

Helical-scan video tape cassette system using 8 mm magnetic tape (8 mm video) —

Part 4: Video subcode (VSC)

The European Standard EN 60843-4:2000 has the status of a
British Standard

ICS 33.160.40

National foreword

This British Standard is the official English language version of EN 60843-4:2000. It is identical with IEC 60843-4:2000.

The UK participation in its preparation was entrusted by Technical Committee EPL/100, Audio, video and multimedia systems and equipment, to Subcommittee EPL/100/2, Recording, which has the responsibility to:

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 26, an inside back cover and a back cover.

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This British Standard, having been prepared under the direction of the Electrotechnical Sector Committee, was published under the authority of the Standards Committee and comes into effect on 15 April 2001

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ISBN 0 580 36848 3

Amendments issued since publication

Amd. No.	Date	Comments

**Helical-scan video tape cassette system
using 8 mm magnetic tape (8 mm video)
Part 4: Video subcode (VSC)
(IEC 60843-4:2000)**

Système de magnétoscope à cassette
à balayage hélicoïdal utilisant la bande
magnétique de 8 mm (vidéo 8 mm)
Partie 4: Sous-code vidéo (VSC)
(CEI 60843-4:2000)

Videoband-Kassettensystem mit
Schrägspuraufzeichnung auf
Magnetband 8 mm (8 mm Video)
Teil 4: Video-Subcode (VSC)
(IEC 60843-4:2000)

This European Standard was approved by CENELEC on 2000-04-01. 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.

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

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Foreword

The text of document 100B/242/FDIS, future edition 1 of IEC 60843-4, prepared by SC 100B, Audio, video and multimedia information storage systems, 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 60843-4 on 2000-04-01.

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) 2001-01-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2003-04-01

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

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

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60843-4:2000 was approved by CENELEC as a European Standard without any modification.

CONTENTS

Clause	Page
1 General	5
1.1 Scope	5
1.2 Normative references	5
2 Area allocation and dimensions	5
2.1 Types of video subcode (VSC).....	5
2.2 1 block VSC.....	5
2.3 5 block VSC.....	5
3 Data structure	6
3.1 1 block VSC.....	6
3.2 5 block VSC.....	6
4 Channel coding.....	6
4.1 Modulation.....	6
4.2 Transmission rate	6
4.3 Erase code	6
4.4 Search mark	6
4.5 Synchronization code	7
4.6 End mark.....	7
5 Data contents	7
5.1 Block	7
5.2 Word	7
5.3 CRC code and error detection.....	7
5.4 Mode	7
6 Recording method of mode data (Block 4)	8
6.1 Time code.....	8
6.2 Recording date/Recording time.....	8
6.3 Video control code.....	8
6.4 Pre-recorded tape modes	8
Annex A (normative) Code assignment	19
Annex B (informative) Pre-recorded tape	25
Annex ZA (normative) Normative references to international publications with their corresponding European publications	26
Figure 1 – Area allocation and dimensions of 1 block VSC	9
Figure 2 – Area allocation and dimensions of 5 block VSC with PCM audio.....	10
Figure 3 – Area allocation and dimensions of 5 block VSC without PCM audio	11
Figure 4 – 1 block VSC	12
Figure 5 – 5 block VSC	13
Figure 6 – Synchronization code	14

	Page
Table 1 – Search mark	14
Table 2 – Block contents	14
Table 3 – Word contents	15
Table 4 – Mode contents	15
Table 5 – Time code (525 line – 60 field system).....	15
Table 6 – Time code (625 line – 50 field system).....	16
Table 7 – Recording date/Recording time (525 line – 60 field system).....	16
Table 8 – Recording date/Recording time (625 line – 50 field system).....	16
Table 9 – Recording length	17
Table 10 – Pre-recorded tape (525 line – 60 field system).....	17
Table 11 – Pre-recorded tape (625 line – 50 field system).....	18
Table A.1 – Control command	20
Table A.2 – Numeral code	24
Table B.1 – Structure of pre-recorded tape.....	25

HELICAL-SCAN VIDEO TAPE CASSETTE SYSTEM USING 8 mm MAGNETIC TAPE (8 mm VIDEO) –

Part 4: Video subcode (VSC)

1 General

1.1 Scope

This part of IEC 60843 specifies a method of auxiliary data recording and playback with the IEC 60843 8 mm video system. This part is applicable to both 525 line – 60 field and 625 line – 50 field television systems.

1.2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 60843. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 60843 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60461:1986, *Time and control code for video tape recorders*

IEC 60843 (all parts), *Helical-scan video tape cassette system using 8 mm magnetic tape*

2 Area allocation and dimensions

2.1 Types of video subcode (VSC)

There are two types of VSC which are 1 block VSC and 5 block VSC.

2.2 1 block VSC

Figure 1 shows the recording area of 1 block VSC.

The recording area of 1 block VSC shall be specified by the head switching point.

All of the data area, search mark and erase code should be recorded.

2.3 5 block VSC

2.3.1 5 block VSC with PCM audio

Figure 2 shows the recording area of 5 block VSC with PCM audio.

The recording area of 5 block VSC with PCM audio shall be specified by the distance from the head switching point.

All the data area, search mark and erase code should be recorded.

The erase code should have a variable length relative to the position of PCM data area.

2.3.2 5 block VSC without PCM audio

Figure 3 shows the recording area of 5 block VSC without PCM audio.

The recording area of 5 block VSC without PCM audio shall be specified by the distance from the head switching point.

All of the data area, search mark and erase code should be recorded.

3 Data structure

3.1 1 block VSC

Figure 4 shows the data area of 1 block VSC.

1 block VSC consists of a block named Block 4.

Block 4 is common to 5 block VSC and 1 block VSC.

3.2 5 block VSC

Figure 5 shows the data area of 5 block VSC.

5 block VSC has an extended data area from Block 0 to Block 3.

4 Channel coding

4.1 Modulation

The modulation method shall be a bi-phase mark, except for the synchronization code.

4.2 Transmission rate

The transmission rate shall be 368 times the horizontal sync frequency, 5,79 Mbit/s for the 525 line – 60 field system and 5,75 Mbit/s for the 625 line – 50 field system.

4.3 Erase code

The erase code shall be all “1”.

4.4 Search mark

The data sign of the search mark shall be all “0” for enable.

The data sign of the search mark shall be all "1" for disable.

Table 1 shows the recording condition of the search mark.

4.5 Synchronization code

Figure 6 shows the synchronization code.

The synchronization code indicates the start position of each CRC block.

4.6 End mark

The end mark shows the end of the data area.

The end mark consists of 12 successive synchronization codes.

5 Data contents

5.1 Block

Table 2 shows the contents of the block.

A block consists of the synchronization code, five words and the CRC code.

Blocks from Block 0 to Block 3 shall be used with 5 block VSC only.

Block 4 is common to 5 block VSC and 1 block VSC.

5.2 Word

Table 3 shows the contents of the word.

Word 0 shows the mode which indicates a category of data code.

Words from Word 1 to Word 4 consist of the data code for the mode.

5.3 CRC code and error detection

The error detection system shall be based on the CRC method.

The CRC block consists of five words and the CRC code.

The CRC code contains 8 bits and its generator polynomial $G(x)$ shall be as follows:

$$G(x) = x^8 + 1 \quad (\text{preset "11001100"})$$

MSB LSB

5.4 Mode

Table 4 shows the outline of the contents of the mode. See annex A for details.