中国认可
国际互认
检测
TESTING
CNAS L4062

TEST REPORT

Reference No.	:	WTF23X10227081Y
Applicant	:	Mid Ocean Brands B.V.
Address	:	7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong.
Manufacturer	:	118144
Address	:	--
Product Name	:	Solar TWS earbuds w carabiner
Model No	:	MO2177
Test specification	:	EN 50332-2:2013: Sound system equipment: Headphones and earphones associated with personal music players - Maximum sound pressure level measurement methodology Part 2: Matching of sets with headphones if either or both are offered separately, or are offered as one package equipment but with standardized connectors between the two allowing to combine components of different manufacturers or different design
Date of Receipt sample	:	2023-11-01
Date of Test	:	2023-11-01 to 2023-11-02
Date of Issue	:	2023-11-07
Test Report Form No.	:	WTX_EN50332_2_2013A
Test Result	:	**Pass**

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of approver.

Prepared By:
Waltek Testing Group (Shenzhen) Co., Ltd.
Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road, Block 70 Bao'an District, Shenzhen, Guangdong, China
Tel :+86-755-33663308 Fax:+86-755-33663309 Email：sem@waltek.com.cn

Tested by: Ivan Zhang

Approved by: Harvid Wei

Test item description.....:	Solar TWS earbuds w carabiner
Trademark .....:	--
Model and/or type reference .....:	MO2177
Rating(s).....:	DC5V/ 1.0A
Test Laboratory	Waltek Testing Group (Shenzhen) Co., Ltd.
Address	1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road, Block 70 Bao'an District, Shenzhen, Guangdong, China

General product information:

.

The sample(s) tested complies with the requirements of EN 50332-2: 2013.

Model Differences:

N/A

Summary of testing:

All tests had been assessed for safety with respect to the above test specifications and found to comply with the requirements of the standards.

Test case verdicts Test case does not apply to the test object : N(N/A) Test item does meet the requirement ..... : P(Pass) Test item does not meet the requirement ...: F(Fail)
Degree of protection against moisture.....: IPX0
General remarks The test result presented in this report relate only to the object(s) tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. The report would be invalid without specific stamp for test institute or the authority. The report would be invalid without the signatures of reporter and reviewer. "(see Enclosure #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report.
Remark: Whether parts of tests for the product have been subcontracted to other labs: ☐ Yes ☒ No If Yes, list the related test items and lab information: Test items: Lab information:

EN 50332-2: 2013			
Clause	**Requirement – Test**	**Result - Remark**	**Verdict**
4	**Basic conditions for specifications and measurements** (For basic conditions on measurements of the maximum sound pressure level, reference is made to EN 50332-1.)		P
4.1	**General description**		P
	The sound pressure level produced by headphones or earphones can be measured by subjective methods or by objective methods.		P
	The reference method for evaluating the sound pressured level emitted by earphones is a psycho acoustic method known as “equal loudness” (EN60268-7)		P
4.2	**Measuring principle**		P
	The standard is based on the use of a Head and Torso Simulator (HATS) in accordance with IEC 60318-7		P
	The sound pressure level measured by the ear simulator microphone represents the pressure found at eardrum level and differs from that of the free field pressure by the HATS transfer function		P
5	**Player characteristics and methods of measurement**		P
5.1	Maximum output voltage Vm		N
5.2	Method of measurement and conditions		N
5.2.1	Input signal		N
	Actual musical signals are continuously fluctuating in both amplitude and spectral contents and thus cannot be used as test signals		N
	The test signal must therefore be a stationary wide-band signal, the spectral content of which is representative of the musical signals.		N
	The test signal used to determine the maximum sound pressure level of headphones shall be programme simulation noise, as defined in HD 483.1 S2.		N
5.2.2	Operating conditions		N
	- By a established power supply		N
	- tolerance of nominal supply voltage		N
	- All controls are adjusted to maximum sound pressure level		N

EN 50332-2: 2013			
Clause	**Requirement – Test**	**Result - Remark**	**Verdict**
	- load of player output		N
5.2.3	Method of measurement for analogue audio outputs		N
	The measuring equipment shall conform to: - EN 61672-1, class 1 for (sound level meters); - EN61260, class 1 for (1/3 octave analysers).		N
	The maximum output voltage Vm shall be defined as unweithted r.m.s. voltage at the load, using an averaging time of 30 s or more.		N
5.2.4	Method of measurement for digital audio outputs		N
	The maximum output level Lm shall be defined as average of digital signal, using an averaging time of 30 s or more.		N
	The digital input test signal is defined in EN 50332-1 as -10 dBFS.		N

6	**Headphone/Earphone characteristics and methods of measurement**		P
6.1	Measuring equipment		P
	The measuring equipment shall be in accordance with EN 61672-1when connected with a HATS microphone.		P
6.2	Simulated programme signal characteristic voltage		P
6.3	Method of measurement arrangement and conditions		P
6.3.1	Input signal		P
	- is program simulation noise as defined in HD 483.1 S2		P
	- according part 1, subclause 5.1		P
6.3.2	Source impedance of analogue input devices		P
	- output impedance of the test signal source		P
6.3.3	Acoustical measurement method		P
6.3.4	Headphones / earphones fit		P
	- Position correctly for measuring maximum sound pressure		P
	- the manufacturer’s instruction for correct use		P
6.3.5	Measure of evaluation		P

EN 50332-2: 2013			
Clause	**Requirement – Test**	**Result - Remark**	**Verdict**
	- part 1, subclause 6.4		P
	- sound pressure level reaches 94 dB SPL		N/A

Table 2 – Classification of the characteristics to be specified

Subclause	Characteristics	Products
5.1	Maximum output voltage	Player
6.1	Wide band characteristic voltage	Headphones

Measuring result:

5.1	**Measuring result**		**N**
	SPL (dB)	Vmax (mV)	Criterion request(mV)
Left side	--	--	--
Right side	--	--	--
Note: N/A.			

6.3.5	**Measuring result (SPL) (Part 1, 6.4)**				**P**
	Measurement No.1	Measurement No.2	Measurement No.3	Measurement No.4	Measurement No.5
Left side	97.26	97.26	97.25	97.28	97.28
Right side	96.79	96.79	96.80	96.84	96.83
Average	Left side:97.27		Right side:96.81		
Note: N/A.					

6.3.5	**Measuring result (WBCV)**		**N/A**
	SPL (dB)	V_{WBCV} (mV)	Criterion request(mV)
Left side	94	--	⩾75
Right side	94	--	⩾75
Note: N/A.			

Photo Documentation
Model: MO2177

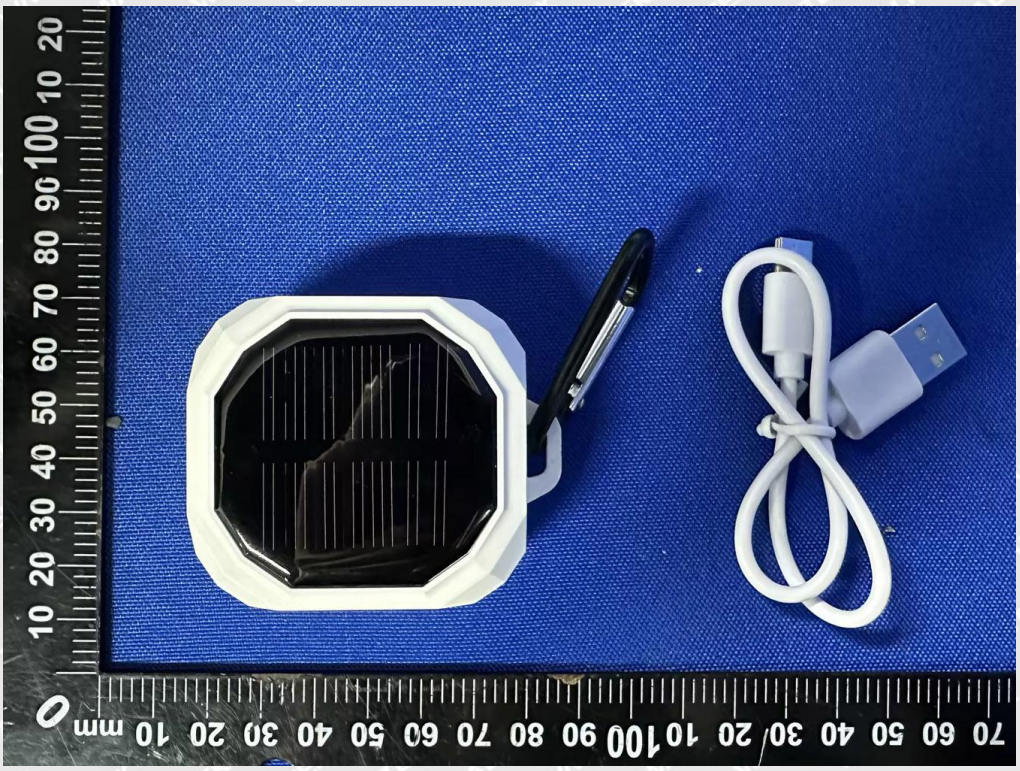

Photo 1

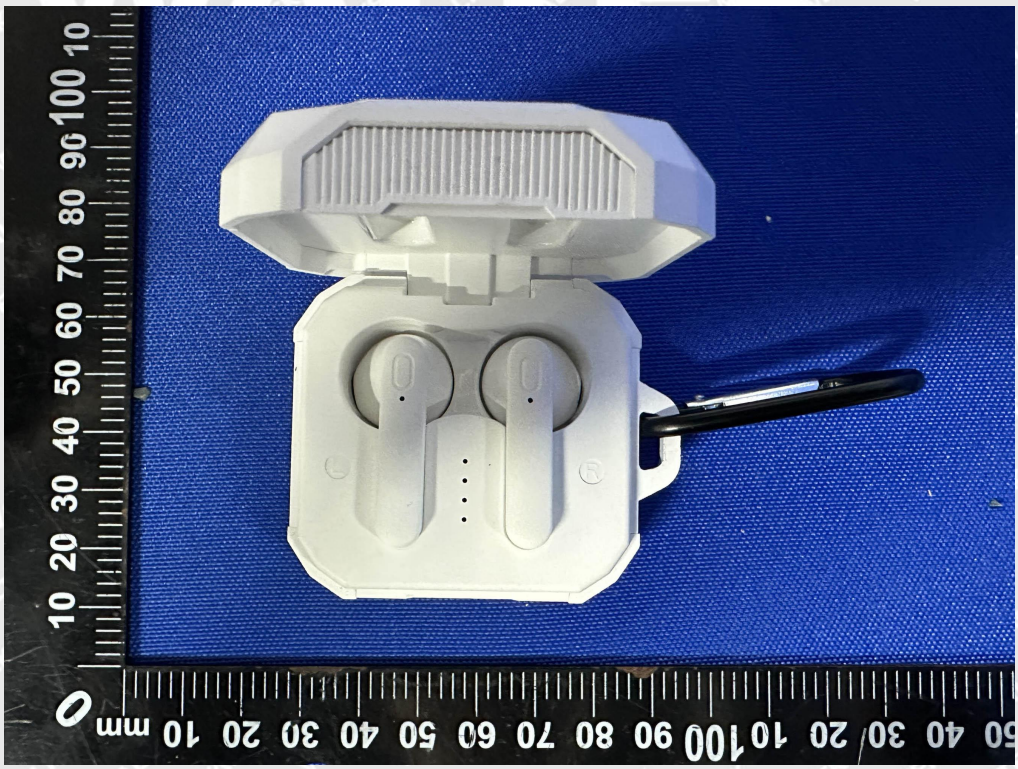

Photo 2

Photo 3

Photo 4

====== End of Report ======