

# SLOVENSKI STANDARD

## SIST EN 62087-2:2018

01-januar-2018

Nadomešča:  
SIST EN 62087:2012

---

### **Avdio, video in pripadajoča oprema - Ugotavljanje porabe energije - 2.del: Signali in mediji (IEC 62087-2:2015)**

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

Messverfahren für die Leistungsaufnahme von Audio-, Video- und verwandten Geräten - Teil 2: Signale und Medien (IEC 62087-2:2015)

Appareils audio, vidéo et matériel connexe - Détermination de la consommation de puissance - Partie 2: Signaux et supports (IEC 62087-2:2015)

**Ta slovenski standard je istoveten z: EN 62087-2:2016**

---

#### **ICS:**

17.220.20	Merjenje električnih in magnetnih veličin	Measurement of electrical and magnetic quantities
33.160.01	Avdio, video in avdiovizualni sistemi na splošno	Audio, video and audiovisual systems in general

**SIST EN 62087-2:2018**

**en,fr,de**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 62087-2:2018

<https://standards.iteh.ai/catalog/standards/sist/1621db13-a18a-4f5e-ac2d-c3dc9a478d95/sist-en-62087-2-2018>

EUROPEAN STANDARD

**EN 62087-2**

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2016

ICS 33.160.10

Supersedes EN 62087:2012 (partially)

English Version

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

Appareils audio, vidéo et matériel connexe - Détermination  
de la consommation de puissance -  
Partie 2 : Signaux et supports  
(IEC 62087-2:2015)

Messverfahren für die Leistungsaufnahme von Audio-,  
Video- und verwandten Geräten -  
Teil 2: Signale und Medien  
(IEC 62087-2:2015)

This European Standard was approved by CENELEC on 2015-07-10. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

[https://standards.iteh.ai/catalog/standards/sist/1621db13-a18a-4f5e-ae2d-](https://standards.iteh.ai/catalog/standards/sist/1621db13-a18a-4f5e-ae2d-c3dc9a478d95/sist-en-62087-2-2018)

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

**EN 62087-2:2016****European foreword**

The text of document 100/2467/FDIS, future edition 1 of IEC 62087-2, prepared by Technical Area 12 "AV energy efficiency and smart grid applications" of IEC/TC 100 "Audio, video and multimedia systems and equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62087-2:2016.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2016-07-08
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2019-01-08

This document supersedes EN 62087:2012 (partially).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

**Endorsement notice**

The text of the International Standard IEC 62087-2:2015 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60933-5	NOTE	Harmonized as EN 60933-5.
IEC 62087:2008	NOTE	Harmonized as EN 62087:2009 <sup>1)</sup> (not modified).
IEC 62087:2011	NOTE	Harmonized as EN 62087:2012 (not modified).
IEC 62087 Series	NOTE	Harmonized as EN 62087 Series.
IEC 62087-3	NOTE	Harmonized as EN 62087-3.
IEC 62087-4	NOTE	Harmonized as EN 62087-4.
IEC 62087-5	NOTE	Harmonized as EN 62087-5.
IEC 62087-6	NOTE	Harmonized as EN 62087-6.
IEC 62104:2015	NOTE	Harmonized as EN 62104 <sup>2)</sup> (not modified).

<sup>1)</sup> Superseded by EN 62087:2012 (IEC 62087:2011).

<sup>2)</sup> To be published.

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu)

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60107-1	1997	Methods of measurement on receivers for television broadcast transmissions - Part 1: General considerations - Measurements at radio and video frequencies	EN 60107-1	1997
IEC 60268-1 +A1 +A2	1985 1988 1988	Sound system equipment - Part 1: General	HD 483.1 S2	1989
IEC 60958-1 +A1	2008 2014	Digital audio interface - Part 1: General	EN 60958-1 +A1	2008 2014
IEC 60958-3 +A1	2006 2009	Digital audio interface - Part 3: Consumer applications	EN 60958-3 +A1	2006 2010
IEC 61938	2013	Multimedia systems - Guide to the recommended characteristics of analogue interfaces to achieve interoperability	EN 61938	2013
IEC 62087-1	2015	Audio, video, and related equipment - Determination of power consumption - Part 1: General	EN 62087-1 <sup>3)</sup>	-
IEC 62087	2015	Video_content_DVD_50, Video content for the IEC 62087:2015 series on DVD, 50 Hz vertical scan frequency	-	-
IEC 62087	2015	Video_content_DVD_60, Video content for the IEC 62087:2015 series on DVD, 60 Hz vertical scan frequency	-	-
IEC 62087	2015	Video_content_BD_50, Video content for the IEC 62087:2015 series on Blu-ray™ Disc, 50 Hz vertical scan frequency	-	-
IEC 62087	2015	Video_content_BD_60, Video content for the IEC 62087:2015 series on Blu-ray™ Disc, 60 Hz vertical scan frequency	-	-
IEC 62216	2009	Digital terrestrial television receivers for the DVB-T system	EN 62216	2011

<sup>3)</sup> To be published.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 62087-2:2018

<https://standards.iteh.ai/catalog/standards/sist/1621db13-a18a-4f5e-ac2d-c3dc9a478d95/sist-en-62087-2-2018>



IEC 62087-2

Edition 1.0 2015-06

# INTERNATIONAL STANDARD



**Audio, video, and related equipment – Determination of power consumption –  
Part 2: Signals and media** (standards.iteh.ai)

SIST EN 62087-2:2018

<https://standards.iteh.ai/catalog/standards/sist/1621db13-a18a-4f5e-ae2d-c3dc9a478d95/sist-en-62087-2-2018>

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

ICS 33.160.10

ISBN 978-2-8322-2682-7

**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 .....	8
3.1 Terms and definitions.....	8
3.2 Abbreviations.....	9
4 Signals.....	10
4.1 Audio-visual signals used for the determination of power consumption .....	10
4.1.1 Overview .....	10
4.1.2 Static video signals.....	10
4.1.3 Dynamic broadcast-content video signal.....	11
4.1.4 Internet-content video signal.....	11
4.1.5 Audio signal associated with video signals.....	11
4.2 Video signals used for the determination of the peak luminance ratio.....	11
4.2.1 General .....	11
4.2.2 Video signals.....	11
4.3 Audio signals used for determination of audio power consumption .....	13
4.3.1 Audio signals.....	13
4.3.2 Signal levels .....	13
5 Media.....	14
5.1 Packaged media.....	14
5.2 Blu-ray Disc™ .....	14
5.3 DVD.....	14
6 Signal generation .....	14
6.1 Audio-visual signal generating equipment.....	14
6.2 Interfaces.....	15
6.2.1 HDMI® .....	15
6.2.2 DisplayPort.....	15
6.2.3 Component analogue video .....	15
6.2.4 S-Video .....	15
6.2.5 Composite analogue video.....	15
6.2.6 Analogue terrestrial interface.....	15
6.2.7 Cable television interface .....	16
6.2.8 Digital terrestrial interface.....	16
6.2.9 Satellite interface.....	16
6.3 Accuracy of video signal levels .....	16
Annex A (informative) Description of video signals used for the determination of power consumption.....	17
A.1 General.....	17
A.2 Static video signals.....	17
A.3 Dynamic broadcast-content video signals .....	17
A.4 Internet-content video signals .....	18
A.5 Dynamic broadcast-content data.....	19
A.6 Internet-content data.....	22



Annex B (informative) Description of video signals used for the determination of the peak luminance ratio .....	23
B.1 General.....	23
B.2 Three bar video signal .....	23
B.3 Box and outline video signal .....	23
Bibliography.....	24
Figure 1 – Gamma-corrected average picture level (APL') .....	9
Figure 2 – Box and outline video signal, including signal drive values .....	12
Figure 3 – Box and outline video signal, outline dimensions.....	12
Figure 4 –Box and outline video signal, box size.....	12
Figure A.1 – Dynamic broadcast-content video signal APL'.....	18
Figure A.2 – Internet-content video signal APL'.....	19
Table 1 – Signal numbering .....	14
Table A.1 – Dynamic broadcast-content data .....	19
Table A.2 – Internet-content data.....	22

## iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN 62087-2:2018

<https://standards.iteh.ai/catalog/standards/sist/1621db13-a18a-4f5e-ac2d-c3dc9a478d95/sist-en-62087-2-2018>

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**AUDIO, VIDEO, AND RELATED EQUIPMENT –  
DETERMINATION OF POWER CONSUMPTION –****Part 2: Signals and media**

## 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.  
<https://standards.iteh.ai/catalog/standards/sist/1621db13-a18a-45e-ae2d-33a97c609200>
- 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 62087-2 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 62087-2 together with IEC 62087-1 and IEC 62087-3 to IEC 62087-6 cancels and replaces IEC 62087:2011 in its entirety. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to Clause 11 of IEC 62087:2011.

- The signals included on the discs are now numbered generically, rather than being based on the subclause numbers within the text of the television test method.
- Video test patterns used to determine the peak luminance ratio are now included on the discs.
- Audio test signals are specified.

- The box and outline video signal has been added.

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

FDIS	Report on voting
100/2467/FDIS	100/2497/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 contains attached files in the form of DVDs and Blu-ray discs, as indicated in the list of normative references. These files form an integral part of this standard.

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.

**iTeh STANDARD PREVIEW**  
(standards.iteh.ai)

[SIST EN 62087-2:2018](https://standards.iteh.ai/catalog/standards/sist/1621db13-a18a-4f5e-ac2d-c3dc9a478d95/sist-en-62087-2-2018)

<https://standards.iteh.ai/catalog/standards/sist/1621db13-a18a-4f5e-ac2d-c3dc9a478d95/sist-en-62087-2-2018>

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

**IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.**

## INTRODUCTION

This standard identifies signals and media to be used to determine power consumption and related characteristics specified in some other parts of IEC 62087:2015. The media include Blu-ray Discs™ and DVDs.

IEC 62087:2008<sup>1</sup> (second edition) added methods for measuring On (average) mode power consumption of televisions, based on three video signal sets. These include static, dynamic broadcast-content, and Internet-content signals.

IEC 62087:2011<sup>2</sup> (third edition) revised methods for measuring power consumption of set top boxes. The signals and media were not changed in this third edition.

This edition of IEC 62087 separates the standard into parts, including this signals and media part which specifies signals that are to be used for determining power consumption and related characteristics. The three original video signal sets (static, dynamic broadcast-content, and Internet-content) are not changed. This edition adds signals for the purpose of determining the peak luminance ratio that is sometimes associated with television power consumption measurement programs.

IEC 62087 has been subdivided and currently consists of the following planned or published parts:

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

**ITeH STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN 62087-2:2018](https://standards.iteh.ai/catalog/standards/sist/1621db13-a18a-4f5e-ac2d-c3dc9a478d95/sist-en-62087-2-2018)

<https://standards.iteh.ai/catalog/standards/sist/1621db13-a18a-4f5e-ac2d-c3dc9a478d95/sist-en-62087-2-2018>

<sup>1</sup> IEC 62087:2008, *Methods of measurement for the power consumption of audio, video and related equipment*

<sup>2</sup> IEC 62087:2011, *Methods of measurement for the power consumption of audio, video and related equipment*