

# 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.  
**Address** : 1299, Main Street, Rahway, NJ 07065, U.S.A.

**Prepared by** : EMTEK (DONGGUAN) CO., LTD.  
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**Report Number** : EDG2208180069E00402R  
**Date(s) of Tests** : August 18, 2022 to August 27, 2022  
**Date of issue** : August 27, 2022

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## 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   |
|---------------------------------------|---|
| <b>Product:</b>                       | Portable LED Color Changing Speaker with Passive Radiator   |
| <b>Model Number:</b>                  | iBT840, iBT840BZ, iBT840X(X could be single or multiple digits by any alphabets denote different cabinet color)<br>All products are the same, only the model number and color of appearance are different<br>Here we selected iBT840 for all the test |
| <b>Sample:</b>                        | 1#  |
| <b>Device Type:</b>                   | Bluetooth V5.2  |
| <b>Data Rate:</b>                     | 1Mbps for GFSK modulation<br>2Mbps for $\pi/4$ -DQPSK modulation  |
| <b>Modulation:</b>                    | GFSK, $\pi/4$ -DQPSK  |
| <b>Operating Frequency Range(s) :</b> | 2402-2480MHz  |
| <b>Number of Channels:</b>            | 79 channels   |
| <b>Transmit Power Max:</b>            | 4.14 dBm(0.002594W)   |
| <b>Antenna Gain:</b>                  | -0.58 dBi   |
| <b>Power supply:</b>                  | DC 5V from USB, DC 7.4V from battery  |
| <b>Evaluation applied:</b>            | <input type="checkbox"/> MPE Evaluation<br><input checked="" type="checkbox"/> 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*  $\leq 50$  mm are determined by:

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

- $f_{(\text{GHz})}$  is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation<sup>25</sup>
- 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  $\leq 50$  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 \*\*\*