AS 60118.2—2007
IEC 60118-2, Ed. 2.0 (1983)
Includes Amendment 1:1993
and Amendment 2:1997

Australian Standard®

Hearing aids

Part 2: Hearing aids with automatic gain control circuits

This Australian Standard® was prepared by Committee AV-003, Acoustics—Human Effects.
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The following are represented on Committee AV-003:

- Association of Accredited Certification Bodies
- Association of Australian Acoustical Consultants
- Association of Consulting Engineers Australia
- Audiological Society of Australia
- Australasian Faculty of Occupational Medicine
- Australian Acoustical Society
- Australian Chamber of Commerce and Industry
- Australian Council of Trade Unions
- Australian Industry Group
- Department of Consumer & Employment Protection, WorkSafe Division, WA
- Department of Labour, NZ
- National Acoustic Laboratories
- New South Wales Nurses, Association
- New Zealand Audiological Society
- Royal Institute of Naval Architects
- Safety Institute of Australia
- The Australian Society of Otolaryngological Head and Neck Surgery
- Victorian WorkCover Authority
- WorkCover New South Wales

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Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through public comment period.

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Australian Standard®

Hearing aids

Part 2: Hearing aids with automatic gain control circuits

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee AV-003, Acoustics—Human Effects, to supersede AS 1088.2—1987.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this Standard is to specify dynamic and static performance characteristics of hearing aids with AGC circuits together with the relevant methods of measurement for these characteristics.

This Standard is identical with, and has been reproduced from IEC 60118-2, Ed. 2.0 (1983), *Hearing aids – Part 2: Hearing aids with automatic gain control circuits* including its Amendment 1:1993 and Amendment 2:1997, which have been incorporated into the source text.

As this Standard is reproduced from an International Standard its number does not appear on each page of text and its identity is shown only on the cover and title page.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian Standard*	
IEC		AS	
60118	Hearing aids	60118	
60118-0	Part 0: Measurement of electroacoustical characteristics (including its Amendment 1:1994)	60118.0	Part 0: Measurement of electroacoustical characteristics
60118-1	Part 1: Hearing aids with induction pick-up coil input	60118.1	Part 1: Hearing aids with induction pick-up coil input
60118-6	Part 6: Characteristics of electrical input circuits for hearing aids	60118.6	Part 6: Characteristics of electrical input circuits for hearing aids
60263	Scales and sizes for plotting frequency characteristics and polar diagrams	—	
60268	Sound system equipment		
60268-8	Part 8: Automatic gain control devices	—	
60711	Occluded-ear simulator for the measurement of earphones coupled to the ear by ear inserts	2928	Occluded-ear simulator for the measurement of earphones coupled to the ear by ear inserts
61260	Electroacoustics—Octave-band and fractional-octave-band filters	AS/NZS 4476	Acoustics—Octave-band and fractional-octave-band-filters

An informative annex is only for information and guidance.

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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 60118-0: *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.

2.2 In general, the methods of measurement recommended are those which are considered to be the most directly related to the characteristics. This does not exclude the use of other stated methods which will give equivalent results.