ZEN Series

Waveform Monitor LV5600、LV5300(A)、LV5350
Rasterizer ― LV7600、LV7300

Leader

March 15th, 2024

Version Upgrade Information Ver. 7.5 or later (free of charge / to be released at the end of March)

■ 3D-LUT(LV5600,LV7600,LV5300(A),LV5350,LV7300)

The 3D-LUT Cube files can be loaded and are used to display SDR and HDR picture, waveform in simultaneous HDR/SDR productions.

- Picture display, waveform display, vectorscope, CIE chart and histogram are supported.
- Supports up to 4 channels for 2K (HD) and 1 channel for 4K (UHD).
- A maximum of 10 Cube files can be registered.
- The 3D-LUT is effective in HDR/SDR Simultaneous production, which can support various methods.
- The interpolation method uses 33-point tetrahedral interpolation.
- SDI output after 3D-LUT conversion (LV5300(A)/LV5350/LV7300 not supported)
- Input/output conversion Gamma SDR/HDR (HLG, PQ, S-LOG3, LOG-C, C-LOG), Colorimetry BT2020/BT709/DCI compatible
- Range Full/Narrow support.
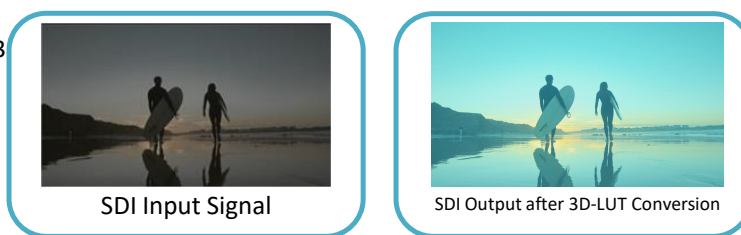- Cube file file information, header information display

3D-LUT

※3D-LUT function require SER23

3D-LUT and transformation information

LUT04 : 01S_HLGSTD5_SDI.cube
Title : 01S_HLGSTD5.srm
SDR/BT709 → SDR/BT709, FULL

SDI Input Signal

SDI Output after 3D-LUT Conversion

Picture Display

Waveform Display

Vectorscope

CIE Color Chart

Histogram

3D-LUT
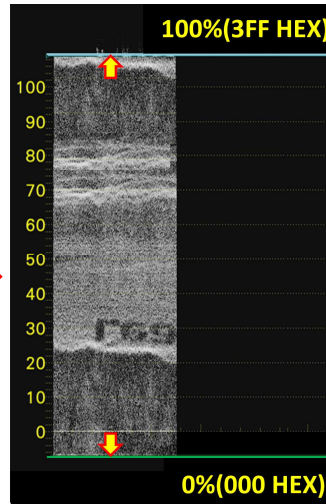
Cubeファイル

**Measurement after
3D-LUT conversion**

SDR Full Range (LV5600,LV7600,LV5300(A),LV5350,LV7300)

It is compatible with the Full Range of HDR. The Full Range of SDR will now be supported without HDR option.
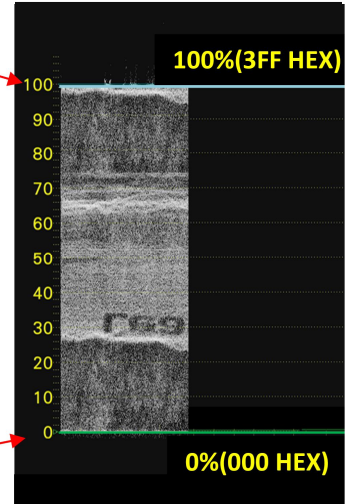
- Waveform display, vectorscope, CIE chart, histogram, CineLite and CineZone are supported.
- Supports up to 4 channels for 2K (HD) and 1 channel for 4K (UHD).
- Scale change for each function.
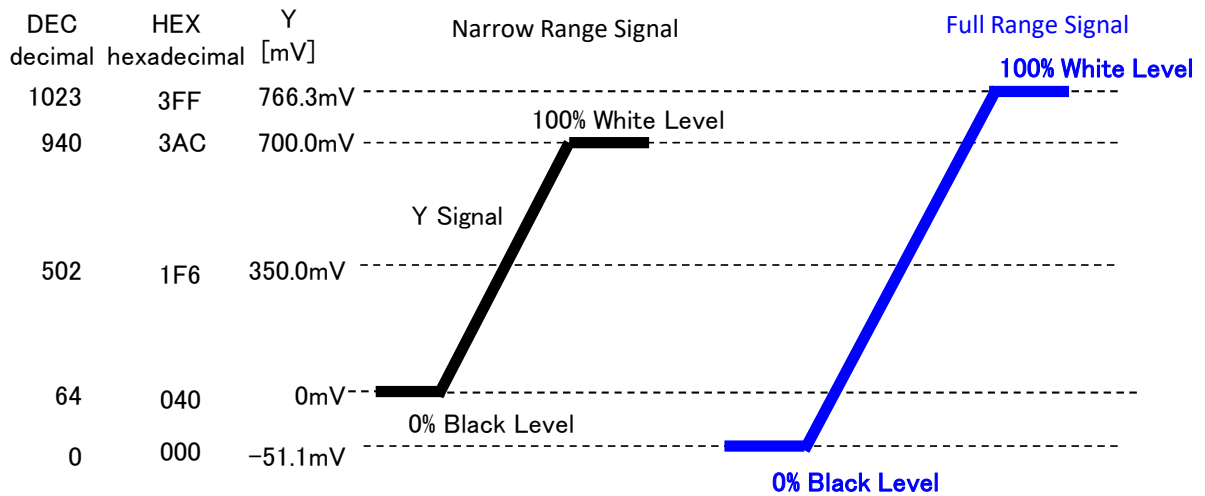- Full range support for DPX and TIFF files.

Full Range Signal

Full Range Signal Input
Conventional Narrow Range settings

Full Range Signal Input
Added Full Range settings

DEC decimal	HEX hexadecimal	Y [mV]
1023	3FF	766.3mV
940	3AC	700.0mV
502	1F6	350.0mV
64	040	0mV
0	000	−51.1mV

Narrow Range Signal

Full Range Signal

100% White Level

100% White Level

Y Signal

0% Black Level

0% Black Level

■ Multilingual closed captioning (subtitles) pairs (LV5600,LV7600,LV5300(A),LV5350,LV7300)

The number of supported languages has been increased for traditional closed captioning.

- **CC608**

  English/Spanish/Portuguese/French/German/Danish/Italian/Finnish/Swedish

- **CC708**

  English/Spanish/Portuguese/Danish/Dutch/Faroese/Finnish/
  French/German/Icelandic/Irish/Italian/Norwegian/Swedish/Korean

- **OP47**

  English/Spanish/Portuguese/Czech/Slovak/Estonian/French/German/Italian/
  Lettish/Lithuanian/Polish/Rumanian/Serbian/Croatian/Slovenian/Swedish/
  Finnish/Hungarian/Turkish/Ukrainian/Rumanian/Bulgarian

- **ARIB STD-B37**

  Japanese   ※**Conventional support**

  ※ LV5300(A) requires LV5300-SER21, LV5350 requires LV5350-SER21 and LV7300 requires
       LV7300-SER21
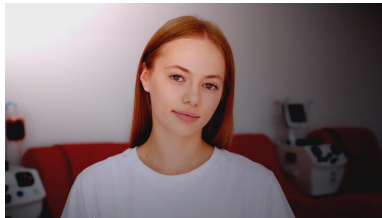

German Closed caption Display

■ False Colour Display (LV5600,LV7600,LV5300(A),LV5350,LV7300)

A False Colour display has been added to the existing CineZone function. Highlights, human skin tones, 18%Grey, blacks, etc. can now be easily identified.
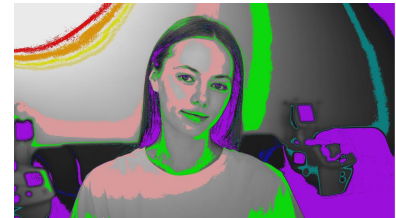
- 2K (HD) supports up to four channels and 4K (UHD) supports one channel.
- False Colour support for ARRI, RED and SONY cameras. ※ USER-S (SONY) will be supported in the future.
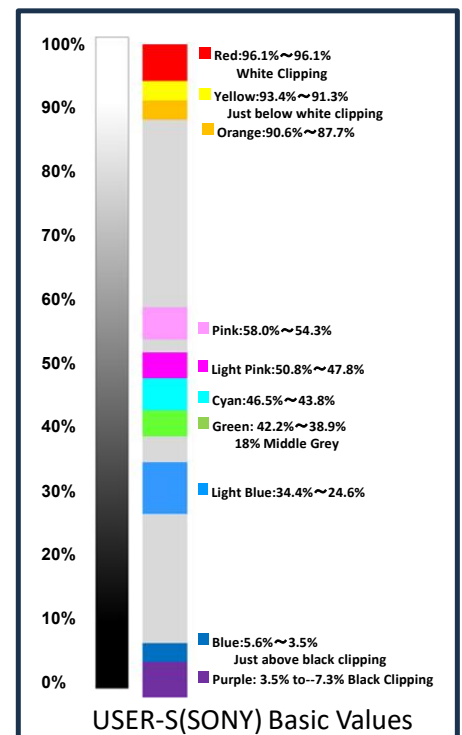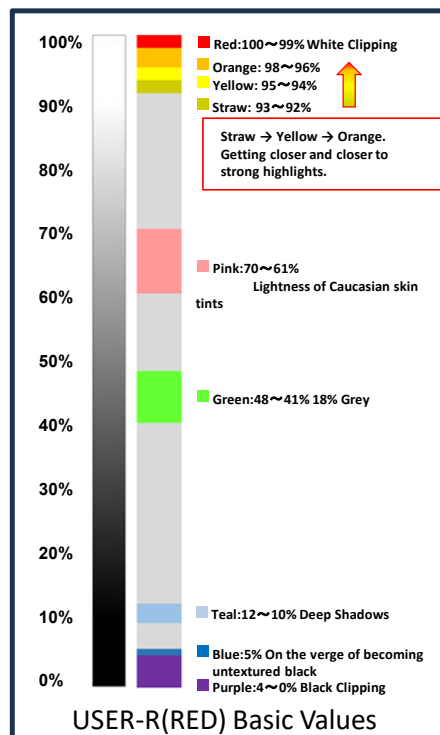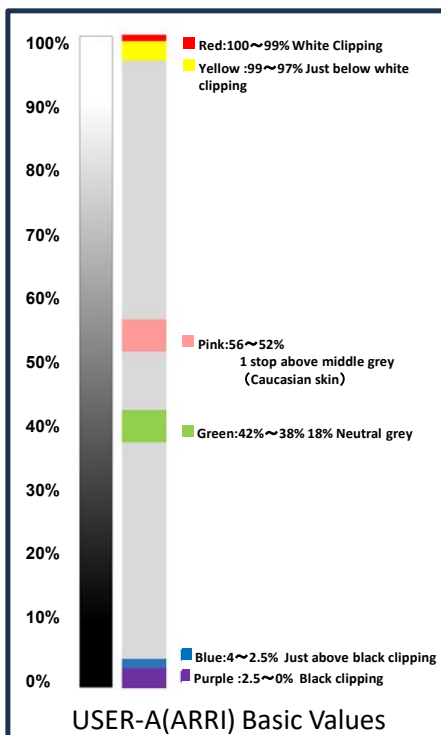- Each value can be varied from the basic value.

False Color OFF

False Color USER-A

False Color USER-R

USER-A(ARRI) Basic Values

- Red:100〜99% White Clipping
- Yellow :99〜97% Just below white clipping
- Pink:56〜52% 1 stop above middle grey （Caucasian skin）
- Green:42%〜38% 18% Neutral grey
- Blue:4〜2.5% Just above black clipping
- Purple :2.5〜0% Black clipping

USER-R(RED) Basic Values

- Red:100〜99% White Clipping
- Orange: 98〜96%
- Yellow: 95〜94%
- Straw: 93〜92%
- Straw → Yellow → Orange. Getting closer and closer to strong highlights.
- Pink:70〜61% Lightness of Caucasian skin tints
- Green:48〜41% 18% Grey
- Teal:12〜10% Deep Shadows
- Blue:5% On the verge of becoming untextured black
- Purple:4〜0% Black Clipping

USER-S(SONY) Basic Values

- Red:96.1%〜96.1% White Clipping
- Yellow:93.4%〜91.3% Just below white clipping
- Orange:90.6%〜87.7%
- Pink:58.0%〜54.3%
- Light Pink:50.8%〜47.8%
- Cyan:46.5%〜43.8%
- Green: 42.2%〜38.9% 18% Middle Grey
- Light Blue:34.4%〜24.6%
- Blue:5.6%〜3.5% Just above black clipping
- Purple: 3.5% to--7.3% Black Clipping

■ Timecode continuity monitoring function and timecode date display (LV5600, LV7600, LV5300(A), LV5350, LV7300) SDI and IP (ST 2110-40, ST 2022-6) timecode continuity monitoring function and display of timecode and date.

■ Timecode anomaly monitoring details

・Missing timecode packets

・Duplication of timecode information

・Non-continuous skipping of timecode time information occurs

・When timecode packets are not superimposed

- Errors are displayed on the screen and recorded in the event log.
- Switching display of timecode

Date display and no abnormality display

EVENT LOG display content
TC NO　　: Missing timecode packets
TC:RPT　 : Duplication of timecode information
TC:SKIP　: Discontinuity of timecode information
※ Discontinuous dropped frame flags are not detected.

EVENT LOG LIST display

Leader

- Source ID display (LV5600,LV7600,LV5300(A),LV5350,LV7300)
  The Source ID display function displays the UDW 15 words of ancillary data transmitted with DID: 253h SDID: 149h in ASCII code.

- IP Audio Channel Mapping diversification (Option LV5600SER06, LV7600SER06 supported)
  Audio channel mapping function allows free audio channel allocation in two-channel pairs

  - Mapping is Mono、Dual Mono、Standard Stereo、Matrix Stereo、5.1ch(LCR)、5.1ch(LRC)、7.1ch(LCR)、7.1ch(LRC)、7.1.4ch(LCR)、7.1.4ch(LRC)、U01～16 can be selected
  - Mapping labels are displayed for various inputs.
  - It is decoded and output as AES/EBU.
  - NMOS - compatible
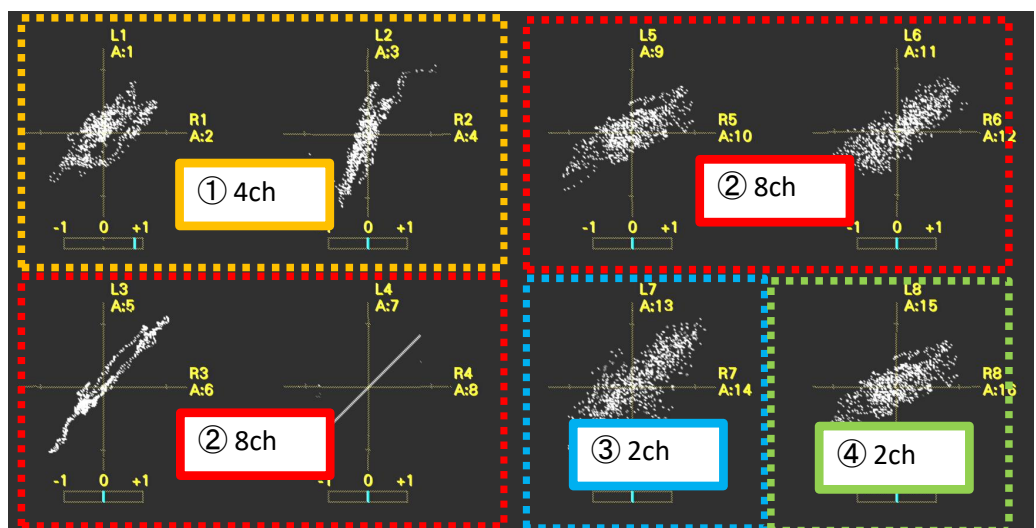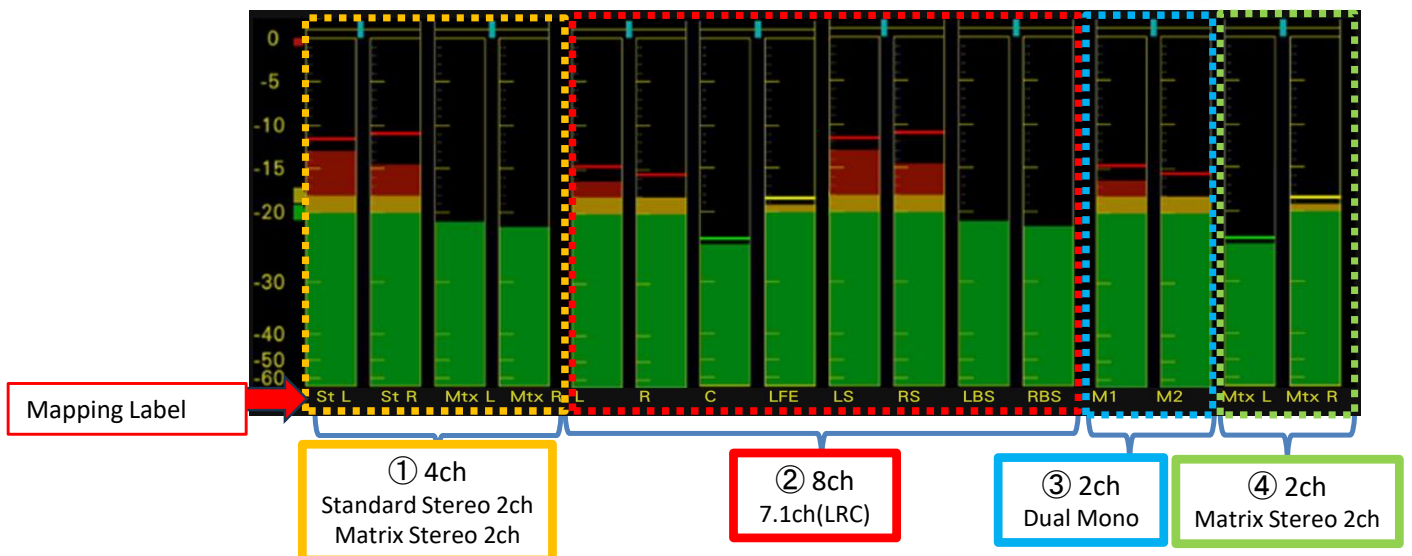
Mapping example

Stream① 4ch ➡
Stream② 8ch ➡
Stream③ 2ch ➡
Stream④ 2ch ➡

Mapping Label

① 4ch
Standard Stereo 2ch
Matrix Stereo 2ch

② 8ch
7.1ch(LRC)

③ 2ch
Dual Mono

④ 2ch
Matrix Stereo 2ch

① 4ch

② 8ch

② 8ch

③ 2ch

④ 2ch

※ **On the ZEN series, the FIRMWARE version can be checked by pressing the [SYS] key → [F.3] (SYSTEM INFO) key. FIRMWARE can be downloaded from our website. This Ver. 7.5 is scheduled for the end of March.**