



EDC6 (2318) DTZS
IEC 62087-2:2023

DRAFT TANZANIA STANDARD

(Draft for comments only)

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

TANZANIA BUREAU OF STANDARDS

1 National Foreword

This draft Tanzania Standard is being prepared by the Telecommunications and Information Technology Technical Committee, under the supervision of the Electrotechnical divisional standards committee (EDC)

This draft Tanzania Standard is an adoption of the International Standard **IEC 62087-2:2023** Audio, video, and related equipment - Determination of power consumption - Part 2: Signals and media, which has been prepared by the International Electrotechnical Commission

2 Terminology and conventions

Some terminologies and certain conventions are not identical with those used in Tanzania standards; attention is drawn especially to the following: -

- 1) The comma has been used as a decimal marker for metric dimensions. In Tanzania Standards, it is current practice to use “full point” on the baseline as the decimal marker.
- 2) Where the words “International Standard(s)” appear, referring to this standard they should read “Tanzania Standard(s)”.

Draft for stakeholders' comments only

INTERNATIONAL STANDARD



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

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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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.
- 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.
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- 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.

This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 62087-2:2015. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

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.

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.

IMPORTANT – The "colour inside" logo on the cover page of this document 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 document identifies ~~test signals and media~~ to be used to determine power consumption and related characteristics specified in some other parts of the IEC 62087:~~2015~~ series. ~~The media include Blu-ray Discs™ and DVDs.~~

IEC 62087:2008¹ (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 62087:2011² (third edition) revised methods for measuring power consumption of set-top boxes. The signals and media were not changed in this third edition.

IEC 62087-2:2015³ (first edition) separates ~~the standard into parts, including this signals and media part which specifies signals~~ 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

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*

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

Part 2: Signals and media

1 Scope

This part of IEC 62087 specifies the signals and media 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 60268-1:1985, *Sound system equipment – Part 1: General*
~~IEC 60268-1:1985/AMD1:1988-01~~
~~IEC 60268-1:1985/AMD2:1988-06~~

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 60958-1:2008, *Digital audio interface – Part 1: General*
~~IEC 60958-1:2008/AMD1:2014~~

IEC 60958-3:2006, *Digital audio interface – Part 3: Consumer applications*
~~IEC 60958-3:2006/AMD1:2009~~

IEC 61938:2013, *Multimedia systems – Guide to the recommended characteristics of analogue interfaces to achieve interoperability (GMT)*

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

~~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*

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

3 Terms, definitions, and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62087-1:2015, 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 luminance level of an internal video signal after the inverse gamma correction within display equipment, such as a television set or computer monitor~~

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 [CEA-770.3-E](#) 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

INTERNATIONAL STANDARD

NORME INTERNATIONALE



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

**Appareils audio, vidéo et matériel connexe – Détermination de la consommation
de puissance –
Partie 2: Signaux et supports**

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INTRODUCTION

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- Part 7: Computer monitors

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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*

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

Part 2: Signals and media

1 Scope

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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*
ds Association