BS EN IEC 62087-2:2023

BSI Standards Publication

Audio, video, and related equipment — Determination of power consumption

Part 2: Signals and media

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National foreword

This British Standard is the UK implementation of EN 62087-2:2023. It is identical to IEC 62087-2:2023. It supersedes BS EN 62087-2:2016, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee EPL/100, Audio-visual equipment.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62087-2

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English Version

Audio, video, and related equipment - Determination of power consumption - Part 2: Signals and media (IEC 62087-2:2023)

Appareils audio, vidéo et matériel connexe - Détermination de la consommation de puissance - Partie 2 : Signaux et supports (IEC 62087-2:2023)

Audio-, Video- und verwandte Geräte - Messverfahren für die Leistungsaufnahme - Teil 2: Signale und Medien (IEC 62087-2:2023)

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European foreword

The text of document 100/3771/CDV, future edition 2 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 IEC 62087-2:2023.

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) 2023-12-24
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2026-03-24

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The text of the International Standard IEC 62087-2:2023 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 standard indicated:

IEC 60933-5	NOTE Approved as EN 60933-5
IEC 62087-3:2023	NOTE Approved as EN IEC 62087-3:2023 (not modified)
IEC 62087-4	NOTE Approved as EN 62087-4
IEC 62087-5	NOTE Approved as EN 62087-5
IEC 62087-6	NOTE Approved as EN 62087-6
IEC 62087-7	NOTE Approved as EN IEC 62087-7

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Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 Where 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.cencenelec.eu.

Publication	Year	Title	EN/HD	Year
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	-	Sound system equipment - Part 1: General	-	-
IEC 60315-1	1988	Methods of measurement on radio receivers for various classes of emission. Part 1: General considerations and methods of measurement, including audio-frequency measurements	-	-
IEC 60315-3	-	Methods of measurement on radio receivers for various classes of emission. Part 3: Receivers for amplitude-modulated sound-broadcasting emissions	EN 60315-3	-
IEC 60315-4	1997	Methods of measurement on radio receivers for various classes of emission - Part 4: Receivers for frequency-modulated sound broadcasting emissions	EN 60315-4	1998
IEC 60958-1	-	Digital audio interface - Part 1: General	EN IEC 60958-1	-
IEC 60958-3	-	Digital audio interface - Part 3: Consumer applications	EN IEC 60958-3	-
IEC 61938	-	Multimedia systems - Guide to the recommended characteristics of analogue interfaces to achieve interoperability (GMT)	EN IEC 61938	-
IEC 62087-1	-	Audio, video, and related equipment - Determination of power consumption - Part 1: General	EN 62087-1	-
IEC 62216	-	Digital terrestrial television receivers for the DVB-T system	EN 62216	-
Recommendation ITU-R BT.2100-2	-	Image parameter values for high dynamic range television for use in production and international programme exchange	-	-

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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.
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IEC 62087-2 has been prepared by technical area 19: Environmental and energy aspects for multimedia systems and equipment, of IEC technical committee 100: Audio, video and multimedia systems and equipment. It is an International Standard.

This second edition cancels and replaces the first edition published in 2015. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) HDR and UHD video test signals have been added;
b) dynamic box and outline test signals have been added, replacing the static box and outline test signals;
c) all test signals are provided as media files for download from a specified IEC online repository, which replaces previous DVD and Blu-ray media.

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The text of this International Standard is based on the following documents:

Draft	Report on voting
100/3771/CDV	100/3848/RVC

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

The language used for the development of this International Standard is English.

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 multiple test signals downloadable from a specified IEC online repository, available at https://www.iec.ch/tc100/supportingdocuments. These files form an integral part of this standard.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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

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

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INTRODUCTION

This document identifies test signals to be used to determine power consumption and related characteristics specified in some other parts of the IEC 62087 series.

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

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

IEC 62087-2:2015[3] (first edition) separates signals and media that are to be used for determining power consumption and related characteristics into a dedicated part. 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 set power consumption measurement programs.

This second edition of IEC 62087-2 adds HDR and UHD video test signals and dynamic box and outline test signals for TV power consumption testing. All test signals are available from a specified IEC online repository for download, replacing the former physical media distribution.

IEC 62087 series currently consists of the following 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
– Part 7: Computer monitors

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[1] IEC 62087:2008, *Methods of measurement for the power consumption of audio, video and related equipment*

[2] IEC 62087:2011, *Methods of measurement for the power consumption of audio, video and related equipment*

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

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

Part 2: Signals and media

1 Scope

This part of IEC 62087 specifies the signals used to determine the power consumption of audio, video, and related equipment, such as television sets and computer monitors. It also specifies signals for determining the peak luminance ratio that is sometimes associated with television set power consumption measurement programs. In addition, this part specifies equipment, interfaces, and accuracy related to signal generation.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. 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 conditions – Measurements at radio and video frequencies*

IEC 60268-1, *Sound system equipment – Part 1: General*

IEC 60315-1:1988, *Methods of measurement on radio receivers for various classes of emission. Part 1: General considerations and methods of measurement, including audio-frequency measurements*

IEC 60315-3, *Methods of measurement on radio receivers for various classes of emission – Part 3: Receivers for amplitude-modulated sound-broadcasting emissions*

IEC 60315-4:1997, *Methods of measurement on radio receivers for various classes of emission – Part 4: Receivers for frequency-modulated sound broadcasting emissions*

IEC 60958-1, *Digital audio interface – Part 1: General*

IEC 60958-3, *Digital audio interface – Part 3: Consumer applications*

IEC 61938, *Multimedia systems – Guide to the recommended characteristics of analogue interfaces to achieve interoperability (GMT)*

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

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

Recommendation ITU-R BT.2100-2, *Image parameter values for high dynamic range television for use in production and international programme exchange*

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3 Terms, definitions, and abbreviated terms

3.1 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at https://www.electropedia.org/
- ISO Online browsing platform: available at https://www.iso.org/obp

3.1.1
average picture level
APL
average level of all the pixels of a single video signal frame or a group thereof in the linear luminance domain

EXAMPLE Display equipment such as television sets or computer monitors that internally use linear encoding after undoing the non-linearity of the input signal.

Note 1 to entry: This note applies to the French language only.

3.1.2
backlit display
display that generates light from a source behind the display panel

EXAMPLE Liquid-crystal display (LCD)

3.1.3
component analogue video
baseband analogue video interface that carries a standard or high-definition colour video signal over three signal lines

Note 1 to entry: See CTA-770.3-E R-2017.

3.1.4
composite analogue video
baseband analogue video interface that carries a standard-definition colour video signal over a single signal line

Note 1 to entry: See SMPTE ST 170M:2004 for the 59,94 Hz version and ITU-R BT.470-5 for the 50 Hz version.

3.1.5
digital visual interface
DVI
video interface that can carry analogue or digital uncompressed video

Note 1 to entry: This note applies to the French language only.

3.1.6
DisplayPort
digital display interface developed by the Video Electronics Standards Association

3.1.7
emissive display
display that generates light directly from each sub-pixel

EXAMPLE PDP or OLED displays

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