

# INTERNATIONAL STANDARD



---

**Audio, video and related equipment – Determination of power consumption –  
Part 4: Video recording 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 It also gives information on projects, replaced and withdrawn publications.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).



IEC 62087-4

Edition 1.0 2015-06

# INTERNATIONAL STANDARD



---

**Audio, video and related equipment – Determination of power consumption –  
Part 4: Video recording equipment**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

---

ICS 33.160.10

ISBN 978-2-8322-2684-1

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

## CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references .....	6
3 Terms, definitions and abbreviations .....	6
3.1 Terms and definitions.....	6
3.2 Abbreviations.....	7
4 Specification of operating modes and functions .....	7
4.1 General.....	7
4.2 Auto power down function .....	8
5 Measuring conditions for video recorders.....	9
5.1 Input signal .....	9
5.1.1 General .....	9
5.1.2 RF test signal .....	9
5.1.3 Broadband input signal .....	9
5.2 Input terminals .....	9
5.2.1 Analogue terrestrial input terminal .....	9
5.2.2 Cable television input terminal.....	10
5.2.3 Digital terrestrial input terminal .....	10
5.2.4 Satellite input terminal .....	10
5.3 Measurement procedure .....	10
5.3.1 General measuring conditions .....	10
5.3.2 Stabilization.....	10
5.3.3 Environmental conditions.....	10
5.3.4 Setup.....	10
5.3.5 Power measurements .....	11
Bibliography.....	15
 Figure 1 – Auto power down function .....	 14
 Table 1 – Operating modes and functions .....	 8
Table 2 – Matrix for multituner VRs .....	12

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**AUDIO, VIDEO AND RELATED EQUIPMENT –  
DETERMINATION OF POWER CONSUMPTION –****Part 4: Video recording 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 62087-4 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 62087-4 cancels and replaces Clause 7 of IEC 62087:2011. This standard together with IEC 62087-1 to IEC 62087-3 and IEC 62087-5 to IEC 62087-6 cancels and replaces IEC 62087:2011. This International Standard constitutes a technical revision.

This edition includes significant technical changes with respect to Clause 7 of IEC 62087:2011. The changes include fundamental and extensive revisions to cover video recorders such as DVD and BD types as well as recorders with removable solid state memory. Clause 7 has been revised in its entirety.

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

FDIS	Report on voting
100/2469/FDIS	100/2499/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 measurement for the power consumption of video recording equipment for consumer use.

IEC 62087:2011 revises methods for measuring power consumption of set top boxes mainly in the modes of On mode and Standby-active, high mode. These modes correspond to the active modes which are defined in IEC 62542:2013.

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

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

## Part 4: Video recording equipment

### 1 Scope

This part of IEC 62087 specifies methods of measurement for the power consumption of video recording equipment with removable media. It specifies the different modes of operation which are relevant for measuring power consumption.

The methods of measurement are applicable only for equipment which can be connected to the mains.

The measuring conditions in this standard represent the normal use of the equipment and may differ from specific conditions, as specified, for example, 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 60107-1:1997, *Methods of measurement on receivers for television broadcast transmissions – Part 1: General considerations – Measurements at radio and video frequencies*

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

IEC 62216:2009, *Digital terrestrial television receivers for the DVB-T system*

### 3 Terms, definitions and abbreviations

#### 3.1 Terms and definitions

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

##### 3.1.1

##### **additional functions**

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

##### 3.1.2

##### **buffering**

temporary storage of video and audio streams in some form of memory in order to perform time shifting functions

##### 3.1.3

##### **hard disk drive**

non removable media with a spinning disk for recording video and audio