	15	0.098	0.044		
Measurement Point 6	Top	20	0.171	0.102		

Test Mode: Wireless Charging 5w for 100% battery						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	113.574	56.778	614	307
Measurement Point 2	Back	15	113.786	56.896		
Measurement Point 3	Left	15	113.859	55.914		
Measurement Point 4	Right	15	112.615	54.795		
Measurement Point 5	Bottom	15	93.776	41.958		
Measurement Point 6	Top	20	121.425	59.443		

PHOTOGRAPHS OF TEST SETUP



Signature

Tiger Xu
EMC Director
Date: 2023-05-26