

4K Ultra High-Definition TV

A display system may be referred to as 4K Ultra High-Definition if it meets the following minimum performance attributes:

Display Resolution – Has at least 8 million active pixels, with at least 3840 horizontally and at least 2160 vertically. Physical pixels shall be individually addressable such that the horizontal and vertical resolution above can be demonstrated over the full range of colors provided by the display.

Aspect Ratio – The width to height ratio of the display's native resolution is 16:9 or wider.

Upconversion – The display is capable of upscaling HD video and displaying it at 4K Ultra High-Definition display resolution.

Digital Input – Has one or more HDMI inputs supporting at least 3840x2160 native content resolution at 24p, 30p, & 60p frames per second. At least one of the 3840x2160 HDMI inputs shall support HDCP v2.2 or equivalent content protection.

Colorimetry – Processes 2160p video inputs encoded according to ITU-R BT.709 color space, and may support wider colorimetry standards.

Bit Depth – Has a minimum bit depth of 8 bits.

Connected 4K Ultra High-Definition TV

A display system may be referred to as Connected 4K Ultra High-Definition (or Connected 4K UHD) if it meets the following minimum performance attributes:

4K Ultra High-Definition Capability – Meets all of the requirements of CTA's 4K Ultra High-Definition Display Characteristics V3.

Video Codec – Decodes IP-delivered video of 3840x2160 resolution that has been compressed using HEVC* and may decode video from other standard encoders.

Audio Codec – Receives and reproduces, and/or outputs multichannel audio.

IP and Networking – Receives IP-delivered 4K Ultra HD video through a Wi-Fi, Ethernet, or other appropriate connection.

Application Services – Supports IP-delivered 4K Ultra HD video through services or applications on the platform of the manufacturer's choosing.

* High Efficiency Video Compression Main Profile, Level 5, Main tier, as defined in ISO/IEC 23008-2 MPEG-H Part 2 or ITU-T H.265, and may support higher profiles, levels or tiers.

High Dynamic Range (HDR) Compatible Display

A TV, monitor or projector may be referred to as a High Dynamic Range (HDR) Compatible Display if it meets the following minimum attributes:

Includes at least one interface that supports HDR signaling as defined in CEA-861-F, as extended by CEA-861.3.

Receives and processes static HDR metadata compliant with CEA-861.3 for uncompressed video.

Receives and processes HDR10 Media Profile* from IP, HDMI or other video delivery sources. Additionally, other media profiles may be supported.

Applies an appropriate Electro-Optical Transfer Function (EOTF), before rendering the image.

* Note: HDR10 Media Profile is defined as:

EOTF: SMPTE ST 2084

Color Sub-sampling: 4:2:0 (For compressed video sources)

Bit Depth: 10 bit

Color Primaries: ITU-R BT.2020

Metadata: SMPTE ST 2086, MaxFALL, MaxCLL

Wide Color Gamut (WCG) Display

A TV, monitor or projector may be referred to as a Wide Color Gamut (WCG) Display if it meets the following minimum attributes:

Receives and decodes ITU-R Recommendation BT.2020 signal input, and remaps as appropriate for the display.

Rendering exceeds 100% of Recommendation BT.709 colors.

LED TV

Consistent with the industry-wide marketing practice of manufacturers and retailers, the CTA Video Division Board defines “LED TVs” to include liquid crystal display (LCD) televisions using light emitting diodes (LED) as a light source.