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SMPTE ENGINEERING GUIDELINE

EG 23-2005

Revision of EG 23-1996

Transfer of Two-Channel Stereo Audio from Audio Magnetic Film or Tape to Video Tape



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1 Scope

1.1 This guideline specifies the handling of volume range issues when transferring two-channel stereo audio from 35-mm or 16-mm magnetic film, or other audio tape formats utilizing time-code based methods of synchronization, to any video recording media.

1.2 Among the volume range issues are both objective and subjective ones, including:

- most end users will usually adjust loudness so that dialog is reproduced at a normalized level (despite how loud or soft other parts of the program may be) for best intelligibility;
- dubbing stages and monitor theaters are often operated at higher reference sound pressure levels than the end video consumer will use;
- commercials may well be intercut with program material, creating the potential for abrupt level changes among video sources;
- many of the video formats have reduced audio dynamic range capability when compared to magnetic audio-only masters;
- video transmission involves at least a 75-ms preemphasis network in the transmitter, and often much more nonstandardized audio signal processing, which has an impact on the volume range relationships within the program material.

1.3 The guideline also specifies certain labeling requirements for audio masters.

2 Definitions

2.1 dynamic range: The range along an intensity scale of which a medium is capable; measured from a maximum point of stated distortion to a background noise level. Dynamic range varies frequency-by-frequency, but is often expressed as a single number from the mid-band defined distortion level to the psycho-acoustically weighted noise level, e.g., "the dynamic range was 72 dB (3% THD to CCIR-ARM noise)."

2.2 volume range: The range along an intensity scale occupied by program material; volume range is taken to be from the highest peaks of the program to the lowest signal intended to be audible.