

# TEST REPORT

**Product Name** : Bluetooth speaker

**Model Number** : IMW344, IMW344-CM, IMW344-BLK

**FCC ID** : 2A8JA-IMW344

Prepared for : Dolphin Electronics (DongGuan) Co.,Ltd.  
Address : Room 301, Building 3, No.2 Baolong Road, Houjie Town,  
Dongguan City, Guangdong Province, China

Prepared by : EMTEK (DONGGUAN) CO., LTD.  
Address : -1&2/F., Building 2, Zone A, Zhongda Marine Biotechnology  
Research and Development Base, No.9, Xincheng Avenue,  
Songshanlu High-technology Industrial Development Zone,  
Dongguan, Guangdong, China

TEL: +86-0769-22807078  
FAX: +86-0769-22807079

Report Number : EDG2406040119E00202R  
Date(s) of Tests : Jun 04, 2024 to Jun 20, 2024  
Date of issue : Jun 21, 2024

## Table of Contents

|                                   |   |
|-----------------------------------|---|
| 1. TEST RESULT CERTIFICATION..... | 3 |
| 2. EUT SPECIFICATION .....        | 5 |
| 3. TEST REQUIREMENT .....         | 6 |
| 4. MEASUREMENT RESULT .....       | 6 |



## 1. TEST RESULT CERTIFICATION

Applicant : Dolphin Electronics (DongGuan) Co.,Ltd.  
 Address : Room 301,Building 3,No.2 Baolong Road, Houjie Town, Dongguan City, Guangdong Province,China  
 Manufacturer : Dolphin Electronics (DongGuan) Co.,Ltd.  
 Address : Room 301,Building 3,No.2 Baolong Road, Houjie Town, Dongguan City, Guangdong Province,China  
 Factory : Dolphin Electronics (DongGuan) Co.,Ltd.  
 Address : Room 301,Building 3,No.2 Baolong Road, Houjie Town, Dongguan City, Guangdong Province,China  
 EUT : Bluetooth speaker  
 Model Name : IMW344, IMW344-CM, IMW344-BLK  
 Trademark : Altec lansing

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 : Jun 04, 2024 to Jun 20, 2024

Warren Deng

Prepared by :

Warren Deng /Editor

Tim Dong

Reviewer :

Tim Dong /Supervisor



Approve & Authorized Signer :

Sam Lv / Manager

## Modified History

| Version | Report No.           | Revision Date | Summary         |
|---------|----------------------|---------------|-----------------|
|         | EDG2406040119E00202R | /             | Original Report |
|         |                      |               |                 |
|         |                      |               |                 |



## 2. EUT Specification

| Characteristics                       | Description  |
|---------------------------------------|--|
| <b>Product:</b>                       | Bluetooth speaker  |
| <b>Model Number:</b>                  | IMW344, IMW344-CM, IMW344-BLK<br>All products are the same, only the model number and color are different. Here we selected IMW344 for all the test. |
| <b>Sample:</b>                        | 1#   |
| <b>Data Rate:</b>                     | 1Mbps for GFSK modulation<br>2Mbps for $\pi/4$ -DQPSK modulation<br>3Mbps for 8DPSK modulation   |
| <b>Modulation:</b>                    | GFSK, $\pi/4$ -DQPSK, 8DPSK  |
| <b>Operating Frequency Range(s) :</b> | 2402-2480MHz   |
| <b>Number of Channels:</b>            | 79 channels  |
| <b>Transmit Power Max:</b>            | 4.92 dBm(0.003105 W)   |
| <b>Antenna Gain:</b>                  | -0.58 dBi  |
| <b>Power supply:</b>                  | DC 5V from USB<br>DC 3.7V from battery   |
| <b>Evaluation applied:</b>            | <input type="checkbox"/> MPE Evaluation<br><input checked="" type="checkbox"/> SAR Evaluation  |

### 3. Test Requirement

#### SAR Evaluation

According to 447498 D01 V06, 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:

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

- $f_{(\text{GHz})}$  is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before 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 |
|--------------------------|-----------|----------------------|--------------------|-------------------------|--------------------|---------|
| 2402                     | GFSK      | 4.53                 | 4±1                | 5                       | 0.9802             | 3       |
| 2441                     | GFSK      | 3.70                 | 4±1                | 5                       | 0.9881             | 3       |
| 2480                     | GFSK      | 3.68                 | 3±1                | 4                       | 0.7911             | 3       |
| 2402                     | Π/4-DQPSK | 4.71                 | 5±1                | 6                       | 1.2340             | 3       |
| 2441                     | Π/4-DQPSK | 4.10                 | 4±1                | 5                       | 0.9881             | 3       |
| 2480                     | Π/4-DQPSK | 4.22                 | 4±1                | 5                       | 0.9960             | 3       |
| 2402                     | 8DPSK     | 4.92                 | 5±1                | 6                       | 1.2340             | 3       |
| 2441                     | 8DPSK     | 4.31                 | 4±1                | 5                       | 0.9881             | 3       |
| 2480                     | 8DPSK     | 4.36                 | 4±1                | 5                       | 0.9960             | 3       |

According to KDB 447498 D01 V06, no stand-alone required for BT antenna, and no simultaneous SAR measurement is required.

\*\*\* End of Report \*\*\*