
Digitalni videokasetni snemalni sistem z zapisovanjem s poševnimi sledmi na 12,65 mm (0,5 in) magnetnem traku – Format HD-D5 –1. del: VTR-specifikacije (IEC 62330-1:2003)

Helical-scan digital video cassette recording system using 12,65 mm (0,5 in) magnetic tape - Format HD-D5 - Part 1: VTR specifications (IEC 62330-1:2003)

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EUROPEAN STANDARD

EN 62330-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2004

ICS 33.160.40; 35.240.99

English version

**Helical-scan digital video cassette recording system
using 12,65 mm (0,5 in) magnetic tape -
Format HD-D5
Part 1: VTR specifications
(IEC 62330-1:2003)**

Système de magnétoscope numérique
à cassette à balayage hélicoïdal
sur bande magnétique
de 12,65 mm (0,5 in) -
Format HD-D5

Partie 1: Spécifications du magnétoscope
(CEI 62330-1:2003)

Videokassettensystem
mit Schrägspuraufzeichnung
auf Magnetband 12,65 mm (0,5 in) -
HD-D5-Format

Teil 1: VTR-Festlegungen
(IEC 62330-1:2003)

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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.

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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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 62330-1:2003, prepared by Technical Area 6: Higher data rate storage media and equipment, of IEC TC 100, Audio, video and multimedia systems and equipment, was submitted to the formal vote and was approved by CENELEC as EN 62330-1 on 2004-03-01 without any modification.

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) 2005-03-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2007-03-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62330-1:2003 was approved by CENELEC as a European Standard without any modification.

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

IEC 60735	NOTE	Harmonized as EN 60735:1991 (not modified).
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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

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 60461	2001	Time and control code for video tape recorders	EN 60461	2001
IEC 60958	Series	Digital audio interface Part 1: General	EN 60958	Series
IEC 61835	- ¹⁾	Helical-scan digital component video cassette recording system using 12,65 mm (0,5 in) magnetic tape - Format D-5	EN 61835	1998 ²⁾
ITU-R BS.647	- ¹⁾	A digital audio interface for broadcasting studios	-	-
SMPTE RP 155	1995	Audio Levels and Indicators for Digital Audio Records on Digital Television Tape Recorders	-	-

¹⁾ Undated reference.

²⁾ Valid edition at date of issue.

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INTERNATIONAL STANDARD

IEC 62330-1

First edition
2003-05

Helical-scan digital video cassette recording system using 12,65 mm (0,5 in) magnetic tape – Format HD-D5 –

Part 1: VTR specifications

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HELICAL-SCAN DIGITAL VIDEO CASSETTE RECORDING SYSTEM USING 12,65 mm (0,5 in) MAGNETIC TAPE – FORMAT HD-D5 –

Part 1: VTR specifications

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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 the 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 National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
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- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62330-1 has been prepared by Technical Area 6: Higher data rate storage media and equipment of IEC technical committee 100: Audio, video and multimedia systems and equipment.

It was submitted to the national committees for voting under the Fast Track Procedure as the following documents:

CDV	Report on voting
100/504/CDV	100/603/RVC

Full information on the voting for the approval of this standard 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 committee has decided that the contents of this publication will remain unchanged until 2008. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

IEC 62330 consists of the following parts, under the general title *Helical-scan digital video cassette recording system using 12,65 mm (0,5 in) magnetic tape – Format HD-D5*.

Part 1: VTR specifications

Part 2: Compression format

Part 3: Data stream format

This part 1 describes the VTR specifications which are tape, magnetization, helical recording, modulation method and basic system data for high definition video compressed data on 29,97 or 59,94 frame rate.

Part 2 describes the specifications for encoding process and data format for 1080i and 720p systems.

Part 3 describes the specifications for transmission of HD-D5 compressed video and audio data stream over 360 Mb/s serial digital interface.

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HELICAL-SCAN DIGITAL VIDEO CASSETTE RECORDING SYSTEM USING 12,65 mm (0,5 in) MAGNETIC TAPE – FORMAT HD-D5 –

Part 1: VTR specifications

1 Scope

This part of IEC 62330 specifies the content, format, and recording method of the data blocks containing HD compressed video data defined in part 2, audio, and associated data which form the helical records on 12,65 mm (0,5 in) tape in cassettes as specified in IEC 61835.

In addition, this standard specifies the content, format, and recording method of the longitudinal record containing tracking information for the scanning head associated with the helical records, and also the longitudinal cue audio, and time and control code.

One video channel of HD compressed video data and four independent audio channels are recorded in the digital format. Each of these channels is designed to be capable of independent editing.

The HD compressed video data are derived from the following HD video signal:

- 1080 line / 59,94 Hz field frequency interlace system
- 720 line / 59,94 Hz frame frequency progressive system

Figure 1 and Figure 2 show block diagrams of the processes involved in the recorder.

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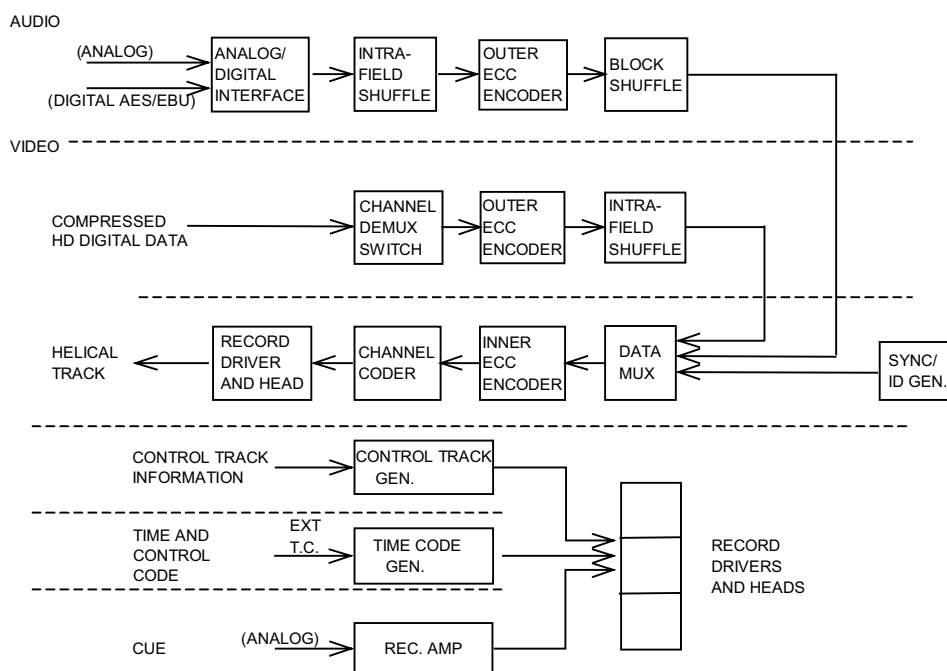


Figure 1 – Record block diagram
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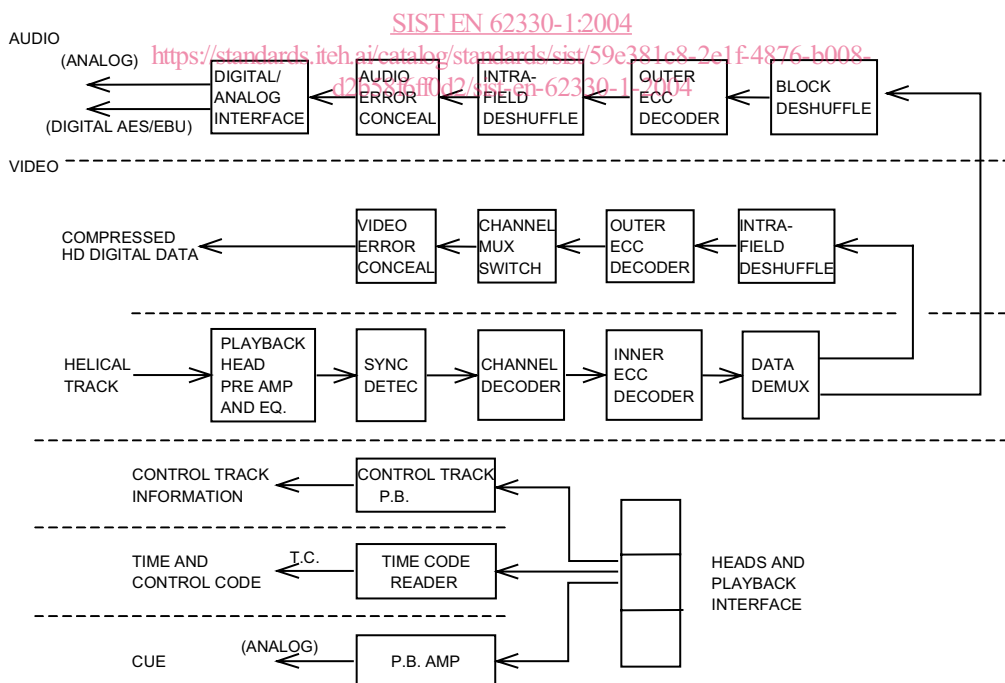


Figure 2 – Playback block diagram

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 60461:2001, *Time and control code for video tape recorders*

IEC 60958, *Digital audio interface*

IEC 61835, *Helical-scan digital component video cassette recording system using 12,65 mm (0,5 in) magnet tape – Format D-5*

ITU-R BS. 647 *A digital audio interface for broadcasting studios*

SMPTE RP 155:1995, *Audio levels and Indicators for Digital Audio Records on Digital Television Tape Recorders*

3 Environment and test conditions

3.1 Environment

Tests and measurements made on the system to check the requirements of this standard shall be carried out under the following conditions:

Temperature	20 °C ±1 °C
Relative humidity	(50 ±2) %
Barometric pressure	from 86 kPa to 106 kPa
Tape conditioning	not less than 24 h
Centre tape tension	0,31 N ±0,05 N (see Annex A)

3.2 Reference tape

Blank tape for reference recordings should be available from any source meeting the tape characteristics as portrayed by this standard.

3.3 Calibration tape

The calibration tapes meeting the requirements of 3.3.1 and Clause 4 should be available from manufacturers who produce DTTRs and players in accordance with this standard.

3.3.1 Record locations and dimensions

Tolerances shown in Table 1 will be reduced by 50 %.

3.3.2 Calibration signals

Two sets of signals should be recorded on the calibration tape:

- a) Video: 100 % colour bars
- Audio: 1 kHz tone at 20 dB below full scale on each of audio channels
- Cue: 1 kHz tone at reference level; 10 kHz tone at reference level