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# INTERNATIONAL STANDARD

## Audio and audiovisual equipment – Digital audio parts – Basic measurement methods of audio characteristics – Part 1: General

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

# AUDIO AND AUDIOVISUAL EQUIPMENT – DIGITAL AUDIO PARTS – BASIC MEASUREMENT METHODS OF AUDIO CHARACTERISTICS –

## Part 1: General

## FOREWORD

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International Standard IEC 61606-1 has been prepared by IEC technical committee 100: Audio, video and multimedia systems and equipment.

This second edition cancels and replaces the first edition published in 2003. It constitutes a technical revision.

The significant technical changes with respect to the first edition are the following:

- changed the period of preconditioning;
- add A weighting filter in measuring instruments;
- correct the wrong reference number;
- some inappropriate descriptions have been improved.

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

| FDIS | Report on voting |
|---|---|
| 100/1547/FDIS | 100/1581/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 of the IEC 61606 series, under the general title *Audio and audiovisual equipment – Digital audio parts – Basic measurement methods of audio characteristics*, 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 maintenance result date indicated on the IEC web site 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- withdrawn,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.

# AUDIO AND AUDIOVISUAL EQUIPMENT – DIGITAL AUDIO PARTS – BASIC MEASUREMENT METHODS OF AUDIO CHARACTERISTICS –

## Part 1: General

## 1 Scope

This part of IEC 61606 is applicable to the basic methods of measurement of the audio characteristics of the digital audio part of audio and audiovisual equipment for all of consumer use, professional use and personal computer.

The common measuring conditions and methods, described in this standard, are used for the measurement of the performance characteristics of equipment having an audio bandwidth equal to approximately one-half of the sampling frequency of a system, where the audio information is processed in the form of digital data. CD players, DAT recorders, digital amplifiers, digital sound broadcast receivers and television broadcast receivers with digital sound are examples.

This standard describes test methods for equipment which has digital input with analogue output and analogue input with digital output. Future revisions of this standard will cover digital-in/digital-out and analogue-in/analogue-out tests.

This standard does not apply to a lossy compression signal and also does not apply to power amplifiers.

NOTE 1 A digital audio system having an analogue input and an analogue output with digital signal processing may have different characteristics from those of a pure analogue audio system due to sampling of the audio signal and performance of incorporated A/D and D/A converters. Measurement methods described in IEC 60268-3 may not give correct results when applied to a digital system.

NOTE 2 The methods described are mostly based on sampling frequencies of 32 kHz and higher.

NOTE 3 For tests of those systems of digital-in – digital-out, and analogue-in – analogue-out tests, refer to AES17.

NOTE 4 This standard is planned to harmonize with the first edition of IEC 61606 (1997)[1], AES17 and EIAJ CP-2i50.

## 2 Normative references

The following referenced documents are indispensable for the application 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 60038, *IEC standard voltages*

IEC 60107-5, *Recommended methods of measurement on receivers for television broadcast transmissions – Part 5: Electrical measurements on multichannel sound television receivers using the NICAM two-channel digital sound system*

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1 IEC 61606:1997, *Audio and audiovisual equipment – Digital audio parts – Basic methods of measurement of audio characteristics* (this publication has been replaced by the IEC 61606 series)

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

IEC 60268-3, *Sound system equipment – Part 3: Amplifiers*

IEC 60958 (all parts), *Digital audio interface*

IEC 61606-2, *Audio and audiovisual equipment – Digital audio parts – Basic measurement methods of audio characteristics – Part 1: Consumer use*

IEC 61606-3, *Audio and audiovisual equipment – Digital audio parts – Basic measurement methods of audio characteristics – Part 3: Professional use*

IEC 61606-4, *Audio and audiovisual equipment – Digital audio parts – Basic measurement methods of audio characteristics – Part 4: Personal computer*

IEC 61079-4, *Methods of measurement on receivers for satellite broadcast transmissions in the 12 GHz band – Part 4: Electrical measurements on sound/data decoder units for the digital subcarrier NTSC system*

IEC 61079-5, *Methods of measurement on receivers for satellite broadcast transmissions in the 12 GHz band – Part 5: Electrical measurements on decoder units for MAC/packet systems*

IEC 61672-1, *Electroacoustics – Sound level meters – Part 1: Specifications*

IEC 61883-6, *Consumer audio/video equipment – Digital interface – Part 6: Audio and music data transmission protocol*

ITU-R BS 468-4, *Measurement of audio-frequency noise voltage level in sound broadcasting*

AES17, *AES standard method for digital audio engineering – Measurement of digital audio equipment*