



2017-09-19

## **Withdrawal of SMPTE EG9-2005**

### **Audio Recording Reference Level for Post Production of Motion-Picture Related Materials**

**This Standard has been withdrawn and its content is no longer endorsed by the Society. This action has been taken because it is judged that there is a significant possibility that use of the document may cause harm.**

EG9-2005 “Audio Recording Reference Level for Post Production of Motion-Picture Related Materials” has been replaced by the revision of RP155-2014, “Reference Levels for Analog and Digital Audio Systems”.

RP155-2014 was revised to include analog audio reference level information previously found in EG9. The two documents contained overlapping information which was cleaned up in this revision. It was intended that EG9 would be withdrawn after publication.

SMPTE EG9-2005 has been withdrawn, and SMPTE encourages users to consider SMPTE RP155-2014 instead.

# SMPTE ENGINEERING GUIDELINE

**EG 9-2005**

Revision of EG 9-1995

## Audio Recording Reference Level for Post-Production of Motion-Picture Related Materials



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### 1 Scope

This guideline specifies the audio recording reference level for intra- and inter-studio operations concerned with motion-picture post-production audio recording on both sprocketed and nonsprocketed analog and digital magnetic and photographic materials.

### 2 Normative reference

The following document contains provisions which, through reference in this text, constitutes provisions of this guideline. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this guideline are encouraged to investigate the possibility of applying the most recent edition of the document indicated below.

SMPTE RP 155-2004, Motion Picture and Television — Reference Level for Digital Audio Systems

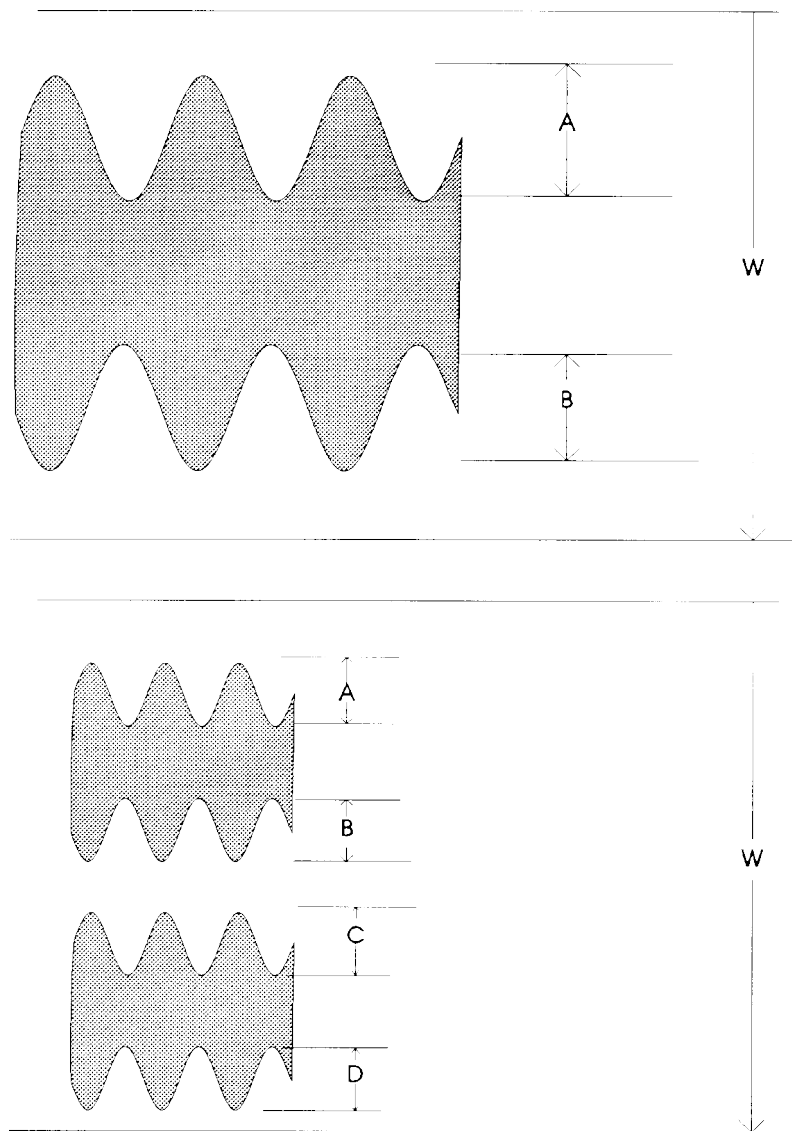
### 3 Specifications

**3.1** The audio recording reference level shall be a sine wave of approximately 1 kHz.

**3.2** For analog recording on magnetic materials, the fluxivity of the reference level shall be 185 nWb/m.

**3.3** For analog recording on photographic audio tracks, the reference level shall correspond to 50% maximum modulation. The maximum modulation width is 0.076 in (1.93 mm) for 35-mm monophonic sound tracks, 0.033 in (0.84 mm) for each track of 35-mm stereo sound tracks, and 0.060 in (1.52 mm) for 16-mm monophonic sound tracks. The condition of 100% modulation is commonly referred to as optical clash, and thus 50% modulation represents a level of approximately 6 dB below optical clash (see figure 1).

**3.4** For digital recording, the reference level shall correspond to 20 dB below the maximum recording level of the digital medium.



$$\% \text{ MOD} = \frac{A+B}{W} \times 100\% = \frac{A+B+C+D}{W} \times 100\%$$

WHERE:  $W = 0.076 \text{ IN (1.93 MM)}$  FOR 35-MM MONO (SMPTE 40)  
 $W = 0.033 \text{ IN (0.84 MM)}$  FOR 1 TRACK OF 35-MM STEREO (SMPTE 203)  
 $W = 0.060 \text{ IN (1.52 MM)}$  FOR 16-MM MONO (SMPTE 41)

EXAMPLE: % MODULATION OF ONE TRACK OF A STEREO TRACK

$$\begin{array}{l} A = 0.0083 \text{ IN} \\ B = 0.0082 \text{ IN} \end{array} \quad \% \text{ MOD} = \frac{0.0083 + 0.0082}{0.033} \times 100\% = 50\% \text{ MOD}$$

**Figure 1 – Measurement of percent modulation**

## **Annex A** (informative)

### **Additional information**

**A.1** The specified level shall normally correspond to 0 on a VU meter, specified in IEC 60268-17, which normally corresponds to 4 on a peak program meter having a scale of 0 to 7 in accordance with IEC 60268-10. This refers to type 2A program level meters. Type 2B program meters will read "test" for the specified level.

**A.2** The reference level specified in 2.1 and 2.2 is available on the following SMPTE test films: Magnetic – M35-SL and M16-SL; Photographic – P35-SL and P16-SL.

**A.3** The dimensions for optical clash in 2.3 are determined from SMPTE 40 for 35-mm and SMPTE 41 for 16-mm film.

## **Annex B** (informative)

### **Bibliography**

SMPTE 40-2002, Motion-Picture Film (35-mm) – Photographic Audio Records - Release Prints

SMPTE 41-2004, Motion-Picture Film (16-mm) – Prints – Photographic Audio Records

SMPTE 203-2003, Motion-Picture Film (35-mm) – Prints – Two-Track Photographic Audio Records

IEC 60268-10 (1991-03), Sound System Equipment – Part 10: Peak Programme Level Meters

IEC 60268-17 (1990-10), Sound System Equipment – Part 17: Standard Volume Indicators