

---

# SMPTE STABLE DOCUMENT

---



**The attached SMPTE Engineering Document has been declared “Stable” by the controlling Technology Committee.**

**The SMPTE Operations Manual for Standards states:**

*A document should be stabilized if it is believed to be substantially correct, does not contain harmful or misleading recommendations, may still be relevant to equipment or practices in use, is stable, but does not represent current technology, and need not be subject to future reviews.*

*A Stable document shall still be made available and offered for sale by the Society, but it shall be prefaced by a cover page explaining its current status.*

*At any time, a Technology Committee may revise, amend, or otherwise initiate a new Project on a Stable document.*

**A Stable document is “In Force”, and not deprecated or withdrawn.**

**\* \* \* \* \***

**Note:**

**SMPTE “Stable” documents were previously described as “Archived” and the attached document may be marked as “Archived”. The status of a SMPTE document described as “Archived” is exactly as described above for a “Stable” document.**

**Stable documents may not adhere to the latest style and format of SMPTE documents, or to current usage of normative language. Suitable care should be taken in interpretation.**

# SMPTE STANDARD

**SMPTE 86-2005**

Revision of  
ANSI/SMPTE 86-1996

## for Motion-Picture Film — Magnetic Audio Records — Two, Three, Four and Six Records on 35-mm and One Record on 17.5-mm Magnetic Film



Page 1 of 5 pages

### 1 Scope

This standard specifies the position, dimensions, reproducing speed, and identity of the two-, three-, four-, or six-track magnetic audio records on 35-mm magnetic film, and one single-track record on 17.5-mm magnetic film. It also specifies the assignment of records to the various tracks on the magnetic coating on the film in relation to the direction of film travel.

### 2 Audio records

**2.1** The lateral location and width of the magnetic audio records shall be as specified in the figures and tables.

**2.2** The recordings shall be made so that the azimuth of the record is at an angle of  $90^\circ \pm 3'$  to the reference edge of the film.

**2.3** The audio records shall be recorded in such a manner that they can be reproduced properly by reproducing heads whose gaps are positioned along a common plane and in line. The gap width for erase heads shall be a minimum of 10% wider than the gap width of the record being erased.

### 3 Reproducing speed

The recordings shall be made and clearly identified so that the audio records will reproduce properly at 96 or 120 perforations per second, corresponding to 24 or 30 frames per second, respectively. Twenty-four frames per second correspond to a linear speed of 18 in (457 mm) per second; 30 frames per second correspond to 22.4 in (570 mm) per second.

### 4 Assignment of records

**4.1** The principal assignment for the two-track format (see figure 1) is for the prime audio record on track No. 1 and time code on track No. 2.

**4.2** Formats of 17.5-mm usually result from slitting 35-mm film into two equal strips; in this case, the record adjacent to the perforation shall be the No. 1 record as specified in figure 2 and table 2. This shall also be the No. 1 record if it is a single recording made for 35-mm film.

**4.3** For monophonic recordings, the prime audio record shall be placed on track No. 1 for all formats.