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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 25498.1-2010

Replacing GB/T 7614-1987

**Electroacoustics -- Simulators of human head and ear -- Part 1:
Ear simulator for the calibration of supra-aural earphones**

电声学 人头模拟器和耳模拟器 第1部分：校准压耳式耳机用耳模拟器

(English Translation)

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References

Foreword

GB/T 25498 "electro-acoustics simulator head and ear simulator" is divided into seven sections.

--- Part 1. Align the ear headphones with the ear simulator;

--- Part 2. calibration of audiometric headphones with high-frequency range extending interim acoustic coupler;

--- Part 3. Calibration of the ear-type headphones with audiometry acoustic coupler;

--- Part 4. measuring insert earphones clogged ear simulator;

--- Part 5. Measurement with hearing aids and earphones earbud headphones 2cm3 coupler;

--- Part 6. measurement of bone vibrators force coupler;

--- Part 7. air conduction hearing aids acoustic measurements Head and Torso Simulator.

This section GB/T 25498 Part 1.

This section identical with IEC 60318-1:1998 "electro-acoustics simulator head and ear simulator - Part 1. Align the ear headphones with the ear simulator "(in English).

For ease of use, this section made the following editorial changes.

a) with a decimal point instead of a comma as the decimal point, " ";

b) Remove IEC 60318-1:1998 Foreword.

This Part replaces GB/T 7614-1987 "calibration of audiometric headset with wideband type artificial ear." this section of the main changes compared to 7614-1987 GB/T as follows.

- a) of this section according to GB/T 1.1-2000 rules to increase the "Normative references" chapter;
- b) the name of the section from the "calibration of audiometric headset with wideband type artificial ear" to "electric and acoustic simulator poll Ear Simulator - Part 1. Align the ear headphones with ear simulator ";
- c) Article 4.1 increases the distance h dimensions and tolerances between the upper edge of the ear simulator plane microphone diaphragm;
- d) Chapter 6 Calibration content increased environmental tolerance requirements and environmental conditions.

This section in Appendix A and Appendix B is an informative annex.

This part is proposed by the Ministry of Industry and Information Technology of the People's Republic of China.

This part of the National Standardization Technical Committee electro-acoustics (SAC/TC23).

This part of the main drafting units. China Electronics Technology Group Corporation Institute.

Participated in the drafting of this section. Hubei Provincial Institute of Measurement and Testing Technology, Industry and Telecommunications Research Institute of the Ministry of Information China Telecommunication Technology Labs, Hangzhou Aihua Instrument Co., Ltd., Hung sound equipment factory (4380) Jiaying branch.

1 Scope

This section GB/T 25498 specifies the calibration of audiometric ear for analog phones and electro-acoustic measurement with a silent leak the ear headphones Structure and properties. This section provides an ear simulator which frequency range is 20Hz ~ 10000Hz.

Note: This does not apply to means for calibrating Headphones. However, in order to calibrate circumaural audiometry headphones, IEC 60318-2 specifies the use of this section gives ear molds Quasi constituted interim acoustic coupler adapter.

2 Normative references

The following documents contain provisions which, through reference GB/T 25498 in this section constitute provisions of this section. For dated reference documents Member, all

subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

GB/T 20441.4-2006 Measurement microphones - Part 4. Specifications for working standard microphones (IEC 61094-4:1995, IDT)

3 Terms and Definitions

The following terms and definitions apply to this part of the GB/T 25498 of.

Ear Simulator Device calibration headset, there are microphones for measuring sound pressure and calibrated within a band of acoustic impedance close to the overall average human ear Acoustic impedance of the acoustic coupler.

The ear headphones supra-aural earphone Close to the ear headphones.

Headphones circumaural earphone Having a large enough coverage, including the inner ear cavity headphones.

4.1 Overview

Ear simulator consists of three acoustic coupling cavity components. Volume size conical main chamber and three coupling cavity defined in Figure 1. The coupling element Lumped values shall be adjusted as follows.

$L_2 = 5 \times 10^2 \text{ Pa} \cdot \text{s}^2 \cdot \text{m}^{-3}$ $L_3 = 1 \times 10^4 \text{ Pa} \cdot \text{s}^2 \cdot \text{m}^{-3}$ $R_2 = 6.5 \times 10^6 \text{ Pa} \cdot \text{s} \cdot \text{m}^{-3}$ $R_3 = 2 \times 10^7 \text{ Pa} \cdot \text{s} \cdot \text{m}^{-3}$ L_2 and L_3 represent sound quality, R_2 and R_3 represents acoustic resistance. These values correspond to the specified test conditions and tolerances shall comply with the provisions of 4.2.

NOTE: Volume V_1 include equivalent volume of the microphone cover, protection grid consequential amendments were also taken into account.

Between the upper edge of the ear simulator and the microphone diaphragm plane distance h should be $8.26 \text{ mm} \pm 0.05 \text{ mm}$.