

## EUT Specification

**FCC ID: 2AZTTDB01**

Characteristics	Description
<b>Product Name</b>	Magnetic wireless power bank
<b>Model number</b>	DB01
<b>Power Supply</b>	TYPE-C: 5V/3A 9V/2A 12V/1.5A Lightning: 5V/2A
<b>Operating Frequency Range</b>	110-205KHz
<b>Modulation Technique</b>	ASK
<b>Antenna Type</b>	Induction coil
<b>Device category</b>	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation) <input type="checkbox"/> Others ____
<b>Exposure classification</b>	<input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm <sup>2</sup> ) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm <sup>2</sup> )
<b>Antenna diversity</b>	<input checked="" type="checkbox"/> Single antenna <input type="checkbox"/> Multiple antennas <input type="checkbox"/> Tx diversity <input type="checkbox"/> Rx diversity <input type="checkbox"/> Tx/Rx diversity
<b>Evaluation applied</b>	<input checked="" type="checkbox"/> MPE Evaluation <input type="checkbox"/> 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.

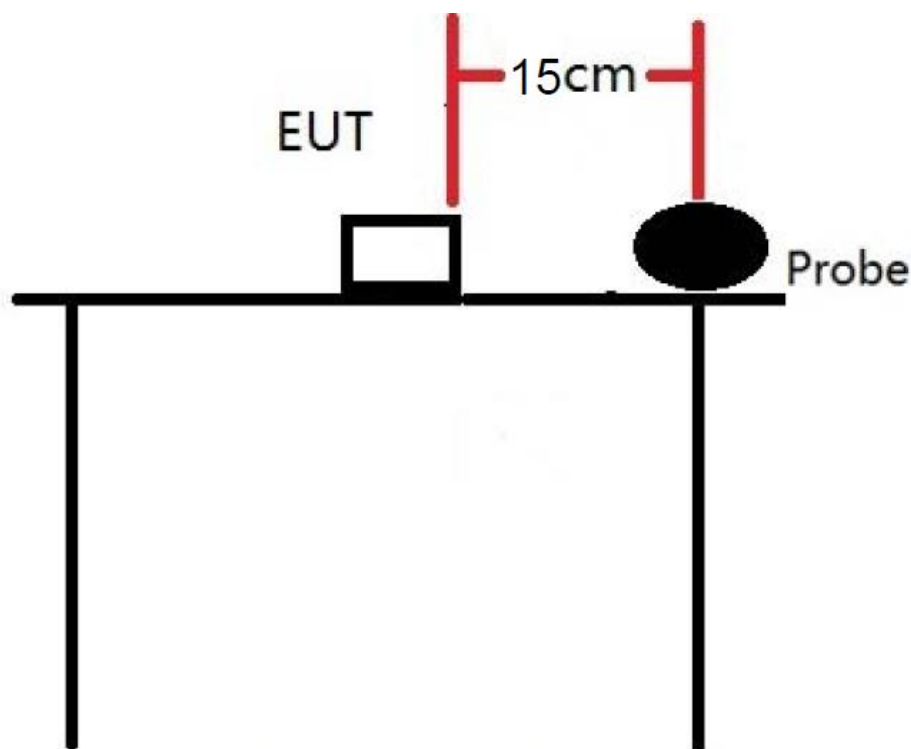
**General population/uncontrolled exposure** limits apply in situations in

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 for mobile device

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.

### Test Procedure for protable device

1. EUT was placed on a table, and the measure probe was placed at a measurement distance of 0~10cm from the EUT to the center of the probe.
2. Power on the measuring probe, the EUT was set at the maximum field strength emission state.
3. The EUT was put in different directions (Left, Right, Front, Rear, Top and Bottom) toward to the measure probe. The distance from the EUT to the probe starts from 0cm, and measures every 2cm until the distance is 10cm.
4. Record the worst data of the different directions.

### Measuring Device And Test Equipment

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
	E-Field Probe(100kHz-3 GHz)	Narda	EP 601	611WX70311	November 16, 2020	1 Year
	H-Field Probe(300KHz-3 0MHz)	Narda	ELT-400	M-0174	August 04, 2020	1 Year
	Broadband Field Meter	Narda	ELT-400	M-0173	August 04, 2020	1 Year

## Description of Support Device

iPhone	: Manufacturer: Apple Inc. M/N: A1524 S/N: N/A
Wireless Charger Receiver Module	: Manufacturer: Universal M/N: N/A S/N: N/A
Adapter	: Model number:580245A087 Input: AC 100-240V, 50/60Hz Manufacturer: SAMSUNG
SAMSUNG S9	: M/N:Samsung Galaxy S9 S/N: N/A
Xiaomi 9	: Manufacturer: Xiaomi M/N:Xiaomi 9 S/N: N/A

## Limits for Maximum Permissible Exposure(MPE)

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density(mW/cm <sup>2</sup> )	Average Time
<b>(A) Limits for Occupational/Control Exposures</b>				
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>(B) Limits for General Population/Uncontrol Exposures</b>				
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: 179KHz)test data see the following.

**Operation Mode: Internal battery power supply + WPT charging**

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

Test Mode: Wireless Charging 15W use xiao mi						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.104	0.052	1.63	0.815
Measurement Point 2	Back	15	0.106	0.053		
Measurement Point 3	Left	15	0.108	0.054		
Measurement Point 4	Right	15	0.101	0.0505		
Measurement Point 5	Bottom	15	0.096	0.048		
Measurement Point 6	Top	20	0.113	0.0565		

Test Mode: Wireless Charging 15W use xiao mi						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	28.365	14.1825	614	307
Measurement Point 2	Back	15	28.362	14.181		
Measurement Point 3	Left	15	28.365	14.1825		
Measurement Point 4	Right	15	26.147	13.0735		
Measurement Point 5	Bottom	15	24.325	12.1625		
Measurement Point 6	Top	20	30.652	15.326		

**Operation Mode: Internal battery power supply + WPT charging**

Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	H- Field(A/m)	Limit(A/m)	10% Limit(A/m)
Measurement Point 1	Front	0	0.154	1.63	0.163
Measurement Point 2	Back	0	0.153		
Measurement Point 3	Left	0	0.150		
Measurement Point 4	Right	0	0.149		
Measurement Point 5	Bottom	0	0.126		
Measurement Point 6	Top	0	0.160		

Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	0	47.216	614	61.4
Measurement Point 2	Back	0	47.365		
Measurement Point 3	Left	0	47.965		
Measurement Point 4	Right	0	47.523		
Measurement Point 5	Bottom	0	47.698		
Measurement Point 6	Top	0	47.236		

Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	H- Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	2	0.153	1.63	0.163
Measurement Point 2	Back	2	0.150		
Measurement Point 3	Left	2	0.147		
Measurement Point 4	Right	2	0.144		
Measurement Point 5	Bottom	2	0.126		
Measurement Point 6	Top	2	0.157		

Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	2	45.231	614	61.4
Measurement Point 2	Back	2	45.362		
Measurement Point 3	Left	2	45.221		
Measurement Point 4	Right	2	45.698		
Measurement Point 5	Bottom	2	45.741		
Measurement Point 6	Top	2	45.691		

Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	H- Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	4	0.142	1.63	0.163
Measurement Point 2	Back	4	0.143		
Measurement Point 3	Left	4	0.140		
Measurement Point 4	Right	4	0.139		
Measurement Point 5	Bottom	4	0.122		
Measurement Point 6	Top	4	0.150		

Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	4	42.365	614	61.4
Measurement Point 2	Back	4	42.478		
Measurement Point 3	Left	4	42.698		
Measurement Point 4	Right	4	42.680		
Measurement Point 5	Bottom	4	40.332		
Measurement Point 6	Top	4	44.259		



Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	H- Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	6	0.136	1.63	0.163
Measurement Point 2	Back	6	0.135		
Measurement Point 3	Left	6	0.133		
Measurement Point 4	Right	6	0.132		
Measurement Point 5	Bottom	6	0.113		
Measurement Point 6	Top	6	0.138		

Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	6	39.654	614	61.4
Measurement Point 2	Back	6	39.674		
Measurement Point 3	Left	6	38.526		
Measurement Point 4	Right	6	39.254		
Measurement Point 5	Bottom	6	36.985		
Measurement Point 6	Top	6	42.562		

Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	H- Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	8	0.123	1.63	0.163
Measurement Point 2	Back	8	0.124		
Measurement Point 3	Left	8	0.125		
Measurement Point 4	Right	8	0.127		
Measurement Point 5	Bottom	8	0.109		
Measurement Point 6	Top	8	0.134		

Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	8	37.526	614	61.4
Measurement Point 2	Back	8	37.965		
Measurement Point 3	Left	8	37.524		
Measurement Point 4	Right	8	37.658		
Measurement Point 5	Bottom	8	33.023		
Measurement Point 6	Top	8	39.255		

Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	H- Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	10	0.117	1.63	0.163
Measurement Point 2	Back	10	0.119		
Measurement Point 3	Left	10	0.120		
Measurement Point 4	Right	10	0.115		
Measurement Point 5	Bottom	10	0.103		
Measurement Point 6	Top	10	0.127		

Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	10	35.625	614	61.4
Measurement Point 2	Back	10	36.369		
Measurement Point 3	Left	10	35.206		
Measurement Point 4	Right	10	34.956		
Measurement Point 5	Bottom	10	31.258		
Measurement Point 6	Top	10	37.963		

### Operation Mode: Adapter to charge power bank + WPT charging

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

Test Mode: Wireless Charging 15W use xiao mi						
		Measuring Distance(cm)	H-Field(A/m)	50% H-Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.119	0.059	1.63	0.815
Measurement Point 2	Back	15	0.118	0.057		
Measurement Point 3	Left	15	0.114	0.056		
Measurement Point 4	Right	15	0.114	0.058		
Measurement Point 5	Bottom	15	0.098	0.05		
Measurement Point 6	Top	20	0.125	0.0615		

Test Mode: Wireless Charging 15W use xiao mi						
		Measuring Distance(cm)	E-Field(V/m)	50% E-Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	28.365	14.677	614	307
Measurement Point 2	Back	15	28.632	14.816		
Measurement Point 3	Left	15	28.463	14.7355		
Measurement Point 4	Right	15	28.361	14.1845		
Measurement Point 5	Bottom	15	26.341	12.512		
Measurement Point 6	Top	20	32.541	16.349		

# **Operation Mode: Adapter to charge power bank + WPT charging**

Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	H- Field(A/m)	Limit(A/m)	10% Limit(A/m)
Measurement Point 1	Front	0	0.156	1.63	0.163
Measurement Point 2	Back	0	0.153		
Measurement Point 3	Left	0	0.152		
Measurement Point 4	Right	0	0.153		
Measurement Point 5	Bottom	0	0.121		
Measurement Point 6	Top	0	0.163		

Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	0	46.252	614	61.4
Measurement Point 2	Back	0	46.325		
Measurement Point 3	Left	0	46.582		
Measurement Point 4	Right	0	46.147		
Measurement Point 5	Bottom	0	44.525		
Measurement Point 6	Top	0	47.825		

Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	H- Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	2	0.143	1.63	0.163
Measurement Point 2	Back	2	0.143		
Measurement Point 3	Left	2	0.148		
Measurement Point 4	Right	2	0.142		
Measurement Point 5	Bottom	2	0.121		
Measurement Point 6	Top	2	0.161		

Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	2	44.698	614	61.4
Measurement Point 2	Back	2	44.321		
Measurement Point 3	Left	2	44.258		
Measurement Point 4	Right	2	44.328		
Measurement Point 5	Bottom	2	43.596		
Measurement Point 6	Top	2	46.147		

Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	H- Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	4	0.141	1.63	0.163
Measurement Point 2	Back	4	0.139		
Measurement Point 3	Left	4	0.136		
Measurement Point 4	Right	4	0.133		
Measurement Point 5	Bottom	4	0.119		
Measurement Point 6	Top	4	0.153		

Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	4	41.632	614	61.4
Measurement Point 2	Back	4	41.528		
Measurement Point 3	Left	4	41.695		
Measurement Point 4	Right	4	41.325		
Measurement Point 5	Bottom	4	38.695		
Measurement Point 6	Top	4	43.259		

Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	H- Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	6	0.132	1.63	0.163
Measurement Point 2	Back	6	0.133		
Measurement Point 3	Left	6	0.131		
Measurement Point 4	Right	6	0.129		
Measurement Point 5	Bottom	6	0.118		
Measurement Point 6	Top	6	0.142		

Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	6	39.521	614	61.4
Measurement Point 2	Back	6	39.623		
Measurement Point 3	Left	6	39.325		
Measurement Point 4	Right	6	38.963		
Measurement Point 5	Bottom	6	36.328		
Measurement Point 6	Top	6	42.654		

Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	H- Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	8	0.121	1.63	0.163
Measurement Point 2	Back	8	0.123		
Measurement Point 3	Left	8	0.122		
Measurement Point 4	Right	8	0.125		
Measurement Point 5	Bottom	8	0.106		
Measurement Point 6	Top	8	0.136		

Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	8	36.953	614	61.4
Measurement Point 2	Back	8	36.715		
Measurement Point 3	Left	8	36.982		
Measurement Point 4	Right	8	37.021		
Measurement Point 5	Bottom	8	33.521		
Measurement Point 6	Top	8	39.541		

Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	H- Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	10	0.123	1.63	0.163
Measurement Point 2	Back	10	0.125		
Measurement Point 3	Left	10	0.121		
Measurement Point 4	Right	10	0.124		
Measurement Point 5	Bottom	10	0.110		
Measurement Point 6	Top	10	0.135		

Test Mode: Wireless Charging 15W use Xiaomi 9					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	10	35.695	614	61.4
Measurement Point 2	Back	10	35.147		
Measurement Point 3	Left	10	36.258		
Measurement Point 4	Right	10	34.963		
Measurement Point 5	Bottom	10	32.695		
Measurement Point 6	Top	10	38.621		



## PHOTOGRAPHS OF TEST SETUP

Internal battery power supply + WPT charging:



Adapter to charge power bank + WPT charging:

