ANSI/CTA Standard

Digital Television (DTV) Closed Captioning: 3D Extensions

ANSI/CTA-708.1

(Formerly ANSI/CEA-708.1)

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(Formulated under the cognizance of the CTA **R4.3 Television Data Systems Subcommittee**.)

FOREWORD

This standard was developed by the Consumer Electronics Association (CEA) R4.3 TV Data Committee.

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1 Scope

This standard specifies signaling to allow CEA-708 [1] caption services to be rendered with stereoscopic 3D program content. CEA-708.1 defines the syntax and semantics of the **SetDepth** command. **SetDepth** is a variable-length command[1] delivered in the C3 code set[2] as defined in CEA-708 [1].

1.1 Overview

The principle of stereoscopic 3D TV involves displaying different views of a scene to the left and right eyes. The difference in horizontal position of a given object between the right- and left-eye views is called the disparity. Negative values of disparity cause the object to be perceived in front of the plane of the screen. Positive values of disparity cause the object to be perceived behind the plane of the screen. Zero disparity causes the object to appear at the plane of the screen.

This standard specifies a standardized method for associating a disparity value, or a series of disparity values that change over time, with a given caption window within a given caption service. Disparity values are specified using a horizontal resolution of 1920 units. For HDTV signals delivered at a resolution of 1920 pixels horizontally, one unit of disparity corresponds to one pixel. For HDTV signals delivered at a resolution of 1280 pixels horizontally, one unit of disparity corresponds to 1920/1280 or 1.5 pixels.

1.2 Notation

Notation for binary and hexadecimal numbers and bitstream syntax notation follows the same conventions as are used in CEA-708 [1].

2 General

2.1 Normative References

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

2.1.1 Normative Reference List
[1] CEA-708-D Digital Television (DTV) Closed Captioning, Consumer Electronics Association, August, 2008.

2.1.2 Normative Reference Acquisition
CEA Standards:
- Global Engineering Documents, World Headquarters, 15 Inverness Way East, Englewood, CO USA 80112-5776; Phone 800-854-7179; Fax 303-397-2740; Internet http://global.ihs.com; Email global@ihs.com

2.2 Definitions

For the purposes of this standard, the following definition applies:
disparity — difference between the horizontal positions of a pixel representing the same point in space in the right and left views.

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[1] Variable-length commands are defined in CEA-708 [1] Sec. 7.1.11.2.
[2] Code space organization is defined in CEA-708 [1] Sec. 7.1.