

INTERNATIONAL STANDARD

Recording – Helical-scan digital video cassette recording system using 6,35 mm magnetic tape for consumer use (525-60, 625-50, 1125-60 and 1250-50 systems) – Part 11: HDV format for 1080i and 720p systems

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CONTENTS

FOREWORD.....	8
1 Scope.....	10
2 Normative references	11
3 Terms, definitions, symbols, abbreviations and conventions	12
4 Environment and test conditions	13
4.1 Environment.....	13
4.2 Reference tape.....	14
5 Helical recordings.....	14
5.1 HD1 mode	14
5.1.1 Tape speed	14
5.1.2 Record location and dimensions	14
5.2 HD2 mode	14
5.2.1 Tape speed	14
5.2.2 Sectors.....	15
5.2.3 Record location and dimensions	15
6 Programme track data arrangement.....	18
6.1 HD1 mode	18
6.1.1 Labelling conversion.....	18
6.1.2 Audio sector	18
6.1.3 Video sector	18
6.1.4 Subcode sector	18
6.2 HD2 mode	18
6.2.1 General	18
6.2.2 ITI sector	21
6.2.3 Main sector.....	22
6.2.4 Subcode sector	28
7 HD1 mode for 480, 576 and 720 systems	29
7.1 General.....	29
7.2 Normal play data	29
7.2.1 Introduction	29
7.2.2 System layer	29
7.2.3 Transport packet layer.....	29
7.2.4 Adaptation field	29
7.2.5 PES packet	30
7.2.6 PSI	30
7.2.7 Video.....	34
7.2.8 Audio.....	36
7.2.9 Embedding of pack data	37
7.2.10 Bit rate	38
7.3 Trick play data.....	38
7.3.1 TPH and TPL.....	38
7.3.2 PES packet	38
7.3.3 Transport stream	38
7.3.4 Transmission via digital interface.....	38
7.4 Seamless playback at transition point.....	39

7.4.1	Management method of GOP recording position	39
7.4.2	PID	41
7.4.3	DIT	41
7.4.4	Recording data	41
7.4.5	Seamless playback stream	41
8	HD2 mode for 1080 system	42
8.1	Data structure	42
8.1.1	Main data	42
8.1.2	Structure of SB header	42
8.1.3	Null sync block	43
8.2	PES data	43
8.2.1	PES sync block	43
8.2.2	PES-A and PES-V	43
8.2.3	PES construction	44
8.2.4	PES packet restrictions	46
8.2.5	Audio processing	47
8.2.6	Video processing	47
8.3	AUX data	50
8.3.1	Structure of AUX sync block	50
8.3.2	Keyword	51
8.3.3	Structure of AUX pack data	51
8.3.4	ETN pack	52
8.3.5	Audio frame pack	53
8.3.6	Video frame pack	57
8.3.7	DV multi-pack	63
8.3.8	ECCTB pack	64
8.3.9	Other packs	69
8.3.10	AUX data at the editing point	71
8.4	Search data	71
8.4.1	Introduction	71
8.4.2	Recording pattern of search data	71
8.4.3	Search data processing	74
8.5	Subcode signal processing	85
8.5.1	Introduction	85
8.5.2	ID data	85
8.5.3	Subcode data	86
8.6	Recording positions on tape	88
8.6.1	Relation between TTC and stream data	88
8.6.2	Recommendation for the recording start position	90
8.6.3	Recording end position	92
8.6.4	Recording other positions	94
8.7	TS specifications	94
8.7.1	Definition of transport streams	94
8.7.2	System layer	94
8.7.3	Transport packet layer	94
8.7.4	Adaptation field	94
8.7.5	PSI	95
8.7.6	DIT	99
8.7.7	Descriptors	99

8.7.8	Partial_transport_stream_descriptor	103
8.7.9	Transport stream system target decoder.....	103
8.7.10	AUX PES packet	104
8.8	MIC (memory in cassette).....	106
8.9	Progressive video processing.....	106
8.9.1	Progressive recording.....	106
8.9.2	24p recording	107
Figure 1	– Location and dimensions of recorded track	15
Figure 2	– Sector location from SSA	16
Figure 3	– Sector arrangement on helical track	19
Figure 4	– Servo information and tracks.....	19
Figure 5	– Structure of main sector	23
Figure 6	– Main sync block ID code word bit assignments.....	24
Figure 7	– Data and inner parity of a data sync block for the main sector.....	25
Figure 8	– Data and outer parity of a data sync block for the main sector.....	27
Figure 9	– Interleaving on a 16-track basis (ECC unit)	28
Figure 10	– Structure of subcode sector	28
Figure 11	– ID data in subcode sector.....	29
Figure 12	– GOP frame management.....	41
Figure 13	– Structure of main sync block	42
Figure 14	– Recording pattern of PES sync block	43
Figure 15	– PES construction (1-1).....	44
Figure 16	– PES construction (1-2).....	45
Figure 17	– PES construction (2-1)	46
Figure 18	– PES construction (2-2).....	46
Figure 19	– PES construction (2-3).....	46
Figure 20	– Horizontal sampling timing	48
Figure 21	– Structure of AUX pack data	52
Figure 22	– Relation between ETN and track number.....	53
Figure 23	– Audio compensation 1	56
Figure 24	– Audio compensation 2.....	56
Figure 25	– Audio compensation 3	57
Figure 26	– Recording pattern of search data	74
Figure 27	– Structure of search sync block	74
Figure 28	– Macro blocks for search picture.....	79
Figure 29	– Structure of search picture data	80
Figure 30	– Configuration of 8x speed search data	80
Figure 31	– 8x speed search base data on video screen.....	80
Figure 32	– 8x speed search helper data on video screen.....	81
Figure 33	– Configuration of 24x speed search data (1080i/60 system).....	81
Figure 34	– Configuration of 24x speed search data (1080i/50 system).....	82
Figure 35	– 24x speed search data on video screen	82
Figure 36	– Relation between search data and video frame (1080i/60 system).....	83

Figure 37 – Relation between search data and video frame (1080i/50 system).....	83
Figure 38 – Management example at the start of discontinuous recording (1080i/60 system).....	84
Figure 39 – Management example at the start of discontinuous recording (1080i/50 system).....	84
Figure 40 – Management example at the end of recording (1080i/60 system)	85
Figure 41 – Management example at the end of recording (1080i/50 system)	85
Figure 42 – Structure of ID data.....	86
Figure 43 – Subcode TTC interrelation (1080i/60 system).....	89
Figure 44 – Subcode TTC interrelation (1080i/50 system).....	89
Figure 45 – Relation between subcode TTC and video frame.....	90
Figure 46 – Recommendation for the recording start position of a tape	91
Figure 47 – Numbering of ABST and ETN for invalid tracks	91
Figure 48 – Recording start position (1080i/60 system).....	92
Figure 49 – Recording start position (1080i/50 system).....	92
Figure 50 – Recording end position.....	94
Figure 51 – Transport stream system target decoder	103
Figure 52 – Transport timing between PES-A and AUX-A	105
Figure 53 – Transport timing between PES-V and AUX-V	106
Figure 54 – Relation between ETN, DTS and TTC for 24p recording	108
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Table 1 – Record location and dimensions.....	16
Table 2 – Length of each area (1080i/60 system).....	16
Table 3 – Length of each area (1080i/50 system).....	17
Table 4 – Scanner example	18
Table 5 – Application ID of video area	18
Table 6 – Randomization pattern used for data sync blocks of the main sector	20
Table 7 – Randomization pattern used for data sync blocks of the subcode sector.....	21
Table 8 – ID of track information.....	21
Table 9 – Bit stream of TIA for track F0	22
Table 10 – Bit stream of TIA for track F1.....	22
Table 11 – Bit stream of TIA for track F2.....	22
Table 12 – Format type.....	24
Table 13 – Track pair number	24
Table 14 – Application ID of area 3 (AP3)	29
Table 15 – Possible descriptor locations	30
Table 16 – Registration_descriptors (descriptor_tag = 05h)	30
Table 17 – DTCP_descriptor (descriptor_tag = 88h).....	31
Table 18 – DTCP_CCI	31
Table 19 – Image_Constraint_Token.....	32
Table 20 – APS.....	32
Table 21 – Stream_identifier_descriptor (descriptor_tag = 52h)	32
Table 22 – Component_tag.....	32
Table 23 – Partial_transport_stream_descriptor (descriptor_tag = 63h).....	33

Table 24 – DIT (PID = 001Eh / table_id = 7Eh)	34
Table 25 – MPEG-2 parameters constraints for 30/60 frame system	35
Table 26 – MPEG-2 parameters constraint for 25/50 frame system	35
Table 27 – Expression method of the number of repetitions	36
Table 28 – Embedded pack data	37
Table 29 – GOP frame management pack	39
Table 30 – Servo frame length	39
Table 31 – Structure of SB header	42
Table 32 – Null sync block	43
Table 33 – PES packet restrictions	47
Table 34 – Construction of video signal sampling	48
Table 35 – Definition 1 of video ES	49
Table 36 – Definition 2 of video ES	49
Table 37 – Definition 3 of video ES	50
Table 38 – Definition 4 of video ES	50
Table 39 – AUX sync block	50
Table 40 – Keyword	51
Table 41 – ETN pack	52
Table 42 – Audio frame pack	54
Table 43 – Video frame pack	58
Table 44 – DV multi-pack	64
Table 45 – ECCTB pack	65
Table 46 – NO INFO pack	69
Table 47 – Maker option pack	69
Table 48 – Null pack	70
Table 49 – VBV pack	70
Table 50 – Configuration of search sync blocks for 8x speed search	72
Table 51 – Configuration of search sync blocks for 24x speed search	73
Table 52 – SB header and search SB header	75
Table 53 – Search pack data	75
Table 54 – Data structure of search header	76
Table 55 – Configuration of search pack for 8x speed search	78
Table 56 – Configuration of search pack for 24x speed search	78
Table 57 – Subcode data for user's tape	87
Table 58 – Subcode data for pre-recorded tape	88
Table 59 – PAT	95
Table 60 – PID assignments	96
Table 61 – PMT	97
Table 62 – Stream_type assignments	98
Table 63 – SIT	98
Table 64 – DIT (PID = 001Eh / table_id = 7Eh)	99
Table 65 – Descriptors	100
Table 66 – Registration_descriptor (descriptor_tag = 05h)	100

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Table 67 – Stream_type in the registration_descriptor	101
Table 68 – Video frame pack data in jog encode stream	102
Table 69 – Partial_transport_stream_descriptor (descriptor_tag = 63h).....	103
Table 70 – TB _n , B _n , RX _n for AUX-A data and AUX-V data stream	104
Table 71 – AUX-A PES packet.....	104
Table 72 – AUX-V PES packet.....	105
Table 73 – Progressive recording parameters	107

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**RECORDING –
HELICAL-SCAN DIGITAL VIDEO CASSETTE
RECORDING SYSTEM USING 6,35 MM MAGNETIC
TAPE FOR CONSUMER USE
(525-60, 625-50, 1125-60 AND 1250-50 SYSTEMS) –**

Part 11: HDV¹ format for 1080i and 720p systems

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International Standard IEC 61834-11 has been prepared by TA 7: Moderate data rate storage media, equipment and systems, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

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

CDV	Report on voting
100/1229/CDV	100/1306/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 list of all the parts of the IEC 61834 series, under the general title, *Recording – Helical-scan digital video cassette recording system using 6,35 mm magnetic tape for consumer use (525-60, 625-50, 1125-60 and 1250-50 systems)*, can be found on the IEC web site.

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**RECORDING –
HELICAL-SCAN DIGITAL VIDEO CASSETTE
RECORDING SYSTEM USING 6,35 MM MAGNETIC
TAPE FOR CONSUMER USE
(525-60, 625-50, 1125-60 AND 1250-50 SYSTEMS) –**

Part 11: HDV² format for 1080i and 720p systems

1 Scope

This part of IEC 61834 specifies the content, format, and recording method of data blocks containing video, audio, and system data on the helical scan digital video cassettes using 6,35 mm tape as defined in IEC 61834-1 for recording MPEG-2 streaming HD signals.

The MPEG-2 streaming HD signals defined in this standard have the following modes.

The HD1 mode is designed for the following systems:

- 525-line progressive with a frame frequency of 59,94 Hz (hereinafter referred to as 480p/60 system)
- 625-line progressive with a frame frequency of 50,00 Hz (hereinafter referred to as 576p/50 system)
- 525-line interlace with a field frequency of 59,94 Hz (hereinafter referred to as 480i/60 system)
- 625-line interlace with a field frequency of 50,00 Hz (hereinafter referred to as 576i/50 system)
- 525-line progressive with a frame frequency of 29,97 Hz (hereinafter referred to as 480p/30 system)
- 625-line progressive with a frame frequency of 25,00 Hz (hereinafter referred to as 576p/25 system)
- 750-line progressive with a frame frequency of 29,97 Hz (hereinafter referred to as 720p/30 system)
- 750-line progressive with a frame frequency of 25,00 Hz (hereinafter referred to as 720p/25 system)
- 750-line progressive with a frame frequency of 59,94 Hz (hereinafter referred to as 720p/60 system)
- 750-line progressive with a frame frequency of 50,00 Hz (hereinafter referred to as 720p/50 system)

The main specifications shall be as defined in IEC 61834-9 and IEC 61834-10.. Other information, such as details about MPEG-2 stream descriptors, trick play data, system data, etc., are defined in Clause 7.

The HD2 mode is designed for the following systems:

- 1125-line interlace with a field frequency of 59,94 Hz (hereinafter referred to as 1080i/60 system)

² HDV is the trademark of Sony Corporation and Victor Company of Japan, Limited (JVC).

- 1125-line interlace with a field frequency of 50,00 Hz (hereinafter referred to as 1080i/50 system)

The main specifications for helical recordings and the program track data format shall be as defined in Clauses 5 and 6 of this standard. Other information, such as details about main data, PES data, search data, subcode data, MPEG-2 stream descriptors, etc., are defined in Clause 8.

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 61834-1, *Recording – Helical-scan digital video cassette recording system using 6,35 mm magnetic tape for consumer use (525-60, 625-50, 1125-60 and 1250-50 systems) – Part 1: General specifications*

IEC 61834-2, *Recording – Helical-scan digital video cassette recording system using 6,35 mm magnetic tape for consumer use (525-60, 625-50, 1125-60 and 1250-50 systems) – Part 2: SD format for 525-60 and 625-50 systems*

IEC 61834-4, *Recording – Helical-scan digital video cassette recording system using 6,35 mm magnetic tape for consumer use (525-60, 625-50, 1125-60 and 1250-50 systems) – Part 4: Pack header table and contents*

IEC 61834-9, *Recording – Helical-scan digital video cassette recording system using 6,35 mm magnetic tape for consumer use (525-60, 625-50, 1125-60 and 1250-50 systems) – Part 9: DVB format*

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IEC 61834-10, *Recording – Helical-scan digital video cassette recording system using 6,35 mm magnetic tape for consumer use (525-60, 625-50, 1125-60 and 1250-50 systems) – Part 10: DTV format*

ISO/IEC 11172-3, *Coding of moving pictures and associated audio for digital storage – Part 3: Audio*

ISO/IEC 13818-1, *Information technology – Generic coding of moving pictures and associated audio information: Systems*

ISO/IEC 13818-2, *Information technology – Generic coding of moving pictures and associated audio information: Video*

ISO/IEC 13818-3, *Information technology – Generic coding of moving pictures and associated audio information – Part 3: Audio*

ISO/IEC 13818-9, *Information technology – Generic coding of moving pictures and associated audio information – Part 9: Extension for real time interface for systems decoder*

ITU-R Recommendation BT.709-5, *Parameter values for the HDTV standards for production and international programme exchange*

ETSI EN 300 468, V1.5.1:2003, *Digital Video Broadcasting (DVB); Specification for Service Information (SI) in DVB Systems*

ARIB STD-B10, *Service Information for Digital Broadcasting System*

ARIB STD-B20, *Transmission System for Digital Satellite Broadcasting*

3 Terms, definitions, symbols, abbreviations and conventions

For the purposes of this document, the following terms and definitions apply.

AAU	Audio access unit
ABST	Absolute track number
AP3	Application ID of area 3
APM	Application ID of MIC
APS	Analogue protection system
APT	Application ID of a track
AUX	Auxiliary
BF	Blank flag
DAR	Display aspect ratio
DCF	Discontinuity flag
DCT	Discrete cosine transform
DIT	Discontinuity information table
DTCP	Digital transmission content protection
DTS	Decoding time stamp
DV	Digital video
ECC	Error correction code
ECCTB	Error correction code table block
ES	Elementary stream
ETN	Extended track number
FR ID	First half ID
GF	Galois field
GOP	Group of picture
HDTV	High definition TV
ID	Identification
IDP	ID parity
ITI	Insert and track information
LSB	Least significant bit of data
MPEG	Moving picture expert group
MSB	Most significant bit of data

NRZI	Non-return to zero inverted
PAT	Program association table
PCR	Program clock reference
PES	Packetized elementary stream
PF	Progressive frame
PID	Packet identifier
PMT	Program map table
PP	Picture/photo ID
PSI	Program specific information
PTS	Presentation time stamp
RF	Repeat first field
SB	Sync block
SBSC	Sync block scramble control
SH	Search header
SIT	Selection information table
SPH	Search phase
SSA	Start-sync block area
STA	Status of the compressed macro block
STI	Second track information of a TI-sync block
TIA	Track information area
TPH	Higher trick play speed
TPL	Lower trick play speed
TTC	TITLE TIME CODE
TS	Transport stream

When data bits are fewer than the defined field, data is packed and stored in the LSB side, and the remaining bits are set to zero.

“[m:n]” means the inclusive range of bits between bit m and bit n.

4 Environment and test conditions

4.1 Environment

Tests and measurements for checking conformity with the requirements of this standard shall be carried out under the following conditions.

- Temperature: 20 °C ± 1 °C
- Relative humidity: 50 % ± 2 %