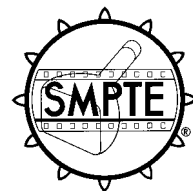


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SMPTE STANDARD

for Television Digital Recording — 19-mm Type D-2 Composite Format — Tape Record



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1 Scope

This standard specifies the dimensions and location of the audio, video, ancillary data, cue track, time code, and control-track records for 19-mm type D-2 helical-scan composite digital cassette television tape recorders operating on the 525/60 television system encoded according to ANSI/SMPTE 244M.

2 General specifications

2.1 Dimensions are in the metric system.

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

- Temperature $20^{\circ}\text{C} \pm 1^{\circ}\text{C}$
- Relative humidity $(50 \pm 2)\%$
- Barometric pressure $96 \text{ kPa} \pm 10 \text{ kPa}$
- Tape tension $0.70 \text{ N} \pm 0.05 \text{ N}$

2.3 Conditioning of the tape stock before recording and testing shall be as follows:

- Time of conditioning: Not less than 24 hours
- Environmental: Stabilized to the conditions specified in 2.2
- Tape tension: Wound on a reel at a tension of 0.6 N to 1.5 N

2.4 The reference edge of the tape for dimensions specified in this standard shall be the lower edge as shown in figure 1. The magnetic coating, with the direction of tape travel as shown in figure 1, is on the side facing the observer.

2.4.1 All dimensions in the table and figures shall be measured from an equivalent reference edge. The tape reference edge is a line through three points on the edge of tape constrained to lie in one straight line. This constraint may be a physical deformation or an equivalent mathematical transformation. The first and third points shall be separated by a measurement distance (MD) of 210 mm. The second point shall be located a distance 0.2 MD from the first point and 0.8 MD from the third point as shown in figure 3. The program reference point lies on a line perpendicular to the reference edge through the second point on the reference edge.

2.4.2 Measuring techniques are shown in annex A.

2.4.3 As indicated in figure 1, this standard anticipates the use of overlap recording by helical tape record heads of width greater than the track pitch.

3 Tape speed

The basic value for tape speed is 131.700 mm/s. The tape speed tolerance is $\pm 0.2\%$.

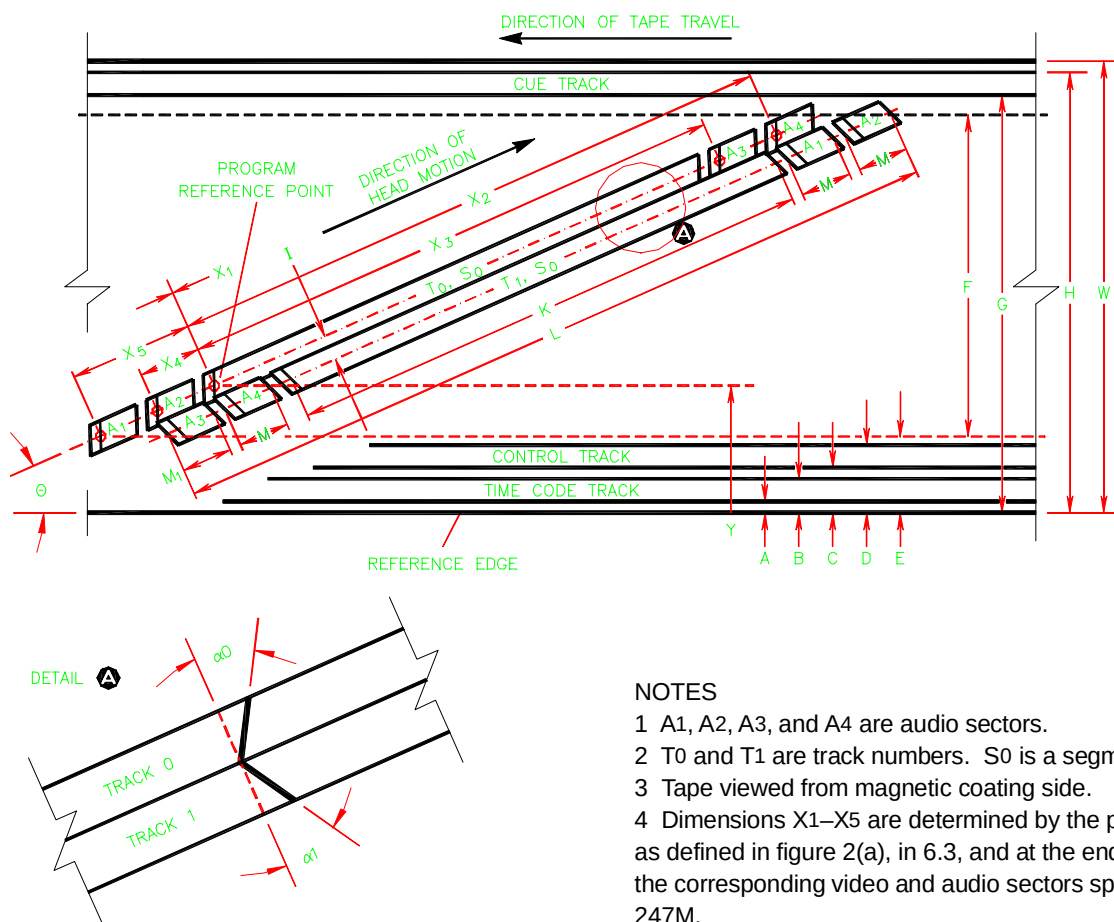
4 Record location and dimensions

4.1 Record location and dimensions for continuous recording shall be as specified in figures 1 and 2 and table 1.

4.2 In recording, sector locations on each helical track shall be contained within the tolerance specified in table 1 and figure 3.

4.3 The width and height tolerances of the heads used for recording shall be chosen so as to ensure

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NOTES

- 1 A1, A2, A3, and A4 are audio sectors.
- 2 T0 and T1 are track numbers. S0 is a segment number (typical).
- 3 Tape viewed from magnetic coating side.
- 4 Dimensions X1–X5 are determined by the program reference point as defined in figure 2(a), in 6.3, and at the end of the preambles of the corresponding video and audio sectors specified in ANSI/SMPTE 247M.

Figure 1 – Location and dimensions of recorded tracks