

# ANSI/CTA Standard

**A DTV Profile for Uncompressed High Speed  
Digital Interfaces**

**ANSI/CTA-861-G**

(Formerly ANSI/CTA-861-F)

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**Consumer  
Technology  
Association™**

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## Contents

<b>1 Scope.....</b>	<b>10</b>
<b>2 General.....</b>	<b>10</b>
<b>2.1 References .....</b>	<b>10</b>
<b>2.1.1 Normative References.....</b>	<b>10</b>
<b>2.1.1.1 Normative Reference List.....</b>	<b>10</b>
<b>2.1.1.2 Normative Reference Acquisition .....</b>	<b>12</b>
<b>2.1.2 Informative References .....</b>	<b>13</b>
<b>2.1.2.1 Informative Document List.....</b>	<b>13</b>
<b>2.1.2.2 Informative Document Acquisition .....</b>	<b>15</b>
<b>2.2 Definitions .....</b>	<b>16</b>
<b>2.3 Symbols and Abbreviations .....</b>	<b>21</b>
<b>2.4 Compliance Notation.....</b>	<b>23</b>
<b>2.5 Hexadecimal Notation .....</b>	<b>23</b>
<b>2.6 HxV Video Timing Notation .....</b>	<b>23</b>
<b>2.7 Bit Naming Conventions .....</b>	<b>23</b>
<b>2.8 ASCII Codes, Characters &amp; Strings .....</b>	<b>23</b>
<b>3 Overview .....</b>	<b>23</b>
<b>3.1 General Video Format Requirements for Sources .....</b>	<b>24</b>
<b>3.2 General Video Format Requirements for Sinks.....</b>	<b>24</b>
<b>4 Video Formats and Waveform Timings .....</b>	<b>25</b>
<b>4.1 Aspect Ratio.....</b>	<b>39</b>
<b>4.2 Frame Rate Relationships .....</b>	<b>45</b>
<b>5 Color Encoding, Sampling, &amp; Conversion.....</b>	<b>46</b>
<b>5.1 Default Encoding Parameters .....</b>	<b>46</b>
<b>5.2 Color Component Samples .....</b>	<b>46</b>
<b>5.2.1 RGB-to-YC<sub>B</sub>C<sub>R</sub> Conversion Matrices.....</b>	<b>46</b>
<b>5.2.2 Sample Lattice.....</b>	<b>47</b>
<b>5.3 Transfer Characteristic (e.g., gamma correction) .....</b>	<b>48</b>
<b>5.4 Color Coding &amp; Quantization .....</b>	<b>49</b>
<b>6 Auxiliary Information Carried from Source to Sink .....</b>	<b>50</b>
<b>6.1 Vendor-Specific InfoFrames .....</b>	<b>51</b>
<b>6.1.1 Multiple VSIF Handling .....</b>	<b>52</b>
<b>6.2 Auxiliary Video Information (AVI) InfoFrame .....</b>	<b>53</b>
<b>6.3 Format of Version 1 AVI InfoFrame .....</b>	<b>53</b>
<b>6.4 Format of Version 2, 3, &amp; 4 AVI InfoFrames.....</b>	<b>53</b>
<b>6.5 Source Product Description (SPD) InfoFrame .....</b>	<b>71</b>
<b>6.6 Audio InfoFrame .....</b>	<b>73</b>
<b>6.6.1 Audio Identification Information .....</b>	<b>75</b>
<b>6.6.2 Speaker Mapping and Down-mix Information .....</b>	<b>77</b>
<b>6.6.3 Delivery According to the Speaker Mask (Byte 4 = 0xFE) .....</b>	<b>81</b>
<b>6.6.4 Delivery by Channel Index (Byte 4 = 0xFF) .....</b>	<b>82</b>
<b>6.6.5 Additional Audio InfoFrame Information.....</b>	<b>82</b>
<b>6.7 MPEG Source InfoFrame .....</b>	<b>82</b>
<b>6.8 NTSC VBI InfoFrame.....</b>	<b>83</b>
<b>6.9 Dynamic Range and Mastering InfoFrame.....</b>	<b>84</b>
<b>6.9.1 Static Metadata Type 1 .....</b>	<b>85</b>
<b>6.10 Extended InfoFrame .....</b>	<b>87</b>

<b>6.10.1 HDR Dynamic Metadata Extended InfoFrame.....</b>	<b>88</b>
<b>7 EDID Data Structure.....</b>	<b>90</b>
<b>7.1 Use of CTA Extensions .....</b>	<b>90</b>
<b>7.2 Describing Video Formats in EDID .....</b>	<b>91</b>
<b>7.2.1 Use of EDID Detailed Timing Descriptors .....</b>	<b>91</b>
<b>7.2.2 Order of Dual-Aspect Ratio Detailed Timing Descriptors .....</b>	<b>93</b>
<b>7.2.3 Source Requirements and Recommendations.....</b>	<b>93</b>
<b>7.3 CTA Extension Version 1 .....</b>	<b>93</b>
<b>7.4 CTA Extension Version 2 .....</b>	<b>95</b>
<b>7.5 CTA Extension Version 3 .....</b>	<b>95</b>
<b>7.5.1 Video Data Block.....</b>	<b>100</b>
<b>7.5.2 Audio Data Block .....</b>	<b>102</b>
<b>7.5.3 Speaker Allocation Data Block.....</b>	<b>104</b>
<b>7.5.4 Vendor-Specific Data Block.....</b>	<b>104</b>
<b>7.5.5 Colorimetry Data Block .....</b>	<b>105</b>
<b>7.5.6 Video Capability Data Block .....</b>	<b>106</b>
<b>7.5.7 Vendor-Specific Video Data Block.....</b>	<b>108</b>
<b>7.5.8 Vendor-Specific Audio Data Block .....</b>	<b>109</b>
<b>7.5.9 InfoFrame Data Block .....</b>	<b>109</b>
<b>7.5.10 YC<sub>B</sub>C<sub>R</sub> 4:2:0 Video Data Block.....</b>	<b>111</b>
<b>7.5.11 YC<sub>B</sub>C<sub>R</sub> 4:2:0 Capability Map Data Block.....</b>	<b>112</b>
<b>7.5.12 Video Format Preference Data Block .....</b>	<b>113</b>
<b>7.5.13 HDR Static Metadata Data Block.....</b>	<b>114</b>
<b>7.5.14 HDR Dynamic Metadata Data Block.....</b>	<b>115</b>
<b>7.5.15 Room Configuration Data Block .....</b>	<b>117</b>
<b>7.5.16 Speaker Location Data Block .....</b>	<b>118</b>
<b>7.5.16.1 Room Coordinate System.....</b>	<b>119</b>
<b>Annex A Baseline Example EDID and Detailed Timing Descriptors (Informative).....</b>	<b>121</b>
<b>A.1 Background .....</b>	<b>121</b>
<b>A.2 EDID Tables .....</b>	<b>121</b>
<b>A.2.1 EDID Table Construction .....</b>	<b>121</b>
<b>A.2.2 Detailed Explanation of EDID Block Zero .....</b>	<b>122</b>
<b>A.2.3 Block Zero Header Section .....</b>	<b>122</b>
<b>A.2.4 Vendor / Product Identification.....</b>	<b>122</b>
<b>A.2.5 EDID Version.....</b>	<b>123</b>
<b>A.2.6 Basic Display Parameters and Features.....</b>	<b>124</b>
<b>A.2.7 Color Characteristics .....</b>	<b>126</b>
<b>A.2.8 Established Timings .....</b>	<b>127</b>
<b>A.2.9 Standard Timing ID #1 – 8 .....</b>	<b>128</b>
<b>A.2.10 Detailed Timing Descriptor Block.....</b>	<b>128</b>
<b>A.2.10.1 First Detailed Timing Descriptor.....</b>	<b>128</b>
<b>A.2.10.2 Second Detailed Timing Descriptor .....</b>	<b>129</b>
<b>A.2.10.3 First Monitor Descriptor (Monitor Name).....</b>	<b>130</b>
<b>A.2.10.4 Second Monitor Descriptor (Monitor Range Limits).....</b>	<b>131</b>
<b>A.2.11 Extension Flag and Checksum .....</b>	<b>132</b>
<b>A.2.11.1 Block One Details .....</b>	<b>133</b>
<b>A.2.12 Overview of Extensions.....</b>	<b>133</b>
<b>A.2.13 Block One CTA Extension Header.....</b>	<b>134</b>
<b>A.2.14 Third Detailed Timing Descriptor .....</b>	<b>135</b>
<b>A.2.15 Fourth Detailed Timing Descriptor .....</b>	<b>135</b>
<b>A.2.16 Descriptor Defined by Manufacturer.....</b>	<b>136</b>
<b>A.2.17 Monitor Serial Number.....</b>	<b>137</b>
<b>A.2.18 Residual Byte Padding and Check Sum .....</b>	<b>137</b>
<b>A.2.19 Hot Plugging Sequence .....</b>	<b>139</b>

A.2.20 InfoFrame Data Block .....	140
A.3 Complete Example EDID Table (Informative).....	141
A.4 Example EDID Detailed Timing Descriptors.....	148
Annex B Application to DVI 1.0 (Normative) .....	160
B.1 Connector and Cable .....	160
B.2 Digital Content Protection.....	160
Annex C Application to Open LDI (Normative) .....	161
C.1 Open LDI Data and Control Signals .....	161
C.2 Non DC Balanced Mode .....	161
C.3 OpenLDI Cabling Information .....	161
C.3.1 Cable Length.....	162
C.3.2 Number of Signal Conductors .....	162
C.3.3 Wire Gauge .....	162
C.3.4 Conductor Resistance .....	162
C.3.5 Insulation .....	162
C.3.6 Shield Requirement .....	162
C.3.7 Single Twisted Pair Transmission Skew .....	162
C.3.8 Multiple Twisted Pair Transmission Skew.....	162
C.3.9 USB Cable Requirements .....	162
C.3.10 DDC Cable Requirements.....	162
Annex D Application to HDMI (Informative) .....	163
D.1 InfoPackets .....	163
D.2 EDID.....	163
D.3 Audio .....	163
D.4 HDCP .....	163
D.5 Additional Information.....	163
D.6 Example EDID Using Elements of CTA Block Tag Extension (Applicable to HDMI).....	163
D.6.1 First Monitor Descriptor (Monitor Name) and Second Monitor Descriptor (Monitor Range Limits) .....	163
D.6.2 Extension Flag and Checksum .....	164
D.6.3 CTA Extension Header (Block 1) .....	164
D.6.4 CTA Data Block Collection.....	164
D.6.5 Video Data Block .....	164
D.6.6 CTA Audio Block.....	165
D.6.7 Speaker Allocation Block .....	165
D.6.8 Vendor-Specific Block .....	166
D.6.9 Complete CTA-861 Example with Block Tag Extension.....	167
Annex E [Reserved for Future Use] .....	176
Annex F Guidance for Source & Sinks (Informative) .....	177
F.1 Overview.....	177
F.2 Background.....	177
F.3 Guidance for Sources .....	177
F.3.1 Stable Video Format.....	178
F.3.2 Changing Video Format .....	178
F.3.3 Optional User Controlled Setting .....	180
F.3.4 Non-Default Scenarios .....	180
F.3.5 Errors Reading the EDID.....	181
F.3.6 Video Timing Transition (AVMUTE Recommendation).....	182
F.4 Guidance for Sinks.....	182
F.4.1 Valid Read-Only EDID .....	182
F.4.2 Ordering of the Video Formats in the EDID .....	182

F.4.3 Video Information Code (VIC) Transition .....	182
Annex G InfoPacket Framework (Informative) .....	183
Annex H Active Format Description (Informative).....	184
H.1 ATSC Active Format Description .....	184
H.2 DVB Active Format Description.....	186
Annex I [ Intentionally Omitted ].....	188
Annex J [ Intentionally Omitted ] .....	189
Annex K Audio Speaker Placement & Channel Allocation Compatibility (Informative) .....	190
Annex L Video Timing Examples (Informative).....	191
Annex M AFD Bar Data Conversion Examples (Informative) .....	194
M.1 Converting 720p 2.4:1 Letterbox Bar Data.....	194
M.2 Converting 1080i 2.4:1 Letterbox Bar Data .....	194
Annex N Video Format Structure (Informative).....	196
Annex O Sync, Pixel, and Interface-specific Data Clock Relationships (Informative).....	197
Annex P Calculation of MaxCLL and MaxFALL (Normative) .....	198
P.1 MaxCLL .....	198
P.2 MaxFALL .....	198
Annex Q Change in Audio Speaker Names from CTA-861-F to CTA-861-G (Informative) .....	199
Annex R HDR Dynamic Metadata Syntax Type 1 (Normative).....	200
R.1 Scope .....	200
R.2 Definitions.....	200
R.3 Display Management Message .....	200
Annex S HDR Dynamic Metadata Syntax Type 4 (Normative).....	206
S.1 Scope.....	206
S.2 User_data_registered_itu_t_t35 SEI message syntax for ST 2094-40 [58] .....	206
S.3 User_data_registered_itu_t_t35 SEI message semantics for ST 2094-40 [58] .....	208

## Figures

<b>Figure 1. General Progressive Video Format Timing (Negative Sync) .....</b>	<b>34</b>
<b>Figure 2. General Progressive Video Format Timing (Positive Sync) .....</b>	<b>35</b>
<b>Figure 3 General Interlaced Video Format Timing (Negative Sync) .....</b>	<b>36</b>
<b>Figure 4. General Interlaced Video Format Timing (Positive Sync) .....</b>	<b>37</b>
<b>Figure 5 Special Interlaced Video Format Timing (Even Vtotal) .....</b>	<b>38</b>
<b>Figure 6 Speaker Placement .....</b>	<b>77</b>
<b>Figure 7 HDR Dynamic Metadata Transmission Window and Metadata Applicability .....</b>	<b>88</b>
<b>Figure 8 OpenLDI Synchronization .....</b>	<b>161</b>
<b>Figure 9 Video Processing Chain .....</b>	<b>177</b>
<b>Figure 10 Example of Options for Format Conversion .....</b>	<b>179</b>
<b>Figure 11 Multiple Conversions Example .....</b>	<b>180</b>
<b>Figure 12 Active Format Illustration (ATSC) .....</b>	<b>184</b>
<b>Figure 13 Active Format Illustration (DVB) .....</b>	<b>186</b>
<b>Figure 14 General Progressive Example for Video ID Codes 2 &amp; 3 (720x480p @ 60 Hz) .....</b>	<b>191</b>
<b>Figure 15 General Interlace Example for Video ID Code 5 (1920x1080i @ 60 Hz) .....</b>	<b>192</b>
<b>Figure 16 Special Interlace Example for Video ID Code 39 (1920x1080i-1250 Vtotal @ 50 Hz) .....</b>	<b>193</b>
<b>Figure 17 Video Format Structure .....</b>	<b>196</b>
<b>Figure 18 Active Pixels, Unique Active Pixels, Pixel Clock, Data Clock, and Sync Relationships</b>	<b>197</b>

## Tables

<b>Table 1 Video Format Timings—Detailed Timing Information .....</b>	<b>26</b>
<b>Table 2 Video Format Timings—Detailed Sync Information .....</b>	<b>29</b>
<b>Table 3 Video Formats—Video ID Code and Aspect Ratios .....</b>	<b>40</b>
<b>Table 4 Frame Rate Relationships—Base to High Frame Rate VICs .....</b>	<b>45</b>
<b>Table 5 List of InfoFrame Type Codes .....</b>	<b>51</b>
<b>Table 6 Vendor-Specific InfoFrame (Version 1) .....</b>	<b>51</b>
<b>Table 7 Vendor-Specific InfoFrame (Version 2) .....</b>	<b>52</b>
<b>Table 8 Auxiliary Video Information (AVI) InfoFrame Format (Versions 2 &amp; 3) .....</b>	<b>54</b>
<b>Table 9 Auxiliary Video Information (AVI) InfoFrame Format (Version 4) .....</b>	<b>55</b>
<b>Table 10 AVI InfoFrame Data Byte 1 .....</b>	<b>56</b>
<b>Table 11 AVI InfoFrame Data Byte 2 .....</b>	<b>57</b>
<b>Table 12 Common Active Formats .....</b>	<b>58</b>
<b>Table 13 AVI InfoFrame Data Byte 3 .....</b>	<b>59</b>
<b>Table 14 Picture Colorimetry Indicated by the RGB or YC<sub>B</sub>C<sub>R</sub> (Y), Colorimetry (C), Extended Colorimetry (EC) and Additional Colorimetry Extension (ACE) Field Settings .....</b>	<b>60</b>
<b>Table 15 AVI Info Frame IT Contents Type, Data Byte 5 .....</b>	<b>62</b>
<b>Table 16 AVI Info Frame YCC Quantization Range, Data Byte 5 .....</b>	<b>63</b>
<b>Table 17 AVI InfoFrame Pixel Repetition Field, Data Byte 5 .....</b>	<b>64</b>
<b>Table 18 Valid Pixel Repeat Values for Each Video Format Timing .....</b>	<b>66</b>
<b>Table 19 Typical Gaming Format AVI InfoFrame Parameters .....</b>	<b>68</b>
<b>Table 20 Video Format Information (Informative) .....</b>	<b>68</b>
<b>Table 21 CTA-861 Picture Pixel &amp; Line Numbers .....</b>	<b>69</b>
<b>Table 22 Bar Data Pixel Number Normalization Equation .....</b>	<b>69</b>
<b>Table 23 Interlaced Bar Data Line Number Normalization Equations .....</b>	<b>70</b>
<b>Table 24 Progressive Bar Data Line Number Normalization Equation .....</b>	<b>70</b>
<b>Table 25 AVI InfoFrame Data Byte 14 Additional Colorimetry Extension (ACE) Bits .....</b>	<b>71</b>
<b>Table 26 Source Product Description InfoFrame Format .....</b>	<b>72</b>
<b>Table 27 Source Product Description InfoFrame Data Byte 25 .....</b>	<b>73</b>

Table 28 Audio InfoFrame Format When Byte 4 is 0x00 to 0x31.....	74
Table 29 Audio InfoFrame Format When Byte 4 is 0xFE .....	74
Table 30 Audio InfoFrame Format When Byte 4 is 0xFF.....	74
Table 31 Audio InfoFrame Data Byte 1 .....	75
Table 32 Audio InfoFrame Data Byte 2 .....	76
Table 33 Additional Audio Format Code Extension Values (Data Byte 3) .....	76
Table 34 Speaker Placement.....	78
Table 35 Audio InfoFrame Data Byte 4 .....	80
Table 36 Audio InfoFrame Data Byte 5, Level Shift Value .....	80
Table 37 Audio InfoFrame Data Byte 5, Down-mix Inhibit Flag .....	81
Table 38 Audio InfoFrame Data Byte 5, LFE Playback Level Information.....	81
Table 39 MPEG Source InfoFrame format .....	83
Table 40 MPEG Source InfoFrame Data Byte 5.....	83
Table 41 NTSC VBI InfoFrame.....	84
Table 42 Dynamic Range and Mastering InfoFrame.....	84
Table 43 Data Byte 1 - Electro-Optical Transfer Function .....	85
Table 44 Data Byte 2 - Static_Metadata_Descriptor_ID.....	85
Table 45 Static Metadata Descriptor Type 1 .....	86
Table 46 Extended InfoFrame .....	87
Table 47 Extended InfoFrame Type Codes.....	88
Table 48 HDR Dynamic Metadata Extended InfoFrame common structure.....	89
Table 49 Video Timing Code 39 Detailed Timing Descriptor .....	92
Table 50 CTA Extension Version 1 (supplanted by Version 3).....	94
Table 51 CTA Extension Version 2 (deprecated) .....	95
Table 52 CTA Extension Version 3 .....	96
Table 53 General Format of “CTA Data Block Collection” .....	98
Table 54 Data Block Header Byte .....	98
Table 55 CTA Data Block Tag Codes .....	99
Table 56 Extended Tag Format (2 <sup>nd</sup> Byte of Data Block).....	99
Table 57 CTA Data Block Tag Codes .....	99
Table 58 Short Video Descriptor (for codes 1 through 64) .....	100
Table 59 Short Video Descriptor (for codes 65 through 127 and 193 through 255).....	100
Table 60 CTA Short Audio Descriptor for Audio Format Code = 1 (L-PCM) .....	102
Table 61 CTA Short Audio Descriptor for Audio Format Codes 2 to 8 .....	102
Table 62 CTA Short Audio Descriptor for Audio Format Codes 9 to 13.....	102
Table 63 CTA Short Audio Descriptor for Audio Format Code 14 (WMA Pro).....	102
Table 64 CTA Short Audio Descriptor for Audio Coding Extension Type Codes 4 to 6.....	103
Table 65 CTA Short Audio Descriptor for Audio Extension Type Codes 8 and 10 .....	103
Table 66 CTA Short Audio Descriptor for Audio Extension Type Code 11 (MPEG-H 3D Audio)....	103
Table 67 CTA Short Audio Descriptor for Audio Extension Type Code 12 (AC-4).....	104
Table 68 CTA Short Audio Descriptor for Audio Extension Type Code 13 (L-PCM 3D Audio).....	104
Table 69 Speaker Allocation Data Block Payload.....	104
Table 70 Colorimetry Data Block .....	105
Table 71 Data Byte 3 Colorimetry Support Flags .....	105
Table 72 Data Byte 4 Colorimetry Metadata Support Flags.....	106
Table 73 Video Capability Data Block (VCDB) .....	106
Table 74 Video Capability Descriptor Data Byte 3 .....	106
Table 75 Vendor-Specific Video Data Block (VSVDB).....	108
Table 76 Vendor-Specific Audio Data Block (VSADB) .....	109
Table 77 InfoFrame Data Block.....	109
Table 78 InfoFrame Processing Descriptor Header .....	109
Table 79 Short InfoFrame Descriptor Header.....	110
Table 80 Short Vendor-Specific InfoFrame Descriptor Header .....	110
Table 81 YC <sub>B</sub> C <sub>R</sub> 4:2:0 Video Data Block.....	111
Table 82 YC <sub>B</sub> C <sub>R</sub> 4:2:0 Capability Map Data Block .....	112
Table 83 Video Format Preference Data Block .....	113

Table 84 HDR Static Metadata Data Block.....	114
Table 85 Supported Electro-Optical Transfer Function .....	114
Table 86 Supported Static Metadata Descriptor .....	114
Table 87 HDR Dynamic Metadata Data Block.....	115
Table 88 Support Flags for Supported HDR Dynamic Metadata Type 0x0001 .....	116
Table 89 Support Flags for Supported HDR Dynamic Metadata Type 0x0002 .....	116
Table 90 Support Flags for Supported HDR Dynamic Metadata Type 0x0004 .....	116
Table 91 Room Configuration Data Block .....	117
Table 92 Speaker Location Data Block .....	118
Table 93 Speaker Location Descriptor.....	118
Table 94 Coordinate Value Format.....	120
Table 95 Standard Data Lengths .....	122
Table 96 Block Zero Header .....	122
Table 97 Vendor / Product Identification; Showing Manufacturer Week and year.....	123
Table 98 Vendor / Product Identification .....	124
Table 99 Example 0x15, 0x16 EDID Screen Size Data and Certain Display Categories .....	124
Table 100 Feature Support Detail .....	125
Table 101 Basic Display Parameters and Features Block .....	126
Table 102 Binary to Decimal Conversion Example .....	126
Table 103 Color Characteristics Block .....	127
Table 104 Established Timings Block.....	127
Table 105 Standard Timing ID Block.....	128
Table 106 First Detailed Timing Descriptor Block (1920x1080i Example).....	129
Table 107 Second Detailed Timing Descriptor Block (720x480p, 4:3 Example) .....	130
Table 108 First Monitor Descriptor Block (Monitor Name) .....	131
Table 109 Second Monitor Descriptor Block (Monitor Range Limits) .....	132
Table 110 Extension Flag Block .....	133
Table 111 Block One CTA Extension Header.....	134
Table 112 Third Detailed Timing Descriptor Block (720p, 16:9 Example) .....	135
Table 113 Fourth Detailed Timing Descriptor Block (480i, 4:3 Example).....	136
Table 114 Descriptor Defined by Manufacturer Block .....	137
Table 115 Monitor Serial Number Block .....	137
Table 116 Residual Byte Stuffing and Check Sum Block .....	138
Table 117 InfoFrame Data Block (Example) .....	140
Table 118 Complete EDID Example .....	141
Table 119 Example EDID Detailed Timing Descriptor for 1280x720p (60 Hz, 16:9).....	148
Table 120 Example EDID Detailed Timing Descriptor for 1920x1080i (60 Hz, 16:9) .....	149
Table 121 Example EDID Detailed Timing Descriptor for 720x480p (59.94 Hz, 4:3).....	150
Table 122 Example EDID Detailed Timing Descriptor for 720x480p (59.94Hz, 16:9).....	151
Table 123 Example EDID Detailed Timing Descriptor for 720x480i (59.94Hz, 4:3).....	152
Table 124 Example EDID Detailed Timing Descriptor for 720x480i (59.94Hz, 16:9) .....	153
Table 125 Example EDID Detailed Timing Descriptor for 1280x720p (50 Hz, 16:9).....	154
Table 126 Example EDID Detailed Timing Descriptor for 1920x1080i (50 Hz, 16:9) .....	155
Table 127 Example EDID Detailed Timing Descriptor for 720x576p (50 Hz, 4:3).....	156
Table 128 Example EDID Detailed Timing Descriptor for 720x576p (50 Hz, 16:9) .....	157
Table 129 Example EDID Detailed Timing Descriptor for 720x576i (50 Hz, 4:3) .....	158
Table 130 Example EDID Detailed Timing Descriptor for 720x576i (50 Hz, 16:9) .....	159
Table 131 OpenLDI Control Signals .....	161
Table 132 CTA Extension Header (Block 1).....	164
Table 133 Video Data Block .....	165
Table 134 Audio Data Block .....	165
Table 135 Speaker Data Block .....	166
Table 136 Vendor-Specific Data Block.....	166
Table 137 CTA-861 EDID Example with Block Tag Extension.....	167
Table 138 Illustrated ATSC AFD Coding.....	185
Table 139 Illustrated DVB AFD Coding .....	187

<b>Table 140 SMPTE/CTA Audio Channel Description &amp; Abbreviation Comparison.....</b>	<b>190</b>
<b>Table 141 SMPTE/CTA Audio Channel Assignment Comparison.....</b>	<b>190</b>
<b>Table 142 Pixel Clock Frequency Modification .....</b>	<b>197</b>
<b>Table 143 Speaker Label Changes from CTA-861-F to CTA-861-G.....</b>	<b>199</b>
<b>Table 144 DM_data() .....</b>	<b>201</b>
<b>Table 145 ext_dm_data_block() .....</b>	<b>202</b>
<b>Table 146 ext_dm_data_block_payload() .....</b>	<b>202</b>
<b>Table 147 Definition of extended metadata block type .....</b>	<b>203</b>
<b>Table 148 user_data_registered_itu_t_t35 .....</b>	<b>208</b>
<b>Table 149 Table Interpretation of the itu_t_t35_terminal_provider_oriented_code .....</b>	<b>208</b>

## FOREWORD

This standard was developed under the auspices of the Consumer Electronics Association (CTA) R4.8 DTV Interface Subcommittee.

CTA-861-G supersedes CTA-861-F and incorporates the Erratum issued in April 2016, as well as the CTA-861.2 Advanced Audio Extensions of August 2015 and CTA-861.3-A HDR Static Metadata Extensions of August 2016.

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## A DTV Profile for Uncompressed High Speed Digital Interfaces

### 1 Scope

CTA-861 establishes protocols, requirements, and recommendations for the utilization of uncompressed digital interfaces by consumer electronics devices such as Digital Televisions (DTVs), digital cable, satellite or terrestrial set-top boxes (STBs), and related peripheral devices including, but not limited to DVD players/recorders, and other related Sources or Sinks.

CTA-861 is applicable to a variety of standard DTV-related high-speed digital physical interfaces - such as Digital Visual Interface (DVI) 1.0 [4], Open LVDS Display Interface (LDI) [8], and High-Definition Multimedia Interface (HDMI) [71] specifications. Protocols, requirements, and recommendations that are defined include Video Formats and waveforms; colorimetry and quantization; transport of compressed and uncompressed, as well as Linear Pulse Code Modulation (L-PCM), audio; carriage of auxiliary data; and implementations of the Video Electronics Standards Association (VESA) *Enhanced Extended Display Identification Data Standard* (E-EDID) [9], which is used by Sinks to declare display capabilities and characteristics.

CTA-861 adopters are strongly encouraged to implement High-bandwidth Digital Content Protection (HDCP) [3] content protection, defined by the Digital Content Protection, LLC (DCP) method, in order to be compatible with digital cable STBs as authorized by 47 C.F.R. § 76.602 [69] and 47 C.F.R. §76.640 [70]. HDCP [3] permits viewing of high-value content that may be available from other video Sources in a home network.

### 2 General

#### 2.1 References

CTA-861 includes mechanisms that allow a digital video Source (such as a cable, satellite or terrestrial STB, digital VCR, or DVD player) to supply displayable, baseband, digital video to High Definition Television (HDTV) devices, as well as peripheral devices such as repeaters, switchers, and recorders, as defined in *CTA Expands Definitions for Digital Television Products* [64].

##### 2.1.1 Normative References

The following standards contain provisions that, through reference in this text, constitute normative provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision. Users of this Standard are cautioned that a newer edition might or might not be compatible.

###### 2.1.1.1 Normative Reference List

1. SMPTE ST 170:2004 (Archived 2010) Television – Composite Analog Video Signal – NTSC for Studio Applications
2. SMPTE ST 274:2008 Television – 1920 x 1080 Image Sample Structure, Digital Representation and Digital Timing Reference Sequences for Multiple Picture Rates
3. DCP, L.L.C., High-bandwidth Digital Content Protection System, Revision 1.1, June 9, 2003
4. DDWG, Digital Visual Interface, Revision 1.0, April 2, 1999
5. IEC 61966-2-4: Multimedia systems and equipment - Colour measurement and management - Part 2-4: Colour management - Extended-gamut YCC colour space for video applications, January 2006
6. Recommendation ITU-R BT.601-5, Studio Encoding parameters of Digital Television for standard 4:3 and wide-screen 16:9 aspect ratios, 1995
7. Recommendation ITU-R BT.709-5, Parameter Values for the HDTV standards for production and International Programme Exchange, 2002 – Part 2: HDTV system with square pixel common image format – 3: Signal format
8. Open LVDS Display Interface (Open LDI) Specification, Version 0.95, May 13, 1999
9. VESA E-EDID™ Standard, VESA Enhanced Extended Display Identification Data Standard, Release A, Revision 1, February 9, 2000 --- Defines EDID Structure Version 1, Revision 3
10. VESA DDC/CI Standard, VESA Display Data Channel Command Interface (DDC/CI) Standard, Version 1.1, October 29, 2004
11. ATSC Standard A/52:2012: Digital Audio Compression (AC-3, E-AC-3), December 17, 2012