

# TECHNICAL SPECIFICATION

---

**Guideline for synchronization of audio and video –  
Part 1-1: Measurement methods for synchronization of audio and video  
equipment and systems – General**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

PRICE CODE

N

## CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references .....	6
3 Terms and definitions .....	6
4 Measuring conditions.....	6
4.1 General conditions .....	6
4.1.1 Power supplies .....	6
4.1.2 Environmental conditions.....	7
4.2 Specific conditions .....	7
4.3 General settings .....	7
4.4 Specific settings .....	7
5 Measurement methods .....	8
5.1 General block diagram .....	8
5.2 Test signal source and test signal .....	8
5.2.1 General .....	8
5.2.2 Signal generator .....	8
5.2.3 Test disc.....	8
5.3 EUT.....	9
5.3.1 Equipment.....	9
5.3.2 Compound equipment.....	10
5.4 Measuring instruments .....	11
5.4.1 General .....	11
5.4.2 Measurement of signal .....	11
5.4.3 Measurement of reproduced signal.....	11
5.4.4 Specific requirement.....	12
Annex A (informative) Assessment of the result of measurement .....	13
Bibliography.....	14
Figure 1 – General block diagram for measurement.....	8
Figure 2 – Audio and video device .....	9
Figure 3 – Source device .....	10
Figure 4 – Display device.....	10
Figure 5 – Recorder device.....	10
Figure 6 – Compound equipment .....	11
Figure 7 – Measurement of reproduced signal .....	12

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## GUIDELINE FOR SYNCHRONIZATION OF AUDIO AND VIDEO –

**Part 1-1: Measurement methods for synchronization  
of audio and video equipment and systems –  
General**

## 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.
- 5) IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 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.

The main task of IEC technical committees is to prepare International Standards. In exceptional circumstances, a technical committee may propose the publication of a technical specification when

- the required support cannot be obtained for the publication of an International Standard, despite repeated efforts, or
- the subject is still under technical development, or where, for any other reason, there is the future but no immediate possibility of an agreement on an International Standard.

Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC 62312-1-1, which is a technical specification, has been prepared by IEC technical committee 100: Audio, video and multimedia systems and equipment.

The text of this technical specification is based on the following documents:

Enquiry draft	Report on voting
100/1270/DTS	100/1316/RVC

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

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

The list of all the parts of IEC 62312, under the general title *Guideline for synchronization of audio and video*, can be found on the IEC website.

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

- transformed into an International standard,
- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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

## INTRODUCTION

Audio and video equipment processes or reproduces the input signals of audio and video, then outputs these signals in various forms. Audio and video equipment needs time to process or reproduce the input signal. This time depends on the signal format, the architecture of equipment and the design of equipment. Hence audio and video equipment may have different output delays for audio and video signals, and this causes unsynchronised audio and video outputs.

This Technical Specification is the general part of the measurement method for that time difference between audio and video outputs. The other subparts of IEC/TS 62312-1 describe specific measurement methods for specific audio and video equipment.

Withdrawn

## **GUIDELINE FOR SYNCHRONIZATION OF AUDIO AND VIDEO –**

### **Part 1-1: Measurement methods for synchronization of audio and video equipment and systems – General**

#### **1 Scope**

This part of 62312 gives guidelines for methods of synchronization of audio and video.

This Technical Specification describes general measurement methods for the synchronization of audio and video equipment.

#### **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/TS 62312-2, *Guideline for synchronization of audio and video – Part 2: Methods for synchronization of audio and video systems*