



Acoustic TEST REPORT

MANUFACTURER : Tiinlab Acoustic Technology Limited

PRODUCT NAME : omthing AirFree True Wireless In-Ear Headphones

MODEL NAME : EO002BT

BRAND NAME : omthing

STANDARD(S) : EN 50332-2:2013

RECEIPT DATE : 2020-04-10

TEST DATE : 2020-04-20

ISSUE DATE : 2020-06-24

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Change History		
Version	Date	Reason for change
1.0	2020-06-24	First edition



1. Technical Information

Note: Provide by manufacturer.

1.1. Equipment under Test (EUT) Description

EUT Type:	omthing AirFree True Wireless In-Ear Headphones
Model No:	EO002BT
Hardware Version:	V2
Software Version:	V1.0.0.3
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: All test items were verified and recorded according to the standards and without any deviation during the test.

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	2019-06-25	2020-06-24
B&K	Conditioning Amplifier	2690-OS2	2019-06-20	2020-06-19
R&S	Audio Analyzer	UPV	2019-06-21	2020-06-20

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

	<input type="checkbox"/> FM	<input checked="" type="checkbox"/> MUSIC					
Channel	EN 50332-2(SPL dB(A))					P	
	1st	2nd	3rd	4th	5th	Average value	
Right Ear	92.86	93.56	92.06	92.24	93.66	92.88	
Left Ear	92.07	92.66	93.22	93.08	92.78	92.94	

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
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B.2 Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
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