

Australian Standard[®]

HEARING AIDS

**Part 2—HEARING AIDS WITH
AUTOMATIC GAIN
CONTROL CIRCUITS**

This Australian standard was prepared by Committee AK/11, Audiology. It was approved on behalf of the Council of the Standards Association of Australia on 25 November 1986 and published on 2 February 1987.

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Audiological Society of Australia
Better Hearing Australia
Department of Defence
Hearing Aid Council of Australia
National Acoustical Laboratories
Otolaryngological Society of Australia
State Pollution Control Commission of New South Wales
University of Melbourne
University of Queensland

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CONTROL CIRCUITS**

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PREFACE

The standard was prepared by the Association's Committee on Audiology. It is identical with and has been reproduced from IEC Publication 118-2, Hearing Aids, Part 2: Hearing Aids with Automatic Gain Control Circuits. It supersedes (in part) AS 1088—1971, Methods of Measurement of the Electro-acoustic Characteristics of Air Conduction Hearing Aids.

The purpose of this standard is to facilitate measurements of certain characteristics of hearing aids with automatic gain (AGC) circuits that are not described elsewhere in AS 1088.0, Hearing Aids, Part 0—Measurement of Electroacoustical Characteristics, and which are considered necessary for a physical description of the function of the automatic gain control. This standard should be read in conjunction with AS 1088.0.

For the purpose of this Australian standard, the text of the IEC standard used herein should be modified as follows:

Cross-reference: The reference to the IEC standard should be replaced by reference to the Australian standard as follows:

Reference to IEC standard

IEC 118-0, Hearing Aids, Part 0:
Measurement of Electroacoustical
Characteristics

Appropriate Australian standard

AS 1088.0, Hearing Aids, Part 0—
Measurement of Electroacoustical
Characteristics

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
HEARING AIDS

PART 2—HEARING AIDS WITH AUTOMATIC GAIN CONTROL CIRCUITS

1. Scope

1.1 This standard applies to the hearing aids of any type with automatic gain control (AGC) circuits.

This standard gives uniform methods for specifying dynamic and static performance characteristics of hearing aids with AGC circuits together with the relevant methods of measurement for these characteristics.

This standard is confined to a description of the different characteristics and the relevant methods of measurement. It does not attempt to specify performance requirements.

1.2 This standard includes devices which have compression and/or limiting properties with respect to the envelope of the input signal. Devices which control the long-term average output level are also included.

a) AGC is employed to obtain compression, or the reduction of the dynamic range of the sound at the output, with the object of preserving the integrity of the input waveform.

b) AGC circuits instead of clipping devices are often used for limiting purposes.

A limiting effect occurs when the input/output characteristic flattens out at higher input levels. Limiting action is mainly used as a means of preventing excessive output sound from the hearing aid from reaching the listener's ear.

1.3 This standard does not include:

a) Expanders.

b) Clipping devices, which cut off the signal peaks above a certain level; such devices differ basically from AGC circuits, which, in a steady state, tend to preserve the waveform of the input signal.

Note. — An AGC circuit with very short recovery time may cause considerable distortion, especially in the low-frequency range. This should be given special attention.

2. Object

2.1 The purpose of this standard is to facilitate measurements of certain characteristics of hearing aids with AGC circuits that are not described elsewhere in IEC Publication 118-0: Hearing Aids, Part 0: Measurement of Electroacoustical Characteristics, and which are considered necessary for a physical description of the function of the automatic gain control.