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Revision of A/53C: ATSC Digital Television Standard with Amendment 1 and Corrigendum 1

Advanced Television Systems Committee
1750 K Street, N.W.
Suite 1200
Washington, D.C. 20006
www.atsc.org

Revision of A/53C with Amendment 1 and Corrigendum 1

This document contains proposed changes to A/53C Annex D as amended by Amendment 1 and Corrigendum 1 to add the capability to signal the existence and type of enhanced VSB. The modifications are to Amendment 1 to A/53C, Annex D (Enhanced VSB) that was a replacement Annex D of A/53C, which was approved 13 July 2004. Change instructions are given in *italics*. New text is shown in red.

Clarify the usage of the affected symbols

In Figure D5.15 change the second footnote to read:

"**For enhanced data transmission, the last 10 of the reserved symbols before the 12 precode symbols are defined. The other 82 symbols may be defined for each enhancement, as needed.

Reform to allow subsequent definition of specific symbols while retaining the exact same meaning for 8-VSB with no enhancements

In Section 5.5.2.4, change from:

"The last 104 bits shall be reserved space. It is suggested that this be filled with a continuation of the PN63 sequence. In the 8 VSB mode, 92 bits are reserved followed by the 12 symbol definition below."

To:

"In the 8 VSB mode, 92 symbols of the last 104 symbols shall be reserved, and they shall be followed by the 12 symbols defined below. To maintain a longer period with a flat spectrum, it is recommended that these 92 symbols be filled with a continuation of the PN63 sequence when only 8 VSB is present.

When one or more enhanced data transmission methods are used, the previously reserved symbols (including the 12 precode symbols used for 8-VSB and E-8-VSB) shall be numbered from 1 to 104, in the order transmitted. The 12 precode symbols shall be preceded by 10 symbols that shall be used to signal the presence of an enhancement or enhancements, as defined below. The use of some or all of the remaining 82 symbols shall be defined by each enhancement."

Allocate certain symbols for certain purposes and establish the odd/even field level alteration

Add new Section 5.5.2.6:

5.5.2.6 Enhancement Signaling

Symbols 85 through 92 shall be used for indication of specific future enhancements. If no enhancements are present, they may be set equal to –5 on odd data fields (positive PN63 in the preceding structure). If one or more enhancements are present, all symbols except those signaling one or more enhancements shall be set to '-5'. The particular symbol that shall be used to signal each enhancement by setting its value to '+5' is specified hereinafter for each.

Symbols 83 and 84 are reserved for signaling future alternative definitions of symbols numbered 85 through 92 and shall be set to '-5' (positive PN63) unless such alternative definitions are signaled as defined hereinafter.

On even data fields (negative PN63), the polarities of symbols 83 through 92 shall be inverted from those in the odd data field.

Define the values and meaning of symbol 92 to signal the currently approved enhanced VSB method is present

Add new Section 5.8.3:

5.8.3 E-8VSB Enhancement Signaling

On odd data fields (positive PN63), the presence of E-8VSB shall be signaled by setting symbol 92 to level '+5'.

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