



IPMX HEVC 4:4:4 Profile Mode Requirements



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1. Purpose

Certain IPMX workflows, including desktop capture/return paths, LED video-wall processors, HDR graphics engines, need full-fidelity 4:4:4 chroma sampling. AIMS wishes to label and certify this capability as an optional “Profile-Mode” layered on top of the baseline IPMX HEVC profile.

Note: Market data show that silicon offering 4:4:4 coding almost always implements both 8-bit and 10-bit. Devices supporting only 8-bit but not 10-bit are practically nonexistent. Therefore, AIMS proposes a single test bundle in which receivers must handle 8 and 10-bit, while transmitters may implement either depth.

AIMS requests that the VSF IPMX Working Group draft the formal test plan and normative language needed to add this capability.

2. Relationship to the Baseline Profile

- Devices shall already conform to the baseline IPMX HEVC profile (Main / Main10, 4:2:0) before claiming any 4:4:4 mode.
- Transport, timing, no-re-ordering, and traffic-shape rules are unchanged.

3. Normative References

- VSF TR-10-07: *IPMX: Compressed Video*
- VSF TR-10-11: *IPMX Requirements for Constant-Bit-Rate Video*

4. Minimum Requirements for the 4:4:4 10-bit Mode

Element	Requirement
Codec Profile & Bit-Depth	<i>Main 4:4:4</i> profile (8-bit, Profile IDC 4) and <i>Main 4:4:4 10</i> profile (10-bit, IDC 5), each signalled with <code>chroma_format_idc = 3</code> .
Receivers	A claiming receiver shall decode both <i>Main 4:4:4</i> 8-bit and <i>Main 4:4:4 10</i>-bit streams whose other parameters satisfy the baseline profile. Receivers must support YCbCr (<code>separate_colour_plane_flag=0</code>). RGB or other color planes are not required.
Transmitters	A claiming transmitter shall produce at least one of the two profiles (8-bit or 10-bit). If it supports both, it shall select the depth requested via IS-11 negotiation. Transmitters must support YCbCr (<code>separate_colour_plane_flag=0</code>). RGB or other color planes are not required.
SDP Signalling	Proper signaling for the codec mode, including subsampling, color model, etc.
NMOS / IS-04	Devices shall advertise chroma subsampling and the supported <code>bit_depth</code> values (8, 10) in their capability resources.
Fallback behaviour	Devices that do not claim 4:4:4 modes shall ignore or politely refuse 4:4:4 offers while remaining fully interoperable with baseline HEVC streams.

Appendix A: Change Log

Version	Date	Summary of Changes
1.0	June, 2026	Initial Release