



ATSC

ADVANCED TELEVISION
SYSTEMS COMMITTEE

ATSC Candidate Standard: A/341 Amendment – Full Range

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Advanced Television Systems Committee
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The Advanced Television Systems Committee, Inc., is an international, non-profit organization developing voluntary standards for digital television. The ATSC member organizations represent the broadcast, broadcast equipment, motion picture, consumer electronics, computer, cable, satellite, and semiconductor industries.

Specifically, ATSC is working to coordinate television standards among different communications media focusing on digital television, interactive systems, and broadband multimedia communications. ATSC is also developing digital television implementation strategies and presenting educational seminars on the ATSC standards.

ATSC was formed in 1982 by the member organizations of the Joint Committee on InterSociety Coordination (JCIC): the Electronic Industries Association (EIA), the Institute of Electrical and Electronic Engineers (IEEE), the National Association of Broadcasters (NAB), the National Cable Telecommunications Association (NCTA), and the Society of Motion Picture and Television Engineers (SMPTE). Currently, there are approximately 150 members representing the broadcast, broadcast equipment, motion picture, consumer electronics, computer, cable, satellite, and semiconductor industries.

ATSC Digital TV Standards include digital high definition television (HDTV), standard definition television (SDTV), data broadcasting, multichannel surround-sound audio, and satellite direct-to-home broadcasting.

Note: The user's attention is called to the possibility that compliance with this standard may require use of an invention covered by patent rights. By publication of this standard, no position is taken with respect to the validity of this claim or of any patent rights in connection therewith. One or more patent holders have, however, filed a statement regarding the terms on which such patent holder(s) may be willing to grant a license under these rights to individuals or entities desiring to obtain such a license. Details may be obtained from the ATSC Secretary and the patent holder.

This specification is being put forth as a Candidate Standard by the TG3/S34 Specialist Group. This document is an editorial revision of the Working Draft S34-256r0 dated 10 March 2017. All ATSC members and non-members are encouraged to review and implement this specification and return comments to cs-editor@atsc.org. ATSC Members can also send comments directly to the TG3/S34 Specialist Group. This specification is expected to progress to Proposed Standard after its Candidate Standard period.

Revision History

Version	Date
Candidate Standard approved	9 May 2017
Standard approved	[date]

Cyan highlight indicates a section or item that is under development in TG3/S34. Feedback and comments on these points from implementers is encouraged.

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1. OVERVIEW

This document describes changes to A/341 that, if adopted, would allow the use of full-range signals in the case of HDR video. If approved by the ATSC, A/341-Video-HEVC [*date of current public version*] would be amended according to the edits described herein.

2. REFERENCES

No additional references are required by this amendment.

3. DEFINITION OF TERMS

No additional acronyms, abbreviations or terms are required for this amendment.

4. CHANGES TO A/341

In this section of this document, “[ref]” indicates that a cross reference to a cited referenced document that is listed in A/341 would be inserted.

4.1 Replace a Bullet Item in 6.3.2.2

The sixth bullet item under 6.3.2.2 “PQ transfer characteristics” would be replaced as follows:

Existing bullet item to be replaced:

- ~~Each SPS shall have video_signal_type_present_flag set equal to 1 and video_full_range_flag set equal to 0. This constrains the sample values to be of narrow range. For more information regarding digital representations, see SMPTE ST 2084 [ref], Annex A. Note that “narrow range” is sometimes referred to as “limited range.”~~

New bullet item to be added:

- Each SPS shall have video_signal_type_present_flag set equal to 1 and video_full_range_flag set equal to 0 or 1. This allows the sample values to be of narrow range or full range, respectively. For more information regarding digital representations, see SMPTE ST 2084 [ref], Annex A. Note that “narrow range” is sometimes referred to as “limited range.” Also note that switching between these modes during a transmission could lead to a disturbance in downstream retransmission systems and consumer devices.

4.2 Replace a Bullet Item in 6.3.2.3

The sixth bullet item under 6.3.2.3 “HLG transfer characteristics” would be replaced as follows:

Existing bullet item to be replaced:

- ~~Each SPS shall have video_signal_type_present_flag set equal to 1 and video_full_range_flag set equal to 0. This constrains the sample values to be of narrow range. For more information regarding signal representation, see ITU-R BT.2100 [ref], Table 9. Note that “narrow range” is sometimes referred to as “limited range.”~~

New bullet item and note to be added:

- Each SPS shall have video_signal_type_present_flag set equal to 1 and video_full_range_flag set equal to 0 or 1. This allows the sample values to be of narrow range or full range, respectively. For more information regarding signal representation, see ITU-R BT.2100 [ref], Table 9. Note that “narrow range” is sometimes referred to as “limited range.” Also note that switching between these modes during a transmission could lead to a disturbance in downstream retransmission systems and consumer devices.

Note: Use of full-range with HLG is still under consideration by ATSC S34.

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