RP 169-1995

SMPTE RECOMMENDED PRACTICE

Television, Audio and Film Time and Control Code -- Auxiliary Time Address Data in Binary Groups -- Dialect Specification of Directory Index Locations

1 Scope

This practice specifies a method of coding an auxiliary time address into the binary groups of SMPTE time and control codes, thus providing a second time address storage and storage location.

The dialect used provides auxiliary time address hours information conforming to the directory index 00 through 23 (decimal), as specified in ANSI/SMPTE 262M. It also conforms to the coding structure of the primary time code located in the time address portion of the time code word.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of the standards indicated below.

ANSI/SMPTE 12M-1995, Television, Audio and Film — Time and Control Code

ANSI/SMPTE 262M-1995, Television, Audio and Film — Binary Groups of Time and Control Codes — Storage and Transmission of Data

3 Data structure

3.1 Bit assignment

Auxiliary time address data stored in binary groups shall be assigned as shown in table 1. This dialect conforms to the directory index in that the directory page index corresponds to the tens of hours of the auxiliary time address. Similarly, the directory line index corresponds to the units of hours of the auxiliary time address.

Table 1 -- Auxiliary time address bit assignment

LTC bits	VITC bits	Binary group	Assignation
4--7	6--9	1	Frames units
12--13	16--17	2	Frames tens
14	18	2	Drop frame flag
15	19	2	Color frame flag
20--23	26--29	3	Seconds units
28--30	36--38	4	Seconds tens
31	39	4	Unassigned
36--39	46--49	5	Minutes units
44--46	56--58	6	Minutes tens
47	59	6	Unassigned
52--55	66--69	7	Hours units (line index)
60--61	76--77	8	Hours tens (page index)
62--63	78--79	8	Zero (page index)

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3.2 Binary group drop frame flag

If certain numbers are being dropped to resolve the difference between real time and color time, a “1" shall be recorded. This flag refers only to the auxiliary time address data.

3.3 Binary group color frame flag

If color frame ID has been intentionally applied to time address data stored in the binary groups, a “1" shall be recorded. In such cases, the time address numbers shall identify the color frames in the manner as specified by ANSI/SMPTE 12M.

3.4 Unassigned bits

Unassigned bits shall be set to “0” until assigned by SMPTE.

4 Binary group flag bits

When the data structure conforms to this format, the binary group flag bits shall be set in accordance with ANSI/SMPTE 12M as shown in table 2. For vertical interval applications, this flag designation shall be repeated in both fields.

Table 2 – Binary group flag values for page-line encoding

		24- and 30-fps systems		25-fps systems	
Binary group flag	Bit value	LTC bit	VITC bit	LTC bit	VITC bit
BGF2	1	59	75	43	55
BGF1	0	58	74	58	74
BGF0	1	43	55	27	35