

# INTERNATIONAL STANDARD



Audio, video and related equipment – Determination of power consumption –  
Part 6: Audio equipment



## THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2015 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

IEC Central Office  
3, rue de Varembe  
CH-1211 Geneva 20  
Switzerland

Tel.: +41 22 919 02 11  
Fax: +41 22 919 03 00  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

### About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

### About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

#### IEC Catalogue - [webstore.iec.ch/catalogue](http://webstore.iec.ch/catalogue)

The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

#### IEC publications search - [www.iec.ch/searchpub](http://www.iec.ch/searchpub)

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, replaced and withdrawn publications.

#### IEC Just Published - [webstore.iec.ch/justpublished](http://webstore.iec.ch/justpublished)

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and also once a month by email.

#### Electropedia - [www.electropedia.org](http://www.electropedia.org)

The world's leading online dictionary of electronic and electrical terms containing more than 30 000 terms and definitions in English and French, with equivalent terms in 15 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

#### IEC Glossary - [std.iec.ch/glossary](http://std.iec.ch/glossary)

More than 60 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

#### IEC Customer Service Centre - [webstore.iec.ch/csc](http://webstore.iec.ch/csc)

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: [csc@iec.ch](mailto:csc@iec.ch).

Document Review generated by EVS

# INTERNATIONAL STANDARD



**Audio, video and related equipment – Determination of power consumption –  
Part 6: Audio equipment**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

ICS 33.160.10

ISBN 978-2-8322-2686-5

**Warning! Make sure that you obtained this publication from an authorized distributor.**

## CONTENTS

|  |    |
|--|----|
| FOREWORD.....  | 4  |
| INTRODUCTION.....  | 6  |
| 1 Scope.....   | 7  |
| 2 Normative references .....                                 | 7  |
| 3 Terms, definitions and abbreviations .....                 | 7  |
| 3.1 Terms and definitions.....                               | 7  |
| 3.2 Abbreviations.....                                       | 9  |
| 4 Specification of operating modes and functions .....       | 9  |
| 5 Measurement conditions.....                                | 10 |
| 5.1 General.....   | 10 |
| 5.2 Power source.....  | 11 |
| 5.3 Environmental conditions .....                           | 11 |
| 5.4 Acoustical environment.....                              | 11 |
| 5.5 Adjustment of controls.....                              | 11 |
| 5.6 Power measurement instrument.....                        | 11 |
| 5.7 Signal generation.....                                   | 11 |
| 5.8 Quantities to be specified and their accuracy .....      | 11 |
| 5.9 Loading of terminals .....                               | 11 |
| 5.10 Output level .....                                      | 11 |
| 5.10.1 General .....   | 11 |
| 5.10.2 Output level at 1 W.....                              | 11 |
| 5.10.3 Output level at one-eighth of non-clipped power ..... | 11 |
| 5.11 Sound level adjustments .....                           | 12 |
| 5.12 Sound pressure level meter .....                        | 12 |
| 5.13 Additional functions.....                               | 12 |
| 5.14 Operating modes .....                                   | 12 |
| 5.14.1 General .....   | 12 |
| 5.14.2 On modes.....   | 12 |
| 5.14.3 Partial On modes.....                                 | 12 |
| 5.14.4 Off mode .....  | 13 |
| 5.14.5 Auto power down function.....                         | 13 |
| 6 Measurement procedure.....                                 | 13 |
| 6.1 Order of measurements .....                              | 13 |
| 6.2 Setup.....   | 14 |
| 6.2.1 General .....  | 14 |
| 6.2.2 Audio equipment terminals and settings.....            | 15 |
| 6.2.3 Compact audio system including loudspeaker.....        | 16 |
| 6.3 Power measurement .....                                  | 16 |
| 6.3.1 General .....  | 16 |
| 6.3.2 Off and Partial On modes .....                         | 16 |
| 6.3.3 On modes.....  | 17 |
| 6.3.4 Auto power down.....                                   | 18 |
| Annex A (informative) Location for sound pressure test ..... | 19 |
| A.1 General.....   | 19 |
| A.2 Example test locations .....                             | 19 |

Bibliography..... 21

Figure 1 – Order of measurements..... 14

Figure 2 – Separate components ..... 14

Figure 3 – Audio systems (non separable components) ..... 15

Figure 4 – Audio systems (separable components) ..... 15

Figure 5 – Compact audio system including loudspeaker ..... 15

Figure 6 – Auto power down function ..... 18

Figure A.1 – Top view ..... 19

Figure A.2 – Top and front view ..... 20

Figure A.3 – Side view..... 20

Table 1 – Operating modes and functions ..... 10

This document is a preview generated by EVS

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**AUDIO, VIDEO AND RELATED EQUIPMENT –  
DETERMINATION OF POWER CONSUMPTION –****Part 6: Audio equipment**

## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62087-6 has been prepared by technical area 12: AV energy efficiency and smart grid applications, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

This first edition of IEC 62087-6 cancels and replaces Clause 9 of IEC 62087:2011. This standard together with IEC 62087-1 to IEC 62087-5 cancels and replaces IEC 62087:2011. This International Standard constitutes a technical revision.

This edition includes the following significant technical changes with respect to Clause 9 of IEC 62087:2011.

- The definition of the input signal is changed.
- The output power measurement of amplifiers is changed.
- The measurement method for compact audio systems including loudspeakers is added.

- Methods for measuring On-decoding, idle and auto power down functions are added.
- Portions of the document related to general measuring conditions and procedures are now contained in IEC 62087-1:2015.
- Portions of the document related to signals and media are now in IEC 62087-2:2015.
- The titles have changed in order to comply with the current directives and to accommodate the new multipart structure of IEC 62087.

The text of this standard is based on the following documents:

| FDIS          | Report on voting |
|---------------|------------------|
| 100/2471/FDIS | 100/2501/RVD     |

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

A list of all parts in the IEC 62087 series, published under the general title *Audio, video, and related equipment – Determination of power consumption*, can be found on the IEC website.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

## INTRODUCTION

This part of IEC 62087 specifies methods of measurements for the power consumption of audio equipment for consumer use. It is used in conjunction with IEC 62087-2, which specifies signals and media. This International Standard includes measurements in the On mode (operation), which was previously identified as “On (average) mode” and adds methods for measuring power consumption in the On-play, On-decoding, and idle sub-modes. These methods consider the effects of the auto power down function. Additionally, this standard includes determination of power consumption in the Partial On mode.

This standard has been divided into multiple parts. At the time of publication of this part, the following parts are planned or published.

- Part 1: General
- Part 2: Signals and media
- Part 3: Television sets
- Part 4: Video recording equipment
- Part 5: Set-top boxes (STB)
- Part 6: Audio equipment

This document is a preview generated by EVS

# AUDIO, VIDEO AND RELATED EQUIPMENT – DETERMINATION OF POWER CONSUMPTION –

## Part 6: Audio equipment

### 1 Scope

This part of IEC 62087 specifies the determination of the power consumption of audio equipment for consumer use.

The various modes of operation which are relevant for measuring power consumption are defined.

This standard is limited to audio equipment which can be connected to the mains. Audio equipment that includes a non-removable, main battery is not covered by this standard. Audio equipment may include any number of auxiliary batteries.

The measuring conditions in this standard represent the normal use of the equipment and may differ from other specific conditions, for example as specified in safety standards.

### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60268-5:2003, *Sound system equipment – Part 5: Loudspeakers*  
IEC 60268-5:2003/AMD1:2007

IEC 62087-1:2015, *Audio, video, and related equipment – Determination of power consumption – Part 1: General*

IEC 62087-2:2015, *Audio, video, and related equipment – Determination of power consumption – Part 2: Signals and media*

IEC 62301:2011, *Household electrical appliances – Measurement of standby power*

### 3 Terms, definitions and abbreviations

#### 3.1 Terms and definitions

For the purposes of this document, the terms and definitions in IEC 62087-1:2015, IEC 62087-2:2015, and the following apply.

##### 3.1.1

##### **additional functions**

functions that are not required for the basic operation of the device

Note 1 to entry: Functions other than a main function.