EUT Specification

FCC ID: EMOIBTW450

Characteristics	Description
Product Name	Wireless Charging Clock Speaker with Dual USB Charging
Model number	HWL83, HWL83N, HWL83X (X means A-Z, denote as color of cabinet)
Power Supply	AC120V/60Hz for adapter
Adapter	M/N: WHDOE-09035 Input: 100-240V~ 50/60Hz 0.65A Max Output: DC 9V 3.5A
Operating Frequency Range	110-148KHz
Modulation Technique	Induction
Antenna Type	Induction coil
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation) ☐ Others ___
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm2) ☒ General Population/Uncontrolled exposure (S=1mW/cm2)
Antenna diversity	☒ Single antenna ☐ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☐ Tx/Rx diversity
Evaluation applied	☒ MPE Evaluation ☐ SAR Evaluation
Product Software Version	HWL-83BT MAIN REV-3
Product Hardware version	U23
Radio Software Version	BT_BK6988V2.3P40.8M,WPT_V1.8.3.9
Radio Hardware version	BT_V2.3,WPT_REV-00

Applicable Standard:

FCC Part 1(1.1310) and Part 2(2.1091)

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 oftransient 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.

Measuring Device And Test Equipment

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☼	E-Field Probe(100kHz-3 GHz)	Narda	EF0391	2304/03	May 17, 2018	1 Year
☼	H-Field Probe(300KHz-3 0MHz)	Narda	HF3061	245633	May 17, 2018	1 Year
☼	Broadband Field Meter	Narda	NBM-550	232421	May 17, 2018	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	:	M/N: WHDOE-09035 Input: 100-240V~ 50/60Hz 0.65A Max Output: DC 9V 3.5A

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 three modes (max load, mid load, min load) for EUT. The worst

mode (max load) and worst test frequency(Low frequency：110KHz)test data see the following.

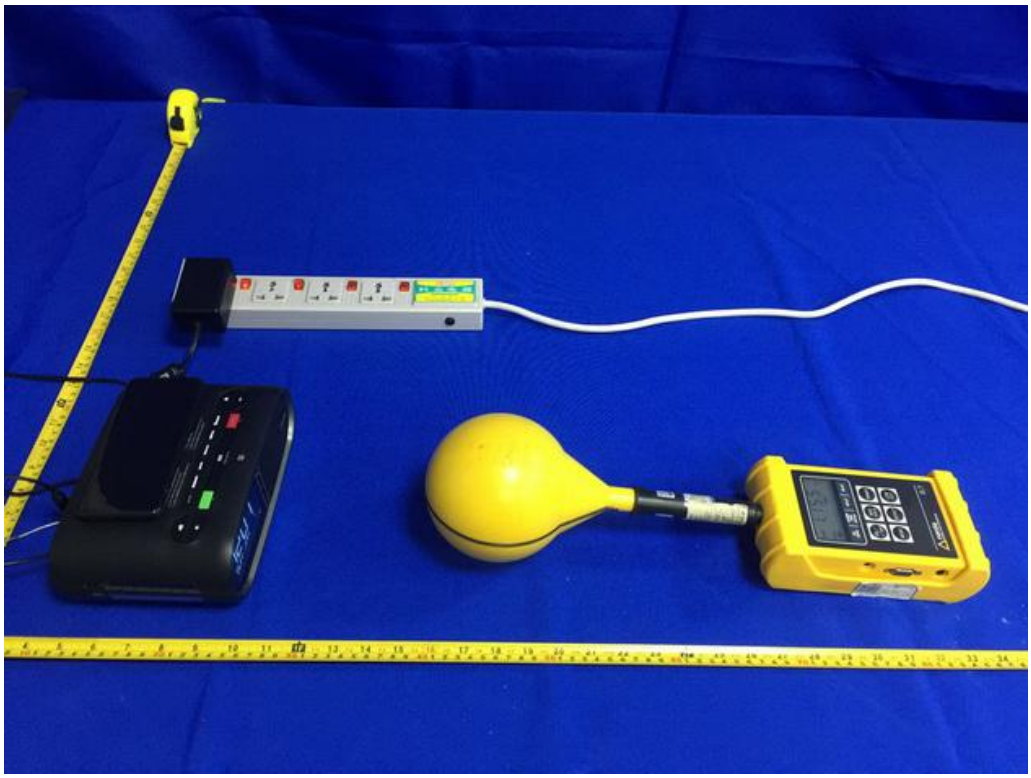
Magnetic Field (H-Field) strength at 15cm from the boundaries of EUT, and 20cm from the top.

Test Mode: Qi-5W					
		Measuring Distance(cm)	Magnetic Field(A/m)	Limit(A/m)	50% Limit(A/m)
Measurement Point 1	Front	15	0.176	1.63	0.815
Measurement Point 2	Back	15	0.168		
Measurement Point 3	Left	15	0.158		
Measurement Point 4	Right	15	0.157		
Measurement Point 5	Bottom	15	0.152		
Measurement Point 6	Top	20	0.180		

Calculated Electric Field (E-Field) strength at 15cm from the boundaries of the EUT, and 20cm from the top.

Test Mode: Qi-5W					
		Measuring Distance(cm)	Electric Field(V/m)	Limit(V/m)	50% Limit(V/m)
Measurement Point 1	Front	15	118.485	614	307
Measurement Point 2	Back	15	117.364		
Measurement Point 3	Left	15	116.247		
Measurement Point 4	Right	15	118.365		
Measurement Point 5	Bottom	15	116.650		
Measurement Point 6	Top	20	124.745		

PHOTOGRAPHS OF TEST SETUP



Signature

Lisa Wang
Manager
Date: 2018-10-26