

ICS 17.140.50
CCS M 72



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

GB/T 25102.2-2010

Replacing GB/T 6659-1986

**Electroacoustics -- Hearing aids -- Part 2: Hearing aids with
automatic gain control circuits**

电声学 助听器 第2部分：具有自动增益控制电路的助听器

(English Translation)

Issued on: September 2, 2010

Implemented on: April 1, 2011

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China**

Table of Contents

Preface	
Introduction	
1 Scope	
2 Normative reference document	
3 Terms and definitions	
4 Steady state input/output curve	
4.1 Enter the relationship between the sound pressure level and the output sound pressure level	
4.2 Measurement method	
5 Dynamic output characteristics	
5.1 Characteristic test	
5.2 Measurement method	
6 Nonlinear distortion	
6.1 Transient	
6.2 Harmonic distortion	
6.3 Intermodulation distortion	
7 Effect of battery or supply voltage variation on steady state and dynamic characteristics	
8 Single-channel AGC circuit with pure tone signal Hearing aid AGC Trigger frequency response	
8.1 Overview	
8.2 General conditions	
8.3 Test equipment	
8.4 Test conditions	
8.5 Measurements	
8.6 Frequency Response Record Figure	
9 With wideband steady state input signal with AGC circuit hearing aid frequency response	
9.1 General	
9.2 Test environment	
9.3 Test conditions	
9.4 Test equipment	
9.5 Measurement of frequency response	

9.6 Frequency Response Record Figure

Appendix A (informative) Measurement system Figure

Appendix B (informative) Smooth data display

Reference

Foreword

GB/T 25102 "electroacoustic hearing aids" is divided into 14 parts.

- Part 0. Measurement of electroacoustic characteristics;
- Part 1. Hearing aids with induction pickup coils;
- Part 2. Hearing aids with automatic gain control circuit;
- Part 3. Hearing equipment that is not completely worn on the listener;
- Part 4. Magnetic field strength of inductive loop systems for hearing aids;
- Part 5. Papillary joints of pluggable headphones;
- Part 6. Characteristics of hearing aid input circuits;
- Part 7. Measurement of the characteristics of the quality inspection of the hearing aid product;
- Part 8. Measurement of hearing aid characteristics under simulated operating conditions;
- Part 9. Measuring methods for hearing aids with output of bone shock absorbers;
- Part 11. Symbols and marks for hearing aids and their associated equipment;
- Part 12. Dimensions of electrical connector systems;
- Part 13. Electromagnetic compatibility (EMC);
- Part 14. Specification for digital interfaces.

This part is part 2 of GB/T 25102.

This part is modified using IEC 60118-2. 1983 "Hearing aids Part 2. Hearing aids with automatic gain control circuits" (English Edition) and IEC 60118-2. 1983 Amendment 1..1993 and IEC 60118-2. 1983 Amendment 2..1997. As in accordance with GB/T 1.1-2000 to add the normative reference document chapter, the IEC 60118-2. 1983 chapter 2 purpose and the contents of Chapter 3 conditions moved to the introduction, So the chapter, the article number has changed in turn, the increase in the normative reference document for the second chapter, the original IEC 60118-2. 1983, 4,5,6,7,8 chapters for the third edition of this edition of Chapter 3, 4, 5, 6 and 7, and IEC 60118-2. 1983 Amendment

1..1993, Chapter 9, Chapter 8 of this edition, IEC 60118-2. 1983 Revision 2..1997 Added Chapter 10 for Chapter 9 of this release, and on the corresponding page with vertical double "||" lines Marked.

This part replaces GB/T 6659-1986 "Measurement method for electroacoustic characteristics of hearing aids with automatic gain control circuits".

Compared with GB/T 6659 - 1986, the main changes are as follows. In addition to editorial changes to the original, Plus a lot of new technical content. The main changes are as follows.

--- This part has been edited in accordance with GB/T 1.1-2000;

- in accordance with the provisions of GB/T 1.1-2000 to increase the "normative reference document" chapter, 1986 version of the purpose of Chapter 2 and the Chapter 3 of the contents of the contents of the move to the introduction, so the chapter, the article number followed by changes, increase the normative reference documents for Chapter 2, the original Chapter 4, 5, 6, 7 and 8 of the 1986 edition are chapters 3, 4, 5, 6 and 7 of this edition;

--- modified the original version of the 1986 version of the first chapter of the sixth chapter, the original 7.1 to 6.2, increase 6.1 transient and 6.3 intermodulation distortion;

--- Added chapters 8 and 9;

--- the original Chapter 4 to Chapter 3, an increase of 3.8,3.9,3.10,3.12,3.13,3.14,3.15 and other seven;

- Added Appendix A, Appendix B and references.

Appendix A and Appendix B of this section are informative.

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

This part is owned by the National Electrotechnical Standardization Technical Committee (SAC/TC23).

This part is responsible for the drafting unit. Tianjin hearing aid factory, the PLA General Hospital.

This part of the main drafters. Tang Huide, Yu Liming, Ji Fei, Chen Hongwen, Mo Qingrong.

This part of the previous version of the standard to replace the release of the situation.

--- GB/T 6659-1986.

Introduction

The purpose of this section is to simplify the measurement of certain characteristics of hearing aids with automatic gain control circuits. These measurements are made GB/T 25102.100-2010 "Electroacoustic hearing aids Part 0. Measurement of electro-acoustic properties" is not described, these measurement methods the role of automatic gain control is necessary.

This part of the measurement method can most directly reflect its characteristics, which does not rule out the use of other methods can be the same results.

Refer to IEC 60268-8 "Sound System Equipment Part 8. Automatic Gain Control Unit".

In addition to the measurements described here, can be carried out according to GB/T 25102.100-2010. However, there is an automatic gain control device , The need to explain the working conditions.

Electroacoustic hearing aids Part 2. with automatic gain control circuit of hearing aids

1 Scope

1.1

This section specifies the dynamic operating characteristics and steady-state operating characteristics of the hearing aid with automatic gain control and its measurement method.

This section only provides a variety of different characteristics and related measurement methods, no provisions of the performance indicators.

This section applies to various types of hearing aids with automatic gain control circuitry.

1.2

This part includes a device that has a compression or limiting function for the envelope of the input signal and also includes a long-term average output control Device.

- a) The automatic gain control circuit is used to compress or reduce the dynamic range of the output sound pressure to maintain the integrity of the output signal.
- b) The automatic gain control circuit is usually used instead of the clipping device for clipping.

When the input signal is large, the input/output characteristics tend to be straight. The main effect of the limiting device is to prevent the hearing aid from being output Big voice into the ear of the listener.

1.3

This part does not include.