Laser-backlit Wide-gamut LCD and Color Gamut Mapping

For production of wide-color-gamut 8K

Outline

We have developed a laser-backlit LCD (4K) that supports wide-gamut system colorimetry for ultra-high definition TV (4K/8K). We have also developed a high-quality gamut mapping device to convert video in the wide gamut into video in the HDTV color gamut in real time.

Features

- **Laser-backlit wide-gamut LCD**
  For wide-color-gamut production, we have developed an LCD that uses laser diodes (red, green, and blue) for the backlight source. The gamut coverage ratio is 98% (in the xy chromaticity diagram).

- **High-quality real-time color gamut mapping device**
  To convert wide-gamut content into HDTV content, we have developed a high-quality gamut mapping device that minimizes perceptual hue changes. This device does not cause significant texture loss and discontinuous tones, which are generated with simpler gamut mapping algorithms commonly used.

Future plans

We are working towards practical application of 8K wide-gamut direct-view displays and color gamut mapping devices in time for the start of 8K broadcasting.

* Wide-gamut system colorimetry: Ultra-high definition TV employs wide-gamut system colorimetry (a system to quantify colors) that can accurately reproduce saturated colors out of the HDTV gamut. (The colorimetry was standardized at ARIB, SMPTE, and ITU-R.)

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**Exhibit structure of wide-gamut display and high-quality gamut mapping**