

PROPOSED SMPTE RECOMMENDED PRACTICE

Definition of Vertical Interval Switching Point for Synchronous Video Switching

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1 Scope

This recommended practice defines the line number and line timing for the switching point of Serial Digital and Analog Interfaces carrying Television and Data payloads to minimize any disturbance in the active payload area.

The switching point location is defined for uncompressed television interfaces operating with composite or component signals, where the payload signals may be in analog or digital format. In addition, the same switching point location is used when the payload signals are data.

This RP applies to equipment that uses an external reference signal to time switching as well as equipment which does not.

2 Introduction

This recommended practice defines a switching point and area such that the effects of any signal discontinuity in the chain are minimized, regardless of whether the interface is carrying an uncompressed television signal or a data signal. The line designated for the switching point is chosen to be after vertical sync at the interface (to minimize the possibility of disturbances to vertical sync), but early in the vertical blanking interval. This ensures that signals transmitted during the vertical blanking interval (time code, audio data, etc.) remain with the video frame with which they are associated. It is recommended, that vital ancillary data or payload data be excluded from the line following the switch line. Individual data applications may provide an appropriate provision for protection during switching.

3 Definition of terms

These definitions apply to the terms as used in this RP.

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SMPTE RECOMMENDED PRACTICE



MPEG-2 Operating Ranges

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1 Scope

This practice specifies the structure and parameters of the data for interfacing MPEG-2 4:2:2 profile and digital audio in the professional environment.

The purpose of this practice is to facilitate video and audio bitstream interchange between MPEG-2 compliant equipment.

An overview of associated documents is given in annex C.

The combination of this document and those referenced in annex C will assist design and application of MPEG-2-based professional television equipment that facilitates bitstream interchange among different applications and over a wide set of user requirements.

This practice is limited to the video and audio parameters of such a system.

This practice defines the MPEG-2 operating ranges. These ranges constrain characteristics of the MPEG-2 4:2:2 profile to ensure bitstream interchange in the professional environment. These operating ranges are subsets of ISO/MPEG profiles and levels. This practice defines two operating ranges for standard-definition television and three operating ranges for

high-definition television. It also defines a hierarchical relationship among the ranges.

All the MPEG-2 data structures defined in this practice are ISO/IEC 13818-2 4:2:2 profile compliant and as such are decodable by MPEG-2 4:2:2 profile compliant stand-alone decoders at the appropriate level. Inasmuch as the 4:2:2 profile also requires stand-alone decoders to decode main profile structures (4:2:0), existing main profile sources can be accommodated.

2 Normative references

The following standards contain provisions, which, through reference in this text, constitute provisions of this practice. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this practice are encouraged to investigate the possibility of applying the most recent edition of the standards indicated below.

AES3-1992, Digital Audio Engineering — Serial Transmission Format for Two-Channel Linearly Represented Digital Audio Data

ANSI/SMPTE 293M-1996, Television — 720 x 483 Active Line at 59.94-Hz Progressive Scan Production — Digital Representation

SMPTE 274M-1998, Television — 1920 x 1080 Scanning and Analog and Parallel Digital Interfaces for Multiple Picture Rates

SMPTE 296M-2001, Television — 1280 x 720 Progressive Image Sample Structure — Analog and Digital Representation and Analog Interface

SMPTE 302M-1998, Television — Mapping of AES3 Data into MPEG-2 Transport Stream

PROPOSED SMPTE RECOMMENDED PRACTICE RP 218

Specifications for Safe Action and Safe Title Areas for Television Systems

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1 Scope

This practice describes a method for locating the safe action and safe title areas for television systems. This document is intended for application in program production where the Image Aspect Ratio of the acquired essence is the same as that of the display.

The safe areas defined in this Recommended Practice are a reaffirmation of past practice. They do not offer guidance in situations where material generated in one aspect ratio may need to be displayed in a different aspect ratio.

Safe action and safe title areas are located within the television system image production aperture lattice. Safe Action Area specifies an image area within which all significant action must take place. Safe Title Area specifies an image area within which important title information must be confined. These areas ensure visibility of action and title information on the majority of home television receivers.

2 Informative References

2.1 SMPTE RP 167-1995, Center, Aspect Ratio, and Blanking of Video Images

2.2 Document 11A/TEMP/57-E --- Preliminary Draft Revision of Recommendation ITU-R BT.1379: Safe Areas of Wide-Screen 16:9 and Standard 4:3 Aspect Ratio Productions to Achieve a Common Production Format during a Transition Period to Wide-Screen 16:9 Production and Broadcasting.

This draft document is applicable only to active pixel matrices of 704 horizontal, by 576 vertical pixels. The reference information defines four safe action and safe graphics area options that can be used during acquisition and production of 16:9 or 4:3 aspect ratio program material and to result in an optimal display of program essence on both 16:9 and 4:3 aspect ratio television receivers. The four specific safe area applications are as follows:

- a. Acquire 16:9, protect central 14:9 area for action, protect central 4:3 area for graphics.
- b. Acquire 16:9, protect central 4:3 area for action and graphics.
- c. Acquire 16:9, protect action and graphics for 16:9 area.
- d. Acquire 4:3, protect a central 14:9 area within the 4:3 area for action and graphics.

This Recommended Practice, RPxxx-2001, does not comply with the provisions of the above reference, ITU-R 11A/TEMP/57-E. Programs produced using this Recommended Practice, RPxxx-2001, may, therefore, not meet the requirements of some broadcasters.

2.3 ARIB TR-B4, April 1997 --- Safety Zone for 16:9 Aspect Ratio Television System

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