I. Device under test

Test object:	Over-the-head earmuff
Trade name / Model reference:	HEA 371 AirLink 2085 WI407
State of construction:	Pre-Production
Serial No.:	See chapter III.
Manufacturer:	Globalsys
Country:	France
Arrival test sample:	2018-07-23

AirLink 2085 WI407

Issue date of test report: 2018-10-30

Amount of pages: 18 Enclosures: Manufacturer Declaration

Test conducted by: Anja Biedermann

Reviewed by: Christian Gerdes

PZT GmbH
Bismarckstraße 264 B
D-26389 Wilhelmshaven
Germany

Accredit Test Laboratory of the Federal Republic of Germany by
Akkreditiertes Prüflabor der Bundesrepublik Deutschland durch die

DAkkS Deutsche Akkreditierungsstelle D-PL-12127-01-01

HEA 371

II. Client:

Globalsys
12 avenue des coquelicots
94380 Bonneuil sur Marne
France

Contact Person: Bruno Henriques
Tel.-No.: +33 143994217
E-Mail: b.henriques@globalsys.fr
WEB: www.globalsys.fr

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
WI407	1	2084	X0573
	2	2085	X0574
	3	2086	X0575
	4	2087	X0576

IV. Accredited Laboratory

PZT GmbH
Bismarckstraße 264 B
26389 Wilhelmshaven
Germany
Tel.-No.: +49 (0) 44 21 / 70340
Fax-No.: +49 (0) 44 21 / 70421
E-Mail: office@pzt-lab.de

Deutsche Akkreditierungsstelle D-PL-12127-01-01

Accredit by DAkks Certificate No. D-PL-12127-01-01
Notified Body: EU-Identification Number: 1974

Reference: Ge / AB

Third-party laboratory: --

V. Testing Standards:

AS/NZS 1270:2002	Australia / New Zealand Standard Acoustics – Hearing protectors

VI. Conformance test conducted on: 2018-10-08 to 2018-10-12

VII. Testsetup (TS)

The measurements were conducted at measurement station TS 1 and TS 2
The measuring equipment is calibrated regularly; the measuring devices are maintained regularly.

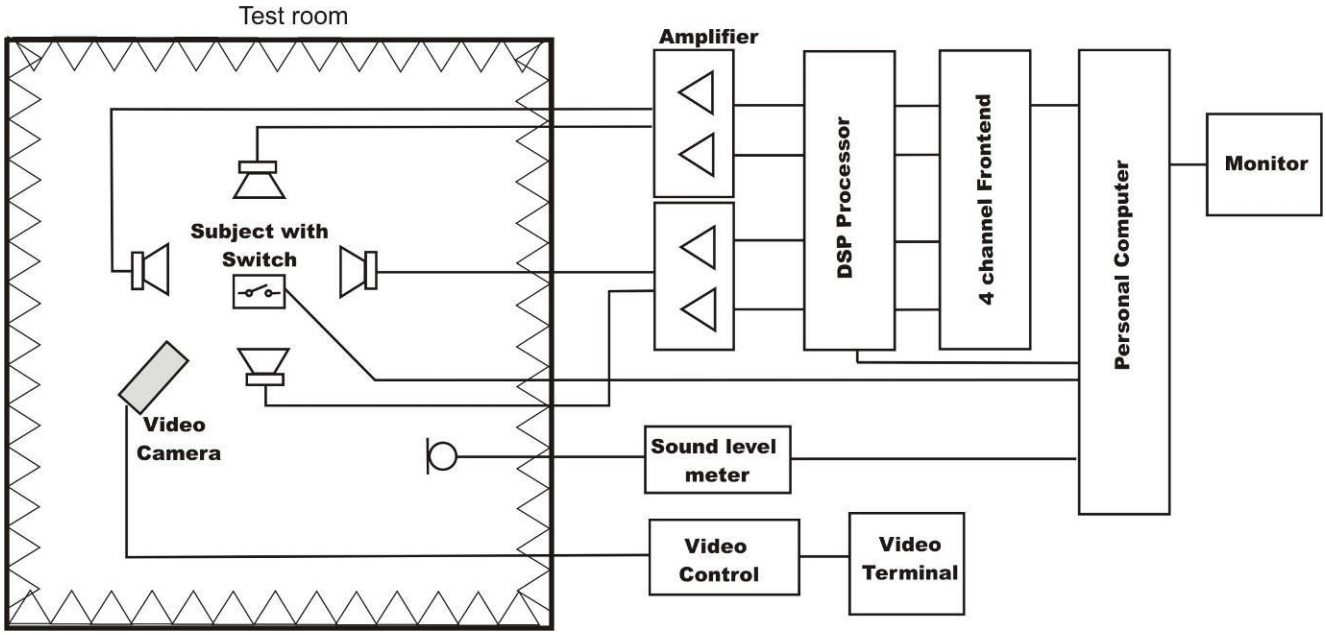

Figure1: Schematic block diagram of the test setup.

Description of the room.

The measurement is carried out in a semi-anechoic room. The background noise in the test room meets the requirements of the standard also the reverberation time. The sound field is realized with 4 speakers and incoherent noise sources. The subject is sitting in the middle of the sound field and is observed by a video camera.

Description of the acoustical test procedure.

For the determination of the attenuation of the hearing protector the subject's hearing threshold with and without hearing protector is measured (REAT procedure). A pulsed "pink" noise of one third octave band width at octave band centre frequencies in the range 125 Hz to 8000 Hz is used. The "Bekesy" tracking technique is used, based on a PC System which automates the procedure. The subjects press a switch when they hear the pulsed tone which is then decreasing and releases the switch when the tone disappears. Then the tone increases and the subjects press the switch when they hear the pulsed tone again. After 5 cycles the measurement is stopped and from the last 3 cycles the mean threshold is calculated.
The real attenuation is calculated by "occluded threshold minus unoccluded threshold".
The measurement is conducted with at least 20 subjects for ear plugs which are selected on the basis of them being relatively inexperienced in the use and fitting of hearing protectors. The subjects are 18 years or older and passed the HL requirement during audiometric test. The so-called "subject-fit method" procedure is used for testing. The experimenter does not allow supporting the fitting process of the hearing protector. Only the instructions that are normally provided by the supplier of the device may be used by the test subject plus fitting noise which is switch off when the subject indicate that they complete the fitting of the hearing protector.

VIII. Testing environment

The climatic conditions in acc. were continuously controlled during the approval test.
The requirements according to EN 13819-2002 were met.

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

IX. General notes

X. Abbreviations

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

X Fitting Instruction:

GLOBALSYS

AirLink 2085

Ramp Wireless Interphone

Activate / deactivate Push To Talk

Battery pack

Subscription

LED

GLOBALSYS
+33 1 43 99 42 17
sales@globalsys.fr
www.globalsys.fr
131 chemin des bassins, 94000 Créteil, France

GLOBALSYS

HEA 371 NextGen Ramp Aviation Headset

User Manual

- Attenuation : H : 33 dB ; M : 31dB ; L : 23 dB ; **SNR : 31 dB**
- **EN352**
- Advanced Ergonomics
- Push To Talk options : On Cup or On-Chest (along cable)

GLOBALSYS

HEA 371 NextGen
Ramp Aviation Headset
User Manual

Push To Talk

UP = speak continuously

MIDDLE = Listen only

DOWN : speak temporarily

Pull the earcups to fit your head

Spare parts

Left and Right cushion foam Ref. 13#371L & 13#371R

Microphone Foam Ref. 03_002

Internal Foam Ref. 31#371

Microphone should be close to your mouth (less than 1cm)

« *TALK* » inscription and the *ARROW* should be in front of your mouth

GLOBALSYS
☎ +33 1 43 99 42 17
sales@globalsys.fr
www.globalsys.fr
12, avenue des Coquelicots Bonneuil sur Marne FR

Content

Results:

2 General Requirements

2.1 Design and Construction

2.1.1 General

P

Requirements: All parts shall be finished smooth and free from sharp edges and from irregularities that could be a potential hazard or cause discomfort to the wearer.
Hearing protectors, other than disposable or user formable earplugs, shall be durable in construction

Result: no deviations and irregularities observed

2.1.2 Earmuffs

P

Requirements: All edges of earmuffs which are in contact with the earmuff cushions shall be rounded, finished smooth, and free form sharp edges which could damage to the cushions.
Over the head straps shall be supplied with all earmuffs designed to allow the clampband to be worn behind the neck or under the chin

Result: See Manufacturer's Declaration, Appendix 1

2.2 Materials

P

Result: See Manufacturer's Declaration, Appendix 1

2.3 Wearer Information

Remark

The information according to paragraphs 2.3 AS/NZS 1270:2002 shall be supplied with the hearing protector. This review is not part of this test report.

2.4 Marking

The hearing protector shall be durably marked with the following information:

a) The name, trade mark or other identification of the manufacturer.

☐ available ☒ shall be affixed at series products

b) The Product identification, model designation or catalogue number

☐ available ☒ shall be affixed at series products

c) Whether the ear-plugs are disposable, user formable, or other

☐ available ☐ shall be affixed at series products ☒ not applicable

d) In the case of ear-muffs intended by the manufacturer to be worn in a particular orientation, an indication of the FRONT and/or TOP of the cups, and/or an indication of LEFT and RIGHT cup.

☒ available ☐ shall be affixed at series products ☐ not applicable

3.2 Test Procedures

3.2.4 Clamping force test

P

Requirements:

Results: Over-the-head ear-muffs

Sample	1	2	3	4
Test height/width	Force [N]			
122 / 135 (S)	-	-	-	-
130 / 145 (M)	-	-	-	-
135 / 150 (L)	11.6	12.1	12.0	12.0

Results: Behind-the-head ear-muffs

Sample	1	2	3	4
Test height/width/depth	Force [N]			
122 / 135 / 75 (S)	N/A	N/A	N/A	N/A
130 / 145 / 90 (M)	N/A	N/A	N/A	N/A
135 / 150 / 105 (L)	N/A	N/A	N/A	N/A

Results: earmuffs with nape bands

Sample	1	2	3	4
Test height/width	Force [N]			
122 / 135 (S)	N/A	N/A	N/A	N/A
130 / 145 (M)	N/A	N/A	N/A	N/A
135 / 150 (L)	N/A	N/A	N/A	N/A

Results: earmuffs mounted on industrial safety helmets

Sample	1	2	3	4
Test height/width	Force [N]			
115 / 135 (S)	N/A	N/A	N/A	N/A
130 / 145 (M)	N/A	N/A	N/A	N/A
140 / 150 (L)	N/A	N/A	N/A	N/A

3.2.5 Dry heat test

P

Requirements: The hearing protector shall not damage- noticeable deformation.

Measurement condition:
The hearing protector shall be placed in a test chamber at room temperature. The conditions of the chamber shall be adjusted to 50 +/- 2°C and a relative humidity between 5 percent and 15 percent. The hearing protector shall be kept in these conditions for at least 16 h.

Result:

No of Samples	Damages
8	None

3.2.6 Low temperature drop test

3.2.6.2 Headband earmuffs

P

Requirements: The hearing protector shall not damage …

Measurement condition:
temperature of -6 °C +/- 2°C
temperature of -20 +/- 3 °C (EN 13819 Part 1)
hearing protector place for 4h in test chamber
conduct within 10 s the drop test on steel plate (500 / 500 / 10 mm)

Results:

Sample	Damages
1	None
2	None
3	None
4	None
5	

3.2.6.3 Helmet mounted earmuffs

N/A

Requirements: The hearing protector shall not damage …

Measurement condition:
temperature of -6 °C +/- 2 °C
temperature of -20 +/- 3 °C (EN 13819 Part 1)
hearing protector place for 4 h in test chamber
conduct within 10 s the drop test on steel plate (500 / 500 / 10 mm)

Results:

Sample	Damages
1	
2	
3	
4	
5	

3.2.7 Headband flexing

P

Measurement condition:
1000 cycles at a rate of 10 to 12 cycles per minute.
Minimum distance of the panels: at least 25 mm, max. 200 +/- 5 mm

Sample	Changes, Damages
1	None
2	None
3	None
4	None
5	
6	

3.2.8 Cleaning **P**

Requirements:

The hearing protector shall be thoroughly cleaned and disinfected according to the manufacturers instruction

3.2.9 Second measurement of clamping force **P**

Requirements:
The headband force shall not change by more than +/- 20 %

Measurement conditions:
The change of the headband force are measured after the ear-muffs have been subjected to the appropriate conditioning and tests: drop test, bending test, cleaning and then 1 h at ambient temperature and humidity

Result: headband force

Mode:	Applicable
Over-the-head ear-muffs	
Behind-the-head ear-muffs	
earmuffs with nape bands	
earmuffs mounted on industrial safety helmets	

Sample	1	2	3	4
measured [N]	10.8	10.8	10.8	10.7
max. headband force from 3.2.4 [N]	11.6	12.1	12.0	12.0
Change [N]	0.8	1.3	1.2	1.3
Result [%]	**6.9**	**10.7**	**10.0**	**10.8**

3.2.10 Real ear Attenuation

P

Measurement conditions:

Measurement conducted with 4 earmuff and 16 subjects. Each earmuff sample is worn by four subjects.

The two models available were spread among the subjects during the measurements. No significant deviation was apparent.

Number of subjects rejected: 0
Number of retests performed: 0

Model reference:

Mean Reference Thresholds [dB]

	octave band centre frequency [Hz]						
	125	**250**	**500**	**1000**	**2000**	**4000**	**8000**
Mean [dB]	20.9	12.0	2.6	1.2	0.1	-2.4	10.0

Result:

Sound – Attenuation values for each subject

Subject ID	**125 Hz**	**250 Hz**	**500 Hz**	**1000 Hz**	**2000 Hz**	**4000 Hz**	**8000 Hz**
1	18.4	21.0	34.6	37.7	38.0	41.4	39.0
2	19.4	21.4	34.7	39.3	35.7	39.1	40.3
3	13.6	18.6	30.0	33.0	30.7	38.7	32.6
4	19.7	24.7	34.3	36.3	32.4	45.0	44.4
5	23.4	22.0	32.4	35.0	25.0	38.6	36.0
6	17.3	25.7	29.7	34.6	30.6	35.3	38.7
7	20.6	29.0	33.0	37.7	32.7	32.0	37.7
8	22.0	25.6	35.0	42.0	34.4	41.0	39.7
9	18.3	14.4	23.7	29.3	42.0	38.0	26.0
10	10.4	18.7	27.0	32.3	31.0	40.4	19.0
11	14.4	16.7	23.3	31.0	34.3	30.0	29.6
12	21.6	18.4	24.7	30.7	32.4	34.3	28.3
13	17.3	21.0	31.0	31.7	36.6	40.6	39.0
14	20.7	25.7	35.6	39.0	37.3	47.0	39.7
15	17.7	25.7	34.3	41.4	29.7	30.6	31.4
16	15.3	19.3	27.0	32.3	34.0	46.4	39.6
Mean	**18.1**	**21.7**	**30.6**	**35.2**	**33.6**	**38.7**	**35.1**
Standard Deviation	**3.4**	**4.0**	**4.3**	**4.0**	**4.0**	**5.2**	**6.7**

Mean - SD	**14.7**	**17.7**	**26.3**	**31.2**	**29.6**	**33.5**	**28.4**

SLC_{80} =	**30 dB**	**Class:**	**5**