



SLOVENSKI STANDARD

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

Non-broadcast video tape recorders - Methods of measurement -- Part 1: General video (NTSC/PAL) and audio (longitudinal) characteristics

Videobandgeräte für den Gebrauch außerhalb des Rundfunks - Meßverfahren -- Teil 1: Allgemeine Eigenschaften von Video (NTSC/PAL) und Ton (Längsaufzeichnung)

Magnétoscopes hors radiodiffusion - Méthodes de mesure -- Partie 1: Généralités, caractéristiques vidéo (NTSC/PAL) et audio (enregistrement longitudinal)

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English version

Non-broadcast video tape recorders
Methods of measurement
Part 1: General video (NTSC/PAL) and audio (longitudinal) characteristics
(IEC 1041-1:1990)

Magnétoscopes hors radiodiffusion
Méthodes de mesure
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vidéo (NTSC/PAL) et audio
(enregistrement longitudinal)
(CEI 1041-1:1990)

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Meßverfahren
Teil 1: Allgemeine Eigenschaften von
Video (NTSC/PAL) und Ton
(Längsaufzeichnung)
(IEC 1041-1:1990)

This European Standard was approved by CENELEC on 1995-05-15. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CENELEC

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

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

Foreword

The text of the International Standard IEC 1041-1:1990, prepared by SC 60B, Video recording, of IEC TC 60, Recording, was approved by CENELEC as HD 619 S1 on 1992-09-15.

This Harmonization Document was submitted to the formal vote for conversion into a European Standard and was approved by CENELEC as EN 61041-1 on 1995-05-15.

The following date was fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement

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(dop) 1996-07-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annexes A and ZA are normative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 1041-1:1990 was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

**Normative references to international publications
with their corresponding European publications**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE: When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 94-3	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		
+ A2	1988		HD 311.3 S2 ¹⁾	1989
IEC 386	1972	Method of measurement of speed fluctuations in sound recording and reproducing equipment	-	-
IEC 756	1983	Time base stability of non-broadcast video recorders	HD 458 S1 ²⁾	1985
IEC 883	1987	Measuring method for chrominance signal-to-random noise ratio for video tape recorders	HD 527 S1	1989

1) HD 311.3 S2 also includes A1:1980.

2) HD 458 S1 is superseded by EN 60756:1993, which is based on IEC 756:1991.

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**Magnétoscopes hors radiodiffusion –
Méthodes de mesure**

**Partie 1:
Généralités, caractéristiques vidéo (NTSC/PAL)
et audio (enregistrement longitudinal)**

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**Non-broadcast video tape recorders –
Methods of measurement**

**Part 1:
General video (NTSC/PAL) and
audio (longitudinal) characteristics**

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CONTENTS

	Page
FOREWORD	7
Clause	
SECTION 1 - GENERAL	
1.1 Scope	9
1.2 Normative references	9
1.3 Environment	11
1.4 Magnetic tape	11
1.5 Performance of measurements	11
1.6 Interchangeability test	13
SECTION 2 - VIDEO CHARACTERISTICS, LUMINANCE	
2.1 Video test signal - General	13
2.2 AGC operation	13
2.3 Luminance amplitude/frequency response	15
2.4 Luminance non-linear distortion	17
2.5 Luminance waveform distortion (linear distortion)	19
2.6 Luminance transient tearing	19
2.7 Luminance signal-to-noise ratio	21
2.8 Luminance drop-out compensation	23
SECTION 3 - VIDEO CHARACTERISTICS, CHROMINANCE (PAL/NTSC)	
3.1 Chrominance amplitude/frequency response	27
3.2 Chrominance signal-to-noise ratio	27
3.3 Chrominance-to-luminance intermodulation	27
3.4 Luminance-to-chrominance crosstalk	29
3.5 Chrominance-to-luminance displacement	31
3.6 Chrominance-to-luminance crosstalk	33
SECTION 4 - TIME BASE	
4.1 Time base	33
SECTION 5 - AUDIO CHARACTERISTICS, LONGITUDINAL RECORDING	
5.1 Audio test signal - General	33
5.2 AGC operation	35
5.3 Audio characteristics	35

Figure	Page
1 Video test signal: nominal values, horizontal line	37
2 Video test signal: vertical field	37
3 Circuit arrangement (clauses 2.2, 2.3, 2.4, 2.5, 3.1, 3.5)	39
4 Test signal for luminance amplitude/frequency response	39
5 Test signal for luminance non-linear distortion (10 steps)	41
6 Test signal for luminance waveform of linear distortion	41
7 Luminance waveform distortion (linear distortion)	43
8 Circuit arrangement: luminance signal-to-noise ratio	45
9 Test signal for luminance signal-to-noise ratio	45
10 Circuit arrangement: luminance drop-out compensation	47
11 Test signal for luminance drop-out compensation	47-51
12 Test signal for chrominance amplitude/frequency response	53
13 Circuit arrangement: chrominance-to-luminance intermodulation	53
14 Test signal for chrominance-to-luminance intermodulation	53
15 Circuit arrangement: luminance-to-chrominance crosstalk	55
16 Test signal for luminance-to-chrominance crosstalk	55-57
17 Test signal for chrominance-to-luminance displacement	57-59
18 Circuit arrangement: chrominance-to-luminance crosstalk	61
19 Audio test signal level as a function of time	61
20 Circuit arrangement: determination of 0 dB level and of hold time	63
21 Audio amplitude response: determination of 0 dB level	63
22 Audio test signal: determination of hold time	63
23 Audio playback signal: determination of hold time	63
Annex A (normative) - Alternative test signals	65

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**NON-BROADCAST VIDEO TAPE RECORDERS -
METHODS OF MEASUREMENT**
**Part 1: General video (NTSC/PAL) and audio
(longitudinal) characteristics**
FOREWORD

- 1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.
- 3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

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This standard has been prepared by Sub-Committee 60B: Video recording, of IEC Technical Committee No. 60: Recording.

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This is a Part 1 of a series of publications dealing with methods of measurement for non-broadcast video tape recorders. Other parts for video (SECAM) and audio (FM) are under consideration.

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

Six Months' Rule	Report on Voting
60B(CO)95	60B(CO)110

Full information on the voting for the approval of this standard can be found in the Voting Report indicated in the above table.

This part of the standard contains one annex, which is normative.

NON-BROADCAST VIDEO TAPE RECORDERS - METHODS OF MEASUREMENT

Part 1: General video (NTSC/PAL) and audio (longitudinal) characteristics

SECTION 1 - GENERAL

1.1 Scope

The methods of measurement described in this International Standard concern the assessment of the performance of non-broadcast video tape recorders of the so-called "colour under" type for domestic use.

This standard defines test signals, measurement set-ups and measurement conditions for non-broadcast video tape recorders of the so-called "colour under" type for domestic use, so as to make possible the comparison of the results of measurements.

Specifying limiting values of the various quantities for acceptable performance is not an object of this standard.

The methods of measurement are designed to make possible the assessment of the performance of the complete recorder by using the input/output terminals of the device.

NOTE - Measuring methods for consumer camcorders (camera-recorders) are under consideration.

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1.2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of IEC 1041. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of IEC 1041 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

1.2.1 IEC standards

IEC 94-3: 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 (Amendment No. 2: 1988)*.

IEC 386: 1972, *Method of measurement of speed fluctuations in sound recording and reproducing equipment*.

IEC 756: 1983, *Time base stability of non-broadcast video recorders*.

IEC 883: 1987, *Measuring method for chrominance signal-to-random noise ratio for video tape recorders*.

1.2.2 Other standards quoted

CCIR Recommendation 471, *Nomenclature and description of colour bar signals.*

CCIR Recommendation 567, *Transmission performance of television circuits designed for use in international connections.*

CCIR Recommendation 569, *Definitions of parameters for simplified automatic measurement of television insertion test signals.*

CCIR Report 476, *Colorimetric standards in colour television.*

1.3 Environment

All measurements shall be carried out within the environmental conditions specified by the manufacturer.

If not otherwise stated by the manufacturer or by the format-standard, the device under test shall be conditioned for at least three hours before measurement begins. In addition, an adequate warm-up time shall be used.

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The environmental conditions during measurement, at least the temperature and the relative humidity, shall be reported together with the presentation of the results of measurements.

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1.4 Magnetic tape

The type of magnetic tape used for measurements shall be commonly available and reported together with the presentation of the results of measurements.

NOTE - By "commonly available" is to be understood the type of magnetic tape recommended by the manufacturer of the unit being tested.

1.5 Performance of measurements

Unless otherwise stated the measurements shall be carried out by measuring the playback signal immediately after recording on the same device.

The method of input and output of the signals, i.e. baseband or modulated RF, shall be reported together with the presentation of the results of measurement.

It is recommended to use baseband input and output of the signals, i.e. via video/audio - input/output terminals if available. If a modulated RF signal is used for input or output, the type of modulator or demodulator shall be reported.

If the video tape recorder under test is equipped with external manual controls, e.g. tracking control, sharpness control, etc., these controls shall be set at mid-position for all measurements unless otherwise stated.

1.6 Interchangeability test

The interchangeability within the IEC standard concerning the device under test shall be confirmed, i.e. the characteristics of the signals recorded on tape and the track pattern shall comply with the standard.

The procedure is under consideration.

SECTION 2 - VIDEO CHARACTERISTICS, LUMINANCE

2.1 Video test signal - General

Unless otherwise stated the characteristics of the synchronizing signal and the characteristics of the chrominance signal shall be in accordance with the CCIR television standard relevant to the recorder under test.

The nominal value of the peak-to-peak amplitude of the composite video signal, i.e. from sync tip to white level, shall be 1,0 V.

The nominal value of the amplitude of the picture signal, i.e. from blanking level to white level, shall be:

0,7 V for 625 lines/50 Hz systems;

0,714 V for 525 lines/60 Hz systems.

The nominal value of the amplitude of the picture signal shall be regarded as 100 % when defining signal amplitudes in percent (see figure 1).

Unless otherwise stated all test signals shall include in each field at least eight lines of 100 % white in order to ensure correct operation of the automatic gain control. These lines shall be located at the end of the vertical blanking area (see figure 2 and note below).

The active field period shall contain the specific picture test signal for measurement of the video characteristics.

Unless otherwise stated the test signal shall be identical in each horizontal line of the active field period, i.e. regarding amplitude, frequency, phase, timing, etc.

Unless otherwise stated the rise time and the fall time of the test signal shall be not less than 2T.

NOTE - Alternative test signals using white reference in each line are shown in annex A (figures A.1, A.2, A.3 and A.4). See also CCIR Recommendations 471-1 and 569-2, and Report 476-1.

2.2 AGC operation

2.2.1 This measurement determines the reaction of the automatic gain control to deviations of the amplitude of the input signal from the nominal value.

2.2.2 The circuit arrangement shall be as shown in figure 3.