

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: Packheader table and the contents

ICS 33.160.40

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National foreword

This British Standard is the UK implementation of EN 61834-4:1998+A1:2011. It is identical to IEC 61834-4:1998, incorporating amendment 1:2010. It supersedes BS EN 61834-4:1998, which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to IEC text carry the number of the IEC amendment. For example, text altered by IEC amendment 1 is indicated by **A1** **A1**.

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.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

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This British Standard, having been prepared under the direction of the Electrotechnical Sector Board, was published under the authority of the Standards Board and comes into effect on 15 November 1998

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English version

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 61834-4:1998)

Enregistrement — Système d'enregistrement
grand public vidéo à cassette à défilement
hélicoïdal pour bande magnétique de 6,35 mm
(systèmes 525-60, 625-50, 1125-60 et 1250-50)
Partie 4: Tableaux des paquets en-tête et leur
contenu
(CEI 61834-4:1998)

Aufzeichnung — Videokassettsystem mit
digitaler Schrägspuraufzeichnung auf
Magnetband 6,35 mm für den Heimgebrauch
(Systeme 525-60, 625-50, 1125-60 und 1250-50)
Teil 4: Datenpakete — Übersicht und Inhalt
(IEC 61834-4:1998)

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

Central Secretariat: Avenue Marnix 17, B-1000 Brussels

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Foreword

The text of document 100B/164/FDIS, future edition 1 of IEC 61834-4, 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 61834-4 on 1998-08-01.

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) 1999-05-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2001-05-01

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

In this standard, Annex ZA is normative.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61834-4:1998 was approved by CENELEC as a European Standard without any modification.

Foreword to amendment A1

The text of amendment 1:2010 to the International Standard IEC 61834-4:1998, prepared by technical area 7, Consumer electronics storage and related applications, of IEC TC 100, Audio, video and multimedia systems and equipment, was submitted to the formal vote and was approved by CENELEC as amendment A1 to EN 61834-4:1998 on 2011-01-02 without any modification.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2011-10-02
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2014-01-02

Annex ZA has been added by CENELEC.

Endorsement notice

The text of amendment 1:2010 to the International Standard IEC 61834-4:1998 was approved by CENELEC as an amendment to the European Standard without any modification.

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1 General

1.1 Scope

This part of IEC 61834 specifies the pack headers and the contents of packs which are applicable to the whole recording system of helical-scan digital video cassette using 6,35 mm magnetic tape.

1.2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 61834. 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 61834 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.

- Ⓐ¹⁾ IEC 61834-2:1998, *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 61834-11:2008, *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*

ETS 300 468, *Specification for Service Information (SI) in DVB systems* Ⓐ¹⁾

IEC 61880:1998, *Video systems (525/60) — Video and accompanied data using the vertical blanking interval — Analogue interface.*

ISO/IEC 2022:1994, *Information technology — Character code structure and extension techniques*¹⁾.

ISO 3166:1993, *Codes for the representation of names of countries.*

ISO 3901:1986, *Documentation — International Standard Recording Code (ISRC).*

EBU SPB 492:1992, *Teletext Specifications.*

EIA 608:1993, *Recommended Practice for Line 21 Data Service.*

ETS 300 294:1996, *Television systems; 625 line television Wide Screen Signalling (WSS).*

ITU-R Report 624-4:1990, *Characteristics of television systems.*

ITU-R Recommendation BT653-2:1993, *Teletext systems.*

1.3 Labelling convention

Byte values are expressed in binary coded decimal notation unless otherwise noted.

An “h” subscript indicates hexadecimal value. A “b” subscript indicates binary value.

2 Pack header table

Packs are divided into groups as follows.

CONTROL group	Packs in relation to VCR control
TITLE group	Packs in relation to Title
CHAPTER group	Packs in relation to Chapter
PART group	Packs in relation to Part
PROGRAMME group	Packs in relation to Programme
AAUX group	Packs in relation to AAUX
VAUX group	Packs in relation to VAUX
CAMERA group	Packs in relation to a camera
LINE group	Packs in relation to horizontal lines
SOFT MODE group	Packs in relation to maker's option and no information

The relationship between pack headers and groups is shown in Table 1.

¹⁾ To be published.

Table 1 — Pack header table

A1

UPPER LOWER	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010 to 1110	1111
	CONTROL	TITLE	CHAPTER	PART	PROGRAM	AAUX	VAUX	CAMERA	LINE	MPEG		SOFT MODE
0000	CASSETTE ID	TOTAL TIME	TOTAL TIME	TOTAL TIME	TOTAL TIME	SOURCE	SOURCE	CONSUMER CAMERA 1	LINE HEADER	SOURCE		MAKER CODE
0001	TAPE LENGTH	REMAIN TIME	REMAIN TIME	REMAIN TIME	REMAIN TIME	SOURCE CONTROL	SOURCE CONTROL	CONSUMER CAMERA 2	Y	SOURCE CONTROL		OPTION
0010	TIMER ACT DATA	CHAPTER TOTAL NO	CHAPTER NO.	PART NO.	REC D TIME	REC DATE	REC DATE	RSV	CR	REC DATE		OPTION
0011	TIMER ACT S/S	TIME CODE	TITLE CODE	TITLE CODE	TITLE CODE	REC TIME	REC TIME	LENS	CB	REC TIME		OPTION
0100	PR START POINT	BINARY GROUP	BINARY GROUP	BINARY GROUP	BINARY GROUP	BINARY GROUP	BINARY GROUP	GAIN	RSV	BINARY GROUP		OPTION
0101	PR START POINT	CASSETTE NO.	RSV	RSV	RSV	CLOSED CAPTION	CLOSED CAPTION	PEDESTAL	RSV	STREAM		OPTION
0110	TAG ID NO / GENRE	SOFT ID	RSV	RSV	RSV	TR	TR	GAMMA	RSV	RSV		OPTION
0111	TOPIC / PAGE HEADER	SOFT ID	RSV	RSV	RSV	RSV	TELE TEXT	DETAIL	RSV	ETN		OPTION
1000	TEXT HEADER	TEXT HEADER	TEXT HEADER	TEXT HEADER	TEXT HEADER	TEXT HEADER	TEXT HEADER	TEXT HEADER	TEXT HEADER	TEXT HEADER		OPTION
1001	TEXT	TEXT	TEXT	TEXT	TEXT	TEXT	TEXT	TEXT	TEXT	TEXT		OPTION
1010	TAG	TITLE START	CHAPTER START	PART START	PROGRAM START	AAUX START	VAUX START	RSV	LINE START	SERVICE START		OPTION
1011	TAG	TITLE START	CHAPTER START	PART START	PROGRAM START	AAUX START	VAUX START	CAMERA PRESET	LINE START	SERVICE START		OPTION
1100	TELETEXT INFO	REEL ID	RSV	RSV	RSV	RSV	MARINE / MOUNTAIN	FLARE	RSV	RSV		OPTION
1101	KEY	REEL ID	RSV	RSV	RSV	RSV	LONGITUDE / LATITUDE	SHADING	RSV	RSV		OPTION
1110	ZONE END	TITLE END	CHAPTER END	PART END	PROGRAM END	AAUX END	VAUX END	KNEE	LINE END	SERVICE END		OPTION
1111	ZONE END	TITLE END	CHAPTER END	PART END	PROGRAM END	AAUX END	VAUX END	SHUTTER	LINE END	SERVICE END		OPTION

	AAUX main area		MIC main area
	VAUX main area		MPEG main area
	Subcode main area		

A1

3 Control

CONTROL 0

3.1 Cassette ID

	MSB						LSB	
PC 0	0	0	0	0	0	0	0	0
PC 1	ME	1	1	MULTI-BYTES			MEM TYPE	
PC 2	MEM SIZE of SPACE 0				MEM SIZE of the LAST BANK in SPACE 1			
PC 3	MEM BANK NO. of SPACE 1							
PC 4	UNITS of TAPE THICKNESS				1/10 of TAPE THICKNESS			

This pack shall be written in the MIC main area.

ME: MIC error

- 0 = All events in this MIC do not always exist on this tape
- 1 = All events in this MIC certainly exist on this tape

MULTI-BYTES: Maximum number of words to be written in one cycle of multi-writing operation

- 0 = 4 bytes
- 1 = 8 bytes
- 2 = 16 bytes
- 3 to 6 = Reserved
- 7 = Unlimited

Reserved value for MULTI-BYTES will be defined by the power of 2 bytes.

MEM TYPE: Memory type

- 00b = EEPROM
- 01b = FeRAM
- Others = Reserved

MEM SIZE of SPACE 0:

MEM SIZE of the LAST BANK in SPACE 1:

- | | | |
|---------------|---------------|---------------------|
| 0 = 256 bytes | 4 = 4 kbytes | 8 = 64 kbytes |
| 1 = 512 bytes | 5 = 8 kbytes | Others = Reserved |
| 2 = 1 kbytes | 6 = 16 kbytes | Fh = No information |
| 3 = 2 kbytes | 7 = 32 kbytes | |

MEM BANK NO. of SPACE 1: Total number of memory banks in space 1

If MEM BANK NO. of SPACE 1 = 0, MEM SIZE of the LAST BANK in SPACE 1 shall be Fh.

TAPE THICKNESS:

- 0,0 μm to 9,9 μm

CONTROL 1

3.2 Tape length

	MSB	LSB
PC 0	00000000	1
PC 1	LSB	1
PC 2	TAPE LENGTH.....	
PC 3	←.....(binary).....	
PC 4	11111111	1

This pack shall be written in the MIC main area.

TAPE LENGTH:

The number of tracks which is given by dividing the total length of magnetic tape by the track pitch 0 for SP mode (10 μm).

CONTROL 2

3.3 Timer act date (Timer activation date)

	MSB	LSB
PC 0	000000010	0
PC 1	SR	DAY
PC 2	RP	TCF TNMN UNITS of MONTH
PC 3	TENS of YEAR UNITS of YEAR	
PC 4	TEXT	GENRE CATEGORY

This pack may be written in the MIC common optional area.

SR: SP/RSV

This flag is valid only for recording of track pitch 0 and track pitch 1.

0 = Reserved (track pitch 1 shall be selected)

1 = SP mode (track pitch 0 shall be selected)

This flag should be set 1 for recording of track pitch 2 and track pitch 3.

DAY and TCF: DAY and timer control flag

TCF	Form	DAY
00	Weekly	Sun. Mon. Tue. Wed. Thr. Fri. Sat.
01	Once	Sun. Mon. Tue. Wed. Thr. Fri. Sat.
10	Reserved	
11	Date	01 to 31

For TCF = 00b or 01b, each bit of DAY is set according to negative logic.

RP: Recording protect

0 = Over-recording on the programme, which is recorded by this timer activation, is not allowed

1 = Over-recording on the programme, which is recorded by this timer activation, is allowed

MONTH:

01 to 12 = January to December

1Fh = No information

TNMN: Tens of month

YEAR: Last two figures of year

00 to 99 FFh = No information

TEXT:

This flag is valid only for MIC.

0 = Text information exists

1 = No text information exists

For subcode, AAUX and VAUX, TEXT shall be 1.

GENRE CATEGORY:

GENRE CATEGORY shows the category of the recording source;

GENRE CATEGORY consists of BASIC CATEGORY of 3 bits and CATEGORY of 4 bits.

GENRE CATEGORY						
BASIC CATEGORY			CATEGORY			
b6	b5	b4	b3	b2	b1	b0
BASIC CATEGORY			Contents			
0	0	0	Movie			
0	0	1	Music			
0	1	0	Sports			
0	1	1	Drama / Entertainment			
1	0	0	News			
1	0	1	Education / Culture			
1	1	0	Leisure / Hobbies / Living			
1	1	1	Others			

Each entry of BASIC CATEGORY has 16 categories.

CATEGORY = 1111b indicates that only the basic category is selected or a GENRE pack is recorded or written in the common optional areas.

CATEGORY = 1110b indicates that information of the basic category is recorded or written in the common optional areas using the character information system or full recording teletext system (see **9.10**).

Examples are described in the GENRE pack.

Movie (BASIC CATEGORY = 000)

CATEGORY	Contents
0 0 0 0	Animation
0 0 0 1	Action/Adventure/Spectacle
0 0 1 0	Science fiction/SFX
0 0 1 1	War/Battle/Combat
0 1 0 0	Drama/Romance
0 1 0 1	Fantasy
0 1 1 0	Comedy
0 1 1 1	Mystery/Suspense
1 0 0 0	Horror/Occult/Splatter
1 0 0 1	Musical/Dance/Opera
1 0 1 0	History/Biography
1 0 1 1	Western/Historical costume play
1 1 0 0	Family/Children
1 1 0 1	Adult
1 1 1 0	Information of this basic category
1 1 1 1	Basic category only or Others

Music (BASIC CATEGORY = 001)

CATEGORY	Contents
0 0 0 0	Pops
0 0 0 1	Rock/Rock'n'roll
0 0 1 0	Jazz and fusion
0 0 1 1	Rhythm & blues/Soul/Gospel
0 1 0 0	House/Rap
0 1 0 1	Easy listening
0 1 1 0	Oldies
0 1 1 1	Country & western/Enka
1 0 0 0	Latin/Reggae/Calypso
1 0 0 1	Samba/Tango/Folklore
1 0 1 0	Chanson/Canzone/Flamenco
1 0 1 1	Ethnic/World
1 1 0 0	Classic (Opera, vocal music)
1 1 0 1	Classic (Others)
1 1 1 0	Information of this basic category
1 1 1 1	Basic category only or Others

Sports (BASIC CATEGORY = 010)

CATEGORY	Contents
0 0 0 0	Track and field
0 0 0 1	Water sports
0 0 1 0	Winter sports
0 0 1 1	Ball games
0 1 0 0	Martial arts
0 1 0 1	Racing sports
0 1 1 0	Baseball
0 1 1 1	Basketball
1 0 0 0	Football/Rugby
1 0 0 1	Soccer
1 0 1 0	Tennis
1 0 1 1	Ice hockey/Hockey
1 1 0 0	Golf
1 1 0 1	Wrestling/Sumo wrestling
1 1 1 0	Information of this basic category
1 1 1 1	Basic category only or Others

Drama/Entertainment (BASIC CATEGORY = 011)

CATEGORY	Contents
0 0 0 0	Animation
0 0 0 1	Drama
0 0 1 0	Stage/Concert
0 0 1 1	Variety
0 1 0 0	Soap opera
0 1 0 1	Comedy
0 1 1 0	Children
0 1 1 1	Documentary
1 0 0 0	Interview
1 0 0 1	Talk
1 0 1 0	Quiz/Puzzle
1 0 1 1	Game
1 1 0 0	Karaoke
1 1 0 1	Gamble
1 1 1 0	Information of this basic category
1 1 1 1	Basic category only or Others

News (BASIC CATEGORY = 100)

CATEGORY	Contents
0 0 0 0	News
0 0 0 1	Report
0 0 1 0	Politics
0 0 1 1	Economy/Finance/Industry
0 1 0 0	Stock
0 1 0 1	Society
0 1 1 0	Region
0 1 1 1	Entertainments
1 0 0 0	Traffic
1 0 0 1	Weather
1 0 1 0	International
1 0 1 1	Commentary/Review
1 1 0 0	Crime/Police
1 1 0 1	Bulletin
1 1 1 0	Information of this basic category
1 1 1 1	Basic category only or Others

Education/Culture (BASIC CATEGORY = 101)

CATEGORY	Contents
0 0 0 0	Natural sciences
0 0 0 1	Humanities
0 0 1 0	Social sciences
0 0 1 1	Electronics/Computer
0 1 0 0	Environment/Energy/Space
0 1 0 1	Politics/Economics/Law
0 1 1 0	Language
0 1 1 1	Art and design/Music
1 0 0 0	Drama/Literature/Poetry
1 0 0 1	Ballet/Dance
1 0 1 0	Fashion/Beauty
1 0 1 1	Medical science/Health/Sports
1 1 0 0	History
1 1 0 1	Religion
1 1 1 0	Information of this basic category
1 1 1 1	Basic category only or Others

Hobbies/Leisure/Living (BASIC CATEGORY = 110)

CATEGORY	Contents
0 0 0 0	Hobbies
0 0 0 1	Leisure
0 0 1 0	Living
0 0 1 1	How-to/Do it yourself
0 1 0 0	Breeding of animals
0 1 0 1	Breeding of fishes
0 1 1 0	Gardening/Kitchen garden
0 1 1 1	Tourism/Photo & Video
1 0 0 0	Nature/Outdoor life
1 0 0 1	Health care/Exercise/Keep fit
1 0 1 0	Motorcar/Motorcycle/Bicycle
1 0 1 1	Magic/Fortune-telling
1 1 0 0	Cooking/Childbirth & child care
1 1 0 1	Shopping/Housing
1 1 1 0	Information of this basic category
1 1 1 1	Basic category only or Others

Others (BASIC CATEGORY = 111)

CATEGORY	Contents
0 0 0 0	Instruction
0 0 0 1	Communication
0 0 1 0	Advertisement
0 0 1 1	Court
0 1 0 0	Ceremony
0 1 0 1	Party
0 1 1 0	Birthday
0 1 1 1	Anniversary
1 0 0 0	For user's definition 0
1 0 0 1	For user's definition 1
1 0 1 0	For user's definition 2
1 0 1 1	For user's definition 3
1 1 0 0	For user's definition 4
1 1 0 1	For user's definition 5
1 1 1 0	Information of this basic category
1 1 1 1	No information

CONTROL 3

3.4 Timer act S/S (Timer activation start/stop)

	MSB				LSB			
PC 0	0	0	0	0	0	0	1	1
PC 1	TENS of START MINUTES				UNITS of START MINUTES			
PC 2	TENS of START HOURS				UNITS of START HOURS			
PC 3	TENS of STOP MINUTES				UNITS of STOP MINUTES			
PC 4	REC TYPE	TENS of STOP HOURS			UNITS of STOP HOURS			

This pack may be written in the MIC common optional area.

This pack contains the time to start and stop timer activation.

START MINUTES:

00 to 59

START HOURS:

00 to 23

STOP MINUTES:

00 to 59

STOP HOURS:

00 to 23

REC TYPE: Recording type

00 = Recording of television signal

01 = Recording of both television and teletext signals

10 = Recording of teletext signal only

11 = No information

CONTROL 4

3.5 PR start point (Playback or recording start point)

MSB					LSB			
PC 0	0	0	0	0	0	1	0	0
PC 1	PR	DF	TENS of FRAMES		UNITS of FRAMES			
PC 2	TENS of SECONDS				UNITS of SECONDS			
PC 3	TENS of MINUTES				UNITS of MINUTES			
PC 4	TENS of HOURS				UNITS of HOURS			

This pack may be written in the MIC common optional area.

This pack shows the tape position where playback or recording starts using the title time code.

PR: Playback or recording flag

0 = The starting point of playback

1 = The starting point of recording

DF: Drop frame flag

0 = Drop frame mode

1 = Non drop frame mode

Drop frame sequence shall be based on the SMPTE/EBU format.

For consumer digital VCR, DF shall be 0.

FRAMES:

For 525-60 or 1125-60 system

00 to 29

For 625-50 or 1250-50 system

00 to 24

SECONDS:

00 to 59

MINUTES:

00 to 59

HOURS:

00 to 23

CONTROL 5

3.6 PR start point (Playback or recording start point)

	MSB								LSB
PC 0	0	0	0	0	0	1	0	1	
PC 1	▶								BF
PC 2	ABSOLUTE TRACK NO.								
PC 3	◀.....	(binary)							
PC 4	PR	1	HL	1	1	1	1	1	

This pack may be written in the MIC common optional area.

This pack shows the tape position where playback or recording starts using absolute track number.

ABSOLUTE TRACK NO.:

Absolute track number which shows the tape position where playback or recording starts

BF: Blank flag

0 = Discontinuity exists before this absolute track number

1 = Discontinuity does not exist before this absolute track number

PR: Playback or recording flag

0 = The starting point of playback

1 = The starting point of recording

HL: Hold flag
0 = Hold the absolute track number after playback or recording
1 = Renew the absolute track number after playback or recording

CONTROL 6

3.7 Tag ID NO./Genre
For TAG ID NO. pack

MSB					LSB			
PC 0	0	0	0	0	0	1	1	0
PC 1	1	1	1	1	TAG ID			1
PC 2	TENS of TAG ID NO.				UNITS of TAG ID NO.			
PC 3	THOUSANDS of TAG ID NO.				HUNDREDS of TAG ID NO.			
PC 4	1	1	1	1	1	1	1	1

This pack may be recorded in the common optional areas.
TAG ID: Bit assignment is the same as TAG ID in the subcode area.

TAG ID	Meaning
0 1 1	for INDEX ID
1 0 1	for SKIP ID
1 1 0	for PP ID
Others	Not permitted

TAG ID NO.: Tag ID number
0 000 to 9 999
For tape, tag ID number should be numbered consecutively from the beginning.

CONTROL 6

For GENRE pack

	MSB						LSB	
PC 0	0	0	0	0	0	1	1	0
PC 1	SITUATION			CATEGORY				0
PC 2	OT0	SUBCATEGORY						
PC 3	... ORNAMENT 1 ...				LSB	MSB	... ORNAMENT 2 ...	
PC 4	MSB		ORNAMENT 0			LSB	MSB	

This pack may be recorded in the common optional areas.

This pack is prepared for expansion of the category and adding the recording source situation and ornamental terms of the category.

When this pack is used, CATEGORY of the GENRE CATEGORY in the counterpart pack shall be 1111b.

SITUATION: Recording source situation

SITUATION	Contents
0 0 0	Live
0 0 1	Pre-recorded
...	Reserved
1 1 1	No information

CATEGORY: Category code

See TIMER ACT DATE pack

SUBCATEGORY: Category code for supplement

Only the subcategory of the sports category (CATEGORY = 010b) is defined.

Others are reserved.

OT0: Group flag of ORNAMENT 0

0 = Group 0 of ORNAMENT 0

1 = Group 1 of ORNAMENT 0

Group 0 of ORNAMENT 0 is reserved.

ORNAMENT: Ornamental terms of the category

ORNAMENT 0 and ORNAMENT 1 consist of 6 bits and ORNAMENT 2 consists of 4 bits.

SUBCATEGORY for sports category

CATEGORY SUB-CATEGORY	Track and field, gymnastics	Water sports	Winter Sports	Ball games
	0 0 0 0	0 0 0 1	0 0 1 0	0 0 1 1
0 0 0 0 0 0 0	Marathon	Swimming	Skiing	Volleyball
0 0 0 0 0 0 1	Walking	Sync swimming	Jump	Beach volleyball
0 0 0 0 0 1 0	Ekiden	Diving	Crosscountry	Table tennis
0 0 0 0 0 1 1	Triathlon	Scuba diving	Free style	Softball
0 0 0 0 1 0 0	Gymnastics	Skin diving	Skating	Handball
0 0 0 0 1 0 1	Rhythmic gym	Life saving	Speed	Badminton
0 0 0 0 1 1 0	Sports acrobatics	Water polo	Figure	Cricket
0 0 0 0 1 1 1	Trampoline	Boat	Ice dance	Bowling
0 0 0 1 0 0 0	Reserved	Board sailing	Bob sleigh	Lacrosse
0 0 0 1 0 0 1		Yachting	Luge	Sepak takraw
0 0 0 1 0 1 0		Canoeing	Biathlon	Pelota vasca
0 0 0 1 0 1 1		Canoe polo	Curling	Polo
0 0 0 1 1 0 0		Surfing	Snowmobile	Bicycle polo
0 0 0 1 1 0 1		Surf jet	Snowboarding	Squash rackets
0 0 0 1 1 1 0		Water bike		Racquet ball
0 0 0 1 1 1 1				Croquet
0 0 1 0 0 0 0				Gate ball
0 0 1 0 0 0 1				Push ball
0 0 1 0 0 1 0				Net ball
0 0 1 0 0 1 1				Dodge ball
0 0 1 0 1 0 0				Unihoc
0 0 1 0 1 0 1				Lawn bowls
0 0 1 0 1 1 0				Jai alai
⋮				
1 1 1 1 1 1 0				
1 1 1 1 1 1 1	No information	No information	No information	No information

SUB-CATEGORY for sports category

CATEGORY SUB-CATEGORY	Martial arts	Racing sports	Others
0 1 0 0	0 1 0 1	1 1 1 1	
0 0 0 0 0 0	Boxing	Motor Car	Skateboarding
0 0 0 0 0 1	Weight lifting	Sprint	Grass skiing
0 0 0 0 1 0	Judo	Rally	Roller skating
0 0 0 0 1 1	Karate	Dirt trial	Land yacht
0 0 0 1 0 0	Tae kwon do	Drag race	Equestrian games
0 0 0 1 0 1	Sambo	Motorcycle	Sky diving
0 0 0 1 1 0	Shooting	Road race	Ultra-light plane
0 0 0 1 1 1	Fencing	Motocross	Glider
0 0 1 0 0 0	Kendo	Trial	Hang glider
0 0 1 0 0 1	Archery	Bicycle	Motor glider
0 0 1 0 1 0	Kyudo	Track race	Paraglider
0 0 1 0 1 1	Naginata	Load race	Paraplane
0 0 1 1 0 0	Kabaddi	Keirin	Parasail
0 0 1 1 0 1	Reserved	Mountain bicycle	Hot-air balloon
0 0 1 1 1 0		All terrain vehicle	Sports kite
0 0 1 1 1 1		Solar car	Mountaineering
0 0 1 0 0 0		Bed race	Free climbing
0 0 1 0 0 1			Rock climbing
0 0 1 0 0 1 0			Bungy jump
0 0 1 0 0 1 1			A tug of war
0 0 1 0 1 0 0			Boomerang
0 0 1 0 1 0 1			Flying disc
0 0 1 0 1 1 0			Disc golf
0 0 1 0 1 1 1			Horse shoe
0 0 1 1 0 0 0			Petanque
0 0 1 1 0 0 1			Bocce
0 0 1 1 0 1 0			Shuffle board
0 0 1 1 0 1 1			Orienteering
0 0 1 1 1 0 0			Indiaca
⋮			
1 1 1 1 1 1 0			
1 1 1 1 1 1 1	No information	No information	No information

Group 1 of ORNAMENT 0 and ORNAMENT 1

ORNAMENT 0	Contents	ORNAMENT 1	Contents
0 0 0 0 0 0	Special	1 0 0 0 0 0	Davis
0 0 0 0 0 1	Highlight	1 0 0 0 0 1	Federation
0 0 0 0 1 0	Series	1 0 0 0 1 0	Wimbledon
0 0 0 0 1 1	Miniseries	1 0 0 0 1 1	Thomas
0 0 0 1 0 0	Fiction	1 0 0 1 0 0	Uber
0 0 0 1 0 1	Non-fiction	1 0 0 1 0 1	The Royal Henley
0 0 0 1 1 0	Elementary	1 0 0 1 1 0	Super
0 0 0 1 1 1	Intermediate	1 0 0 1 1 1	Rose
0 0 1 0 0 0	Advanced	1 0 1 0 0 0	Orange
0 0 1 0 0 1	Junior high school	1 0 1 0 0 1	Sugar
0 0 1 0 1 0	High school	1 0 1 0 1 0	Cotton
0 0 1 0 1 1	College	1 0 1 0 1 1	Rice
0 0 1 1 0 0	Club	1 0 1 1 0 0	Rally
0 0 1 1 0 1	Amateur	1 0 1 1 0 1	Sports car
0 0 1 1 1 0	Open	1 0 1 1 1 0	Endurance
0 0 1 1 1 1	Professional	1 0 1 1 1 1	Formula 1
0 1 0 0 0 0	Senior	1 1 0 0 0 0	Formula 3000
0 1 0 0 0 1	Masters	1 1 0 0 0 1	Indianapolis 500
0 1 0 0 1 0	All star	1 1 0 0 1 0	Le Mans
0 1 0 0 1 1	Indoor	1 1 0 0 1 1	Paris-le
0 1 0 1 0 0	Outdoor	1 1 0 1 0 0	Tour de France
0 1 0 1 0 1	Home game	1 1 0 1 0 1	Marathon Laid
0 1 0 1 1 0	Away game	1 1 0 1 1 0	British
0 1 0 1 1 1	City	1 1 0 1 1 1	United States
0 1 1 0 0 0	Regional	1 1 1 0 0 0	America's
0 1 1 0 0 1	Domestic	1 1 1 0 0 1	French
0 1 1 0 1 0	Foreign	1 1 1 0 1 0	Australian
0 1 1 0 1 1	International	1 1 1 0 1 1	European
0 1 1 1 0 0	World	1 1 1 1 0 0	South American
0 1 1 1 0 1	Universiade	1 1 1 1 0 1	Japan
0 1 1 1 1 0	Olympic	1 1 1 1 1 0	Nippon
0 1 1 1 1 1	The goodwill	1 1 1 1 1 1	No information

ORNAMENT 2

ORNAMENT 2	Contents
0 0 0 0	League
0 0 0 1	Tournament
0 0 1 0	Series
0 0 1 1	Tour
0 1 0 0	Open
0 1 0 1	Regatta
0 1 1 0	Games
0 1 1 1	Cup
1 0 0 0	Bowl
1 0 0 1	Championship
1 0 1 0	Title match
1 0 1 1	Grand prix
1 1 0 0	Reserved
1 1 0 1	
1 1 1 0	
1 1 1 1	No information

*Examples**For tennis*

TITLE START pack															
MSB								LSB							
PC0	0	0	0	1	1	0	1	1							
PC1	1	1	0	1	0	0	0	1							
PC2	0	0	0	0	0	1	1	1							
PC3	0	0	0	0	0	0	0	0							
PC4	1	0	1	0	1	0	1	0							

BASIC CATEGORY = Sports
CATEGORY = Tennis

GENRE pack not required

For Wimbledon tennis

TITLE START pack															
MSB								LSB							
PC0	0	0	0	1	1	0	1	1							
PC1	1	1	0	1	0	0	0	1							
PC2	0	0	0	0	0	1	1	1							
PC3	0	0	0	0	0	0	0	0							
PC4	1	0	1	0	1	1	1	1							

BASIC CATEGORY = Sports
CATEGORY = Others

GENRE pack															
MSB								LSB							
PC0	0	0	0	0	0	1	1	0							
PC1	0	0	0	1	0	1	0	0							
PC2	1	1	1	1	1	1	1	1							
PC3	1	1	1	1	1	0	0	1							
PC4	1	0	0	0	1	0	1	1							

SITUATION = Live
CATEGORY = Tennis
OT0 = 1
SUBCATEGORY = No information
ORNAMENT 0 = Wimbledon
ORNAMENT 1 = No information
ORNAMENT 2 = Championship

For international college water polo games

TITLE START pack										GENRE pack									
MSB					LSB					MSB					LSB				
PC0	0	0	0	1	1	0	1	1		PC0	0	0	0	0	0	1	1	0	
PC1	1	1	0	1	0	0	0		1	PC1	0	0	1	0	0	0	1		0
PC2	0	0	0	0	0	1	1	1		PC2	1	0	0	0	0	1	1	0	
PC3	0	0	0	0	0	0	0	0	0	PC3	1	0	1	1	0	1	1	0	
PC4	1	0	1	0	1	1	1	1		PC4	0	1	1	0	1	1	0	0	
BASIC CATEGORY = Sports CATEGORY = Others										SITUATION = Pre-recorded CATEGORY = Water sports OT0 = 1 SUBCATEGORY = Water polo ORNAMENT 0 = International ORNAMENT 1 = College ORNAMENT 2 = Games									

CONTROL 7

3.8 Topic/Page header

MSB					LSB				
PC 0	0	0	0	0	0	1	1	1	
PC 1	LANGUAGE TAG				TOPIC TAG				
PC 2	RE	TENS of LPU			UNITS of LPU				
PC 3	DM	SCRL	HV	CL	RASTER COLOR				
PC 4	1	TENS of PU NO.			UNITS of PU NO.				

This pack may be recorded in the common optional areas on tape.
PC1, PC2 are used for topic header and PC3, PC4 are used for page header.
Topic header part
LANGUAGE TAG:

0 = Main language Others = Optional language

From the beginning to the end on tape, the correspondence between each language and its LANGUAGE TAG shall not be changed.
TOPIC TAG:

0 = Menu Others = Reserved
1 = TOC 1Fh = No information

The correspondence between each topic and its TOPIC TAG shall be defined in menu topic and shall not be changed from the beginning to the end on tape.
RE: Renewal flag

This bit shows whether the contents of page units have been renewed or not. When the contents of page units are renewed, this bit turns around. The initial value of RE shall be 1.

LPU: Last number of page units in this topic data

00 to 79

Page header part

DM: Density mode flag

This flag indicates the displayed density.

0 = Standard density

1 = High density

More details are shown in Table 3 of Part 5.

SCRL: Scroll flag

0 = Scrolled display

1 = Not scrolled display

HV: Horizontal or vertical scroll

0 = Vertical scroll in whole displaying area from bottom to top

1 = Horizontal scroll in the bottom row

SCRL	HV	Display mode
0	0	Vertical scroll
	1	Horizontal scroll in the bottom row
1	0	No scroll
	1	No information

CL: Clear screen

The purpose of this flag is to clear the screen which is displaying the previous page just before a new page is started to be displayed.

0 = Clear screen which is displaying the previous page

1 = Keep displaying the previous page

When a new topic is started to be displayed, the screen which is displaying the previous page shall be cleared despite the value of CL.

Raster colour:

0 = Black	8 = Transparency
1 = Red	9 = Red of reduced intensity
2 = Green	Ah = Green of reduced intensity
3 = Yellow	Bh = Yellow of reduced intensity
4 = Blue	Ch = Blue of reduced intensity
5 = Magenta	Dh = Magenta of reduced intensity
6 = Cyan	Eh = Cyan of reduced intensity
7 = White	Fh = Gray of reduced intensity

PU No.: Page unit number

00 = TOC position data

01 to 79 = Page data

3.9 Text header

For tape without menu topic and for MIC

MSB					LSB				
PC 0	0	0	0	0	1	0	0	0	
PC 1	 TDP (binary)								LSB
PC 2	TEXT TYPE				OPN			 MSB	
PC 3	TEXT CODE								
PC 4	1	1	1	1	1	1	1	1	

For menu topic of the full mode on pre-recorded tape

MSB					LSB				
PC 0	0	0	0	0	1	0	0	0	
PC 1	 TDP (binary)								LSB
PC 2	TEXT TYPE				OPN			 MSB	
PC 3	TEXT CODE								
PC 4	AREA NO.			TOPIC TAG					

These packs may be recorded or written in the common optional areas.

TDP: Total number of text data (see Figure 55 of Part 2)

For tape, total number of TEXT packs which follow this pack

For MIC, total number of text data bytes which follow PC3

TEXT TYPE:

- 0 = Name
- 1 = Memo
- 2 = Station
- 3 = Model
- 6 = Operator
- 8 = Outline
- 9 = Full screen
- Ch = One byte coded font
- Dh = Two byte coded font
- Eh = Graphic
- Fh = No information
- Others = Reserved

OPN: Option number

OPN is the option number of UK teletext. More details are described in teletext specification (EBU SPB 492 — December 1992).

If OPN is not used, OPN shall be 111b.

TEXT CODE:

TEXT CODE designates the character set.
A TEXT CODE designates four character sets to the G0, G1, G2, and G3 areas.

Character sets which are designated and invoked are described below.

Refer to ISO 2022.

Refer to following normative references for each TEXT CODE.

TEXT CODE	Normative reference
40	ANSI X3.110-1983, CSA T500 – 1983
41	ANSI X3.110-1983, CSA T500 – 1983
42	USA version of ISO 646, ANSI X3.4 – 1986
43	KS C5601 – 1989
44	KS C5601 – 1989
46	Korean version of ISO 646, KS C5636 – 1989
4A	Japanese version of ISO 646, JIS C6220 – 1969
4B to 51	The bulletin number 803 of the Ministry of Postal Services in Japan – October 1985
52 to 5D 68 to 70	Teletext specification (625 line television systems) EBU SPB 492 – December 1992
NOTE EXT CODES are expressed in hexadecimal notation.	

AREA NO.:

AREA number indicates in which area on the tape this topic is stored.

- | | |
|---------------------------|----------------------|
| 0 = Area 1 (AAUX for CH1) | 4 = Area 2 (VAUX) |
| 1 = Area 1 (AAUX for CH2) | 5 = Area 3 (subcode) |
| 2 = Area 1 (AAUX for CH3) | 6 = Reserved |
| 3 = Area 1 (AAUX for CH4) | 7 = No information |

TOPIC TAG:

Each topic has its own TOPIC TAG which is defined in a menu topic. From the beginning to the end on tape, the correspondence between topic and TOPIC TAG shall not be changed.

- | | |
|-----------|---------------------------------|
| 00 = Menu | 02 to 1Eh = Definable TOPIC TAG |
| 01 = TOC | 1Fh = No information |

TEXT CODE	Character set	G0	G1	G2	G3	GL	GR
40	USA mosaic set	42	40	41	40	40	42
41	USA supplementary set	42	40	41	40	41	42
42	USA primary set	42	40	41	40	42	41
43	Korean two byte set	43	46	41	40	43	41
44	Korean one byte set	43	46	41	44	43	44
46	Korean version roman set	43	46	41	40	46	43
4A	Japanese version roman set	4B	4A	4C	4D	4A	4B
4B	Japanese two byte set	4B	4A	4C	4D	4B	4C
4C	Hiragana set	4B	4A	4C	4D	4C	4B
4D	Katakana set	4B	4A	4C	4D	4D	4B
4E	Mosaic set A	4B	4E	4C	4D	4E	4B
4F	Mosaic set B	4B	4F	4C	4D	4F	4B
50	Mosaic set C	4E	4F	50	51	50	4F
51	Mosaic set D	4E	4F	50	51	51	4F
52	First latin primary set	52	54	53	55	52	53
53	First latin supplementary set	52	54	53	55	53	52
54	Block mosaic set	52	54	53	55	54	52
55	Smoothed mosaic set	52	54	53	55	55	52
56	Arabic primary set	56	54	57	55	56	57
57	Arabic supplementary set	56	54	57	55	57	56
58	Cyrillic primary set	58	54	59	55	58	59
59	Cyrillic supplementary set	58	54	59	55	59	58
5A	Greek primary set	5A	54	5B	55	5A	5B
5B	Greek supplementary set	5A	54	5B	55	5B	5A
5C	Hebrew primary set	5C	54	5D	55	5C	5D
5D	Hebrew supplementary set	5C	54	5D	55	5D	5C
68	Second latin primary set	68	54	69	55	68	69
69	Second latin supplementary set	68	54	69	55	69	68
6A	Third latin primary set	6A	54	6B	55	6A	6B
6B	Third latin supplementary set	6A	54	6B	55	6B	6A
6C	Cyrillic and latin primary set	6C	54	#1	55	6C	#1
6D	Fourth latin primary set	6D	54	6E	55	6D	6E
6E	Fourth latin supplementary set	6D	54	6E	55	6E	6D
6F	Yugoslav latin primary set	6F	54	70	55	6F	70
70	Yugoslav latin supplementary set	6F	54	70	55	70	6F
G0 Graphic set 0 G1 Graphic set 1	G2 Graphic set 2 G3 Graphic set 3	GL Graphic set left GR Graphic set right					
NOTE 1 TEXT CODES are expressed in hexadecimal notation.							
NOTE 2 TEXT CODES of 45h, 47h to 49h, 5Eh to 67h, 71h to 7Dh are reserved for other languages.							
NOTE 3 For OPN = 101b, #1 = 53h. For OPN = 000b, #1 = 59h.							

CONTROL 9

3.10 Text

	MSB								LSB
PC 0	0	0	0	0	1	0	0	1	
PC 1									
PC 2									
PC 3									
PC 4									

This pack may be recorded in the common optional areas on tape.

This pack contains font data, graphic data, text data according to TEXT TYPE designated in CONTROL TEXT HEADER pack.

CONTROL 10

3.11 Tag

	MSB								LSB
PC 0	0	0	0	0	1	0	1	0	
PC 1	1	DF	TENS of FRAMES	UNITS of FRAMES					
PC 2	TENS of SECONDS				UNITS of SECONDS				
PC 3	TENS of MINUTES				UNITS of MINUTES				
PC 4	TENS of HOURS				UNITS of HOURS				

This pack may be recorded or written in the common optional areas.

This pack shows the tape position of the tag point or the start point of the zone using title time code. For indicating the start point of the zone, ZONE END pack (pack header = 0Eh) shall be used with this pack.

DF: Drop frame flag

0 = Drop frame mode

1 = Non drop frame mode

Drop frame sequence shall be based on SMPTE/EBU format.

For consumer digital VCR, DF shall be 0.

FRAMES:

For 525-60 or 1125-60 system

00 to 29

For 625-50 or 1250-50 system

00 to 24

SECONDS:

00 to 59

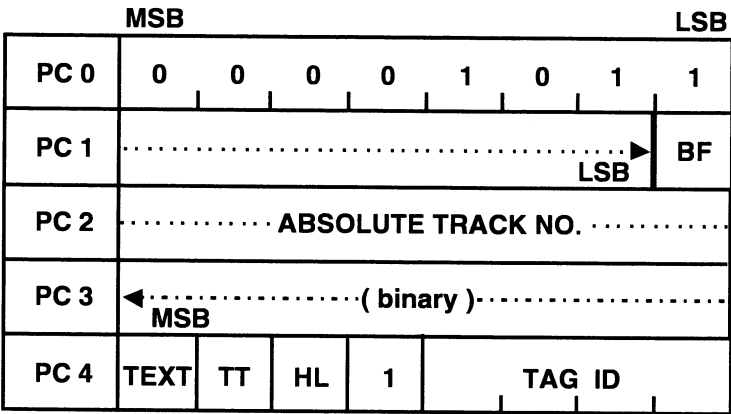
MINUTES:

00 to 59

HOURS:

00 to 23

3.12 Tag



This pack may be recorded or written in the common optional areas.

This pack shows the tape position of the tag point or the start point of the zone using absolute track number. For indicating the start point of the zone, ZONE END pack (pack header = 0Fh) shall be used with this pack.

ABSOLUTE TRACK NO.:

Absolute track number which shows the tape position of the tag point or the start point of the zone

BF: Blank flag

0 = Discontinuity exists before this absolute track number

1 = Discontinuity does not exist before this absolute track number

TEXT:

This flag is valid only for MIC.

0 = Text information exists

1 = No text information exists

For subcode, AAUX and VAUX, TEXT shall be 1.

TT: Temporary true

This flag is valid only for MIC.

0 = This event data in MIC is not always valid

1 = This event data in MIC is valid

For subcode, AAUX and VAUX, TT shall be 1.

HL: Hold flag

0 = Hold the absolute track number after playback or recording

1 = Renew the absolute track number after playback or recording

TAG ID:

TAG ID	Contents
0 0 0 0	Index (refer to subcode TAG ID)
0 0 0 1	Skip start (refer to subcode TAG ID)
0 0 1 0	PP (refer to subcode TAG ID)
0 0 1 1	Programme play start
0 1 0 0	Zone play
0 1 0 1	Still both video and audio
0 1 1 0	Still video only
0 1 1 1	Last recording point
1 0 0 0	Date change
1 0 0 1	Time change
1 0 1 0	Recording start point
1 0 1 1	Playback start point
1 1 0 0	Reserved
1 1 0 1	
1 1 1 0	
1 1 1 1	No information

Further details are given in Figure 59 of Part 2 and ZONE END pack.

CONTROL 12

3.13 Teletext info (Teletext information)

These packs may be written in the MIC common optional area or recorded in the VAUX common optional area.

These packs are prepared for recording teletext data in timer activation, or for recognizing the page information of recorded teletext data (see Figure 59 of Part 2 and VAUX TELETEXT pack).

For recording Japanese teletext (refer to the bulletin number 803 of the Ministry of Postal Services in Japan — October 1985)

	MSB				LSB			
PC 0	0	0	0	0	1	1	0	0
PC 1	TENS of PROGRAMME NO.				UNITS of PROGRAMME NO.			
PC 2	MAGAZINE NO.				HUNDREDS of PROGRAMME NO.			
PC 3	TENS of PAGE NO.				UNITS of PAGE NO.			
PC 4	TENS of TOTAL PAGE				UNITS of TOTAL PAGE			

PROGRAMME NO.: 000 to 999

MAGAZINE NO.: 0 to 9

PAGE NO.: 00 to 99

TOTAL PAGE: 00 to 99

For recording UK teletext (refer to EBU SPB 492 – December 1992)

	MSB	LSB
PC 0	0 0 0 0	1 1 0 0
PC 1	TENS of PAGE NO.	UNITS of PAGE NO.
PC 2	1 1 1 1	MAGAZINE NO.
PC 3	TENS of SUBPAGE NO.	UNITS of SUBPAGE NO.
PC 4	TENS of TOTAL SUBPAGE	UNITS of TOTAL SUBPAGE

PAGE NO.: 00 to 99 MAGAZINE NO.: 0 to 9
SUBPAGE NO.: 00 to 99 TOTAL SUBPAGE: 00 to 99

CONTROL 12

For recording NABTS teletext (teletext type C in ITU-R Recommendation 653)

	MSB	LSB
PC 0	0 0 0 0	1 1 0 0
PC 1	TENS of PAGE NO.	UNITS of PAGE NO.
PC 2	UNITS of MAGAZINE NO.	HUNDREDS of PAGE NO.
PC 3	HUNDREDS of MAGAZINE NO.	TENS of MAGAZINE NO.
PC 4	TENS of MORE PAGE NO.	UNITS of MORE PAGE NO.

PAGE NO.: 000 to 999 MAGAZINE NO.: 000 to 999
MORE PAGE NO.: 00 to 99

3.14 Key

	MSB				LSB			
PC 0	0	0	0	0	1	1	0	1
PC 1	KEY 1				KEY 0			
PC 2	KEY 3				KEY 2			
PC 3	KEY 5				KEY 4			
PC 4	KEY 7				KEY 6			

This pack may be recorded or written in the common optional areas.

This pack is prepared for unlocking the audience restriction of audio and video.

KEY n: Key code

0 to Fh = Key code

where

n is the figure number.

The number of figures is up to a maximum of eight.

If there are figures which are not used, they shall be set to all Fh.

The first figure of the valid KEY n shall not be Fh.

Example

For Key code = 3FE124, the number of figures is six.

KEY 7 = Fh

KEY 6 = Fh

KEY 5 = 3h (The first figure)

KEY 4 = Fh

KEY 3 = Eh

KEY 2 = 1h

KEY 1 = 2h

KEY 0 = 4h (The last figure)

For audio data

If SS in AAUX SOURCE CONTROL pack = 10b, then KEY pack should be recorded in the AAUX common optional area. For MIC, the user may add audience restrictions on tape after audio recording. In this case, KEY pack should be written in the AAUX event (see Figure 59 of Part 2).

For video data

If SS in VAUX SOURCE CONTROL pack = 10b, then KEY pack should be recorded in the VAUX common optional area. For MIC, the user may add audience restrictions on tape after video recording. In this case, KEY pack should be written in the VAUX event (see Figure 59 of Part 2).

3.15 Zone end

MSB					LSB			
PC 0	0	0	0	0	1	1	1	0
PC 1	1	DF	TENS of FRAMES		UNITS of FRAMES			
PC 2	TENS of SECONDS				UNITS of SECONDS			
PC 3	TENS of MINUTES				UNITS of MINUTES			
PC 4	TENS of HOURS				UNITS of HOURS			

This pack may be recorded or written in the common optional areas.
This pack shall be used with TAG pack (pack header = 0Ah).
This pack shows the tape position of the zone end using title time code.

DF: Drop frame flag

- 0 = Drop frame mode
- 1 = Non drop frame mode

Drop frame sequence shall be based on SMPTE/EBU format.
For consumer digital VCR, DF shall be 0.

FRAMES:

- For 525-60 or 1125-60 system
 - 00 to 29
- For 625-50 or 1250-50 system
 - 00 to 24

SECONDS:

- 00 to 59

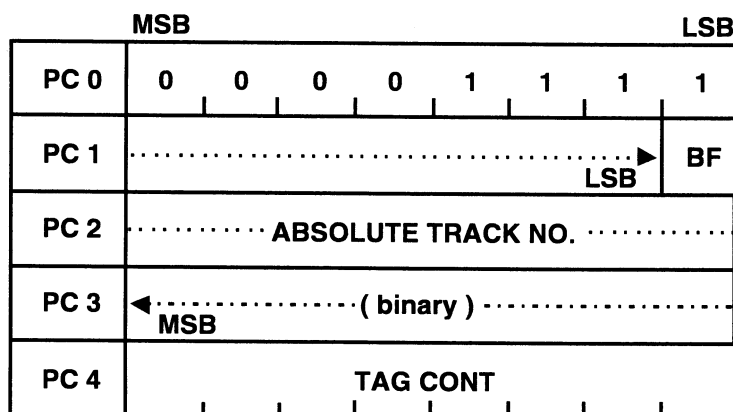
MINUTES:

- 00 to 59

HOURS:

- 00 to 23

3.16 Zone end



This pack may be recorded or written in the common optional areas.

This pack shall be used with TAG pack (pack header = 0Bh).

This pack shows the tape position of the zone end using absolute track number.

ABSOLUTE TRACK NO.:

Absolute track number which shows the tape position of the zone end

BF: Blank flag

0 = Discontinuity exists before this absolute track number

1 = Discontinuity does not exist before this absolute track number

TAG CONT: Tag Control

TAG CONT				Meaning
0 0 0 0 1 1 1 1				Over-recording on this zone is not allowed
0 0 0 1 1 1 1 1				This zone has been played already
0 1	FMODE	RMODE	Play once	
1 0	FMODE	RMODE	Play twice	
1 1	FMODE	RMODE	Infinite repeat play until stop command is given	
Others			Reserved	

FMODE: Forward Play Mode

RMODE: Reverse play Mode

000b = No operation

000b = No operation

001b = Play

001b = Reverse play

010b = Slow

010b = Reverse slow

011b = Cue

011b = Review

100b = FF

100b = Rewind

101b = Strobe

101b = Reverse strobe

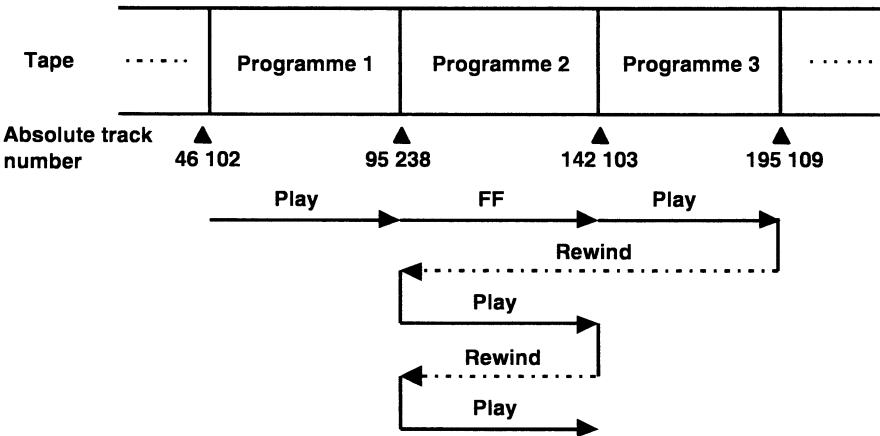
110b to 111b = Reserved

110b to 111b = Reserved

Example of programme play

If TAG pack indicates the programme play start (TAG ID = 0011b), ZONE END packs should be written consecutively. Each ZONE END pack indicates the play mode and the tape position to turn the play mode into the play mode in the next ZONE END pack. Therefore, they shall be in the same order as the playing order.

TAG	Absolute track No. = 46 102 TAG ID = 0011
ZONE END	Absolute track No. = 95 238 TAG CONT = 01001000 (Play once, FMODE = Play, RMODE = No operation)
ZONE END	Absolute track No. = 142 103 TAG CONT = 01100000 (Play once, FMODE = FF, RMODE = No operation)
ZONE END	Absolute track No. = 195 109 TAG CONT = 01001000 (Play once, FMODE = Play, RMODE = No operation)
ZONE END	Absolute track No. = 95 238 TAG CONT = 01000100 (Play once, FMODE = No operation, RMODE = Rewind)
ZONE END	Absolute track No. = 142 103 TAG CONT = 10001100 (Play twice, FMODE = Play, RMODE = Rewind)



4 Title

TITLE 0

4.1 Total time

MSB					LSB			
PC 0	0	0	0	1	0	0	0	0
PC 1	1	DF	TENS of FRAMES		UNITS of FRAMES			
PC 2	TENS of SECONDS				UNITS of SECONDS			
PC 3	TENS of MINUTES				UNITS of MINUTES			
PC 4	TENS of HOURS				UNITS of HOURS			

This pack may be recorded or written in the common optional areas.

This pack shows the total recording time of the title.

DF: Drop frame flag

0 = Drop frame mode

1 = Non drop frame mode

Drop frame sequence shall be based on SMPTE/EBU format.

For consumer digital VCR, DF shall be 0.

FRAMES:

For 525-60 or 1125-60 system

00 to 29

For 625-50 or 1250-50 system

00 to 24

SECONDS:

00 to 59

MINUTES:

00 to 59

HOURS:

00 to 23

4.2 Remain time

MSB					LSB			
PC 0	0	0	0	1	0	0	0	1
PC 1	1	DF	TENS of FRAMES		UNITS of FRAMES			
PC 2	TENS of SECONDS				UNITS of SECONDS			
PC 3	TENS of MINUTES				UNITS of MINUTES			
PC 4	TENS of HOURS				UNITS of HOURS			

This pack may be recorded in the common optional areas on tape.
This pack shows the remaining time of the title at the tape position where this pack is recorded.
DF: Drop frame flag
0 = Drop frame mode
1 = Non drop frame mode
Drop frame sequence shall be based on SMPTE/EBU format.
For consumer digital VCR, DF shall be 0.

FRAMES:
For 525-60 or 1125-60 system
00 to 29
For 625-50 or 1250-50 system
00 to 24

SECONDS:
00 to 59

MINUTES:
00 to 59

HOURS:
00 to 23

4.3 Chapter total no.

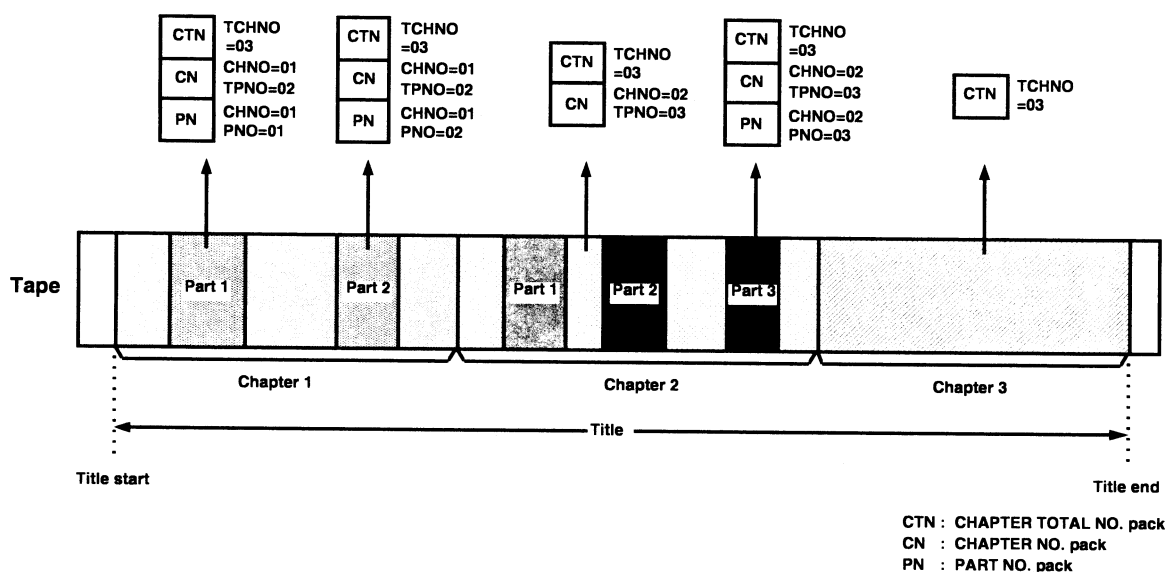
	MSB				LSB			
PC 0	0	0	0	1	0	0	1	0
PC 1	TENS of TCHNO				UNITS of TCHNO			
PC 2	1	1	1	1	1	1	1	1
PC 3	1	1	1	1	1	1	1	1
PC 4	1	1	1	1	1	1	1	1

This pack may be recorded or written in the common optional areas.

TCHNO: Total number of chapters

00 to 99

Example of recording CHAPTER TOTAL NO., CHAPTER NO. and PART NO. packs for prerecorded tape



4.4 Time code

This pack shall be recorded at least in the subcode main area.
This pack contains time code data which show the elapsed time in TITLE at the tape position where this pack is recorded.
For not recording TITLE BINARY pack

MSB					LSB			
PC 0	0	0	0	1	0	0	1	1
PC 1	BF	1	TENS of FRAMES		UNITS of FRAMES			
PC 2	1	TENS of SECONDS			UNITS of SECONDS			
PC 3	1	TENS of MINUTES			UNITS of MINUTES			
PC 4	1	1	TENS of HOURS		UNITS of HOURS			

Title time code shall be set to the initial value at the title start position.
If discontinuity exists before the tape position where recording will be started, title time code shall be reset to the initial value at the tape position and BF shall be 0.
Consumer digital VCR shall adopt the drop frame sequence based on SMPTE/EBU time code format.

Initial value

HOURS:	00
MINUTES:	00
SECONDS:	00
FRAMES:	00

BF: Blank flag

0 = Discontinuity exists before the absolute track number on the track where this pack is recorded

1 = Discontinuity does not exist before the absolute track number on the track where this pack is recorded

TITLE 3

For recording TITLE BINARY pack

	MSB						LSB	
PC 0	0	0	0	1	0	0	1	1
PC 1	S2	S1	TENS of FRAMES		UNITS of FRAMES			
PC 2	S3	TENS of SECONDS			UNITS of SECONDS			
PC 3	S4	TENS of MINUTES			UNITS of MINUTES			
PC 4	S6	S5	TENS of HOURS		UNITS of HOURS			

S1 to S6 flags shall be recorded based on SMPTE/EBU format.

Bit number	S1	S2	S3	S4	S5	S6
VITC	14	15	35	55	74	75
LTC	10	11	27	43	58	59

VITC: vertical interval time code
LTC : linear time code

TITLE 4

4.5 Binary group

	MSB				LSB			
PC 0	0	0	0	1	0	1	0	0
PC 1	BINARY GROUP 2				BINARY GROUP 1			
PC 2	BINARY GROUP 4				BINARY GROUP 3			
PC 3	BINARY GROUP 6				BINARY GROUP 5			
PC 4	BINARY GROUP 8				BINARY GROUP 7			

This pack shall be recorded right after TITLE TIME CODE pack, if needed.

4.6 Cassette no.

MSB				LSB				
PC 0	0	0	0	1	0	1	0	1
PC 1	TENS of CNO				UNITS of CNO			
PC 2	1	1	1	1	HUNDREDS of CNO			
PC 3	RANDOM NO.							
PC 4								

This pack may be recorded or written in the common optional areas.

This pack is prepared for consumer use.

CNO: Cassette number

000 to 999

RANDOM NO:

The method of numbering RANDOM NO. is not specified.

4.7 Soft ID

For catalogue number

	MSB	LSB
PC 0	0 0 0 1 0 1 1 0	
PC 1	N 1	1 1 1 0
PC 2	N 3	N 2
PC 3	N 5	N 4
PC 4	N 7	N 6

	MSB	LSB
PC 0	0 0 0 1 0 1 1 0	
PC 1	N 8	1 1 1 1
PC 2	N 10	N 9
PC 3	N 12	N 11
PC 4	1 1 1 1	N 13

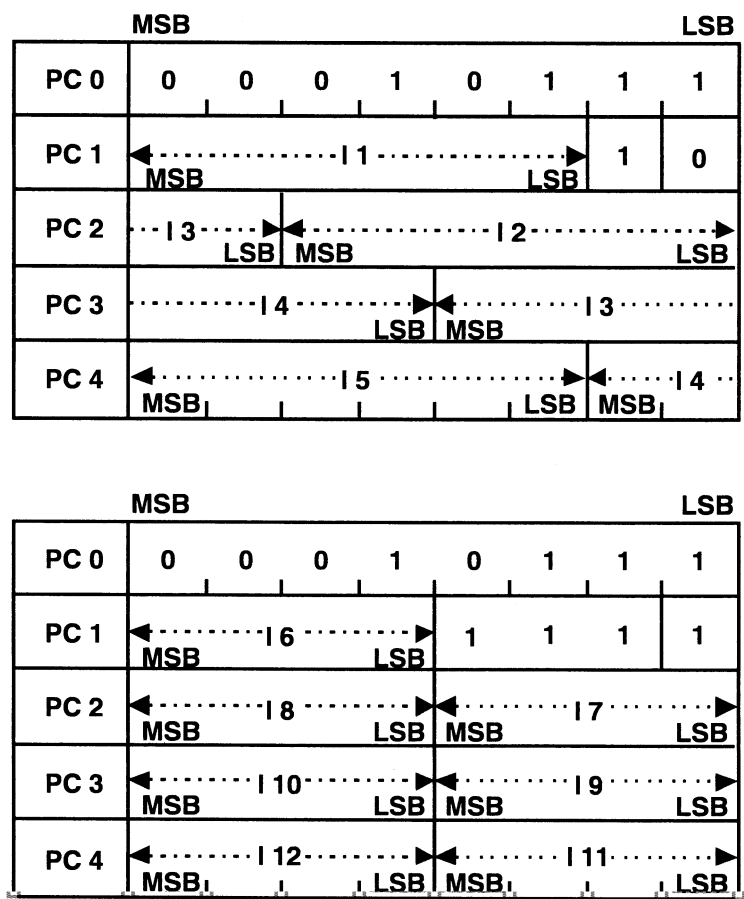
These packs may be recorded or written in the common optional areas.

These packs are prepared for pre-recorded tapes.

The catalogue number of the tape is expressed in 13 digits BCD. The UPC/EAN-Code (BAR coding) is used. The catalogue number shall not be changed from the beginning to the end on a tape. If no catalogue number is encoded, N1 to N13 are all Fh or CATALOGUE NO. packs are not recorded.

4.8 Soft ID

For ISRC (International standard recording code)



These packs may be recorded or written in the common optional areas.

These packs are prepared for pre-recorded tapes.

For recording, this pack should be recorded in each video frame. ISRC is defined in ISO 3901. If ISRC is not used, ISRC packs shall not be recorded.

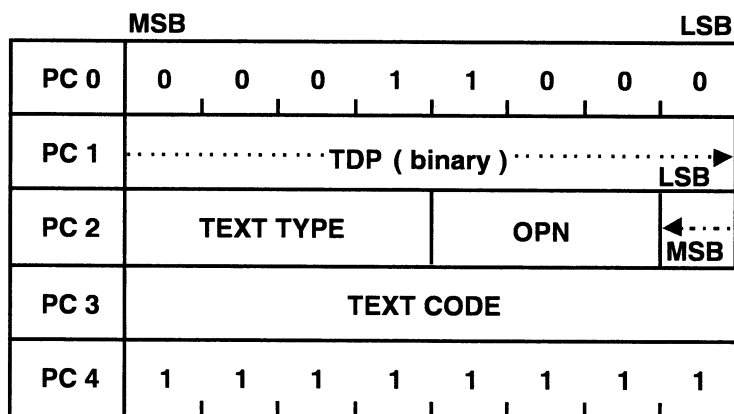
I1 to I2: Country code

I3 to I5: Owner code

I6 to I7: Year of recording

I8 to I12: Serial number of recording

4.9 Text header



This pack may be recorded or written in the common optional areas.

TDP: Total number of text data (see Figure 55 of Part 2)

For tape, total number of TEXT packs which follow this pack

For MIC, total number of text data bytes which follow PC3

TEXT TYPE:

0 = Name	7 = Subtitle	Eh = Graphic
1 = Memo	8 = Outline	Fh = No information
2 = Station	9 = Full screen	Others = Reserved
3 = Model	Ch = One byte coded font	
6 = Operator	Dh = Two byte coded font	

OPN: Option number

OPN is the same as the option number of UK teletext. More details are described in teletext specification (EBU SPB 492 — December 1992).

If OPN is not used, OPN shall be 111b.

TEXT CODE:

TEXT CODE designates the character set. The details are described in CONTROL TEXT HEADER pack.

4.10 Text

	MSB								LSB
PC 0	0	0	0	1	1	0	0	1	
PC 1									
PC 2									
PC 3									
PC 4									

This pack may be recorded in the common optional areas on tape.
This pack contains font data, graphic data, text data according to TEXT TYPE designated in TITLE TEXT HEADER pack.

4.11 Title start

MSB					LSB				
PC 0	0	0	0	1	1	0	1	0	
PC 1	1	DF	TENS of FRAMES		UNITS of FRAMES				
PC 2	TENS of SECONDS				UNITS of SECONDS				
PC 3	TENS of MINUTES				UNITS of MINUTES				
PC 4	TENS of HOURS				UNITS of HOURS				

This pack may be recorded or written in the common optional areas.
This pack shows the tape position of the title start using title time code.
DF: Drop frame flag
 0 = Drop frame mode
 1 = Non drop frame mode
Drop frame sequence shall be based on SMPTE/EBU format.
For consumer digital VCR, DF shall be 0.

FRAMES:

For 525-60 or 1125-60 system

00 to 29

For 625-50 or 1250-50 system

00 to 24

SECONDS:

00 to 59

MINUTES:

00 to 59

HOURS:

00 to 23

TITLE 11

4.12 Title start

	MSB	LSB
PC 0	0 0 0 1 1 0 1 1	
PC 1	LSB	TT
PC 2	ABSOLUTE TRACK NO.	
PC 3	MSB.....(binary)	
PC 4	TEXT	GENRE CATEGORY

This pack may be recorded or written in the common optional areas.

This pack shows the tape position of the title start using absolute track number.

ABSOLUTE TRACK NO.:

Absolute track number which shows the tape position of the title start

TT: Temporary true

This flag is valid only for MIC.

0 = These event data in MIC do not always exist on tape

1 = These event data in MIC exist on tape certainly

For subcode, AAUX and VAUX, TT shall be 1.

TEXT:

This flag is valid only for MIC.

0 = Text information exists

1 = No text information exists

For subcode, AAUX and VAUX, TEXT shall be 1.

GENRE CATEGORY:

GENRE CATEGORY shows the title's category.

The details are described in TIMER ACT DATE pack.

4.13 Reel ID

	MSB									LSB
PC 0	0	0	0	1	1	1	0	0		
PC 1	C0									
PC 2	C1									
PC 3	C2									
PC 4	C3									

4.14 Reel ID

MSB				LSB				
PC 0	0	0	0	1	1	1	0	1
PC 1	C4							
PC 2	C5							
PC 3	C6							
PC 4	C7							

These packs may be recorded in the common optional areas.

These packs are prepared for identifying each cassette for professional use.

C0 to C7: 8-bit code of alphanumeric character

REEL ID should be recorded in eight figures of alphanumeric character using these two packs. C7 is the most significant byte. If there are figures which are not in use, they shall be all FFh.

4.15 Title end

	MSB								LSB
PC 0	0	0	0	1	1	1	1	0	
PC 1	1	DF	TENS of FRAMES		UNITS of FRAMES				
PC 2	TENS of SECONDS				UNITS of SECONDS				
PC 3	TENS of MINUTES				UNITS of MINUTES				
PC 4	TENS of HOURS				UNITS of HOURS				

This pack may be recorded or written in the common optional areas.

This pack shows the tape position of the title end using title time code.

DF: Drop frame flag

0 = Drop frame mode

1 = Non drop frame mode

Drop frame sequence shall be based on SMPTE/EBU format.

For consumer digital VCR, DF shall be 0.

FRAMES:

For 525-60 or 1125-60 system

00 to 29

For 625-50 or 1250-50 system

00 to 24

SECONDS:

00 to 59

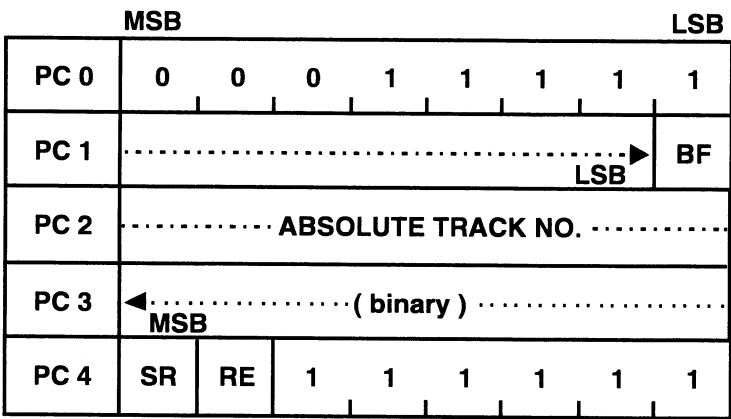
MINUTES:

00 to 59

HOURS:

00 to 23

4.16 Title end



This pack shall be written in the MIC main area.
This pack shows the tape position of the title end using absolute track number.
ABSOLUTE TRACK NO.:

- Absolute track number which shows the tape position of the title end
- BF: Blank flag
 - 0 = Discontinuity exists before this absolute track number
 - 1 = Discontinuity does not exist before this absolute track number

- SR: SP/RSV
 - This flag is valid only for recording of track pitch 0 and track pitch 1.
 - 0 = Reserved (track pitch 1 shall be selected)
 - 1 = SP mode (track pitch 0 shall be selected)
 - This flag should be set to 1 for recording of track pitch 2 and track pitch 3.

- RE: Recording protection events exist
 - This flag is valid only for MIC.
 - 0 = Recording protection events exist on tape
 - 1 = Recording protection events do not exist on tape

For subcode, AAUX and VAUX, RE shall be 1.
For RE = 0, the MIC-limited-function VCR should not record any data on tape.

5 Chapter

CHAPTER 0

5.1 Total time

	MSB				LSB			
PC 0	0	0	1	0	0	0	0	0
PC 1	1	DF	TENS of FRAMES		UNITS of FRAMES			
PC 2	TENS of SECONDS				UNITS of SECONDS			
PC 3	TENS of MINUTES				UNITS of MINUTES			
PC 4	TENS of HOURS				UNITS of HOURS			

This pack may be recorded or written in the common optional areas.

This pack shows the total recording time of the chapter.

DF: Drop frame flag

0 = Drop frame mode

1 = Non drop frame mode

Drop frame sequence shall be based on SMPTE/EBU format.

For consumer digital VCR, DF shall be 0.

FRAMES:

For 525-60 or 1125-60 system

00 to 29

For 625-50 or 1250-50 system

00 to 24

SECONDS:

00 to 59

MINUTES:

00 to 59

HOURS:

00 to 23

5.2 Remain time

MSB					LSB			
PC 0	0	0	1	0	0	0	0	1
PC 1	1	DF	TENS of FRAMES		UNITS of FRAMES			
PC 2	TENS of SECONDS				UNITS of SECONDS			
PC 3	TENS of MINUTES				UNITS of MINUTES			
PC 4	TENS of HOURS				UNITS of HOURS			

This pack may be recorded in the common optional areas on pre-recorded tape.
This pack shows the remaining time of the chapter at the tape position where this pack is recorded.

DF: Drop frame flag
0 = Drop frame mode
1 = Non drop frame mode
Drop frame sequence shall be based on SMPTE/EBU format.
For consumer digital VCR, DF shall be 0.

FRAMES:
For 525-60 or 1125-60 system
00 to 29
For 625-50 or 1250-50 system
00 to 24

SECONDS:
00 to 59

MINUTES:
00 to 59

HOURS:
00 to 23