



# MPE Test Report

**Report No.:** MTi210223002-02E2

**Date of issue:** Mar. 17, 2021

**Applicant:** Edifier International Limited

**Product name:** Multimedia Speaker

**Model(s):** EDF100025

**FCC ID:** Z9G-EDF138

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>



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### TEST RESULT CERTIFICATION

|                           |                                                                                         |
|---------------------------|-----------------------------------------------------------------------------------------|
| Applicant's name.....     | Edifier International Limited                                                           |
| Address.....              | P.O. Box 6264 General Post Office Hong Kong                                             |
| Manufacturer's Name ..... | Beijing Edifier Technology Co., Ltd.                                                    |
| Address.....              | 8th floor, ZuoAn Building, NO.68 BeiSiHuanXiLu, Haidian District, Beijing 100080, CHINA |

#### Product description

|                    |                               |
|--------------------|-------------------------------|
| Product name.....  | Multimedia Speaker            |
| Trademark .....    | EDIFIER                       |
| Model Name .....   | EDF100025                     |
| Serial Model ..... | N/A                           |
| Standards.....     | Edifier International Limited |
| Test procedure     | KDB 447498 D01 v06            |

#### Date of Test

|                                       |                               |
|---------------------------------------|-------------------------------|
| Date (s) of performance of tests... : | Feb. 27, 2021 ~ Mar. 17, 2021 |
| Test Result.....:                     | Pass                          |

This device described above has been tested by Shenzhen Microtest Co., Ltd. and the test results show that the equipment under test (EUT) is in compliance with the EMC requirements. And it is applicable only to the tested sample identified in the report.

Testing Engineer

:

(Danny Xu)

Technical Manager

:

(Leo Su)

Authorized Signatory

:

(Tom Xue)



## 1 RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified in §1.1307(b)

### 1.1 Limits for Maximum Permissible Exposure (MPE)

| Frequency range (MHz)                                          | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm <sup>2</sup> ) | Averaging time (minutes) |
|----------------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| <b>(A) Limits for Occupational/Controlled Exposure</b>         |                               |                               |                                     |                          |
| 0.3-3.0                                                        | 614                           | 1.63                          | *100                                | 6                        |
| 3.0-30                                                         | 1842/f                        | 4.89/f                        | *900/f <sup>2</sup>                 | 6                        |
| 30-300                                                         | 61.4                          | 0.163                         | 1.0                                 | 6                        |
| 300-1,500                                                      |                               |                               | f/300                               | 6                        |
| 1,500-100,000                                                  |                               |                               | 5                                   | 6                        |
| <b>(B) Limits for General Population/Uncontrolled Exposure</b> |                               |                               |                                     |                          |
| 0.3-1.34                                                       | 614                           | 1.63                          | *100                                | 30                       |
| 1.34-30                                                        | 824/f                         | 2.19/f                        | *180/f <sup>2</sup>                 | 30                       |
| 30-300                                                         | 27.5                          | 0.073                         | 0.2                                 | 30                       |
| 300-1,500                                                      |                               |                               | f/1500                              | 30                       |
| 1,500-100,000                                                  |                               |                               | 1.0                                 | 30                       |

f = frequency in MHz \* = Plane-wave equivalent power density

#### MPE Calculation Method

Friis transmission formula:  $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

$P_d$  = Power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

$G$  = Numeric gain of the antenna relative to isotropic antenna

$\pi$  = 3.1415926

$R$  = distance between observation point and center of the radiator in cm(20cm)

$P_d$  the limit of MPE, 1mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.



## 1.2 Measurement Result

### BT:

Operation Frequency: BT GFSK,  $\pi/4$ -DQPSK, 8DPSK: 2402-2480MHz

Power density limited: 1mW/ cm<sup>2</sup>

Antenna Type: BT Antenna: PCB Antenna;

BT antenna gain: 2.59dBi

R=20cm

$mW=10^{(dBm/10)}$

antenna gain Numeric= $10^{(dBi/10)}=10^{(2.59/10)}=1.82$

| Chann<br>el<br>Freq.<br>(MHz) | modulat<br>ion | conduct<br>ed<br>power | Tune-<br>up<br>power<br>(dBm) | Max           |       | Antenna |             | Evalua<br>tion<br>result | Power<br>density<br>Limits |
|-------------------------------|----------------|------------------------|-------------------------------|---------------|-------|---------|-------------|--------------------------|----------------------------|
|                               |                | (dBm)                  |                               | tune-up power |       | Gain    |             | (mW/c<br>m2 )            | (mW/c<br>m2)               |
|                               |                |                        |                               | (dBm)         | (mW)  | (dBi)   | Numeri<br>c |                          |                            |
| 2402                          | GFSK           | 7.531                  | 7±1                           | 8             | 6.310 | 2.59    | 1.82        | 0.0023                   | 1                          |
| 2441                          |                | 7.638                  | 7±1                           | 8             | 6.310 | 2.59    | 1.82        | 0.0023                   | 1                          |
| 2480                          |                | 7.555                  | 7±1                           | 8             | 6.310 | 2.59    | 1.82        | 0.0023                   | 1                          |
| 2402                          | π/4-<br>DQPSK  | 7.113                  | 7±1                           | 8             | 6.310 | 2.59    | 1.82        | 0.0023                   | 1                          |
| 2441                          |                | 7.334                  | 7±1                           | 8             | 6.310 | 2.59    | 1.82        | 0.0023                   | 1                          |
| 2480                          |                | 7.052                  | 7±1                           | 8             | 6.310 | 2.59    | 1.82        | 0.0023                   | 1                          |
| 2402                          | 8DPSK          | 6.667                  | 7±1                           | 8             | 6.310 | 2.59    | 1.82        | 0.0023                   | 1                          |
| 2441                          |                | 7.348                  | 7±1                           | 8             | 6.310 | 2.59    | 1.82        | 0.0023                   | 1                          |
| 2480                          |                | 7.015                  | 7±1                           | 8             | 6.310 | 2.59    | 1.82        | 0.0023                   | 1                          |

### Conclusion:

For the max result:  $0.0023 \leq 1.0$  for 1g SAR, No SAR is required.

----END OF REPORT----