

ISO/IEC 23008-8:2018 (E)

Information technology — High efficiency coding and media delivery in heterogeneous environments — Part 8: Conformance specification for HEVC

Contents

	Foreword
1	Scope
2	Normative references
3	Terms, definitions, abbreviated terms and conventions
4	Conformance testing for Rec. ITU-T H.265 ISO/IEC 23008-2
4.1	General
4.2	Bitstream conformance
4.3	Decoder conformance
4.4	Procedure to test bitstreams
4.5	Procedure to test decoder conformance
4.5.1	Conformance bitstreams
4.5.2	Contents of the bitstream file
4.5.3	Requirements on output of the decoding process and timing
4.5.4	Recommendations (informative)
4.5.5	Static tests for output order conformance
4.5.6	Dynamic tests for output timing conformance
4.5.7	Decoder conformance test of a particular profile, tier, and level
4.6	Specification of the test bitstreams
4.6.1	General
4.6.2	Test bitstreams — Block structure
4.6.2.1	Test bitstreams #STRUCT_A
4.6.2.2	Test bitstreams #STRUCT_B
4.6.3	Test bitstreams — Intra coding
4.6.3.1	Test bitstreams #IPRED_A, #IPRED_B, and #IPRED_C
4.6.3.2	Test bitstreams #CIP_A
4.6.3.3	Test bitstreams #CIP_B
4.6.3.4	Test bitstreams #CIP_C
4.6.4	Test bitstreams — Inter frame coding
4.6.4.1	Test bitstreams #MERGE_A
4.6.4.2	Test bitstreams #MERGE_B
4.6.4.3	Test bitstreams #MERGE_C
4.6.4.4	Test bitstreams #MERGE_D
4.6.4.5	Test bitstreams #MERGE_E
4.6.4.6	Test bitstreams #MERGE_F
4.6.4.7	Test bitstreams #MERGE_G
4.6.4.8	Test bitstreams #PMERGE_A
4.6.4.9	Test bitstreams #PMERGE_B
4.6.4.10	Test bitstreams #PMERGE_C
4.6.4.11	Test bitstreams #PMERGE_D
4.6.4.12	Test bitstreams #PMERGE_E
4.6.4.13	Test bitstreams #AMVP_A
4.6.4.14	Test bitstreams #AMVP_B
4.6.4.15	Test bitstreams #AMVP_C
4.6.4.16	Test bitstreams #TMVP_A
4.6.4.17	Test bitstreams #MVDL1ZERO_A
4.6.4.18	Test bitstreams #MVCLIP_A
4.6.4.19	Test bitstreams #MVEDGE_A
4.6.4.20	Test bitstreams #WP_A
4.6.4.21	Test bitstreams #WP_B

4.6.5 Test bitstreams — Transform and quantization
 4.6.5.1 Test bitstreams #RQT_A
 4.6.5.2 Test bitstreams #RQT_B
 4.6.5.3 Test bitstreams #RQT_C
 4.6.5.4 Test bitstreams #RQT_D
 4.6.5.5 Test bitstreams #RQT_E
 4.6.5.6 Test bitstreams #RQT_F
 4.6.5.7 Test bitstreams #RQT_G
 4.6.5.8 Test bitstreams #TUSIZE_A
 4.6.5.9 Test bitstreams #DELTAQP_A
 4.6.5.10 Test bitstreams #DELTAQP_B
 4.6.5.11 Test bitstreams #DELTAQP_C
 4.6.5.12 Test bitstreams #INITQP_A
 4.6.5.13 Test bitstreams #SLIST_A
 4.6.5.14 Test bitstreams #SLIST_B
 4.6.5.15 Test bitstreams #SLIST_C
 4.6.5.16 Test bitstreams #SLIST_D
 4.6.6 Test bitstreams — Deblocking filter
 4.6.6.1 Test bitstreams #DBLK_A
 4.6.6.2 Test bitstreams #DBLK_B
 4.6.6.3 Test bitstreams #DBLK_C
 4.6.6.4 Test bitstreams #DBLK_D
 4.6.6.5 Test bitstreams #DBLK_E
 4.6.6.6 Test bitstreams #DBLK_F
 4.6.6.7 Test bitstreams #DBLK_G
 4.6.7 Test bitstreams — Sample adaptive offset
 4.6.7.1 Test bitstreams #SAO_A
 4.6.7.2 Test bitstreams #SAO_B
 4.6.7.3 Test bitstreams #SAO_C
 4.6.7.4 Test bitstreams #SAO_D
 4.6.7.5 Test bitstreams #SAO_E
 4.6.7.6 Test bitstreams #SAO_F
 4.6.7.7 Test bitstreams #SAO_G
 4.6.7.8 Test bitstreams #SAO_H
 4.6.7.9 Test bitstreams # SAODBLK_A
 4.6.7.10 Test bitstreams # SAODBLK_B
 4.6.8 Test bitstreams — Entropy coding
 4.6.8.1 Test bitstreams #MAXBINS_A
 4.6.8.2 Test bitstreams #MAXBINS_B
 4.6.8.3 Test bitstreams #MAXBINS_C
 4.6.8.4 Test bitstreams #CAINIT_A
 4.6.8.5 Test bitstreams #CAINIT_B
 4.6.8.6 Test bitstreams #CAINIT_C
 4.6.8.7 Test bitstreams #CAINIT_D
 4.6.8.8 Test bitstreams #CAINIT_E
 4.6.8.9 Test bitstreams #CAINIT_F
 4.6.8.10 Test bitstreams #CAINIT_G
 4.6.8.11 Test bitstreams #CAINIT_H
 4.6.8.12 Test bitstreams #SDH_A
 4.6.9 Test bitstreams — Temporal scalability
 4.6.9.1 Test bitstreams #TSCL_A
 4.6.9.2 Test bitstreams #TSCL_B
 4.6.10 Test bitstreams — Parallel processing tools
 4.6.10.1 Test bitstreams #TILES_A
 4.6.10.2 Test bitstreams #TILES_B
 4.6.10.3 Test bitstreams #WPP_A
 4.6.10.4 Test bitstreams #WPP_B
 4.6.10.5 Test bitstreams #WPP_C
 4.6.10.6 Test bitstreams #WPP_D
 4.6.10.7 Test bitstreams #WPP_E
 4.6.10.8 Test bitstreams #WPP_F
 4.6.10.9 Test bitstreams #ENTP_A
 4.6.10.10 Test bitstreams #ENTP_B
 4.6.10.11 Test bitstreams #ENTP_C

4.6.11 Test bitstreams — Other coding tools
 4.6.11.1 Test bitstreams #IPCM_A
 4.6.11.2 Test bitstreams #IPCM_B
 4.6.11.3 Test bitstreams #IPCM_C
 4.6.11.4 Test bitstreams #IPCM_D
 4.6.11.5 Test bitstreams #IPCM_E
 4.6.11.6 Test bitstreams #TS_A
 4.6.11.7 Test bitstreams #AMP_A, #AMP_D, and #AMP_E
 4.6.11.8 Test bitstreams #AMP_B
 4.6.11.9 Test bitstreams #LS_A
 4.6.11.10 Test bitstreams #LS_B
 4.6.12 Test bitstreams — High level syntax
 4.6.12.1 Test bitstreams #NUT_A
 4.6.12.2 Test bitstreams #FILLER_A
 4.6.12.3 Test bitstreams #VPSID_A
 4.6.12.4 Test bitstreams #PS_B
 4.6.12.5 Test bitstreams #VPSSPSPS_A
 4.6.12.6 Test bitstreams #PPS_A
 4.6.12.7 Test bitstreams #SLPPLP_A
 4.6.12.8 Test bitstreams #OPFLAG_A
 4.6.12.9 Test bitstreams #OPFLAG_B
 4.6.12.10 Test bitstreams #OPFLAG_C
 4.6.12.11 Test bitstreams #NoOutPrior_A
 4.6.12.12 Test bitstreams #NoOutPrior_B
 4.6.12.13 Test bitstreams #PICSIZE_A
 4.6.12.14 Test bitstreams #PICSIZE_B
 4.6.12.15 Test bitstreams #PICSIZE_C
 4.6.12.16 Test bitstreams #PICSIZE_D
 4.6.12.17 Test bitstreams #POC_A
 4.6.12.18 Test bitstreams #RAP_A
 4.6.12.19 Test bitstreams #RAP_B
 4.6.12.20 Test bitstreams #RPS_A
 4.6.12.21 Test bitstreams #RPS_B
 4.6.12.22 Test bitstreams #RPS_C
 4.6.12.23 Test bitstreams #RPS_D
 4.6.12.24 Test bitstreams #RPS_E
 4.6.12.25 Test bitstreams #RPS_F
 4.6.12.26 Test bitstreams #LTRPSPS_A
 4.6.12.27 Test bitstreams #RPLM_A
 4.6.12.28 Test bitstreams #RPLM_B
 4.6.12.29 Test bitstreams #SLICES_A
 4.6.12.30 Test bitstreams #DSLICE_A
 4.6.12.31 Test bitstreams #DSLICE_B
 4.6.12.32 Test bitstreams #DSLICE_C
 4.6.12.33 Test bitstreams #BUMPING_A
 4.6.12.34 Test bitstreams #CONFWIN_A
 4.6.12.35 Test bitstreams #HRD_A
 4.6.12.36 Test bitstreams #EXT_A
 4.6.13 Test bitstreams — 10 bit
 4.6.13.1 Test bitstreams #WP_A_MAIN10
 4.6.13.2 Test bitstreams #WP_B_MAIN10
 4.6.13.3 Test bitstreams #TSUNEQBD_A_MAIN10
 4.6.13.4 Test bitstreams #DBLK_A_MAIN10
 4.6.13.5 Test bitstreams #INITQP_B_MAIN10
 4.6.13.6 Test bitstreams #WPP_A_MAIN10
 4.6.13.7 Test bitstreams #WPP_B_MAIN10
 4.6.13.8 Test bitstreams #WPP_C_MAIN10
 4.6.13.9 Test bitstreams #WPP_D_MAIN10
 4.6.13.10 Test bitstreams #WPP_E_MAIN10
 4.6.13.11 Test bitstreams #WPP_F_MAIN10
 4.6.14 Test bitstreams — MV-HEVC
 4.6.14.1 Test bitstream #MVHEVCS-A
 4.6.14.2 Test bitstream #MVHEVCS-B
 4.6.14.3 Test bitstream #MVHEVCS-C

4.6.14.4 Test bitstream #MVHEVCS-D
 4.6.14.5 Test bitstream #MVHEVCS-E
 4.6.14.6 Test bitstream #MVHEVCS-F
 4.6.14.7 Test bitstream #MVHEVCS-G
 4.6.14.8 Test bitstream #MVHEVCS-H
 4.6.14.9 Test bitstream #MVHEVCS-I
 4.6.15 Test bitstreams — 3D-HEVC
 4.6.15.1 Test bitstreams — Texture tools
 4.6.15.1.1 General
 4.6.15.1.2 Test bitstream #3DHC_T_A
 4.6.15.1.3 Test bitstream #3DHC_T_B
 4.6.15.1.4 Test bitstream #3DHC_T_C
 4.6.15.1.5 Test bitstream #3DHC_T_D
 4.6.15.1.6 Test bitstream #3DHC_T_E
 4.6.15.2 Test bitstreams — Depth tools
 4.6.15.2.1 Test bitstream #3DHC_D1_A
 4.6.15.2.2 Test bitstream #3DHC_D1_B
 4.6.15.2.3 Test bitstream #3DHC_D1_C
 4.6.15.2.4 Test bitstream #3DHC_D1_D
 4.6.15.2.5 Test bitstream #3DHC_D1_E
 4.6.15.2.6 Test bitstream #3DHC_D1_F
 4.6.15.2.7 Test bitstream #3DHC_D1_G
 4.6.15.2.8 Test bitstream #3DHC_D1_H
 4.6.15.2.9 Test bitstream #3DHC_D2_A
 4.6.15.2.10 Test bitstream #3DHC_D2_B
 4.6.15.3 Test bitstreams — Depth dependent texture tools
 4.6.15.3.1 General
 4.6.15.3.2 Test bitstream #3DHC_DT_A
 4.6.15.3.3 Test bitstream #3DHC_DT_B
 4.6.15.3.4 Test bitstream #3DHC_DT_C
 4.6.15.3.5 Test bitstream #3DHC_DT_D
 4.6.15.4 Test bitstreams — Texture dependent depth tools
 4.6.15.4.1 General
 4.6.15.4.2 Test bitstream #3DHC_TD_A
 4.6.15.4.3 Test bitstream #3DHC_TD_B
 4.6.15.4.4 Test bitstream #3DHC_TD_C
 4.6.15.4.5 Test bitstream #3DHC_TD_D
 4.6.15.4.6 Test bitstream #3DHC_TD_E
 4.6.15.5 Test bitstreams — Other combined cases
 4.6.15.5.1 Test bitstream #3DHC_C_A
 4.6.15.5.2 Test bitstream #3DHC_C_B
 4.6.15.5.3 Test bitstream #3DHC_C_C
 4.6.16 Test bitstreams — Format Range Extensions
 4.6.16.1 Test bitstreams #ADJUST_IPRED_ANGLE_A_RExt
 4.6.16.2 Test bitstreams #CCP_8bit_RExt
 4.6.16.3 Test bitstreams #CCP_10bit_RExt
 4.6.16.4 Test bitstreams #CCP_12bit_RExt
 4.6.16.5 Test bitstreams #Bitdepth_A_RExt
 4.6.16.6 Test bitstreams #Bitdepth_B_RExt
 4.6.16.7 Test bitstreams #QMATRIX_A_RExt
 4.6.16.8 Test bitstreams #SAO_A_RExt
 4.6.16.9 Test bitstreams #PERSIST_PARAM_A_RExt
 4.6.16.10 Test bitstreams #HIGH_TP_8BIT_RExt
 4.6.16.11 Test bitstreams #HIGH_TP_10BIT_RExt
 4.6.16.12 Test bitstreams #HIGH_TP_12BIT_RExt
 4.6.16.13 Test bitstreams #HIGH_TP_16BIT_RExt
 4.6.16.14 Test bitstreams #HIGH_TP_8BIT_RExt
 4.6.16.15 Test bitstreams #HIGH_TP_10BIT_RExt
 4.6.16.16 Test bitstreams #HIGH_TP_12BIT_RExt
 4.6.16.17 Test bitstreams #HIGH_TP_16BIT_RExt
 4.6.16.18 Test bitstreams #IPCM_A_RExt
 4.6.16.19 Test bitstreams #IPCM_B_RExt
 4.6.16.20 Test bitstreams #TSCTX_8bit_I_RExt
 4.6.16.21 Test bitstreams #TSCTX_8bit_RExt

4.6.16.22 Test bitstreams #TSCTX_10bit_I_Ext
 4.6.16.23 Test bitstreams #TSCTX_10bit_Ext
 4.6.16.24 Test bitstreams #TSCTX_12bit_I_Ext
 4.6.16.25 Test bitstreams #TSCTX_12bit_Ext
 4.6.16.26 Test bitstreams #ExplictRdpcm_A_Ext
 4.6.16.27 Test bitstreams #ExplictRdpcm_B_Ext
 4.6.16.28 Test bitstreams #Main_422_10_A_Ext
 4.6.16.29 Test bitstreams #Main_422_10_B_Ext
 4.6.16.30 Test bitstreams #GENERAL_8b_400_Ext
 4.6.16.31 Test bitstreams #GENERAL_8b_420_Ext
 4.6.16.32 Test bitstreams #GENERAL_8b_444_Ext
 4.6.16.33 Test bitstreams #GENERAL_10b_420_Ext
 4.6.16.34 Test bitstreams #GENERAL_10b_422_Ext
 4.6.16.35 Test bitstreams #GENERAL_10b_444_Ext
 4.6.16.36 Test bitstreams #GENERAL_12b_400_Ext
 4.6.16.37 Test bitstreams #GENERAL_12b_420_Ext
 4.6.16.38 Test bitstreams #GENERAL_12b_422_Ext
 4.6.16.39 Test bitstreams #GENERAL_12b_444_Ext
 4.6.16.40 Test bitstreams #GENERAL_16b_400_Ext
 4.6.16.41 Test bitstreams #GENERAL_16b_444_Ext
 4.6.16.42 Test bitstreams #GENERAL_16b_444_HighThroughput_Ext
 4.6.16.43 Test bitstreams #WAVETILES_Ext
 4.6.17 Test bitstreams — Scalable extensions
 4.6.17.1 Test bitstreams — Layer ID
 4.6.17.1.1 Test bitstream #LAYERID_A_NOKIA
 4.6.17.1.2 Test bitstream #MVD_A_IDCC
 4.6.17.1.3 Test bitstream #MVD_A_NOKIA
 4.6.17.1.4 Test bitstream #MAXTID_A_ETRI
 4.6.17.1.5 Test bitstream #MAXTID_B_ETRI
 4.6.17.1.6 Test bitstream #MAXTID_C_ETRI
 4.6.17.1.7 Test bitstream #INACTIVE_A_QCOM
 4.6.17.1.8 Test bitstream #REFLAYER_A_VIDYO
 4.6.17.1.9 Test bitstream #REFLAYER_B_VIDYO
 4.6.17.1.10 Test bitstream #REFLAYER_C_VIDYO
 4.6.17.1.11 Test bitstream #REFLAYER_D_VIDYO
 4.6.17.2 Test bitstreams — VPS syntax
 4.6.17.2.1 Test bitstream #SPLITFLAG_A_HHI
 4.6.17.2.2 Test bitstream #VUI_A_QUALCOMM
 4.6.17.2.3 Test bitstream #VUI_B_QUALCOMM
 4.6.17.2.4 Test bitstream #VUI_C_QUALCOMM
 4.6.17.2.5 Test bitstream #NONVUI_A_QUALCOMM
 4.6.17.2.6 Test bitstream #NONVUI_B_QUALCOMM
 4.6.17.2.7 Test bitstream #NONVUI_C_QUALCOMM
 4.6.17.3 Test bitstreams — DPB
 4.6.17.3.1 Test bitstream #DPB_A_VIDYO
 4.6.17.3.2 Test bitstream #DPB_B_VIDYO
 4.6.17.4 Test bitstreams — Picture resolution
 4.6.17.4.1 Test bitstream #SRATIOS_A_SAMSUNG
 4.6.17.4.2 Test bitstream #SRATIOS_B_SAMSUNG
 4.6.17.4.3 Test bitstream #SNR_A_IDCC
 4.6.17.4.4 Test bitstream #SNR_B_IDCC
 4.6.17.4.5 Test bitstream #SNR_C_IDCC
 4.6.17.4.6 Test bitstream #REPFMT_A_VIDYO
 4.6.17.4.7 Test bitstream #REPFMT_B_VIDYO
 4.6.17.4.8 Test bitstream #REPFMT_C_VIDYO
 4.6.17.4.9 Test bitstream #RESCHANGE_A_VIDYO
 4.6.17.4.10 Test bitstream #ADAPTRES_A_ERICSSON
 4.6.17.4.11 Test bitstream #SPSREPFMT_A_SONY
 4.6.17.4.12 Test bitstream #CONFCROP_A_VIDYO
 4.6.17.4.13 Test bitstream #CONFCROP_B_VIDYO
 4.6.17.4.14 Test bitstream #CONFCROP_C_VIDYO
 4.6.17.5 Test bitstreams — Offsets and phase adjustments
 4.6.17.5.1 Test bitstream #SCREFOFF_A_QCOM
 4.6.17.5.2 Test bitstream #REFREGOFF_A_SHARP

- 4.6.17.5.3 Test bitstream #RESPHASE_A_SAMSUNG
- 4.6.17.5.4 Test bitstream #OLS_A_NOKIA
- 4.6.17.5.5 Test bitstream #OLS_B_NOKIA
- 4.6.17.5.6 Test bitstream #OLS_C_NOKIA
- 4.6.17.5.7 Test bitstream #DISFLAG_A_QUALCOMM
- 4.6.17.6 Test bitstreams — Scaling lists
- 4.6.17.6.1 Test bitstream PPSSLIST_A_SONY
- 4.6.17.6.2 Test bitstream SPSSLIST_A_SONY
- 4.6.17.7 Test bitstreams — Colour gamut scalability
- 4.6.17.7.1 Test bitstream #CGS_A_TECHNICOLOR
- 4.6.17.7.2 Test bitstream #CGS_B_TECHNICOLOR
- 4.6.17.7.3 Test bitstream #CGS_C_TECHNICOLOR
- 4.6.17.7.4 Test bitstream #CGS_D_TECHNICOLOR
- 4.6.17.7.5 Test bitstream #CGS_E_TECHNICOLOR
- 4.6.17.7.6 Test bitstream #CGS_F_TECHNICOLOR
- 4.6.17.7.7 Test bitstream #CGS_G_TECHNICOLOR
- 4.6.17.7.8 Test bitstream #CGS_H_TECHNICOLOR
- 4.6.17.7.9 Test bitstream #CGS_I_TECHNICOLOR
- 4.6.17.8 Test bitstreams — Additional extensibility
- 4.6.17.8.1 Test bitstream #PSEXT_A_VIDYO
- 4.6.17.8.2 Test bitstream #LAYERID63_A_HHI
- 4.6.17.9 Test bitstreams — Picture order count
- 4.6.17.9.1 Test bitstream #POC_A_ERICSSON
- 4.6.17.9.2 Test bitstream #POC_B_ERICSSON
- 4.6.17.10 Test bitstreams — Base layer type
- 4.6.17.10.1 Test bitstream #HYBRID_A_QUALCOMM
- 4.6.17.10.2 Test bitstream #INBLD_A_NOKIA
- 4.6.17.10.3 Test bitstream #SIM_A_IDCC
- 4.6.17.10.4 Test bitstream #SIM_B_IDCC
- 4.6.17.11 Test bitstreams — Signalling of level information
- 4.6.17.11.1 Test bitstream #SLLEV_A_VIDYO
- 4.6.17.12 Test bitstreams — Auxiliary pictures
- 4.6.17.12.1 Test bitstream #ALPHA_A_BBC
- 4.6.17.12.2 Test bitstream #DEPTH_A_NOKIA
- 4.6.17.13 Test bitstreams — Layers
- 4.6.17.13.1 Test bitstream #8LAYERS_QUALCOMM
- 4.6.17.14 Test bitstreams — Scalable range extensions
- 4.6.17.14.1 Test bitstream #SREXT_A_FUJITSU
- 4.6.17.14.2 Test bitstream #SREXT_B_FUJITSU
- 4.6.17.14.3 Test bitstream #SREXT_C_FUJITSU
- 4.6.17.14.4 Test bitstream #SREXT_D_FUJITSU
- 4.6.17.14.5 Test bitstream #SREXT_E_FUJITSU
- 4.6.17.14.6 Test bitstream #SREXT_F_FUJITSU
- 4.7 Normative conformance test suites for Rec. ITU-T H.265 | ISO/IEC 23008#2
- 4.7.1 Bitstreams for Main, Main Still Picture, and Main 10 profiles
- 4.7.2 Bitstreams for Multiview Main profile
- 4.7.3 Bitstreams for 3D Main profile
- 4.7.4 Bitstreams for Monochrome 12, Monochrome 16, Main 12, Main 4:2:2 10, Main 4:2:2 12, Main 4:4:4, Main 4:4:4 10, Main 4:4:4 12, Main Intra, Main 10 Intra, Main 12 Intra, Main 4:2:2 10 Intra, Main 4:2:2 12 Intra, Main 4:4:4 Intra, Main 4:4:4 10 Intra, Main 4:4:4 12 Intra, Main 4:4:4 16 Intra, Main 4:4:4 Still Picture and Main 4:4:4 16 Still Picture profiles
- 4.7.5 Bitstreams for Scalable Main and Scalable Main 10 profiles
- 4.7.6 Bitstreams for Scalable Monochrome, Scalable Monochrome 12, Scalable Monochrome 16, and Scalable Main 4:4:4 profiles