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TEST REPORT

Product Name	:	**Compact Bluetooth Bedside Alarm Clock with Qi Wireless and USB Charging**
Model Number	:	**iBTW22, iBTW22B, iBTW22X (X could be single or multiple digits by any alphabets denote different cabinet color)**
FCC ID	:	**EMOIBTW22B**

Prepared for	:	SDI Technologies Inc.
Address	:	1299, Main Street, Rahway, NJ 07065, U.S.A.
Prepared by	:	EMTEK (DONGGUAN) CO., LTD.
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Report Number	:	EDG2204110209E00303R
Date(s) of Tests	:	April 11, 2022 to April 27, 2022
Date of issue	:	April 27, 2022

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TEST REPORT DESCRIPTION

Applicant	:	SDI Technologies Inc. 1299, Main Street, Rahway, NJ 07065, U.S.A.
Manufacturer	:	SDI Technologies Inc. 1299, Main Street, Rahway, NJ 07065, U.S.A.
Factory	:	DONGGUAN SYNST ELECTRONICS CO.,LTD THE SCIENCE & TECHNOLOGY INDUSTRIAL PARK, HOUJIE TOWN, DONGGUAN, GUANGDONG, CHINA
EUT	:	Compact Bluetooth Bedside Alarm Clock with Qi Wireless and USB Charging
Model Name	:	iBTW22, iBTW22B, iBTW22X (X could be single or multiple digits by any alphabets denote different cabinet color)
Trademark	:	iHome

Measurement Procedure Used:

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC Part 1(1.1310) and Part 2(2.1091) 680106 D01 RF Exposure Wireless Charging App v03	PASS

The above equipment was tested by DONGGUAN EMTEK CO., LTD. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in FCC Part 1(1.1310) and Part 2(2.1091)
680106 D01 RF Exposure Wireless Charging App v03 by the sample EUT tested as described in this report is in compliance with of FCC Rules

The test results of this report relate only to the tested sample identified in this report.

Date of Test : April 11, 2022 to April 27, 2022

Prepared by : Xia Yang/Editor

Reviewer : Tim Dong/Supervisor

Approve & Authorized Signer : Sam Lv/Manager

EMTEK (DONGGUAN) CO.,LTD. TESTING

1. EUT SPECIFICATION

Characteristics	Description
Product Name	Compact Bluetooth Bedside Alarm Clock with Qi Wireless and USB Charging
Model number	iBTW22, iBTW22B, iBTW22X (X could be single or multiple digits by any alphabets denote different cabinet color) Here we selected iBTW22 for all the test
Power Supply	AC 100-240 50/60Hz
Operating Frequency Range	111-205kHz
Modulation Technique	Induction
Antenna Type	Induction coil
Temperature Range	-10° C ~ +60° C
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

Modified Information

Version	Summary	Revision Date	Report No.
Ver.1.0	Original Report	April 27, 2022	EDG2204110209E00303R

2. SUMMARY OF TEST RESULT

EMISSION		
Description of Test Item	Standard & Limits	Results
MPE	FCC Part 1(1.1310) and Part 2(2.1091) 680106 D01 RF Exposure Wireless Charging App v03	Pass
Note: N/A is an abbreviation for Not Applicable.		

3. MEASUREMENT UNCERTAINTY

Uncertainty (EHP-50F)		
	Electric field	Magnetic field
Flatness:	±0.35dB (5Hz ~ 400kHz)	±0.7dB (5Hz ~ 40Hz); ±0.35dB (40Hz ~ 100kHz); ±0.7dB (100kHz ~ 400kHz)
Isotropic probes:	±0.54 dB	±0.12 dB
Linearity:	±0.2 dB (1 V / M - 1 kV / M)	±0.2 dB (200 NT - 10 mT)
Uncertainty (EHP-200A)		
Flatness:	±0.5dB (9KHz ~ 30MHz)	±0.7dB (9KHz ~ 150kHz); ±0.8dB (150KHz ~ 1MHz); ±0.7dB (1MHz ~ 30MHz)
Isotropic probes:	±0.8 dB	±0.5 dB
Linearity:	±0.2 dB (0.02 V / M - 1 kV / M)	±0.3 dB (0.6mA/m - 300A/m)

4. DESCRIPTION OF TEST FACILITY

Site Description

EMC Lab. : Accredited by CNAS, 2020.08.27
The certificate is valid until 2024.07.05
The Laboratory has been assessed and proved to be in compliance with CNAS/CL01:2018
The Certificate Registration Number is L3150

Accredited by FCC
Designation Number: CN1300
Test Firm Registration Number: 945551

Accredited by A2LA, April 05, 2021
The Certificate Registration Number is 4321.02

Accredited by Industry Canada
The Certificate Registration Number is CN0113

Name of Firm : EMTEK(DONGGUAN) CO., LTD.

Site Location : -1&2/F.,Buiding 2,Zone A,Zhongda Marine Biotechnology Research and Development Base,N.9,Xincheng Avenue,Songshanhu High-technology Industrial Development Zone, Dongguan, Guangdong, China

5. MEASURING DEVICE AND TEST EQUIPMENT

5.1. For MPE Measurement

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	Probe(100cm^2)	Narda	ELT-400	C-0012	May 21, 2021	1 Year
☑	E-Field Probe(100kHz-3GHz)	Narda	EF0391	2304/03	May 21, 2021	1 Year
☑	Broadband Field Meter	Narda	NBM-550	232421	May 21, 2021	1 Year
☑	Electric and Magnatic Field Analyzer (1Hz-400kHz)	Narda	EHP-50F	2404/03	May 21, 2021	1 Year

6. RF EXPOSURE

6.1. Measuring Standard

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

6.2. Requiments

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: o 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. o 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. o 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: In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means. Awareness of the potential for RF exposure in a workplace or similar environment can be provided through specific training as part of a RF safety program. If appropriate, warning signs and labels can also be used to establish such awareness by providing prominent information on the risk of potential exposure and instructions on methods to minimize such exposurerisks. General Population/Uncontrolled Exposure: The general population / uncontrolled exposure limits are applicable to 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 made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity. Warning labels placed on low-power consumer devices such as cellular telephones are not considered sufficient to allow the device to be considered under the occupational/controlled category, and the general population/uncontrolled exposure limits apply to these devices.

6.3. Test configuration

1) The field strength of both E-field and H-field was measured at 15cm(the 15 cm measured from the center of the probe(s) to the edge of the device) using the equipment list above for determining compliance with the MPE requirements of FCC Part 1.1310.
2) The RF power density was measured at 3 ifferent charge conditions:. min load, mid load, max load.
3) Maximum E-field and H-field measurements were made 15cm from each side of the EUT. Along the side of the EUT and still 15cm away from the edge of the EUT, the field probes were positioned at the location where there is maximum field strength. The maximum E-field and H-field is reported below.
4) Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz.
5) This device uses a wireless charging circuit for power transfer operating at the frequency of 111-205kHz. Thus, the limits were used: E-field Limit = 614 (V/m); H-field limit = 1.63 (A/m).

6.4. Limits

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm^2)	Averaging Time $\|E\|^2$,$\|H\|^2$ or S (minutes)
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
1500-100,000			5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm^2)	Averaging Time $\|E\|^2$,$\|H\|^2$ or S (minutes)
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
1500-100,000			1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

Test Mode	Description	Remark
Mode A Charging	100% Load	With resistor
	50% Load	With resistor
	0% Load	No load

6.5. Measuring Results

Test Mode: Mode A.1(100% Load)

Electric Field Emissions		
Test Position	Measure Value (V/m)	Limit(V/m)
Top	2.36	614
Left	2.40	614
Right	2.53	614
Rear	2.44	614
Front	2.21	614
Bottom	2.18	614
Magnetic Field Emissions		
Test Position	Measure Value (A/m)	Limit(A/m)
Top	0.2114	1.63
Left	0.2182	1.63
Right	0.2266	1.63
Rear	0.2354	1.63
Front	0.2436	1.63
Bottom	0.2256	1.63

Test Mode: Mode A.1(50% Load)

Electric Field Emissions		
Test Position	Measure Value (V/m)	Limit(V/m)
Top	2.16	614
Left	2.17	614
Right	2.51	614
Rear	2.24	614
Front	2.29	614
Bottom	2.32	614
Magnetic Field Emissions		
Test Position	Measure Value (A/m)	Limit(A/m)
Top	0.2282	1.63
Left	0.2254	1.63
Right	0.2456	1.63
Rear	0.2330	1.63
Front	0.2352	1.63
Bottom	0.2479	1.63

Test Mode: Mode A.1(0% Load)

Electric Field Emissions		
Test Position	Measure Value (V/m)	Limit(V/m)
Top	1.51	614
Left	1.60	614
Right	1.85	614
Rear	1.61	614
Front	1.42	614
Bottom	1.47	614
Magnetic Field Emissions		
Test Position	Measure Value (A/m)	Limit(A/m)
Top	0.0357	1.63
Left	0.0358	1.63
Right	0.0540	1.63
Rear	0.0446	1.63
Front	0.0467	1.63
Bottom	0.0450	1.63

Remark: The device meets the mobile RF exposure limit at a 15cm separation distance as specified in §2.1091 of the FCC Rules. The maximum leakage fields at 15 cm surrounding the device from all simultaneous transmitting coils are demonstrated to be less than 30% of the MPE limit.

Requirement for KDB Publication 680106 D01

Condition Requirement	Answers
Power transfer frequency is less than 1 MHz.	The power transfer frequency is 111kHz-205kHz.
Output power from each primary coil is less than or equal to 15 watts.	Output power is less than or equal to 15W.
The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.	The transfer system includes only single primary.
Client device is placed directly in contact with the transmitter.	Client device is placed directly in contact with the transmitter.
Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).	Mobile exposure conditions only
The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.	Please refer to the result of Electric Field Emissions and Magnetic Field Emissions.

7. PHOTOGRAPHS OF TEST SETUP

Refer to Setup photos

*** End of Report ***