

EUT Specification

FCC ID: 2AVNTSOG-BAL-DOT

Characteristics	Description
Product Name	Fast wireless car mount
Model number	SOG_WIRE_BAL_BK_DOT
Power Supply	AC120V/60Hz for car charger
Operating Frequency Range	110-205KHz
Modulation Technique	ASK
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.

Licenseses 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 Procedure

- 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 15, 2020	1 Year
☒	H-Field Probe(300KHz-3 0MHz)	Narda	ELT-400	M-0174	August 03, 2020	1 Year
☒	Broadband Field Meter	Narda	ELT-400	M-0173	August 03, 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
car charger	: Model number: DT-CC45 Input: DC 12V Output: DC 5V/3A, 9V/2A, 12V/1.5A
SAMSUNG S9	: Manufacturer: SAMSUNG 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 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: 179KHz)test data see the following.

Test Mode: Wireless Charging 5W use iphone					
		Measuring Distance(cm)	H- Field(A/m)	Limit(A/m)	10% Limit(A/m)
Measurement Point 1	Front	0	0.147	1.63	0.163
Measurement Point 2	Back	0	0.145		
Measurement Point 3	Left	0	0.148		
Measurement Point 4	Right	0	0.144		
Measurement Point 5	Bottom	0	0.128		
Measurement Point 6	Top	0	0.149		

Test Mode: Wireless Charging 5W use iphone					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	0	45.233	614	61.4
Measurement Point 2	Back	0	45.242		
Measurement Point 3	Left	0	45.315		
Measurement Point 4	Right	0	46.762		
Measurement Point 5	Bottom	0	42.375		
Measurement Point 6	Top	0	48.641		

Test Mode: Wireless Charging 5W use iphone					
		Measuring Distance(cm)	H- Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	2	0.137	1.63	0.163
Measurement Point 2	Back	2	0.142		
Measurement Point 3	Left	2	0.138		
Measurement Point 4	Right	2	0.141		
Measurement Point 5	Bottom	2	0.122		
Measurement Point 6	Top	2	0.147		

Test Mode: Wireless Charging 5W use iphone					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	2	42.053	614	61.4
Measurement Point 2	Back	2	41.962		
Measurement Point 3	Left	2	41.974		
Measurement Point 4	Right	2	41.437		
Measurement Point 5	Bottom	2	39.621		
Measurement Point 6	Top	2	45.327		

Test Mode: Wireless Charging 5W use iphone					
		Measuring Distance(cm)	H- Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	4	0.136	1.63	0.163
Measurement Point 2	Back	4	0.127		
Measurement Point 3	Left	4	0.131		
Measurement Point 4	Right	4	0.122		
Measurement Point 5	Bottom	4	0.129		
Measurement Point 6	Top	4	0.135		

Test Mode: Wireless Charging 5W use iphone					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	4	40.341	614	61.4
Measurement Point 2	Back	4	39.526		
Measurement Point 3	Left	4	39.652		
Measurement Point 4	Right	4	39.617		
Measurement Point 5	Bottom	4	37.545		
Measurement Point 6	Top	4	41.262		

Test Mode: Wireless Charging 5W use iphone					
		Measuring Distance(cm)	H- Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	6	0.127	1.63	0.163
Measurement Point 2	Back	6	0.123		
Measurement Point 3	Left	6	0.125		
Measurement Point 4	Right	6	0.124		
Measurement Point 5	Bottom	6	0.117		
Measurement Point 6	Top	6	0.132		

Test Mode: Wireless Charging 5W use iphone					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	6	38.212	614	61.4
Measurement Point 2	Back	6	38.223		
Measurement Point 3	Left	6	38.238		
Measurement Point 4	Right	6	38.754		
Measurement Point 5	Bottom	6	36.576		
Measurement Point 6	Top	6	40.024		

Test Mode: Wireless Charging 5W use iphone					
		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	0.115		
Measurement Point 3	Left	8	0.117		
Measurement Point 4	Right	8	0.113		
Measurement Point 5	Bottom	8	0.097		
Measurement Point 6	Top	8	0.124		

Test Mode: Wireless Charging 5W use iphone					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	8	35.537	614	61.4
Measurement Point 2	Back	8	35.145		
Measurement Point 3	Left	8	35.164		
Measurement Point 4	Right	8	34.985		
Measurement Point 5	Bottom	8	32.572		
Measurement Point 6	Top	8	37.586		

Test Mode: Wireless Charging 5W use iphone					
		Measuring Distance(cm)	H- Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	10	0.113	1.63	0.163
Measurement Point 2	Back	10	0.112		
Measurement Point 3	Left	10	0.108		
Measurement Point 4	Right	10	0.116		
Measurement Point 5	Bottom	10	0.092		
Measurement Point 6	Top	10	0.114		

Test Mode: Wireless Charging 5W use iphone					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	10	32.247	614	61.4
Measurement Point 2	Back	10	32.112		
Measurement Point 3	Left	10	32.265		
Measurement Point 4	Right	10	31.585		
Measurement Point 5	Bottom	10	29.352		
Measurement Point 6	Top	10	33.571		

Test Mode: Wireless Charging 10W use Samsung S9					
		Measuring Distance(cm)	H- Field(A/m)	Limit(A/m)	10% Limit(A/m)
Measurement Point 1	Front	0	0.155	1.63	0.163
Measurement Point 2	Back	0	0.153		
Measurement Point 3	Left	0	0.146		
Measurement Point 4	Right	0	0.143		
Measurement Point 5	Bottom	0	0.127		
Measurement Point 6	Top	0	0.155		

Test Mode: Wireless Charging 10W use Samsung S9					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	0	46.326	614	61.4
Measurement Point 2	Back	0	46.257		
Measurement Point 3	Left	0	46.366		
Measurement Point 4	Right	0	46.724		
Measurement Point 5	Bottom	0	46.332		
Measurement Point 6	Top	0	49.687		

Test Mode: Wireless Charging 10W use Samsung S9					
		Measuring Distance(cm)	H- Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	2	0.149	1.63	0.163
Measurement Point 2	Back	2	0.143		
Measurement Point 3	Left	2	0.136		
Measurement Point 4	Right	2	0.144		
Measurement Point 5	Bottom	2	0.128		
Measurement Point 6	Top	2	0.147		

Test Mode: Wireless Charging 10W use Samsung S9					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	2	44.523	614	61.4
Measurement Point 2	Back	2	44.342		
Measurement Point 3	Left	2	44.212		
Measurement Point 4	Right	2	43.955		
Measurement Point 5	Bottom	2	41.347		
Measurement Point 6	Top	2	46.359		

Test Mode: Wireless Charging 10W use Samsung S9					
		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	0.138		
Measurement Point 3	Left	4	0.135		
Measurement Point 4	Right	4	0.132		
Measurement Point 5	Bottom	4	0.114		
Measurement Point 6	Top	4	0.146		

Test Mode: Wireless Charging 10W use Samsung S9					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	4	41.332	614	61.4
Measurement Point 2	Back	4	41.641		
Measurement Point 3	Left	4	41.668		
Measurement Point 4	Right	4	41.357		
Measurement Point 5	Bottom	4	39.255		
Measurement Point 6	Top	4	43.249		

Test Mode: Wireless Charging 10W use Samsung S9					
		Measuring Distance(cm)	H- Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	6	0.137	1.63	0.163
Measurement Point 2	Back	6	0.135		
Measurement Point 3	Left	6	0.134		
Measurement Point 4	Right	6	0.136		
Measurement Point 5	Bottom	6	0.122		
Measurement Point 6	Top	6	0.139		

Test Mode: Wireless Charging 10W use Samsung S9					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	6	38.662	614	61.4
Measurement Point 2	Back	6	38.687		
Measurement Point 3	Left	6	38.252		
Measurement Point 4	Right	6	38.696		
Measurement Point 5	Bottom	6	36.531		
Measurement Point 6	Top	6	41.313		

Test Mode: Wireless Charging 10W use Samsung S9					
		Measuring Distance(cm)	H- Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	8	0.122	1.63	0.163
Measurement Point 2	Back	8	0.123		
Measurement Point 3	Left	8	0.126		
Measurement Point 4	Right	8	0.122		
Measurement Point 5	Bottom	8	0.104		
Measurement Point 6	Top	8	0.137		

Test Mode: Wireless Charging 10W use Samsung S9					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	8	36.148	614	61.4
Measurement Point 2	Back	8	36.687		
Measurement Point 3	Left	8	36.253		
Measurement Point 4	Right	8	35.962		
Measurement Point 5	Bottom	8	32.061		
Measurement Point 6	Top	8	38.769		

Test Mode: Wireless Charging 10W use Samsung S9					
		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	0.115		
Measurement Point 3	Left	10	0.116		
Measurement Point 4	Right	10	0.114		
Measurement Point 5	Bottom	10	0.092		
Measurement Point 6	Top	10	0.125		

Test Mode: Wireless Charging 10W use Samsung S9					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	10	34.256	614	61.4
Measurement Point 2	Back	10	34.527		
Measurement Point 3	Left	10	34.212		
Measurement Point 4	Right	10	33.685		
Measurement Point 5	Bottom	10	30.667		
Measurement Point 6	Top	10	36.582		

Test Mode: Wireless Charging 10W use Xiaomi 9					
		Measuring Distance(cm)	H- Field(A/m)	Limit(A/m)	10% Limit(A/m)
Measurement Point 1	Front	0	0.152	1.63	0.163
Measurement Point 2	Back	0	0.156		
Measurement Point 3	Left	0	0.151		
Measurement Point 4	Right	0	0.148		
Measurement Point 5	Bottom	0	0.127		
Measurement Point 6	Top	0	0.159		

Test Mode: Wireless Charging 10W use Xiaomi 9					
		Measuring Distance(cm)	E- Field(V/m)	Limit(V/m)	10% Limit(V/m)
Measurement Point 1	Front	0	47.212	614	61.4
Measurement Point 2	Back	0	47.364		
Measurement Point 3	Left	0	47.963		
Measurement Point 4	Right	0	47.524		
Measurement Point 5	Bottom	0	47.697		
Measurement Point 6	Top	0	47.235		

Test Mode: Wireless Charging 10W use Xiaomi 9					
		Measuring Distance(cm)	H- Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	2	0.154	1.63	0.163
Measurement Point 2	Back	2	0.149		
Measurement Point 3	Left	2	0.146		
Measurement Point 4	Right	2	0.143		
Measurement Point 5	Bottom	2	0.125		
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	45.243	614	61.4
Measurement Point 2	Back	2	45.357		
Measurement Point 3	Left	2	45.224		
Measurement Point 4	Right	2	45.696		
Measurement Point 5	Bottom	2	45.739		
Measurement Point 6	Top	2	45.692		

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	0.143	1.63	0.163
Measurement Point 2	Back	4	0.141		
Measurement Point 3	Left	4	0.139		
Measurement Point 4	Right	4	0.137		
Measurement Point 5	Bottom	4	0.126		
Measurement Point 6	Top	4	0.147		

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	42.362	614	61.4
Measurement Point 2	Back	4	42.496		
Measurement Point 3	Left	4	42.685		
Measurement Point 4	Right	4	42.677		
Measurement Point 5	Bottom	4	40.341		
Measurement Point 6	Top	4	44.258		

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	0.134	1.63	0.163
Measurement Point 2	Back	6	0.133		
Measurement Point 3	Left	6	0.134		
Measurement Point 4	Right	6	0.133		
Measurement Point 5	Bottom	6	0.114		
Measurement Point 6	Top	6	0.137		

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	39.657	614	61.4
Measurement Point 2	Back	6	39.668		
Measurement Point 3	Left	6	38.525		
Measurement Point 4	Right	6	39.251		
Measurement Point 5	Bottom	6	36.982		
Measurement Point 6	Top	6	42.561		

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	0.124	1.63	0.163
Measurement Point 2	Back	8	0.126		
Measurement Point 3	Left	8	0.127		
Measurement Point 4	Right	8	0.129		
Measurement Point 5	Bottom	8	0.112		
Measurement Point 6	Top	8	0.133		

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	37.525	614	61.4
Measurement Point 2	Back	8	37.962		
Measurement Point 3	Left	8	37.521		
Measurement Point 4	Right	8	37.656		
Measurement Point 5	Bottom	8	33.024		
Measurement Point 6	Top	8	39.257		

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	0.115	1.63	0.163
Measurement Point 2	Back	10	0.118		
Measurement Point 3	Left	10	0.122		
Measurement Point 4	Right	10	0.116		
Measurement Point 5	Bottom	10	0.104		
Measurement Point 6	Top	10	0.129		

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	35.631	614	61.4
Measurement Point 2	Back	10	36.358		
Measurement Point 3	Left	10	35.212		
Measurement Point 4	Right	10	34.952		
Measurement Point 5	Bottom	10	31.255		
Measurement Point 6	Top	10	37.964		

PHOTOGRAPHS OF TEST SETUP



Signature

A handwritten signature in black ink, appearing to read "Alan He".

Alan He
Manager

Date: 2020-12-20