LEADER

PRODUCTS ☐ NEWS

■ MULTI SDI MONITOR

■ LV 5380

RoHS

8.4 inches

The design is subject to change.

Compact Waveform Monitor for Video Engineers

■ GENERAL

The LV 5380 is a multi-SDI monitor equipped with a precision video signal waveform and vectorscope display via a high-fidelity TFT LCD that produces high-quality picture displays. It also offers an embedded audio signal display featuring Lissajous and level-meter configurations.[*1] Additional features include simultaneous display of two SDI signals, screen capture to USB memory, and on-picture gamut error monitoring.

All these features are integrated into a thin, light instrument that allows it to be used in any video production or monitoring sites.

■ FEATURES

1 High-Quality TFT LCD

Employs an XGA TFT LCD (1,024x768) that produces high-quality picture displays.

2 Extensive Video Signal Displays

The waveform monitor display has gain adjustment, sweep, and cursor measurement features along with RGB and pseudo-composite information. The LV 5380 also provides vectorscope and embedded audio's Lissajous and Level-meter displays.

3 Multi-Functional Picture Display

The picture display has various adjustment features such as color temperature selection, brightness, contrast, gain, and bias. Other features include monochrome, chroma up, on-image gamut error, and safety marker displays.

4 Multi-Screen Display and 2-Channel Simultaneous Display

1) You can switch to multi-screen which simultaneously shows video signal waveforms and pictures.
2) You can switch to multi-screen which simultaneously shows video signal waveforms, picture, vectorscope, and audio levels.
3) You can display two SDI signals simultaneously.[*1]

5 Status Display

The LV 5380 can display SDI signal's data dump and error logs as well as the phase difference between the external sync signal and SDI signal.

6 Display Mode Switch Keys

For quick operation, the LV 5380 provides dedicated keys for switching between different display modes such as video waveform, vectorscope, and picture displays. In addition, all keys can be back-lit.

7 Two Multi-Purpose Knobs

Equipped with two multi-purpose knobs. The functionality of the two knobs changes depending on the display mode or the current menu level. For example, the two knobs adjust the brightness and contrast in the picture display and the horizontal and vertical positions in the waveform display. The functionality that is currently in effect is displayed on the screen.

8 Stereo Headphone Output

Delivers SDI signal's embedded audio signals in stereo through the headphone output jacks.

9 External Sync Signal Input

Receives tri-level sync signals or NTSC/PAL black burst signals.

10 Presets

Stores up to 30 front panel presets.

11 Last Memory

Equipped with a feature that stores panel settings to memory.

12 75-mm VESA Mounting

Provides 75-mm VESA mounting holes on the rear panel that allows the LV 5380 to be mounted on an arm or stand.

13 External Remote Connector (Factory Option)

An external remote connector can be installed as a factory option. In addition, one of the connectors can be modified so that a tally indicator can be displayed on the screen.

14 Battery Mount (Factory Option)[*2]

A battery adapter can be installed on the rear panel as a factory option.

■ CINELITE II (Cinelite+Cinezone) (Option)

The CINELITE feature useful in lighting control during filming can be added.

*1 To be supported in the future
*2 If you install the battery mount, you cannot use the 75-mm VESA mounting holes.

Specifications   LV 5380

Video Formats and Corresponding Standards

Format	Quantization	Scanning	Frame (Field) Frequency	Corresponding Standard
Y, C_B, C_R 4:2:2	10bit	1080i	60/59.94/50	SMPTE 274M
		1080p	30/29.97/25/24/23.98	SMPTE 292M
		1080PsF	30/29.97/25/24/23.98	SMPTE RP211 SMPTE 292M
		720p	60/59.94/50/ 30/29.97/25/24/23.98	SMPTE 296M SMPTE 292M
		525i	59.94	SMPTE 259M
		625i	50	

Audio Playback
- **Compliant Standard:** SMPTE-299M (HD-SDI), SMPTE-272M (SD-SDI)
- **Quantization:** 20 bits
- **Synchronization:** Must be synchronized to all video clocks
- **Channel Separation:** Two groups (eight channels in the same SDI channel) selectable

Input/Output Connectors
- **SDI Input**
  - **Input Connectors:** Two BNC connectors
  - **Input Impedance:** 75 Ω
  - **Input Return Loss:** ≥ 15 dB 5 MHz to the serial clock frequency
  - **Maximum Input Voltage:** ±2 V (DC + ACpeak)
- **SDI Output**
  - **Output Connector:** One BNC connector Reclocks and transmits the selected SDI input signal
  - **Output Impedance:** 75 Ω
  - **Output Voltage:** 800 mVp-p ± 10 %
  - **Maximum Return Loss:** ≥ 15 dB 5 MHz to the serial clock frequency
- **External Reference Input**[1]
  - **Input Signal:** Tri-level sync or NTSC/PAL black burst
  - **Input Connectors:** One pair of BNC connectors
  - **Input Impedance:** 15 kΩ passive loop-through
- **Headphone Output**
  - **Output Signal:** Extracts and transmits the embedded audio signal (when synchronized to the video signal)
  - **Sampling Frequency:** Only supports 48 kHz
  - **Output Connector:** One stereo miniature jack
  - **Impedance:** 16 Ω

LCD
- **LCD Type:** 8.4-inch color XGA TFT. Effective area 1,024 × 768 dots
- **Backlight Brightness:** 32 adjustable levels
- **Auto Shutoff:** Time to turn off the LCD can be set.

Screen Capture
- **Capture:** Captures the screen to a image file Only one screen image can be stored in the internal memory.
- **Data Output:** Screen captures can be saved as bitmap files to USB memory or to a PC over the Ethernet.
- **Data Input:** Data saved to USB memory can be loaded and displayed on the LV 5380.

Presets
- **Display Mode Presets:** Only stores settings specific to each display mode
- **Number of Presets:** 30 total Display Mode Presets:Five presets for each display mode

Waveform Display
- **Waveform Operation**
  - **Display Mode**
    - **Overlay Display:** Overlays component signals
    - **Parade Display:** Displays component signals side by side
    - **Blanking Period:** H and V blanking periods can be masked
    - **RGB Conversion:** Converts Y, C_B, C_R signals into RGB and displays the result
    - **Pseudo-Composite Display:** Artificially converts component signals into composite signals and displays the result
    - **Channel Assignments:** The G, B, R order or R, G, B order selectable for RGB conversion display
    - **Line Select:** Displays the selected line
- **Vertical Axis**
  - **Gain:** ×1 or ×5 selectable
  - **Variable Gain:** ×0.2 to ×2.0
  - **Amplitude Accuracy:** ≤ ±0.5 %
  - **Frequency Characteristics HDTV**
    - **Y Signal:** ≤ ±0.5 % for 1 to 30 MHz
    - **C_B, C_R Signals:** ≤ ±0.5 % for 0.5 to 15 MHz
    - **Low-Pass Attenuation:** ≥ 20 dB (at 20 MHz)
  - **Frequency Characteristics SDTV**
    - **Y Signal:** ≤ ±0.5 % for 1 to 5.75 MHz
    - **C_B, C_R Signals:** ≤ ±0.5 % for 0.5 to 2.75 MHz
    - **Low-Pass Attenuation:** ≥ 20 dB (at 3.8 MHz)
- **Horizontal Axis**
  - **Line Display:** ×1, ×10, ×20, ACTIVE, or BLANK selectable
  - **Field Display:** ×1, ×20, or ×40 selectable
- **Cursor Measurement**
  - **Types:** Two horizontal cursors (REF and DELTA) Two vertical cursors (REF and DELTA)
  - **Amplitude Measurement:** Measures in % or V
  - **Time Measurement:** Measures in usec or msec
  - **Frequency Display:** Displays the frequency by assuming the interval between the cursors to be one period
- **Scale**
  - **Type:** % scale or V scale selectable
  - **Color:** Selectable from seven colors
  - **Thumbnail Display:** Can display thumbnails of picture displays and audio level meters

Vectorscope Display
- **Gain:** ×1, ×5, or IQ-MAG selectable
- **Variable Gain:** ×0.2 to ×2.0
- **Amplitude Accuracy:** ≤ ±0.5 %
- **Scale**
  - **Type:** 75 % or 100 % selectable
  - **IQ Axis:** Show or hide selectable
  - **Color:** Selectable from seven colors
- **Pseudo-Composite Display:** Artificially converts component signals into composite signals and displays the result
- **Thumbnail Display:** Can display thumbnails of picture displays and audio level meters

5 Bar Display
- **Bar Display:** Displays the peak levels of Y, R, G, B, and composite
- **Channel Assignments:** RGB or GBR selectable
- **Scale:** mV or % selectable
- **Error Level:** Based on gamut error level and composite gamut error level settings

Picture Display
- **Color Temperature:** 6500K or 9300K selectable
- **Quality Adjustment:** Brightness, contrast, gain, bias, aperture
- **Display Size:** Fit, full frame, real, and 4:3 full screen
- **Color:** R, G, or B can be turned off separately. Chroma gain and monochrome available.
- **Frame Rate:** Displays by converting the frame rate using the internal sync signal
- **Aspect Marker Display:** 4:3, 13:9, 14:9, or 16:9 selectable
- **Aspect Marker Format:** Line, shadow (three types), black
- **Safety Marker Size:** ARIB TR-B4, SMPTE RP-218, or user-defined selectable
- **Line Select:** Displays a mark on the selected line
- **Gamut Error Display:** Displays gamut error locations over the picture
- **Thumbnail Display:** Displays thumbnails of audio level meters

Embedded Audio Display
- **Lissajous Display**
  - **Display Channels:** 2ch (single) or 8ch (multi) selectable
  - **Display Mode:** X-Y or L-R selectable
- **Level Meter Display**
  - **Display Channels:** 2ch or 8ch display selectable
  - **Meter:** 60 dB peak level, 90 dB peak level, or average selectable. (Peak level meters have a hold feature.)
- **Channels**
  - **Group Selection:** Select any two groups within the same SDI channel from groups 1, 2, 3, and 4
  - **Audio Information Detection:** Detects the presence of each audio channel
  - **Sampling Frequency:** 48 kHz (must be synchronized with the video signal)

Status Display
- **Event Log:** Stores up to 1,000 events
- **Data Dump Display:** Dumps data by serial data sequence or by channel
- **Data Output:** Can be saved in text format to USB memory or to a PC

Phase Difference Display
- **Display:** Displays numerically and graphically the phase difference between an SDI signal and the external sync signal
- **Display Range**
  - **Vertical:** ±1 field (for interlace) ±1/2 frame (for progressive)
  - **Horizontal:** ±1 line

Error Count
- **Error Count:** Counts up to 999,999 video, audio, and gamut errors separately
- **Count Period:** Counts all errors that occur in one field as one error
- **Video Errors**
  - **CRC Error:** Detects transmission errors of HD-SDI signals
  - **EDH Error:** Detects transmission errors of SD-SDI signals
- **Gamut Error**
  - **Gamut Error:** Detects gamut errors
    - **Detection Range Upper Limit:** 90.0 to 109.4 %
    - **Lower Limit:** -7.2 to +6.1 % (0.1 % steps)
  - **Composite Gamut Error:** Monitors level errors when component signals are converted to composite signals
    - **Detection Range Upper Limit:** 90.0 to 135.0 %
    - **Lower Limit:** -40 to -20 % (0.1 % steps)
- **Audio Errors**
  - **CRC Error:** Detects CRC errors in channel status bits
  - **BCH Errors:** Detects transmission errors of HD-SDI audio packets

Time Display
- **Current Time Display:** Time display based on the internal clock
- **Elapsed Time:** Time elapsed since the error count was cleared
- **Time Code:** LTC or VITC selectable (complies with SMPTE RP-188)

Other Display Features
- **ID Display:** ID can be assigned to each input channel.
- **Tally Indicator:** One of the remote connectors can be modified so that tally indication can be shown on the screen (to be supported in the future).

Front Panel
- **Key LEDs:** All keys illuminate dimly. (The selected key illuminates brightly.)
- **Last Memory:** Backs up panel settings to memory

Environmental Conditions
- **Operating Temperature:** 0 to 40 °C
- **Operating Humidity Range:** ≤ 85 % RH (without condensation)
- **Operating Environment:** Indoors
- **Overvoltage Category:** I
- **Pollution Degree:** 2

Power Requirements: 10 to 18 VDC, 30 W max.
Dimensions: 215 (W) × 176 (H) × 85 (D) mm (excluding projections)
Weight: 2.0 kg
Accessory: Instruction manual..1
Option Sold Separately: AC adapter LP 1960
Rack mount LP 2751 I
Blank Panel LC 2129

*1 · The video signal waveform display and vectorscope display may be delayed by up to 1 frame with respect to the picture display.
· V sweep cannot be displayed when the video signal waveform displays for two simultaneous inputs are shown.
· If the video signal waveform or phase difference is displayed using an external sync signal as reference, waveform phase of 1 clock before and after an SDI signal is inserted or the power is turned on is indefinite.

■ REAR PANEL