

**I. Device under test**

Test object: Active over-the-head earmuff

Trade name / Model reference: HEA 371  
AirLink 2085 WI407

State of construction: Pre-Production

Serial No./WE No.: See chapter III.

Manufacturer: Globalsys

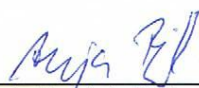
Country: France

Arrival test sample: 2018-07-23



Issue date of test report: **Revision 1 2019-12-04** (2019-10-15)

Amount of pages: 8      Enclosures: --



Test conducted by: Anja Biedermann



Reviewed by: Christian Gerdes



HEA 371

**II. Description of the device under test**

The product is an over-the-head earmuff with communication device available as wireless version (WI 407) and wired version (HEA 371). Both variants are mechanically identical and were mixed during the sound attenuation measurements.

**III. Samples provided for testing**

Model name	Sample No	PZT WE number	Serial number
HEA 371	1	2072	1201
	2	2073	1193
	3	2074	1191
	4	2075	1194
	5	2076	1195
	6	2077	1196
	7	2078	1198
	8	2079	1192
	9	2080	1200
	10	2081	1202

Model name	Sample No	PZT WE number	Serial number
WI 407	1	2084	X0573
	2	2085	X0574
	3	2086	X0575
	4	2087	X0576

**IV. Conformance test conducted on:** 2019-03-11 to 2019-11-20**V. General notes**

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Accredit by DAKkS Certificate No. D-PL-12127-01-01  
Notified Body Number: 1974

Reference: Ge / AB

**Third-party laboratory: --**

**VIII. Testing Standards:**

Z94.2-14 December 2014	Hearing protection devices Performance, selection, care, and use
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**IX. Testing environment**

The climatic conditions in acc. were continuously controlled during the approval test.  
The requirements according to EN 13819-12002 were met.

Temperature: 22 ±5 °C  
Humidity: < 85 %

**X. Measurement equipment**

The measurements were conducted at measurement station No. 1 / 2.

The measuring equipment is calibrated regularly; the measuring devices are maintained regularly.

**XI. Abbreviations**

In the opinion of the testing laboratory  
P requirement fulfilled  
F requirement not fulfilled  
X no requirements defined  
N/A requirement not relevant  
# requirement not specified  
U for result see test report from third-party laboratory  
M Mandatory  
N None



**XII. Revision**

Revision No.	Date	Reason of revision
2871806-2 Rev.1	2019-10-15	Revision of the Original Test Report 2871806-2 (2019-10-15) Page 6: Sound Attenuation: change of result values including NRR. Page 7: Attenuation classes: change of octave band attenuation results including attenuation class.

Only the test-report with the latest revision status is valid.

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**Results:**

**6.1 Sound attenuation measurement**

**P**

**Measurement conditions:**

The sound attenuation is measured acc. ANSI S3.19.

Attenuation Measurement conducted with 4 samples (samples No. 1 to 4) and 10 subjects with three measures each.

The experimenter fit method is used.

**Result:**

**NRR = 26 dB**

Subject ID	Individual attenuation values [dB]								
	Frequency [Hz]								
	125	250	500	1000	2000	3150	4000	6300	8000
1	16.3	25.0	32.6	40.7	32.7	34.4	37.4	38.7	35.4
	19.3	25.0	33.3	37.0	30.7	31.0	31.4	35.7	39.0
	18.3	27.0	32.0	39.0	32.3	32.4	37.0	41.3	41.4
2	18.4	24.6	35.0	33.7	32.3	36.7	40.6	43.0	37.3
	19.7	24.6	33.7	35.0	31.0	35.7	40.0	46.3	39.3
	17.7	23.6	33.0	36.0	31.3	35.0	39.3	45.0	39.3
3	19.4	23.0	33.0	37.7	33.7	41.4	41.0	38.3	37.6
	20.4	24.7	34.4	37.7	34.7	41.7	39.6	36.7	38.0
	19.0	19.7	34.0	37.0	34.7	42.4	40.6	38.0	36.0
4	23.4	22.7	30.0	36.6	31.0	37.6	43.6	38.0	34.3
	22.4	19.4	27.0	31.6	31.0	33.6	41.3	41.0	35.3
	26.0	23.4	27.7	32.0	31.7	37.6	43.6	39.3	37.0
5	13.0	22.0	32.7	35.3	35.0	32.3	37.3	39.6	38.0
	18.7	21.3	31.4	39.3	32.3	34.0	36.7	40.6	41.3
	14.0	23.6	32.7	39.0	37.3	33.3	38.7	40.3	41.7
6	19.0	25.0	33.3	38.4	37.0	43.6	46.0	46.3	40.6
	19.3	25.0	34.6	39.4	39.6	38.0	46.0	49.3	43.6
	21.6	23.7	34.3	37.7	37.3	38.6	46.3	48.3	44.3
7	15.7	24.6	32.0	40.0	31.7	34.7	41.0	45.7	43.0
	17.3	23.6	32.0	38.4	30.4	34.7	39.3	43.0	42.3
	15.0	24.6	33.0	38.0	29.4	32.0	39.3	48.4	43.6
8	14.6	20.0	26.7	36.6	31.0	42.3	39.0	40.0	32.0
	16.0	20.7	28.4	38.0	27.0	39.3	43.4	39.0	31.0
	16.6	22.7	29.4	38.6	29.7	39.3	40.0	36.0	30.3
9	21.7	27.3	34.4	37.0	36.3	38.7	41.6	44.6	36.3
	16.3	26.3	34.4	31.3	36.3	42.0	43.0	42.6	38.6
	18.0	22.0	36.0	33.0	34.0	42.4	42.6	42.6	37.0
10	15.7	22.3	33.3	35.7	34.7	31.0	36.3	42.6	41.0
	18.7	20.7	33.0	35.4	34.7	29.7	36.0	39.3	38.3
	24.0	21.7	33.0	36.7	34.0	30.0	33.0	39.6	38.7
<b>Mean [dB]</b>	<b>18.5</b>	<b>23.3</b>	<b>32.3</b>	<b>36.7</b>	<b>33.2</b>	<b>36.5</b>	<b>40.0</b>	<b>41.6</b>	<b>38.4</b>
<b>Std dev [dB]</b>	<b>3.0</b>	<b>2.1</b>	<b>2.4</b>	<b>2.5</b>	<b>2.8</b>	<b>4.2</b>	<b>3.5</b>	<b>3.7</b>	<b>3.6</b>



**6.1.2 Attenuation classes**

**Measurement conditions:** When attenuation is measured in accordance with ANSI S3.19, an attenuation class shall be assigned to each HPD based on its ability to provide minimum octave-band sound attenuations as set forth in Table 3.

**Result:** **Class A**

Frequency [Hz]	Octave band attenuation results [dB]	Minimum attenuation [dB]		
		<b>Class A</b>	<b>Class B</b>	<b>Class C</b>
125	18.5	10	5	None
250	23.3	18	12	None
500	32.3	26	16	None
1000	36.7	31	21	11
2000	33,2	33	23	13
3150	36.5	33	23	13
4000	40.0	31	21	11
6300	41.6	33	23	13
8000	38.4	33	23	13

**6.2.2 Force measurements for earmuffs**

Measurement conditions: Over-the-head earmuff  
 Temperature: 24,3 °C  
 Humidity: 39 %

**Results:**

Sample	1	2	3	4	5	6
<b>Test height / width</b>	<b>Force [N]</b>					
<b>130 / 145</b>	12.6	12.7	12.7	13.4	13.1	13.2

Mean value: 13.0 N

**7.1 Required packaging information**

**Requirements:** The smallest package in which the hearing protector is sold shall include, either on the package or as an insert, the following information (in English and French):

- a) NRR and attenuation class of the HPD (see Table 3);
- b) A warning that maximum attenuation will only be achieved if the HPD is properly fitted
- c) Contact details such as a telephone number or a website for

Inclusion of SNR(SF84) is optional.

**7.2 Additional packaging information**

The following information regarding the construction, performance, and use of hearing protectors shall be provided by the manufacturer as part of the HPD packaging, where practicable, or shall be readily available (e.g., on a manufacturer's website or upon request by the user):

- a) Instructions on the selection, care, and use of the hearing protector (for guidance, see Clause 11);
- b) Mean sound attenuation in decibels at octave bands centered at 125, 250, 500, 1000, 2000, 4000, and 8000 Hz for each test subject. Mean attenuations and standard deviations shall be computed according to the respective standard, and the measurement standard shall be cited (either ANSI S3.19 or ANSI/ASA S12.6);
- c) For earmuffs, semi-insert plus, and semi-aural plugs, a measurement of the force exerted against the side of the head (see Clause 6.2);
- d) The identity of the test laboratory where each of the performance characteristics set forth in Items b) and c) were determined;
- e) The model(s) of hard hat(s) tested in combination with earmuffs;
- f) The direction that users of hard hats combined with earmuffs shall refer to CSA Z94.1; and
- g) Details of any maintenance requirements and a list of the replacement spare parts that are available.

**Remark:**

The information according to paragraphs 7.1 and 7.2 of Z94.2-14 shall be supplied with the ear muffs. This review is not part of this test report.