

Broadcast video tape recorders — Methods of measurement —

Part 4: Analogue audio performance measurements

The European Standard EN 61237-4:1997 has the status of a
British Standard

ICS 33.160.40

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ISBN 0 580 28891 9

Amendments issued since publication

Amd. No.	Date	Comments

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National foreword

This British Standard is the English language version of EN 61237-4:1997. It is identical with IEC 61237-4:1997.

The UK participation in its preparation was entrusted by Technical Committee EPL/100, Audio, video and multimedia systems and equipment, to Subcommittee EPL/100/3, Equipment in the field of audio, video and audiovisual engineering, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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From 1 January 1997, all IEC publications have the number 60000 added to the old number. For instance, IEC 27-1 has been renumbered as IEC 60027-1. For a period of time during the change over from one numbering system to the other, publications may contain identifiers from both systems.

IEC 61237 comprises the following Parts:

- *Part 1: Mechanical measurements;*
- *Part 2: Electrical measurements of analogue composite video signals;*
- *Part 3: Electrical measurements of analogue component signals;*
- *Part 4: Analogue audio performance measurement;*
- *Part 5: Electrical measurements of digital composite video signals and digital audio signals;*
- *Part 6: Electrical measurements of digital component video signals and digital audio signals.*

Cross-references

Attention is drawn to the fact that CEN and CENELEC Standards normally include an annex which lists normative references to international publications with their corresponding European publications. The British Standards which implement these international or European publications may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 16 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

ICS 33.160.40

Descriptors: Electroacoustics, video recording, recording apparatus, magnetoscopes, radiocommunications, measurements, characteristics, acoustic signals, analog signals

English version

Broadcast video tape recorders — Methods of measurement Part 4: Analogue audio performance measurements

(IEC 61237-4:1997)

Magnétoscopes de radiodiffusion
Méthodes de mesure
Partie 4: Mesure des caractéristiques
audio-analogiques
(CEI 61237-4:1997)

Videobandgeräte für den Rundfunk
Meßverfahren
Teil 4: Messung der Leistungskennwerte
für analoge Tonsignale
(IEC 61237-4:1997)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B-1050 Brussels

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Foreword

The text of document 100B/93/FDIS, future edition 1 of IEC 61237-4, prepared by SC 100B, Recording, of IEC TC 100, Audio, video and multimedia systems and equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61237-4 on 1997-10-01.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1998-07-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1998-07-01

Annexes designated “normative” are part of the body of the standard.

Annexes designated “informative” are given for information only.

In this standard, Annex ZA is normative and Annex A and Annex B are informative.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61237-4:1997 was approved by CENELEC as a European Standard without any modification.

In the official version, for Annex B, Bibliography, the following note has to be added for the standard indicated:

IEC 60094-2

NOTE Harmonized as EN 60094-2:1995 (not modified).

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1 General

1.1 Scope and object

This part of IEC 61237 describes methods of measurement and special test signals for the analogue audio part of equipment mainly dedicated to recording reproduction of TV signals on magnetic tape on reels or in cassettes.

The allowable tolerances for the rated values for acceptable performance are not given in this standard, but may be derived from the specifications for the related system i.e. appropriate publications, manufacturers' specifications, etc.

The necessary reference and calibration tapes are either mentioned in the specific IEC publication of the equipment under test or included in IEC 61105 and IEC 61295, respectively.

The methods are applicable to acceptance tests, performance comparison and, as far as possible, to routine checks.

To ensure that the results obtained at a specific time and at a specific place are comparable to other measurements, it is advisable to specify the test signal, measuring devices and types of tapes used together with results obtained.

1.2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 61237. At the time of publication, the editions indicated were valid. All normative documents are subject to revision and parties to agreements based on this part of IEC 61237 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60094-3:1979, *Magnetic tape sound recording and reproducing systems — Part 3: Methods of measuring the characteristics of recording and reproducing equipment for sound on magnetic tape.*

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 60268-3:1988, *Sound system equipment — Part 3: Amplifiers.*

IEC 60268-8:1973, *Sound system equipment — Part 8: Automatic gain control devices.*

IEC 60386:1972, *Method of measurement of speed fluctuations in sound recording and reproducing equipment.*

IEC 60602:1980, *Type B helical video recorders.*

IEC 60651:1979, *Sound level meters.*

IEC 61041-1:1990, *Non-broadcast video tape recorders — Methods of measurement — Part 1: General video (NTSC/PAL) and audio (longitudinal) characteristics.*

IEC 61041-3:1993, *Non-broadcast video tape recorders — Methods of measurement — Part 3: Audio characteristics for FM recording.*

IEC 61105:1991, *Reference tapes for video tape recorder systems.*

IEC 61213:1993, *Analogue audio recording on video tape — Polarity of magnetization.*

IEC 61260:1995, *Electroacoustics — Octave-band and fractional-octave-band filters.*

IEC 61295:1994, *Calibration tapes for broadcast VTRs.*

ITU-R Recommendation BS 468-4:1990, *Measurement of audio-frequency noise voltage level in sound broadcasting.*

ITU-R 798-2:1990, *Simulated programme signals.*

1.3 Definitions

For the purpose of this part of IEC 61237, the following definitions apply:

1.3.1

reference level

value of signal level defined in the relevant system IEC publication as remanent magnetic short-circuit flux level on the tape, for example 90 ± 5 nWb/m r.m.s. for 625-50 systems in IEC 60602. Method of measurement is given in Annex A of this standard

1.3.2

crosstalk attenuation or track separation

in multi-channel equipment, signals in one channel can break through into another channel in an attenuated and distorted form. Particularly when two adjacent tracks are used or two adjacent channels in the same head stack are operated simultaneously in different modes for example record and reproduction, impairments can arise. To make matters worse, beside these audio tracks additional longitudinal tracks are present on a video tape for example control track and time and control code track

the influence of a signal in one channel to another channel can be described in terms of crosstalk attenuation or track separation