

American National Standard basic system and transport geometry parameters for 1-in type B helical-scan video tape reference recorders for video and audio reference tapes

Approved September 2, 1982

Secretariat: Society of Motion Picture and Television Engineers

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1. Scope

This standard specifies test conditions, general video record system, video pole-tip locations, scanner parameters, scanner-guide locations, and the tape tension for 1-in Type B helical-scan video tape reference recorders operating on the 525/60 monochrome or NTSC color systems.

2. General Specifications

Tests and measurements made on the recorder to check the requirements of this standard shall be made under the following atmospheric conditions:

Temperature of drum diameter	23 ± 0.5°C
Temperature for all other tests	23 ± 1°C
Relative humidity	50 ± 2 percent
Barometric pressure	86 to 106 hPa (860 to 1060 mbar)
Conditioning before testing	24 h

3. Video Record System

3.1 The video modulation system shall be the FM type.

3.2 The video record shall contain all picture lines and vertical sync information.

4. Video Heads and Scanner Parameters

4.1 Two video heads shall be positioned 180° ± 20" apart, β , measured from the gap of video head 1 to the gap of video head 2, as shown in Fig. 1.

4.2 The drum size shall be 50.330 +0 —0.003 mm.

4.3 The nominal rotational speed of the head wheel shall be 150 r/s.

4.4 The video head protrusion shall be 0.030 ± 0.005 mm, measured from the outer surface of the drum to the end of the head tip.

4.5 The video head gap shall be 90° nominal to the plane of rotation of the video head.

4.6 The control head gap shall be located at point Y (see Fig. 1) which lies on a line which is at 90° ± 7.5', measured from diameter F-G which is the centerline through the plate assembly.

5. Tape Tension

The record tape tension shall be as follows:

T_{in} , tape tension in	measured between Band X = 2.0 ± 0.1 N
T_{out} , maximum tape tension out	measured between Y and E = 2.3 N

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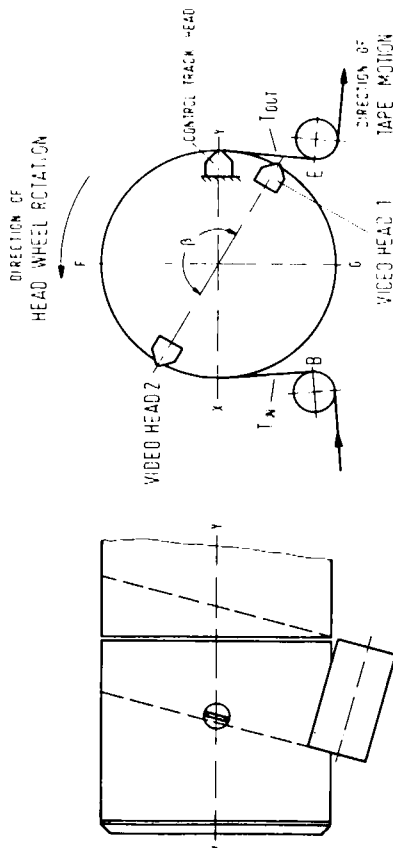


Fig. 1

6. Relevant Documents

In addition to this standard, the following documents apply:

American National Standard Dimensions and Location of Records on Video and Audio Reference Tape for 1-in Type B Helical-Scan Video Recorders, ANSI V98.30M-1982.

American National Standard Specifications and Conditioning of Raw Tape Stock Used to Record Reference Tapes for 1-in Helical-Scan Video Tape Recorders, ANSI V98.26M-1982.

SMPTTE Recommended Practice on Specifications of Tracking Control Record for 1-in Type B Helical-Scan Video Tape Recording, RP 83-1980.

SMPTTE Recommended Practice on Video Reference Carrier Frequencies and Pre-emphasis Characteristics for 1-in Type B Helical-Scan Video Tape Recording, RP 84-1980. The tolerances in Table 1 are tightened to ± 0.025 MHz. Other values shall be held as close as possible.

SMPTTE Recommended Practice on Video and Audio Reference Tape for 1-in Type B Helical-Scan Format, RP 107-1982.

ANSI V98.30M-1982 American National Standard dimensions and location of records on video and audio reference tape for 1-in type B helical-scan video tape recorders

Approved September 10, 1982

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1. Scope

This standard specifies the dimensions and location of video, audio, and tracking control records on reference tapes for 1-in Type B helical-scan video tape recorders, operating on the 525/60 monochrome or NTSC color systems, as described in American National Standard Basic System and Transport Geometry Parameters for 1-in Type B Helical-Scan Video Tape Reference Recorders for Video and Audio Reference Tapes, ANSI V98.29M-1982.

2. General Specifications

2.1 Tests and measurements made on the tape record to check the requirements of this standard shall be made under the following conditions unless otherwise specified:

Temperature	23 ± 1°C
Relative humidity	50 ± 2 percent
Barometric pressure	86 to 106 kPa (860 to 1060 mbar)
Tape tension	2.0 ± 0.1 N

2.2 Before recording and testing, the tape shall be conditioned for 24 hours, and wound on a reel at 2.0 ± 0.5 N.

2.3 The reference edge of the tape for dimensions in this standard shall be the lower edge as

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shown in Fig. 1. The magnetic coating is on the side facing the observer.

2.4 The tape speed shall be 245.0 ± 0.8 mm/s.

3. Record Location and Dimensions

3.1 Record location and dimensions shall be in accordance with Fig. 1 and Table 1.

3.2 The nominal width of audio records 1, 2, and 3 shall be 0.8 mm.

3.3 The audio and cue recordings shall be downstream from the associated video information. (See Dimension J in the figure and table.)

3.4 The audio recording shall be made so that the azimuth of the recorded record is at an angle of 90° ± 2.5° to the reference edge of the tape. Audio 1 and 2 head gaps shall be in line.

3.5 The position of the field synchronizing signal on the video record shall be 7.609 ± 0.024 mm from the intersection of L and X, in the direction of tape travel as measured along the video track.

3.6 The cue signal and time code shall be recorded in the audio 3 track.

4. Video Record Curvature

The edge of the video record shall be contained within two parallel straight lines 0.015 mm apart.

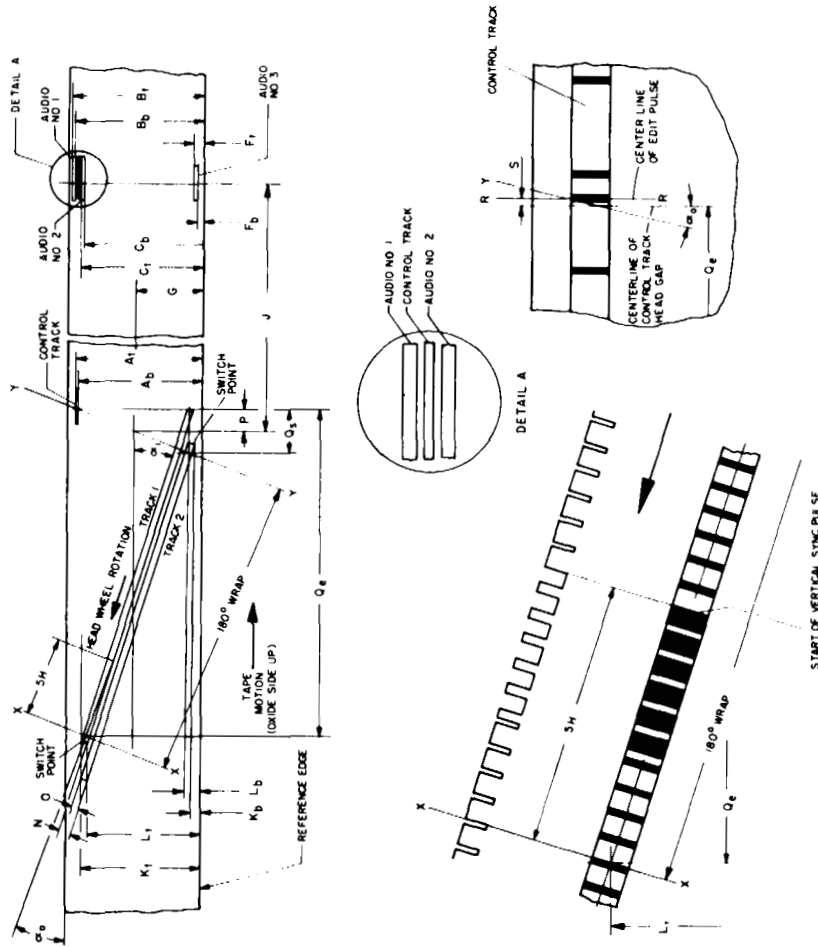


Fig. 1

ANSI V98.30M-1982

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