

TEST REPORT

Product Name : Portable LED Color Changing Speaker with
Passive Radiator
Model Number : iBT840, iBT840BZ, iBT840X(X could be single
or multiple digits by any alphabets denote
different cabinet color)
FCC ID : EMOIBT840A

Prepared for : SDI Technologies Inc.
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Date(s) of Tests : August 18, 2022 to August 27, 2022
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Table of Contents

1. TEST RESULT CERTIFICATION	3
2. EUT SPECIFICATION	5
3. TEST REQUIREMENT:	6
RF EXPOSURE EVALUATION	6
4. MEASUREMENT RESULT	7



1. TEST RESULT CERTIFICATION

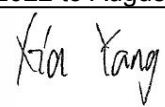
Applicant : SDI Technologies Inc.
Address : 1299, Main Street, Rahway, NJ 07065, U.S.A.
Manufacturer : SDI Technologies Inc.
Address : 1299, Main Street, Rahway, NJ 07065, U.S.A.
Factory : Harmonic Technology Co., Ltd.
Address : Building B, No. 8, Tianxin Street, Chung Kou Village, Shijie Town, Dongguan City, Guangdong Province
EUT : Portable LED Color Changing Speaker with Passive Radiator
Model Name : iBT840, iBT840BZ, iBT840X(X could be single or multiple digits by any alphabets denote different cabinet color)
Trademark : iHome
Measurement Procedure Used:

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
§ 15.247(i), § 2.1093	PASS

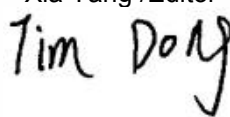
The above equipment was tested by EMTEK(DONGGUAN) CO., LTD. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules FCC § 15.247(i), § 2.1093.

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

Date of Test : August 18, 2022 to August 27, 2022

Prepared by : 

Xia Yang /Editor

Reviewer : 

Tim Dong/ Supervisor

Approve & Authorized Signer :  

Sam Lv / Manager

Modified History

Version	Report No.	Revision Date	Summary
	EDG2208180069E00402R	/	Original Report



2. EUT Specification

Characteristics	Description
Product:	Portable LED Color Changing Speaker with Passive Radiator
Model Number:	iBT840, iBT840BZ, iBT840X(X could be single or multiple digits by any alphabets denote different cabinet color) All products are the same, only the model number and color of appearance are different Here we selected iBT840 for all the test
Sample:	1#
Device Type:	Bluetooth V5.2
Data Rate:	1Mbps for GFSK modulation 2Mbps for $\pi/4$ -DQPSK modulation
Modulation:	GFSK, $\pi/4$ -DQPSK
Operating Frequency Range(s) :	2402-2480MHz
Number of Channels:	79 channels
Transmit Power Max:	4.14 dBm(0.002594W)
Antenna Gain:	-0.58 dBi
Power supply:	DC 5V from USB, DC 7.4V from battery
Evaluation applied:	☐ MPE Evaluation ☒ SAR Evaluation

3. Test Requirement:

RF EXPOSURE EVALUATION

According to §15.247(i) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f_{(\text{GHz})}}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR,}^{24} \text{ where}$$

- $f_{(\text{GHz})}$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation²⁵
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum *test separation distance* is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum *test separation distance* is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

Routine SAR evaluation refers to that specifically required by § 2.1093, using measurements or computer simulation. When routine SAR evaluation is not required, portable transmitters with output power greater than the applicable low threshold require SAR evaluation to qualify for TCB approval. One antenna is available for the EUT. The minimum separation distance is 5mm.

4. Measurement Result

Antenna gain:-0.58 dBi

Transmit Frequency(MHz)	Mode	Measured Power (dBm)	Tune upPower (dBm)	Max tune up power(dBm)	Calculation Result	1-g SAR
2.402	GFSK	3.25	3±1	4	0.7786038	3
2.441	GFSK	2.05	2±1	3	0.6234676	3
2.480	GFSK	0.65	2±1	1	0.3965115	3
2.402	Π/4-DQPSK	3.25	3±1	4	0.7786038	3
2.441	Π/4-DQPSK	4.14	4±1	5	0.9881295	3
2.480	Π/4-DQPSK	2.74	2±1	3	0.6284284	3

According to KDB 447498, no stand-alone required for BT antenna, and no simultaneous SAR measurement is required.

*** End of Report ***