INTERNATIONAL STANDARD

IEC 61834-4

First edition
1998-07

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

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

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For general terminology, readers are referred to IEC 60050: *International Electrotechnical Vocabulary* (IEV).

For graphical symbols, and letter symbols and signs approved by the IEC for general use, readers are referred to publications IEC 60027: *Letter symbols to be used in electrical technology*, IEC 60417: *Graphical symbols for use on equipment. Index, survey and compilation of the single sheets* and IEC 60617: *Graphical symbols for diagrams.*

* See web site address on title page.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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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 4: Pack header table and contents

FOREWORD

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International Standard IEC 61834-4 has been prepared by subcomittee 100B: Audio, video and multimedia information storage systems, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

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

FDIS	Report on voting
100B/164/FDIS	100B/174/RVD

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

IEC 61834 consists of the following parts:

– Part 1: General specifications;
– Part 2: SD format for 525-60 and 625-50 systems;
– Part 3: HD format for 1125-60 and 1250-50 systems;
– Part 4: Pack header table and contents;
– Part 5: Character information system.

This document is Part 4 of IEC 61834 and describes the pack header table and the contents of packs which are applicable to the whole recording system of helical-scan digital video cassette.

Part 1 describes the common specifications for the helical-scan digital video cassette recording system using 6,35 mm magnetic tape.

Part 2 describes the specifications for 525-60 and 625-50 systems which are not included in Part 1.

Part 3 describes the specifications for 1125-60 and 1250-50 systems which are not included in Part 1 and Part 2.

Part 5 describes the character information system which is applicable to the whole recording system of helical-scan digital video cassette.

For manufacturing SD digital video cassette recording system, Part 1, Part 2, Part 4 and Part 5 are referred to.

For manufacturing HD digital video cassette recording system, Part 1, Part 2, Part 3, Part 4 and Part 5 are referred to.

This part of IEC 61834 is to be referred to particularly when the pack header table and the contents are to be checked.

A bilingual version of this standard may be issued at a later date.

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

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.

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.

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1) To be published.

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.

Table 1 – Pack header table

UPPER / LOWER	0000 CONTROL	0001 TITLE	0010 CHAPTER	0011 PART	0100 PROGRAM	0101 AAUX	0110 VAUX	0111 CAMERA	1000 LINE	1001 MPEG	1010 to 1110	1111 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 DATE	CHAPTER TOTAL NO.	CHAPTER NO.	PART NO.	REC DTIME	REC DATE	REC DATE	RSV	CR	REC DATE		OPTION
0011	TIMER ACT S/S	TIME CODE	TIME CODE	TIME CODE	TIME 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	RSV	RSV	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		NO INFO

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

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

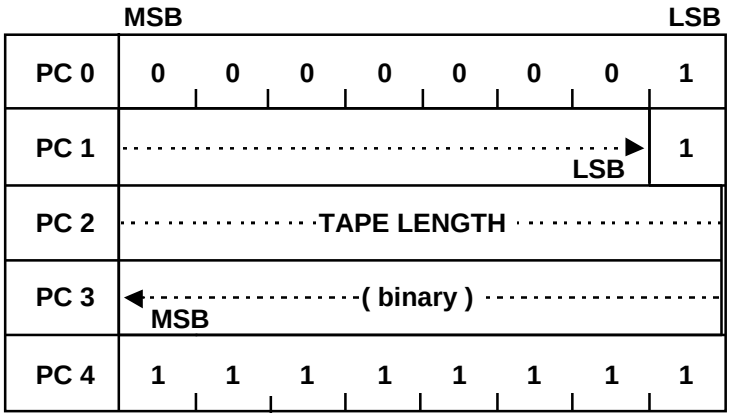
If MEM BANK NO. of SPACE 1 = 0, MEM SIZE of the LAST BANK in SPACE 1 shall be Fh.

TAPE THICKNESS:

0,0 µm to 9,9 µm

CONTROL 1

3.2 TAPE LENGTH



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	0	0	0	0	0	0	1	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	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:

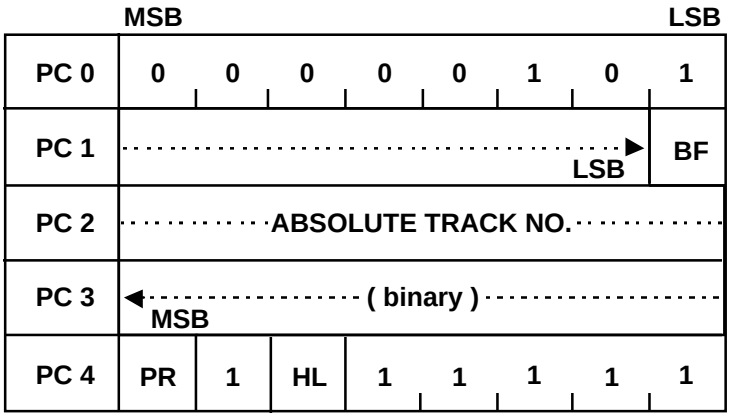
00 to 59

HOURS:

00 to 23

CONTROL 5

3.6 PR START POINT (Playback or recording start point)



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

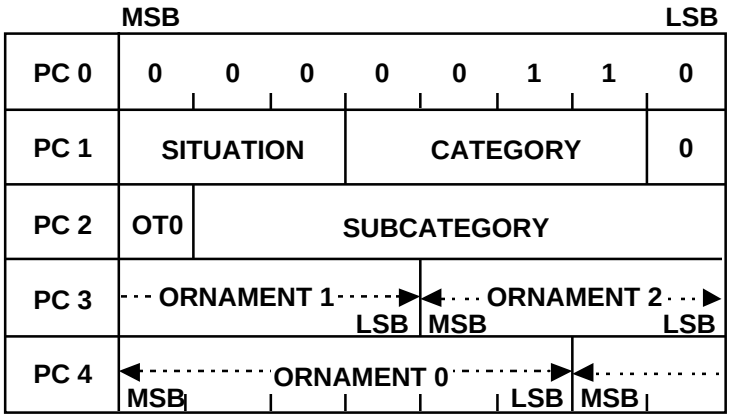
TAG ID NO.: Tag ID number

0 000 to 9 999

For tape, tag ID number should be numbered consecutively from the beginning.

CONTROL 6

For GENRE pack



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		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		Reserved		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

SUBCATEGORY for sports category (concluded)

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 0	Boxing	Motor Car	Skateboarding
0 0 0 0 0 0 1	Weight lifting	Sprint	Grass skiing
0 0 0 0 0 1 0	Judo	Rally	Roller skating
0 0 0 0 0 1 1	Karate	Dirt trial	Land yacht
0 0 0 0 1 0 0	Tae kwon do	Drag race	Equestrian games
0 0 0 0 1 0 1	Sambo	Motorcycle	Sky diving
0 0 0 0 1 1 0	Shooting	Road race	Ultra-light plane
0 0 0 0 1 1 1	Fencing	Motocross	Glider
0 0 0 1 0 0 0	Kendo	Trial	Hang glider
0 0 0 1 0 0 1	Archery	Bicycle	Motor glider
0 0 0 1 0 1 0	Kyudo	Track race	Paraglider
0 0 0 1 0 1 1	Naginata	Load race	Paraplane
0 0 0 1 1 0 0	Kabaddi	Keirin	Parasail
0 0 0 1 1 0 1	Reserved	Mountain bicycle	Hot-air balloon
0 0 0 1 1 1 0		All terrain vehicle	Sports kite
0 0 0 1 1 1 1		Solar car	Mountaineering
0 0 1 0 0 0 0		Bed race	Free climbing
0 0 1 0 0 0 1		Reserved	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

	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	1	0	0	0	1	0
PC2	1	0	0	0	0	1	1	0
PC3	1	0	1	1	0	1	1	0
PC4	0	1	1	0	1	1	0	0

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

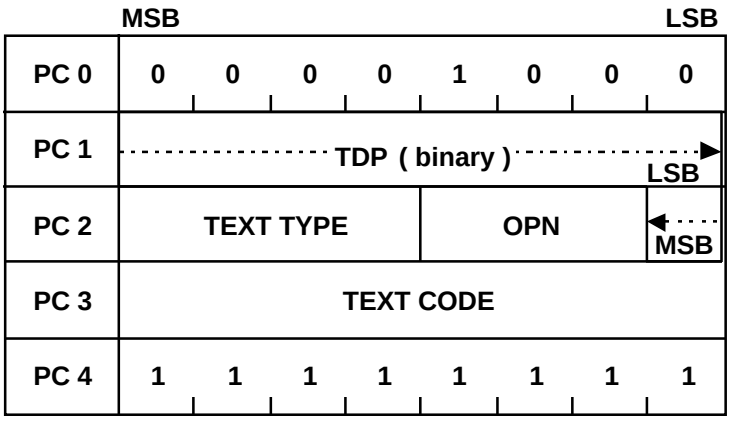
00 = TOC position data

01 to 79 = Page data

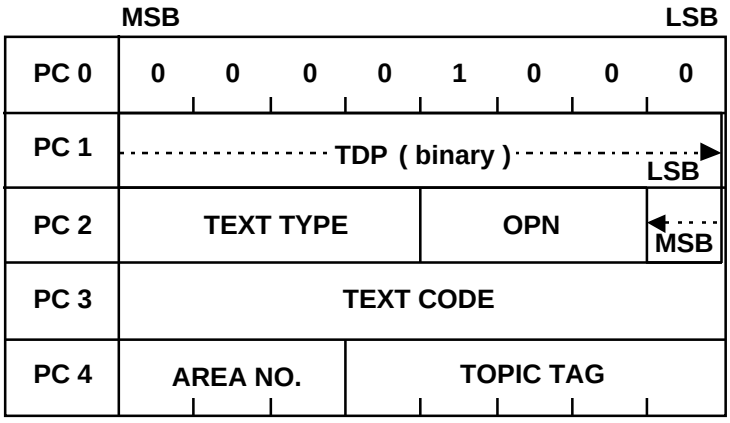
CONTROL 8

3.9 TEXT HEADER

For tape without menu topic and for MIC



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



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	6 = Operator	Dh = Two byte coded font
1 = Memo	8 = Outline	Eh = Graphic
2 = Station	9 = Full screen	Fh = No information
3 = Model	Ch = One byte coded font	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)
1 = Area 1 (AAUX for CH2)
2 = Area 1 (AAUX for CH3)
3 = Area 1 (AAUX for CH4)
4 = Area 2 (VAUX)
5 = Area 3 (subcode)
6 = Reserved
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
01 = TOC
02 to 1Eh = Definable TOPIC TAG
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

GO Graphic set 0 G2 Graphic set 2 GL Graphic set left
G1 Graphic set 1 G3 Graphic set 3 GR Graphic set right

NOTES
1 TEXT CODES are expressed in hexadecimal notation.
2 TEXT CODES of 45h, 47h to 49h, 5Eh to 67h, 71h to 7Dh are reserved for other languages.
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:

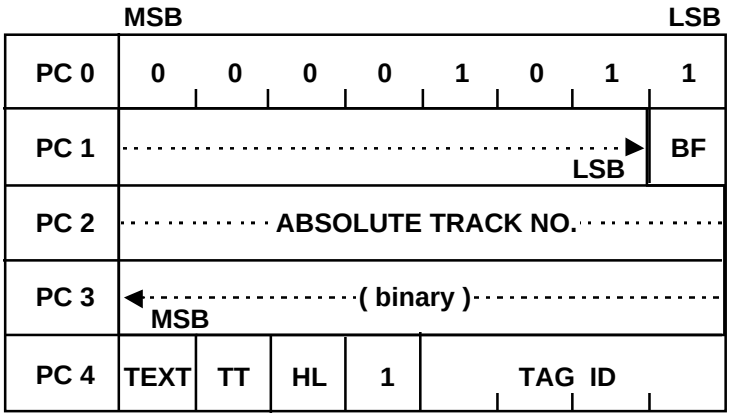
00 to 59

HOURS:

00 to 23

CONTROL 11

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

CONTROL 13

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).

CONTROL 14

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:

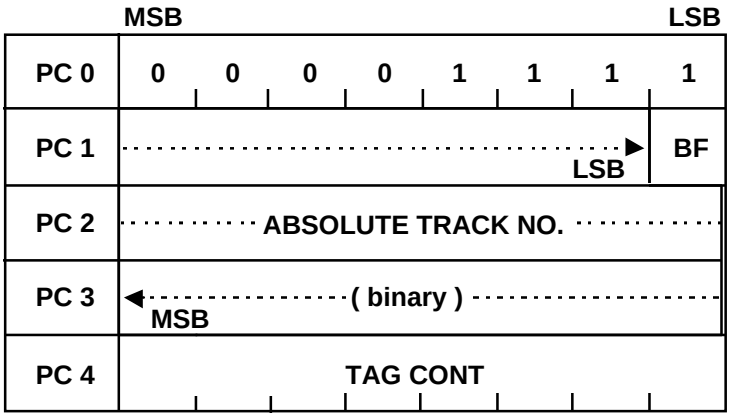
00 to 59

HOURS:

00 to 23

CONTROL 15

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

000b = No operation
001b = Play
010b = Slow
011b = Cue
100b = FF
101b = Strobe
110b to 111b = Reserved

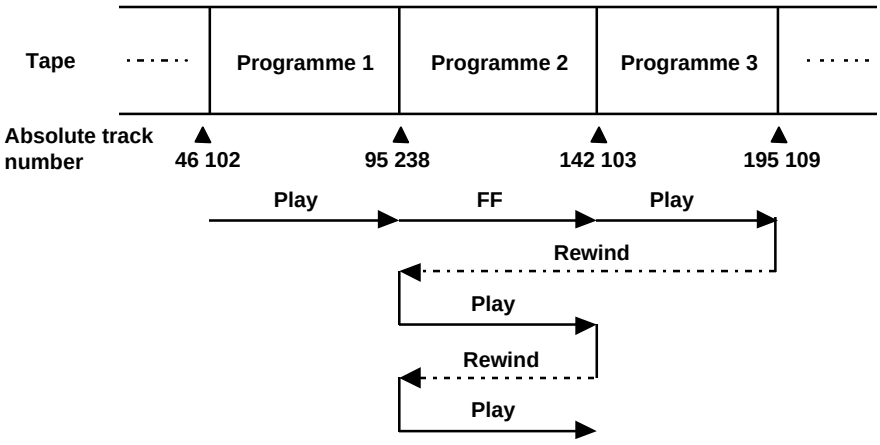
RMODE: Reverse play Mode

000b = No operation
001b = Reverse play
010b = Reverse slow
011b = Review
100b = Rewind
101b = Reverse strobe
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

TITLE 1

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

TITLE 2

4.3 CHAPTER TOTAL NO.

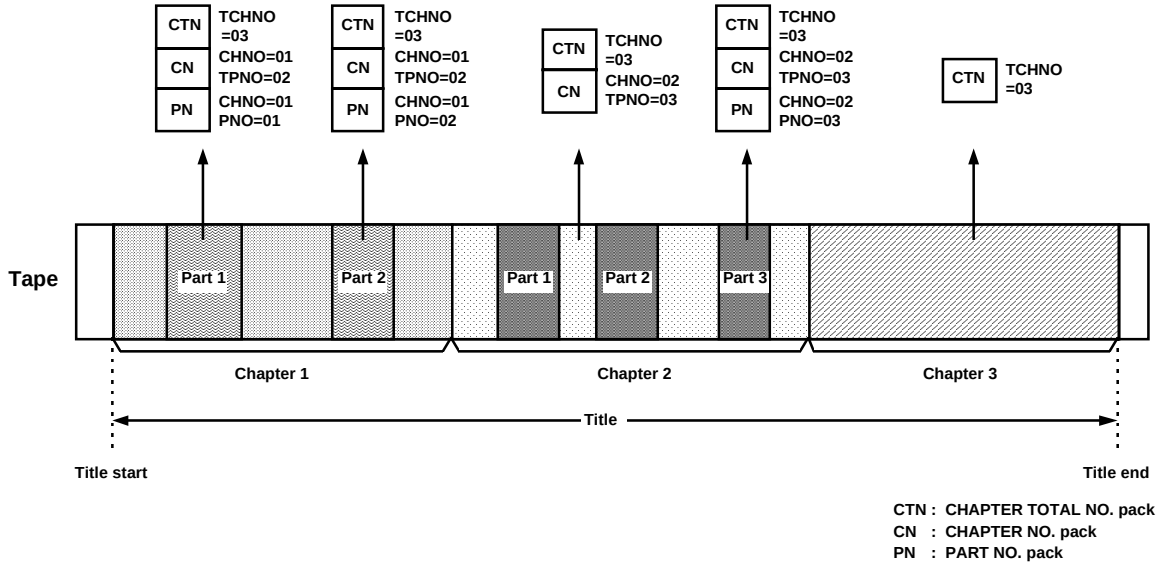
	MSB							LSB
PC 0	0	0	0	1	0	0	1	0
PC 1	TENS of TCHNO				UNITS of TCHNO			
PC 2	1	1	1	1	1	1	1	1
PC 3	1	1	1	1	1	1	1	1
PC 4	1	1	1	1	1	1	1	1

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 pre-recorded tape



TITLE 3

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.

TITLE 5

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.

TITLE 6

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.

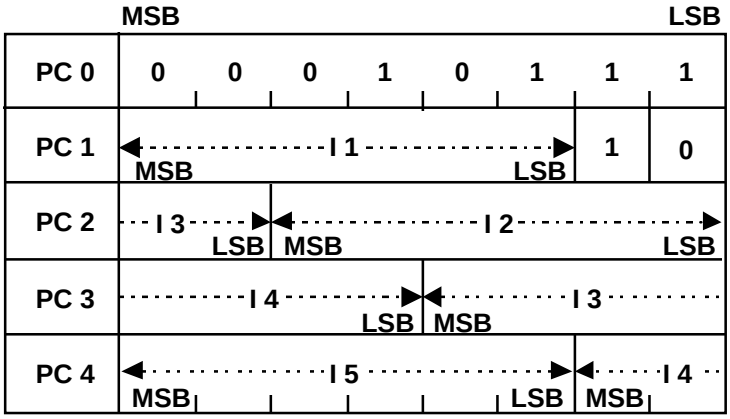
These packs are prepared for pre-recorded tapes.

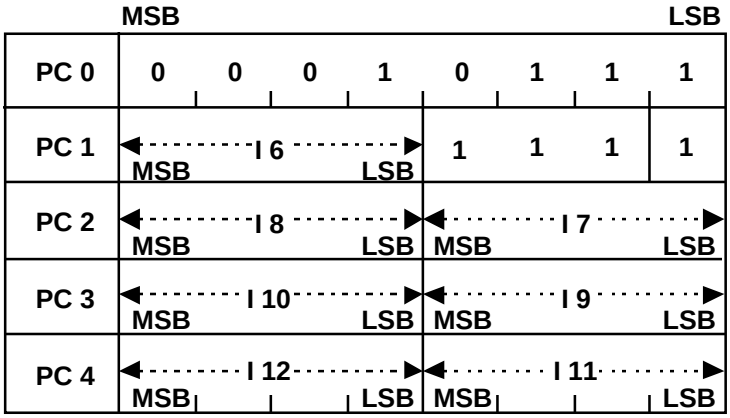
The catalogue number of the tape is expressed in 13 digits BCD. The UPC/EAN-Code (BAR coding) is used. The catalogue number shall not be changed from the beginning to the end on a tape. If no catalogue number is encoded, N1 to N13 are all Fh or CATALOGUE NO. packs are not recorded.

TITLE 7

4.8 SOFT ID

For ISRC (International standard recording code)





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

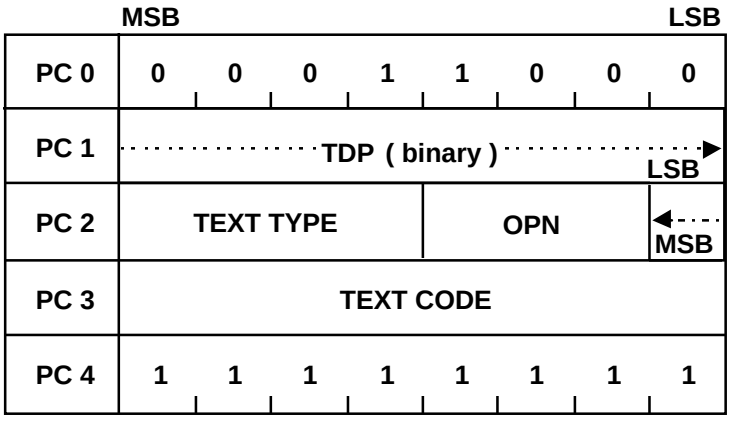
These packs are prepared for pre-recorded tapes.

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

TITLE 8

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).

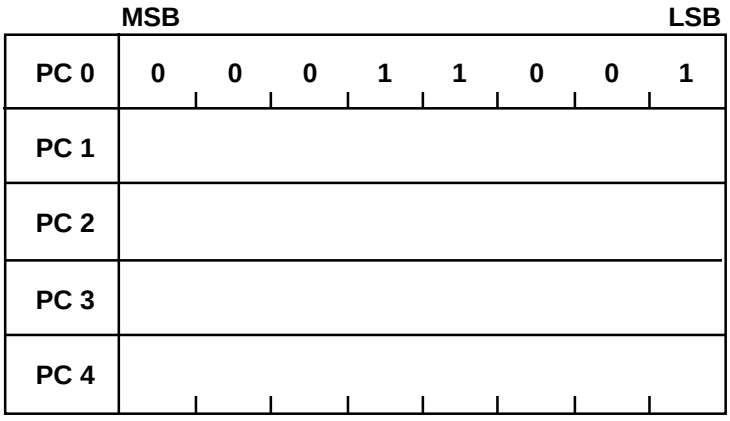
If OPN is not used, OPN shall be 111b.

TEXT CODE:

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

TITLE 9

4.10 TEXT



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.

TITLE 10

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:

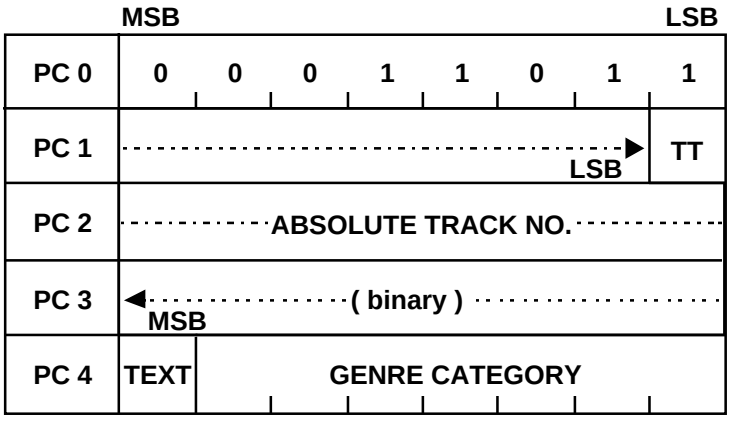
00 to 59

HOURS:

00 to 23

TITLE 11

4.12 TITLE START



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.

TITLE 12

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							

TITLE 13

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.

TITLE 14

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:

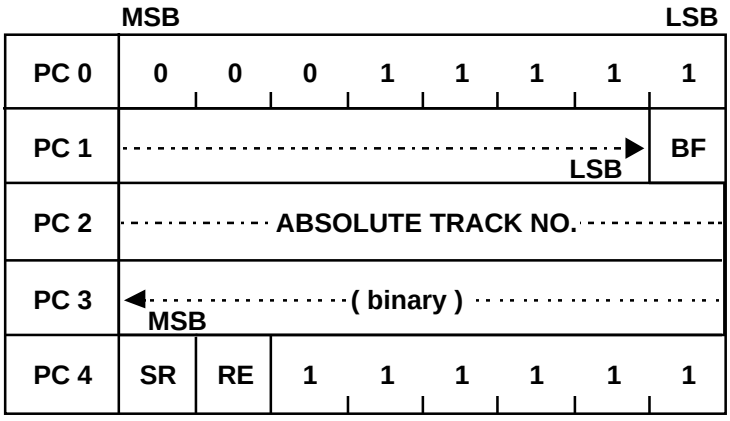
00 to 59

HOURS:

00 to 23

TITLE 15

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

CHAPTER 1

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

CHAPTER 2

5.3 CHAPTER NO.

	MSB							LSB
PC 0	0	0	1	0	0	0	1	0
PC 1	TENS of CHNO				UNITS of CHNO			
PC 2	TENS of TPNO				UNITS of TPNO			
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.

This pack contains the chapter number at the tape position where this pack is recorded and total number of parts in this chapter.

CHNO: Chapter number

00 to 99

TPNO: Total number of parts

00 to 99

The example of recording this pack is shown in CHAPTER TOTAL NO. pack.

CHAPTER 3

5.4 TIME CODE

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

This pack contains time code data which show the elapsed time in CHAPTER at the tape position where this pack is recorded.

For not recording CHAPTER BINARY pack

	MSB							LSB
PC 0	0	0	1	0	0	0	1	1
PC 1	1	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			

Consumer digital VCR shall adopt the drop frame sequence based on SMPTE/EBU time code format.

For recording CHAPTER BINARY pack

	MSB							LSB
PC 0	0	0	1	0	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

CHAPTER 4

5.5 BINARY GROUP

	MSB							LSB
PC 0	0	0	1	0	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 CHAPTER TIME CODE pack, if needed.

CHAPTER 5

5.6 Reserved

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

This pack is reserved for future use.

CHAPTER 6

5.7 Reserved

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

This pack is reserved for future use.

CHAPTER 7

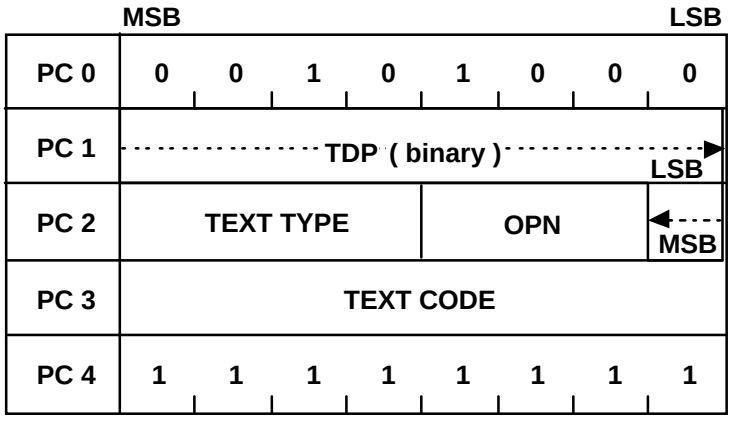
5.8 Reserved

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

This pack is reserved for future use.

CHAPTER 8

5.9 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	8 = Outline	Eh = Graphic
1 = Memo	9 = Full screen	Fh = No information
6 = Operator	Ch = One byte coded font	Others = Reserved
7 = Subtitle	Dh = Two byte coded font	

OPN: Option number

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

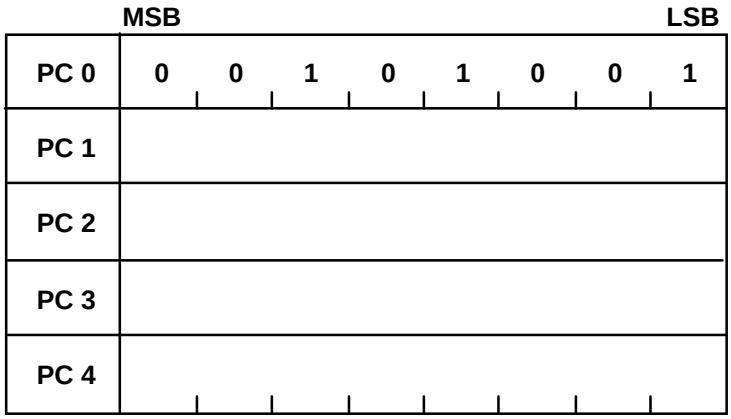
If OPN is not used, OPN shall be 111b.

TEXT CODE:

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

CHAPTER 9

5.10 TEXT



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

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

CHAPTER 10

5.11 CHAPTER START

	MSB							LSB
PC 0	0	0	1	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 chapter 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:

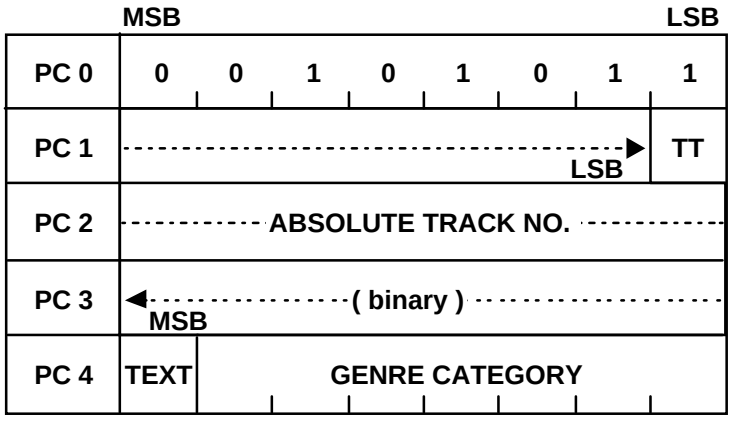
00 to 59

HOURS:

00 to 23

CHAPTER 11

5.12 CHAPTER START



This pack may be recorded in the subcode main area on pre-recorded tape, and also may be recorded or written in the common optional areas.

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

ABSOLUTE TRACK NO.:

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

TT: Temporary true

This flag is valid only for MIC.

0 = This event data in MIC does not always exist on tape

1 = This event data in MIC certainly exists on tape

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 chapter's category.

The details are described in TIMER ACT DATE pack.

CHAPTER 12

5.13 Reserved

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

This pack is reserved for future use.

CHAPTER 13

5.14 Reserved

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

This pack is reserved for future use.

CHAPTER 14

5.15 CHAPTER END

	MSB							LSB
PC 0	0	0	1	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 shows the tape position of the chapter 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:

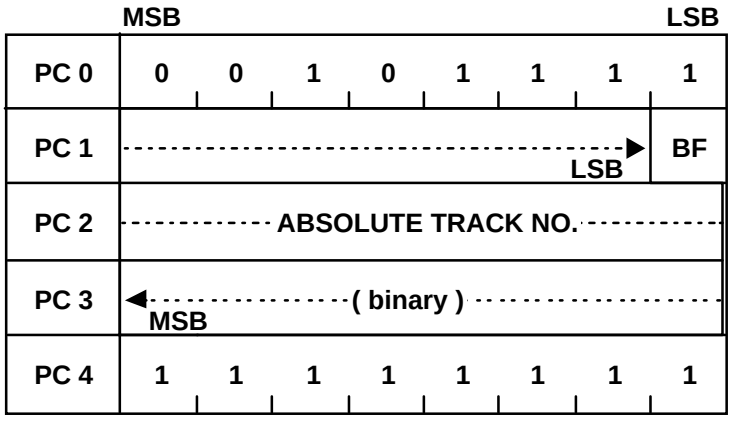
00 to 59

HOURS:

00 to 23

CHAPTER 15

5.16 CHAPTER END



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

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

ABSOLUTE TRACK NO.:

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

BF: Blank flag

0 = Discontinuity exists before this absolute track number

1 = Discontinuity does not exist before this absolute track number

6 PART

PART 0

6.1 TOTAL TIME

	MSB							LSB
PC 0	0	0	1	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 part.

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

PART 1

6.2 REMAIN TIME

	MSB							LSB
PC 0	0	0	1	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 pre-recorded tape.

This pack shows the remaining time of the part 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

PART 2

6.3 PART NO.

	MSB							LSB
PC 0	0	0	1	1	0	0	1	0
PC 1	TENS of CHNO				UNITS of CHNO			
PC 2	TENS of PNO				UNITS of PNO			
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.

This pack contains chapter number and part number at the tape position where this pack is recorded.

CHNO: Chapter number

00 to 99

PNO: Part number

00 to 99

An example of recording this pack is shown in CHAPTER TOTAL NO. pack.

PART 3

6.4 TIME CODE

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

This pack contains time code data which show the elapsed time in PART at the tape position where this pack is recorded.

For not recording PART BINARY pack

	MSB							LSB
PC 0	0	0	1	1	0	0	1	1
PC 1	1	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			

Consumer digital VCR shall adopt the drop frame sequence based on SMPTE/EBU time code format.

For recording PART BINARY pack

	MSB							LSB
PC 0	0	0	1	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

PART 4

6.5 BINARY GROUP

	MSB							LSB
PC 0	0	0	1	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 PART TIME CODE pack, if needed.

PART 5

6.6 Reserved

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

This pack is reserved for future use.

PART 6

6.7 Reserved

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

This pack is reserved for future use.

PART 7

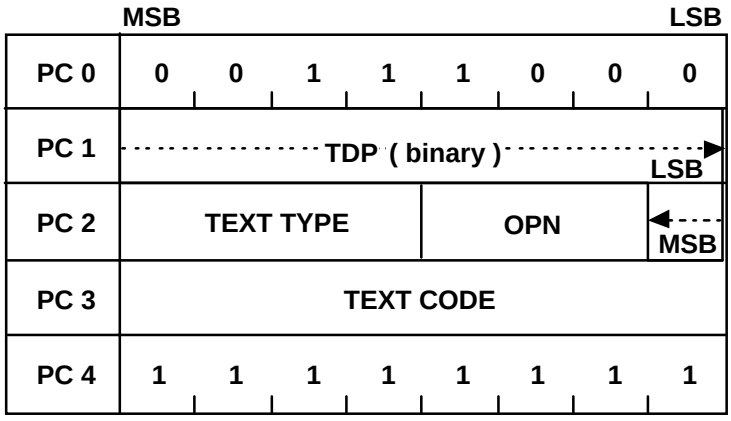
6.8 Reserved

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

This pack is reserved for future use.

PART 8

6.9 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	8 = Outline	Eh = Graphic
1 = Memo	9 = Full screen	Fh = No information
6 = Operator	Ch = One byte coded font	Others = Reserved
7 = Subtitle	Dh = Two byte coded font	

OPN: Option number

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

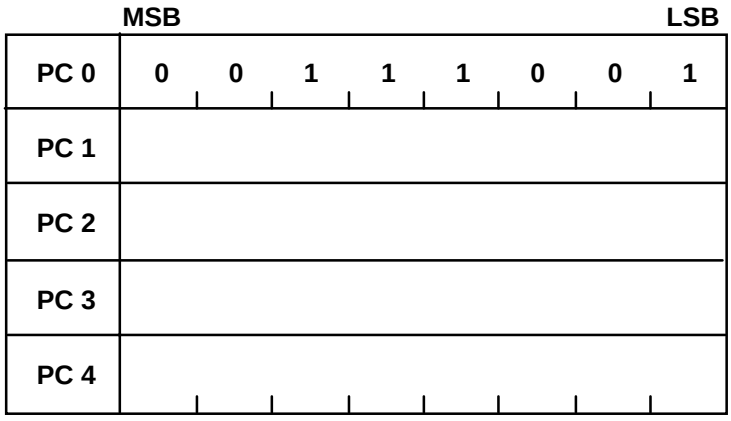
If OPN is not used, OPN shall be 111b.

TEXT CODE:

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

PART 9

6.10 TEXT



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

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

PART 10

6.11 PART START

	MSB							LSB
PC 0	0	0	1	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 part 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:

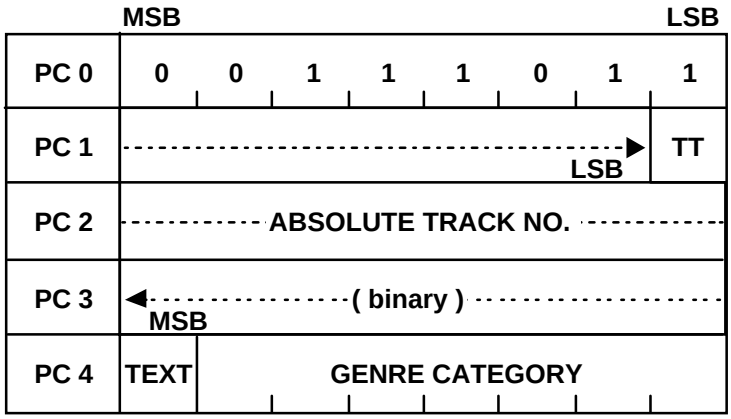
00 to 59

HOURS:

00 to 23

PART 11

6.12 PART START



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

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

ABSOLUTE TRACK NO.:

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

TT: Temporary true

This flag is valid only for MIC.

0 = This event data in MIC does not always exist on tape

1 = This event data in MIC certainly exists on tape

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 part's category.
The details are described in TIMER ACT DATE pack.

PART 12

6.13 Reserved

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

This pack is reserved for future use.

PART 13

6.14 Reserved

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

This pack is reserved for future use.

PART 14

6.15 PART END

	MSB							LSB
PC 0	0	0	1	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 part 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:

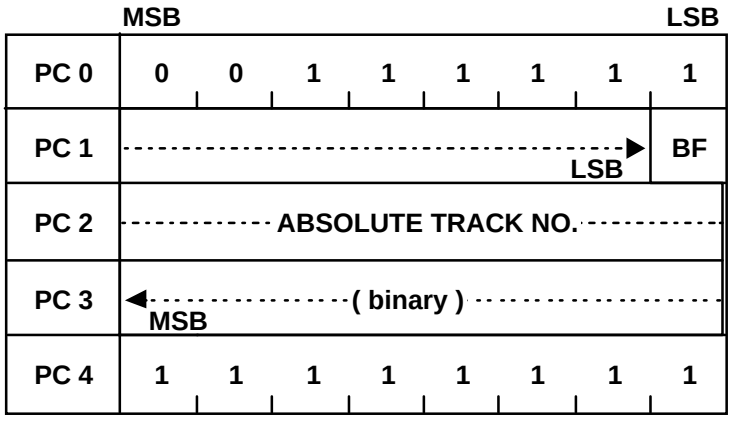
00 to 59

HOURS:

00 to 23

PART 15

6.16 PART END



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

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

ABSOLUTE TRACK NO.:

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

BF: Blank flag

0 = Discontinuity exists before this absolute track number

1 = Discontinuity does not exist before this absolute track number

7 PROGRAMME

PROGRAMME 0

7.1 TOTAL TIME

	MSB							LSB
PC 0	0	1	0	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 programme.

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

PROGRAMME 1

7.2 REMAIN TIME

	MSB							LSB
PC 0	**0**	**1**	**0**	**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 the user's tape.

This pack shows the remaining time of the programme 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:

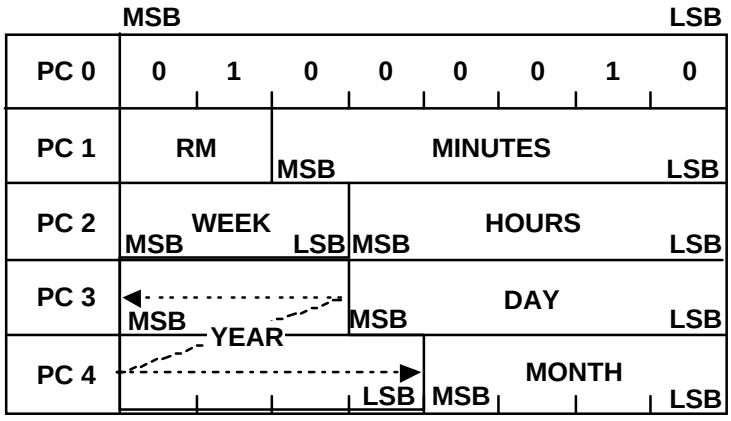
00 to 59

HOURS:

00 to 23

PROGRAMME 2

7.3 REC DTIME (REC DATE/TIME)



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

The date and time when this pack is written is stored in this pack.

RM: Recording mode

00b = Video
01b = Audio
10b = Video/Audio
11b = Duplicate

MINUTES:

00 to 3Bh 3Fh = No information

WEEK:

0 = Sunday 4 = Thursday
1 = Monday 5 = Friday
2 = Tuesday 6 = Saturday
3 = Wednesday 7 = No information

HOURS:

00 to 17h 1Fh = No information

MONTH:

1 to Ch = January to December
Fh = No information

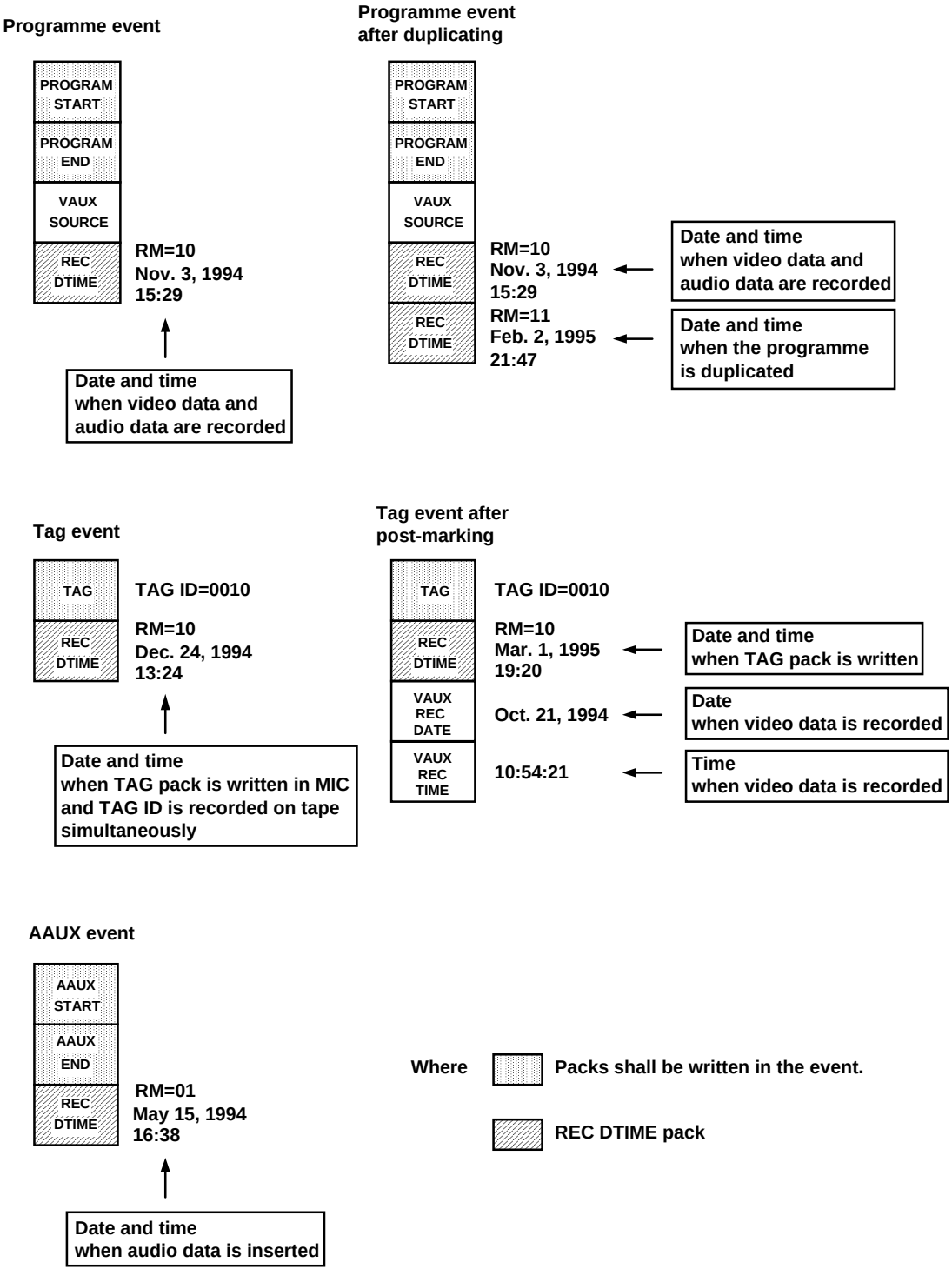
DAY:

01 to 1Fh

YEAR: Last two figures of year

00 to 63h 7Fh = No information

Examples of writing REC DTIME pack in MIC



PROGRAMME 3

7.4 TIME CODE

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

This pack contains time code data which show the elapsed time in PROGRAMME at the tape position where this pack is recorded.

For not recording PROGRAMME BINARY pack

	MSB							LSB
PC 0	0	1	0	0	0	0	1	1
PC 1	1	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			

The consumer digital VCR shall adopt the drop frame sequence based on the SMPTE/EBU time code format.

For recording PROGRAMME BINARY pack

	MSB							LSB
PC 0	0	1	0	0	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 the 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

PROGRAMME 4

7.5 BINARY GROUP

	MSB							LSB
PC 0	0	1	0	0	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 PROGRAMME TIME CODE pack, if needed.

PROGRAMME 5

7.6 Reserved

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

This pack is reserved for future use.

PROGRAMME 6

7.7 Reserved

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

This pack is reserved for future use.

PROGRAMME 7

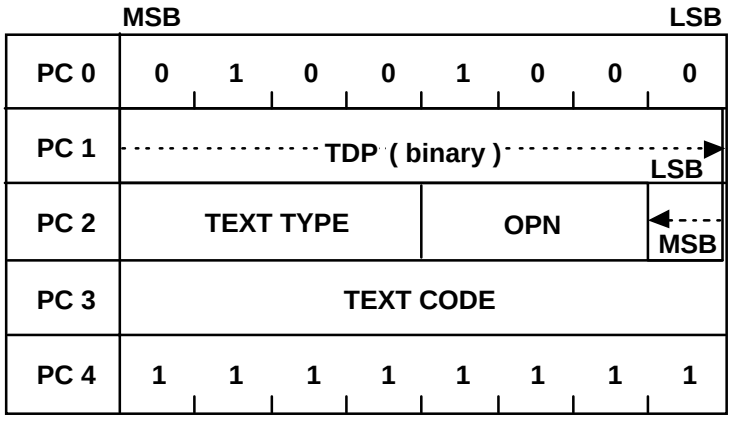
7.8 Reserved

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

This pack is reserved for future use.

PROGRAMME 8

7.9 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 option number of UK teletext. More details are described in teletext specification (EBU SPB 492 – December 1992).

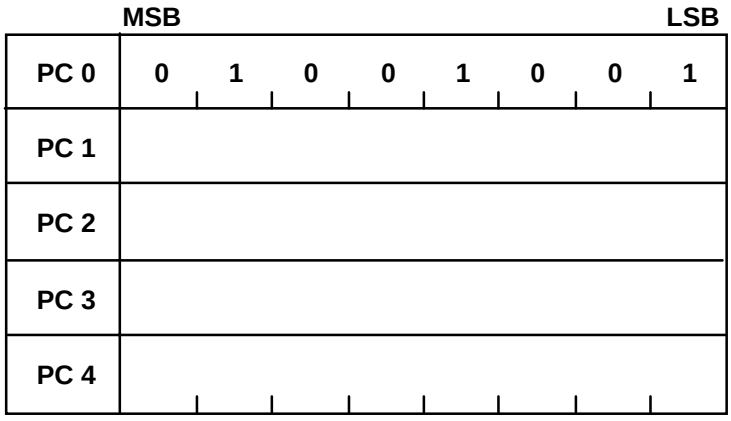
If OPN is not used, OPN shall be 111b.

TEXT CODE:

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

PROGRAMME 9

7.10 TEXT



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

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

PROGRAMME 10

7.11 PROGRAMME START

	MSB							LSB
PC 0	**0**	**1**	**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 programme start using the 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:

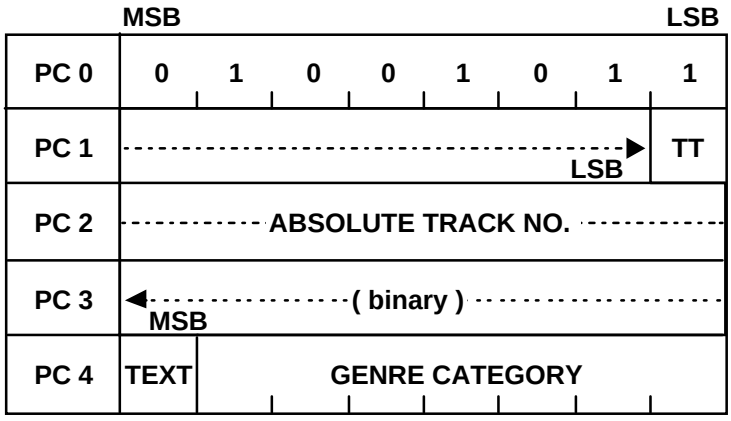
00 to 59

HOURS:

00 to 23

PROGRAMME 11

7.12 PROGRAMME START



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

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

ABSOLUTE TRACK NO.:

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

TT: Temporary true

This flag is valid only for MIC.

0 = This event data in MIC does not always exist on tape

1 = This event data in MIC exists 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 programme category.

The details are described in TIMER ACT DATE pack.

PROGRAMME 12

7.13 Reserved

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

This pack is reserved for future use.

PROGRAMME 13

7.14 Reserved

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

This pack is reserved for future use.

PROGRAMME 14

7.15 PROGRAMME END

	MSB							LSB
PC 0	0	1	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 shows the tape position of the programme 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:

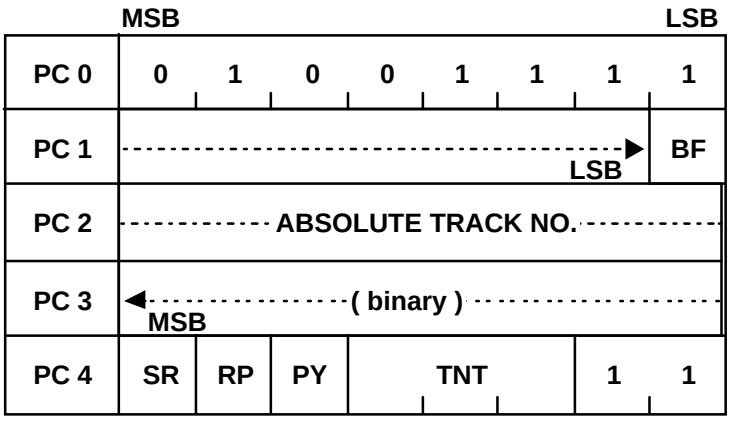
00 to 59

HOURS:

00 to 23

PROGRAMME 15

7.16 PROGRAMME END



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

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

ABSOLUTE TRACK NO.:

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

BF: Blank flag

0 = Discontinuity exists before this absolute track number
1 = Discontinuity does not exist discontinuity 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 1 for recording of track pitch 2 and track pitch 3.

RP: Recording protect

This flag is valid only for MIC.

0 = Over-recording on this programme is not allowed

1 = Over-recording on this programme is allowed

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

PY: Played flag

This flag is valid only for MIC.

0 = This programme has been played already

1 = This programme has not been played yet

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

TNT: Total number of text events

TNT is valid only for MIC.
TNT shows the total number of text events related to this programme event.
0 to 6 7 = No information

For subcode, AAUX and VAUX, TNT shall be 111b.

8 AAUX

AAUX 0

8.1 SOURCE

	MSB							LSB
PC 0	0	1	0	1	0	0	0	0
PC 1	LF	1	AF SIZE					
PC 2	SM	CHN		PA	AUDIO MODE			
PC 3	1	ML	50/60	STYPE				
PC 4	EF	TC	SMP			QU		

This pack shall be recorded at least in the AAUX main area.

LF: Locked mode flag

Locking condition of audio sampling frequency with video signal

0 = Locked mode

1 = Unlocked mode

AF SIZE: Audio frame size

The number of audio samples per frame:

525-60 or 1125-60 system

AF SIZE	The number of samples per frame		
	32 kHz	44,1 kHz	48 kHz
000000	1 053	1 452	1 580
⋮	⋮	⋮	⋮
011011	1 080	1 479	1 607
⋮		⋮	⋮
100101		1 489	1 617
⋮			⋮
101000			1 620
⋮		Reserved	
111111			

625-50 or 1250-50 system

AF SIZE	The number of samples per frame		
	32 kHz	44,1 kHz	48 kHz
000000	1 264	1 742	1 896
⋮	⋮	⋮	⋮
100000	1 296	1 774	1 928
⋮		⋮	⋮
101100		1 786	1 940
⋮			⋮
110000			1 944
⋮		Reserved	
111111			

SM: Stereo mode

0 = Multi-stereo audio

1 = Lumped audio

CHN: The number of audio channels within an audio block

00b = One channel per audio block Others = Reserved

01b = Two channels per audio block

The audio block is composed of five audio sectors in five consecutive tracks for 525-60 or 1125-60 system, six audio sectors in six consecutive tracks for 625-50 or 1250-50 system.

PA: Pair bit

PA indicates whether the audio signals recorded in CH1 (CH3) are related to the audio signals recorded in CH2 (CH4).

0 = One of pair channels

1 = Independent channel

For SM = 1, PA in each audio block shall be 1.

AUDIO MODE: The contents of the audio signal on each channel

CHANNEL / AUDIO MODE	SM = 0			SM = 1							
	CHN = 00	CHN = 01		CHN = 00 or 01							
	CH1/2/3/4	CHa/c /e/g	CHb/d /f/h	CH1		CH2		CH3		CH4	
				CHa	CHb	CHc	CHd	CHe	CHf	CHg	CHh
0 0 0 0	L	L	R	L		R		C		S	
0 0 0 1	R	M1	—	L		R		C		M	
0 0 1 0	M	M1	M2	L		R		C		—	
0 0 1 1	Reserved	LS	RS	L		R		LS		RS	
0 1 0 0		C	S	Lmix		Rmix		T	WO	Q1	Q2
0 1 0 1		C	—	L	R	C	WO	LS	RS	Lmix	Rmix
0 1 1 0		C	M1	L	R	C	WO	LS1	RS1	LS2	RS2
0 1 1 1		Reserved		L	R	C	WO	LS	RS	LC	RC
|				Reserved							
1 1 1 0	?	?	?								
1 1 1 1	—	—	—								

L	left channel of stereo
R	right channel of stereo
M1 M1, M2	monaural signal
C	centre channel of 3, 4, 5, 6 or 8ch stereo
S	surround channel of 4, 6 or 8ch stereo
LS, LS1, LS2	left surround channel of 4, 6 or 8ch stereo
RS, RS1, RS2	right surround channel of 4, 6 or 8ch stereo
LC	left centre channel of 8ch stereo
RC	right centre channel of 8ch stereo
WO	woofer channel
Lmix	L + 0,7172C + 0,7071LS
Rmix	R + 0,7172C + 0,7071RS
T	0,7071C
Q1	0,7071LS + 0,7071RS
Q2	0,7071LS + 0,7071RS
?	undistinguishable
—	no information

Examples of PA and AUDIO MODE for 525-60 or 625-50 system are shown below.

ML: Multi-language flag

Multi-language has two meanings as follows:

a) the same contents are recorded using other languages in other audio blocks of the same video frame;

b) other audio programmes with different contents, such as commentary about the same video programme, are recorded in other audio blocks of the same video frame.

0 = Recorded in multi-language

1 = Not recorded in multi-language

50/60:

0 = 60 field system

1 = 50 field system

STYPE: Defines a system type of video signal in combination with the 50/60 flag as follows.

STYPE	50/60	
	0	1
0 0 0 0 0	525-60 system	625-50 system
0 0 0 0 1	Reserved	
0 0 0 1 0	1125-60 system	1250-50 system
0 0 0 1 1 ⋮ 1 1 1 1 1	Reserved	

EF: Emphasis flag

0 = On

1 = Off

TC: Time constant of emphasis

1 = 50/15 µs

0 = Reserved

SMP: Sampling frequency

0 = 48 kHz

1 = 44,1 kHz

2 = 32 kHz

Others = Reserved

QU: Quantization

0 = 16 bits linear

1 = 12 bits non-linear

2 = 20 bits linear

Others = Reserved

Examples of PA and AUDIO MODE for 525-60 or 625-50 system

One channel per audio block (see table 15 of Part 2)

	CH1		CH2	
	PA	AUDIO MODE	PA	AUDIO MODE
Stereo	0	0 0 0 0	0	0 0 0 1
2ch mono	1	0 0 1 0	1	0 0 1 0
1ch mono	1	0 0 1 0	1	1 1 1 1
Indistinguishable	1	1 1 1 0	1	1 1 1 0
No information	1	1 1 1 1	1	1 1 1 1

Two channels per audio block (see table 16 of Part 2)

	CHa or CHb		CHc or CHd	
	PA	AUDIO MODE	PA	AUDIO MODE
Stereo + stereo	1	0 0 0 0	1	0 0 0 0
Stereo + 2ch mono	1	0 0 0 0	1	0 0 1 0
Stereo + 1ch mono	1	0 0 0 0	1	0 0 0 1
Stereo	1	0 0 0 0	1	1 1 1 1
2ch mono + stereo	1	0 0 1 0	1	0 0 0 0
4ch mono	1	0 0 1 0	1	0 0 1 0
3ch mono 1	1	0 0 1 0	1	0 0 0 1
2ch mono 1	1	0 0 1 0	1	1 1 1 1
1ch mono + stereo	1	0 0 0 1	1	0 0 0 0
3ch mono 2	1	0 0 0 1	1	0 0 1 0
2ch mono 2	1	0 0 0 1	1	0 0 0 1
1ch mono	1	0 0 0 1	1	1 1 1 1
3/1 stereo	0	0 0 0 0	0	0 1 0 0
3/0 stereo + 1ch mono	0	0 0 0 0	0	0 1 1 0
3/0 stereo	0	0 0 0 0	0	0 1 0 1
2/2 stereo	0	0 0 0 0	0	0 0 1 1
Indistinguishable	1	1 1 1 0	1	1 1 1 0
No information	1	1 1 1 1	1	1 1 1 1

AAUX 1

8.2 SOURCE CONTROL

	MSB							LSB
PC 0	0	1	0	1	0	0	0	1
PC 1	CGMS		ISR		CMP		SS	
PC 2	REC ST	REC END	REC MODE				INSERT CH	
PC 3	DRF	SPEED						
PC 4	1	GENRE CATEGORY						

This pack shall be recorded at least in the AAUX main area.

CGMS: Copy generation management system

00b = Copying permitted without restriction
01b = Not used
10b = One generation of copies permitted
11b = No copying permitted

If CGMS information encoded in the incoming signal is "0 0", a digital VCR may make a copy and shall encode "0 0", on "CGMS".

If CGMS information encoded in the incoming signal is "1 0", a digital VCR may make a copy and shall encode "1 1", on "CGMS".

If CGMS information encoded in the incoming signal is "1 1", a digital VCR shall not make a copy.

Each manufacturer has the discretion to follow the rules described above unless there is any legislation or similar mandating this.

ISR: Input source of just previous recording

00b = Analogue input
01b = Digital input
10b = Reserved
11b = No information

CMP: The number of times of compression

00b = Compression once
01b = Compression twice
10b = Compression three times or more
11b = No information

SS: Source and recorded situation

00b = Scrambled source with audience restrictions
and recorded without descrambling
01b = Scrambled source without audience restrictions
and recorded without descrambling
10b = Source with audience restrictions
or descrambled source with audience restrictions
11b = No information

If SS = 10b, then KEY pack should be recorded in AAUX common optional area.

REC ST: Recording start point

0 = Recording start point
1 = Not recording start point

The duration of the recording start point shall be one audio block period for each recording channel.

REC END: Recording end point

0 = Recording end point
1 = Not recording end point

The duration of the recording end point shall be one audio block period for each recording channel.

REC MODE: Recording mode

001b = Original
011b = One CH insert (CH1 or CH2 or CH3 or CH4)
100b = Four CHs insert (CH1 and CH2 and CH3 and CH4)
101b = Two CHs insert ((CH1 and CH2) or (CH3 and CH4))
111b = Invalid recording

where

Original:	Video and two audio blocks are recorded simultaneously.
One CH insert:	One of the audio blocks is recorded with the pre-recorded video area and the other audio block remaining as it is.
Two CHs insert:	Two audio blocks are recorded with the pre-recorded video area and the other audio block remaining as it is.
Four CHs insert:	Four audio blocks are recorded with the pre-recorded video area remaining as it is.
Invalid recording:	Recorded audio data are not taken into account.

INSERT CH:

INSERT CH is valid only for MIC.

000b = CH1	100b = CH1 and CH2
001b = CH2	101b = CH3 and CH4
010b = CH3	110b = CH1 and CH2 and CH3 and CH4
011b = CH4	111b = No information

For recording AAUX SOURCE CONTROL pack on tape, INSERT CH shall be 111b.

DRF: Direction flag

0 = Reverse direction
1 = Forward direction

SPEED: Playback speed

Playback speed is defined by coarse value plus fine value.

Playback speed =1 is indicative of normal speed.

SPEED consists of 7 bits. The most significant 3 bits indicates the coarse value and the rest of it indicates the fine value.

Most significant 4 bits		Least significant 4 bits						
		0000	0001	0010	0011	-------	1110	1111
	Coarse value	Fine value						
000	0	a	b	1/16	1/15	-------	1/4	1/3
001	1/2	0/32	1/32	2/32	3/32	-------	14/32	15/32
010	1	0/16	1/16	2/16	3/16	-------	14/16	15/16
011	2	0/8	1/8	2/8	3/8	-------	14/8	15/8
100	4	0/4	1/4	2/4	3/4	-------	14/4	15/4
101	8	0/2	1/2	2/2	3/2	-------	14/2	15/2
110	16	0	1	2	3	-------	14	15
111	32	0	2	4	6	-------	28 <	c

a 0 times speed (still)
b lower than 1/16 times linear play
c no information or unknown speed

For normal recording, SPEED shall be set to 0100000b.

If the playback speed does not correspond to any value shown above, SPEED shall be the most approximate value. If the playback speed is between two values shown above, SPEED should be the smaller value.

More details are given in 11.6 of Part 2.

GENRE CATEGORY:

GENRE CATEGORY shows the category of the audio source.

The details are given in TIMER ACT DATE pack.

AAUX 2

8.3 REC DATE

	MSB							LSB
PC 0	0	1	0	1	0	0	1	0
PC 1	DS	TM	TENS of TIME ZONE		UNITS of TIME ZONE			
PC 2	1	1	TENS of DAY		UNITS of DAY			
PC 3	WEEK			TNMN	UNITS of MONTH			
PC 4	TENS of YEAR				UNITS of YEAR			

This pack should be recorded in the AAUX main area. The date when audio data are recorded is stored in this pack.

DS: Daylight saving time

0 = Daylight saving time
1 = Normal

TM: Thirty minutes flag

Thirty minutes unit of the time differential from GMT

0 = 30 min
1 = 0 min

TIME ZONE:

00 to 23 3Fh = No information

Example

For Tokyo

TIME ZONE = 001001b
PC1 = 11001001b GMT plus 9:00

For New York with daylight saving time

TIME ZONE = 011001b
PC1 = 01011001b GMT plus 19:00

For New Delhi where thirty minutes unit of the time differential from GMT is adopted

TIME ZONE = 000101b
PC1 = 10000101b GMT plus 5:30

where GMT: Greenwich Mean Time

DAY:

01 to 31 3Fh = No information

WEEK:

0 = Sunday 4 = Thursday
1 = Monday 5 = Friday
2 = Tuesday 6 = Saturday
3 = Wednesday 7 = No information

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

AAUX 3

8.4 REC TIME

This pack should be recorded in the AAUX main area.

The time when audio data are recorded is stored based on the SMPTE/EBU time code format.

For not recording AAUX BINARY pack

	MSB							LSB
PC 0	0	1	0	1	0	0	1	1
PC 1	1	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			

Consumer digital VCR shall adopt the drop frame sequence.

If FRAME is not used, FRAME shall be 3Fh.

For recording AAUX BINARY pack

	MSB							LSB
PC 0	0	1	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

AAUX 4

8.5 BINARY GROUP

	MSB							LSB
PC 0	0	1	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 may be recorded in the AAUX main area.

If this pack is used, S1 to S6 flags in AAUX REC TIME pack shall be set based on the SMPTE/EBU time code format.

If this pack is not used, NO INFO pack shall be recorded.

AAUX 5

8.6 CLOSED CAPTION

	MSB							LSB
PC 0	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**1**
PC 1	**1**	**1**	**MAIN AUDIO LANGUAGE**			**MAIN AUDIO TYPE**		
PC 2	**1**	**1**	**SECOND AUDIO LANGUAGE**			**SECOND AUDIO TYPE**		
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 in the AAUX main area.

If closed caption signals are transmitted, the signals should be decoded. Since the contents about the audio services which are not defined in AAUX SOURCE and AAUX SOURCE CONTROL packs are announced in XDS (Extended data service, EIA608-1993), AAUX CLOSED CAPTION pack is prepared for recording such data. If AAUX CLOSED CAPTION packs have been recorded on tape, handling these packs will depend on each digital VCR.

More details are given in 9.4 of Part 2.

MAIN (SECOND) AUDIO LANGUAGE:

0 = Unknown	4 = German
1 = English	5 = Italian
2 = Spanish	6 = Others
3 = French	7 = None

MAIN AUDIO TYPE:

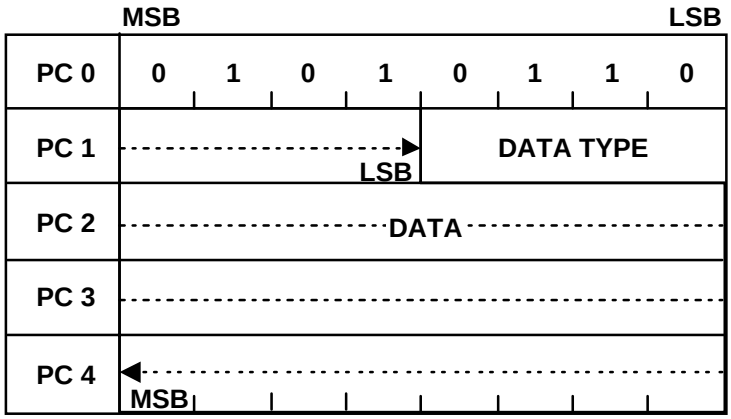
0 = Unknown	4 = Stereo surround
1 = Mono	5 = Data service
2 = Simulated stereo	6 = Others
3 = True stereo	7 = None

SECOND AUDIO TYPE:

0 = Unknown	4 = Special effects
1 = Mono	5 = Data service
2 = Descriptive video service	6 = Others
3 = Non-programme audio	7 = None

AAUX 6

8.7 TR (Transparent)



This pack may be recorded in the AAUX main area.

If the digital data which should be stored in the VAUX TR pack are transmitted, the data should be decoded. If there exists data concerning audio signals, this data should be decoded and stored in AAUX TR pack, and the contents should be set in AAUX SOURCE and AAUX SOURCE CONTROL packs to avoid inconsistency between AAUX TR pack and these two packs. Since contents may exist, which are not defined in AAUX SOURCE and AAUX SOURCE CONTROL packs, for future definitions in the vertical blanking period, AAUX TR pack is prepared for recording such data. If there is no data to fill the DATA area, all "1" data shall be recorded. If AAUX TR packs have been recorded on tape, it depends on each digital VCR how to handle these packs.

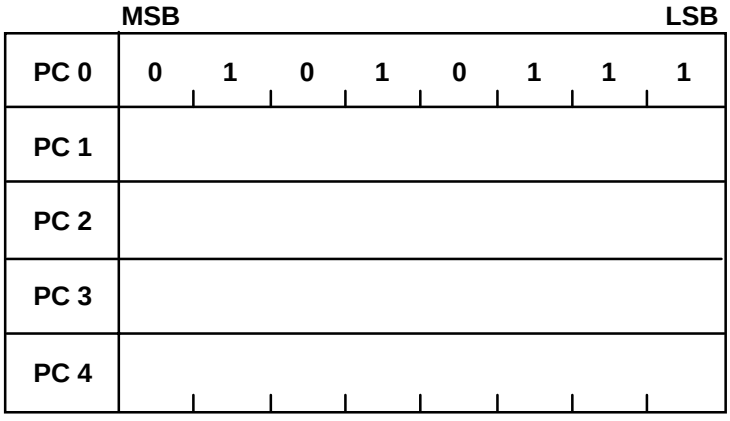
More details are described in 9.4 of Part 2.

DATA TYPE: Reserved for future use

DATA: Reserved for future use

AAUX 7

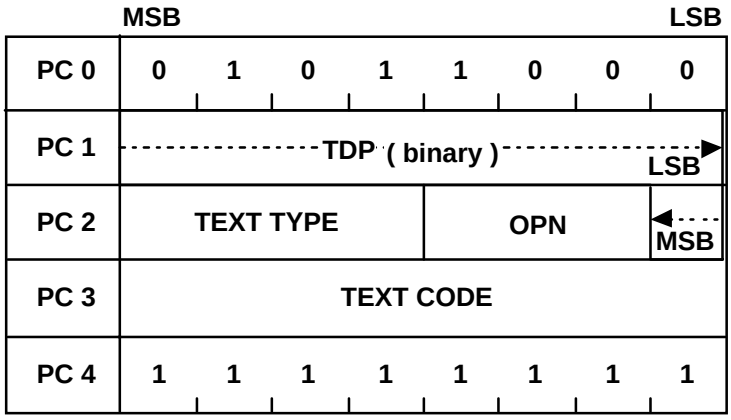
8.8 Reserved



This pack is reserved for future use.

AAUX 8

8.9 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 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.

AAUX 9

8.10 TEXT

	MSB							LSB
PC 0	0	1	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 AAUX TEXT HEADER pack.

AAUX 10

8.11 AAUX START

	MSB							LSB
PC 0	0	1	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 except for the VAUX optional area.

This pack shows the tape position when starting to insert audio data using the 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:

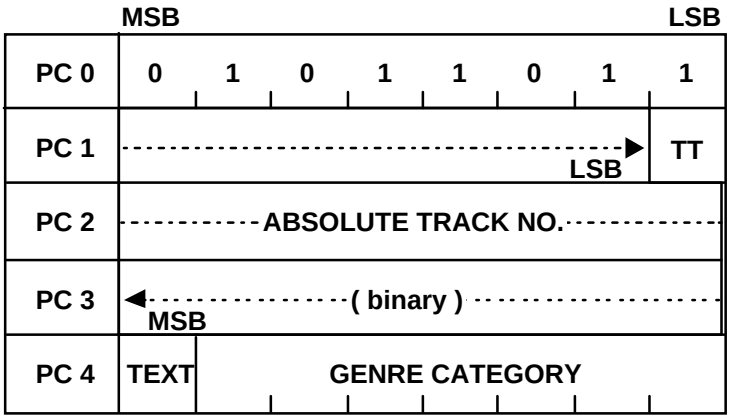
00 to 59

HOURS:

00 to 23

AAUX 11

8.12 AAUX START



This pack may be recorded or written in the common optional areas except for the VAUX optional area.

This pack shows the tape position of starting to insert audio data using absolute track number.

ABSOLUTE TRACK NO.:

Absolute track number which shows the tape position of starting to insert audio data

TT: Temporary true

This flag is valid only for MIC.

0 = This event data in MIC does not always exist on tape

1 = This event data in MIC exists 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 category of the inserted audio source.

The details are described in TIMER ACT DATE pack.

AAUX 12

8.13 Reserved

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

This pack is reserved for future use.

AAUX 13

8.14 Reserved

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

This pack is reserved for future use.

AAUX 14

8.15 AAUX END

	MSB							LSB
PC 0	0	1	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 except for the VAUX optional area.

This pack shows the tape position of ending to insert audio data using the title time code.

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:

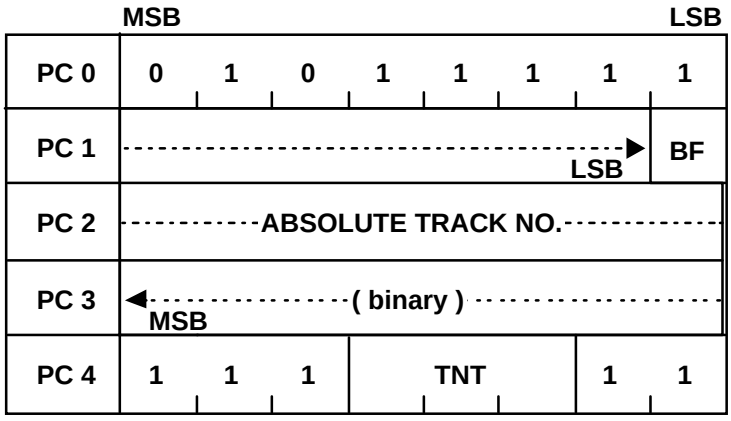
00 to 59

HOURS:

00 to 23

AAUX 15

8.16 AAUX END



This pack may be recorded or written in the common optional areas except for the VAUX optional area.

This pack shows the tape position of ending to insert audio data using absolute track number.

ABSOLUTE TRACK NO.:

Absolute track number which shows the tape position of ending to insert audio data

BF: Blank flag

0 = Discontinuity exists before this absolute track number

1 = Discontinuity does not exist before this absolute track number

TNT: Total number of text events

TNT is valid only for MIC.

TNT shows the total number of text events related to this AAUX event.

0 to 6 7 = No information

For subcode, AAUX and VAUX, TNT shall be 111b.

9 VAUX

VAUX 0

9.1 SOURCE

	MSB							LSB
PC 0	0	1	1	0	0	0	0	0
PC 1	TENS of TV CHANNEL				UNITS of TV CHANNEL			
PC 2	B/W	EN	CLF		HUNDREDS of TV CHANNEL			
PC 3	SOURCE CODE			50/60	STYPE			
PC 4	TUNER CATEGORY							

This pack shall be recorded at least in the VAUX main area.

TV CHANNEL: The number of the television channel

001 to 999 = Television channel

EEEh = Pre-recorded tape or LINE (MUSE)

FFFh = No information

TV CHANNEL should indicate the channel number which is assigned to the broadcasting station, and it may indicate the channel number which is set by the user on the receiver.

B/W: Black and white flag

0 = Black and white

1 = Colour

B/W flag should be set to 1 for consumer digital VCR.

EN: Colour frames enable flag

0 = CLF is valid

1 = CLF is invalid

CLF: Colour frames identification code (refer to ITU-R Report 624-4)

For 525-60 system

00b = Colour frame A

01b = Colour frame B

Others = reserved

For 625-50 system

00b = 1st, 2nd field

01b = 3rd, 4th field

10b = 5th, 6th field

11b = 7th, 8th field

50/60:

0 = 60 field system

1 = 50 field system

The specification of B/W, EN, 50/60 and CLF

B/W	EN	50/60	CLF	System	Colour frame	
1	0	0	0 0	525-60	Valid	Colour frame A
			0 1			Colour frame B
		1	0 0	625-50		1st, 2nd fields
			0 1			3rd, 4th fields
			1 0			5th, 6th fields
			1 1			7th, 8th fields
X	1	X	1 1		Invalid	

X don't care

SOURCE CODE:

SOURCE CODE defines the input source of the video signal in combination with TV CHANNEL and TUNER CATEGORY as follows.

SOURCE CODE	TV CHANNEL			TUNER CATEGORY	Input source
	100's	10's	1's		
0 0	Fh	Fh	Fh	FFh	Camera
0 1	Eh	Eh	Eh	FFh	Line (MUSE)
0 1	Fh	Fh	Fh	FFh	Line
1 0	0h	0h	1h	FFh	Cable Ch1
	0h	0h	2h		Ch2
	|	|	|		|
	9h	9h	9h		Ch999
1 1	0h	0h	1h	Prescribed value	Tuner Ch1
	0h	0h	2h		Ch2
	|	|	|		|
	9h	9h	9h		Ch999
1 1	Eh	Eh	Eh	FFh	Pre-recorded tape
1 1	Fh	Fh	Fh	FFh	No information

STYPE:

STYPE defines a signal type of video signal in combination with the 50/60 flag as follows.

STYPE	50/60	
	0	1
0 0 0 0 0	525-60 system	625-50 system
0 0 0 0 1	Reserved	
0 0 0 1 0	1125-60 system	1250-50 system
0 0 0 1 1	Reserved	
⋮		
1 1 1 1 1		

TUNER CATEGORY:

TUNER CATEGORY consists of area number and satellite number as follows.
TUNER CATEGORY = FFh is indicative of no information.

Area number			Satellite number				
b7	b6	b5	b4	b3	b2	b1	b0

Area number specification

Area number	Region	Area
0 0 0	Region 1	Europe, Africa
0 0 1		
0 1 0	Region 2	North America, South America
0 1 1		
1 0 0		
1 0 1		
1 1 0	Region 3	Asia, Oceania
1 1 1		

Details of area number are to be decided.

For region 1

Area number	Satellite number	Satellite name
0 0 0	0 0 0 0 0	UHF/VHF
	0 0 0 0 1	Reserved
	0 0 0 1 0	ASTRA A+B
	0 0 0 1 1	ASTRA C+D
	0 0 1 0 0	TELECOM (France)
	0 0 1 0 1	TELECOM-2
	0 0 1 1 0 ⋮ 1 1 1 1 1	Reserved
0 0 1	0 0 0 0 0	UHF/VHF
	0 0 0 0 1 ⋮ 1 1 1 1 1	Reserved

For region 2

Area number	Satellite number	Satellite name
0 1 0	0 0 0 0 0	UHF/VHF
	0 0 0 0 1 ⋮ 1 1 1 1 1	Reserved
0 1 1	0 0 0 0 0	UHF/VHF
	0 0 0 0 1 ⋮ 1 1 1 1 1	Reserved
1 0 0	0 0 0 0 0	UHF/VHF
	0 0 0 0 1 ⋮ 1 1 1 1 1	Reserved
1 0 1	0 0 0 0 0	UHF/VHF
	0 0 0 0 1 ⋮ 1 1 1 1 1	Reserved

For region 3

Area number	Satellite number	Satellite name
1 1 0	0 0 0 0 0	UHF/VHF
	0 0 0 0 1	BS
	0 0 0 1 0	SCC-A
	0 0 0 1 1	SCC-B
	0 0 1 0 0	JCSAT-1
	0 0 1 0 1	JCSAT-2
	0 0 1 1 0 ⋮ 1 1 1 1 1	Reserved
1 1 1	0 0 0 0 0	UHF/VHF
	0 0 0 0 1 ⋮ 1 1 1 1 0	Reserved

VAUX 1

9.2 SOURCE CONTROL

	MSB							LSB
PC 0	0	1	1	0	0	0	0	1
PC 1	CGMS		ISR		CMP		SS	
PC 2	REC ST	1	REC MODE		1	DISP		
PC 3	FF	FS	FC	IL	ST	SC	BCSYS	
PC 4	1	GENRE CATEGORY						

This pack shall be recorded at least in the VAUX main area.

CGMS: Copy generation management system

00b = Copying permitted without restriction
01b = Not used
10b = One generation of copying permitted
11b = No copying permitted

If CGMS information encoded in the incoming signal is "0 0", a digital VCR may make a copy and shall encode "0 0", on "CGMS".

If CGMS information encoded in the incoming signal is "1 0", a digital VCR may make a copy and shall encode "1 1", on "CGMS".

If CGMS information encoded in the incoming signal is "1 1", a digital VCR shall not make a copy.

Each manufacturer has the discretion to follow the rules described above unless there is any legislation or similar mandating this.

ISR: Input source of just previous recording

00b = Analogue input
01b = Digital input
10b = Reserved
11b = No information

CMP: The number of times of compression

00b = Compression once
01b = Compression twice
10b = Compression three times or more
11b = No information

SS: Source and recorded situation

00b = Scrambled source with audience restrictions
and recorded without descrambling
01b = Scrambled source without audience restrictions
and recorded without descrambling
10b = Source with audience restrictions
or descrambled source with audience restrictions
11b = No information

If SS = 10b, then KEY pack should be recorded in the VAUX common optional area.

REC ST: Recording start point

0 = Recording start point
1 = Not recording start point

The duration of recording start point should be the period of 30 frames (525-60 system) or 25 frames (625-50 system).

REC MODE:

00b = Original

01b = Reserved

10b = Insert

11b = Invalid recording

where

Original: Video and two audio blocks are recorded simultaneously.

Insert: Video area is recorded with the pre-recorded audio blocks remaining as they are.

Invalid recording: Recorded video data are not taken into account.

BCSYS: Broadcast system

BCSYS indicates the type information of display format with DISP.

00b = type 0 (refer to IEC 61880, EIA-608)

01b = type 1 (refer to prETS 300 294)

Others = Reserved

DISP: Display select mode

BCSYS	DISP	Aspect ratio and format	Position
0 0	0 0 0	4 : 3 full format	Not applicable
	0 0 1	16 : 9 letter box	Centre
	0 1 0	16 : 9 full format (squeeze)	Not applicable
	0 1 1 ⋮ 1 1 1	Reserved	
0 1	0 0 0	4 : 3 full format	Not applicable
	0 0 1	14 : 9 letter box	Centre
	0 1 0	14 : 9 letter box	Top
	0 1 1	16 : 9 letter box	Centre
	1 0 0	16 : 9 letter box	Top
	1 0 1	> 16 : 9 letter box	Centre
	1 1 0	14 : 9 full format	Centre
	1 1 1	16 : 9 full format (anamorphic)	Not applicable
1 0 ⋮ 1 1	0 0 0 ⋮ 1 1 1	Reserved	

FF: Frame/Field flag

FF indicates whether both fields are output in order or only one of them is output twice during one frame period.

0 = Only one of two fields is output twice

1 = Both fields are output in order

FS: First/Second flag

FS indicates a field which should be output during field 1 period.

0 = Field 2 is output

1 = Field 1 is output

FF	FS	Output field
1	1	Field 1 and field 2 are output in this order
1	0	Field 2 and field 1 are output in this order
0	1	Field 1 is output twice
0	0	Field 2 is output twice

FC: Frame change flag

FC indicates whether the picture of the current frame is the same picture of the immediate previous frame.

0 = Same picture as the immediate previous frame

1 = Different picture from the immediate previous frame

IL: Interlace flag

IL indicates whether the data of two fields which construct one frame are interlaced or non-interlaced.

0 = Non-interlaced

1 = Interlaced or unrecognized

ST: Still-field picture flag

ST indicates the time difference between the two fields within a frame. This flag shall have the same value for a duration of at least three frames.

0 = The time difference between the fields is approximately 0 s.

1 = The time difference between the fields is approximately 1,001/60 s (525-60 system) or approximately 1/50 s (625-50 system).

SC: Still camera picture flag

This flag is prepared for distinguishing a still camera picture. Still camera picture:

Consecutive five frame of the same picture. For SC = 0, this flag may be used for displaying a still camera picture by stopping tape travelling automatically.

0 = Still camera picture

1 = Not still camera picture

GENRE CATEGORY:

GENRE CATEGORY shows the category of the video source.

The details are described in TIMER ACT DATE pack.

Examples of how to use FF, FS, FC, IL and ST

There are four types of input video signals:

– interlaced motion picture: a normal standard TV signal;
– non-interlaced motion picture: a non-interlaced TV signal in a frame like a video game output;
– frame still picture: a still picture during a frame and the still picture is an interlace TV signal in a frame;
– field still picture: a still picture during a field and the same still picture is repeated twice in a frame.

If the type of an input signal is indefinite, interlaced motion picture should be selected.

For original recording

Recording frames		a		b		c		d		e	
Recording fields		a1	a2	b1	b2	c1	c2	d1	d2	e1	e2
Interlaced motion picture	FF	1		1		1		1		1	
	FS	1		1		1		1		1	
	FC	1		1		1		1		1	
	IL	1		1		1		1		1	
	ST	1		1		1		1		1	
Non-interlaced motion picture	FF	1		1		1		1		1	
	FS	1		1		1		1		1	
	FC	1		1		1		1		1	
	IL	0		0		0		0		0	
	ST	1		1		1		1		1	
Frame still picture	FF	1		1		1		1		1	
	FS	1		1		1		1		1	
	FC	0		1		0		0		1	
	IL	1		1		1		1		1	
	ST	0		0		0		0		0	
Field still picture	FF	1		1		1		1		1	
	FS	1		1		1		1		1	
	FC	0		1		0		0		1	
	IL	0		0		0		0		0	
	ST	0		0		0		0		0	

NOTE – For frame still pictures and field still pictures, frames b, c and d are still frames and have the same frame data.

For normal playback

Reproducing frames from tape		a		b		c		d		e	
Reproducing fields from tape		a1	a2	b1	b2	c1	c2	d1	d2	e1	e2
	OT[1]	a1	a2	b1	b2	c1	c2	d1	d2	e1	e2
	OD[2]	a1	a2	b1	b2	c1	c2	d1	d2	e1	e2
Interlaced motion picture	FF	1		1		1		1		1	
	FS	1		1		1		1		1	
	FC	1		1		1		1		1	
	IL	1		1		1		1		1	
	ST	1		1		1		1		1	
Non-interlaced motion picture	OT	a1	a2	b1	b2	c1	c2	d1	d2	e1	e2
	OD	a1	a2	b1	b2	c1	c2	d1	d2	e1	e2
	FF	1		1		1		1		1	
	FS	1		1		1		1		1	
	FC	1		1		1		1		1	
	IL	0		0		0		0		0	
	ST	1		1		1		1		1	
Frame still picture	OT	a1	a2	b1	b2	c1	c2	d1	d2	e1	e2
	OD	a1	a2	b1	b2	c1	c2	d1	d2	e1	e2
	FF	1		1		1		1		1	
	FS	1		1		1		1		1	
	FC	0		1		0		0		1	
	IL	1		1		1		1		1	
	ST	0		0		0		0		0	
Field still picture	OT	a1	a2	b1	b2	c1	c2	d1	d2	e1	e2
	OD	a1	a2	b1	b2	c1	c2	d1	d2	e1	e2
	FF	1		1		1		1		1	
	FS	1		1		1		1		1	
	FC	0		1		0		0		1	
	IL	0		0		0		0		0	
	ST	0		0		0		0		0	

1) OT output order to the TV screen
2) OD output order to the digital interface

NOTE – For frame still pictures and field still pictures, frames b, c and d are still frames and have the same frame data.

For slow playback (X 1/3)

Reproducing frames from tape		a		b		b		b		c	
Reproducing fields from tape		a1	a2	b1	b2	b1	b2	b1	b2	c1	c2
Interlaced motion picture (field slow)	OT[1]	a2	a2	b1	b1	b1	b2	b2	b2	c1	c1
	OD[2]	a1	a2	b1	b2	b1	b2	b1	b2	c1	c2
	FF	0		0		1		0		0	
	FS	0		1		1		0		1	
	FC	0		1		0		0		1	
	IL	1		1		1		1		1	
	ST	1		1		1		1		1	
Interlaced motion picture (frame slow)	OT	a1	a2	b1	b2	b1	b2	b1	b2	c1	c2
	OD	a1	a2	b1	b2	b1	b2	b1	b2	c1	c2
	FF	1		1		1		1		1	
	FS	1		1		1		1		1	
	FC	0		1		0		0		1	
	IL	1		1		1		1		1	
	ST	1		1		1		1		1	
Non-interlaced motion picture (field slow)	OT	a2	a2	b1	b1	b1	b2	b2	b2	c1	c1
	OD	a1	a2	b1	b2	b1	b2	b1	b2	c1	c2
	FF	0		0		1		0		0	
	FS	0		1		1		0		1	
	FC	0		1		0		0		1	
	IL	0		0		0		0		0	
	ST	1		1		1		1		1	
Frame still picture	OT	a1	a2	b1	b2	b1	b2	b1	b2	c1	c2
	OD	a1	a2	b1	b2	b1	b2	b1	b2	c1	c2
	FF	1		1		1		1		1	
	FS	1		1		1		1		1	
	FC	0		1		0		0		0	
	IL	1		1		1		1		1	
	ST	0		0		0		0		0	
Field still picture	OT	a1	a2	b1	b2	b1	b2	b1	b2	c1	c2
	OD	a1	a2	b1	b2	b1	b2	b1	b2	c1	c2
	FF	1		1		1		1		1	
	FS	1		1		1		1		1	
	FC	0		1		0		0		0	
	IL	0		0		0		0		0	
	ST	0		0		0		0		0	

1) OT output order to the TV screen.
2) OD output order to the digital interface.

NOTE - For frame still pictures and field still pictures, frames b, c and d are still frames and have the same frame data.

For slow playback (X -1/3)

Reproducing frames from tape		e		d		d		d		c	
Reproducing fields from tape		e1	e2	d1	d2	d1	d2	d1	d2	c1	c2
Interlaced motion picture (field slow)	OT[1)]	e1	e1	d2	d2	d2	d1	d1	d1	c2	c2
	OD[2)]	e1	e2	d1	d2	d1	d2	d1	d2	c1	c2
	FF	0		0		1		0		0	
	FS	1		0		0		1		0	
	FC	0		1		0		0		1	
	IL	1		1		1		1		1	
	ST	1		1		1		1		1	
Interlaced motion picture (frame slow)	OT	e1	e2	d1	d2	d1	d2	d1	d2	c1	c2
	OD	e1	e2	d1	d2	d1	d2	d1	d2	c1	c2
	FF	1		1		1		1		1	
	FS	1		1		1		1		1	
	FC	0		1		0		0		1	
	IL	1		1		1		1		1	
	ST	1		1		1		1		1	
Non-interlaced motion picture (field slow)	OT	e1	e1	d2	d2	d2	d1	d1	d1	c2	c2
	OD	e1	e2	d1	d2	d1	d2	d1	d2	c1	c2
	FF	0		0		1		0		0	
	FS	1		0		0		1		0	
	FC	0		1		0		0		1	
	IL	0		0		0		0		0	
	ST	1		1		1		1		1	
Frame still picture	OT	e1	e2	d1	d2	d1	d2	d1	d2	c1	c2
	OD	e1	e2	d1	d2	d1	d2	d1	d2	c1	c2
	FF	1		1		1		1		1	
	FS	1		1		1		1		1	
	FC	0		1		0		0		0	
	IL	1		1		1		1		1	
	ST	0		0		0		0		0	
Field still picture	OT	e1	e2	d1	d2	d1	d2	d1	d2	c1	c2
	OD	e1	e2	d1	d2	d1	d2	d1	d2	c1	c2
	FF	1		1		1		1		1	
	FS	1		1		1		1		1	
	FC	0		1		0		0		0	
	IL	0		0		0		0		0	
	ST	0		0		0		0		0	

1) OT output order to the TV screen
2) OD output order to the digital interface

NOTE - For frame still pictures and field still pictures, frames b, c and d are still frames and have the same frame data.

For still playback

Reproducing frames from tape		a		b		b		b		b	
Reproducing fields from tape		a1	a2	b1	b2	b1	b2	b1	b2	b1	b2
Interlaced motion picture (field still type 1)	OT[1]	a1	a2	b1	b1	b1	b1	b1	b1	b1	b1
	OD[2]	a1	a2	b1	b2	b1	b2	b1	b2	b1	b2
	FF	1		0		0		0		0	
	FS	1		1		1		1		1	
	FC	1		1		0		0		0	
	IL	1		1		1		1		1	
	ST	1		1		1		1		1	
Interlaced motion picture (field still type 2)	OT	a1	a2	b1	b2	b2	b2	b2	b2	b2	b2
	OD	a1	a2	b1	b2	b1	b2	b1	b2	b1	b2
	FF	1		1		0		0		0	
	FS	1		1		0		0		0	
	FC	1		1		0		0		0	
	IL	1		1		1		1		1	
	ST	1		1		1		1		1	
Interlaced motion picture (frame still)	OT	a1	a2	b1	b2	b1	b2	b1	b2	b1	b2
	OD	a1	a2	b1	b2	b1	b2	b1	b2	b1	b2
	FF	1		1		1		1		1	
	FS	1		1		1		1		1	
	FC	1		1		0		0		0	
	IL	1		1		1		1		1	
	ST	1		1		1		1		1	
Non-interlaced motion picture (field still type 1)	OT	a1	a2	b1	b1	b1	b1	b1	b1	b1	b1
	OD	a1	a2	b1	b2	b1	b2	b1	b2	b1	b2
	FF	1		0		0		0		0	
	FS	1		1		1		1		1	
	FC	1		1		0		0		0	
	IL	0		0		0		0		0	
	ST	1		1		1		1		1	
Non-interlaced motion picture (field still type 2)	OT	a1	a2	b1	b2	b2	b2	b2	b2	b2	b2
	OD	a1	a2	b1	b2	b1	b2	b1	b2	b1	b2
	FF	1		1		0		0		0	
	FS	1		1		0		0		0	
	FC	1		1		0		0		0	
	IL	0		0		0		0		0	
	ST	1		1		1		1		1	

1) OT output order to the TV screen
2) OD output order to the digital interface

For still playback (concluded)

Reproducing frames from tape		a		b		b		b		b	
Reproducing fields from tape		a1	a2	b1	b2	b1	b2	b1	b2	b1	b2
Frame still picture	OT[1]	a1	a2	b1	b2	b1	b2	b1	b2	b1	b2
	OD[2]	a1	a2	b1	b2	b1	b2	b1	b2	b1	b2
	FF	1		1		1		1		1	
	FS	1		1		1		1		1	
	FC	0		1		0		0		0	
	IL	1		1		1		1		1	
	ST	0		0		0		0		0	
Field still picture	OT	a1	a2	b1	b2	b1	b2	b1	b2	b1	b2
	OD	a1	a2	b1	b2	b1	b2	b1	b2	b1	b2
	FF	1		1		1		1		1	
	FS	1		1		1		1		1	
	FC	0		1		0		0		0	
	IL	0		0		0		0		0	
	ST	0		0		0		0		0	

1) OT output order to the TV screen
2) OD output order to the digital interface

For fast playback

Reproducing frames from tape		**indefinite**	**indefinite**	**indefinite**	**indefinite**	**indefinite**
Reproducing fields from tape		**indefinite**	**indefinite**	**indefinite**	**indefinite**	**indefinite**
	OT[1)]	**indefinite**	**indefinite**	**indefinite**	**indefinite**	**indefinite**
	OD[2)]	**indefinite**	**indefinite**	**indefinite**	**indefinite**	**indefinite**
	FF	**1**	**1**	**1**	**1**	**1**
Interlaced motion picture	**FS**	**1**	**1**	**1**	**1**	**1**
	FC	**1**	**1**	**1**	**1**	**1**
	IL	**1**	**1**	**1**	**1**	**1**
	ST	**1**	**1**	**1**	**1**	**1**
	OT	**indefinite**	**indefinite**	**indefinite**	**indefinite**	**indefinite**
	OD	**indefinite**	**indefinite**	**indefinite**	**indefinite**	**indefinite**
	FF	**1**	**1**	**1**	**1**	**1**
Non-interlaced motion picture	**FS**	**1**	**1**	**1**	**1**	**1**
	FC	**1**	**1**	**1**	**1**	**1**
	IL	**1**	**1**	**1**	**1**	**1**
	ST	**1**	**1**	**1**	**1**	**1**
	OT	**indefinite**	**indefinite**	**indefinite**	**indefinite**	**indefinite**
	OD	**indefinite**	**indefinite**	**indefinite**	**indefinite**	**indefinite**
	FF	**1**	**1**	**1**	**1**	**1**
Frame still picture	**FS**	**1**	**1**	**1**	**1**	**1**
	FC	**1**	**1**	**1**	**1**	**1**
	IL	**1**	**1**	**1**	**1**	**1**
	ST	**1**	**1**	**1**	**1**	**1**
	OT	**indefinite**	**indefinite**	**indefinite**	**indefinite**	**indefinite**
	OD	**indefinite**	**indefinite**	**indefinite**	**indefinite**	**indefinite**
	FF	**1**	**1**	**1**	**1**	**1**
Field still picture	**FS**	**1**	**1**	**1**	**1**	**1**
	FC	**1**	**1**	**1**	**1**	**1**
	IL	**1**	**1**	**1**	**1**	**1**
	ST	**1**	**1**	**1**	**1**	**1**

1) OT output order to the TV screen
2) OD output order to the digital interface

VAUX 2

9.3 REC DATE (Recording date)

	MSB							LSB
PC 0	0	1	1	0	0	0	1	0
PC 1	DS	TM	TENS of TIME ZONE		UNITS of TIME ZONE			
PC 2	1	1	TENS of DAY		UNITS of DAY			
PC 3	WEEK			TNMN	UNITS of MONTH			
PC 4	TENS of YEAR				UNITS of YEAR			

This pack should be recorded in the VAUX main area. The date when video data are recorded is stored in this pack.

DS: Daylight saving time

0 = Daylight saving time

1 = Normal

TM: Thirty minutes flag

Thirty minutes unit of the time differential from GMT

0 = 30 min

1 = 0 min

TIME ZONE:

00 to 23 3Fh = No information

Example

For Tokyo

TIME ZONE = 001001b

PC1 = 11001001b GMT plus 9:00

For New York with daylight saving time

TIME ZONE = 011001b

PC1 = 01011001b GMT plus 19:00

For New Delhi where 30 min unit of the time differential from GMT is adopted.

TIME ZONE = 000101b

PC1 = 10000101b GMT plus 5:30

where GMT: Greenwich Mean Time

DAY:

01 to 31 3Fh = No information

WEEK:

0 = Sunday 4 = Thursday
1 = Monday 5 = Friday
2 = Tuesday 6 = Saturday
3 = Wednesday 7 = No information

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

VAUX 3

9.4 REC TIME

This pack should be recorded in the VAUX main area.

The time when video data are recorded is stored based on the SMPTE/EBU time code format.

For not recording VAUX BINARY pack

	MSB							LSB
PC 0	0	1	1	0	0	0	1	1
PC 1	1	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			

Consumer digital VCR shall adopt the drop frame sequence.

If FRAME is not used, FRAME shall be 3Fh.

For recording VAUX BINARY pack

	MSB							LSB
PC 0	0	1	1	0	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

VAUX 4

9.5 BINARY GROUP

	MSB							LSB
PC 0	0	1	1	0	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 may be recorded in the VAUX main area.

If this pack is used, S1 to S6 flags in VAUX REC TIME pack shall be set based on the SMPTE/EBU time code format.

If this pack is not used, NO INFO pack shall be recorded.

VAUX 5

9.6 CLOSED CAPTION

	MSB							LSB
PC 0	0	1	1	0	0	1	0	1
PC 1	MSB 1st FIELD Line 21 1st BYTE LSB							
PC 2	MSB 1st FIELD Line 21 2nd BYTE LSB							
PC 3	MSB 2nd FIELD Line 21 1st BYTE LSB							
PC 4	MSB 2nd FIELD Line 21 2nd BYTE LSB							

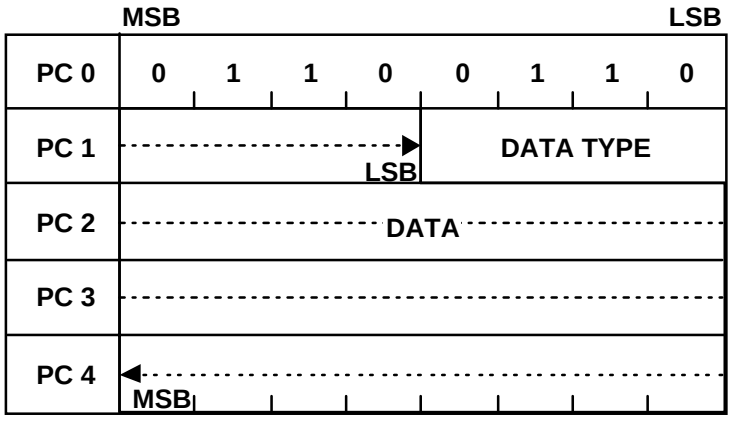
This pack should be recorded in the VAUX main area.

Closed caption data should be stored in VAUX CLOSED CAPTION pack without change. The data shall be stored from next bit of start bits as a LSB. If the data which concern VAUX SOURCE, VAUX SOURCE CONTROL, AAUX SOURCE and AAUX SOURCE CONTROL packs, such as DISP, CLF and AUDIO MODE, are transmitted, the contents should be set in those four packs to avoid the inconsistency between VAUX CLOSED CAPTION pack and those four packs. If there exists information on audience restrictions, SS in SOURCE CONTROL packs of VAUX and AAUX shall be set to 10b. If VAUX CLOSED CAPTION packs have been recorded on tape, closed caption signals should be reconstructed and added to line 21 in each field of the vertical blanking period.

More details are given in 9.5 of Part 2.

AUX 6

9.7 TR (Transparent)



This pack should be recorded in the VAUX main area.

In addition to VAUX CLOSED CAPTION pack, VAUX TR pack is prepared for preserving digital data such as Video ID, WSS (wide screen signalling) and EDTV-2 ID without change. If these signals are transmitted in the vertical blanking period, VAUX TR pack should be recorded. If the data which concern VAUX SOURCE, VAUX SOURCE CONTROL, AAUX SOURCE and AAUX SOURCE CONTROL packs, such as DISP, CLF and AUDIO MODE, are transmitted, the contents should be set in those four packs to avoid inconsistency between VAUX TR pack and those four packs. If there is no data for the DATA area, all "1" data shall be recorded. If VAUX TR packs have been recorded on tape, the signals of DATA TYPE should be reconstructed and added in the appropriate lines of the vertical blanking period.

More details are given in 9.5 of Part 2.

DATA TYPE:

0 = Video ID

1 = WSS

2 = EDTV-2 ID in 22 line

3 = EDTV-2 ID in 285 line

Fh = No information

Others = Reserved

For recording Video ID data

Video ID data of one horizontal line consists of 20 bits. The data shall be stored from the side of horizontal sync as an LSB. All 20 bits of data shall be stored in the VAUX TR pack.

For recording WSS data

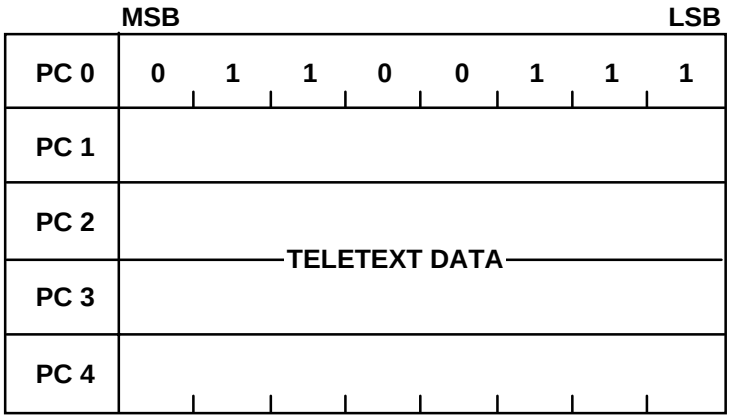
WSS data of one horizontal line consists of 14 bits. The data shall be stored from next bit of start bits as an LSB. All 14 bits of data shall be stored in the VAUX TR pack.

For recording EDTV-2 ID data

EDTV-2 ID data of one horizontal line consists of 27 bits. The data shall be stored from the side of horizontal sync as an LSB. 24 bits of the data except the last 3 bits for discriminator shall be stored in the VAUX TR pack.

VAUX 7

9.8 TELETEXT



This pack may be recorded in the VAUX common optional area.

Step 1: Gathering teletext data in one horizontal line

Following a teletext ID shown below, teletext data in one horizontal line shall be gathered and reconstructed in the form of bytes from the next bit of teletext framing code as an LSB to the end of teletext signal in order.

Step 2: Packing teletext data in TELETEXT packs

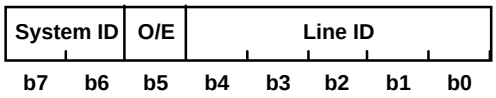
The TELETEXT IDs and TELETEXT data in one video frame shall be gathered in order and packed in the TELETEXT packs. If there exists the remains in the last TELETEXT pack, the data of FFh which is indicative of no information shall be filled.

Step 3: Recording teletext data in VAUX common optional area

The queue of teletext recording packs consists of a VAUX TEXT HEADER pack, a TELETEXT INFO pack, if needed, and TELETEXT packs. TEXT TYPE in VAUX TEXT HEADER pack shall be set to Ah. This queue should be recorded multiple times in one video frame. In the final TELETEXT pack in one video frame, the terminate code shall be recorded.

Teletext ID:

Teletext ID consists of System ID, Odd / Even and Line ID.



System ID:

00b = Japanese teletext system (the bulletin number 803 of the Ministry of Postal Service in Japan – October 1985, teletext type D in ITU-R Recommendation 653)

01b = NABTS teletext system (teletext type C in ITU-R Recommendation 653)

10b = Reserved

11b = UK teletext system (EBU SPB492 – December 1992, teletext type B in ITU-R Recommendation 653)

O/E: Odd / Even

0 = Odd field or first field

1 = Even field or second field

Line ID: Line number ID

For 525-60 system

0 to 0Ch = Actual line number

0Dh to 1Eh = Reserved

1Fh = Terminate code

For O/E = 0, Actual line number = 10 + Line ID

For O/E = 1, Actual line number = 272 + Line ID

For 625-50 system

0 to 11h = Actual line number

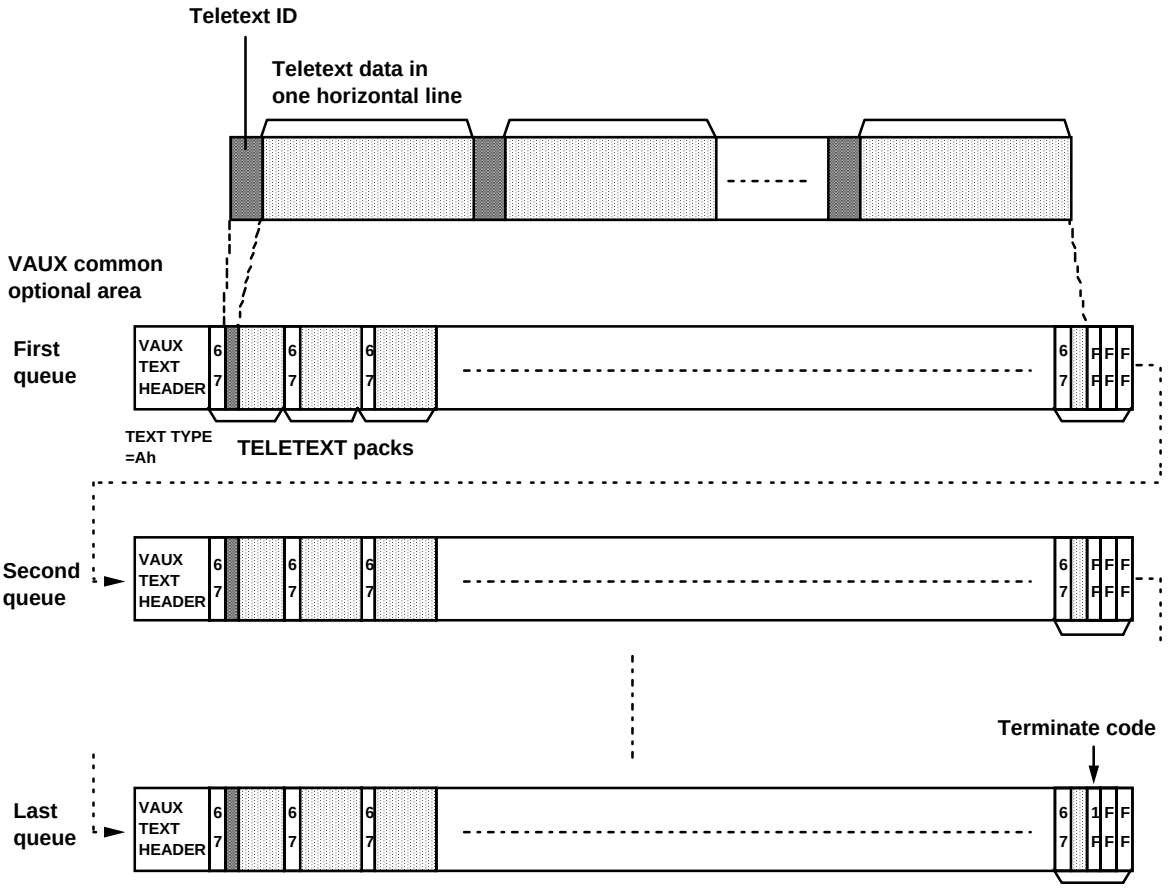
12h to 1Eh = Reserved

1Fh = Terminate code

For O/E = 0, Actual line number = 6 + Line ID

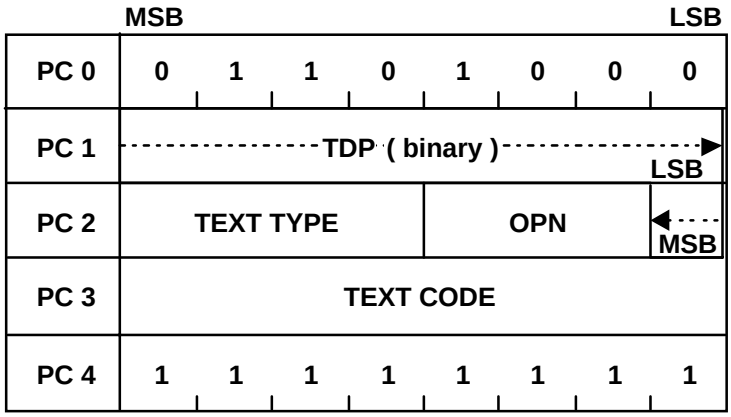
For O/E = 1, Actual line number = 318 + Line ID

Procedure for recording teletext data



VAUX 8

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

OPN: Option number

OPN is the option number of UK teletext. More details are given 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.

VAUX 9

9.10 TEXT

	MSB							LSB
PC 0	0	1	1	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 VAUX TEXT HEADER pack.

VAUX 10

9.11 VAUX START

	MSB							LSB
PC 0	0	1	1	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 except for the AAUX optional area.

This pack shows the tape position of starting to insert video data 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:

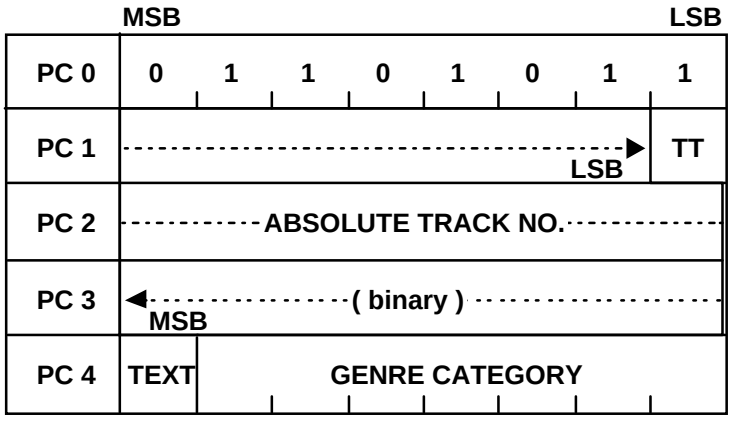
00 to 59

HOURS:

00 to 23

VAUX 11

9.12 VAUX START



This pack may be recorded or written in the common optional areas except for the AAUX optional area.

This pack shows the tape position of starting to insert video data using absolute track number.

ABSOLUTE TRACK NO.:

Absolute track number which shows the tape position of starting to insert video data

TT: Temporary true

This flag is valid only for MIC.

0 = This event data in MIC does not always exist on tape

1 = This event data in MIC exists 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 category of the inserted video source.

The details are described in TIMER ACT DATE pack.

VAUX 12

9.13 MARINE/MOUNTAIN

	MSB							LSB
PC 0	0	1	1	0	1	1	0	0
PC 1	1/10 of TEMPERATURE				CF	CATEGO		0
PC 2	TENS of TEMPERATURE				UNITS of TEMPERATURE			
PC 3	UNITS of PRESSURE				THPR	0	NP	HDRT
PC 4	HUNDREDS of PRESSURE				TENS of PRESSURE			

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

This pack contains the temperature and pressure data of the location where the recording was made.

CF: Centigrade/Fahrenheit

0 = Fahrenheit

1 = Centigrade

CATEGO: Category code

0 = Marine

1 = Mountain

Others = Reserved

NP: Negative/positive

NP shows the positive and negative sign of the temperature data.

0 = Negative

1 = Positive

PRESSURE:

0 000 hPa to 1 999 hPa

HPR: Thousands of pressure

TEMPERATURE:

000,0 to 199,9

HDRT: Hundreds of temperature

VAUX 12

9.13 MARINE/MOUNTAIN (continued)

	MSB							LSB
PC 0	0	1	1	0	1	1	0	0
PC 1	1/10 of TEMPERATURE				CF	CATEGO		0
PC 2	TENS of TEMPERATURE				UNITS of TEMPERATURE			
PC 3	1/10 of ATM PRESSURE				HDPR	1	NP	HDRT
PC 4	TENS of ATM PRESSURE				UNITS of ATM PRESSURE			

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

This pack contains the temperature and pressure data of the location where the recording was made.

CF: Centigrade/Fahrenheit

0 = Fahrenheit

1 = Centigrade

CATEGO: Category code

0 = Marine

1 = Mountain

Others = Reserved

NP: Negative/positive

NP shows the positive and negative sign of the temperature data.

0 = Negative

1 = Positive

ATM PRESSURE:

000,0 atm to 199,9 atm

where atm = hPa / 1 013,25

HDPR: Hundreds of atm pressure

TEMPERATURE:

000,0 to 199,9

HDRT: Hundreds of temperature

VAUX 12

9.13 MARINE/MOUNTAIN (concluded)

	MSB							LSB
PC 0	0	1	1	0	1	1	0	0
PC 1	1/10 of HEIGHT				FM	CATEGO		1
PC 2	TENS of HEIGHT				UNITS of HEIGHT			
PC 3	THOUSANDS of HEIGHT				HUNDREDS of HEIGHT			
PC 4	1	1	1	NP	TEN THOUSANDS of HEIGHT			

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

This pack contains the height and depth data of the location where the recording was made.

FM: Feet/meter

0 = Feet

1 = Meter

CATEGO: Category code

0 = Marine

1 = Mountain

Others = Reserved

NP: Negative/positive

NP shows the positive and negative sign of the height data.

0 = Negative

1 = Positive

HEIGHT:

00 000,0 to 99 999,9

VAUX 13

9.14 LONGITUDE/LATITUDE

	MSB							LSB
PC 0	0	1	1	0	1	1	0	1
PC 1	0	TENS of SECOND			UNITS of SECOND			
PC 2	EW	TENS of MINUTE			UNITS of MINUTE			
PC 3	TENS of DEGREE				UNITS of DEGREE			
PC 4	1	1	1	1	1	1	1	HDRD

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

This pack contains the longitude data of the location where the recording was made.

SECOND:

00 to 59

MINUTE:

00 to 59

DEGREE:

00 to 180

HDRD: Hundreds of degrees

Longitude data has a valid range of 0° 00'00" to 180° 00'00".

EW: East/West

0 = East

1 = West

VAUX 13

9.14 LONGITUDE/LATITUDE (concluded)

	MSB							LSB
PC 0	0	1	1	0	1	1	0	1
PC 1	1	TENS of SECOND			UNITS of SECOND			
PC 2	NS	TENS of MINUTE			UNITS of MINUTE			
PC 3	TENS of DEGREE				UNITS of DEGREE			
PC 4	1	1	1	1	1	1	1	1

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

This pack contains the latitude data of the location where the recording was made.

SECOND:

00 to 59

MINUTE:

00 to 59

DEGREE:

00 to 90

Latitude data has a valid range of 0° 00'00" to 90° 00'00".

NS: North/South

0 = North

1 = South

VAUX 14

9.15 VAUX END

	MSB							LSB
PC 0	0	1	1	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 except for the AAUX optional area.

This pack shows the tape position of ending to insert video data 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:

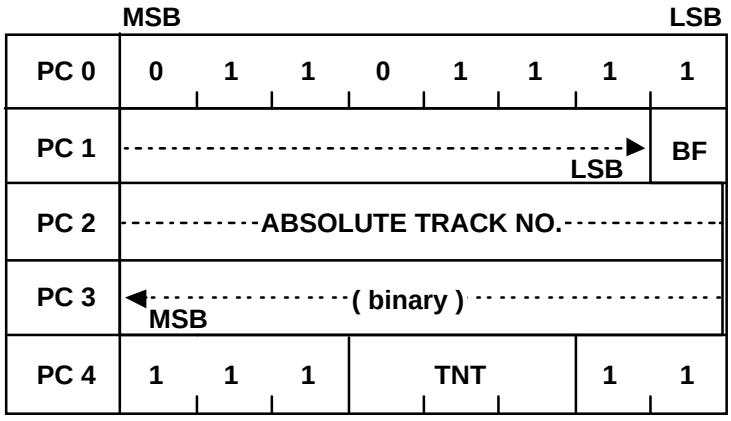
00 to 59

HOURS:

00 to 23

VAUX 15

9.16 VAUX END



This pack may be recorded or written in the common optional areas except for the AAUX optional area.

This pack shows the tape position of ending to insert video data using absolute track number.

ABSOLUTE TRACK NO.:

Absolute track number which shows the end tape position of video insert

BF: Blank flag

0 = Discontinuity exists before this absolute track number.

1 = Discontinuity does not exist before this absolute track number.

TNT: Total number of text events

TNT is valid only for MIC.

TNT shows the total number of text events related to this VAUX event.

0 to 6 7 = No information

For subcode, AAUX and VAUX, TNT shall be 111b.

10 CAMERA

CAMERA 0

10.1 CONSUMER CAMERA 1

	MSB							LSB
PC 0	0	1	1	1	0	0	0	0
PC 1	1	1	IRIS					
PC 2	AE MODE				AGC			
PC 3	WB MODE			WHITE BALANCE				
PC 4	FCM	FOCUS						

This pack may be recorded or written in the common optional areas except for the AAUX optional area.

IRIS: Iris position in terms of F number

0 to 3Ch = IP

3Dh = Under F1,0

3Eh = Close

3Fh = No information

where

Iris position = $2^{IP/8}$

AE MODE:

0 = Full automatic
1 = Gain priority mode
2 = Shutter priority mode
3 = Iris priority mode
4 = Manual
Fh = No information
Others = Reserved

AGC: Automatic gain control

0 to Dh = G

Fh = No information

where

WB MODE: White balance mode

0 = Automatic
1 = Hold
2 = One-push
3 = Preset
7 = No information
Others = Reserved

WHITE BALANCE:

0 = Candle

1 = Incandescent lamp

2 = Fluorescent lamp of low colour temperature

3 = Fluorescent lamp of high colour temperature

4 = Sunlight

5 = Cloudiness

6 = Others

1Fh = No information

Others = Reserved

FCM: Focus mode

0 = Automatic focus

1 = Manual focus

FOCUS: Focus position in terms of length

0 to 7Eh = Focus position

7Fh = No information

where

Focus position = $M \times 10^{L}$ cm

M: Most significant 5 bits of FOCUS

L: Least significant 2 bits of FOCUS

CAMERA 1

10.2 CONSUMER CAMERA 2

	MSB							LSB
PC 0	0	1	1	1	0	0	0	1
PC 1	1	1	VPD	V PANNING SPEED				
PC 2	IS	HPD	H PANNING SPEED					
PC 3	FOCAL LENGTH							
PC 4	ZEN	UNITS of E-ZOOM		1/10 of E-ZOOM				

This pack may be recorded or written in the common optional areas except for the AAUX optional area.

VPD: Vertical panning direction

0 = The same direction as the vertical scanning

1 = The opposite direction of the vertical scanning

V PANNING SPEED: Panning speed of vertical direction (line per field)

0 to 1Dh = Panning speed

1Eh = More than 29 lines per field

1Fh = No information

HPD: Horizontal panning direction

0 = The same direction as the horizontal scanning

1 = The opposite direction to the horizontal scanning

H PANNING SPEED: Panning speed of horizontal direction (pixel per field)

0 to 1DH = PS

3Eh = More than 122 pixels per field

3Fh = No information

where

Panning speed = $2 \times$ PS

$$1\,\text{pixel period} = \frac{1}{13{,}5 \times 10^{6}}\ \text{s}$$

IS: Image stabilizer

0 = On

1 = Off

FOCAL LENGTH: Focal length of 35 mm film camera lens with the same horizontal angle of view

0 to FEh = Focal length

FFh = No information

where

Focal length = $M \times 10^{L}$ mm

M: Most significant 7 bits of FOCAL LENGTH

L: Least significant bit of FOCAL LENGTH

ZEN: Zoom enable flag

0 = Electric zoom on

1 = Electric zoom off

E-ZOOM: Magnification of electric zoom

0,0 to 7,9

where

7Eh = More than or equal to eight times

7Fh = No information

CAMERA 2

10.3 Reserved

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

This pack is reserved for future use.

CAMERA 3

10.4 LENS

	MSB							LSB
PC 0	0	1	1	1	0	0	1	1
PC 1	FCM	FOCUS						
PC 2	IRIS							
PC 3	ZOOM							
PC 4	1	1	EXTENDER				IRIS CONT	

This pack may be recorded or written in the common optional areas except for the AAUX optional area.

FCM: Focus mode

0 = Automatic focus
1 = Manual focus

FOCUS: Focus position in terms of length

0 to 7Eh = Focus position
7Fh = No information

where

Focus position = $M\ 10^{L}$ cm
M: Most significant 5 bits of FOCUS
L: Least significant 2 bits of FOCUS

IRIS: Iris position in terms of F number

0 to FDh = IP
FEh = Close
FFh = No information

where

Iris position = $\sqrt{2}^{\,IP\,/\,16}$

ZOOM: Zoom position factor

0 to FEh = Zoom position
FFh = No information

where

Zoom position = $M\ 10^{L}$ m
M: Most significant 7 bits of ZOOM
L: Least significant bit of ZOOM

EXTENDER: Extender factor

0 to Fh = EX

where

Extender ratio = EX / 4

IRIS CONT: Iris control

00b = Automatic iris mode
01b = One push automatic iris mode
10b = Manual iris mode
11b = No information

CAMERA 4

10.5 GAIN

	MSB							LSB
PC 0	**0**	**1**	**1**	**1**	**0**	**1**	**0**	**0**
PC 1	**GM**	**MASTER GAIN**						
PC 2	**R GAIN**							
PC 3	**B GAIN**							
PC 4	**ND FILTER**				**CC FILTER**			

This pack may be recorded or written in the common optional areas except for the AAUX optional area. Each gain value shall be expressed in offset binary notation.

GM: Gain mode

0 = AGC mode
1 = Manual mode

MASTER GAIN: Gain value for master control

00h to 7Eh = Gain value
7Fh = No information

where

20h = 0 dB

Δ1LSB = 0,5 dB

R GAIN: Gain value of channel red

B GAIN: Gain value of channel blue

00h to FEh = Gain value
FFh = No information

where

80h = 0 dB

Δ1LSB = 6 / 128 dB

ND FILTER: Neutral density filter

0h to Eh = NF
Fh = No information

where

Attenuation ratio = $1 / 2^{NF}$

CC FILTER: Colour temperature conversion filter

1000b = 3 200 K to 3 200 K filter
1001b = 4 300 K to 3 200 K filter
1010b = 5 600 K to 3 200 K filter
1100b = 6 300 K to 3 200 K filter
1111b = No information
Others = Reserved

CAMERA 5

10.6 PEDESTAL

	MSB							LSB
PC 0	0	1	1	1	0	1	0	1
PC 1	G PEDESTAL							
PC 2	R PEDESTAL							
PC 3	B PEDESTAL							
PC 4	QF	1	BP		RP		GP	

This pack may be recorded or written in the common optional areas except for the AAUX optional area.

QF: Quantization flag

0 = Pedestal level of each channel consists of 10 bits

1 = Pedestal level of each channel consists of 8 bits

Pedestal level	QF = 1	QF = 0
Channel green	G PEDESTAL	G PEDESTAL + GP[1)]
Channel red	R PEDESTAL	R PEDESTAL + RP[1)]
Channel blue	B PEDESTAL	B PEDESTAL + BP[1)]
1) GP, RP and BP are least significant 2 bits.		

Pedestal level of each channel shall be expressed in offset binary notation.

For QF = 0

000h to 3FEh = Pedestal level

3FFh = No information

where

200h = 0 mV

Δ1LSB = 0,625 mV

For QF = 1

00h to FEh = Pedestal level

FFh = No information

where

80h = 0 mV

Δ1LSB = 2,5 mV

CAMERA 6

10.7 GAMMA

	MSB							LSB
PC 0	0	1	1	1	0	1	1	0
PC 1	G GAMMA							
PC 2	R GAMMA							
PC 3	B GAMMA							
PC 4	QF	1	BG		RG		GG	

This pack may be recorded or written in the common optional areas except for the AAUX optional area.

QF: Quantization flag

0 = Gamma correction value of each channel consists of 10 bits

1 = Gamma correction value of each channel consists of 8 bits

Gamma	QF = 1	QF = 0
Channel green	G GAMMA	G GAMMA + GG 1)
Channel red	R GAMMA	R GAMMA + RG 1)
Channel blue	B GAMMA	B GAMMA + BG 1)
1) GG, RG and BG are least significant 2 bits.		

Gamma correction value of each channel shall be expressed in offset binary notation.

For QF = 0

000h to 3FEh = Gamma correction value

3FFh = No information

where

200h = 0,45

Δ1LSB = 0,15 / 512

For QF = 1

00h to FEh = Gamma correction value

FFh = No information

where

80h = 0,45

Δ1LSB = 0,15 / 128

CAMERA 7

10.8 DETAIL

	MSB							LSB
PC 0	0	1	1	1	0	1	1	1
PC 1	MASTER DETAIL							
PC 2	H DETAIL							
PC 3	V DETAIL							
PC 4	QF	1	VD		HD		MD	

This pack may be recorded or written in the common optional areas except for the AAUX optional area.

QF: Quantization flag

0 = Detail level of each channel consists of 10 bits

1 = Detail level of each channel consists of 8 bits

Detail level	QF = 1	QF = 0
Master	MASTER DETAIL	MASTER DETAIL + MD 1)
Horizontal	H DETAIL	H DETAIL + HD 1)
Vertical	V DETAiL	V DETAiL + VD 1)
1) MD, HD and VD are least significant 2 bits.		

Each detail level shall be expressed in straight binary notation.

For QF = 0

000h to 3FEh = Detail level

3FFh = No information

where

Preset level shall be set to 200h.

Δ1LSB = Preset level / 512

000h = 0 mV

3FEh = 2 000 mV

For QF = 1

00h to FEh = Detail level

FFh = No information

where

Preset level shall be set to 80 h.

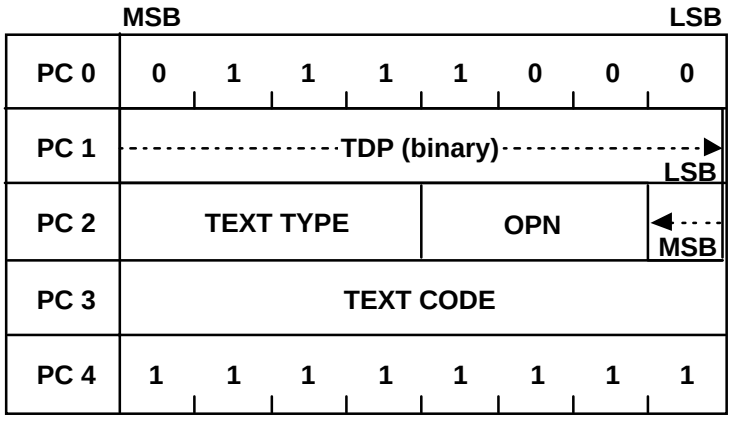
Δ1LSB = Preset level / 128

00h = 0 mV,

FEh = 2 000 mV

CAMERA 8

10.9 TEXT HEADER



This pack may be recorded or written in the common optional areas except for the AAUX common optional area.

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

OPN: Option number

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

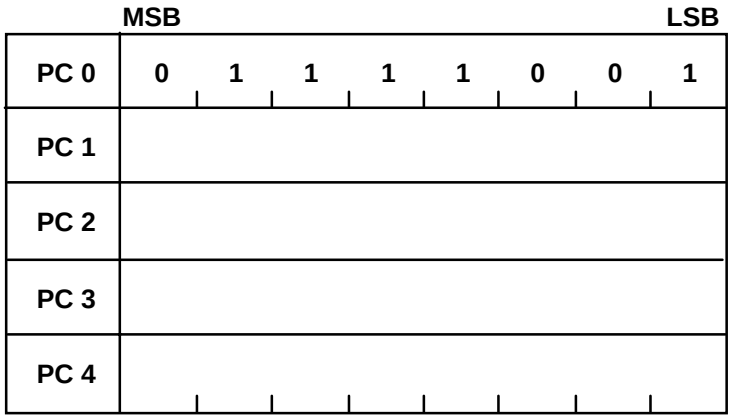
If OPN is not used, OPN shall be 111b.

TEXT CODE:

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

CAMERA 9

10.10 TEXT

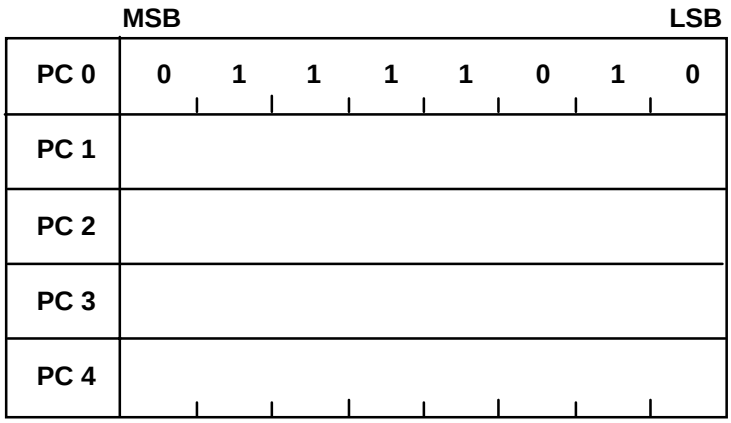


This pack may be recorded in the common optional areas on tape except for the AAUX common optional area.

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

CAMERA 10

10.11 Reserved



This pack is reserved for future use.

CAMERA 11

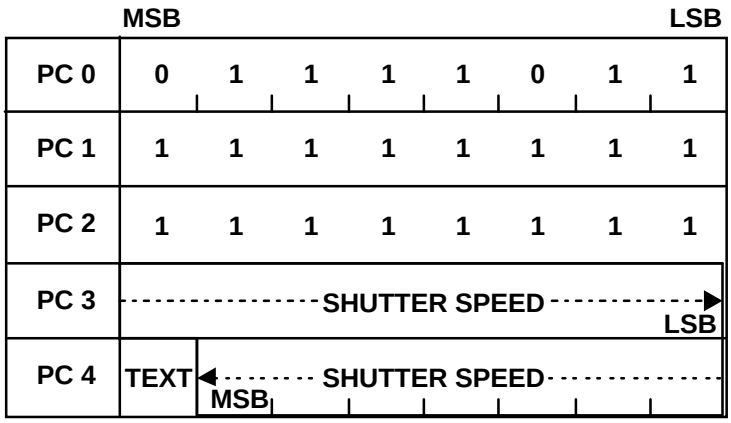
10.12 CAMERA PRESET

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

This pack is prepared for presetting camera data automatically.

If there is no need to preset shutter speed, then all shutter speeds shall be set to "1".

For consumer use



SHUTTER SPEED: Shutter speed factor for consumer use “(in seconds)”

0000h = Not used

0001h to 7FFEh = SPD

7FFFh = No information

where

Shutter speed = $T_H \times SPD$

T_H: Horizontal scanning period “(in seconds)”

TEXT: Text flag for MIC

0 = Text information exists

1 = No text information exists

For professional use

	MSB							LSB
PC 0	**0**	**1**	**1**	**1**	**1**	**0**	**1**	**1**
PC 1	**SSP1**							
PC 2	**SSP2**							
PC 3	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
PC 4	**TEXT**	**1**	**1**	**1**	**1**	**1**	**1**	**1**

SSP1: Upper line shutter speed in two-line read-out mode of CCD image sensor

SSP2: Lower line shutter speed In two-line read-out mode of CCD image sensor

00h to FEh = Shutter speed

FFh = No information

where

Shutter speed = $1 / 2^{SSP1}$ or $1 / 2^{SSP2}$

CCD: Charge coupled device

TEXT: Text flag for MIC

0 = Text information exists.

1 = No text information exists.

CAMERA 12

10.13 FLARE

	MSB							LSB
PC 0	0	1	1	1	1	1	0	0
PC 1	G FLARE							
PC 2	R FLARE							
PC 3	B FLARE							
PC 4	QF	1	BF		RF		GF	

This pack may be recorded or written in the common optional areas except for the AAUX optional area.

QF: Quantization flag

0 = Flare compensation of each channel consists of 10 bits

1 = Flare compensation of each channel consists of 8 bits

Flare	QF = 1	QF = 0
Channel green	G FLARE	G FLARE + GF [1)]
Channel red	R FLARE	R FLARE + RF [1)]
Channel blue	B FLARE	B FLARE + BF [1)]
1) GF, RF and BF are least significant 2 bits.		

Flare compensation of each channel shall be expressed in offset binary notation.

For QF = 0

000h to 3FEh = Flare compensation coefficient

3FFh = No information

where

200h = 0 %

Δ1LSB = 0,125 %

For QF = 1

00h to FEh = Flare compensation coefficient

FFh = No information

where

80h = 0 %

Δ1LSB = 0,5 %

CAMERA 13

10.14 SHADING

	MSB							LSB
PC 0	0	1	1	1	1	1	0	1
PC 1	0	SHAD COMP 1						
PC 2	CH0	SHAD COMP 3						
PC 3	CH1	SHAD COMP 4						
PC 4	WB	SHAD COMP 6						

	MSB							LSB
PC 0	0	1	1	1	1	1	0	1
PC 1	1	SHAD COMP 0						
PC 2	CH0	SHAD COMP 2						
PC 3	CH1	SHAD COMP 5						
PC 4	WB	SHAD COMP 7						

These packs may be recorded or written in the common optional areas except for the AAUX optional area.

CH1, CH0: Channel green, red or blue

CH1	CH0	Channel
0	0	Green
0	1	Red
1	0	Blue
1	1	No information

WB: White or black shading compensation

0 = White shading compensation

1 = Black shading compensation

SHAD COMP *n*: Shading compensation expressed in offset binary notation at the area number *n* under the 0 dB condition of MASTER GAIN, R GAIN and B GAIN in GAIN pack.

For WB = 0

00h to 7Eh = Compensation value to the white shading in the centre area

7Fh = No information

where

40h = 0 %

Δ1LSB = 1 %

For WB = 1

00h to 7Eh = Compensation value to the black shading in the centre area

7Fh = No information

where

40h = 0 %

Δ1LSB = 0,5 %

Effective area of image device is divided into three equal areas each in horizontal and vertical direction.

Area numbers in the effective area of image device

Area 0	**Area 1**	**Area 2**
Area 3	**Centre**	**Area 4**
Area 5	**Area 6**	**Area 7**

CAMERA 14

10.15 KNEE

	MSB							LSB
PC 0	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**0**
PC 1	**KNEE POINT**							
PC 2	**KNEE SLOPE**							
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 except for the AAUX optional area.

Each value shall be expressed in straight binary notation.

KNEE POINT:

00h to FEh = Knee point

FFh = No information

where

80h = 700 mV

Δ1LSB = 2,5 mV

KNEE SLOPE

00h to FEh = Knee slope from 500 %

FFh = No information

where

80h = 15 %

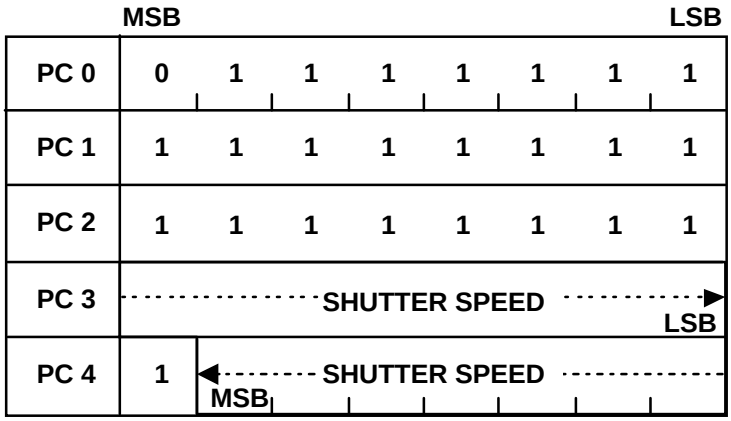
Δ1LSB = 15 %

CAMERA 15

10.16 SHUTTER

This pack may be recorded or written in the common optional areas except for the AAUX optional area.

For consumer use



SHUTTER SPEED: Shutter speed factor for consumer use (s)

0000h = Not used

0001h to 7FFEh = SPD

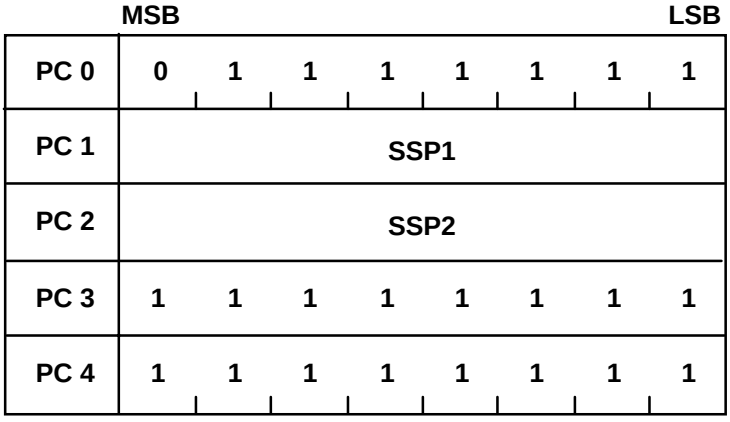
7FFFh = No information

where

Shutter speed = $T_H \times SPD$

T_H: Horizontal scanning period (s)

For professional use



SSP1: Upper line shutter speed in two-line read-out mode of CCD image sensor

SSP2: Lower line shutter speed In two-line read-out mode of CCD image sensor

00h to FEh = Shutter speed

FFh = No information

where

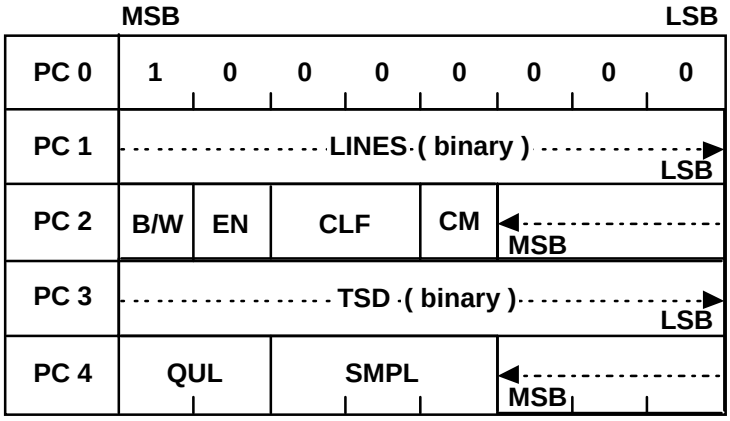
Shutter speed = $1 / 2^{SSP1}$ or $1 / 2^{SSP2}$

CCD: Charge coupled device

11 LINE

LINE 0

11.1 LINE HEADER



This pack may be recorded in the VAUX common optional areas.

This pack is prepared for preserving a horizontal line data without change.

LINES: Horizontal line number

1 to 1 250

CM: Common line number

0 = Horizontal line number designated in LINES is common in both first field and second field

1 = Horizontal line number designated in LINES is independent in one frame

B/W: Black and white flag

0 = Black and white

1 = Colour

B/W flag should be set to 1 for consumer digital VCR.

EN: Colour frames enable flag

0 = CLF is valid

1 = CLF is invalid

CLF: Colour frames identification code (refer to ITU-R Report 624-4)

For 525-60 system

00b = Colour frame A

01b = Colour frame B

Others = Reserved

For 625-50 system

00b = 1st, 2nd fields

01b = 3rd, 4th fields

10b = 5th, 6th fields

11b = 7th, 8th fields

TSD: Total number of sampling data which follow this pack

1 to 2 047

QUL: Quantization of the horizontal line

00b = 2 bits 10b = 8 bits

01b = 4 bits 11b = No information

SMPL: Sampling frequency of the horizontal line

0 = 13,5 MHz 3 = 1,35 MHz

1 = 27,0 MHz Others = Reserved

2 = 6,75 MHz

Sampling starting point

The sampling starting point of Y, CR and CB in each horizontal line shall be as described in 7.4.1 of Part 2 or ITU-R Recommendation 601. That is 123T for the 525-60 system or 133T for the 625-50 system from the half level of the falling edge of each horizontal sync, where

$$T = \frac{1}{13{,}5 \times 10^6} \text{ s}$$

Sampling level of video signals

The sampling level of 8 bits quantization shall be the same as described in 7.4.1 of Part 2.

The sampling level of 4 bits and 2 bits quantization shall be as described below.

Quantization		Digital value of 8 bits quantization	Analogue level	
2 bits	4 bits		Y	CR, CB
0 0	0 0 0 0	—	Under black level	—
—	0 0 0 1	16	Black level	Under peak
	0 0 1 0	32	⋮	⋮
	0 0 1 1	48		
0 1	0 1 0 0	64		
—	0 1 0 1	80		
	0 1 1 0	96		
	0 1 1 1	112		
1 0	1 0 0 0	128	51 IRE	Centre level
—	1 0 0 1	144	⋮	⋮
	1 0 1 0	160		
	1 0 1 1	176		
1 1	1 1 0 0	192		
—	1 1 0 1	208		
	1 1 1 0	224		
	1 1 1 1	240	Over white level	Upper peak

Step 1: Gathering data in one horizontal line

Sampling data in one horizontal line shall be gathered and reconstructed in the form of bytes. For 4 bits and 2 bits quantization, sampling data shall be stored from LSB of bytes to MSB of bytes in order.

4 bits sampling

	MSB	LSB
PC0	Pack header	
PC1	Sample n+1	Sample n
PC2	Sample n+3	Sample n+2
PC3	Sample n+5	Sample n+4
PC4	Sample n+7	Sample n+6

2 bits sampling

	MSB			LSB
PC0	Pack header			
PC1	S n+3	S n+2	S n+1	S n
PC2	S n+7	S n+6	S n+5	S n+4
PC3	S n+11	S n+10	S n+9	S n+8
PC4	S n+15	S n+14	S n+13	S n+12

S = sample
n = sampling number

Step 2: Packing line data in Y, CR and CB packs

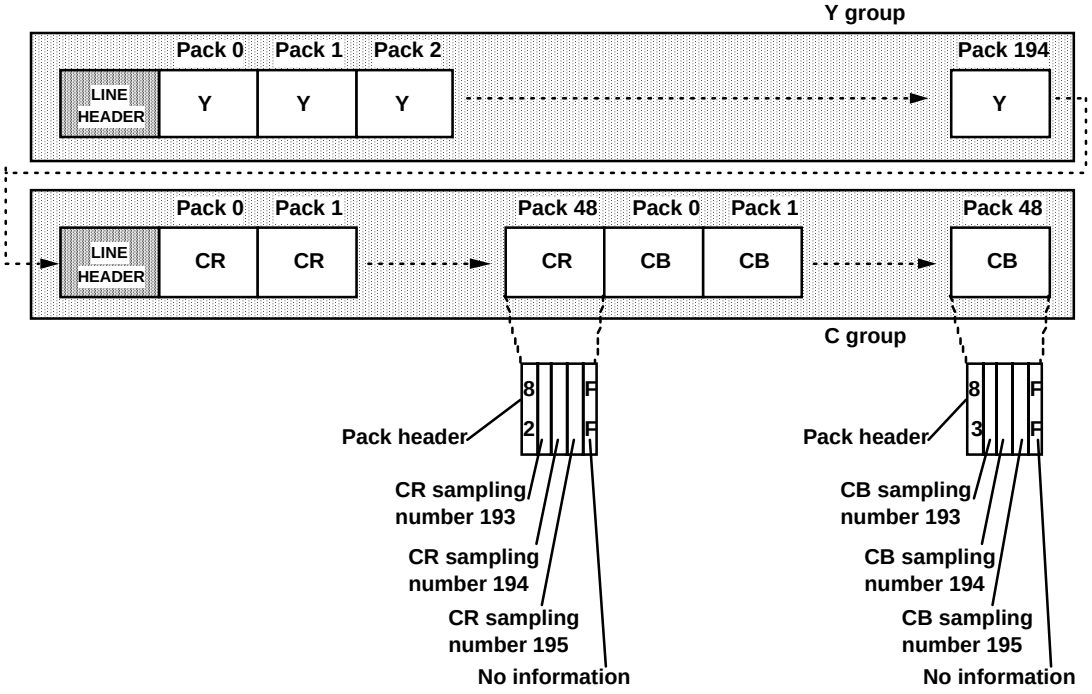
Y, CR and CB data in one horizontal line shall be packed in the Y, CR and CB packs respectively. If data remain in the last Y, CR and CB packs, all "1" data which are indicative of no information shall be filled.

Step 3: Recording line data in VAUX common optional area

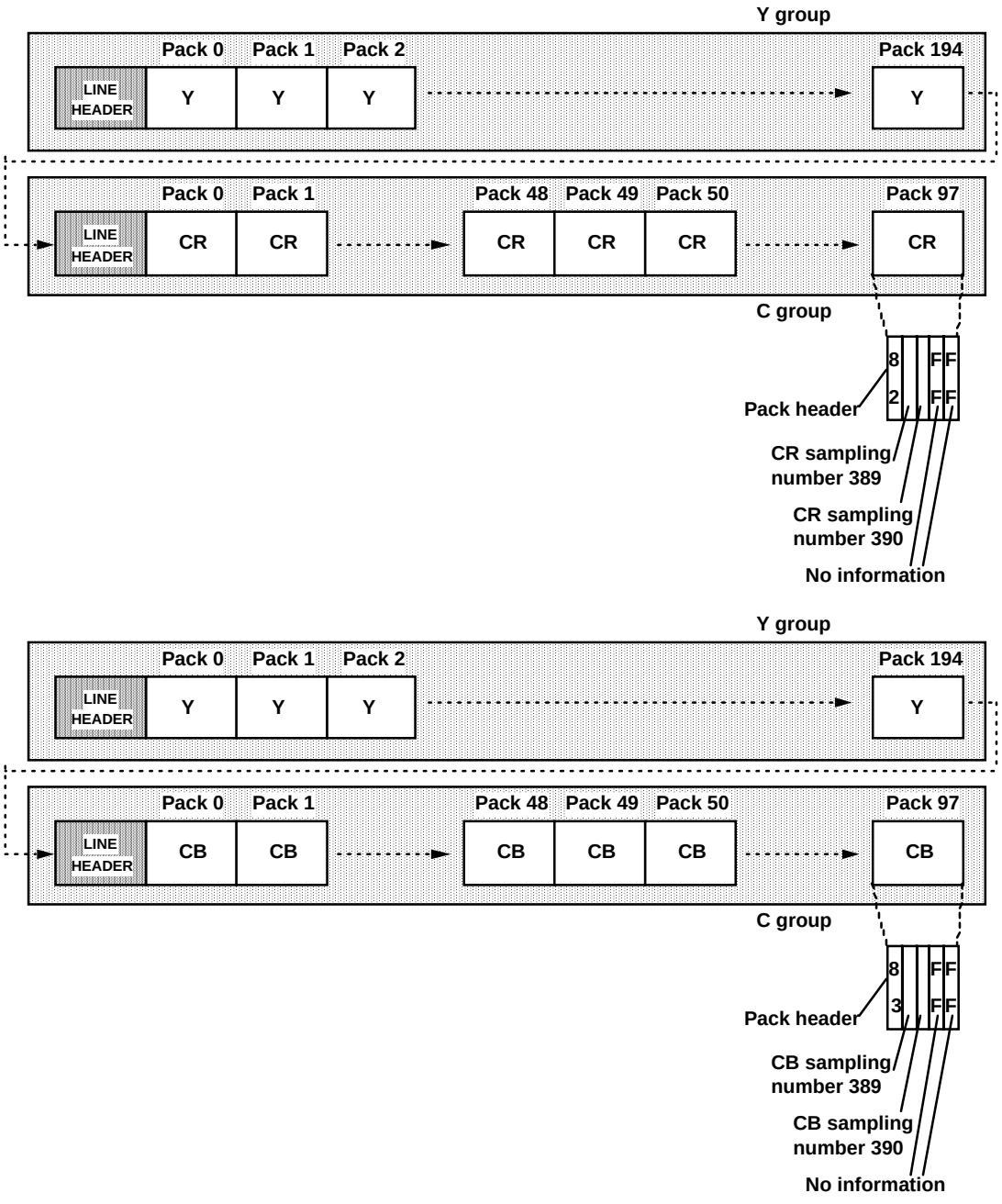
The line data packs shall be divided into Y group and C group. The queue of Y group packs consists of a LINE HEADER pack and Y packs. The queue of C group packs consists of a LINE HEADER pack, CR packs and CB packs. It is permitted to record Y group only.

These queues should be recorded multiple times in one video frame if possible.

Example for 4:1:1 sampling of 8 bits quantization

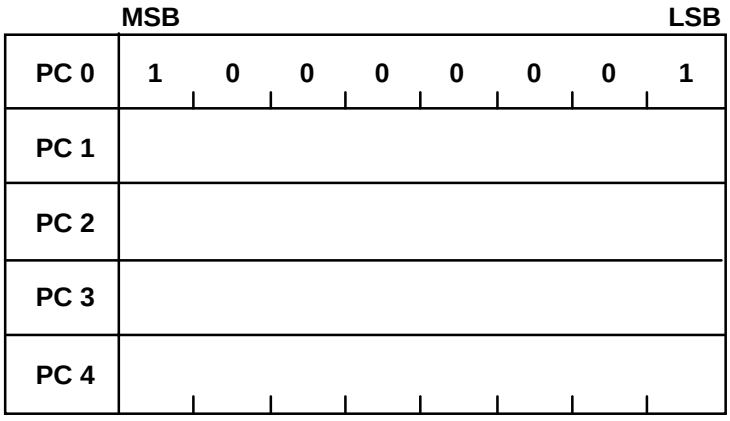


Example for 4:2:0 sampling of 8 bits quantization



LINE 1

11.2 Y

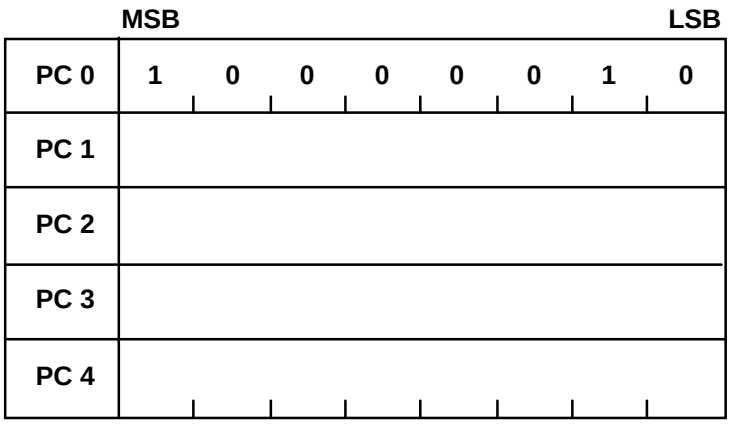


This pack may be recorded in the VAUX common optional areas.

This pack is prepared for preserving Y data of a horizontal line without change.

LINE 2

11.3 CR



This pack may be recorded in the VAUX common optional areas.

This pack is prepared for preserving CR data of a horizontal line without change.

LINE 3

11.4 CB

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

This pack may be recorded in the VAUX common optional areas.

This pack is prepared for preserving CB data of a horizontal line without change.

LINE 4

11.5 Reserved

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

This pack is reserved for future use.

LINE 5

11.6 Reserved

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

This pack is reserved for future use.

LINE 6

11.7 Reserved

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

This pack is reserved for future use.

LINE 7

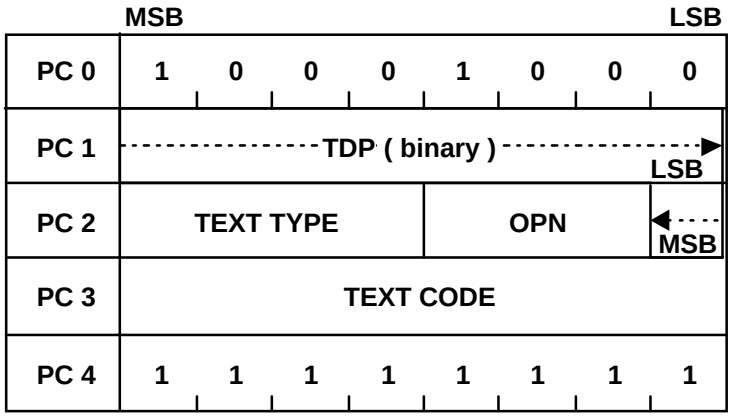
11.8 Reserved

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

This pack is reserved for future use.

LINE 8

11.9 TEXT HEADER



This pack may be recorded or written in the common optional areas except for the AAUX common optional area.

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

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. The details are described in CONTROL TEXT HEADER pack.

LINE 9

11.10 TEXT

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

This pack may be recorded in common optional areas on tape except for the AAUX common optional area.

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

LINE 10

11.11 LINE START

	MSB							LSB
PC 0	1	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 except for the AAUX common optional area.

This pack shows the tape position of starting to record line data 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:

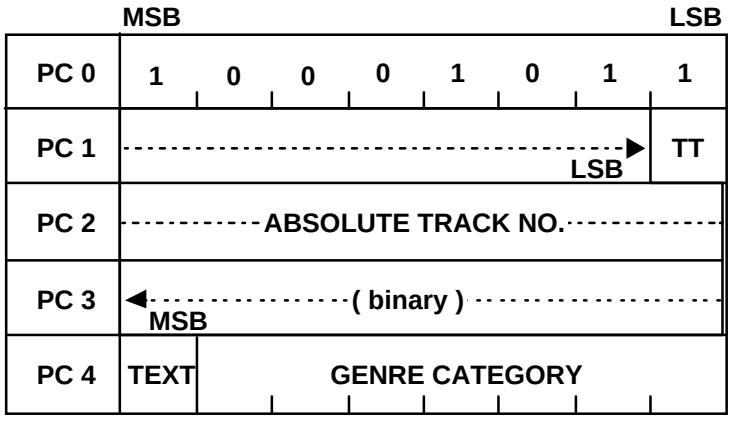
00 to 59

HOURS:

00 to 23

LINE 11

11.12 LINE START



This pack may be recorded or written in the common optional areas except for the AAUX common optional area.

This pack shows the tape position of starting to record line data using absolute track number.

ABSOLUTE TRACK NO.:

Absolute track number which shows the tape position of starting to record line data

TT: Temporary true

This flag is valid only for MIC.

0 = This event data in MIC does not always exist on tape

1 = This event data in MIC exists 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 is reserved for recording genre of audio source.

LINE 12

11.13 Reserved

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

This pack is reserved for future use.

LINE 13

11.14 Reserved

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

This pack is reserved for future use.

LINE 14

11.15 LINE END

	MSB							LSB
PC 0	1	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 except for the AAUX common optional area.

This pack shows the tape position of ending to record line data 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:

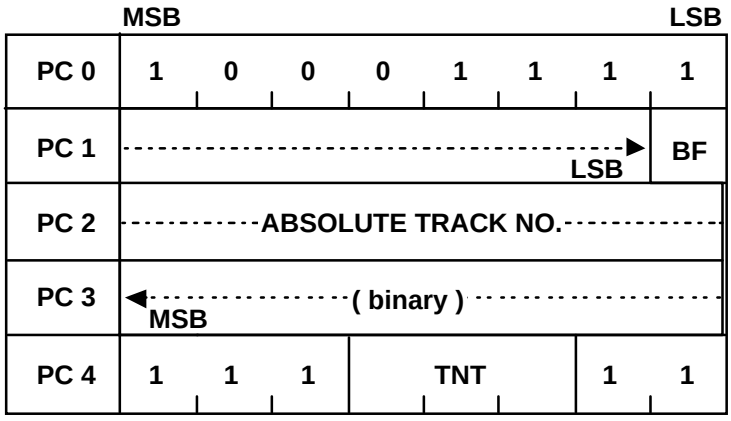
00 to 59

HOURS:

00 to 23

LINE 15

11.16 LINE END



This pack may be recorded or written in the common optional areas except for the AAUX common optional area.

This pack shows the tape position of ending to record line data using title time code.

ABSOLUTE TRACK NO.:

Absolute track number which shows the tape position of ending to record line data

BF: Blank flag

0 = Discontinuity exists before this absolute track number

1 = Discontinuity does not exist before this absolute track number

TNT: Total number of text events

TNT is valid only for MIC.

TNT shows the total number of text events related to this LINE event.

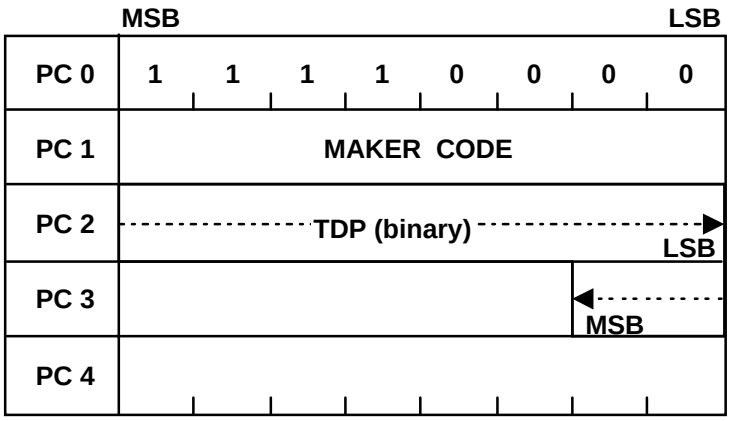
0 to 6 7 = No information

For subcode, AAUX and VAUX, TNT shall be 111b.

12 SOFT MODE

SOFT MODE 0

12.1 MAKER CODE



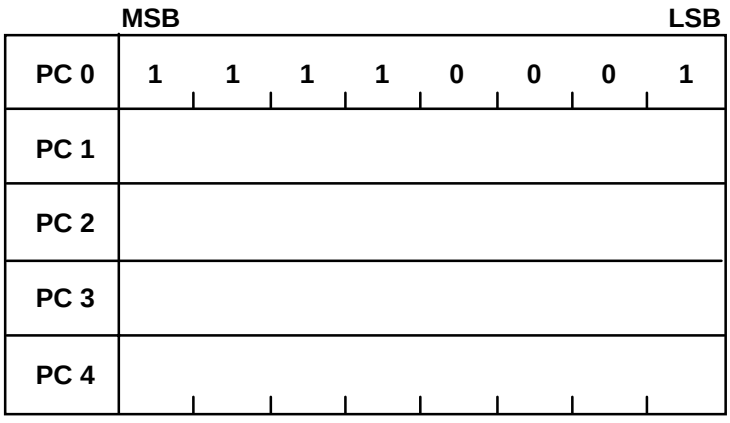
MAKER CODE: To be defined.

TDP: Total number of OPTION packs which follow this pack.

The rest of in this pack are in free use for each manufacturer to implement maker's options.

SOFT MODE 1

12.2 OPTION



This pack is reserved for maker's options.

SOFT MODE 2

12.3 OPTION

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

This pack is reserved for maker's options.

SOFT MODE 3

12.4 OPTION

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

This pack is reserved for maker's options.

SOFT MODE 4

12.5 OPTION

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

This pack is reserved for maker's options.

SOFT MODE 5

12.6 OPTION

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

This pack is reserved for maker's options.

SOFT MODE 6

12.7 OPTION

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

This pack is reserved for maker's options.

SOFT MODE 7

12.8 OPTION

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

This pack is reserved for maker's options.

SOFT MODE 8

12.9 OPTION

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

This pack is reserved for maker's options.

SOFT MODE 9

12.10 OPTION

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

This pack is reserved for maker's options.

SOFT MODE 10

12.11 OPTION

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

This pack is reserved for maker's options.

SOFT MODE 11

12.12 OPTION

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

This pack is reserved for maker's options.

SOFT MODE 12

12.13 OPTION

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

This pack is reserved for maker's options.

SOFT MODE 13

12.14 OPTION

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

This pack is reserved for maker's options.

SOFT MODE 14

12.15 OPTION

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

This pack is reserved for maker's options.

SOFT MODE 15

12.16 NO INFO: No information

	MSB							LSB
PC 0	1	1	1	1	1	1	1	1
PC 1	1	1	1	1	1	1	1	1
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

If PC0 = FFh, all bytes of PC1 to PC4 shall be FFh and this pack has no information.

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International Electrotechnical Commission
3, rue de Varembé
Case postale 131

1211 Geneva 20
Switzerland

or

Fax to: CSC at +41 22 919 03 00

Thank you for your contribution to the standards making process.

Nicht frankieren
Ne pas affranchir

Non affrancare
No stamp required

A Prioritaire

RÉPONSE PAYÉE

SUISSE

Customer Service Centre (CSC)
International Electrotechnical Commission
3, rue de Varembé
Case postale 131
1211 GENEVA 20
Switzerland

1.

No. of IEC standard:

.....

2.

Tell us why you have the standard. (check as many as apply). I am:

- ☐ the buyer
- ☐ the user
- ☐ a librarian
- ☐ a researcher
- ☐ an engineer
- ☐ a safety expert
- ☐ involved in testing
- ☐ with a government agency
- ☐ in industry
- ☐ other.....

3.

This standard was purchased from?

.....

4.

This standard will be used (check as many as apply):

- ☐ for reference
- ☐ in a standards library
- ☐ to develop a new product
- ☐ to write specifications
- ☐ to use in a tender
- ☐ for educational purposes
- ☐ for a lawsuit
- ☐ for quality assessment
- ☐ for certification
- ☐ for general information
- ☐ for design purposes
- ☐ for testing
- ☐ other.....

5.

This standard will be used in conjunction with (check as many as apply):

- ☐ IEC
- ☐ ISO
- ☐ corporate
- ☐ other (published by.....)
- ☐ other (published by.....)
- ☐ other (published by.....)

6.

This standard meets my needs (check one)

- ☐ not at all
- ☐ almost
- ☐ fairly well
- ☐ exactly

7.

Please rate the standard in the following areas as (1) bad, (2) below average, (3) average, (4) above average, (5) exceptional, (0) not applicable:

- ☐ clearly written
- ☐ logically arranged
- ☐ information given by tables
- ☐ illustrations
- ☐ technical information

8.

I would like to know how I can legally reproduce this standard for:

- ☐ internal use
- ☐ sales information
- ☐ product demonstration
- ☐ other.....

9.

In what medium of standard does your organization maintain most of its standards (check one):

- ☐ paper
- ☐ microfilm/microfiche
- ☐ mag tapes
- ☐ CD-ROM
- ☐ floppy disk
- ☐ on line

9A.

If your organization currently maintains part or all of its standards collection in electronic media, please indicate the format(s):

- ☐ raster image
- ☐ full text

10.

In what medium does your organization intend to maintain its standards collection in the future (check all that apply):

- ☐ paper
- ☐ microfilm/microfiche
- ☐ mag tape
- ☐ CD-ROM
- ☐ floppy disk
- ☐ on line

10A.

For electronic media which format will be chosen (check one)

- ☐ raster image
- ☐ full text

11.

My organization is in the following sector (e.g. engineering, manufacturing)

.....

12.

Does your organization have a standards library:

- ☐ yes
- ☐ no

13.

If you said yes to 12 then how many volumes:

.....

14.

Which standards organizations published the standards in your library (e.g. ISO, DIN, ANSI, BSI, etc.):

.....

15.

My organization supports the standards-making process (check as many as apply):

- ☐ buying standards
- ☐ using standards
- ☐ membership in standards organization
- ☐ serving on standards development committee
- ☐ other.....

16.

My organization uses (check one)

- ☐ French text only
- ☐ English text only
- ☐ Both English/French text

17.

Other comments:

.....

.....

.....

.....

.....

.....

18.

Please give us information about you and your company

name: .....

job title:.....

company: .....

address:.....

.....

.....

.....

No. employees at your location:.....

turnover/sales:.....

Enquête sur les normes

La CEI se préoccupe de savoir comment ses normes sont accueillies et utilisées.

Les réponses que nous procurera cette enquête nous aideront tout à la fois à améliorer nos normes et les informations qui les concernent afin de toujours mieux répondre à votre attente.

Nous aimerions que vous nous consacriez une petite minute pour remplir le questionnaire joint que nous vous invitons à retourner au:

Centre du Service Clientèle (CSC)

Commission Electrotechnique Internationale
3, rue de Varembé
Case postale 131

1211 Genève 20
Suisse

Télécopie: IEC/CSC +41 22 919 03 00

Nous vous remercions de la contribution que vous voudrez bien apporter ainsi à la Normalisation Internationale

Nicht frankieren
Ne pas affranchir

Non affrancare
No stamp required

A Prioritaire

RÉPONSE PAYÉE

SUISSE

Centre du Service Clientèle (CSC)
Commission Electrotechnique Internationale
3, rue de Varembé
Case postale 131
1211 GENÈVE 20
Suisse

1.

Numéro de la Norme CEI:

.....

2.

Pourquoi possédez-vous cette norme? (plusieurs réponses possibles). Je suis:

- ☐ l'acheteur
- ☐ l'utilisateur
- ☐ bibliothécaire
- ☐ chercheur
- ☐ ingénieur
- ☐ expert en sécurité
- ☐ chargé d'effectuer des essais
- ☐ fonctionnaire d'Etat
- ☐ dans l'industrie
- ☐ autres .....

3.

Où avez-vous acheté cette norme?

.....

4.

Comment cette norme sera-t-elle utilisée? (plusieurs réponses possibles)

- ☐ comme reférence
- ☐ dans une bibliothèque de normes
- ☐ pour développer un produit nouveau
- ☐ pour rédiger des spécifications
- ☐ pour utilisation dans une soumission
- ☐ à des fins éducatives
- ☐ pour un procès
- ☐ pour une évaluation de la qualité
- ☐ pour la certification
- ☐ à titre d'information générale
- ☐ pour une étude de conception
- ☐ pour effectuer des essais
- ☐ autres .....

5.

Cette norme est-elle appelée à être utilisée conjointement avec d'autres normes? Lesquelles? (plusieurs réponses possibles):

- ☐ CEI
- ☐ ISO
- ☐ internes à votre société
- ☐ autre (publiée par).....)
- ☐ autre (publiée par).....)
- ☐ autre (publiée par).....)

6.

Cette norme répond-elle à vos besoins?

- ☐ pas du tout
- ☐ à peu près
- ☐ assez bien
- ☐ parfaitement

7.

Nous vous demandons maintenant de donner une note à chacun des critères ci-dessous (1, mauvais; 2, en-dessous de la moyenne; 3, moyen; 4, au-dessus de la moyenne; 5, exceptionnel; 0, sans objet)

- ☐ clarté de la rédaction
- ☐ logique de la disposition
- ☐ tableaux informatifs
- ☐ illustrations
- ☐ informations techniques

8.

J'aimerais savoir comment je peux reproduire légalement cette norme pour:

- ☐ usage interne
- ☐ des renseignements commerciaux
- ☐ des démonstrations de produit
- ☐ autres .....

9.

Quel support votre société utilise-t-elle pour garder la plupart de ses normes?

- ☐ papier
- ☐ microfilm/microfiche
- ☐ bandes magnétiques
- ☐ CD-ROM
- ☐ disquettes
- ☐ abonnement à un serveur électronique

9A.

Si votre société conserve en totalité ou en partie sa collection de normes sous forme électronique, indiquer le ou les formats:

- ☐ format tramé (ou image balayée ligne par ligne)
- ☐ texte intégral

10.

Sur quels supports votre société prévoit-elle de conserver sa collection de normes à l'avenir (plusieurs réponses possibles):

- ☐ papier
- ☐ microfilm/microfiche
- ☐ bandes magnétiques
- ☐ CD-ROM
- ☐ disquettes
- ☐ abonnement à un serveur électronique

10A.

Quel format serait retenu pour un moyen électronique? (une seule réponse)

- ☐ format tramé
- ☐ texte intégral

11.

A quel secteur d'activité appartient votre société? (par ex. ingénierie, fabrication)

.....

12.

Votre société possède-t-elle une bibliothèque de normes?

- ☐ Oui
- ☐ Non

13.

En combien de volumes dans le cas affirmatif?

.....

14.

Quelles organisations de normalisation ont publié les normes de cette bibliothèque (ISO, DIN, ANSI, BSI, etc.):

.....

15.

Ma société apporte sa contribution à l'élaboration des normes par les moyens suivants (plusieurs réponses possibles):

- ☐ en achetant des normes
- ☐ en utilisant des normes
- ☐ en qualité de membre d'organisations de normalisation
- ☐ en qualité de membre de comités de normalisation
- ☐ autres .....

16.

Ma société utilise (une seule réponse)

- ☐ des normes en français seulement
- ☐ des normes en anglais seulement
- ☐ des normes bilingues anglais/français

17.

Autres observations

.....

.....

.....

.....

.....

18.

Pourriez-vous nous donner quelques informations sur vous-mêmes et votre société?

nom .....

fonction.....

nom de la société .....

adresse.....

.....

.....

.....

nombre d'employés.....

chiffre d'affaires:.....

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