CEA Standard

Standard Definition TV Analog Component Video Interface

CEA-770.2-D R-2012

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(Formulated under the cognizance of the CEA **R4.8 DTV Interface Subcommittee**.)

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FOREWORD

This standard was developed under the auspices of the Consumer Electronics Association (CEA) Technology & Standards R4.8 DTV Interface Subcommittee.

Other scanning structures for analog component interfaces are set forth in separate standards, identified by CEA-770.X notation.

Users of this standard should note that, at some future time, copy protection parameters, methods and/or standards are expected to be established with which copy-protected content traversing the component video interface will be required to comply.

For consumer video products, an optional multi-pin connector may be specified at a later date for inclusion of audio and control signals. At that time, this standard may be revised and given a new revision number and issue date.

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STANDARD DEFINITION TV ANALOG COMPONENT VIDEO INTERFACE

1 Scope

CEA-770.2-D defines the physical characteristics of an interface and the parameters of the signals carried across that interface, using three parallel channels for the interconnection of equipment operating with analog component video signals. CEA-770.2-D includes specifications for: (1) 480i video format defined by 480 active lines, 525 total lines, 2:1 interlaced at 59.94 or 60 fields/second; and, (2) 480p video format defined by 480 active lines, 525 total lines, progressively scanned at 59.94 or 60 frames/second. Both video formats shall be capable of either 4:3 or 16:9 aspect ratios.

Table 1 presents all the permissible scanning systems of CEA-770.2-D. A compliant interface shall implement one or more of these permissible scanning systems. Other scanning structures such as HDTV video formats are outside the scope of CEA-770.2-D (see CEA-770.3-C for HDTV scanning formats).

The signal characteristics are defined by a gamma-corrected component set: a luminance video and two accompanying color-difference signals, see SMPTE Standard 170M Section 5.

The intended uses of this interface should be:

a) For interconnection between Digital Television (DTV) Set top boxes and compatible television receivers or monitors; or
b) For interconnection between DTV compatible Cable TV Set top boxes or Satellite DBS Receiver Decoders, and television receivers or monitors; or
c) To interconnect equipment into complete, self-contained analog component systems of relatively small size.

CEA-770.2-D applies to signals carried on the connectors described in Section 10 and may or may not apply to component signals carried on other types of connectors.

Table 1 Scanning Systems

	Pixels per active line	Active lines per frame	Frame Rate (Hz)	Scanning Format	Total samples per line	Total lines per frame
1	704	480	30	Interlaced	858	525
2	704	480	30/1.001	Interlaced	858	525
3	720	480	30	Interlaced	858	525
4	720	480	30/1.001	Interlaced	858	525
5	704	480	60	Progressive	858	525
6	704	480	60/1.001	Progressive	858	525
7	720	480	60	Progressive	858	525
8	720	480	60/1.001	Progressive	858	525

2 References

2.1 Normative References

The following references contain provisions, which, 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 in Section 2.1.1.

2.1.1 Normative Reference List

ANSI/SMPTE Standard 170M (2004), Standard for Television – Composite Analog Video Signal – NTSC for Studio Applications