



TEST REPORT

MANUFACTURER : Tiinlab Acoustic Technology Limited
PRODUCT NAME : 1MORE PistonBuds True Wireless In-Ear Headphones
MODEL NAME : ECS3001T
BRAND NAME : 1MORE
STANDARD(S) : EN 50332-2:2013
RECEIPT DATE : 2020-08-13
TEST DATE : 2020-09-17
ISSUE DATE : 2020-10-12

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| Change History | | |
|----------------|------------|-------------------|
| Version | Date | Reason for change |
| 1.0 | 2020-10-12 | First edition |
| | | |



1. Technical Information

Note: Provide by manufacturer.

1.1. Equipment under Test (EUT) Description

| | |
|------------------------------|--|
| EUT Type: | 1MORE PistonBuds True Wireless In-Ear Headphones |
| Model No: | ECS3001T |
| Hardware Version: | V4 |
| Software Version: | ECS3001T_V1007_20200825 |
| Manufacturer: | Tiinlab Acoustic Technology Limited |
| Manufacturer Address: | Tianliao Building 1403, Zone A Tianliao Industrial Park, Taoyuan Str., Nanshan Dist., Shenzhen, P.R. China |

Note: For a more detailed description, please refer to specification or user's manual supplied by the applicant and/or manufacturer.

1.2. Applied standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of EN 50332-2.

Note 1: All test items were verified and recorded according to the standards and without any deviation during the test.

Note 2: When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% risk level.

1.3. EUT Setup and Operating Conditions

During the measurement, the environmental conditions were within the listed ranges:

| | |
|-----------------------------|----------|
| Temperature (°C): | 15 - 35 |
| Relative Humidity (%): | 30 - 60 |
| Atmospheric Pressure (kPa): | 86 - 106 |



2. Measurement Method

This test method is based on the use of a Head and Torso Simulator(HATS), B&K type 4128 equipped with ear simulators type 4158 and 4159 in accordance with IEC 60318-7.

Test source signal used to measure the maximum sound pressure level is a program simulation noise, as defined in HD 483.1 S2., and its crest factor range is between 1.8~2.2. It is fed into the system simulator over the air to the device under test.

The sound pressure level measured by the ear simulator microphone represents the pressure found at eardrum level, and that levels have been correlated by the acoustic free-filled transfer function of the simulator. The results are given as free filed related A-weighted and in dB unit.

Test is repeated five times for each ear, and the earphones are removed and re-positioned each test prior to each measurement. The equipment under test is set in maximum volume value.

The maximum sound pressure level considered as the test result is the mean value of all L_{Aeq} measurements. Results shall not deliver more than 100dB for maximum SPL for player with headset/earphone.

Player output voltage of the “warning” appears, The maximum sound pressure level considered as the test result is the mean value of all L_{Aeq} measurements. Results shall not deliver more than 85dB for maximum SPL for player with headset/earphone.

For headset/earphone, the simulated programme signal characteristic voltage of analogue headphone input is the input signal voltage when the sound pressure level reaches 94 dB SPL A-weighted, and test procedure (same procedure above for player) is repeated five times. Results shall not be less than 75mV.

For the maximum output voltage measurement, the mV shall be defined as unweighted true r.m.s. voltage at the load, using and averaging time of 30s or more. Player output shall be loaded with a resistive load of 32 Ω . results shall not deliver more than 150mV.



3. Test equipment

| Manufacturer | Name of equipment | Type/Model | Calibration Date | Due Date |
|--------------|------------------------|------------|------------------|------------|
| B&K | HATS | 4128-C-001 | 2020-06-18 | 2021-06-17 |
| B&K | Conditioning Amplifier | 2690-OS2 | 2020-06-18 | 2021-06-17 |
| R&S | Audio Analyzer | UPV | 2020-06-15 | 2021-06-14 |

The calibrated as a whole system is calibrated by the acoustical calibrator, and considers cable connections for accuracy, before starting test.

Uncertainty: Combined Uncertainty =1.22dB, based on 95% confidence level (K=2).



4. Test Results

Table 1 Player Maximum SPL

| Channel | EN 50332-2(SPL dB(A)) | | | | | P |
|-----------|-----------------------|-------|-------|-------|-------|---------------|
| | 1st | 2nd | 3rd | 4th | 5th | Average value |
| Right Ear | 95.34 | 95.86 | 95.48 | 96.11 | 95.39 | 95.64 |
| Left Ear | 95.60 | 95.59 | 95.63 | 95.61 | 95.59 | 95.61 |

Note: Results shall not deliver more than 100dB(A) for maximum SPL

Conclusion

According to the test result and limits, the product was fulfilled the requirement of standard: EN62368-1:2014+A11:2017, EN60950-1: 2006+A1:2009 + A11:2011+A2: 2013(Zx. Protection against excessive sound pressure from personal music players).

Annex A Photographs of the EUT

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Annex B General Information

B.1 Identification of the Responsible Testing Laboratory

| | |
|---------------------|--|
| Laboratory Name: | Shenzhen Morlab Communications Technology Co., Ltd. |
| Laboratory Address: | FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China |
| Telephone: | +86 755 36698555 |
| Facsimile: | +86 755 36698525 |

B.2 Identification of the Responsible Testing Location

| | |
|----------|--|
| Name: | Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory |
| Address: | FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China |

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