ANSI V98.9-1983
Revision and Redesignation of
ANSI C98.9-1967

American National Standard
for video recording—magnetic tape—color leader

Approved January 14, 1983

Secretariat: Society of Motion Picture and Television Engineers

1. Scope

1.1 This standard specifies the minimum leader requirements for color video tape recording operation to permit adjustment of equipment for optimum performance during reproduction prior to the start of recorded program material.

1.2 The standard also specifies the audio and video information that precedes and follows the recorded program material (for purpose of ensuring uniformity of reproduction), and provides the necessary identification, cue-up and runout information, and the minimum lengths of tape required to ensure proper threading for color video tape recordings.

2. Color Bar Signal

2.1 At the head end of the tape, a color bar pattern, as defined by EIA Standard RS-189, Encoded Color Bar Signals, shall be recorded with maximum luminance at 77 IRE units corresponding to 75 percent chroma level, including a reference white bar and reference black bar. The position and length of the color bar recording shall be as specified in Fig. 2 and Table 2. The recording shall be made under the same conditions of equipment adjustment as used for recording the video program material. For original recording, the color bar signal shall originate in and be fed through the same studio and equipment used for the program.

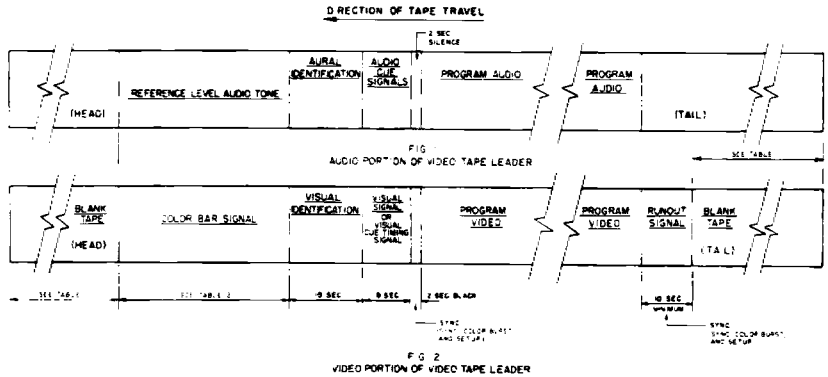

FIG
AUDIO PORTION OF VIDEO TAPE LEADER

FIG 2
VIDEO PORTION OF VIDEO TAPE LEADER

NOTE: The figures of picture and audio sequences are shown related on a time basis. There is separation of the picture and audio records on the recorded tape, by an amount dictated by the recording format being used.

Table 1

Recording Format	Minimum Length
2-in Quadruplex	8 ft (2.4 m)
1-in Helical-Scan	8 ft (2.4 m)
½-in Helical-Scan	5 ft (1.5 m)
Cassettes	Does not apply

2.2 Simultaneously with the color bar signal, an audio tone of 400 Hz ± 5 percent shall be recorded at the same level and under the same conditions of equipment adjustment used for recording the audio portion of the program material. For recording formats with more than one audio channel available, the audio tone shall be recorded only on the channel or channels that contain the program audio.

2.3 For reel-to-reel machines, the color bar signal shall be preceded by blank tape for threading purposes. The length of the blank tape shall be as specified in Table 1.

3. Identification Information

3.1 Visual identification information shall be recorded for at least 15 seconds following the color bar signal specified in Section 2. The identification shall contain the following information (if known):

(1) title
(2) subject
(3) production number
(4) take number
(5) name of recording studio
(6) date of recording
(7) broadcast date

3.2 Simultaneously, an aural identification of the information specified in 3.1 shall be recorded under the same conditions as defined in 2.2.

4. Cue Timing Signals

4.1 Audio cue signals, as described below, shall be recorded on the audio program track following the aural identification signals specified in Section 3.

4.1.1 The audio cue tone signals shall consist of a series of 400 Hz ± 5 percent bursts, each of ⅓-second duration, occurring at one-second intervals over the range from ten or more seconds ahead of the program material to two seconds ahead. The recording level shall be as defined in 2.2.

Table 2

Program Length	Color Bar Length
Longer than 1 min	60 s
1 min or less	40 s

4.1.2 In addition, a steady component of the audio cue tone shall be recorded approximately 20 dB below the level used in 4.1.1, starting with the first tone burst and ending with the last one, to leave a two-second silent interval before the start of program material.

4.2 A visual signal shall be recorded during the entire period of the steady component of the above-described audio tone signals. Sync (sync, color burst, and setup) only shall be recorded during the two-second interval from the end of the tone bursts to the start of program. The recording level shall be as described in 2.1.

If a visual cue timing signal is used, it shall be coincident with and identify the tone burst in 4.1.1.

5. Continuity of Recorded Signals

Continuity of recorded signals, beginning with the color bar signal, shall not be interrupted. This continuity of sync, color burst, and control track shall be achieved by continuous recording, by electronic editing, or by equivalent splicing, provided that the requirements of 2.1 are fulfilled.

Run-Out Signal

6.1 There shall be at least 10 seconds of sync (sync, color burst, and setup) recorded immediately following the conclusion of program material.

6.2 For reel-to-reel machines, the runout signal shall be followed by blank tape for wrap-around purposes. The length of the blank tape shall be as specified in Table 1.

ANSI V98.4-1983
Revision and Redesignation of
ANSI C98.4-1970

American National Standard for video recording—2-in magnetic tape for quadruplex recording—speed

Approved January 14, 1983 Secretariat: Society of Motion Picture and Television Engineers

1. Scope

This standard specifies the nominal rates of travel of 2-in wide magnetic tape for quadruplex video magnetic tape recording.

2. Primary Nominal Rate of Tape Travel

The primary nominal rate of tape travel shall be 15 in/s (38.1 cm/s).

3. Secondary Nominal Rate of Tape Travel

The secondary nominal rate of tape travel shall be 7.5 in/s (19.05 cm/s).

NOTE: The absolute tape speed is outlined in American National Standard Dimensions of *Video, Audio and Tracking Control Records on 2-in Video Magnetic Tape Quadruplex* Recorded at 15 and 7.5 in/s, ANSI V98.6-1981.

SMPTE RECOMMENDED PRACTICE — RP 110-1983

Specifications for an Alignment Test Film for Anamorphic Attachments to 35-mm Motion-Picture Projectors

1. *Scope*

This practice specifies a test film for the alignment of anamorphic attachments or lenses for 35-mm motion-picture projectors.

2. *Test Pattern*

2.1 A reproduction of the alignment chart is shown in Fig. 1.

2.2 A chart showing the dimensions as measured on the test film is shown in Fig. 2.

2.3 The lettering shall be bold and of a style and size shown in the figures.

2.4 The vertical lines shall be one-half as wide as the horizontal lines so that during projection they will appear to be the same width.

3. *Test Film*

3.1 The test film shall be produced as a 35-mm print with white lines on a black background.

3.2 The test pattern shall be photographed and the center point positioned on the print as specified by Style B in American National Standard Dimensions of 35-mm Motion-Picture Camera Aperture Images, ANSI PH22.59-1974 (R1981).

3.3 The print shall be on motion-picture stock made in accordance with long-pitch dimensions specified in American National Standard Dimensions for 35-mm Motion-Picture Film Perforated KS, ANSI PH22.139-1980.

3.4 The emulsion position of the print shall be away from the projector lens for direct front projection.

3.5 The test film shall be supplied in an emulsion-in winding.

4. *Densities*

4.1 The black background shall have a neutral density greater than 1.9.

4.2 The density of the lines and lettering shall be below 0.3.

NOTE: Test films made in accordance with this practice are available from the Society of Motion Picture and Television Engineers.

Approved 3 February 1983

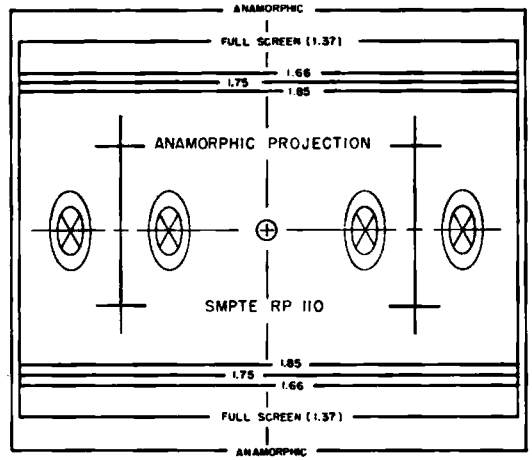

Fig. 1
Reproduction of Test Chart

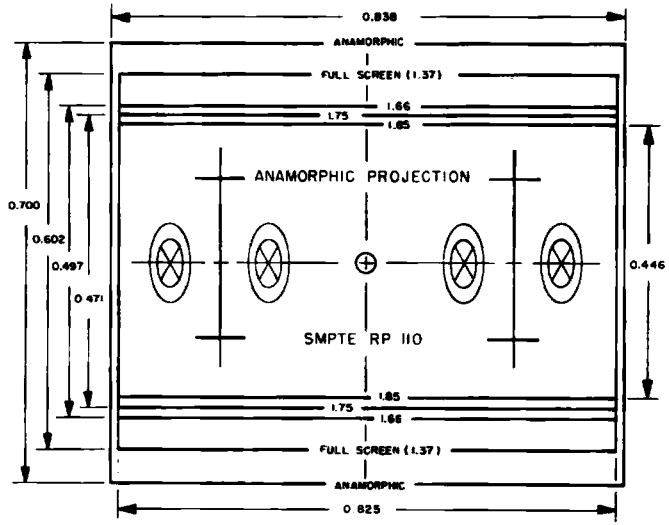

Fig. 2
Test Chart Dimensions

Appendix

(The Appendix is not a part of this SMPTE Recommended Practice, but is included for information purposes only.)

The test pattern is used for checking:

(a) The area being projected. The horizontal lines designate the projectable image area documented in American National Standard Dimensions of Projectable Image Area on 35-mm Motion-Picture Prints, ANSI PH22.195-1977, permitting adjustment of the screen masking to the desired aspect ratio or judgment of how much image area is being lost outside the visible screen area.

(b) The alignment of the anamorphic attachment or lens. Anamorphic attachments and lenses for theatrical use are designed to expand the film image by 2X; consequently, the four circles at the sides should appear perfectly round and the circle at the center should be an ellipse twice as wide as it is high.

By rotating the attachment, the crossed lines can be made to appear perpendicular to each other. If both the vertical and horizontal lines do not appear sharp, the projection distance scale must be adjusted. First use the focus knob so that the horizontal lines are very sharp. Then adjust the distance ring so that the vertical lines become as sharp as possible, and lock the distance ring. If the sharpness of the vertical lines changes when the distance ring is locked, repeat the sequence, starting with the focus knob.