

# COMPONENT DIGITAL WAVEFORM MONITOR

## LV 5100D/LV 5100DE

## LEADER



**PATENTED:**  
Equivalent cable  
length measurement  
The cabinet is sold  
separately.

## Observation of Serial Digital and Analog Signals EDH Measurement Function for Monitoring of Digital Input Transmission Error

The LV 5100D is a Component Digital/Analog Waveform Monitor for the 525/60 and 625/50 systems. It accommodates both digital and analog, and features two component serial digital inputs and a single 3-channel component video analog input that allows you to make use of your existing video sources and is ideal for mixed digital/analog systems. At the digital inputs, an EDH measurement function enables transmission error monitoring and analysis. By using the equivalent cable length measurement function, it is possible to check signal strength in a form that is intuitively understandable.

The LV 5100D also boasts a full range of analog component waveform monitor functions, including a picture monitor output for TV picture display of a video signal, a line selector function with a high-intensity CRT, and settings from a menu screen.

### FEATURES

#### • Two sets of serial digital inputs and output

Two sets of serial digital passive through inputs conforming to ITU-R656-1 and SMPTE 259M standards are provided, in addition to an active output which provides re-transmission of either of these inputs.

#### • Component analog inputs (Y, C<sub>b</sub>, C<sub>r</sub>, or GBR)

By providing component analog inputs, it is possible to use the LV 5100D in mixed digital/analog applications.

#### • Analog picture monitor output

The LV 5100D features an analog picture monitor output which outputs a serial digital video signal in either GBR format or Y, C<sub>b</sub>, C<sub>r</sub> format.

#### • Picture display function

A picture display function is provided, enabling display of the Y or G video signal as a TV image on the CRT. When using the line selector, a selected line of the image is displayed with intensity modulation, a convenient feature in

checking the positional relationship between a video signal and the picture.

#### • Vector display function

Vector display is possible of both digital and analog signals.

#### • Equivalent cable length measurement function

The strength of a signal connected to the serial digital input can be measured and displayed as an equivalent length of 5C-2V coaxial cable.

#### • EDH measurement function

It is possible to monitor serial transmission error by means of EDH codes.

#### • Data damp function

Displays arbitrary line of digital data in hexadecimal notation.

#### • Cursor measurement functions

Level measurements are possible by using cursor lines.

#### • Stereo sound X-Y display function

An analog stereo signal can be displayed in X-Y mode.

#### • Preset function

Panel switch settings, including vertical and horizontal position settings can be stored in memory, enabling often-used measurement conditions to be stored for quick recall from either the front panel or remotely.

### ■ LV 5100DE (Eye pattern-display version)



<b>CRT</b> Type Accelerating Potential Scales	150 mm, rectangular, P4 phosphor 16.5 kV Internal graticules (waveforms), illuminated scales Displayed graticules (vector and audio)
<b>Measurement Signals</b> Digital Signals Applicable Standards  Analog Signals	ITU-R601-3/ITU-R656-1, SMPTE 125M-1992/SMPTE 259M 4:2:2 serial digital component video signals 3-line analog component video signals Y, C <sub>b</sub> , C <sub>r</sub> or GBR
<b>Input</b> Serial Digital Inputs Number of Inputs Input Connector Type Return Loss  Analog Inputs Number of Inputs Input Connector Type Analog REF Input Input Input Connector Type	Two sets of a single input, passive through BNC ≥25 dB, 1 to 270 MHz (Powered on) ≥15 dB, 1 to 270 MHz (Powered off)  One set of 3 inputs, passive through BNC  One input, passive through BNC
<b>Outputs</b> Series Digital Active Outputs Output Signal  Output Impedance Return Loss Analog Picture Monitor Output Formats Frequency Response Output Impedance Output Connector Type	Retransmission of either of the serial inputs as selected 75 Ω 15 dB min 1 to 270 MHz  Y, C <sub>b</sub> , C <sub>r</sub> or GBR 25 Hz to 6 MHz 75 Ω BNC (One set of three connectors)
<b>Vertical Axis</b> Deflection System Deflection Sensitivity  Variable Range  Filter Characteristics FLAT  LOWPASS Rolloff DIF'D STEP  Gain	±1%: referenced to a 1 V input full scale ±2%: ×5 ±0.5%: Cursor measurements 0.7 to 2 Vp-p: ×1 full scale 0.14 to 0.4 Vp-p: ×5  Within ±2%: 25 Hz to 6 MHz +2 to -5%: 6 MHz to 8 MHz (50 kHz reference)  35 dB min. at 3.58 MHz 400 kHz bandpass filter (for measurement of the linearity of the luminance component) ×5 ±10%, referenced to FLAT response
<b>Horizontal Axis</b> Operating Mode	OVERLAY: Displays waveforms in overlay mode RAPADE: Displays waveforms in parade mode TIMING: To measure time difference between channels using the bowtie* signal (*Used with permission of Tektronix, Inc.)
<b>Sweep Mode</b> Sweep Time Line Display Line Magnification Field Display Field Magnification Time Accuracy Sweep Length Linearity	Automatic sweep  1H, 2H, 3H 1H MAG, 2H MAG, 3H MAG 1V, 2V, 3V 1V MAG, 2V MAG, 3V MAG Within ±3% 12.5 div ±0.7 div Within ±3%
<b>Display Position Adjustment Range</b>	Any part of the synced sweep can be displayed on the screen in any sweep mode.
<b>Vector Mode</b>	Vector display of C <sub>b</sub> and C <sub>r</sub> signals
<b>Picture Mode</b>	Picture display of Y or G signal
<b>Audio Mode</b>	Display stereo signal in lissajous pattern

<b>Digital Functions</b> EDH Function Applicable Standards Error Indicator  TRS Monitoring  ANC Data Monitoring  Data Dump Function  Equivalent Cable Length Measurement Function	SMPTE RP165 ALARM LED (when error occurs on the serial digital input signal.) Monitors SAV position with respect to EAV, and format. Monitors presence of audio data, and channel display format. Displays 10 bits digital data in hexadecimal notation after parallel conversion is made. Converts input signal level into equivalent length of 5C-2V cable.						
<b>CAL</b> Amplitude	1 V ±0.5% Vertical cursor display						
<b>Line Selector</b>  FLD 1 & 2 FRAME	<table border="1"> <tr> <td><b>525 lines</b></td> <td><b>625 lines</b></td> </tr> <tr> <td>Lines 1 to 262</td> <td>Lines 1 to 312</td> </tr> <tr> <td>Lines 1 to 525</td> <td>Lines 1 to 625</td> </tr> </table>	<b>525 lines</b>	<b>625 lines</b>	Lines 1 to 262	Lines 1 to 312	Lines 1 to 525	Lines 1 to 625
<b>525 lines</b>	<b>625 lines</b>						
Lines 1 to 262	Lines 1 to 312						
Lines 1 to 525	Lines 1 to 625						
<b>Preset Function</b> Ten Sets of Panel Settings can be Preset and Recalled	All front panel settings (with the exception of INTEN, READOUT INTEN, ROTATION, FOCUS, ILLUM, and POWER switch)						
<b>Cursor Measurements</b> Available Cursors  Amplitude Measurement  Calibration Accuracy Time Interval Measurement  Measurement Range Resolution Frequency Measurement	2 horizontal cursor lines (REF and Δ) 2 vertical cursor lines (REF and Δ) Measurement of the voltage between the REF and Δ cursors (V or %) Vertical: 0.5% Measurement of the time interval between the REF and Δ cursors ±6 divisions min. from the center of the screen 1/80 div Frequency displayed based on the period measured between the REF and Δ cursors						
<b>Environmental Conditions</b> Operating  Spec-Guaranteed	Temperature: 0 to 40°C Humidity: ≤ 85% RH (without condensation) Temperature: 10 to 35°C Humidity: ≤ 80% RH (without condensation)						
<b>Power Requirements</b>	90 to 250 VAC, 48 to 440 Hz, 65 Wmax.						
<b>Dimensions and Weight</b>	215 (W) × 132 (H) × 429 (D) mm, 5.0 kg (not including outer cabinet)						
<b>Supplied Accessories</b>	Illumination lamp .....5 Rack mounting inch-size screws .....2 D-sub 25-pin connector .....1 D-sub 25-pin connector cover .....1 Screw lock .....2 E-ring .....1 Cover/Inlet stopper .....1 Power cord .....1 Instruction manual .....1						
<b>Optional Accessory</b>	Cabinet: LR-2427B, LR-2404A, LR-2700A-I						

## ■ LV 5100D REAR PANEL

