SLOVENSKI STANDARD
oSIST prEN IEC 60268-23:2022

01-september-2022

Oprema zvokovnega sistema - 23. del: Televizijski sprejemniki in monitorji - Sistemi zvočnikov

Sound system equipment - Part 23: TVs and monitors - Loudspeaker systems

Équipements pour systèmes électroacoustiques - Partie 23: Téléviseurs et moniteurs - Systèmes de haut-parleurs

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SECRETARIAT: Japan	SECRETARY: Mr Nobukazu Suzuki
OF INTEREST TO THE FOLLOWING COMMITTEES: TC 100	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: ☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☐ SAFETY	
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TITLE:

SOUND SYSTEM EQUIPMENT - Part 23: TVs and monitors - Loudspeaker systems

PROPOSED STABILITY DATE: 2025

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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SOUND SYSTEM EQUIPMENT –

Part 23: TVs and monitors – loudspeaker systems

FOREWORD

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International Standard IEC 60268-23 has been prepared by technical area 20:Analog and digital audio, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

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

CDV	Report on voting
XX/XX/XX	XX/XX/XXX

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

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

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://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- withdrawn,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.

The National Committees are requested to note that for this document the stability date is 20XX..

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INTRODUCTION

For IEC TC100 has already standardized loudspeaker measurement methods. However, loudspeaker location of TVs and monitors are various(e.g. front, bottom, back, side) and TVs and monitors are used stand-type and wall mount-type, and this will expand further. Since the sound characteristics change according to the installation type and position of the loudspeaker, it is necessary to develop new measurement method for loudspeaker of TVs and monitors. This document provides measurement methods for the audio system of TVs and monitors considering the listening environment.

SOUND SYSTEM EQUIPMENT –

Part 23: TVs and monitors– loudspeaker systems

1 Scope

This International Standard specifies acoustical measurement methods that apply to TV sets, monitors with built-in loudspeakers, and other audio devices having similar acoustical properties (e.g., flat-panel loudspeakers). The acoustical measurements are performed under free-field conditions and In-situ environment.

This document does not assess the perception and cognitive evaluation of the reproduced sound and the impact of perceived sound quality.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes the 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 60263, *Scales and sizes for plotting frequency characteristics and polar diagrams*

IEC 60268-1:1985, *Sound system equipment – Part 1 : General*

IEC 60268-2:1987, *Sound system equipment – Part 2: Explanation of general terms and calculation methods*

IEC 60268-21: *Sound system equipment – Part 21 Acoustical (output-based) measurements*

IEC 60268-22: *Sound system equipment –Electrical and mechanical measurements*

IEC 61094-4, *Measurement microphones – Part 4: Specifications for working standard microphones*

IEC 61260-1:2014, *Electroacoustics – Octave-band and fractional-octave-band filters – Part 1: Specifications*

IEC 61606-1:2009, *Audio and audiovisual equipment - Digital audio parts - Basic measurement methods of audio characteristics - Part 1: General*

IEC 62777*, Quality evaluation method for sound field of directional loudspeaker array systems*

ISO 3744*, Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Engineering methods for an essentially free field over a reflecting plane*

ISO 3745, *Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Precision methods for anechoic rooms and hemi-anechoice rooms.*

ISO 3382-1, *Acoustics – Measurement of room acoustic parameters – Part 1: Performance spaces*

ISO 80000-2 *Quantities and units — Part 2: Mathematics*

ANSI/CTA 2034-A:2015, *Standard Method of Measurement for In-Home Loudspeakers*

AES17: 2017, *Standard method for digital audio engineering – Measurement of digital audio equipment*

SJT11157-2, *Methods of measurement on receivers for television broadcast transmissions-Part2: Methods of electrical and acoustical measurements on audio channels*

ITU-R BT.2246-4, *The present state of ultra-high definition television*

NOTE Numbers in square brackets refer to the Bibliography.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

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

3.1 equipment under test
EUT
Equipment to be measured using the methods described in this document

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3.2 Abbreviated terms

For the purposes of this document, the following abbreviated terms apply.

COG	Centre of Gravity
dB	decibel
DEF	Direct Energy Fraction
DNR	Distortion-to-Noise Ratio
DSP	Digital Signal Processor
EFR	Effective Frequency Range
EITHD	Equivalent Input Total Harmonic Distortion
ESP	Equivalent Sound Power
ESPDI	Equivalent Sound Power Directivity Index
EUT	Equipment Under Test
Hz	Hertz
m	meter
MD	Absolute Multi-tone Distortion
MDS	Multi-tone Spectrum
NBV	Narrow Band Variation
NF	Noise Floor
ON	On-axis frequency response
Pa	Pascal

POR	Point of Rotation
RFR	Rated Frequency Range
RLD	Regression Line Deviation
RMS	Root Mean Square
RMD	Relative Multi-tone Distortion
RNF	Relative Noise Floor
SB	Spectral Balance
SNR	Signal-to-Noise Ratio
SP	Sound Power
SPL	Sound Pressure Level
TFA	Time-frequency Analysis
TH	Total Harmonic
THD	Total Harmonic Distortion
TMDR	Total Multi-tone Distortion Ratio
W	Watt

4 Type description

The type description shall be provided by the manufacturer, including the following information:

a) Number of input channels. Typically the EUT has two input channels exciting at least one transducer on the left and right side, as shown in Figure 1. The configuration has to be clearly specified for EUT with more input channels.

b) Signal input format such as analog, digital and wireless.

c) type, principles, and the number of the transducers used in the TV and monitor audio systems.

d) power amplification.

e) DSP processing (e.g., equalizer, active protection).