LEADER

LV 5490 / LV 5480

MULTI WAVEFORM MONITOR

LV 5490SER01	SDI INPUT	**LV 5490SER07**	HDR
LV 5490SER02	SDI INPUT / EYE	**LV 5490SER08**	IP (NMI)
LV 5490SER03	DIGITAL AUDIO Dolby (Option)	**LV 5490SER09**	12G-SDI EYE
		LV 5490SER10	VIDEO NOISE METER
LV 5490SER04	FOCUS ASSIST	**LV 5480SER20**	4K
LV 5490SER05	CIE DIAGRAM	**LV 5480SER21**	TSG
LV 5490SER06	12G-SDI INPUT		

INSTRUCTION MANUAL

LEADER
ELECTRONIC MEASURING INSTRUMENTS

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GENERAL SAFETY SUMMARY

■ Read This before Using the Instrument

This instrument should only be used by persons with sufficient knowledge of electronics who thoroughly understand the contents of this manual.

This instrument is not designed or manufactured for households or ordinary consumers.
If unqualified personnel are to use the instrument, be sure the instrument is handled under the supervision of qualified personnel (those who have electrical knowledge). This is to prevent the possibility of personal injury or damage to the instrument.

■ Note about Reading This Manual

The contents of this manual contain specialized terminology and may be difficult to understand. If you have any questions about the contents of this manual, please contact your local LEADER agent.

■ Symbols and Terms

The following symbols and terms are used in this instruction manual and on the instrument to indicate important warnings and notes.

<Symbol>	This symbol appears in this instruction manual and on the instrument to indicate an area where improper handling could result in personal injury, damage to the instrument, or malfunction of the instrument or devices connected to it. When you encounter this symbol on the instrument, be sure to refer to the information in this instruction manual that corresponds to the area that the symbol marks.
<Term>	Ignoring the precautions that this term indicates could lead to death or serious injury.
<Term>	Ignoring the precautions that this term indicates could lead to personal injury or damage to the instrument.

GENERAL SAFETY SUMMARY

Read the warnings and information below thoroughly to avoid death, personal injury, and damage and deterioration of the instrument.

■ Warnings Concerning the Case and Panels

Do not remove the instrument's case or panels for any reason. Touching the internal components of the instrument could lead to fire or electric shock.
Also, do not allow foreign materials, such as liquids, combustible matter, and metal, to enter the instrument. Turning the instrument on when such materials are inside it could lead to fire, electric shock, damage to the instrument, or some other accident.

■ Installation Environment

- Operating Temperature Range
  Use this instrument in a 0 to 40 °C environment. Using the instrument with its vents blocked or in a high temperature environment could lead to fire.
  Drastic changes in temperature, such as might be caused by moving the instrument between two rooms with different temperatures, can damage the instrument by causing condensation to form within it. If there is a possibility that the instrument has condensation within it, wait for approximately 30 minutes before turning on the power.
- Operating Humidity Range
  Use this instrument in an environment whose relative humidity is 85 %RH or less where there is no threat of condensation forming.
  Also, do not operate this instrument with wet hands. Doing so could lead to electric shock or fire.
- Do Not Operate in an Explosive Atmosphere
  Using this instrument in an environment where flammable gasses, explosive gasses, or steam is emitted or stored could lead to an explosion or fire. Do not use the instrument in such an environment.
- Do Not Insert Foreign Materials
  Do not insert foreign materials, such as metal and flammable objects, through the vents or allow liquid to enter the instrument. Such acts can lead to fire, electric shock, damage to the instrument, or some other accident.

■ If You Notice Something Wrong during Operation

If you notice smoke, fire, a strange smell, or something else that is wrong with the instrument while you are operating it, stop operation immediately. Failing to do so could lead to fire. Turn OFF the power switch, and remove the power cord from the outlet. After making sure that fire has not spread anywhere, contact your local LEADER agent.

GENERAL SAFETY SUMMARY

WARNING

■ Warnings Concerning the Power Source

Do not use a power source with a voltage other than the rated power source voltage for the instrument. Doing so could lead to fire.
Confirm the voltage of the power source before you connect the power cord to it.
Only use a power source whose frequency is 50/60 Hz.

Use a power cord that is appropriate for the voltage of the power source. Also, use a power cord that meets the safety standards of the country that you are using it in.
Using a power cord that does not meet the standards could lead to fire. If the power cord is damaged, stop using it, and contact your local LEADER agent. Using a damaged power cord could lead to electrical shock or fire.
When removing the power cord from the power outlet, do not pull on the cord. Pull from the plug.

■ Warnings Concerning Grounding

The instrument has a ground terminal to protect the user and the instrument from electric shock. Ensure that the product is properly grounded for safe operation.

■ Warnings Concerning the Panel

Sections of the panel are made out of glass. If the glass breaks, the broken glass may lead to injury. Do not apply a strong shock to the panel, cut it with sharp metal, or damage it in any similar manner.

CAUTION

■ Cautions Concerning the Input and Output Connectors

To avoid damaging the instrument, only apply signals to the input connectors that conform to the specifications in this instruction manual. Do not short or apply external voltage to the output connectors. Doing so could damage the instrument.

■ Cautions Concerning the Ethernet Port

When you are connecting the instrument to the communication provider's equipment, connect to the Ethernet port through a hub that is authorized for use in the country that you are using the instrument in.

GENERAL SAFETY SUMMARY

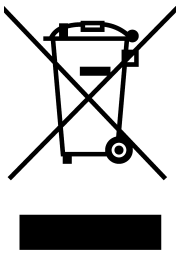
■ Calibration and Repairs

This instrument has been carefully examined at the factory to ensure that its performance is in accordance with the standards. However, because of factors such as parts wearing out over time, the performance of the instrument may degrade. To ensure stable performance, we recommend that you have the instrument calibrated regularly. Also, if the instrument malfunctions, repairs are necessary. For repairs and calibration, contact your local LEADER agent.

■ Routine Maintenance

When you clean the instrument, remove the power plug from the outlet.
Do not use thinner or benzene when you clean the instrument's case, panels, or knobs. Doing so could lead to paint chipping and the corrosion of plastic components. To clean the case, panels, and knobs, use a soft cloth with mild detergent, and wipe gently. While cleaning, make sure that foreign materials, such as water and detergent, do not enter the product. If liquid or a metal object enters into the instrument, fire or electric shock may result.

■ About the European WEEE Directive



This instrument and its accessories are subject to the European WEEE Directive.
Follow the applicable regulations of your country or region when discarding this instrument or its accessories. Follow the EU Battery Directive when discarding the batteries that you removed from this instrument.
(WEEE stands for Waste Electrical and Electronic Equipment.)

Follow the warnings and precautions that have been listed in this section to use the instrument correctly and safely. Precautions are also contained in various other sections of this instruction manual. To use the instrument correctly, be sure to follow those precautions as well.

If you have any questions or comments about this instruction manual, please contact your local LEADER agent.

1. INTRODUCTION

Thank you for purchasing this LEADER instrument. To use this instrument safely, read this instruction manual thoroughly, and make sure that you know how to use the instrument properly.

If some point about the operation of this instrument is still unclear after you have read this instruction manual, refer to the contact information on the back cover of the manual to contact LEADER, or contact your local LEADER agent.
After you have finished reading this manual, keep it in a convenient place so that you can refer to it when necessary.

1.1 Scope of Warranty

This LEADER instrument has been manufactured under the strictest quality control guidelines.
LEADER shall not be obligated to furnish the following free services during the warranty period.

1. Repair of malfunction or damages resulting from fire, natural calamity, or improper voltage applied by the user.
2. Repair of a product that has been improperly repaired, adjusted, or modified by personnel other than a factory-trained LEADER representative.
3. Repair of malfunctions or damages resulting from improper use.
4. Repair of malfunctions caused by devices other than this instrument.
5. Repair of malfunctions or damages without the presentation of a proof of purchase or receipt bill for the instrument.

1.2 Operating Precautions

1.2.1 Maximum Allowable Input Voltage

CAUTION

The maximum signal voltage that can be applied to the input connectors is indicated below. Do not apply excessive voltage to the connectors. Doing so may damage the device or lead to injury.

Table 1-1 Maximum allowable input voltage

Input Connector		Maximum Allowable Input Voltage
LV 5490	EXT REF	±5 V (DC + peak AC)
	REMOTE	0 to +5 V
SER01	SDI INPUT	±2 V (DC + peak AC)
SER02	SDI INPUT (1A to 1D)	0 to +12 V (DC), ±1V (AC)
	SDI INPUT (2A to 2D)	±2 V (DC + peak AC)
SER03	DIGITAL AUDIO INPUT	±5 V (DC + peak AC)
SER06	12G-SDI INPUT (1A to 1D) 3G-SDI INPUT (2A to 2D)	±2 V (DC + peak AC)
SER08	12G-SDI INPUT (1A to 1D) 3G-SDI INPUT (2A to 2D)	±2 V (DC + peak AC)

1.2.2 Mechanical Shock

This instrument contains sensitive components, so it may be damaged if it is dropped or otherwise exposed to a strong shock.

1.2.3 Electrostatic Damage

Electronic components can be damaged by static discharge. Static electricity can build up in the core wire of a coaxial cable. Before connecting a coaxial cable to the instrument, short the core wire of the cable with the external conductor.

1.2.4 Warming Up

To ensure more accurate measurements, turn ON the instrument approximately 30 minutes before you intend to use it to allow its internal temperature to stabilize.

1.2.5 About Standby Mode

Even if you press the power switch to turn off this instrument, the instrument remains in standby mode as long as the power cord is connected to the outlet. In standby mode, some of the internal circuits operate and may generate heat. Unless necessary, keep the power cord disconnected from the outlet.

1.2.6 Backup

This instrument has a last-memory feature. When you turn the power on, the instrument starts with the panel settings that were in use the last time that it was turned off. If the backup battery is out of power, the message “The last memory feature is disabled.” will appear, and this last-memory feature will no longer work.

To continually use the last-memory feature, we recommend that you replace the backup battery with a new one every five years after you purchase the instrument. You cannot replace the backup battery yourself. For details, contact your nearest LEADER agent.

1.2.7 About the LCD Panel

There may be a small number of pixels in the LCD panel that do not light or are always on. Note that this is not a malfunction.

The LCD panel supports a large number of video signals. SDI input signals are displayed asynchronously on the LCD. Therefore, images may appear to flicker on the waveform and picture displays.
In addition, the input SDI signal is temporarily stored in frame memory and is loaded by using the LCD display synchronization signal—which is not synchronized with the input SDI signal. Therefore, because frame skip—which skips over frames in the memory—and frame repeat—which reads the same frames of the memory twice—occur, the image may appear to flicker.
(An external sync signal can be used to synchronize the LCD to the input signal.)

1.3 About Trademarks and Licenses

The company and product names in this document are trademarks or registered trademarks of their respective holders.

1.4 About Terminology Used in this Manual

- **SER****

  LV 5490SER** is referred to as SER**.

- **Single Input Mode**

  This refers to the mode in which on the INPUT menu, F•7 DISPLAY is set to SINGLE.
  It is a mode for measuring a single input signal.

- **Simul Mode**

  This refers to the mode in which on the INPUT menu, F•7 DISPLAY is set to SIMUL.
  It is a mode for measuring multiple input signals simultaneously.

- **Multi Display**

  This refers to the mode in which the MULTI key is on.

- **About Underlining (_)**

  Underlined options indicate the default values.

- **Input Formats and Link Systems**

  The following names are used for the input formats and link systems.
  Multi link may be used as a collective term to refer to dual link and quad link.

Table 1-2 Input formats and link systems

Name	Description	Link System
SD	SD-SDI	Single link
HD	HD-SDI	Single link
3G-A	3G-SDI level A	Single link
3G-B-DL	3G-SDI level B dual link mapping	Single link
3G-B-DS	3G-SDI level B dual stream mapping	Single link
12G	12G-SDI TYPE 1	Single link
HD (DL)	HD-SDI dual link	Dual Link
HD (QL)	HD-SDI quad link	Quad link
3G (DL)-2K	3G-A, 3G-B-DL dual link Resolution 1920(2048)×1080	Dual Link
3G (DL)-4K	3G-B-DS dual link Resolution 3840(4096)×2160	Dual Link
3G (QL)	3G-A, 3G-B-DL quad link	Quad link
3G	Collective name for 3G links	-
3G-B	Collective name for 3G-B-DL and 3G-B-DS	-
3G (DL)	Collective name for 3G (DL)-2K and 3G (DL)-4K	-
4K	Collective name for HD (QL), 3G (DL)-4K, 3G (QL) and 12G	-

1.5 About the LV 5480

This manual explains the LV 5490.
If you are using the LV 5480, refer to the LV 5490 vs. LV 5480 comparison table below, and read LV 5490 as LV 5480 in this manual.

Table 1-3 LV 5490 vs. LV 5480 comparison

Item	LV 5490	LV 5480
Supported units	LV 5490SER01 LV 5490SER02 LV 5490SER03 LV 5490SER06 LV 5490SER08	LV 5490SER01 LV 5490SER02 LV 5490SER03 LV 5490SER06 (*1) LV 5490SER08 (*1)
Supported options	LV 5490SER04 LV 5490SER05 LV 5490SER07 LV 5490SER09 (*2) LV 5490SER10	LV 5490SER04 LV 5490SER05 LV 5490SER07 LV 5490SER09 (*2) LV 5490SER10 LV 5480SER20 LV 5480SER21
4K function	Standard support	Supported with LV 5480SER20 (*3)
Signal generation function	Standard support	Supported with LV 5480SER21 (*4)
USB save destination folder name	LV5490_USER	LV5480_USER
TELNET login and password	LV5490	LV5480
FTP login and password	LV5490	LV5480
SNMP MIB file name	lv5490.my	lv5490.my (*5)

*1 The LV 5480SER20 must be installed to install the LV 5490SER06 or LV 5490SER08.
*2 The LV 5490SER06 must be installed, to install LV 5490SER09.
*3 Installing the LV 5480SER20 enables you to select 4K 3G Quad Link, 4K 3G Dual Link, and 4K HD Quad Link for SDI System on the SDI IN tab.
*4 Installing the LV 5480SER21 enables you to select Test Signal for Mode on the SDI OUT tab.
*5 The MIB file is shared with the LV 5490, but the SNMP manager detects it as “LV5480.” The other aspects of the SNMP function are the same as those of the LV 5490.

2. SPECIFICATIONS

2.1 General

The LV 5490 is a multi waveform monitor that supports 4K video formats. It can receive four 12G-SDI signals by switching. It can also receive up to four signals up to 3G-SDI simultaneously, and up to eight signals can be displayed by switching. For 4K video formats, 12G-SDI single link, 3G-SDI dual link, and quad link, HD-SDI quad link, IP(NMI) are supported.

The display is a 9-inch full high definition LCD enabling the LV 5490 to also be used as a high-quality picture monitor. In addition, the LV 5490 is equipped with SDI and DVI-D output connectors. The content shown on the LV 5490 display can be output to an external full high definition monitor.

The display incorporates a new free layout technology that allows the size and position of the display layout to be customized with a mouse to suit your application.

The following units and options are available. You can combine them to suit your application.

LV 5490SER01 (SDI INPUT):	SDI input (*1)
LV 5490SER02 (SDI INPUT / EYE):	SDI input with eye pattern (*1)
LV 5490SER03 (DIGITAL AUDIO):	Digital audio I/O
LV 5490SER06 (12G-SDI INPUT):	12G SDI input (*1)
LV 5490SER08 (IP(NMI)):	IP(NMI) input (*1)
LV 5490SER04 (FOCUS ASSIST):	Focus assist
LV 5490SER05 (CIE DIAGRAM):	CIE diagram
LV 5490SER07 (HDR):	High dynamic range
LV 5490SER09 (12G-SDI EYE):	12G SDI eye pattern (*2)
LV 5490SER10 (VIDEO NOISE METER):	Video noise meter

*1 The LV 5490 requires an LV 5490SER01, LV 5490SER02, LV 5490SER06, or LV 5490SER08 to be installed.
These units cannot be installed simultaneously.

*2 The LV 5490SER06 must be installed, to install LV 5490SER09.

2.2 Features

- **4K Video Format**

  The LV 5490 supports 4K video formats (4096×2160 and 3840×2160) based on 12G single link, 3G dual link and quad link and HD quad link.
  Up to four 12G single link or 3G dual link 4K video signals can be displayed by switching.
  Up to two 3G quad link or HD quad link 4K video signals can be displayed by switching.
  In addition, IP (NMI) supports video signals in 4K video format (3840×2160). If 4K video is input into IP (NMI), only one input is displayed.

- **Full High Definition LCD**

  The LV 5490 is equipped with a 9-inch LCD with excellent viewing angle and color reproducibility. It can also be used as a high-quality high definition picture monitor.

- **Free Layout**

  The LV 5490 can display not only the video signal waveform, vector waveform, picture, and the like of an input SDI signal simultaneously, but it can also display multiple input signals simultaneously and overlay them for comparison. The measurement screens can be adjusted in size and position as you like.
  Different layout configurations can be achieved simply by using the mouse.

- **Eight Inputs and Simultaneous Four Input Display**

  The LV 5490 has four SDI input connectors compatible with 3G, HD, and SD and can display up to four SDI input signals simultaneously. It also has four additional SDI I/O connectors. (*1) If these connectors are used as inputs, the LV 5490 can receive up to eight SDI input signals.

  *1 For the I/O connectors, the maximum length of 5C2V cables that SD signals can be received is 100 meters. See section 4.9.1, “SDI Signal I/O.”

- **Up to Four 12G-SDI Inputs and Reclock Output (SER06/SER08)**

  The LV 5490 has four SDI input connectors compatible with 12G and can display the SDI signal of one of these inputs by switching. Further, it also provides reclock output of the displayed 12G-SDI signal.

- **Equivalent Cable Length Measurement (SER01/SER02)**

  The four SDI input connectors are equipped with an equivalent cable length measurement function. This function displays SDI signal attenuation in terms of a coaxial cable length, which can be used to check the margin that the system has.

- **Pattern Generator Function and Reclock Output**

  By using the four SDI I/O connectors as outputs, you can use them as reclock outputs of the SDI signals received through the SDI input connectors. They can also be used as outputs for generating patterns such as color bars with embedded audio. In pattern output, the phase of each SDI output can be varied up to ±0.5 lines or ±1/2 frames. This feature can be used to check the system’s phase margin.

- **External Monitor Output and SDI Routing**

  The measurement screen can be output in SDI or DVI-D from the monitor output connector. The output signal can be displayed on an external LCD in full high definition resolution. In addition, an SDI signal received through one of the SDI input or SDI I/O connectors can be reclocked and output, serving as a routing function. (excluding 12G-SDI)

- **USB Mouse Operation**

  A USB mouse can be used to operate the panel. If the measurement screen is displayed on an external monitor in SDI or DVI-D, you can control the LV 5490 by using a USB mouse while viewing the external monitor.

- **SDI Signal Analysis**

  On the status display, SDI signal transmission errors and various errors related to the embedded audio signal, ancillary data, and video data can be detected.
  It also has event log, data dump, and phase difference measurement features enabling you to perform detailed SDI signal analysis.

- **Screen Capture**

  The LV 5490 is equipped with a screen capture feature, which captures the entire display as still-image data. Not only can captured data be displayed by the LV 5490, but it can also be compared with an input signal or saved to a USB memory device as bitmap data for viewing on a PC.

- **Frame Capture**

  The LV 5490 is equipped with a frame capture feature, which captures single frames in an SDI signal. Frames can be captured manually or automatically when errors occur.

- **Time Code Display**

  The LV 5490 can display the LTC or VITC that is embedded in an SDI signal and the D-VITC of an SD signal. The timecode can also be used for time stamps in the event log.

- **External Remote Connector**

  The remote control connector can be used to load presets, switch the input signal, and transmit alarms.

- **Ethernet Port**

  By connecting the Ethernet interface to a PC, you can control the LV 5490 remotely over TELNET, transfer files over FTP, control the LV 5490 remotely and detect errors over SNMP, and control the LV 5490 over HTTP (to be supported in the future). You can also connect to the separately-sold LV 5490-01 (REMOTECONTROLLER).

- **Eye Pattern Display (SER02/SER09)**

  This feature can display eye pattern waveforms and jitter waveforms of SDI signals as well as measurement results of various parameters. The feature displays the information of the SDI signals received through the four SDI input connectors, one input at a time.

- **Embedded Audio Display (SER03)**

  Embedded audio can be separated from the SDI signal and shown in Lissajous, surround, and meter displays. Other types of analysis displays are also available. 16 channels of one SDI signal or 4 channels of four SDI signals can be displayed simultaneously.

- **Digital Audio I/O (SER03)**

  The digital Audio I/O option has eight digital I/O connectors. Switching between input and output is possible in groups of four connectors (eight channels).
  When used as inputs, digital audio can be shown in Lissajous, surround, and meter displays. Other types of analysis displays are also available.
  When used as outputs, embedded audio is separated from SDI signals and output as digital audio signals.

- **Dolby Option (SER03)**

  When the Dolby option is added, the Dolby audio signal in the embedded audio or digital audio signal can be decoded and displayed.
  Dolby E, Dolby Digital, and Dolby Digital Plus are supported.

- **Focus Assist (SER04)**

  A new focusing algorithm based on nonlinear super-resolution technology has been developed, allowing highly sensitive focusing even on low-contrast images that were difficult to be focused in on in the past. You can select the sensitivity from the five available levels according to the image scene.

- **CIE Diagram (SER05)**

  Chromaticity diagrams based on ITU-R BT.601, ITU-R BT.709, and ITU-R BT.2020 colorimetries can be displayed. Display mode supports CIE 1931 (xy display) and CIE 1976 (u'v' display).

- **HDR (SER07)**

  On CINEZONE display, the SDR area is displayed in monochrome, while the HDR area is displayed using colors corresponding to the brightness. This makes it easy to view the brightness distribution in the HDR area. In addition, displaying the peak and average values of brightness reduces the grading time.
  On video signal waveform display and histogram display, displaying a scale corresponding to the HDR standard makes it possible to manage video in Scene linear.

- **IP(NMI) Input (SER08)**

  As the IP input supports Networked Media Interface (NMI), 4K (compressed) and HD (compressed or uncompressed) video signals can be displayed with little delay.
  If the input signal is HD, the video signals of up to four inputs can be displayed simultaneously. In addition, IP and SDI can be displayed simultaneously.

- **Video Noise Meter (SER10)**

  Noise included in the Y, G, B, or R signal of the SDI signal applied to the LV 5490 can be measured.

- **RS-422/485 Connector (custom order feature)**

  The camera ID can be displayed using serial communication.

- **Remote Controller (LV 5490-01; sold separately)**

  Equipped with keys that correspond to the front panel keys of the LV 5490. They can be used to remotely control the LV 5490 via Ethernet.
  (You cannot use TELNET while you are using the LV 5490-01.)

2.3 Specifications

2.3.1 SDI Formats and Standards

Table 2-1 SD video signal formats and standards

Color System	Quantization	Image	Field Frequency/Scanning	Compliant Standard
YC_BC_R 4:2:2	10 bits	720×487	59.94/I	SMPTE ST 259
		720×576	50/I	

Table 2-2 HD video signal formats and standards

Color System	Quantization	Image	Frame (Field) Frequency/Scanning	Compliant Standard
YC_BC_R 4:2:2	10 bits	1280×720	60/59.94/50/30/29.97/25/24/23.98/P	SMPTE ST 292-1 SMPTE ST 296
		1920×1080	60/59.94/50/I	SMPTE ST 274 SMPTE ST 292-1
			30/29.97/25/24/23.98/P	
			30/29.97/25/24/23.98/PsF	

Table 2-3 3G-A video signal formats and standards

Color System	Quantization	Image	Frame (Field) Frequency/Scanning	Compliant Standard
YC_BC_R 4:2:2	10 bits	1920×1080	60/59.94/50/P	SMPTE ST 274 SMPTE ST 425-1
			48/47.95/P	-
		2048×1080	60/59.94/50/48/47.95/P	SMPTE ST 425-1 SMPTE ST 2048-2
	12 bits	1920×1080	60/59.94/50/I	SMPTE ST 274 SMPTE ST 425-1
			30/29.97/25/24/23.98/P	
			30/29.97/25/24/23.98/PsF	
		2048×1080	30/29.97/25/24/23.98/P	SMPTE ST 425-1 SMPTE ST 2048-2
			30/29.97/25/24/23.98/PsF	
YC_BC_R 4:4:4	10 bits	1280×720	60/59.94/50/30/29.97/25/24/23.98/P	SMPTE ST 296 SMPTE ST 425-1
		1920×1080	60/59.94/50/I	SMPTE ST 274 SMPTE ST 425-1
			30/29.97/25/24/23.98/P	
			30/29.97/25/24/23.98/PsF	
		2048×1080	30/29.97/25/24/23.98/P	SMPTE ST 425-1 SMPTE ST 2048-2
			30/29.97/25/24/23.98/PsF	
	12 bits	1920×1080	60/59.94/50/I	SMPTE ST 274 SMPTE ST 425-1
			30/29.97/25/24/23.98/P	
		2048×1080	30/29.97/25/24/23.98/P	SMPTE ST 425-1 SMPTE ST 2048-2
			30/29.97/25/24/23.98/PsF	

Color System	Quantization	Image	Frame (Field) Frequency/Scanning	Compliant Standard
RGB 4:4:4	10 bits	1280×720	60/59.94/50/30/29.97/25/24/23.98/P	SMPTE ST 296 SMPTE ST 425-1
		1920×1080	60/59.94/50/I	SMPTE ST 274 SMPTE ST 425-1
			30/29.97/25/24/23.98/P	
			30/29.97/25/24/23.98/PsF	
		2048×1080	30/29.97/25/24/23.98/P	SMPTE ST 425-1 SMPTE ST 2048-2
			30/29.97/25/24/23.98/PsF	
	12 bits	1920×1080	60/59.94/50/I	SMPTE ST 274 SMPTE ST 425-1
			30/29.97/25/24/23.98/P	
		2048×1080	30/29.97/25/24/23.98/P	SMPTE ST 425-1 SMPTE ST 2048-2
			30/29.97/25/24/23.98/PsF	
XYZ 4:4:4	12 bits	2048×1080	30/25/24/P	SMPTE ST 425-1 SMPTE ST 428
			30/25/24/PsF	

Table 2-4 3G-B-DL and HD (DL) video signal formats and standards

Color System	Quantization	Image	Frame (Field) Frequency/Scanning	Compliant Standard
YC_BC_R 4:2:2	10 bits	1920×1080	60/59.94/50/P	SMPTE ST 274 SMPTE ST 372 SMPTE ST 425-1
		2048×1080	60/59.94/50/48/47.95/P	SMPTE ST 372 SMPTE ST 425-1 SMPTE ST 2048-2
	12 bits	1920×1080	60/59.94/50/I	SMPTE ST 274 SMPTE ST 372 SMPTE ST 425-1
			30/29.97/25/24/23.98/P	
			30/29.97/25/24/23.98/PsF	
		2048×1080	30/29.97/25/24/23.98/P	SMPTE ST 372 SMPTE ST 425-1 SMPTE ST 2048-2
			30/29.97/25/24/23.98/PsF	
YC_BC_R 4:4:4	10 bits	1920×1080	60/59.94/50/I	SMPTE ST 274 SMPTE ST 372 SMPTE ST 425-1
			30/29.97/25/24/23.98/P	
			30/29.97/25/24/23.98/PsF	
		2048×1080	30/29.97/25/24/23.98/P	SMPTE ST 372 SMPTE ST 425-1 SMPTE ST 2048-2
			30/29.97/25/24/23.98/PsF	
	12 bits	1920×1080	60/59.94/50/I	SMPTE ST 274 SMPTE ST 372 SMPTE ST 425-1
			30/29.97/25/24/23.98/P	
			30/29.97/25/24/23.98/PsF	
		2048×1080	30/29.97/25/24/23.98/P	SMPTE ST 372 SMPTE ST 425-1 SMPTE ST 2048-2
			30/29.97/25/24/23.98/PsF	

Color System	Quantization	Image	Frame (Field) Frequency/Scanning	Compliant Standard
RGB 4:4:4	10 bits	1920×1080	60/59.94/50/I	SMPTE ST 274
			30/29.97/25/24/23.98/P	SMPTE ST 372
			30/29.97/25/24/23.98/PsF	SMPTE ST 425-1
		2048×1080	30/29.97/25/24/23.98/P	SMPTE ST 372
			30/29.97/25/24/23.98/PsF	SMPTE ST 425-1
				SMPTE ST 2048-2
	12 bits	1920×1080	60/59.94/50/I	SMPTE ST 274
			30/29.97/25/24/23.98/P	SMPTE ST 372
			30/29.97/25/24/23.98/PsF	SMPTE ST 425-1
		2048×1080	30/29.97/25/24/23.98/P	SMPTE ST 372
			30/29.97/25/24/23.98/PsF	SMPTE ST 425-1
				SMPTE ST 2048-2
XYZ 4:4:4	12 bits	2048×1080	30/25/24/P	SMPTE ST 372
			30/25/24/PsF	SMPTE ST 425-1
				SMPTE ST 428

* When these signals are displayed, phase differences of up to 100 clocks (approx. 1.34 us) between HD (DL) links are automatically corrected.

Table 2-5 3G-B-DS video signal formats and standards

Color System	Quantization	Image	Frame (Field) Frequency/Scanning	Compliant Standard
YC_BC_R 4:2:2	10 bits	1920×1080	60/59.94/50/I	SMPTE ST 274
			30/29.97/25/24/23.98/P	SMPTE ST 425-1
			30/29.97/25/24/23.98/PsF	
		1280×720	60/59.94/50/30/29.97/25/24/23.98/P	SMPTE ST 296
				SMPTE ST 425-1

Table 2-6 3G(DL)-2K video signal formats and standards

Color System	Quantization	Image	Frame (Field) Frequency/Scanning	Compliant Standard
YC_BC_R 4:2:2	12 bits	1920×1080	60/59.94/50/P	SMPTE ST 274
				SMPTE ST 425-3
			48/47.95/P	-
		2048×1080	60/59.94/50/48/47.95/P	SMPTE ST 2048-2
				SMPTE ST 425-3
YC_BC_R 4:4:4	10 bits	1920×1080	60/59.94/50/P	SMPTE ST 274
				SMPTE ST 425-3
		2048×1080	60/59.94/50/48/47.95/P	SMPTE ST 2048-2
				SMPTE ST 425-3
	12 bits	1920×1080	60/59.94/50/P	SMPTE ST 274
				SMPTE ST 425-3
		2048×1080	60/59.94/50/48/47.95/P	SMPTE ST 2048-2
				SMPTE ST 425-3

Color System	Quantization	Image	Frame (Field) Frequency/Scanning	Compliant Standard
RGB 4:4:4	10 bits	1920×1080	60/59.94/50/P	SMPTE ST 274 SMPTE ST 425-3
		2048×1080	60/59.94/50/48/47.95/P	SMPTE ST 2048-2 SMPTE ST 425-3
	12 bits	1920×1080	60/59.94/50/P	SMPTE ST 274 SMPTE ST 425-3
		2048×1080	60/59.94/50/48/47.95/P	SMPTE ST 2048-2 SMPTE ST 425-3

* When these signals are displayed, phase differences of up to 100 clocks (approx. 0.67 us) between links are automatically corrected.

* 3G-A and 3G-B-DL links are supported.

Table 2-7 3G (DL)-4K video signal formats and standards

Division Transmission System	Color System	Quantization	Image	Frame Frequency/Scanning	Compliant Standard
Square	YC_BC_R 4:2:2	10 bits	3840×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-3 SMPTE ST 2036-1
				30/29.97/25/24/23.98/PsF	-
			4096×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-3 SMPTE ST 2048-1
				30/29.97/25/24/23.98/PsF	-
2 sample interleave	YC_BC_R 4:2:2	10 bits	3840×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-3 SMPTE ST 2036-1
			4096×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-3 SMPTE ST 2048-1

* When these signals are displayed, phase differences of up to 100 clocks (approx. 0.67 us) between links are automatically corrected.

* 3G-B-DS links are supported.

Table 2-8 HD (QL) video signal formats and standards

Division Transmission System	Color System	Quantization	Image	Frame Frequency/Scanning	Compliant Standard
Square	YC_BC_R 4:2:2	10 bits	3840×2160	30/29.97/25/24/23.98/P	-
				30/29.97/25/24/23.98/PsF	-
			4096×2160	30/29.97/25/24/23.98/P	-
				30/29.97/25/24/23.98/PsF	-

* When these signals are displayed, phase differences of up to 100 clocks (approx. 0.67 us) between links are automatically corrected.

Table 2-9 3G (QL) video signal formats and standards

Division Transmission System	Color System	Quantization	Image	Frame Frequency/Scanning	Compliant Standard
Square	YC_BC_R 4:2:2	10 bits	3840×2160	60/59.94/50/P	SMPTE ST 425-5 SMPTE ST 2036-1
				48/47.95/P	-
			4096×2160	60/59.94/50/48/47.95/P	SMPTE ST 425-5 SMPTE ST 2048-1
		12 bits	3840×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-5 SMPTE ST 2036-1
				30/29.97/25/24/23.98/PsF	-
			4096×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-5 SMPTE ST 2048-1
				30/29.97/25/24/23.98/PsF	-
	YC_BC_R 4:4:4	10 bits	3840×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-5 SMPTE ST 2036-1
				30/29.97/25/24/23.98/PsF	-
			4096×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-5 SMPTE ST 2048-1
				30/29.97/25/24/23.98/PsF	-
		12 bits	3840×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-5 SMPTE ST 2036-1
				30/29.97/25/24/23.98/PsF	-
			4096×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-5 SMPTE ST 2048-1
				30/29.97/25/24/23.98/PsF	-
	RGB 4:4:4	10 bits	3840×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-5 SMPTE ST 2036-1
				30/29.97/25/24/23.98/PsF	-
			4096×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-5 SMPTE ST 2048-1
				30/29.97/25/24/23.98/PsF	-
		12 bits	3840×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-5 SMPTE ST 2036-1
				30/29.97/25/24/23.98/PsF	-
			4096×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-5 SMPTE ST 2048-1
				30/29.97/25/24/23.98/PsF	-
	XYZ 4:4:4	12 bits	4096×2160	30/25/24/P	SMPTE ST 425-5 SMPTE ST 428
				30/25/24/PsF	-

Division Transmission System	Color System	Quantization	Image	Frame Frequency/Scanning	Compliant Standard
2 sample interleave	YC_BC_R 4:2:2	10 bits	3840×2160	60/59.94/50/P	SMPTE ST 425-5 SMPTE ST 2036-1
				48/47.95/P	-
			4096×2160	60/59.94/50/48/47.95/P	SMPTE ST 425-5 SMPTE ST 2048-1
		12 bits	3840×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-5 SMPTE ST 2036-1
			4096×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-5 SMPTE ST 2048-1
	YC_BC_R 4:4:4	10 bits	3840×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-5 SMPTE ST 2036-1
			4096×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-5 SMPTE ST 2048-1
		12 bits	3840×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-5 SMPTE ST 2036-1
			4096×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-5 SMPTE ST 2048-1
	RGB 4:4:4	10 bits	3840×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-5 SMPTE ST 2036-1
			4096×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-5 SMPTE ST 2048-1
		12 bits	3840×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-5 SMPTE ST 2036-1
			4096×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-5 SMPTE ST 2048-1
	XYZ 4:4:4	12 bits	4096×2160	30/25/24/P	SMPTE ST 425-5 SMPTE ST 428

* When these signals are displayed, phase differences of up to 100 clocks (approx. 0.67 us) between links are automatically corrected.

* 3G-A and 3G-B-DL links are supported.

Table 2-10 12G video signal formats and standards (SER06/SER08)

Division Transmission System	Color System	Quantization	Image	Frame Frequency/Scanning	Compliant Standard
2 sample interleave	YC_BC_R 4:2:2	10 bits	3840×2160	60/59.94/50/P	SMPTE ST 2036-1 SMPTE ST 2082-10
				48/47.95/P (SER08 only)	-
			4096×2160	60/59.94/50/48/47.95/P	SMPTE ST 2036-1 SMPTE ST 2082-10
		12 bits	3840×2160	30/29.97/25/24/23.98/P	SMPTE ST 2036-1 SMPTE ST 2082-10
			4096×2160	30/29.97/25/24/23.98/P	SMPTE ST 2036-1 SMPTE ST 2082-10
	YC_BC_R 4:4:4	10 bits	3840×2160	30/29.97/25/24/23.98/P	SMPTE ST 2036-1 SMPTE ST 2082-10
			4096×2160	30/29.97/25/24/23.98/P	SMPTE ST 2036-1 SMPTE ST 2082-10
		12 bits	3840×2160	30/29.97/25/24/23.98/P	SMPTE ST 2036-1 SMPTE ST 2082-10
			4096×2160	30/29.97/25/24/23.98/P	SMPTE ST 2036-1 SMPTE ST 2082-10
	RGB 4:4:4	10 bits	3840×2160	30/29.97/25/24/23.98/P	SMPTE ST 2036-1 SMPTE ST 2082-10
			4096×2160	30/29.97/25/24/23.98/P	SMPTE ST 2036-1 SMPTE ST 2082-10
		12 bits	3840×2160	30/29.97/25/24/23.98/P	SMPTE ST 2036-1 SMPTE ST 2082-10
			4096×2160	30/29.97/25/24/23.98/P	SMPTE ST 2036-1 SMPTE ST 2082-10

* 12G-SDI TYPE 1 links are supported.

2.3.2 Supported IP (NMI) Input Signal Formats (SER08)

Table 2-11 IP (NMI) input signal format

Color System	Quantization	Image	Frame (Field) Frequency/Scanning
YCBCR 4:2:2	10 bits	1920x1080	59.94/50/I
YCBCR 4:2:2	10 bits	3840x2160	59.94/50/P

* The IP transmission input system supports NMI.

* The supported IP control system is IP Live System Manager.

2.3.3 Embedded Audio Playback Format (SER03)

Compliant Standards	
3G, HD, HD (DL)	SMPTE ST 299
SD	SMPTE ST 272
Format	L-PCM, Dolby-E (option), Dolby Digital (option), Dolby Digital Plus (option)
Sampling Frequency	48 kHz
Quantization	24 bits
Clock Generation	Generated from the video clock
Synchronization	Must be synchronized to the video clock. All SDI signals must be synchronized.
Channel Separation	Separates up to four groups (16 channels) from an SDI input.

2.3.4 SDI I/O Connectors

SDI Input Connectors	
Connector Type	BNC
Number of Input Connectors	4 (1A, 1B, 1C, 1D)
Input Impedance	75 Ω
Input Return Loss	
5 MHz to 1.485 GHz	15 dB or more
1.485 to 2.97 GHz	10 dB or more
Maximum Input Voltage	
SER01/SER06/SER08	±2 V (DC + peak AC)
SER02	0 to +12 V (DC), ±1 V (AC)

SDI I/O Connectors	
Connector Type	BNC
Number of I/O Connectors	4 (2A, 2B, 2C, 2D)
I/O Impedance	75 Ω
I/O Return Loss	
5 MHz to 1.485 GHz	15 dB or more
1.485 to 2.97 GHz	10 dB or more
Maximum Input Voltage	±2 V (DC + peak AC)
Output Voltage	800 mVp-p ± 10 % (into 75 Ω)
Output Signals	Reclocked signal of SDI input, pattern generator

12G-SDI Output Connector (SER06/SER08)	
Connector Type	BNC
Number of Output Connectors	1
Output Impedance	75 Ω
Output Return Loss	
5 MHz to 1.485 GHz	15 dB or more
1.485 to 2.97 GHz	10 dB or more
Output Voltage	800 mVp-p ± 10 % (into 75 Ω)
Output Signals	Reclocked signal of the SDI signal received through 1A to 1D

Input Signal Selection (*1)

When the I/O Connector Is Set to Input

SD/HD/3G-A/3G-B-DL	Four input signals consisting of 1A, 1B, 1C, and 1D or four input signals consisting of 2A, 2B, 2C, and 2D
3G-B-DS	One input signal selected from 1A, 1B, 1C, and 1D or one input signal selected from 2A, 2B, 2C, and 2D
HD (DL), 3G (DL)-2K	Two input signals consisting of (1A, 1B) and (1C, 1D) or two input signals consisting of (2A, 2B) and (2C, 2D)
3G (DL)-4K	One input signal selected from (1A, 1B) and (1C, 1D) or one input signal selected from (2A, 2B) and (2C, 2D)
3G (QL), HD (QL)	One input signal selected from (1A, 1B, 1C, 1D) and (2A, 2B, 2C, 2D)
12G (SER06/SER08)	One input signal selected from 1A, 1B, 1C, and 1D

When the I/O Connector Is Set to Output

SD/HD/3G-A/3G-B-DL	Input signals 1A, 1B, 1C, 1D
3G-B-DS, 12G (SER06/SER08)	One input signal selected from 1A, 1B, 1C, and 1D
HD (DL), 3G (DL)-2K	Two input signals consisting of (1A, 1B) and (1C, 1D)
3G (DL)-4K	One input signal selected from (1A, 1B) and (1C, 1D)
3G (QL), HD (QL)	One input signal consisting of (1A, 1B, 1C, 1D)

*1 Parentheses indicate multi link combinations.

2.3.5 IP(NMI) Input Connectors (SER08)

Input terminal (SFP+)	DLC/DLC connector
Number of Ports	2
Compliant Standard	10GBASE-SR
Fiber Type	Multi mode
Optical fiber diameter	50 μm
Wavelength	850 nm

* The SFP+ transceivers are accessories.

2.3.6 External Reference Input

Connector Type	BNC
Number of Input Connectors	1 pair
Input Impedance	15 kΩ passive loop-through
Input Return Loss	≥ 30 dB for 50 kHz to 30 MHz into 75 Ω
Maximum Input Voltage	±5 V (DC + peak AC)
Input Signal	Tri-level sync or NTSC/PAL black burst signal

* The waveform display position and the measured phase of the phase difference display based on the external sync signal may vary by ±1 clock depending on the timing when the external sync signal or SDI signal is connected or disconnected or when the device is restarted.
* Waveform display using an external sync signal is not possible for the following formats.
  - 3G 720/30P, 720/29.97P, 720/25P, 720/24P, 720/23.98P
  - HD (DL) 1080/60P, 1080/59.94P, 1080/50P
  - 3G (DL), 3G (QL), HD (QL), 12G (SER06/SER08)
  - Frame frequency 48P, 47.95P
* Phase difference display using an external sync signal is not possible for the following formats.
  - 3G 720/30P, 720/29.97P, 720/25P, 720/24P, 720/23.98P
  - Frame frequency 48P, 47.95P

2.3.7 Audio Input/Output Connectors (SER03)

Digital Audio I/O Connectors

Connector Type	BNC
Number of I/O Connectors	
Group A	4 pairs (8 channels)
Group B	4 pairs (8 channels)
I/O Impedance	75 Ω
Maximum Input Voltage	±5 V (DC + peak AC)
Output Voltage	1.0 Vp-p ± 10 % (into 75 Ω)
Input/Output Switching	By group (4 pairs (8 channels))
Compliant Standard	AES-3id
Supported Format	L-PCM, Dolby-E (option), Dolby Digital (option), Dolby Digital Plus (option)
Sampling Frequency	48 kHz
Output Signal	Audio signal displayed on the screen (Dolby signals are decoded and generated.)

Headphone Output

Connector Type	One mini jack (stereo)
Output Signals	Two channels from the audio signals that are being displayed on the screen (downmixed Lt and Rt are also possible)
Sampling Frequency	48 kHz
Volume Adjustment	Using the menu
Power Output	100 mW maximum (into 8 Ω load)

2.3.8 Monitor Output Connector

SDI Output Connector

Connector Type	BNC
Number of Output Connectors	1
Output Impedance	75 Ω
Output Return Loss	
5 MHz to 1.485 GHz	15 dB or more
1.485 to 2.97 GHz	10 dB or more
Output Voltage	800 mVp-p ± 10 % (into 75 Ω)
Output Signal	Outputs the LCD screen in HD, 3G-A, or 3G-B-DL.
Output Format	

Color System	Quantization	Image	Frame (Field) Frequency/Scanning	Compliant Standard
YC_BC_R 4:2:2	10 bits	1920×1080	60/59.94/50/I	SMPTE ST 274
			60/59.94/50/P	

Synchronization	Synchronized with the LCD refresh rate (free run or frequency synchronization with the external reference signal(*1))
Routing	Outputs the SDI signal received through I/O connectors 1A to 1D or 2A to 2D (excluding 12G-SDI)

DVI-D Output Connector

Connector Type	DVI-D
Number of Output Connectors	1
Signal Format	Single Link T.M.D.S
DDC	Not supported
HOT PLUG Detection	Not supported
Output Signal	Outputs the LCD screen
Image	1920×1080
Frame Frequency	60P, 59.94P, 50P
Synchronization	Synchronized with the LCD refresh rate (free run or frequency synchronization with the external reference signal(*1))

*1 Frame (field) frequencies 24 Hz and 23.98 Hz are not supported.

2.3.9 Control Connectors

USB Port

Port Type	Standard A
Number of Ports	2 (one on front, one on rear)
Specifications	USB 2.0
Compatible Devices	USB memory, USB mouse
USB Memory Feature	Saves captured data, preset data, and data dumps
USB Mouse Feature	Used to control on the screen

Ethernet Port (*1)

Compliant Standard	IEEE802.3
Supported Protocol	TELNET, FTP, SNMP, HTTP, SNTP
I/O Connectors	RJ-45
Function	Remote control from an external PC or the LV 5490-01
Type	10Base-T, 100Base-TX

Remote Connector

Port Type	15-pin D-sub (female)
Locking screws	Inch screws (No.4-40UNC)
Number of Ports	1
Control Signal	LV-TTL level (low active)
Input Voltage Range	0 to 5 VDC All inputs are pulled up to +3.3 V (control is also possible using +5 V)
Function	Used to load preset settings, switch input signals, and transmit the alarm signal
Alarm Output	Outputs alarms signals when format alarms occur, when various errors occur, when the fan malfunctions, or when the internal temperature is abnormal

RS-422/485 Connector Custom order feature

*1 You cannot use TELNET and the LV 5490-01 at the same time.

2.3.10 Front Panel

Display

LCD Type	9-inch color TFT
Resolution	1920×1080P
Refresh Rate	60 Hz, 59.94 Hz, 50 Hz (free run or frequency synchronization with the external reference signal (*1))
Backlight Brightness	32 levels
Key LEDs	All the keys are dimly back-lit. The selected key is lit more brightly.
Power Switch	Electronic switch (which remembers whether the instrument is on or off)
Last Memory	Backs up the panel settings to memory
Key Lock	Prevents erroneous operation

*1 The LCD refresh rate changes automatically depending on the frame rate of the external reference signal.

Frame Rate of the External Reference Signal	LCD Refresh Rate
23.98 Hz	Free run
24 Hz	Free run
25 Hz	50 Hz
29.97 Hz	59.94 Hz
30 Hz	60 Hz

2.3.11 Screen Capture

Function	Captures the screen
Indication	Displays only the captured image or overlays the captured image over the input signal
Media	Internal memory (RAM) and USB memory You can only record one screen capture to the internal memory.
Data Output	Screen captures can be saved as bitmap files to USB memory, or they can be saved in a file format that the LV 5490 can load.
Data Input	Data saved to USB memory can be loaded and displayed on the LV 5490.

2.3.12 Frame Capture

Function	Captures frame data
Indication	Displays the captured frame data or superimposes the captured frame data over the input signal
Media	Internal memory (RAM) and USB memory You can only record one frame of data to the internal memory

Data Output	Frame captures can be saved to USB memory as .dpx files, .tif files, or in a file format that the instrument can load
Data Input	Data saved to USB memory can be loaded and displayed on the instrument (*1)
Capture Timing	Manual and automatic (error capture)
Error Capturing	Automatically captures frame data when an error occurs

*1 An input signal in the same format as the frame data is required.

2.3.13 Pattern Generator

Table 2-12 HD video signal formats and standards

Color System	Quantization	Image	Frame (Field) Frequency/Scanning	Compliant Standard
YC_BC_R 4:2:2	10 bits	1920×1080	60/59.94/50/I	SMPTE ST 274
			30/29.97/25/24/23.98/P	SMPTE ST 292-1
			30/29.97/25/24/23.98/PsF	

Table 2-13 3G-A, 3G-B-DL video signal formats and standards

Color System	Quantization	Image	Frame (Field) Frequency/Scanning	Compliant Standard
YC_BC_R 4:2:2	10 bits	1920×1080	60/59.94/50/48/47.95/P	SMPTE ST 274 SMPTE ST 425-1
			48/47.95/P	-
		2048×1080	60/59.94/50/48/47.95/P	SMPTE ST 425-1 SMPTE ST 2048-2
YC_BC_R 4:4:4 RGB 4:4:4	10 bits	1920×1080	60/59.94/50/I	SMPTE ST 274 SMPTE ST 425-1
			30/29.97/25/24/23.98/P	
			30/29.97/25/24/23.98/PsF	
		2048×1080	30/29.97/25/24/23.98/P	SMPTE ST 425-1
			30/29.97/25/24/23.98/PsF	SMPTE ST 2048-2

Table 2-14 3G (DL)-4K video signal formats and standards

Color System	Quantization	Image	Frame Frequency/Scanning	Compliant Standard
YC_BC_R 4:2:2	10 bits	3840×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-3 SMPTE ST 2036-1
			30/29.97/25/24/23.98/PsF	-
		4096×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-3 SMPTE ST 2048-1
			30/29.97/25/24/23.98/PsF	-

* The supported division transmission systems are square and 2 sample interleave.

Table 2-15 3G (QL) video signal formats and standards

Color System	Quantization	Image	Frame Frequency/Scanning	Compliant Standard
YC_BC_R 4:2:2	10 bits	3840×2160	60/59.94/50/48/47.95/P	SMPTE ST 425-5 SMPTE ST 2036-1
			48/47.95/P	-
		4096×2160	60/59.94/50/48/47.95/P	SMPTE ST 425-5 SMPTE ST 2048-1
YC_BC_R 4:4:4 RGB 4:4:4	10 bits	3840×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-5 SMPTE ST 2036-1
			30/29.97/25/24/23.98/PsF	-
		4096×2160	30/29.97/25/24/23.98/P	SMPTE ST 425-5 SMPTE ST 2048-1
			30/29.97/25/24/23.98/PsF	-

* The supported division transmission systems are square and 2 sample interleave.

* 3G-A and 3G-B-DL links are supported.

Output Pattern — Color bar 100%, color bar 75%, multiformat color bar, color raster, cross hatch, 10 step, limit ramp

Scroll

- Direction — Eight directions (up, down, left, right, and their combinations)
- Speed Range and Unit — 4 to 124 dots, in 4 dot steps

Moving Box — ON, OFF

Frequency Phase Adjustment (*1)

- Quad Link — Adjust the phase of Bch, Cch, and Dch separately relative to Ach
- Dual Link — Adjust the phase of Bch relative to Ach and the phase of Dch relative to Cch
- Adjustment Range — ± 0.5 line (in units of video clocks)
  ± 1/2 frame (in unit of lines)

Embedded Audio

- Number of Embedded Channels
  16 or 8 channels depending on the video format
- Embedding On/Off — On/off at the audio group level
- Audio Level — -20dBFS, -18dBFS, 0dBFS, Mute

*1 The output phase may be off by ±1 clock from the specified value as a result of switching the format or turning on and off the power.

2.3.14 Preset

Preset — Saves panel settings (with a few exceptions)

Number of Presets — 60

Preset Loading Method — Front panel or remote control connector (*1)

Copying — All preset data can be copied from the LV 5490 to a USB memory device or from a USB memory device to the LV 5490.

*1 The number of presets loaded from the remote control connector can be 8 or 60.

2.3.15 Display

Free Layout

Function	Freely arrange the windows shown with WFM, VECT, PIC, AUDIO (SER03), STATUS, EYE (SER02/SER09) (one of each), and a window consisting of five displays shown with MULTI
Display Format	Displays up to four input signals in tiled, mixed, V aligned, or H aligned mode.
Tiled Display	The screen is divided into windows.
Mixed Display	The windows are cascaded.
V Aligned Display	The windows are arranged top to bottom.
H Aligned Display	The windows are arranged side by side.

3G-B-DS Display Format

Aligned Display	The screen is divided into windows.
Mixed Display	The windows are cascaded.

Time Display

Displayed Contents	Current time, time code
Current Time Display	The time based on the internal clock
Time Code Display	LTC, VITC, D-VITC (SD only)
Compliant Standards	
LTC, VITC	SMPTE ST 12-2
D-VITC	SMPTE ST 266

Alarm Indications	Displayed on the screen when various alarms occur, when various errors occur, when the fan malfunctions, or when the internal temperature is abnormal
Format Alarm	Displays an alarm when a signal in a format other than the specified format is received
Colorimetry Alarm	Displays an alarm when a signal with a colorimetry other than the specified colorimetry is received

2.3.16 SDI Video Signal Waveform Display

Waveform Operations

Display Mode	
Overlay	Overlays component signals
Parade	Displays component signals side by side
Blanking Interval	H and V blanking periods can be masked.
RGB Conversion	Converts a Y,CB,CR signal into an RGB signal and displays the result
Channel Assignment	GBR or RGB order
Pseudo-Composite Display	Artificially converts component signals into composite signals and displays the result
Line Select	Displays the selected line
Sweep Modes	H, V
Color	7 colors to choose from

Vertical Axis

Gain	×1 / ×5
Scale Jump	Sets the scale display position at ×5 gain (*1) 0, +10, +20, +30, +40, +50, +60, +70, +80, +90, CURSOR (sets the display position near the selected cursor)
Variable Gain	×0.2 to ×2.0
Amplitude Accuracy	
×1	±0.5 %
×5	±0.2 %
3G, HD (DL) (1080/60P, 1080/59.94P, 1080/50P)	
Y Signal	±0.5 % (1 to 60 MHz)
CBCR Signal	±0.5 % (0.5 to 30 MHz)
Low-Pass Attenuation	20 dB or greater (at 40 MHz)
3G, HD, HD (DL) (excluding 1080/60P, 1080/59.94P, 1080/50P)	
Y Signal	±0.5 % (1 to 30 MHz)
CBCR Signal	±0.5 % (0.5 to 15 MHz)
Low-Pass Attenuation	≥ 20 dB (at 20 MHz)
SD	
Y Signal	±0.5 % (1 to 5.75 MHz)
CBCR Signal	±0.5 % (0.5 to 2.75 MHz)
Low-Pass Attenuation	≥ 20 dB (at 3.8 MHz)

Horizontal Axis

Line Display	
Display Format	Overlay (1H, 2H) (*2) Parade (1H, 2H, 3H) 4Y parade (4H)
Magnification	×1, ×10, ×20, ACTIVE, or BLANK
Field Display	
Display Format	Overlay (1V, 2V) (*3) Parade (1V, 2V, 3V)
Magnification	×1 / ×20 / ×40
Time Accuracy	±0.5 %

Cursor Measurement

Composition	
Horizontal Cursors	2 (REF and DELTA)
Vertical Cursors	2 (REF and DELTA)
Simultaneous Display	Displays both the horizontal cursors and vertical cursors
Amplitude Measurement	mV, %, R%, DEC, HEX, HDR (SER07)
Time Measurement	Second display
Frequency Display	Computes and displays the frequency with the length of one period set to the time between two cursors
Cursor Value Display	Displays measured values on the cursors

Scale	
Type	%, V, decimal, hexadecimal
Color	7 colors to choose from

*1 The jump range varies depending on COLOR MATRIX, SCALE UNIT, and the like.
*2 2H display is not possible when the input signal is 4K.
*3 2V display is not possible when the input signal is progressive.

2.3.17 SDI Vector Waveform Display

Color	7 colors to choose from
Blanking Interval	H and V blanking periods can be masked (according to the video signal waveform display settings).
Pseudo-Composite Display	Artificially converts component signals into composite signals and displays the result
Line Select	Displays the selected line
Gain	×1, ×5, IQ-MAG
Variable Gain	×0.2 to ×2.0
Amplitude Accuracy	±0.5 %
Scale	
Type	ITU-R BT.601, ITU-R BT.709, AUTO
Setting the Color Bar Saturation	75 %, 100 %
IQ Axis	Show or hide
Color	7 colors to choose from
Vector Marker Display	Displays a marker and numeric value at the specified location on the vector display
Number of Markers	1
Numeric Display	Displays the marker position numerically
Cb	Displays the CB position as a percentage
Cr	Displays the CR position as a percentage
deg	Displays the hue in degrees.
d	Displays the distance from the center as a percentage
Histogram Display	Displays the luminance distribution

2.3.18 SDI Signal 5-Bar Display

Function	Converts an SDI signal into Y, R, G, B, and composite values and then displays the five peak levels
Channel Assignment	RGB / GBR
Scale	mV / %
Error Level	Based on the gamut error, composite gamut error, and luminance error thresholds
Line Select	Selected line display
Low-Pass Filter	The same as gamut errors Removes transient errors

* This function is not supported in some of the LV 5490 products. To check, see section 6.3, “Displaying System Information.”

2.3.19 SDI Picture Display

Quantization	8 bits
Display Sizes	Reduced, actual size, ×2, full frame
Quality Adjustment and Color Selection	
	Brightness, contrast, gain, bias, chroma gain, monochrome display
Frame Rate	Converts the frame rate based on the LCD frame rate (60P, 59.94P, 50P)
Aspect Marker	
3G (17:9 aspect ratio)	16:9, 14:9, 13:9, 4:3, 2.39:1
3G (16:9 aspect ratio), HD, HD (DL)	
	17:9, 14:9, 13:9, 4:3, 2.39:1, AFD (*1)
SD	16:9, 14:9, 13:9, AFD (*1)
Aspect Marker Format	Line, shadow (99 levels), black
Safety Marker Size	ARIB TR-B4, SMPTE RP-218, or user-defined
AFD Display (*1)	Displays abbreviations for SMPTE 2016-1-2007 standard AFD codes
Line Select	Marks the selected line
Gamut Error Display (*2)	The positions of gamut errors are displayed on the picture (this is the logical sum of gamut, composite gamut, and luminance errors)

*1 Supports SD or HD.

*2 This function is not supported in some of the LV 5490 products. To check, see section 6.3, “Displaying System Information.”

2.3.20 SDI CINELITE Display

CINELITE Display

Function	f Stop display, percentage display, and 256 level gradation display
f Stop Display	Displays f Stop values relative to a reference point Set in reference to an object with an 18% reflectance
f Stop Gamma Correction	
Fundamental Gamma	0.45 (ITU-R BT.709)
User Correction Table	3 types
% Display	Displays the luminance level or RGB level as a percentage
Gradation Display	RGB components are displayed with 8-bit, 256-level gradation.
Code Value Display	Displays the video data values of SDI signals
Measured Points	3
Measurement Sizes	1 x 1 pixel, 3 x 3 pixels, and 9 x 9 pixels

CINELITE Advanced Display

Function	Synchronizes the markers on the waveform display or vectorscope display to the points selected with CINELITE
Waveform Display Link Markers	
	Synchronizes the markers on the waveform display to the points selected with CINELITE
Number of Link Markers	Up to 16 (for YRGB, YGBR display)
Vector Link Markers	Synchronizes the markers on the vectorscope display to the points selected with CINELITE
Number of Link Markers	Up to 4
Vector Numeric Display	Displays numerically the active marker position
Cb	Displays the C_B position as a percentage
Cr	Displays the C_R position as a percentage
deg	Displays the hue in degrees.
d	Displays the distance from the center as a percentage

CIE Chromaticity Diagram Display (SER05) Link Markers

	Synchronizes the markers on the CIE chromaticity diagram display to the points selected with CINELITE
Number of Link Markers	Up to 4

2.3.21 SDI CINEZONE Display

CINEZONE Display

Function	Adds colors to the display in accordance with luminance levels
Color	Linear (1024 colors), step (12 colors)
Upper Limit	-6.3 to 109.4% (values equal to or greater than the upper limit are displayed in white)
Lower Limit	-7.3 to 108.4% (values less than the lower limit are displayed in black)

Level Search Display

Function	Displays a specified luminance level ±0.5 % using green on an otherwise monochrome picture display
Luminance Level	-7.3 to 109.4%
Upper Limit	-6.3 to 109.4% (values equal to or greater than the upper limit are displayed in red)
Lower Limit	-7.3 to 108.4% (values less than the lower limit are displayed in blue)

2.3.22 Digital Audio Display (SER03)

Input Signal	SDI embedded audio signal, external audio signal
Displayed Channels	Up to 16 channels
Select the embedded audio channel	Select up to four groups (16 channels) from the available SDI inputs
Display Types	Level meter, Lissajous, correlation meter, surround, status

Level Meter Display

Displayed Channels	8 or 16 channels
Dynamic Range	-60 dBFS, -90 dBFS, reference level±3 dB
Meter Response Model	TRUE PEAK, PPM type I, PPM type II, VU
Peak Hold Response Model	TRUE PEAK, PPM type I, PPM type II
Peak Hold Time	0.0 to 5.0 s (in 0.5 s steps), HOLD
Level Setting	-40.0 to 0.0 dBFS (standard level, warning level, over level)

Lissajous Display

Displayed Channels	2, 8, or 16 channels
Display Modes	X-Y, MATRIX
Correlation Meter	Displays the correlation between two channels as a value from -1 to 1
Indicator Display (option)	Displays Dolby E frame locations with indicators

Surround Display	
Function	Displays a graphical representation of a sound field
Surround Format	5.1
Channel Mapping	L, R, C, LFE, Ls, Rs, Lt, Rt
Center Channel Format	Normal, phantom center
Gain	×1, AUTO
Status Display	
Level	Audio levels are displayed using numbers (dBFS).
Error Detection	Counts the number of errors that occur for each channel
Level Over	Counts the number of times that the level of the input signal exceeds the set value
Detection Setting	-40.0 to 0.0 dBFS
Clipping	Counts the number of times that a received signal exceeds the maximum signal value for the specified number of consecutive samples
Detection Setting	1 to 100 samples
Mute	Counts the number of times that the length of a received mute signal exceeds the specified period
Detection Setting	1 to 5000 ms
Parity Error	Counts the number of times that the input signal's parity bit and the parity bit recalculated by the LV 5490 differ
Validity Error	Counts the number of times that the input signal's validity bit is 1
CRC Error	Counts the number of times that the CRC of the channel status bits and the calculated CRC are different
Code Violation	Counts the number of times that the state of the input signal's biphase modulation is abnormal
Elapsed Time	Displays the amount of time that has elapsed since the instrument was reset
Channel Status Bits	Dump display, text display
User Data Bits	Dump display
Dolby-E Metadata	Text display (option)
Dolby Digital Metadata	Text display (option)

2.3.23 SDI Signal Status Display

Signal Detection	Detects the presence of an SDI signal
Format Display	Displays the video signal format
Frequency Deviation Display	
Function	Displays the sampling frequency deviation Displays an error if ±10 ppm is exceeded
Measurement Range	±100 ppm
Precision	±2 ppm
Equivalent Cable Length Display (1A to 1D on the SER01/SER02 only)	
Function	Displays SDI signal attenuation in terms of cable length Displays an error if the specified cable length is exceeded
Supported Cables	
3G, HD	LS-5CFB, 1694A
SD	L-5C2V, 8281
Display Range	
3G	< 10 m, 10 to 105 m, > 105 m
HD	< 5 m, 5 to 130 m, > 130 m
SD	< 50 m, 50 to 300 m, > 300 m
Precision	±20 m
Resolution	5 m
Error Count Display	Up to 999,999 errors for each error type
Count Period	1 second, 1 field (frame)
Embedded Audio Channel Display (*1)	
	Displays the embedded audio channel numbers
SDI Signal Error Detection	
CRC Error	Detects 12G (SER06/SER08), 3G and HD signal transmission errors
EDH Error	Detects SD signal transmission errors
TRS Position Error	Detects TRS embedding position errors
TRS Code Error	Detects TRS protection bit errors
Line Number Error	Detects errors with the line numbers embedded in 12G (SER06/SER08), 3G and HD signals
Illegal Code Error	Detects data within the range of 000 to 003h and 3FC to 3FFh in locations other than TRS and ADF
Ancillary Data Packet Error Detection	
Checksum Error	Detects ancillary data transmission errors
Parity Error	Detects ancillary data header parity errors

Embedded Audio Packet Error Detection (*1)

BCH Error	Detects audio packet transmission errors
DBN Error	Detects audio packet continuity errors
Parity Error	Detects audio packet parity errors
Embedded Position Error	Detects the presence of audio in lines where it should not be embedded
Sample Counter Error	Detects asynchronous audio by measuring the number of audio samples

Video Error Detection

Gamut Error (*2) Detects gamut errors

Detection Range

Upper Limit 90.8 to 109.4 %

Lower Limit -7.2 to 6.1 %

Low-Pass Filter

Format	Low-Pass Filter	
	HD/SD:1MHz	HD:2.8MHz SD:1MHz
SD 720×487	Approx.1MHz (EBU R103-2000)	Approx.1MHz
SD 720×576	Approx.1MHz (EBU R103-2000)	Approx.1MHz
HD 1280×720	Approx.1MHz	Approx.2.8MHz
HD 1920×1080 (Frame rate≦30Hz)	Approx.1MHz (IEEE STD 205)	Approx.2.8MHz
HD 1920×1080 (Frame rate＞30Hz)	Approx.2MHz	Approx.5.5MHz
HD 2048×1080 (Frame rate≦30Hz)	Approx.1MHz (IEEE STD 205)	Approx.2.8MHz
HD 2048×1080 (Frame rate＞30Hz)	Approx.2MHz	Approx.5.5MHz
4K 3840×2160 (Frame rate≦30Hz)	Approx.4MHz	Approx.11MHz
4K 3840×2160 (Frame rate＞30Hz)	Approx.8MHz	Approx.22MHz
4K 4096×2160 (Frame rate≦30Hz)	Approx.4MHz	Approx.11MHz
4K 4096×2160 (Frame rate＞30Hz)	Approx.8MHz	Approx.22MHz

Area Specification 0.0 to 5.0 %

Time Specification 1 to 60 frames

Composite Gamut Error (*2) Detects level errors that occur when component signals are converted to composite signals

Detection Range

Upper Limit 90.0 to 135.0 %

Lower Limit -40.0 to 20.0 %

Low-Pass Filter The same as the gamut error

Area Specification 0.0 to 5.0 %

Time Specification 1 to 60 frames

Freeze Error Detects freezing of video within the specified time range

Detection Method Video interval checksum

Time Specification 2 to 300 frames

Black Error Detects video blackouts

Black Level Specification 0 to 100 %

Area Specification 1 to 100 %

Time Specification 1 to 300 frames

Level Error	Detects YC_BC_R level errors
Upper Y Limit	-51 to 766 mV
Lower Y Limit	-51 to 766 mV
Upper C_BC_R Limit	-400 to 399 mV
Lower C_BC_R Limit	-400 to 399 mV
Low-Pass Filter	The same as the gamut error

*1 If the input signal is 3G-B-DL, only stream 1 is supported.

*2 This function is not supported in some of the LV 5490 products. To check, see section 6.3, "Displaying System Information."

2.3.24 SDI Analysis Features

Event Log Display

Function	Records detected errors, events—such as the LV 5490 switching between input signals, and time stamps.
Recording Capacity	Up to 1000 events
Operation	Records all events from start to finish
Data Output	Data can be saved as text files to USB memory

Data Dump Display

Display Format	
HD, SD, 3G-A, 3G-B-DS	Displays serial data sequence or displays each color component separately
3G-B-DL	PICTURE, stream 1, stream 2
HD (DL)	PICTURE, link A, link B
3G (DL)	PICTURE, link 1, link 2
3G (QL), HD (QL), 12G (SER06/SER08)	PICTURE, link 1, link 2, link 3, link 4
Display Format Details	
PICTURE	Combines inks or streams 1 and 2 and shows in a picture structure (displays only the image area for 4K)
Stream 1/2	Displays each stream in a transmission structure
Link A/B/1/2/3/4	Displays the selected link
Line Select	Displays the selected line
Sample Select	Displays from the selected sample
Jump Feature	Moves to EAV or SAV (Moves to 0 or 3839/4095 for 4K in PICTURE format)
Data Output	Text output to USB memory

Phase Difference Display (*1)

Function	Displays the phase difference between a reference signal and an SDI signal or between two SDI signals numerically and graphically
Reference Signal	
SD, HD, 3G, 3G (QL), HD (QL)	External sync signal, Ach
HD (DL), 3G (DL)	External sync signal, Ach, Cch
12G	External sync signal
Display Range	
Vertical	1 frame
Horizontal	± 1 line

SDI Ancillary Data List Display

List Display Details	Presence or absence of each ancillary data type, embedded line number, and number of packets per frame
Dump Display	The selected ancillary data is displayed in hexadecimal or binary.

EDH Display (Only for SD)

Compliant Standard	SMPTE RP 165
Display Details	Analyzes and displays EDH packets and displays received CRC errors
Display Format	Text, hexadecimal, binary

Payload ID Display

Compliant Standard	SMPTE ST 352
Display Details	Analyzes and displays payload information
Display Format	Text and binary

Audio Control Packet

Compliant Standard	SMPTE ST 299-1, SMPTE ST 272
Display Details	Displays audio control packet analysis
Display Format	Text, hexadecimal, binary
Group Select	1, 2, 3, 4

Closed Caption Display (*2)

Compliant Standard	ARIB STD-B37
Display Details	Analyzes and displays the closed caption signal
Display Format	Text, hexadecimal, binary

Inter-Stationary Control Signal (NET-Q) Display (*2)

Compliant Standard	ARIB STD-B39
Display Details	Analyzes and displays inter-stationary control signals
Display Format	Text, hexadecimal, binary
Logging Feature	Q-signal logging
Format ID Display Feature	Analyzes and displays the format ID
Data Output	Outputs Q signal logs in CSV format through a USB memory device

Data Broadcast Trigger Signal (*2)

Compliant Standard	ARIB STD-B35
Display Format	Text, hexadecimal, binary

V-ANC User Data Display (*2)

Compliant Standard	ARIB TR-B23
Display Format	Hexadecimal and binary

AFD Packet Display

Compliant Standard	SMPTE ST 2016-3
Display Format	Text, hexadecimal, binary

User-Defined ANC Packet Display

ANC Specification Method	DID, SDID
Display Details	Y, C

*1 If the reference signal is set to an external sync signal, the measured phase may vary by ±1 clock depending on the timing when the external sync signal or SDI signal is connected or disconnected or when the power is turned on and off.
If the reference signal is set to an SDI signal, the measured phase may vary by ±2 clock depending on the timing when the SDI signal is connected or disconnected or when the power is turned on and off.

*2 This is not supported when the input signal is 3G, 12G (SER06/SER08).

2.3.25 Eye Pattern Display (SER02/SER09)

Display	Displays the input SDI waveform before equalizing
12G (SER09), 3G, HD, SD	Displays channel A, B, C, or D, whichever is selected
HD (DL)	Displays link A or B, whichever is selected
3G (DL)	Displays link 1 or 2, whichever is selected
3G (QL), HD (QL)	Displays link 1, 2, 3, or 4, whichever is selected
Waveform Display Color	7 colors to choose from
Scale Display Color	7 colors to choose from
Method	Equivalent time sampling
Frequency Response (SER02)	7 GHZ -3dB (converted from the rise time)
Amplitude Accuracy	800 mV ± 5 % (for 800 mV input)
Time Axis	
2 UI Display	
12G (SER09)	12.5 ps/div
3G	50 ps/div
HD	100 ps/div
SD	550 ps/div
4 UI Display	
12G (SER09)	25 ps/div
3G	100 ps/div
HD	200 ps/div
SD	1100 ps/div
16 UI Display	
12G (SER09)	100 ps/div
3G	400 ps/div
HD	800 ps/div
SD	4400 ps/div
Time Axis Accuracy	±3 %
Jitter Filter	
10 Hz	HPF 10 Hz
100 Hz	HPF 100 Hz
1 kHz	HPF 1 kHz
100 kHz	HPF 100 kHz
Timing	HPF 10 Hz
Alignment	
12G (SER09), 3G, HD	HPF 100 kHz
SD	HPF 1 kHz
Cursor Measurement	Amplitude measurement using Y cursors Time measurement using X cursors Rise time and fall time measurement using the TrTf cursor

Automatic Measurement Items	Eye pattern's amplitude Rise time (the time for the signal to rise from 20 to 80 % of its amplitude) Fall time (the time for the signal to fall from 80 to 20 % of its amplitude) Timing jitter Current jitter Overshoot of the rising edge Overshoot of the falling edge

2.3.26 Jitter Display (SER02/SER09)

Display	Displays the jitter component of an SDI signal
12G (SER09), 3G, HD, SD	Displays channel A, B, C, or D, whichever is selected
HD (DL)	Displays link A or B, whichever is selected
3G (DL)	Displays link 1 or 2, whichever is selected
3G (QL), HD (QL)	Displays link 1, 2, 3, or 4, whichever is selected
Waveform Display Color	7 colors to choose from
Scale Display Color	7 colors to choose from
Method	Phase detection method
Gain	×16, ×8, ×4, ×2, ×1
Measurement Range	
3G, HD, SD	
×8	0.00 to 1.20 UI
×2	1.20 to 4.80 UI
×1	4.80 to 9.60 UI
12G (SER09)	
×16	0.00 to 1.20 UI
×4	1.20 to 4.80 UI
×2	4.80 to 9.60 UI
×1	9.60 to 19.20 UI
Time Axis	1 H, 2 H, 1 V, 2 V (*1)
Time Axis Accuracy	±3 %
Jitter Filter	
10 Hz	HPF 10 Hz
100 Hz	HPF 100 Hz
1 kHz	HPF 1 kHz
100 kHz	HPF 100 kHz
Timing	HPF 10 Hz
Alignment	
12G (SER09), 3G, HD	HPF 100 kHz
SD	HPF 1 kHz
Cursor Measurement	Jitter value measurement through the use of cursors
Automatic Measurement Display Feature	
	Displays the jitter value in seconds (sec) and unit intervals (UI)
Automatic Measurement Items	Timing jitter, current jitter

Accuracy	Input jitter frequency: 1 kHz. Filter setting: 10 Hz, within measurement range
0 UI < automatic measurement value ≤ 1 UI	
SER02	±10 % + 0.05 UI
SER09	±10 % + 0.07 UI
1 UI < automatic measurement value ≤ 7 UI	
	±10 %

*1 2V display is not possible when the input signal is progressive except for 60/59.94/50P of HD (DL).

2.3.27 Eye Pattern and Jitter Detection (SER02/SER09)

Error Detection	On or off per item
Error Threshold Settings	Can be set individually for 12G (SER09), 3G, HD, and SD signals
Event Log	Stores eye patterns and jitter errors
Threshold Values	100 % of the values in the SMPTE standard
Eye-Pattern Amplitude	
Upper Limit	80 to 140 % (640 to 1120 mV)
Lower Limit	40 to 100 % (320 to 800 mV)
Rise Time, Fall Time	
12G (SER09)	40 to 140 % (18.0 to 63.0 ps)
3G	40 to 140 % (54.0 to 189.0 ps)
HD	40 to 140 % (108.0 to 378.0 ps)
SD	40 to 140 % (0.60 to 2.10 ns)
Difference between the Rise and Fall Times	
12G (SER09)	40 to 140 % (7.2 to 25.2 ps)
3G	40 to 140 % (20 to 70 ps)
HD	40 to 140 % (40 to 140 ps)
SD	40 to 140 % (0.20 to 0.70 ns)
Timing Jitter	
12G (SER09)	10 to 200 % (0.80 to 16.00 UI, 67.2 to 1344.0 ps)
3G	10 to 200 % (0.20 to 4.00 UI, 67.4 to 1348.0 ps)
HD	10 to 200 % (0.10 to 2.00 UI, 67.4 to 1348.0 ps)
SD	10 to 200 % (0.02 to 0.40 UI, 0.07 to 1.48 ns)
Current Jitter	
12G (SER09)	10 to 200 % (0.03 to 0.60 UI, 2.5 to 50.4 ps)
3G	10 to 200 % (0.03 to 0.60 UI, 10.1 to 202.5 ps)
HD	10 to 200 % (0.02 to 0.40 UI, 13.5 to 270.0 ps)
SD	10 to 200 % (0.02 to 0.40 UI, 0.07 to 1.48 ns)
Overshoot of the Rising Edge	0 to 200 % (0.0 to 20.0 %)
Overshoot of the Falling Edge	0 to 200 % (0.0 to 20.0 %)

2.3.28 Focus Assist Display (SER04)

Detection Sensitivity	LOW, MIDDLE, HIGH, V-HIGH (*1), U-HIGH (*1)
Highlight Display Color	WHITE, GREEN, BLUE, RED
Picture Luminance Level	OFF, EMBOSS, 25 %, 50 %, 75 %, 100 %

*1 If there is noise in the image, the noise will also be enhanced.

2.3.29 CIE Diagram Display (SER05)

Display Standard	CIE1931 (xy display), CIE1976 (u'v' display)
Display Type	Chromaticity diagram display, color temperature display
Display Mode	
Chromaticity Diagram Display	Luminance display, color display
Color Temperature Display	Luminance display
Colorimetry	BT.601(525), BT.601(625), BT.709, DCI, BT.2020
Clipping	
ON	Clips negative values of the input signal to zero
OFF	Displays negative values of the input signal according to BT.1361
Smoothing	Displays by averaging data every two pixels
Accuracy	± 0.005 (relative to the measurement coordinate value)
Chromaticity Diagram Display Scale	
Triangle	Select two from BT.601(525), BT.601(625), BT.709, DCI, and BT.2020
User-defined Triangle	Set a single user-defined triangle
Background	Color sample, white background
Sub Scale	Color temperature curve, grid (0.1 steps), white point (D65), triangle name (each can be turned on or off)
Cursor	Displays the cursor position in coordinates
User-defined gamma	1.5 to 3.0

2.3.30 HDR Display (SER07)

Compliant Standards	ARIB STD-B67 (HLG; Hybrid Log Gamma) SMPTE ST 2084 (PQ curve, Narrow Range only) S-Log3
Supported Format	All inputs except SD and XYZ inputs
CINEZONE Display Color	
Upper limit or higher	Magenta
HDR area	Coloring according to the brightness
SDR area	Monochrome
Lower limit or less	Black

2.3.31 IP(NMI) Status Display (SER08)

NMI Display	Displays the IP address, gateway address, subnet mask, and PTP domain number of IP (NMI) A/B
IP Live System Manager Display	Displays the IP address, port number, protocol, and communication status of IP Live System Manager
NMI Status Display (*1)	Displays the set format and the PTP synchronization state

*1 Only Network Media Interface (NMI) signals are supported.

2.3.32 Video Noise Meter (SER10)

Measurement Function

Measured Signal	Select Y, G, B, or R.
Measurement Area	Set the size and position of the area to be measured
Noise Level Display	mVrms、dB
Alarm Function	Displays measured values in red when the values exceed the specified threshold

Low-Pass Filter -12 dB±1 dB at the cutoff frequencies in the following table

Format	Cutoff frequencies						
SD 720×487	5.5MHz	4.4MHz	3.6MHz	2.7MHz	1.4MHz	0.7MHz	Through
SD 720×576	5.5MHz	4.4MHz	3.6MHz	2.7MHz	1.4MHz	0.7MHz	Through
HD 1280×720	30MHz	24MHz	20MHz	15MHz	7.5MHz	3.7MHz	Through
HD 1920×1080 (Frame rate≦30Hz)	30MHz	24MHz	20MHz	15MHz	7.5MHz	3.7MHz	Through
HD 1920×1080 (Frame rate＞30Hz)	60MHz	48MHz	40MHz	30MHz	15MHz	7.5MHz	Through
HD 2048×1080 (Frame rate≦30Hz)	30MHz	24MHz	20MHz	15MHz	7.5MHz	3.7MHz	Through
HD 2048×1080 (Frame rate＞30Hz)	60MHz	48MHz	40MHz	30MHz	15MHz	7.5MHz	Through
4K 3840×2160 (Frame rate≦30Hz)	120MHz	96MHz	80MHz	60MHz	30MHz	15MHz	Through
4K 3840×2160 (Frame rate＞30Hz)	240MHz	192MHz	160MHz	120MHz	60MHz	30MHz	Through
4K 4096×2160 (Frame rate≦30Hz)	120MHz	96MHz	80MHz	60MHz	30MHz	15MHz	Through
4K 4096×2160 (Frame rate＞30Hz)	240MHz	192MHz	160MHz	120MHz	60MHz	30MHz	Through

Passband Ripple ±0.5dB

High-Pass Filter -12 dB±1 dB at the cutoff frequencies in the following table

Format	Cutoff frequencies	
	ON	OFF
SD 720×487	36kHz	Through
SD 720×576	36kHz	Through
HD 1280×720	200kHz	Through
HD 1920×1080 (Frame rate≦30Hz)	200kHz	Through
HD 1920×1080 (Frame rate＞30Hz)	400kHz	Through
HD 2048×1080 (Frame rate≦30Hz)	200kHz	Through
HD 2048×1080 (Frame rate＞30Hz)	400kHz	Through
4K 3840×2160 (Frame rate≦30Hz)	800kHz	Through
4K 3840×2160 (Frame rate＞30Hz)	1.6MHz	Through
4K 4096×2160 (Frame rate≦30Hz)	800kHz	Through
4K 4096×2160 (Frame rate＞30Hz)	1.6MHz	Through

Passband Ripple ±0.5dB

Measurement Accuracy (when filters are not applied)

0 to -65.00dB ±0.3dB

-65.01 to -70.00dB ±0.7dB

-70.01 to -75.00dB ±2.0dB

* This function is not supported in some of the LV 5490 products. To check, see section 6.3, “Displaying System Information.”

2.3.33 General Specifications

Environmental Conditions	
Operating Temperature	0 to 40 °C
Operating Humidity Range	85 %RH or less (no condensation)
Optimal Temperature	10 to 30 °C
Operating Environment	Indoors
Elevation	Up to 2,000 m
Overvoltage Category	II
Pollution Degree	2
Power Requirements	
Voltage	90 to 250 VAC
Frequency	50/60 Hz
Power Consumption	150 W max.
Dimensions	223 (W) × 172 (H) × 360 (D) mm (excluding protrusions)
Weight	5.6 kg max. (including options, excluding accessories)
Accessories	Power cord.....1
	Cover/Inlet stopper.....1
	15-pin D-sub connector.....1
	15-pin D-sub connector cover.....1
	SFP+ Transceiver Module AFBR-709SMZ) (SER08) 2
	Instruction manual.....1

3. PANEL DESCRIPTION

3.1 Front Panel

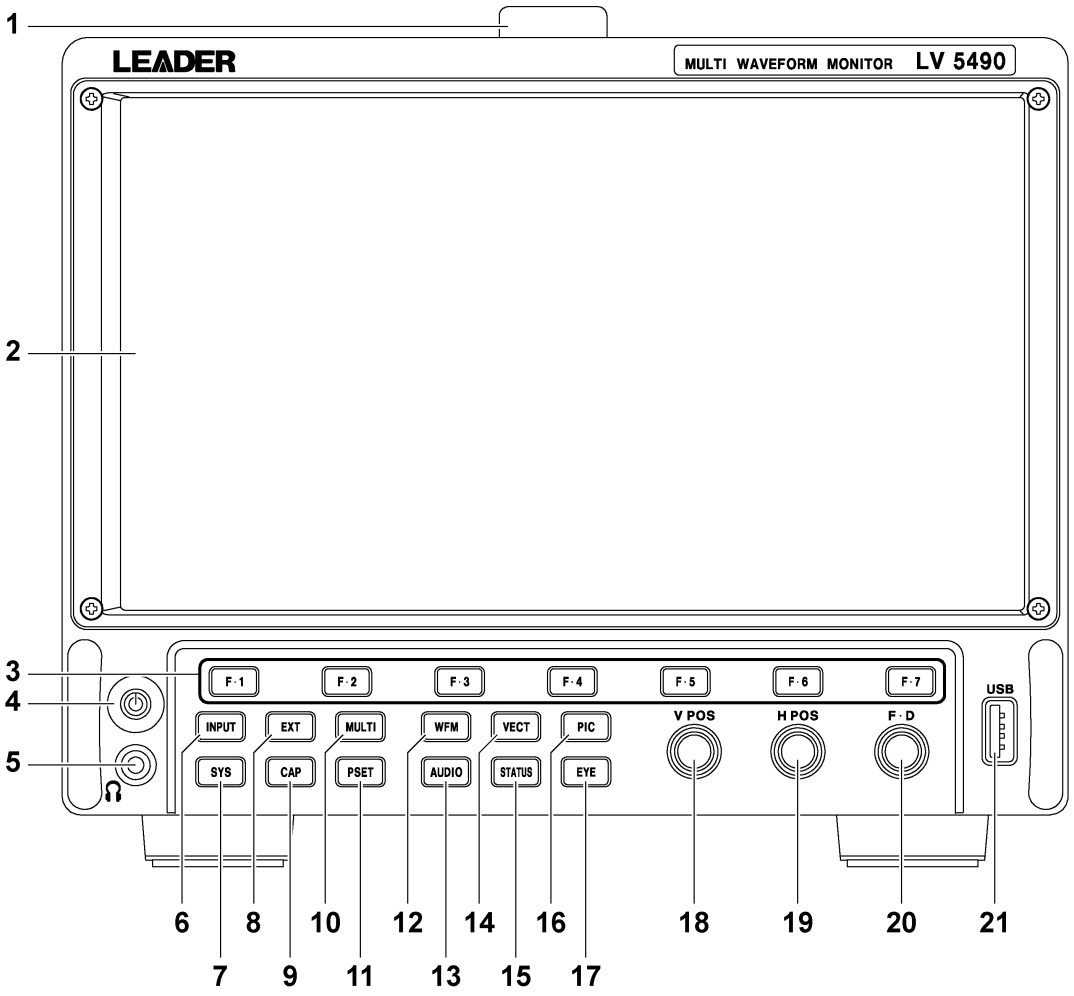


Figure 3-1 Front panel

Table 3-1 Front panel description

No.	Name	Description
1	Handle	Use this when you carry the LV 5980.
2	LCD	Displays measurement and setup screens The protection panel can be removed. See section 4.2, “Removing the Protection Panel.”
3	F•1 to F•7	Carries out the corresponding function menu operation. See section 4.10.2, “Function Menu Operations.”
4	Power Switch	Press this switch to turn the instrument on. Hold this switch down to turn the instrument off. See section 4.6, “Turning the Instrument On and Off.”
5	Headphone jack (SER03)	This is a mini-plug headphone jack. When a pair of headphones are connected to this jack, the LV 5490 transmits the audio signal embedded in the SDI signal or the audio signal received through its rear panel.
6	INPUT	Used to set the measurement channels. See section 5.1, “Setting the Input Signals”
7	SYS	Configures the settings See chapter 6, “SYSTEM SETTINGS.”

No.	Name	Description
8	EXT	Switches the sync signal. When the internal sync signal is being used, this key's LED turns off. When the external sync signal is being used, this key's LED lights. See section 4.9.2, "External Sync Signal Input."
9	CAP	Captures the screen See chapter 7, "CAPTURE FEATURE."
10	MULTI	Displays a combination of measurement screens. You can change the layout as you like. See section 5.3.7, "Multi Display."
11	PSET	Click to recall a preset; hold down to register, delete, or collectively copy presets. See chapter 8, "PRESET SETTINGS"
12	WFM	Shows the video signal waveform display. You can change the layout as you like. See section 5.3.1, "Video Signal Waveform Display."
13	AUDIO (SER03)	Shows the audio display. You can change the layout as you like. See section 5.3.4, "Audio Display (SER03)."
14	VECT	Shows the vector waveform display. You can change the layout as you like. See section 5.3.2, "Vector Waveform Display."
15	STATUS	Shows the status display. You can change the layout as you like. See section 5.3.5, "Status Display."
16	PIC	Shows the picture display. You can change the layout as you like. See section 5.3.3, "Picture Display."
17	EYE (SER02/SER09)	Switches to the eye pattern display. You can change the layout as you like. See section 5.3.6 "Eye Pattern Display (SER02/SER09)."
18	V POS	Turn to adjust the vertical position of the video signal waveform or other item. Press to return to the reference position.
19	H POS	Turn to adjust the horizontal position of the video signal waveform or other item. Press to return to the reference position.
20	F•D	Turn to specify a numeric value or to move cursors. In most cases, press to reset the value to its default value.
21	USB	Connect a USB memory device or USB mouse. See section 4.7, "Connecting USB Devices."

3.2 Rear Panel

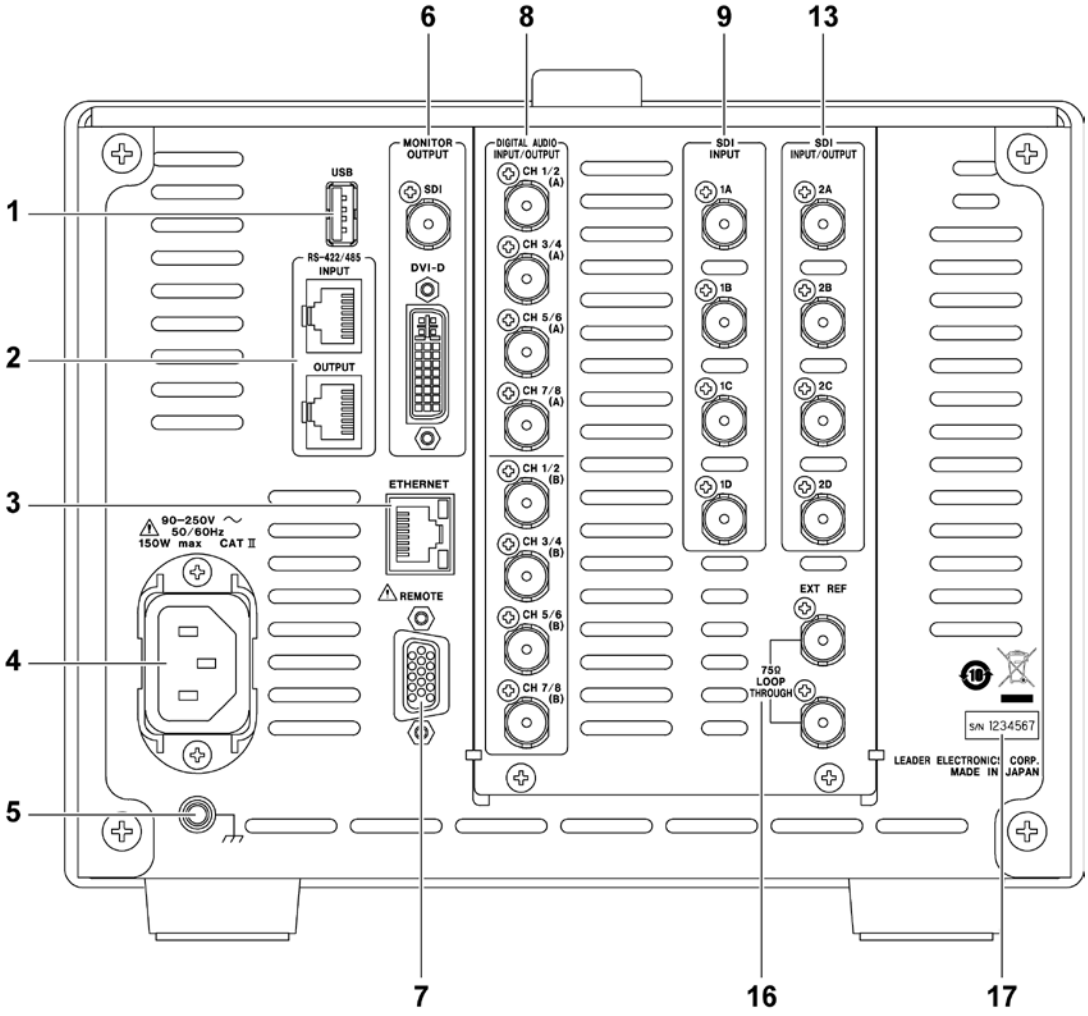


Figure 3-2 Rear panel (SER01/SER02)

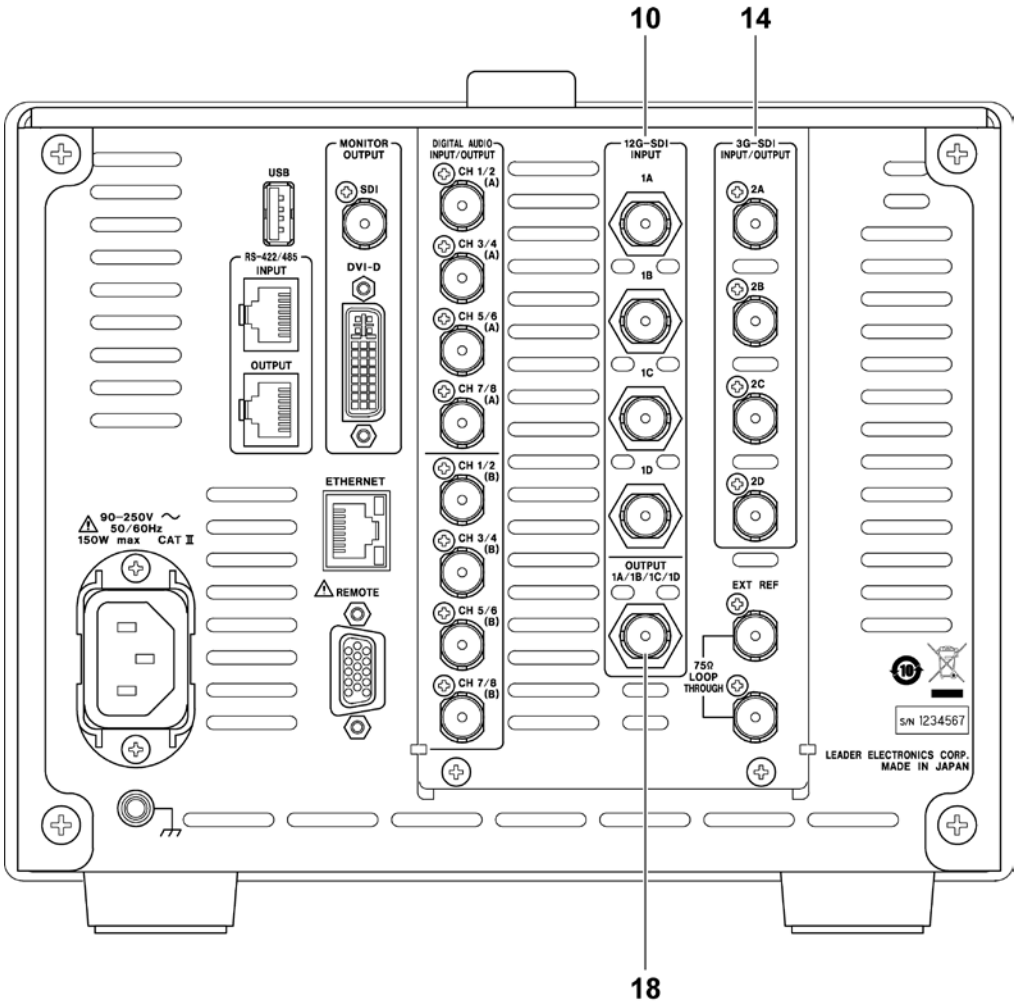


Figure 3-3 Rear panel (SER06)

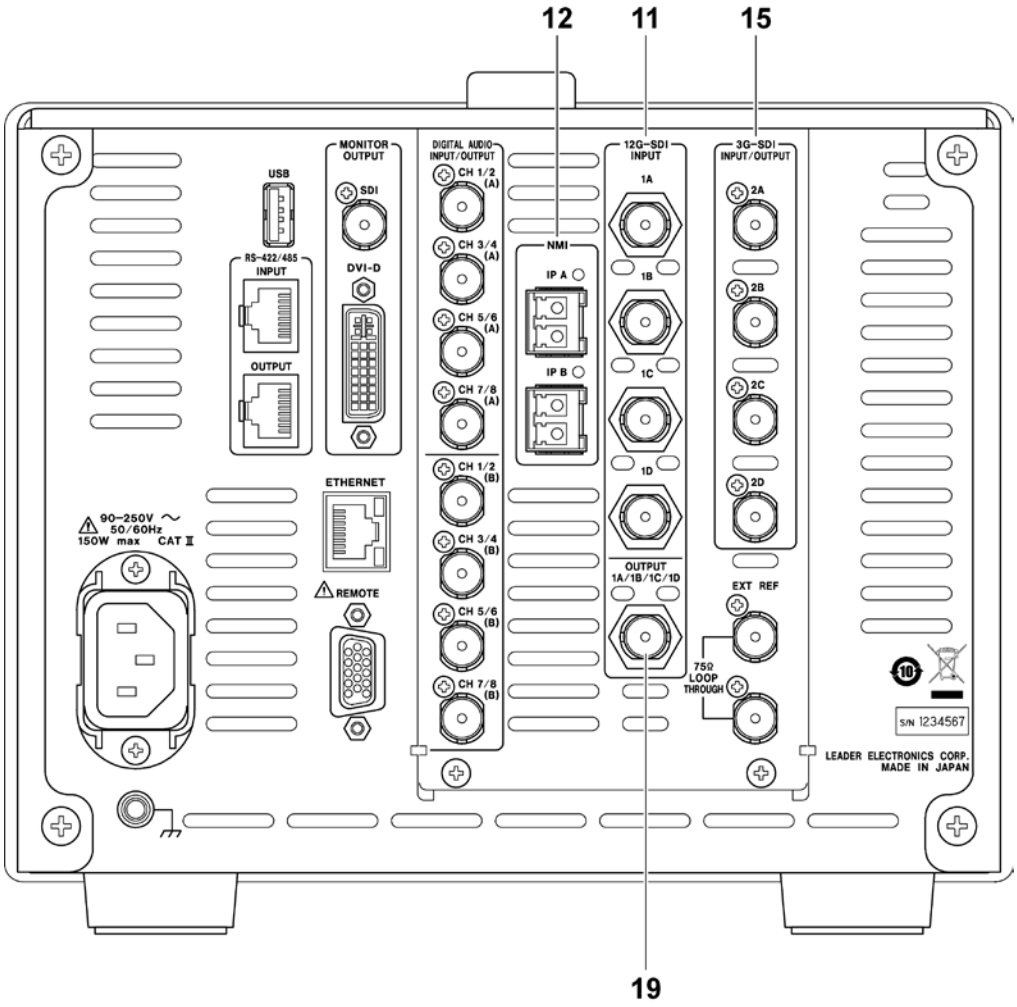


Figure 3-4 Rear panel (SER08)

Table 3-2 Rear panel description

No.	Name	Description
1	USB	Connect a USB memory device or USB mouse. See section 4.7, “Connecting USB Devices.”
2	RS-422/485 (custom order feature)	Displays the camera ID using serial communication.
3	ETHERNET	Ethernet port. Supports TELNET, FTP, SNMP, HTTP, and SNTP. See section 10, “ETHERNET REMOTE CONTROL.”
4	AC inlet	Attach the included cover/inlet stopper to the AC inlet. See section 4.1, “Attaching the Cover Inlet Stopper.”
5	Ground terminal	Connect the instrument to an external ground.
6	MONITOR OUTPUT	Transmits the screen image. The SDI connector can transmit a reclocked SDI signal. See section 4.9.5, “Transmitting Monitor Signals.”
7	REMOTE	15-pin D-sub remote control connector. Can be used to execute actions such as recalling preset settings.

No.	Name	Description
8	DIGITAL AUDIO INPUT/OUTPUT (SER03)	Audio signal I/O connectors. Switch between input and output using system settings. See section 4.9.4, “Digital Audio I/O (SER03).”
9	SDI INPUT (SER01/SER02)	SDI signal input connectors. See section 4.9.1, “SDI Signal I/O.”
10	12G-SDI INPUT (SER06)	
11	12G-SDI INPUT (SER08)	
12	NMI (SER08)	IP (NMI) signal input connectors. These are used by installing the included SFP+ transceiver modules. See section 4.8, “Installing the SFP+ Transceiver Module (SER08)”
13	SDI INPUT/OUTPUT (SER01/SER02)	SDI signal input/output connectors. Switch between input and output using system settings. Eye patterns and cable lengths cannot be measured. See section 4.9.1, “SDI Signal I/O.”
14	3G-SDI INPUT/OUTPUT (SER06)	
15	3G-SDI INPUT/OUTPUT (SER08)	
16	EXT REF	External reference input connector. This is a loop-through connector. See section 4.9.2, “External Sync Signal Input.”
17	Serial number label	The serial number is printed on this label.
18	OUTPUT (SER06)	12G SDI output Connector. Reclocked signals 1A to 1D or a test pattern is output. See section 4.9.1, “SDI Signal I/O.”
19	OUTPUT (SER08)	

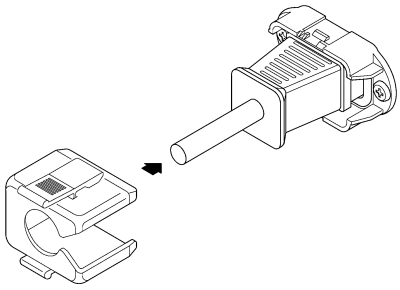
4. BEFORE YOU BEGIN MEASURING

4.1 Attaching the Cover Inlet Stopper

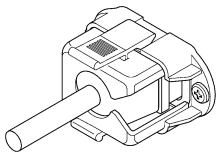
A cover/inlet stopper is included with the LV 5490. Use this device to prevent the power cord from being pulled free of the AC inlet. To attach the cover/inlet stopper, follow the procedure below.

- **Attaching the Cover/Inlet Stopper**

  1. **Cover the power cord with the cover/inlet stopper.**



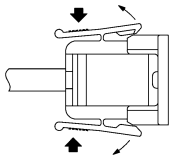
  2. **Push the cover/inlet stopper, until you hear a click, to attach it to the AC inlet.**



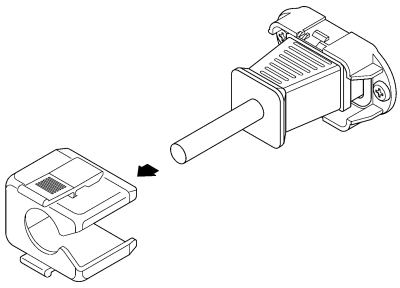
  3. **Check that the cover/inlet stopper is securely attached to the AC inlet.**

- **Removing the Cover/Inlet Stopper**

  1. **Release the lock by using two fingers to press the cover/inlet stopper levers.**



  2. **Pull the cover/inlet stopper away from the AC inlet.**



4.2 Removing the Protection Panel

A protection panel is attached to the LV 5490 in order to protect the LCD panel from physical shock, scratches, and the like. If necessary, this protection panel can be removed. To do so, remove the four screws.

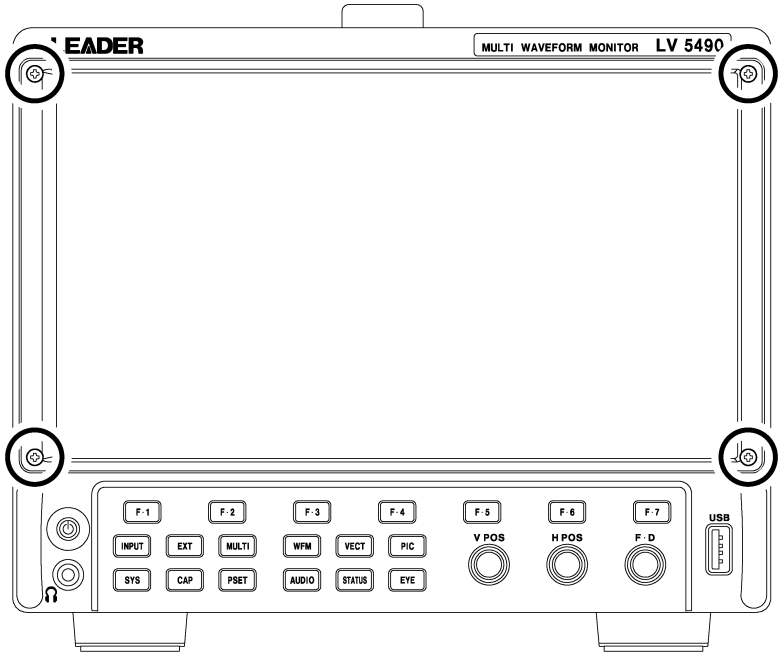


Figure 4-1 Removing the protection panel

4.3 Using the Stand

You can use the stand to tilt the LV 5490. Tilting the LV 5490 may make the screen easier to view or make it easier to operate the front panel. If necessary, pull out the stand.

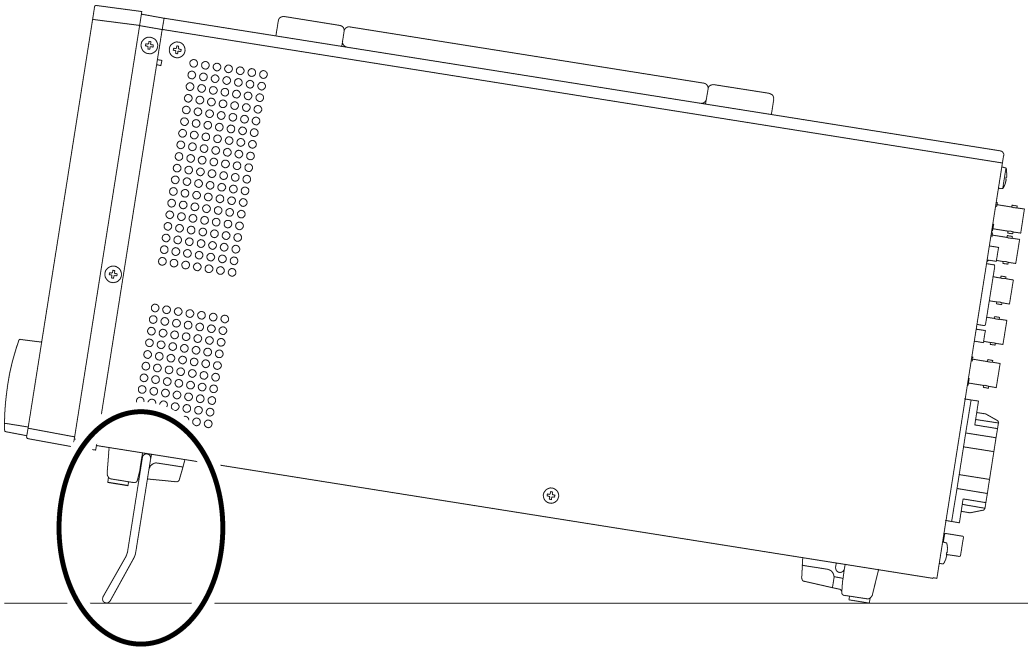


Figure 4-2 Using the stand

4.4 About Units

This instrument only functions as a measuring instrument after at least one unit is installed.
To replace or add a unit, contact your local LEADER agent. You cannot install or uninstall units.

Table 4-1 Unit types

Unit	Name	Main Function
LV 5490SER01	SDI INPUT	SDI signal measurement
LV 5490SER02	SDI INPUT / EYE	SDI signal measurement and eye pattern display
LV 5490SER03	DIGITAL AUDIO	Embedded audio signal measurement External Audio Signal Measurement Dolby signal measurement (option)
LV 5490SER06	12G-SDI INPUT	12G SDI signal measurement
LV 5490SER08	IP(NMI)	IP(NMI), 12G SDI signal measurement

* The LV 5490 requires an LV 5490SER01, LV 5490SER02, LV 5490SER06, or LV 5490SER08 to be installed.
These units cannot be installed simultaneously.

4.5 About Options

The following options (sold separately) can be installed in the LV 5490.
If you want to obtain an option, provide your local LEADER agent with the LV 5490's MAC address (see the LICENSE tab) and serial number (see the rear panel). We will issue a license key.
When you receive the license key, install the option by referring to section 6.4, "Installing Options." Each LV 5490 requires a unique license key. You cannot use the same key for multiple instruments.

Table 4-2 Types of options

Option	Name	Main Function
LV 5490SER04	FOCUS ASSIST	Assists focusing
LV 5490SER05	CIE DIAGRAM	Displays CIE chromaticity diagrams
LV 5490SER07	HDR	HDR signal measurement
LV 5490SER09	12G-SDI EYE	Eye pattern display of 12G SDI signal

4.6 Turning the Instrument On and Off

To turn on the power, press the power switch. The power switch LED lights, and the instrument turns ON. When you turn ON the power, the LV 5490 starts up with the same panel settings that were set when it was last turned OFF.

To turn off the power, hold down the power switch for 2 seconds or more. The power switch LED and the instrument turn OFF.

You can set the time from when the power is turned on until the LV 5490 starts on the GENERAL SETUP tab in the system settings.
Reference GENERAL SETUP tab → 6.2.1, "General Settings."

4.7 Connecting USB Devices

The front and rear panels each has a USB port. You can connect a USB memory device or USB mouse to the ports. You can connect the devices to either USB port, but you cannot connect the same type of devices to the LV 5490 simultaneously.
USB devices can be connected or removed with the power turned on.

- **USB Memory Device**

  When a USB memory devices is connected, a USB memory icon appears in the upper right of the screen.
  You can save various types of data in a USB memory device.

  This icon is normally green, but it changes to red when the USB memory device is being accessed. Do not turn the power OFF or remove the USB memory device when the icon is red.

- **USB Mouse**

  When a USB mouse is connected, a mouse icon appears in the upper right of the screen.
  Basic operations can be performed without a mouse, but arranging the measurement screen layout requires a mouse.

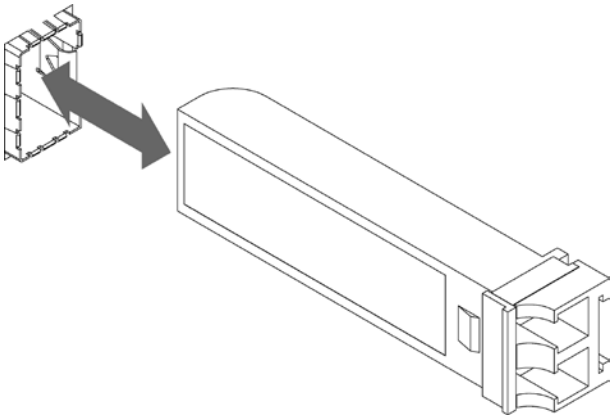
  Reference 5.4, “Arranging the Measurement Screen Layout”

4.8 Installing the SFP+ Transceiver Module (SER08)

If the SER08 is installed, the rear panel has two IP (NMI) input connectors. Use these connectors by installing the included SFP+ transceiver modules.
You can connect and disconnect an SFP+ transceiver module with the power turned on.
To install it, follow the procedure below.

● Installation

1. **Insert an SFP+ transceiver module into the IP A NMI input connector with the correct orientation.**



2. **Push it in until a click is heard.**

3. **Install another module into IP B in a similar manner.**

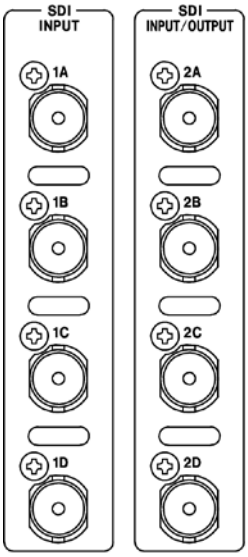
● Uninstallation

Pinch the SFP+ transceiver module with your fingers, and pull it out. Do not pull the cable.

4.9 Signal I/O

4.9.1 SDI Signal I/O

● SER01/SER02



● SER06/SER08

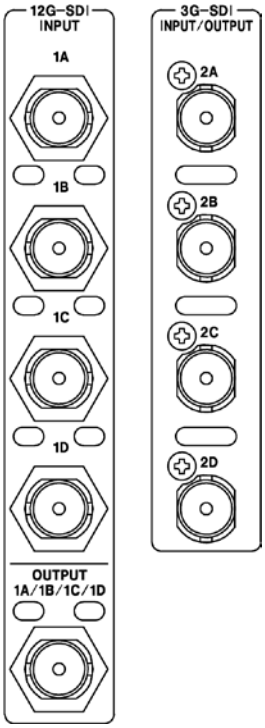


Figure 4-3 SDI I/O connectors

- **Input/Output Switching**

  1A to 1D are fixed to input. 2A to 2D can be switched between input and output.
  On the SDI OUT tab in the system settings, select Input or Output.
  Reference SDI OUT tab → 6.1.4, “Configuring the SDI I/O Connectors.”

- **SDI Signal Input : 1A to 1D, 2A to 2D**

  The input connector assignments to the link system when 2A to 2D are set to input are shown below.
  Apply signals that are specified in section 2.3.1, “SDI Formats and Standards.”

  Table 4-3 SDI signal input

Link System	Input Connector
Single link	Input to 1A, 1B, 1C, 1D, 2A, 2B, 2C, 2D (up to 8 signals)
Dual link	Input to 1A/1B, 1C/1D, 2A/2B, and 2C/2D (up to 4 signals)
Quad link	Input to 1A/1B/1C/1D and 2A/2B/2C/2D (up to 2 signals)

- **12G SDI Signal Input : 1A to 1D (SER06/SER08)**

  On the SDI IN tab in the system settings, set SDI System to 4K 12G, and then apply signals to 1A to 1D.
  When 12G is being measured, even if 2A to 2D are set to input, signals received through 2A to 2D cannot be measured. Further, even if 2A to 2D are set to output (Input Through), the reclocked signals of 1A to 1D are not output.
  Reference SDI IN tab → 6.1.1, “Configuring the SDI Input Connectors.”

- **SDI Signal Output : 2A to 2D**

  There are two SDI signal output settings: Input Through and Test Signal. You can set it on the SDI OUT tab in the system settings.

- **Input Through**

  2A to 2D output reclocked signals of the signals received through 1A to 1D. Use the signals for monitoring.

  For 3G (DL)-4K, the output signals are different as follows:
  • When 1A-1B is selected: Both 2A-2B and 2C-2D output reclocked signals of the signals received through 1A-1B.
  • When 1C-1D is selected: Both 2A-2B and 2C-2D output reclocked signals of the signals received through 1C-1D.

  For single link, you can select whether to set the 2A output to channel A or a channel that you select on the SDI OUT tab. If you select to use a channel that you select, set the output channel using the INPUT menu or F•6 SELECT CH in the appropriate measurement screen.

  For 4K 12G, signals are converted into 3G-SDI×4ch and output through 2A to 2D. However, because the 12G-SDI payload ID is embedded in the 3G-SDI signal, the format has to be set manually on the receiving device.

  For 4K NMI, NMI signals are converted into 3G-SDI×4ch and output through 2A to 2D.

  For NMI, signals are converted into HD-SDI and output.

- **Test Signal**

  2A-2D output various patterns. You can superimpose a moving box, vary the phase, and so on. You can use the LV 5490 as a signal generator.

● **12G SDI Signal Output : 1A/1B/1C/1D (SER06)**

There are two 12G SDI signal output settings: Input Through and Test Signal. You can set it on the 12G SDI OUT tab in the system settings.

Reference 12G SDI OUT tab → 6.1.8, “Configuring the 12G SDI Output Connector (SER06).”

- **Input Through**

  When 12G is measured, OUTPUT transmits reclocked signals of the signals received through 1A to 1D. To select the output channel, use the INPUT menu or F•6 SELECT CH on each measurement screen. Use the signals for monitoring.

- **Test Signal**

  OUTPUT transmits 12G SDI signals. You can use the LV 5490 as a signal generator.

● **12G SDI Signal Output : 1A/1B/1C/1D (SER08)**

12G SDI signal output is fixed to Input Through.

When 12G is measured, OUTPUT transmits reclocked signals of the signals received through 1A to 1D. To select the output channel, use the INPUT menu or F•6 SELECT CH on each measurement screen. Use the signals for monitoring.

● **Terminators**

The SDI input connectors are terminated internally at 75 Ω, so there is no need to connect terminators to them. Connect cables with a characteristic impedance of 75 Ω.

● **Configuring Measurement Channels**

Configure the measurement channels using the SDI IN tab in the system settings and the INPUT menu.
Eye patterns and cable lengths for signals applied to 2A to 2D cannot be measured.

Reference 5.1, “Configuring Measurement Channels”

● **Cables**

It has been confirmed that errors do not occur when the LV 5490 receives an 800 mVp-p stress pattern through the following cables.

Input Signal	Cable Type	Input Connectors (1A to 1D)	I/O Connectors (2A to 2D)	Video Pattern
12G	L5.5CUHD cable	70m	None	COLOR BAR
3G	LS-5CFB cable	70m	70m	CHECK FIELD
HD	LS-5CFB cable	110m	110m	CHECK FIELD
SD	L-5C2V cable	260m	100m	CHECK FIELD

4.9.2 IP(NMI) Signal Input (SER08)

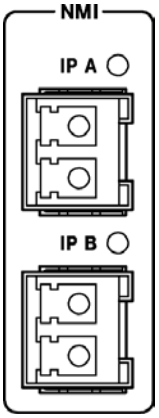


Figure 4-4 IP(NMI) Signal Input connectors

- **Signal Input : IP A, IP B (SER08)**

  On the SDI IN tab in the system settings, set SDI System to 4K NMI or NMI, and then apply signals to IP A and IP B.

  Reference 6.1.1, “Configuring the SDI Input Connectors”

4.9.3 External Sync Signal Input

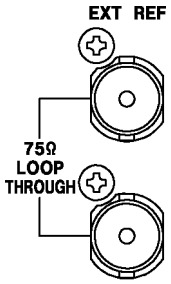


Figure 4-5 External sync signal input connectors

On the video-signal-waveform and vector displays, you can apply an external sync signal to display waveforms. (*1) Apply an external sync signal to an external sync signal input connector, and then press EXT. The LV 5490 determines the sync signal format automatically.

As shown in the figure below, the external sync signal input connectors are loop-through. Apply the input signal to one of the two connectors, and terminate the other connector at 75 Ω, or connect it to another 75 Ω device. If you connect to another device, be sure to terminate the device at the end of the chain at 75 Ω. Connect cables with a characteristic impedance of 75 Ω.

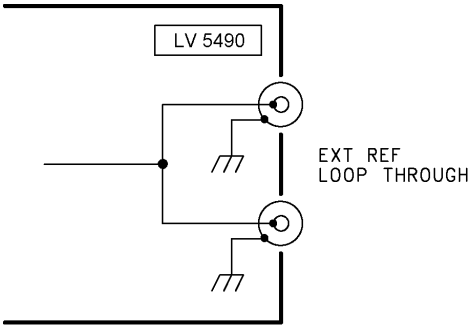


Figure 4-6 Loop-through

*1 Waveform display using an external sync signal is not possible for the following formats.
- 3G 720/30P, 720/29.97P, 720/25P, 720/24P, 720/23.98P
- HD (DL) 1080/60P, 1080/59.94P, 1080/50P
- 3G (DL), 3G (QL), HD (QL), 12G (SER06/SER08)
- Frame frequency 48P, 47.95P

External sync signals that are compatible with each input signal are indicated with a check mark in the following table. Proper measurement is possible only for combinations that are indicated with check marks.

Table 4-4 External sync signal formats (SD, HD)

		SDI (SD, HD) Input Signal Format																						
		525/59.94I	625/50I	1080/60I	1080/59.94I	1080/50I	1080/30PsF	1080/29.97PsF	1080/25PsF	1080/24PsF	1080/23.98PsF	1080/30P	1080/29.97P	1080/25P	1080/24P	1080/23.98P	720/60P	720/59.94P	720/50P	720/30P	720/29.97P	720/25P	720/24P	720/23.98P
External Sync Signal Format	NTSC with 10 field ID (59.94Hz)(*1)	✓			✓			✓			✓		✓			✓		✓			✓			✓
	NTSC (59.94Hz)	✓			✓			✓					✓					✓			✓			
	PAL (50Hz)		✓			✓			✓					✓					✓			✓		
	1080/60I			✓			✓																	
	1080/59.94I				✓			✓																
	1080/50I					✓			✓															
	1080/30PsF						✓																	
	1080/29.97PsF							✓																
	1080/25PsF								✓															
	1080/24PsF									✓														
	1080/23.98PsF										✓													
	1080/30P											✓												
	1080/29.97P												✓											
	1080/25P													✓										
	1080/24P														✓									
	1080/23.98P															✓								
	720/60P																✓							
	720/59.94P																	✓						
	720/50P																		✓					
	720/30P																			✓				
	720/29.97P																				✓			
	720/25P																					✓		
	720/24P																						✓	
	720/23.98P																							✓

*1 If the input signal is 1080/23.98PsF or 1080/23.98P, the 10 field ID is automatically detected.

Table 4-5 External sync signal formats (3G)

		1080/60P	1080/59.94P	1080/50P	1080/60I	1080/59.94I	1080/50I	1080/30PsF	1080/29.97PsF	1080/25PsF	1080/24PsF	1080/23.98PsF	1080/30P	1080/29.97P	1080/25P	1080/24P	1080/23.98P	720/60P	720/59.94P	720/50P
External Sync Signal Format	NTSC with 10 field ID (59.94Hz)(*1)		✓			✓			✓			✓		✓			✓		✓	
	NTSC (59.94Hz)		✓			✓			✓					✓					✓	
	PAL (50Hz)			✓			✓			✓					✓					✓
	1080/60I	✓			✓			✓												
	1080/59.94I		✓			✓			✓											
	1080/50I			✓			✓			✓										
	1080/30PsF							✓												
	1080/29.97PsF								✓											
	1080/25PsF									✓										
	1080/24PsF										✓									
	1080/23.98PsF											✓								
	1080/30P												✓							
	1080/29.97P													✓						
	1080/25P														✓					
	1080/24P															✓				
	1080/23.98P																✓			
	720/60P																	✓		
	720/59.94P																		✓	
	720/50P																			✓

*1 If the input signal is 1080/23.98PsF or 1080/23.98P, the 10 field ID is automatically detected.

Table 4-6 External sync signal formats (12G)

		SDI (12G) Sub Image Input Signal Format (*1)							
		1080/60P	1080/59.94P	1080/50P	1080/30P	1080/29.97P	1080/25P	1080/24P	1080/23.98P
External Sync Signal Format	NTSC with 10 field ID (59.94Hz) (*2)		✓			✓			✓
	NTSC (59.94Hz)		✓			✓			
	PAL (50Hz)			✓			✓		
	1080/60I	✓							
	1080/59.94I		✓						
	1080/50I			✓					
	1080/30P				✓				
	1080/29.97P					✓			
	1080/25P						✓		
	1080/24P							✓	
	1080/23.98P								✓

*1 If the input signal is 12G, the phase difference is measured for the 4k sub image format.

*2 If the input signal is 1080/23.98PsF or 1080/23.98P, the 10 field ID is automatically detected.

4.9.4 Digital Audio I/O (SER03)

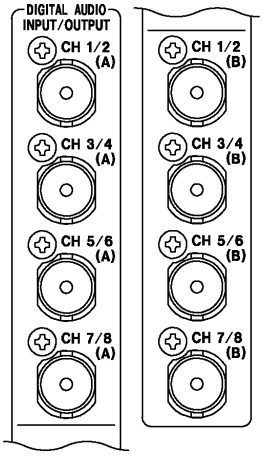


Figure 4-7 Digital audio I/O connectors

- **Input/Output Switching**

  The connectors can be switched between input and output in groups (A and B).
  On the AUDIO IN/OUT tab in the system settings, select Input or Output.

  Reference AUDIO IN/OUT tab → 6.1.5, “Configuring the Audio I/O Connectors (SER03)”

- **Audio Signal Output**

  If group A or B is set to output, the following signals are output. Use the signals for monitoring.

  Table 4-7 Audio signal output

INPUT	CH MODE	Group A Output	Group B Output
SDI	8ch	The 8 channels from 1st GROUP and 2nd GROUP	The 8 channels from 1st GROUP and 2nd GROUP
	16ch	The 8 channels from 1st GROUP and 2nd GROUP	The 8 channels from 3rd GROUP and 4th GROUP
EXT AUDIO	8ch	- (Input)	8 channels applied to group A
		8 channels applied to group B	- (Input)
	16ch	- (Input)	- (Input)

4.9.5 Monitor Signal Output

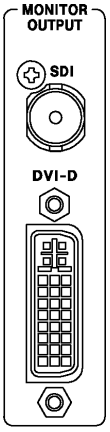


Figure 4-8 Monitor output connectors

The SDI output connector and DVI-D output connector transmit the LV 5490 screen for a monitor device. Connect to a full high definition (1920×1080) display.

- **Selecting the Sync Mode**

  On the MONITOR OUT tab in the system settings, select internal synchronization or external synchronization. If you select internal synchronization, you can also select the output format.

  Reference MONITOR OUT tab → 6.1.7, “Configuring the Monitor Output Connectors”

- **SDI Routing Output**

  In single link mode (excluding 12G and 3G-B-DS), in place of transmitting the LV 5490 screen, the SDI output connector can transmit a reclocked signal of a signal received through SDI INPUT. On the MONITOR OUT tab in the system settings, select INPUT ROUTER.

  The output channel when INPUT ROUTER is selected is the displayed channel in single input mode or the channel selected with F•6 SELECT CH on the appropriate measurement screen in simul mode.

4.10 Operation Basics

4.10.1 Displaying the Function Menu

The function menu is used to specify a variety of settings.
Normally the function menu is displayed, but it can be cleared by pressing the measurement key that is currently selected. You can also set it to disappear automatically on the GENERAL SETUP tab in the system settings.

Reference GENERAL SETUP tab → 6.2.1, “General Settings”

If the measurement menu disappears, carry out one of the following operations to display it again.

- **Pressing a Measurement Key to Display the Menu**

  Press the measurement key (WFM, VECT, PIC, AUDIO, STATUS, or EYE) that corresponds to the currently selected display mode to display the menu. When you perform this operation, the top-level menu is displayed.

- **Pressing a Function Key to Display a Menu**

  Press one of the function keys to display the menu. When you perform this operation, the menu is displayed at the level that was displayed before it disappeared.

4.10.2 Function Menu Operations

This section explains how to operate the function menu, using the function menu on the VECT display as an example.

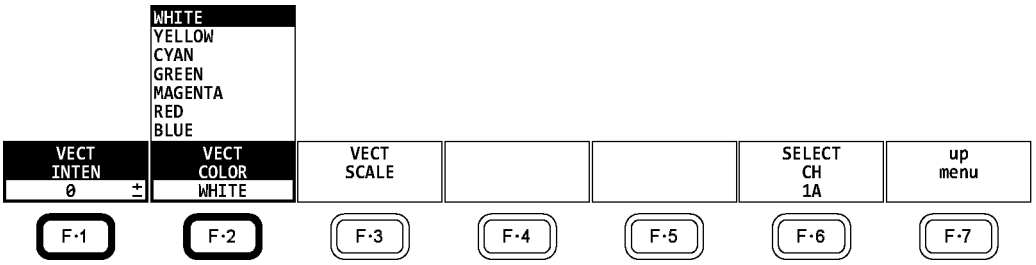


Figure 4-9 Function menu operations

- **Specifying Values**

  To set the value of a setting like F•1 VECT INTEN, which is shown in the figure above, press F•1, and then turn the function dial (F•D). You can reset most settings to their default values by pressing the function dial (F•D).

- **Selecting Settings**

  To select a setting from a list like the one shown in the figure above for F•2 VECT COLOR, press F•2 repeatedly to select the setting you want. The setting changes each time you press F•2. After you stop pressing F•2, the setting is confirmed and the pop-up menu disappears.

4.10.3 Mouse Operations

You can use the mouse to operate the keys on the screen to specify settings in the same manner as using the front panel keys. To display the keys, connect a mouse, and click in the screen.

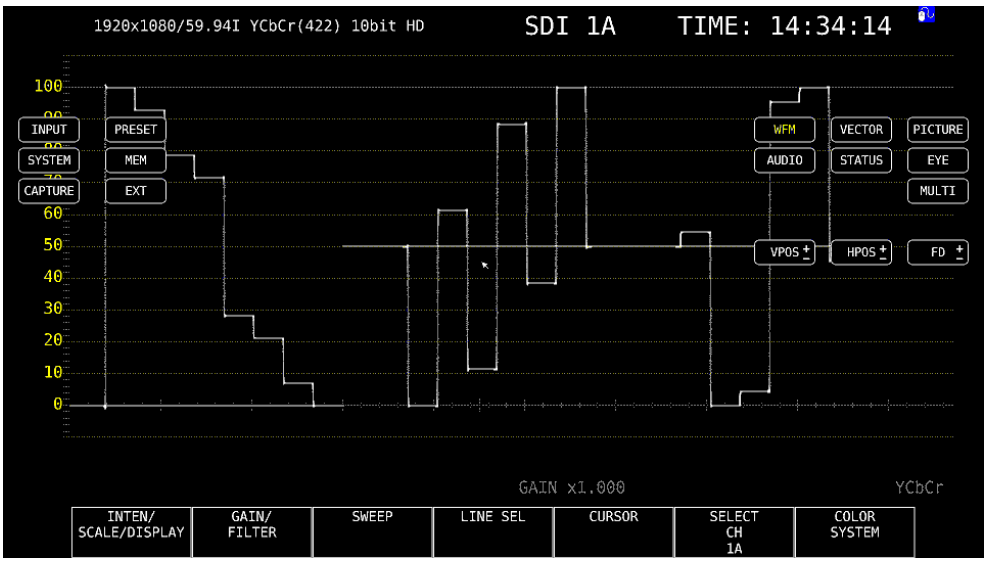


Figure 4-10 Mouse operations

- **Measurement Screen Settings**

  Click the keys on the screen and the function menu.

  You can change a value in the function menu by using the +- buttons to the right of FD, the +- buttons to the right of the value, or the wheel on the mouse.

  The preset feature is divided into PRESET and MEM keys on the screen. PRESET is used to recall, and MEM is used to store.

- **Tab Screen Settings**

  Click the items on the screen and the function menu.

  You can change a value on a tab screen by using the +- buttons to the right of FD or the wheel on the mouse.

- **Moving the Cursors**

  Cursors on video signal waveforms can be moved easily with a mouse.

  To do so, click a cursor to select it, and then click a position of your choice. To unselect, right-click.

  A portion of the cursors can be moved with a mouse wheel. If you use a mouse wheel, right-click to set the position.

- **Right-Click Menu**

  The menu below appears when you right-click the mouse.
  LAYOUT is an item that can only be set using the mouse.

Table 4-8 Right-click menu

Menu	Description
ALL CLEAR	Hides the keys and function menu from the screen. Click in the screen to redisplay them.
KEY CLEAR	Hides the keys from the screen. Click in the screen to redisplay them.
MENU CLEAR	Hides the function menu. Click in the screen to redisplay it.
LAYOUT	Creates a measurement screen layout. Reference 5.4, “Arranging the Measurement Screen Layout”

4.10.4 Tab Menu Operations

Normally, the function menus are used to configure the various settings. However, tab menus—such as that shown below—are displayed in some situations.
This section explains how to operate the tab menu, using the GENERAL SETUP tab menu as an example.

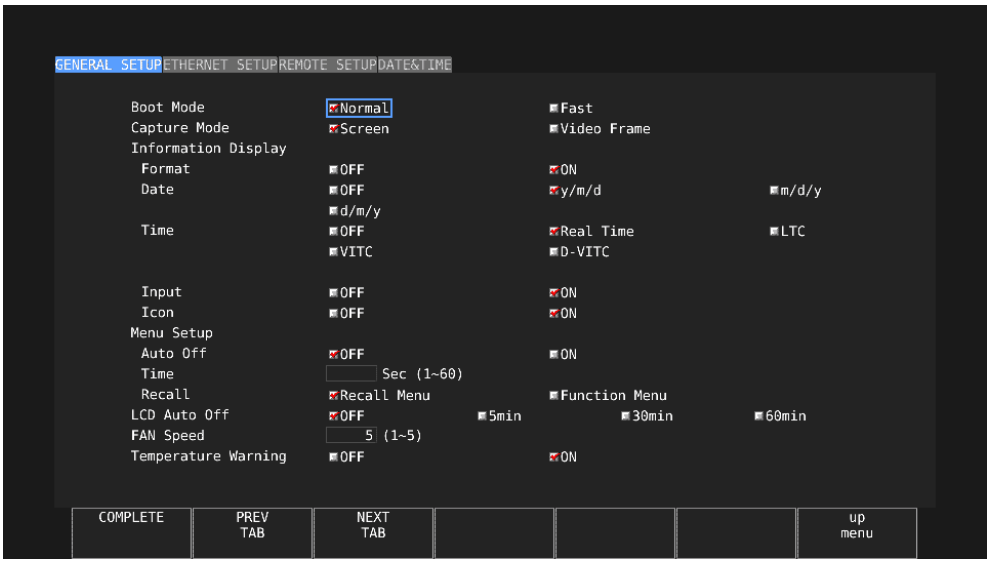


Figure 4-11 Tab menu operations

- **Moving Cursors**

  To move the cursor, turn the function dial (F•D). Depending on what you are setting, there are some items in which you cannot move the cursor.

- **Switching Tabs**

  When there are multiple tabs, such as in the figure above, press F•2 PREV TAB and F•3 NEXT TAB to change between tabs. If you switch to another tab, the settings are retained, but they are not confirmed until you press F•1 COMPLETE.

- **Selecting a Check Box**

  Move the cursor to the check box that you want to select, and press the function dial (F•D).

- **Entering Values**

  Move the cursor to the item that you want to enter the value for, and press the function dial (F•D). Turn the function dial (F•D) to set the value. To confirm the value that you have set, press the function dial (F•D) again.

- **Confirming Settings**

  Press F•1 COMPLETE to apply the settings from all the tabs and return to the screen that is one level up.

- **Canceling Settings**

  Press F•7 up menu to cancel the settings from all the tabs and return to the screen that is one level up.

4.10.5 Setting the Key Lock

You can prevent unintentional operations on the LV 5490 by enabling the key lock. The key lock disables all LV 5490 keys except for the power switch.

- **Enabling the Key Lock**

  Hold down SYS until the following message is displayed on the screen. While the key lock is enabled, the key lock icon appears in the upper right of the screen.

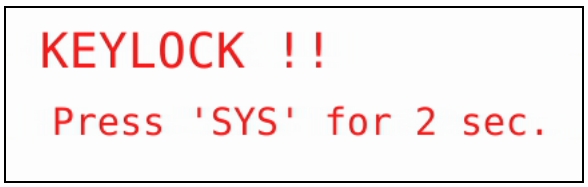


Figure 4-12 Enabling the key lock

- **Releasing the Key Lock**

  Hold down SYS until the following message is displayed on the screen.

Figure 4-13 Releasing the key lock

4.11 Measurement Screen Explanation

The measurement screen layout can be arranged as you like. This section explains items that are common to all displays.

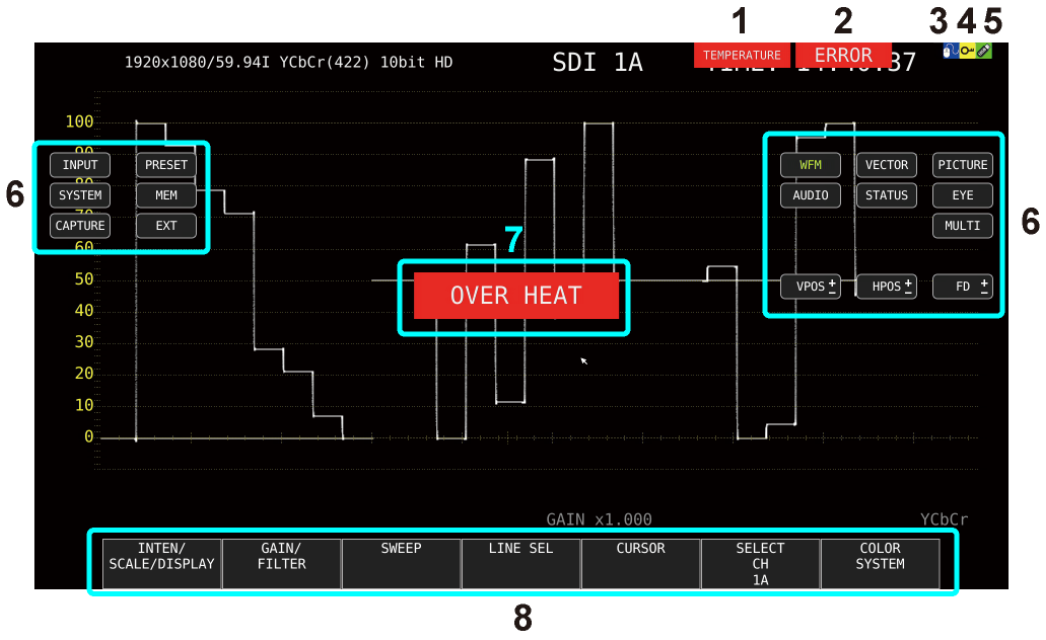


Figure 4-14 Measurement screen explanation

Table 4-9 Measurement screen explanation

No.	Name	Description
1	TEMPERATURE	Appears when the internal temperature increases. You can also choose to hide this information. See sections 6.3, “Displaying System Information” and 6.2.1, “General Settings.”
2	ERROR	Appears when an input signal error occurs.(*1) To configure error detection settings, use F•5 STATUS SETUP on the STATUS menu or F•4 ERROR SETUP on the EYE menu.
3	Mouse icon	Appears when a USB mouse is connected. You can also choose to hide this information. See section 4.7, “Connecting USB Devices” and 6.2.1, “General Settings.”
4	Key lock icon	Appears when key lock is enabled. You can also choose to hide this information. See section 4.10.5, “Enabling the Key Lock” and 6.2.1, “General Settings.”
5	USB memory icon	Appears when a USB memory device is connected. You can also choose to hide this information. See section 4.7, “Connecting USB Devices” and 6.2.1, “General Settings.”
6	Screen keys	Keys on the screen that you operate with a mouse. See section 4.10.3, “Mouse Operations.”

No.	Name	Description
7	OVER HEAT FAN ALARM	“OVER HEAT” appears when the internal temperature increases. “FAN ALARM” appears when a fan error occurs. If either of these alarm appears, immediately turn the power off, and then check for problems with the operating environment. If this alarm appears even though there are no problems with the operating environment, contact your local LEADER agent. See section 6.3, “Displaying System Information.”
8	Function menu	A menu for configuring settings. See section 4.10.1, “Displaying the Function Menu.”

*1 The applicable channels are all channels in the selected group (1A to 1D or 2A to 2D).
However, when measuring 3G-B-DS or 3G (DL)-4K, only on the currently displayed channels are applicable.

5. BASIC OPERATION

5.1 Setting the Input Signals

This section explains the INPUT menu settings and input format display.

5.1.1 Selecting the Input Mode

When SDI System on the SDI IN tab is set to SD/HD/3G-A/3G-B-DL, HD Dual Link, or NMI to select the input mode, follow the procedure below.

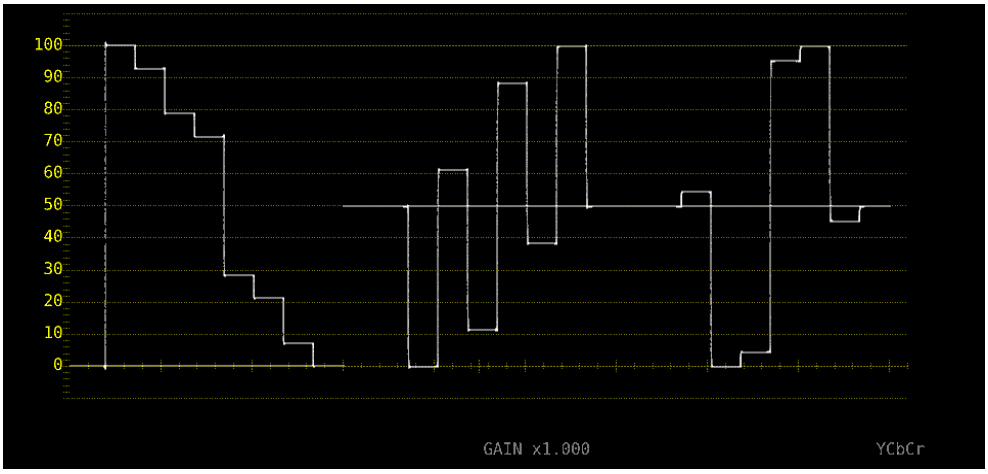
Procedure

INPUT → F•7 DISPLAY: SINGLE, SIMUL

Settings

SINGLE:	The LV 5490 operates in single input mode. It is a mode for measuring a single signal that has been turned on using F•1 to F•4.
SIMUL:	The LV 5490 operates in simul mode. It is a mode for measuring multiple signals that have been turned on using F•1 to F•4.

DISPLAY = SINGLE



DISPLAY = SIMUL

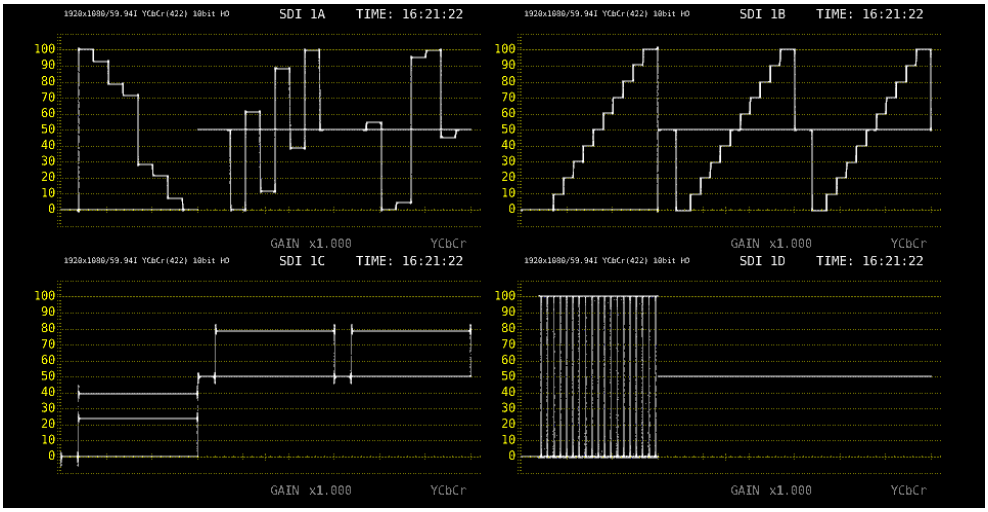


Figure 5-1 Selecting the Input Mode

5.1.2 Selecting Simul Operation

When in simul mode, to select how to set each channel, follow the procedure below.
If you change INDIVIDUAL to COM, all the settings are changed to those of the channel selected with F•6 SELECT CH on each measurement screen.

Procedure

INPUT → F•6 OPERATE CH MODE: COM / INDIVIDUAL

Settings

COM:	Measurement settings are made for all channels. A portion of the settings, such as the line selection when signals of different formats are applied, are not shared by all channels.
INDIVIDUAL:	Measurement settings are made for each channel. To select the channel you want to set, use F•6 SELECT CH on each measurement screen. A portion of the settings, such as ERROR CLEAR on the STATUS menu are shared by all channels.

5.1.3 Selecting the Measurement Group

When SDI In/Out BNC on the SDI OUT tab is set to Input, to select the measurement group, follow the procedure below. When SDI System on the SDI IN tab is 4K 12G, the group is fixed to 1, and this menu item is not displayed.

Procedure

INPUT → F•5 INPUT GROUP: 1 / 2

Settings

1:	Signals received through 1A to 1D are measured
2:	Signals received through 2A to 2D are measured

5.1.4 Selecting the Channels to Measure

To select the channels to measure in the group selected with F•5 INPUT GROUP, follow the procedure below.

Procedure (when the link format is set to single)

INPUT
→ F•1 1A: ON / OFF F•1 2A: ON / OFF
→ F•2 1B: ON / OFF F•2 2B: ON / OFF
→ F•3 1C: ON / OFF F•3 2C: ON / OFF
→ F•4 1D: ON / OFF F•4 2D: ON / OFF

Procedure (when the link format is set to dual)

INPUT
→ F•1 1A - 1B: ON / OFF F•3 2A - 2B: ON / OFF
→ F•2 1C - 1D: ON / OFF F•4 2C - 2D: ON / OFF

Procedure (when the link format is set to quad)

INPUT
→ F•1 1A - 1D: ON F•2 2A - 2D: ON

Procedure (when SDI System is set to 4K NMI, SER08)

INPUT
→ F•1 1 - 4: ON

Procedure (when SDI System is set to NMI, SER08)

INPUT
→ F•1 1: ON / OFF
→ F•2 1: ON / OFF
→ F•3 1: ON / OFF
→ F•4 1: ON / OFF

You can also use F•6 SELECT CH on each measurement screen to select the channel you want to measure.
F•6 SELECT CH works as follows:

- In single input mode, select the measurement channel.
- Selects the signal that is output from SDI OUTPUT (2A) when Select Out on the SDI OUT tab is set to A/B/C/D ch.
- Selects the signal that is output from MONITOR OUTPUT (SDI) when Mode on the MONITOR OUT tab is set to INPUT ROUTER.
- Selects that channel to be configured when F•6 OPERATE CH MODE of the INPUT menu is set to INDIVIDUAL.
- Selects where to recall captured frame data from.

5.1.5 Input Format Error Display

If the format of the received signal is not appropriate for the setting specified on the SDI IN tab in the system settings, the LV 5490 displays the format in red or an INPUT FORMAT window in the center of the screen.
If this occurs, check the settings on the SDI IN tab, the input signal, and payload ID.

The format is displayed in red in the following situations.

- If the format is 2 sample interleave of 3G(DL)-4K or 3G(QL), and the order of the link is not correct
- When the payload ID is not appropriate

An INPUT FORMAT window is displayed in the following situations.

- If the input signal is multi link, and the format specified on the SDI IN tab is not received

Reference SDI IN tab → 6.1.1, “Configuring the SDI Input Connectors.”

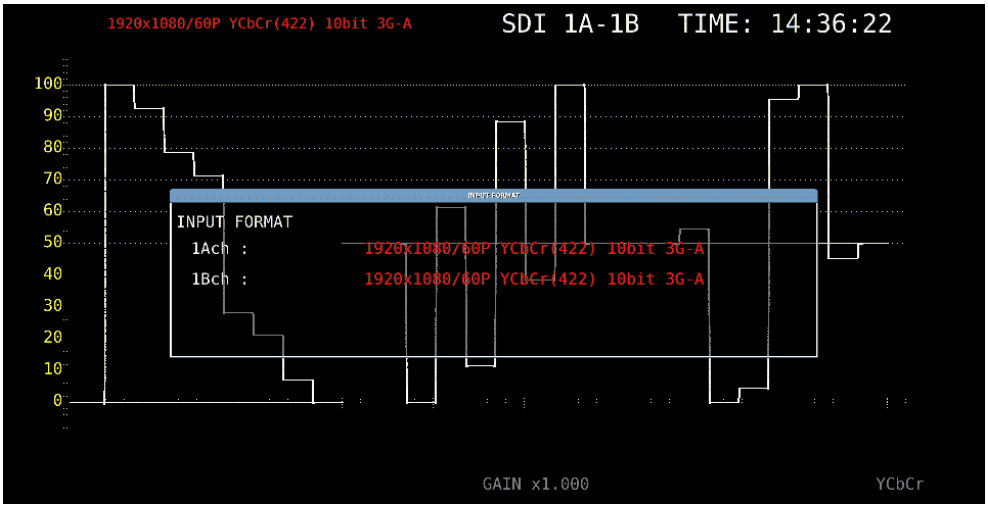


Figure 5-2 Input Format Error Display

5.2 Setting the Signals to Measure

This section explains the procedure from applying an input to displaying the measurement screen for each of the different input signal formats.

5.2.1 Measuring SD, HD, 3G-A, and 3G-B-DL Signals

1. On the SDI IN tab in the system settings, set SDI System to SD/HD/3G-A/3G-B-DL.

SYS → F•1 SIGNAL IN OUT →

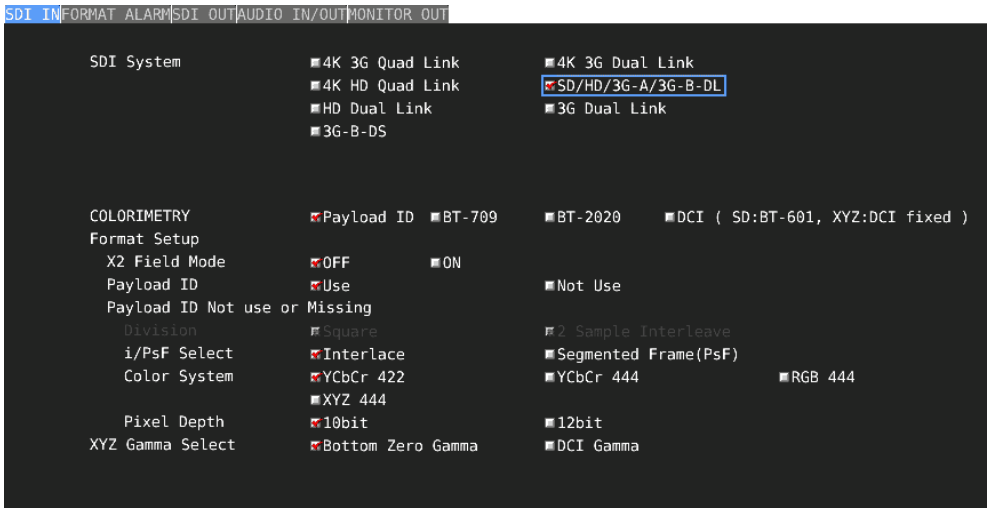


Figure 5-3 SDI IN tab

2. If the input signal is HD or 3G, set the payload ID.

Select Use or Not Use. If you select Not Use, specify the following settings.

- HD Set i/PsF Select.
- 3G Set i/PsF Select, Color System, and Pixel Depth.

Reference 6.1.1, “Configuring the SDI Input Connectors”

3. Press F•2 PREV TAB or F•3 NEXT TAB, and then set SDI In/Out BNC.

Select Input to apply up to eight signals (1A to 1D and 2A to 2D).
Select Output to apply up to four signals (1A to 1D). (2A to 2D are set to output.)

SYS → F•1 SIGNAL IN OUT → F•2 PREV TAB or F•3 NEXT TAB →

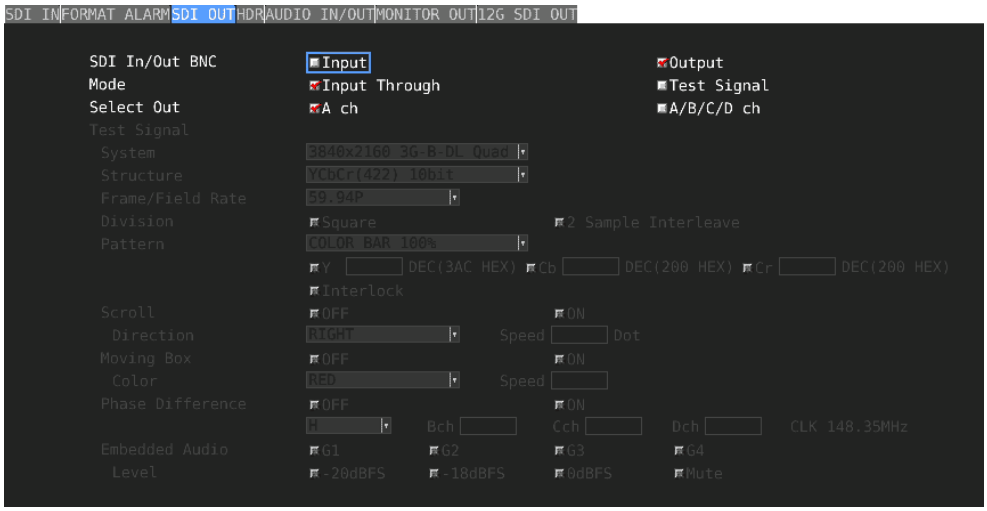


Figure 5-4 SDI OUT tab

4. Press COMPLETE.

5. Apply SDI signals to the SDI INPUT connectors on the rear panel.

If Output is selected in step 3, do not apply signals to 2A to 2D.

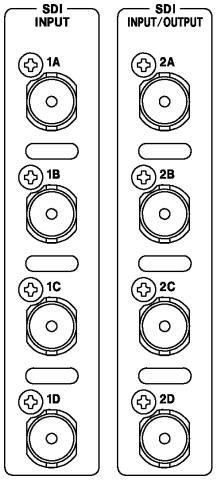


Figure 5-5 SDI input connectors

6. Press INPUT to select the channels you want to measure.

First, press F•7 DISPLAY to select whether to measure a single channel (SINGLE) or multiple channels (SIMUL).

Next, press F•5 INPUT GROUP to select whether to measure 1A to 1D (1) or 2A to 2D (2). This does not appear if Output was selected in step 3.

Finally, press F•1 to F•4 to turn on the channels you want to measure.

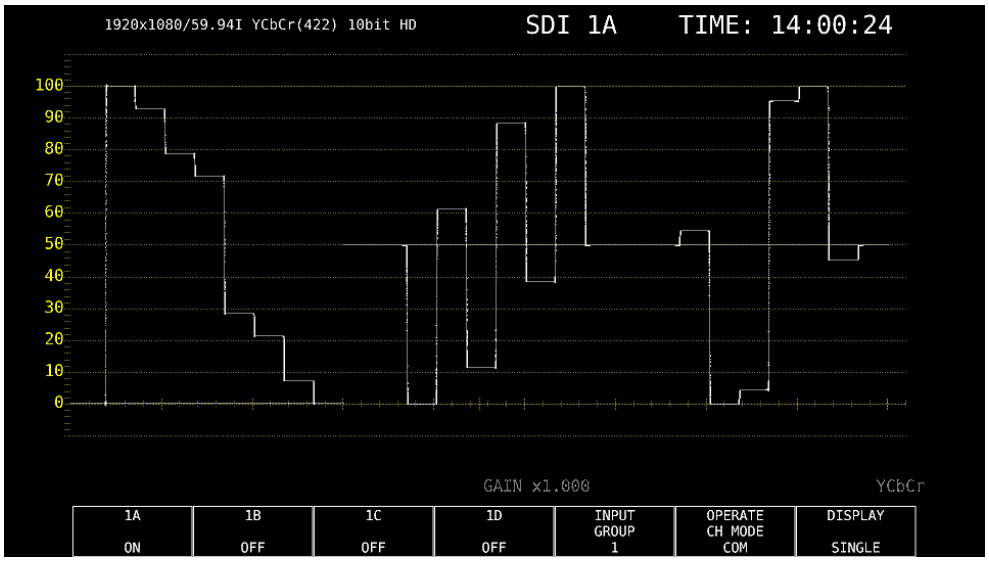


Figure 5-6 Measurement screen

5.2.2 Measuring 3G-B-DS Signals

1. On the SDI IN tab in the system settings, set SDI System to 3G-B-DS.

SYS → F•1 SIGNAL IN OUT →

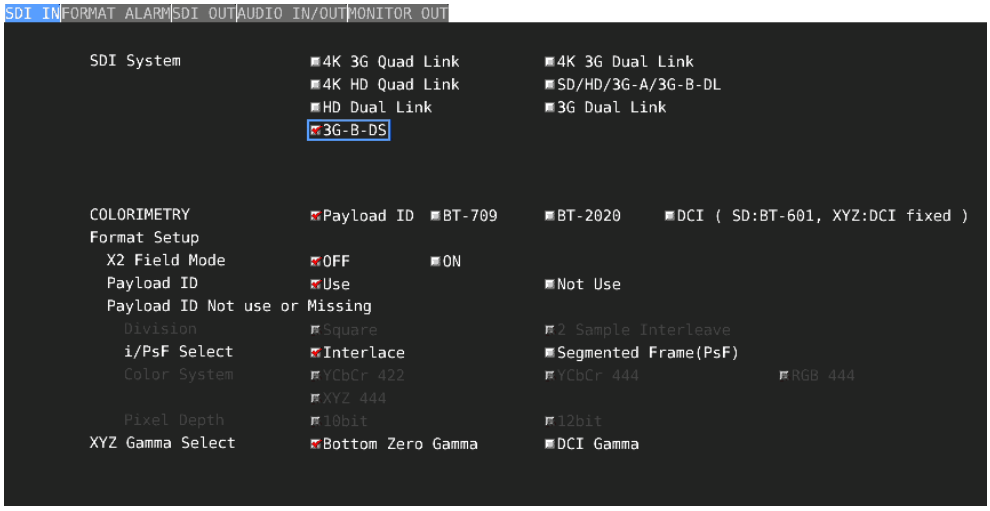


Figure 5-7 SDI IN tab

2. Set the payload ID.

Select Use or Not Use. If you select Not Use, set i/PsF Select.
Even if Use is selected, if a 3G-B-DL signal is applied, the LV 5490 will detect is as a 3G-B-DS signal.

Reference 6.1.1, “Configuring the SDI Input Connectors”

3. Press F•2 PREV TAB or F•3 NEXT TAB, and then set SDI In/Out BNC.

Select Input to apply up to eight signals (1A to 1D and 2A to 2D).
Select Output to apply up to four signals (1A to 1D). (2A to 2D are set to output.)

SYS → F•1 SIGNAL IN OUT → F•2 PREV TAB or F•3 NEXT TAB →

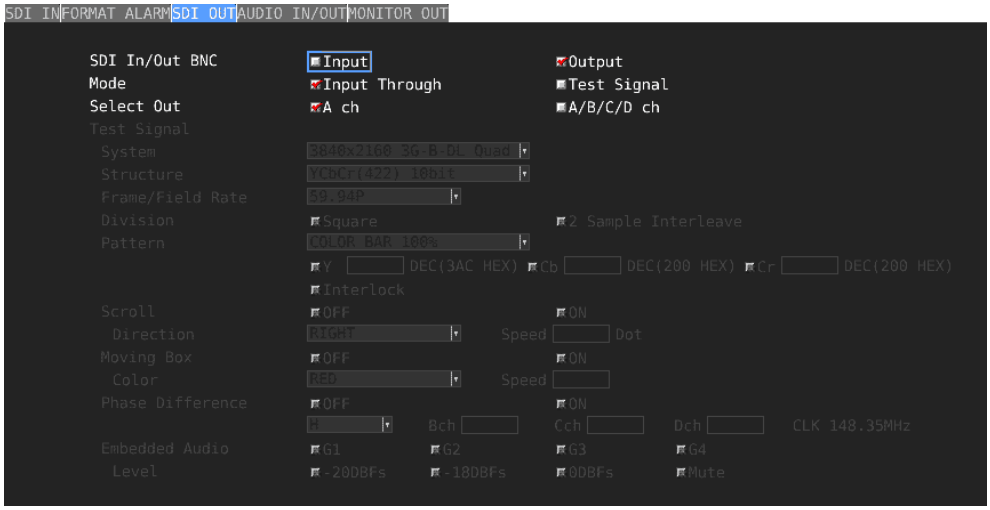


Figure 5-8 SDI OUT tab

4. **Press COMPLETE.**

5. **Apply 3G-B-DS signals to the SDI INPUT connectors on the rear panel.**

   If Output is selected in step 3, do not apply signals to 2A to 2D.

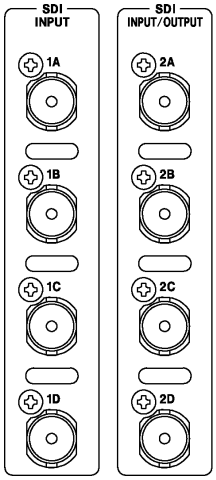


Figure 5-9 SDI input connectors

6. **Press INPUT to select the channels you want to measure.**

   First, press F•5 INPUT GROUP to select whether to measure 1A to 1D (1) or 2A to 2D (2). This does not appear if Output was selected in step 3.

   Next, press F•1 to F•4 to turn on the channels you want to measure. Simul mode cannot be used.

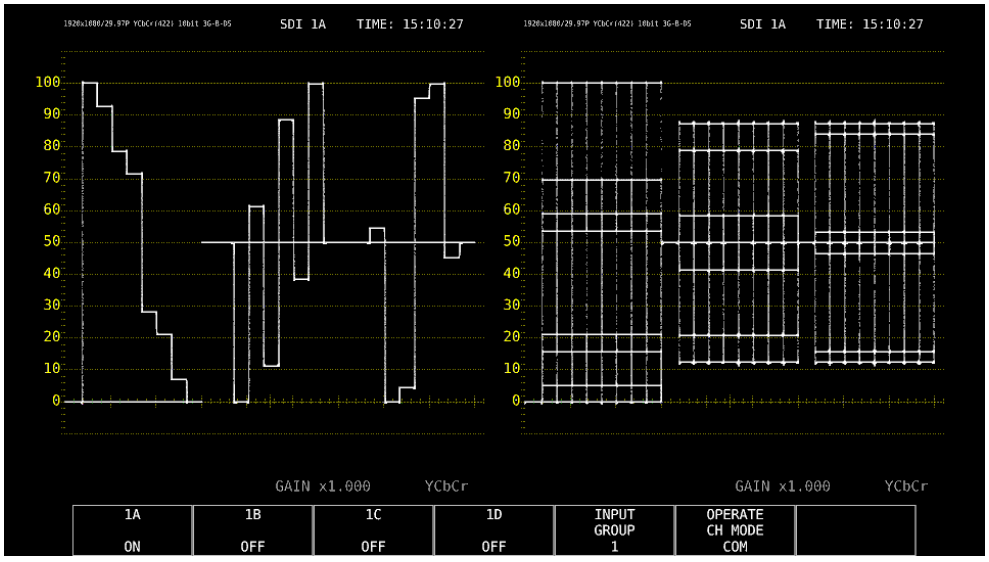


Figure 5-10 Measurement screen

5.2.3 Measuring 12G Signals (SER06/SER08)

1. On the SDI IN tab in the system settings, set SDI System to 4K 12G.

SYS → F•1 SIGNAL IN OUT →

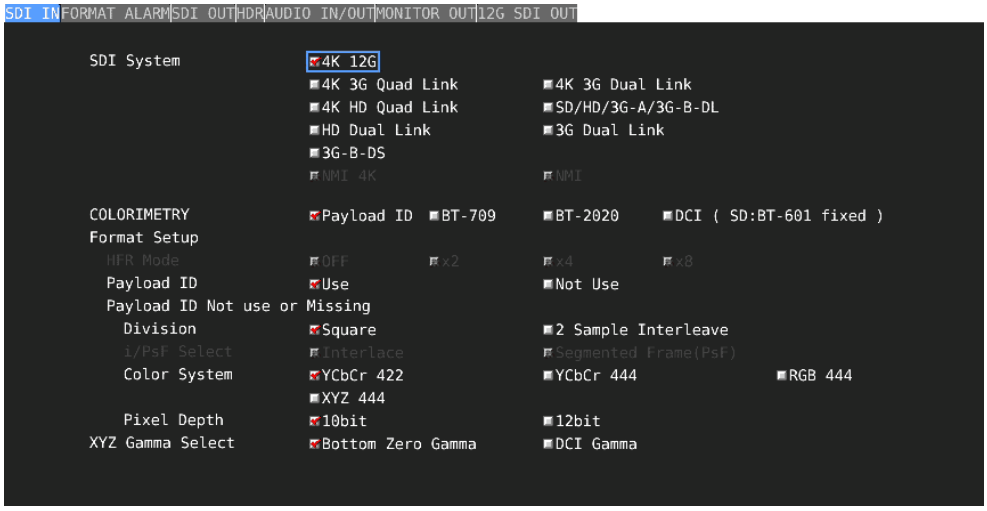


Figure 5-11 SDI IN tab

2. Set the payload ID.

Select Use or Not Use. If you select Not Use, set Division, Color System, and Pixel Depth.

Reference 6.1.1, “Configuring the SDI Input Connectors”

3. Press COMPLETE.

4. Apply 12G signals to the 12G-SDI INPUT (1A to 1D) connectors on the rear panel.

Even if SDI In/Out BNC on the SDI OUT tab is set to Input, signals received through 2A to 2D cannot be measured.

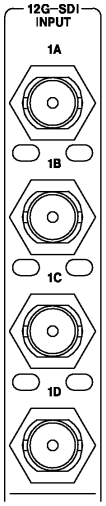


Figure 5-12 12G-SDI input connectors

5. Press INPUT to select the channels you want to measure.

Press F•1 to F•4 to turn on the channels you want to measure. Simul mode cannot be used.

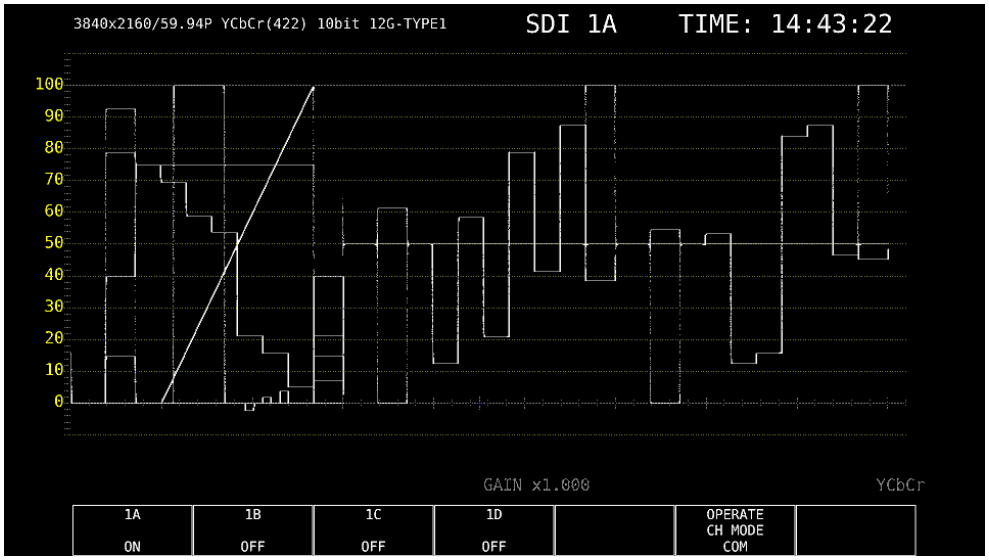


Figure 5-13 Measurement screen

* To measure 12G-SDI signals, use cables and connectors that are appropriate for transmitting 12G-SDI signals. Using incompatible or degraded cables or connectors may cause the transmission characteristics to degrade drastically.

5.2.4 Measuring HD (DL) Signals

1. On the SDI IN tab in the system settings, set SDI System to HD Dual Link.

SYS → F•1 SIGNAL IN OUT →

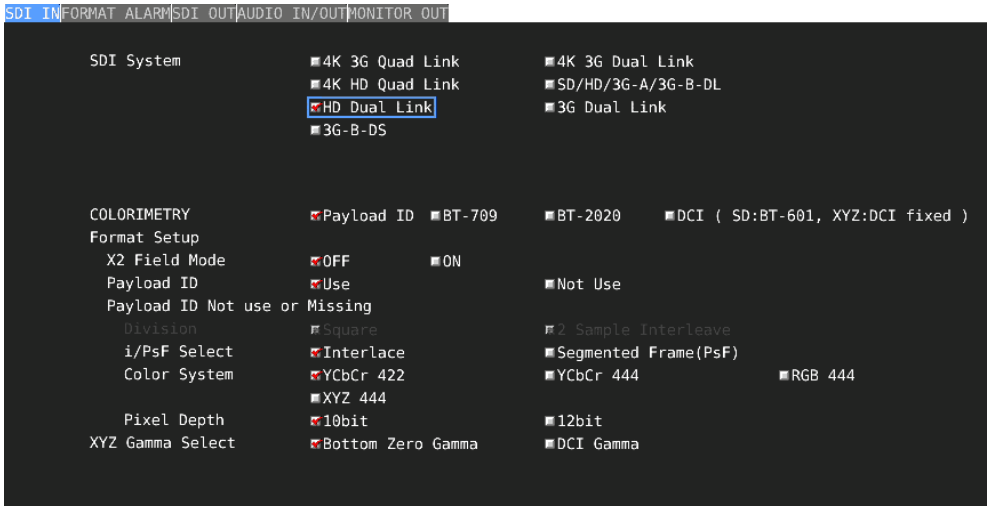


Figure 5-14 SDI IN tab

2. Set the payload ID.

Select Use or Not Use. If you select Not Use, set i/PsF Select, Color System, and Pixel Depth.

Even if Use is selected, if a HD signal is applied, the LV 5490 will detect is as a HD (DL) signal.

Reference 6.1.1, “Configuring the SDI Input Connectors”

3. Press F•2 PREV TAB or F•3 NEXT TAB, and then set SDI In/Out BNC.

Select Input to apply up to four signals (1A/1B, 1C/1D, 2A/2B, and 2C/2D).

Select Output to apply up to two signals (1A/1B and 1C/1D). (2A to 2D are set to output.)

SYS → F•1 SIGNAL IN OUT → F•2 PREV TAB or F•3 NEXT TAB →

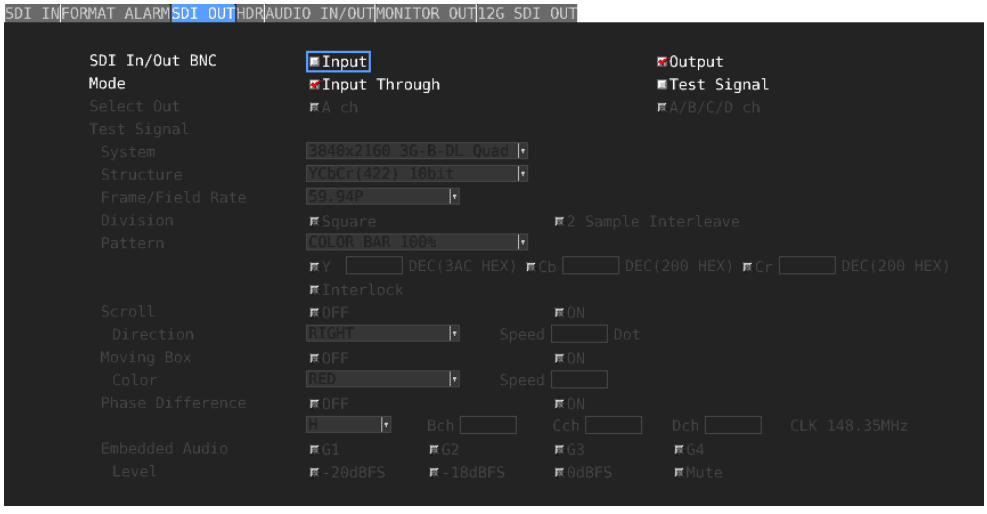


Figure 5-15 SDI OUT tab

4. **Press COMPLETE.**

5. **Apply HD signals to the SDI INPUT connectors on the rear panel.**

   1A/1B, 1C/1D, 2A/2B, and 2C/2D are pairs.
   If Output is selected in step 3, do not apply signals to 2A to 2D.

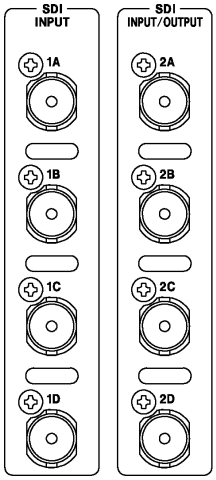


Figure 5-16 SDI input connectors

6. **Press INPUT to select the channels you want to measure.**

   First, press F•7 DISPLAY to select whether to measure a single channel (SINGLE) or multiple channels (SIMUL).

   Next, press F•5 INPUT GROUP to select whether to measure 1A to 1D (1) or 2A to 2D (2). This does not appear if Output was selected in step 3.

   Finally, press F•1 to F•4 to turn on the channels you want to measure.

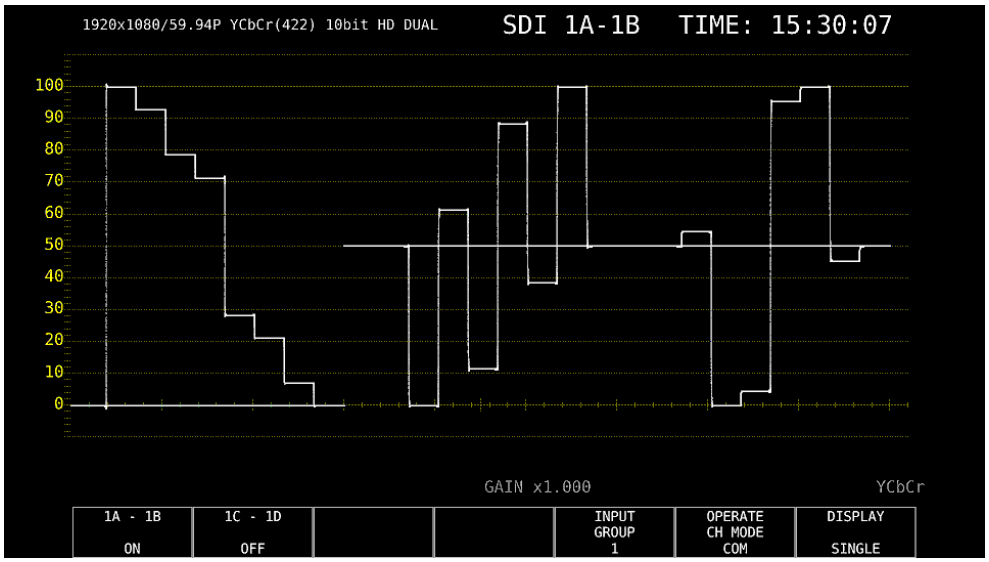


Figure 5-17 Measurement screen

5.2.5 Measuring 3G (DL)-2K Signals

1. On the SDI IN tab in the system settings, set SDI System to 3G Dual Link.

SYS → F•1 SIGNAL IN OUT →

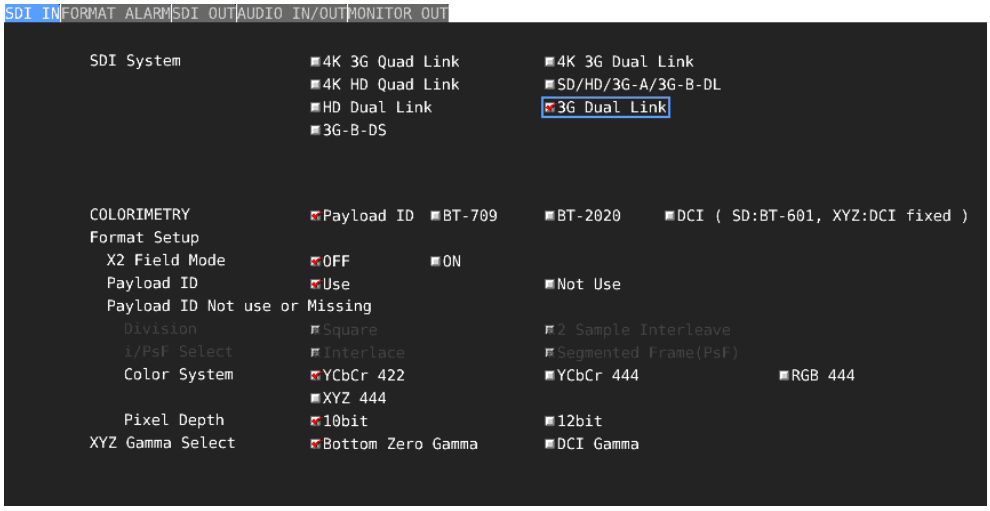


Figure 5-18 SDI IN tab

2. Set the payload ID.

Select Use or Not Use. If you select Not Use, set Color System and Pixel Depth.
Even if Use is selected, if a 3G-A or 3G-B-DL signal is applied, the LV 5490 will detect is as a 3G(DL)-2K signal.

Reference 6.1.1, “Configuring the SDI Input Connectors”

3. Press F•2 PREV TAB or F•3 NEXT TAB, and then set SDI In/Out BNC.

Select Input to apply up to four signals (1A/1B, 1C/1D, 2A/2B, and 2C/2D).
Select Output to apply up to two signals (1A/1B and 1C/1D). (2A to 2D are set to output.)

SYS → F•1 SIGNAL IN OUT → F•2 PREV TAB or F•3 NEXT TAB →

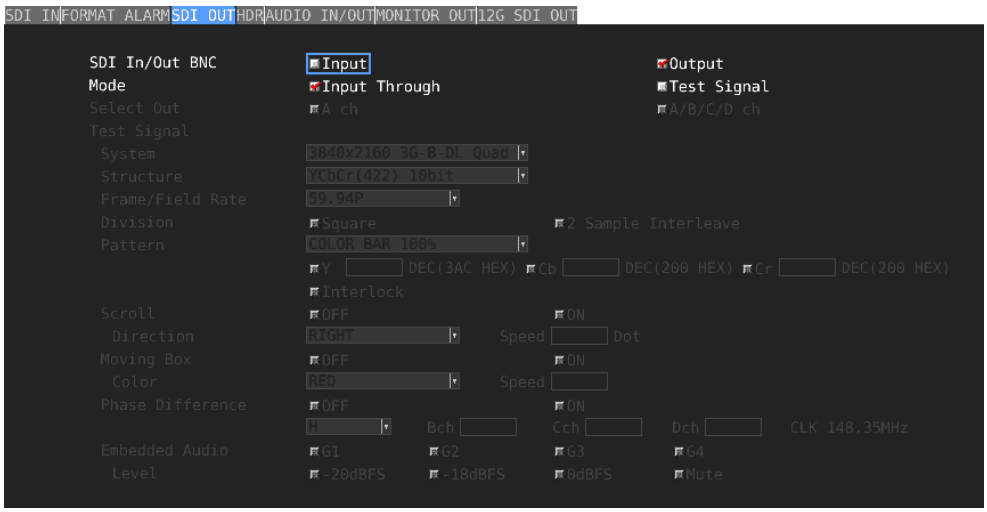


Figure 5-19 SDI OUT tab

4. **Press COMPLETE.**

5. **Apply a 3G-A or 3G-B-DL signal to the SDI INPUT connectors on the rear panel.**

   1A/1B, 1C/1D, 2A/2B, and 2C/2D are pairs.
   If Output is selected in step 3, do not apply signals to 2A to 2D.

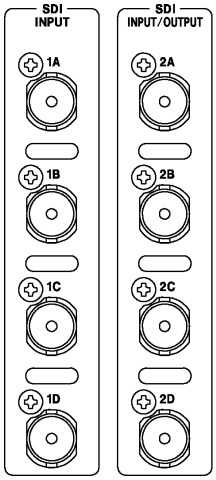


Figure 5-20 SDI input connectors

6. **Press INPUT to select the channels you want to measure.**

   First, press F•7 DISPLAY to select whether to measure a single channel (SINGLE) or multiple channels (SIMUL).

   Next, press F•5 INPUT GROUP to select whether to measure 1A to 1D (1) or 2A to 2D (2). This does not appear if Output was selected in step 3.

   Finally, press F•1 to F•4 to turn on the channels you want to measure.

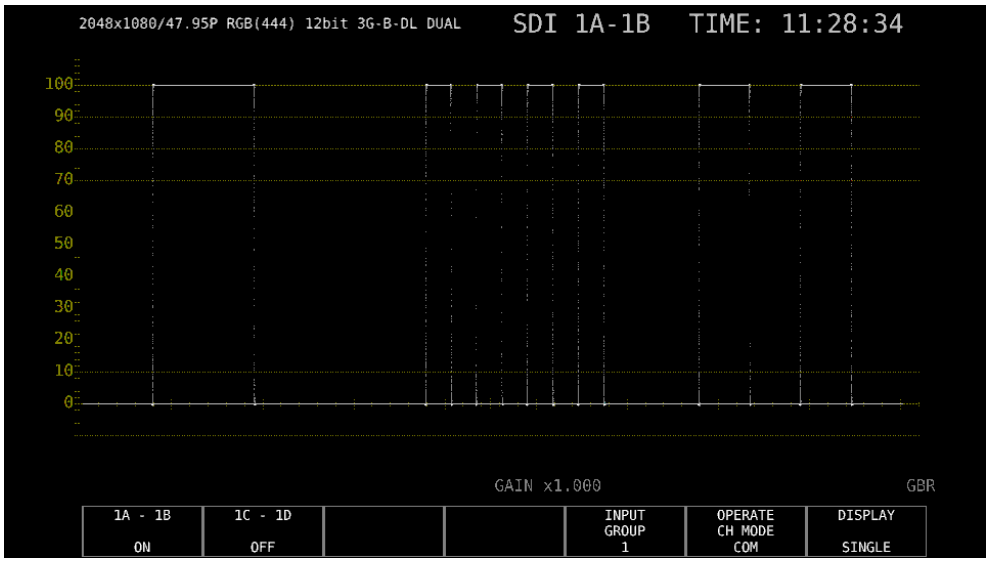


Figure 5-21 Measurement screen

5.2.6 Measuring 3G (DL)-4K Signals

1. On the SDI IN tab in the system settings, set SDI System to 4K 3G Dual Link.

SYS → F•1 SIGNAL IN OUT →

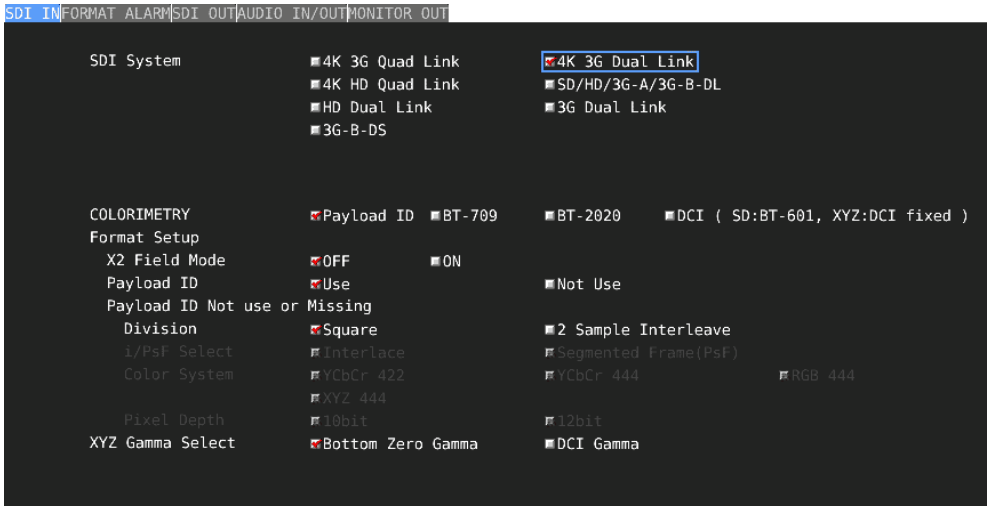


Figure 5-22 SDI IN tab

2. Set the payload ID.

Select Use or Not Use. If you select Not Use, set Division.
Even if Use is selected, if a 3G-B-DL signal is applied, the LV 5490 will detect is as a 3G-B-DS signal.

Reference 6.1.1, “Configuring the SDI Input Connectors”

3. Press F•2 PREV TAB or F•3 NEXT TAB, and then set SDI In/Out BNC.

Select Input to apply up to four signals (1A/1B, 1C/1D, 2A/2B, and 2C/2D).
Select Output to apply up to two signals (1A/1B and 1C/1D). (2A to 2D are set to output.)

SYS → F•1 SIGNAL IN OUT → F•2 PREV TAB or F•3 NEXT TAB →

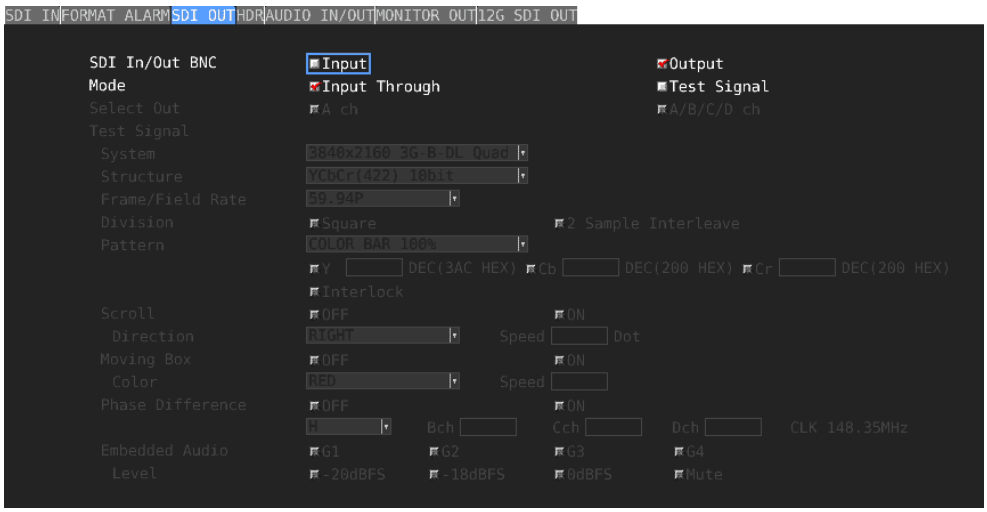


Figure 5-23 SDI OUT tab

4. **Press COMPLETE.**

5. **Apply 3G-B-DS signals to the SDI INPUT connectors on the rear panel.**

   1A/1B, 1C/1D, 2A/2B, and 2C/2D are pairs.
   If Output is selected in step 3, do not apply signals to 2A to 2D.

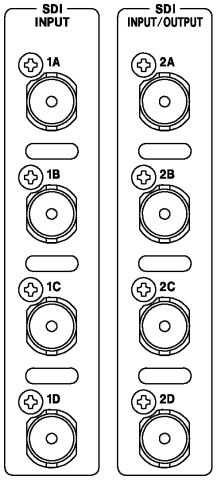


Figure 5-24 SDI input connectors

6. **Press INPUT to select the channels you want to measure.**

   First, press F•5 INPUT GROUP to select whether to measure 1A to 1D (1) or 2A to 2D (2). This does not appear if Output was selected in step 3.

   Next, press F•1 to F•4 to turn on the channels you want to measure. Simul mode cannot be used.

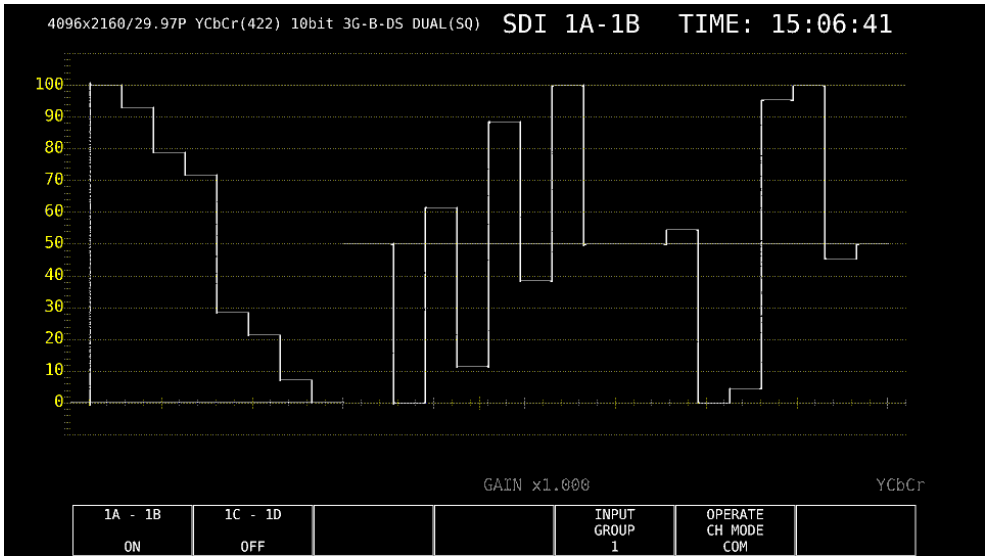


Figure 5-25 Measurement screen

5.2.7 Measuring HD (QL) Signals

1. On the SDI IN tab in the system settings, set SDI System to 4K HD Quad Link.

SYS → F•1 SIGNAL IN OUT →

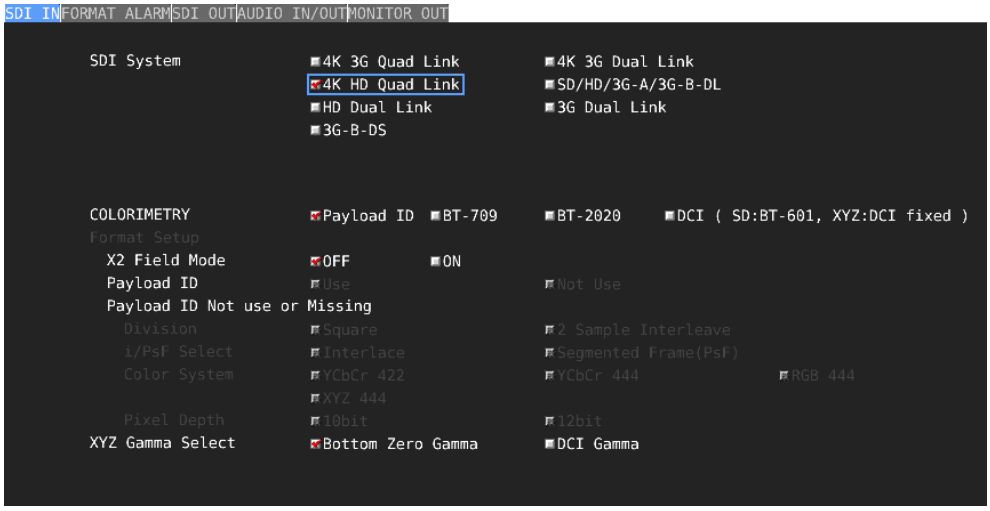


Figure 5-26 SDI IN tab

2. Press F•2 PREV TAB or F•3 NEXT TAB, and then set SDI In/Out BNC.

Select Input to apply up to two signals (1A to 1D and 2A to 2D).
Select Output to apply up to one signals (1A to 1D). (2A to 2D are set to output.)

SYS → F•1 SIGNAL IN OUT → F•2 PREV TAB or F•3 NEXT TAB →

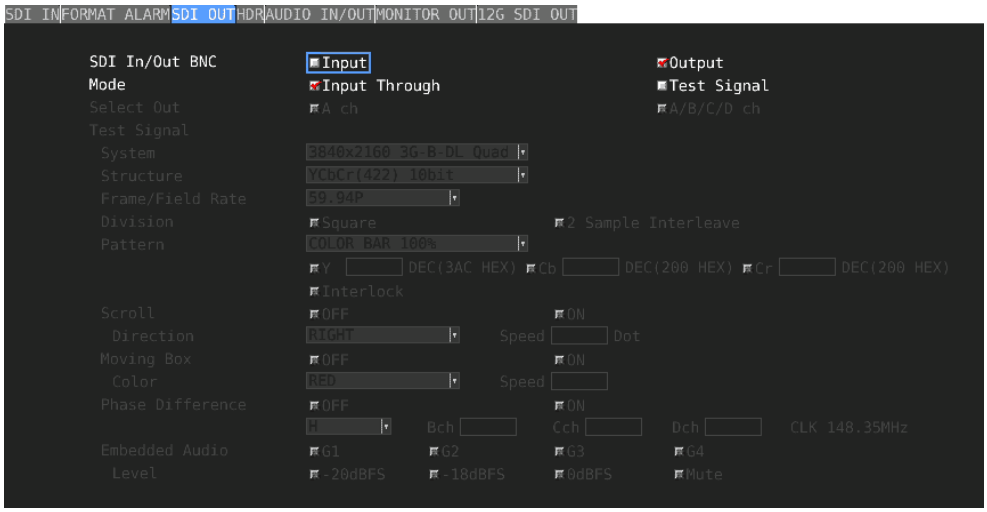


Figure 5-27 SDI OUT tab

3. **Press COMPLETE.**

4. **Apply HD signals to the SDI INPUT connectors on the rear panel.**

   If Output is selected in step 2, do not apply signals to 2A to 2D.

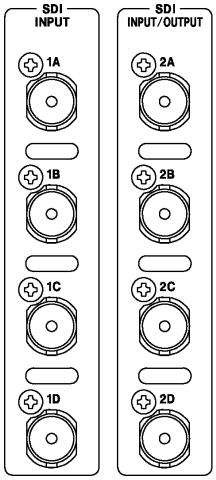


Figure 5-28 SDI input connectors

5. **Press INPUT to select the channels you want to measure.**

   Press F•5 INPUT GROUP to select whether to measure 1A to 1D (1) or 2A to 2D (2). This does not appear if Output was selected in step 2.

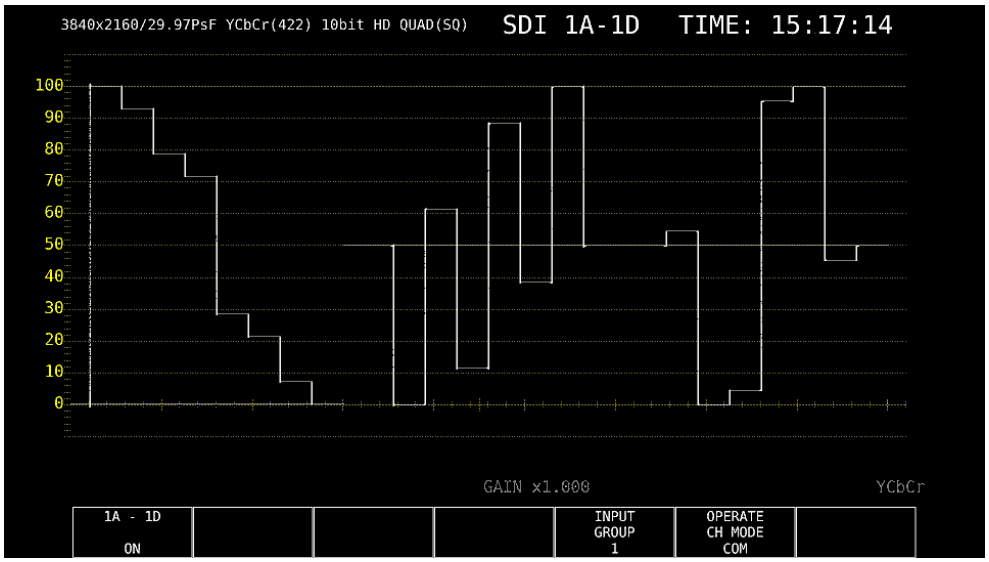


Figure 5-29 Measurement screen

5.2.8 Measuring 3G (QL) Signals

1. On the SDI IN tab in the system settings, set SDI System to 4K 3G Quad Link.

SYS → F•1 SIGNAL IN OUT →

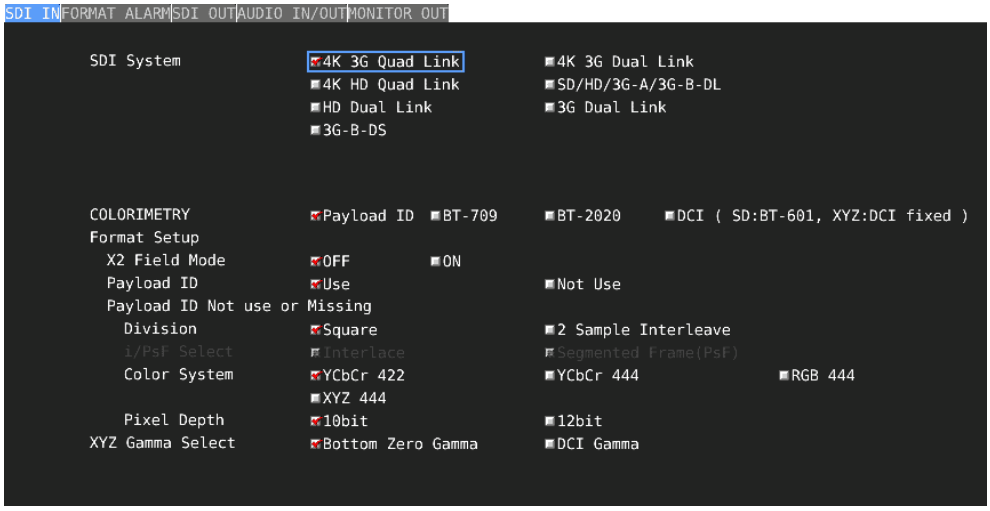


Figure 5-30 SDI IN tab

2. Set the payload ID.

Select Use or Not Use. If you select Not Use, set Division, Color System, and Pixel Depth.

Even if Use is selected, if a 3G-B-DS signal is applied, the LV 5490 will detect is as a 3G-B-DL signal.

Reference 6.1.1, “Configuring the SDI Input Connectors”

3. Press F•2 PREV TAB or F•3 NEXT TAB, and then set SDI In/Out BNC.

Select Input to apply up to two signals (1A to 1D and 2A to 2D).

Select Output to apply up to one signals (1A to 1D). (2A to 2D are set to output.)

SYS → F•1 SIGNAL IN OUT → F•2 PREV TAB or F•3 NEXT TAB →

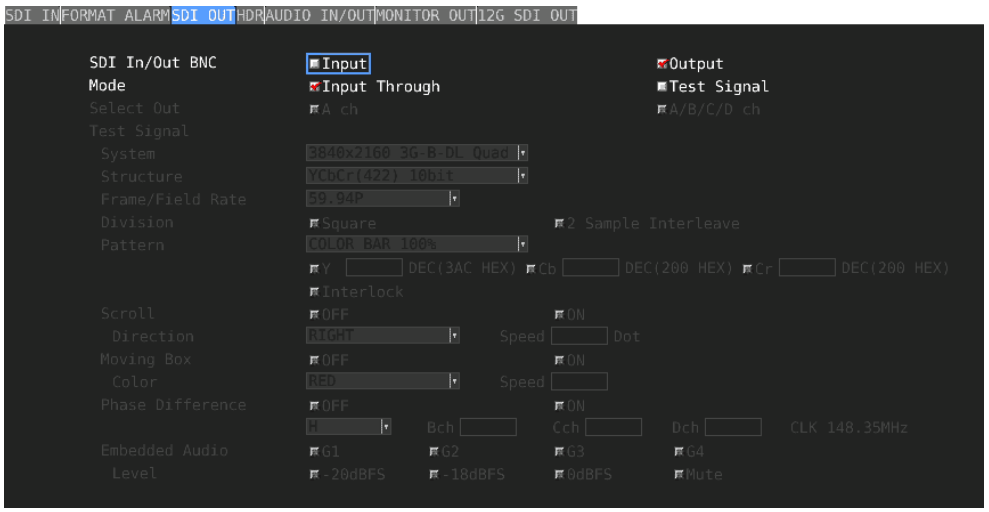


Figure 5-31 SDI OUT tab

4. **Press COMPLETE.**

5. **Apply a 3G-A or 3G-B-DL signal to the SDI INPUT connectors on the rear panel.**

   If Output is selected in step 3, do not apply signals to 2A to 2D.

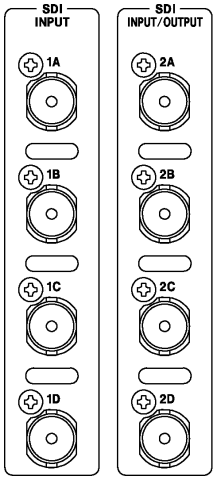


Figure 5-32 SDI input connectors

6. **Press INPUT to select the channels you want to measure.**

   Press F•5 INPUT GROUP to select whether to measure 1A to 1D (1) or 2A to 2D (2). This does not appear if Output was selected in step 3.

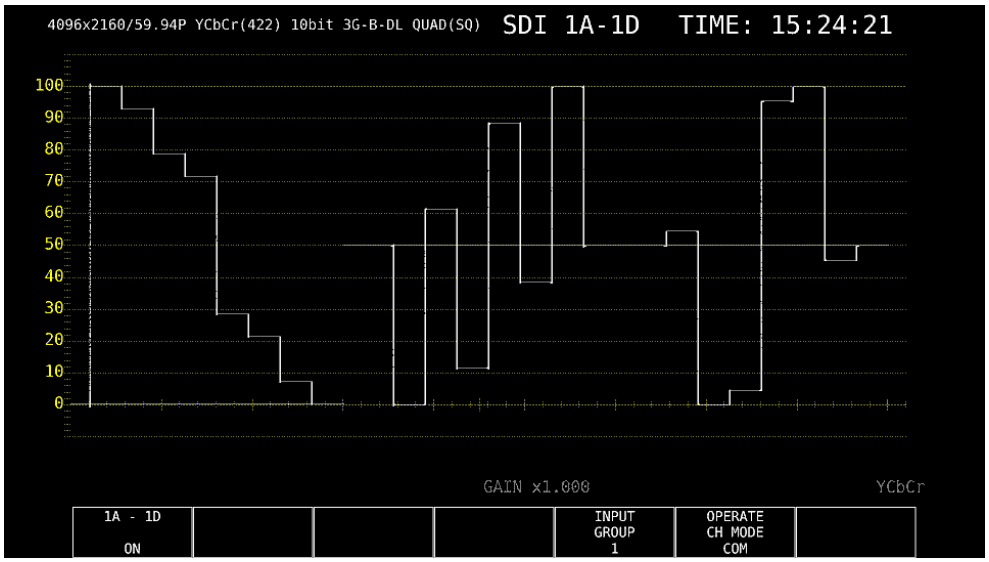


Figure 5-33 Measurement screen

5.2.9 Measuring 4K NMI Signals (SER08)

1. On the SDI IN tab in the system settings, set SDI System to 4K NMI.

SYS → F•1 SIGNAL IN OUT →

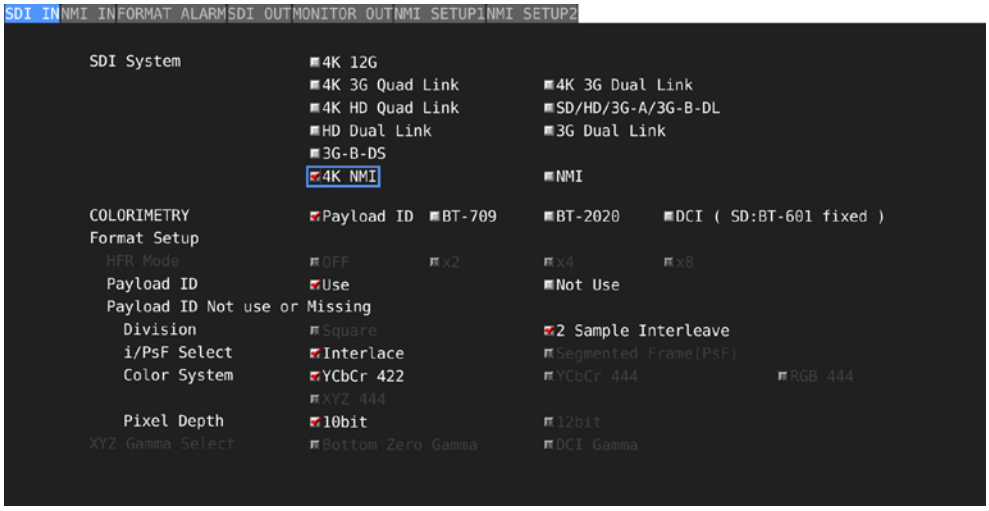


Figure 5-34 SDI IN tab

2. Set the payload ID.

Select Use or Not Use. Division is fixed to 2 Sample Interleave. i/PsF Select is fixed to Interlace. Color System is fixed to YCbCr 422. Pixel Depth is fixed to 10 bit.
Even if Use is selected, if a 4K NMI signal is applied, the LV 5490 will detect is as a 4K NMI signal.

Reference 6.1.1, “Configuring the SDI Input Connectors”

3. Press COMPLETE.

4. Apply 4K NMI signals to the NMI connectors on the rear panel.

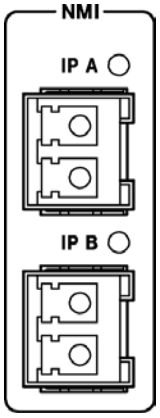


Figure 5-35 NMI input connectors

5. Press INPUT to select the channels you want to measure.

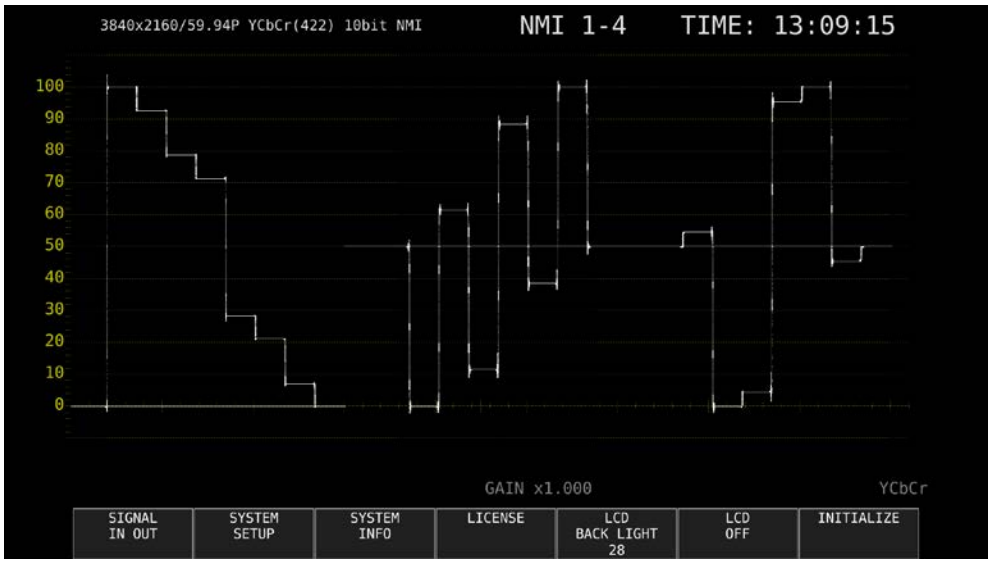


Figure 5-36 Measurement screen

5.2.10 Measuring NMI Signals (SER08)

1. On the SDI IN tab in the system settings, set SDI System to NMI.

SYS → F•1 SIGNAL IN OUT →

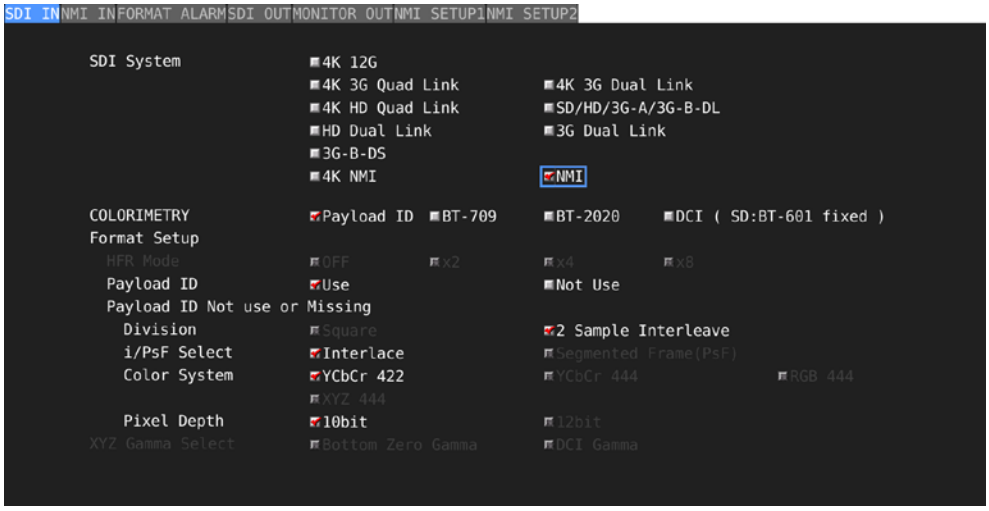


Figure 5-37 SDI IN tab

2. Set the payload ID.

Select Use or Not Use. Division is fixed to 2 Sample Interleave. i/PsF Select is fixed to Interlace. Color System is fixed to YCbCr 422. Pixel Depth is fixed to 10 bit.
Even if Use is selected, if a 4K NMI signal is applied, the LV 5490 will detect is as a 4K NMI signal.

Reference 6.1.1, “Configuring the SDI Input Connectors”

3. Press COMPLETE.

4. Apply NMI signals to the NMI connectors on the rear panel.

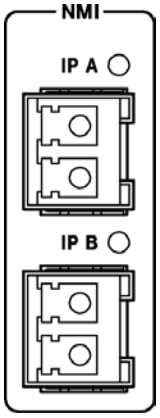


Figure 5-38 NMI input connectors

5. Press INPUT to select the channels you want to measure.

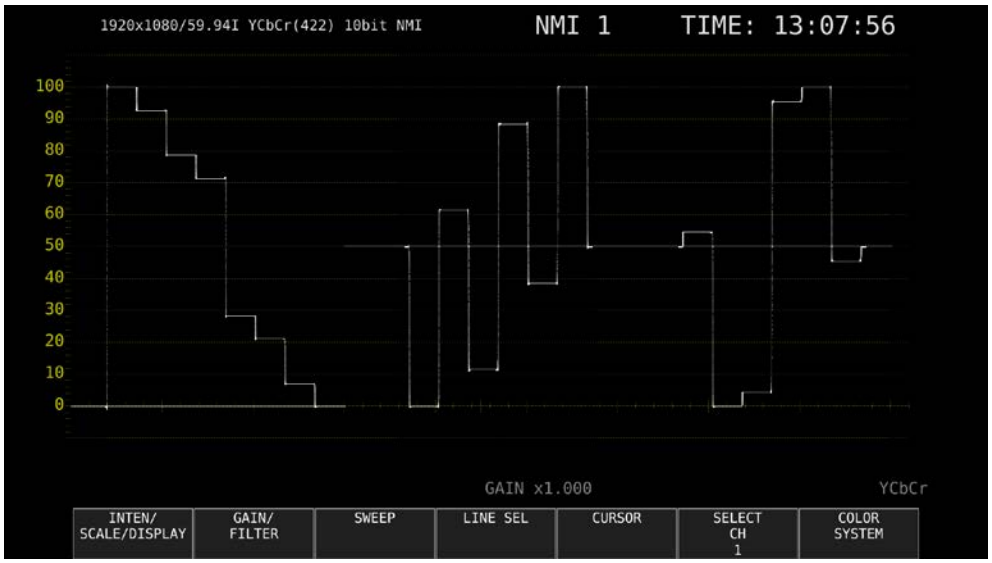


Figure 5-39 Measurement screen

5.3 Selecting the Measurement Mode

The types of measurement screens available are WFM, VECT, PIC, AUDIO, STATUS, and EYE. There is also another type, MULTI, that combines these six types. Press a measurement key on the front panel to select the type.

5.3.1 Video Signal Waveform Display

To display video signal waveforms, press WFM.
The available features include line select display, which displays the waveform of the selected line, RGB display, and pseudo-composite display.

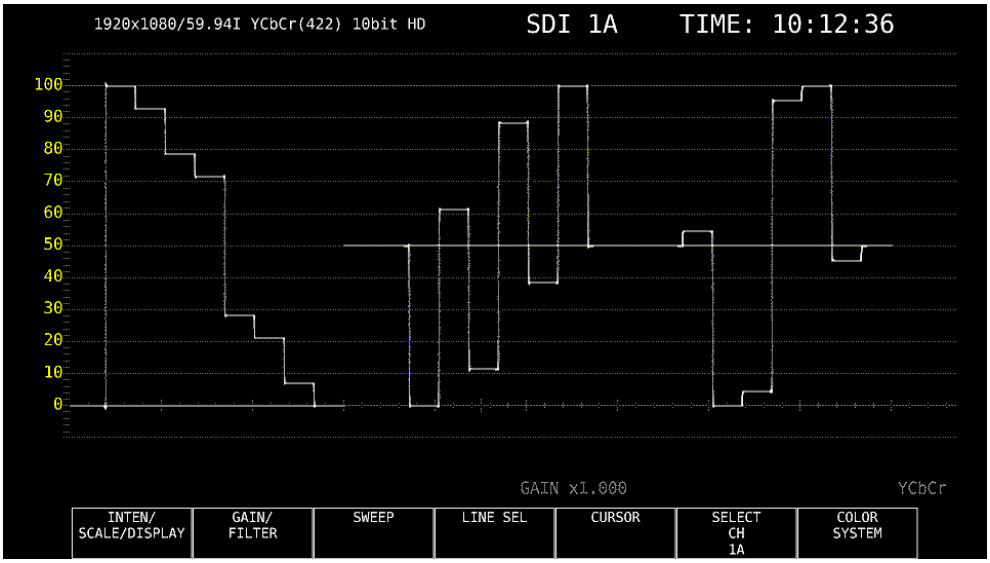


Figure 5-40 Video signal waveform display

5.3.2 Vector Waveform Display

To display vectors, press VECT.
The available features include line select display, marker display, pseudo-composite display, 5 bar display, and CIE diagram display (SER05).

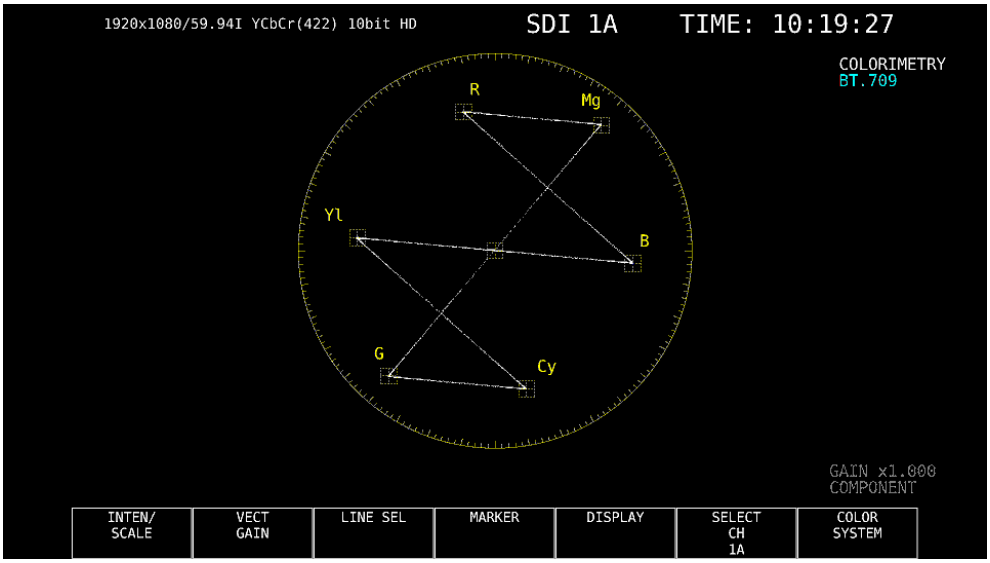


Figure 5-41 Vector waveform display

5.3.3 Picture Display

To show the picture display, press PIC.
The available features include monochrome display, marker display, line select display, and focus assist display (SER04).

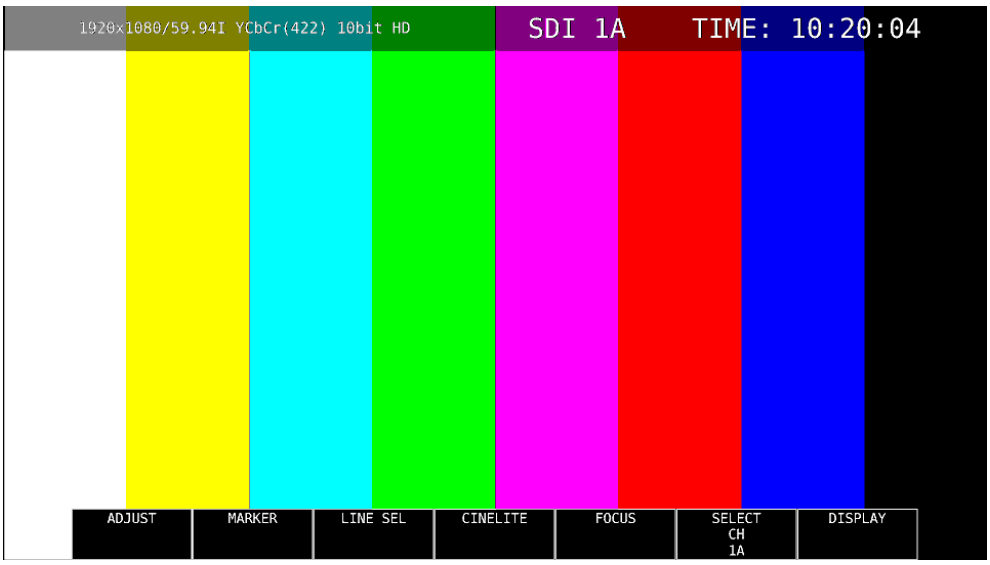


Figure 5-42 Picture display

5.3.4 Audio Display (SER03)

To show the audio display, press AUDIO. (If SER03 is not installed, the AUDIO key is disabled.)
The available features include Lissajous display, surround display, meter display, and status display of the signal selected with F•1 MAPPING.

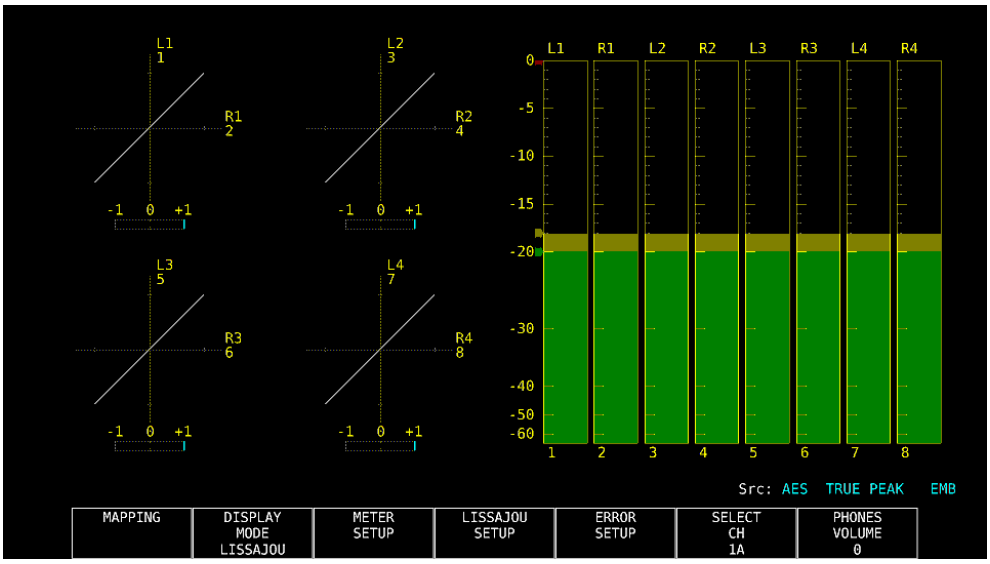


Figure 5-43 Audio display

5.3.5 Status Display

To show the status display, press STATUS.
The available features include event log display and data dump display.

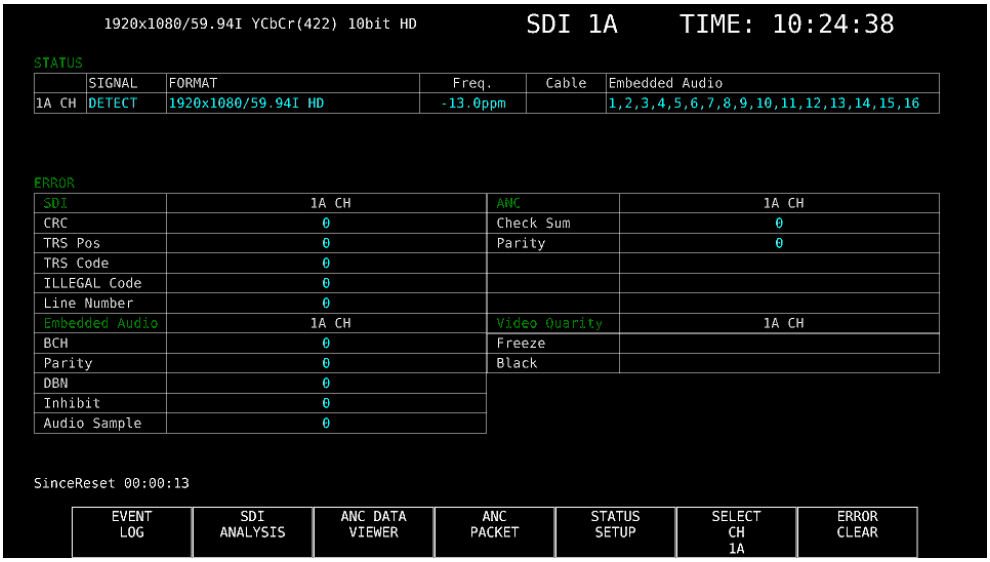


Figure 5-44 Status display

5.3.6 Eye Pattern Display (SER02/SER09)

To show eye patterns, press EYE. (If SER02/SER09 is not installed, the EYE key is disabled.)
You can also show jitter by switching F•2 MODE.
Simul mode is not supported. In addition signals applied to 2A to 2D cannot be displayed.

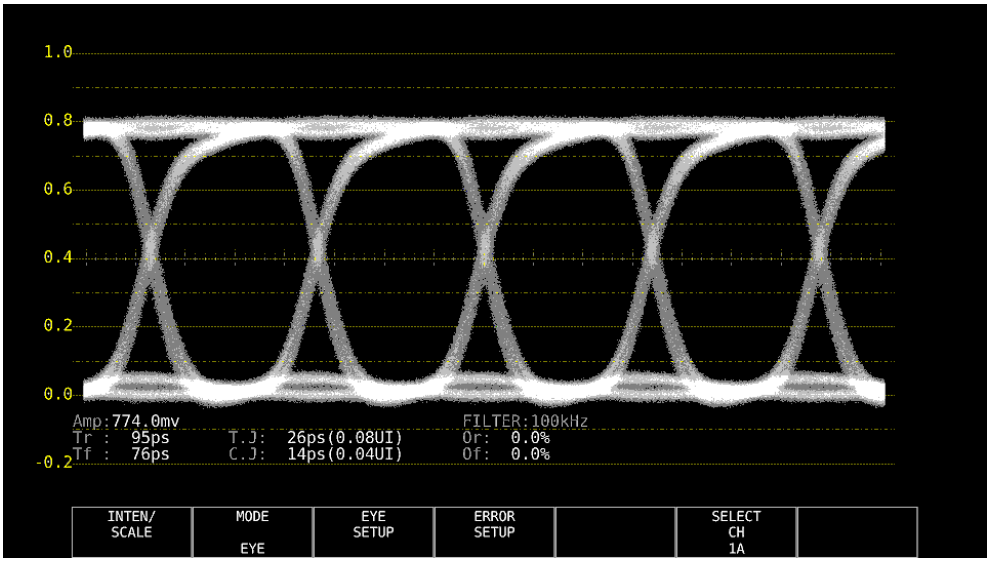


Figure 5-45 Eye pattern display

5.3.7 Multi Display

To show a multi screen, which is a combination of measurement screens, press MULTI.
You can select between five types of layouts by using F•1 LAYOUT SELECT.
To set each measurement screen, use F•2 MULTI WFM to F•7 MULTI EYE.

- **USER 1**

  The vector, video signal waveform, status, and picture are displayed in four divided screens.

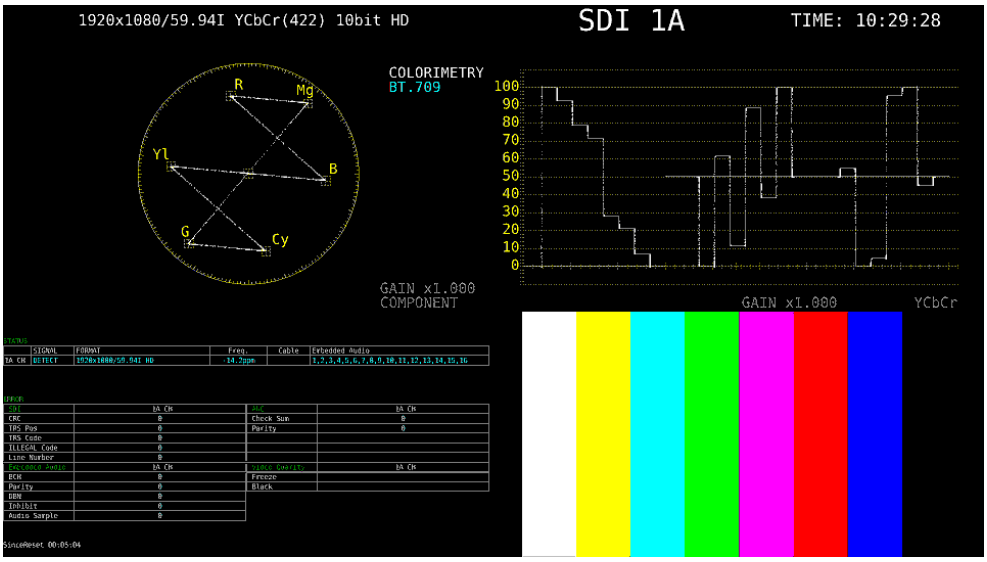


Figure 5-46 Multi display (USER 1)

- **USER 2**

  The picture is displayed in the main screen, and the video signal waveform and vector are displayed as thumbnails.

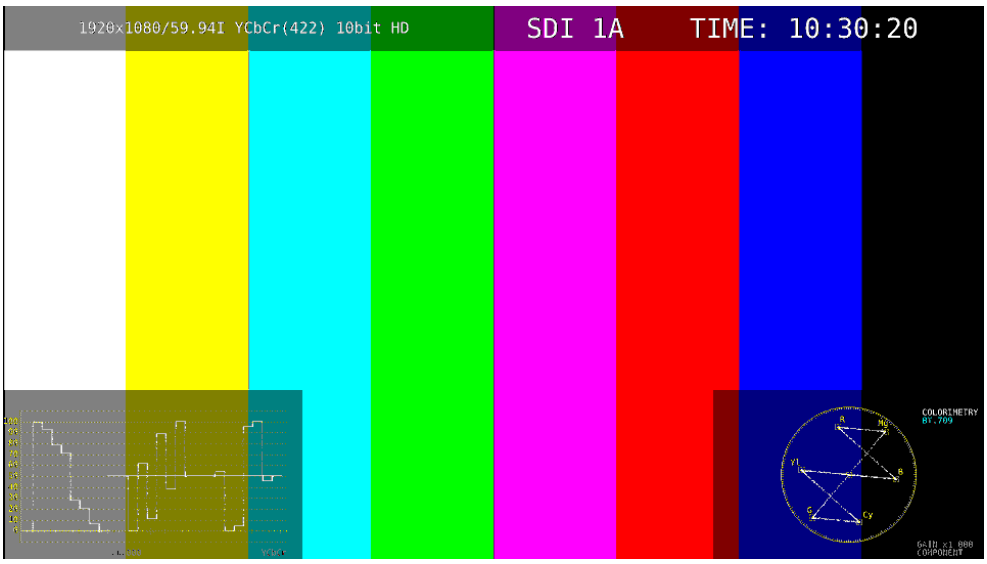


Figure 5-47 Multi display (USER 2)

- **USER 3**

  The vector is displayed in the main screen, and the video signal waveform and picture are displayed as thumbnails.

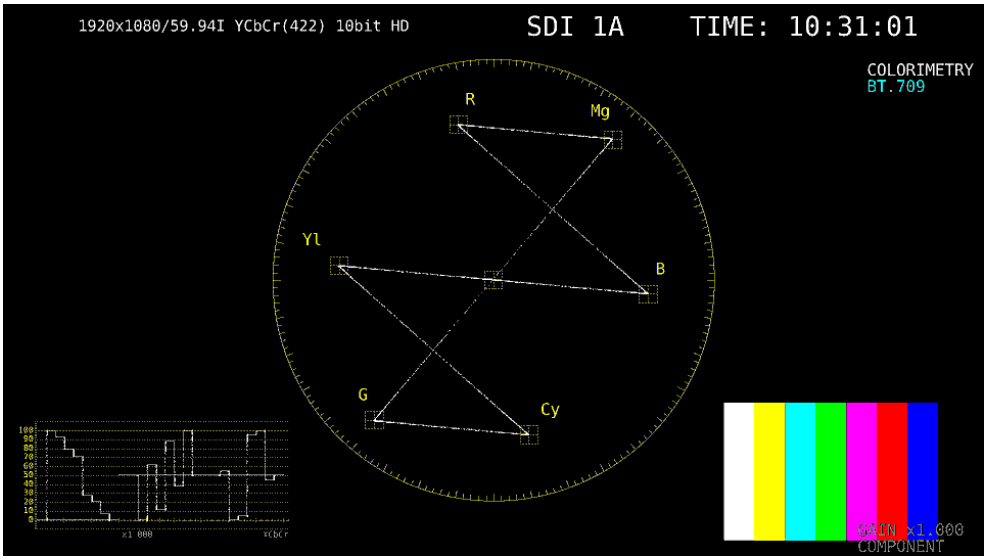


Figure 5-48 Multi display (USER 3)

- **USER 4**

  The picture, video-signal-waveform, and vector are displayed top to bottom.
  This is suitable for simul mode.

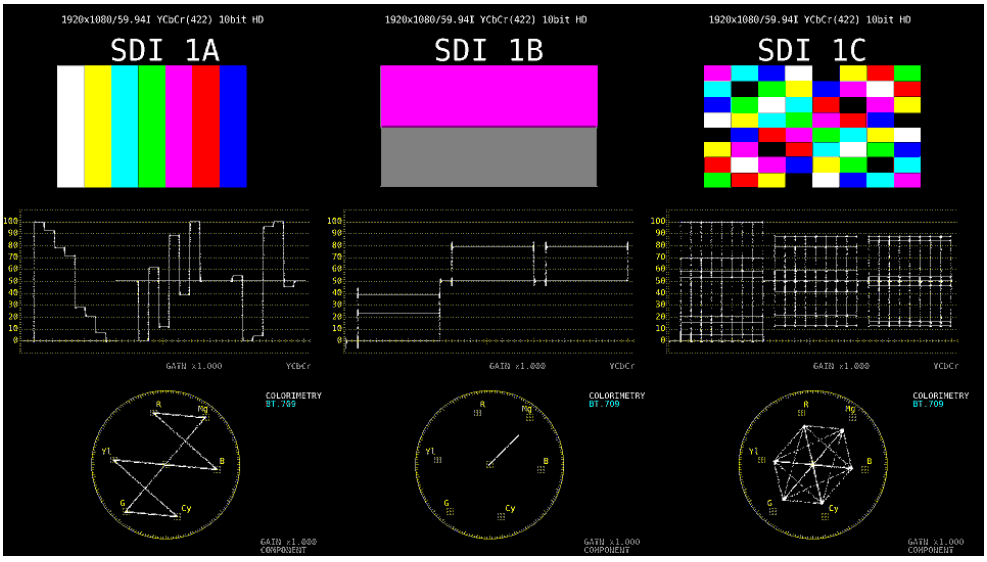


Figure 5-49 Multi display (USER 4)

- **USER 5**

  The picture and video signal waveform are displayed in the top and bottom screens. This is suitable for simul mode.

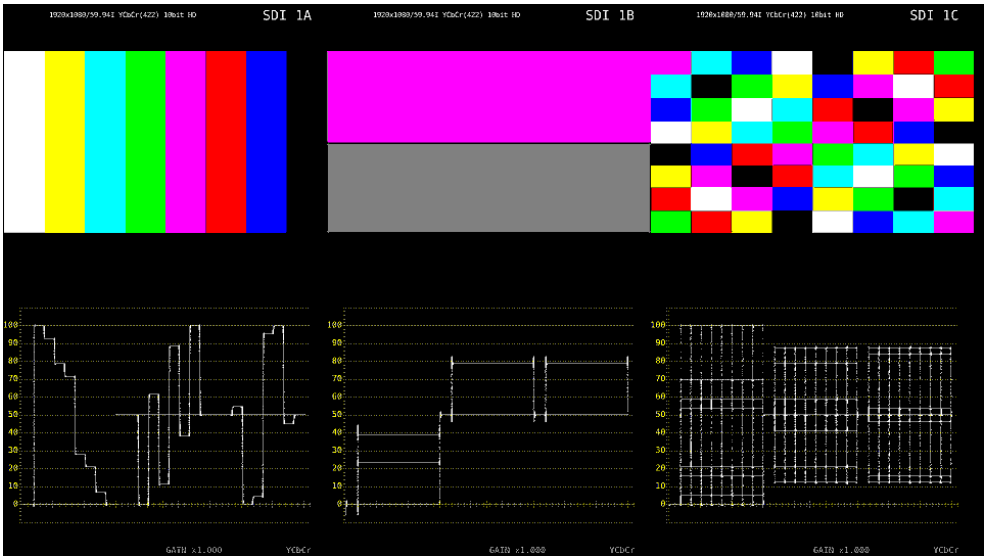


Figure 5-50 Multi display (USER 5)

5.4 Arranging the Measurement Screen Layout

The layout of the measurement screen that appears when the WFM, VECT, PIC, AUDIO, STATUS, or EYE key is pressed (one type each) and the screen that appears when the MULTI key is pressed (five types) can be arranged freely. To do so, connect a mouse to the front or rear panel USB port.

The layout that you specify will not be initialized even if you initialize the LV 5490. To initialize, perform any of the procedures below.
Reference 6.7, “Initialization”

LAYOUT INIT YES on the SYS menu:	The entire layout is initialized.
ALL INIT YES on the SYS menu:	The entire layout is initialized.
Factory default settings:	The entire layout is initialized.
DEFAULT LAYOUT in the layout window:	The layout of the selected measurement display is initialized.

5.4.1 Notes

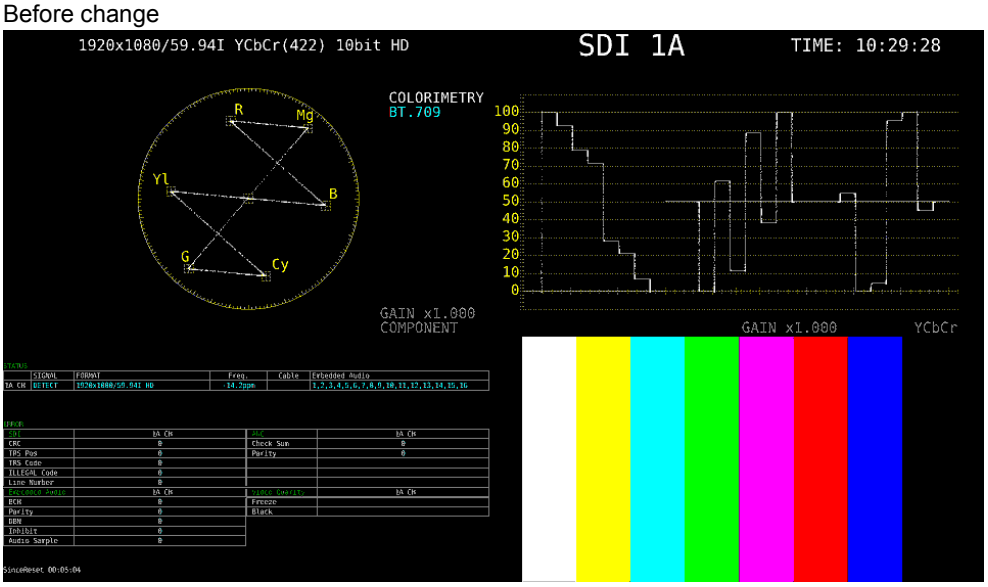
- The maximum number of items that can be arranged is determined by 64 ÷ the number of measurement channels (1 to 4).
  Item, here, includes the items on the Main and Sub tabs as well as Format, Input, and Time on the Option tab.

5.4.2 Layout Procedure

As an example, this section explains how to change the layout of a multi display (User 1) in the following manner.

a) Display the layout screen
b) Change TIME in the upper right of the screen to DATE
c) Superimpose the vector on the picture
d) Add audio
e) Add TIME to the status
f) Apply the changes

Before change



After change

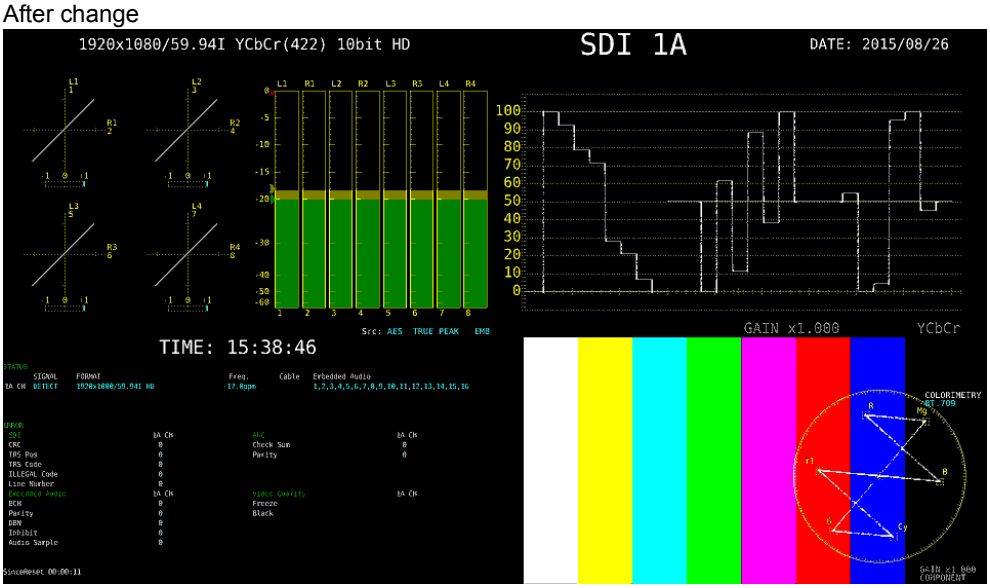


Figure 5-51 Arranging the multi display layout

a) Display the layout screen

1. Press MULTI, and set F•1 LAYOUT SELECT to USER 1.

There are five layouts for the multi screen. You can use USER 1 to USER 5 to switch between the layouts.

2. Right-click in the measurement screen, and click LAYOUT.

The layout screen appears.

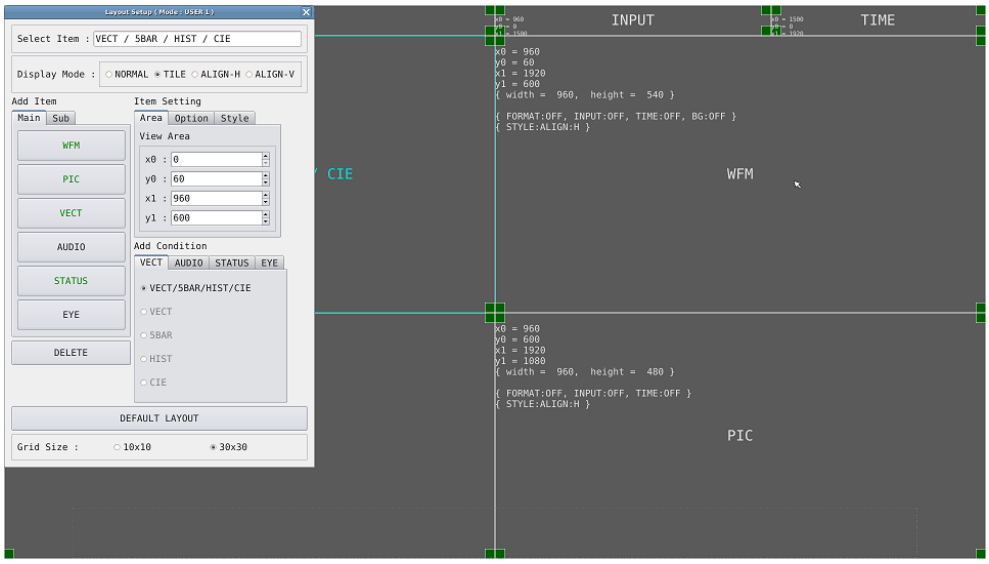


Figure 5-52 Layout screen

b) Change TIME in the upper right of the screen to DATE

3. Click the TIME item in the upper right of the screen.

The color of the frame and text changes to light blue, and Select Item in the layout window displays TIME. This indicates that the TIME item is selected.

4. Click DELETE.

The TIME item is deleted.

5. On the Sub tab, click DATE.

The DATE item appears.

6. Place the DATE item in the area where the TIME item was displayed.

To move an item, drag it.
To resize an item, drag the green handles at the four corners of the item.
The position and size of an item snap to the grid selected by Grid Size in the layout window.

You can also use the Area tab to move and resize an item.
The coordinates at the upper left corner of the screen are (0, 0). Those at the lower right corner are (1920, 1080). Using these references, set the coordinates of the upper left corner of the item (x0, y0) and the lower right corner (x1, y1).
The minimum size is 90×60.

If the layout window gets in the way, move it or close it. If you close it, you can redisplay it by double-clicking in the layout screen.

If multiple items are on top of each other, items in the back may not be selectable. If you need to select such item, click the item on the Main or Sub tab. The selected item will move to the front.

c) Superimpose the vector on the picture

7. Select the VECT item, and click Background Transparent on the Option tab.

Background Transparent is for making the background transparent when an item is superimposed on a picture.

8. Place the VECT item on top of the picture.

Resize as necessary.

d) Add audio

9. Click AUDIO on the Main tab.

The AUDIO item appears.
You can place an AUDIO item even if SER03 is not installed, but the message “Not installed” will appear.

10. Place the AUDIO item in the area where the VECT item was originally displayed.

e) Add TIME to the status

11. Click the STATUS item.

12. Click Time on the Option tab.

The TIME item on the Sub tab can be placed anywhere. Time on the Option tab is displayed at the top of the selected item. You cannot change the display position or size.

f) Apply the changes

13. Right-click in the layout screen, and click COMPLETE.

The measurement screen returns.
If you click CANCEL, all the changes that you made up to that point will be canceled.

5.4.3 Layout Screen Description

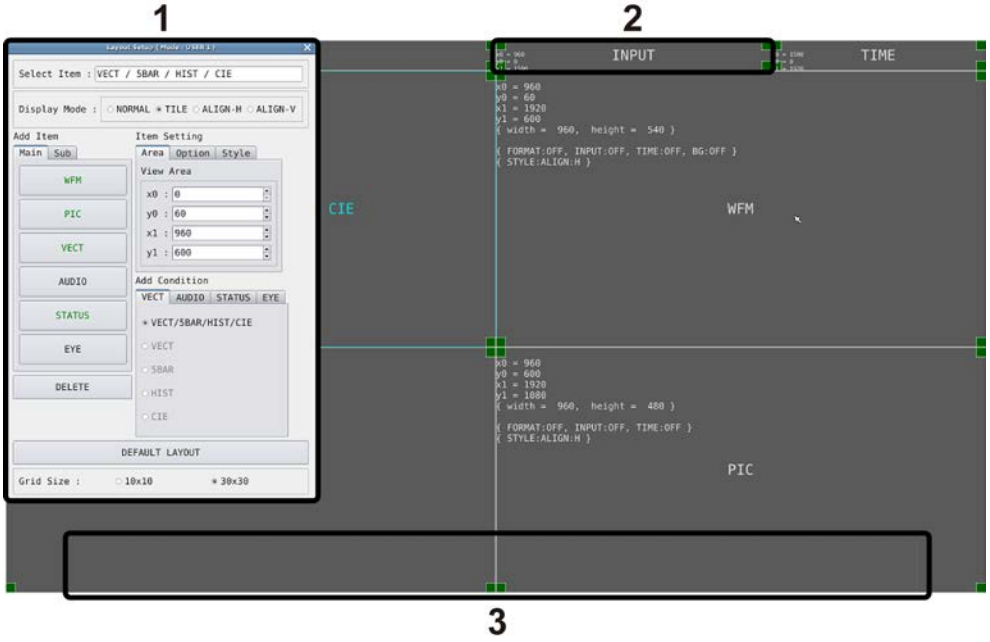


Figure 5-53 Layout screen

1 Layout Window

The Layout window is used to create layouts.
Mode in the title bar displays the current measurement mode (WFM, USER 1 to USER 5, etc.).
You can move the window by dragging and close it by clicking X in the upper right of the window. If you close it, you can redisplay it by double-clicking in the layout screen.

2 Item

Displays the item selected on the Main or Sub tab.
The settings specified with Item Setting are displayed in the frame.
If you select it, the frame color changes from white to light blue.

3 Menu Guide

A function menu appears in this area.
Use this as a guide when placing items.

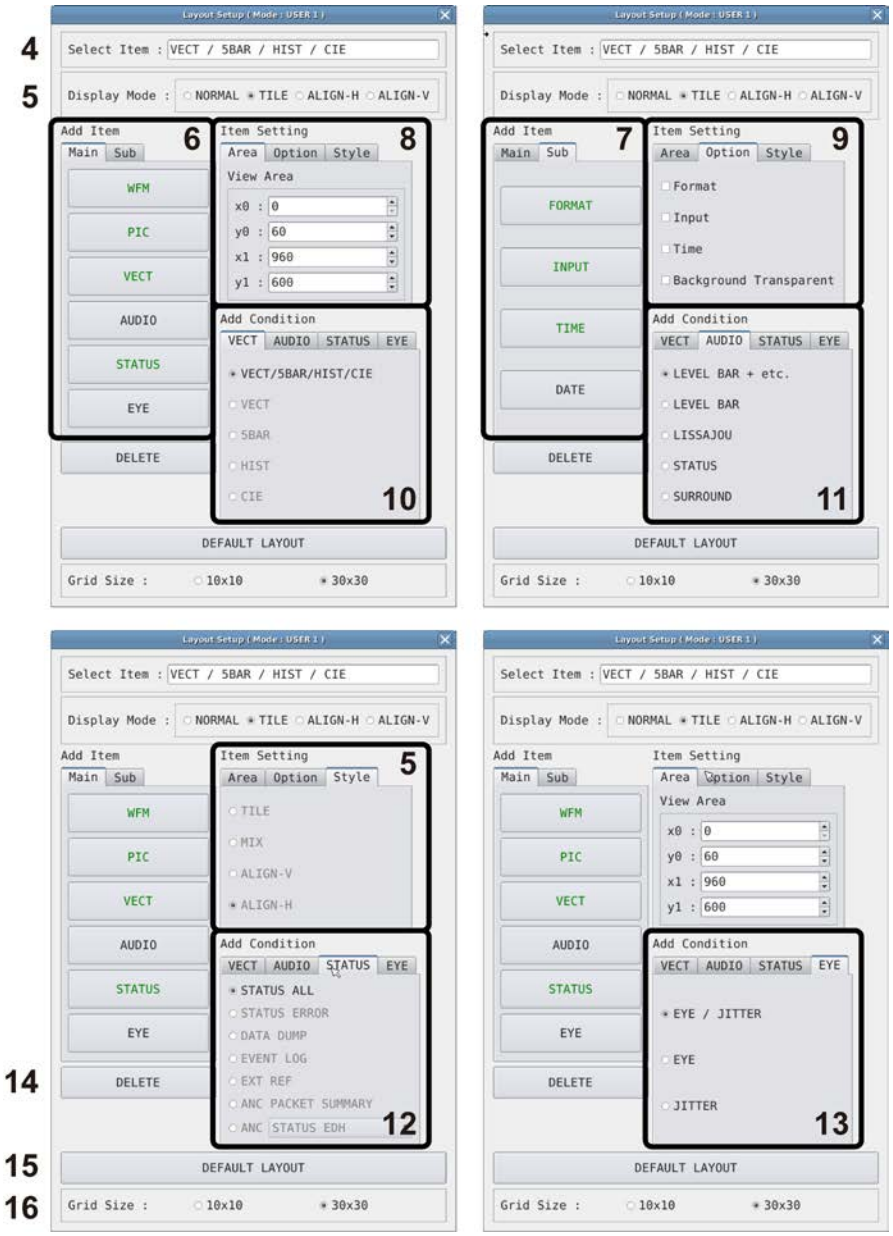


Figure 5-54 Layout window

4 Select Item

Displays the selected item.

5 Display Mode / Style

Select the display format for simul mode.
Display Mode applies to the entire screen, Style applies to the selected item.

If Display Mode is not set to NORMAL or if the selected item is AUDIO or EYE, Style cannot be selected.
If the selected item is VECT(5BAR), VECT(HIST), VECT(CIE), STATUS, or an item on the Sub tab, you cannot set Style to MIX.

If Display Mode is not set to NORMAL and multiple channels are displayed in simul mode, even if you place AUDIO or EYE items in the layout, “Not supported” will appear and will not work.

For example, if the following screens are displayed in single input mode and you change to simul mode, the display changes depending on Display Mode as follows.

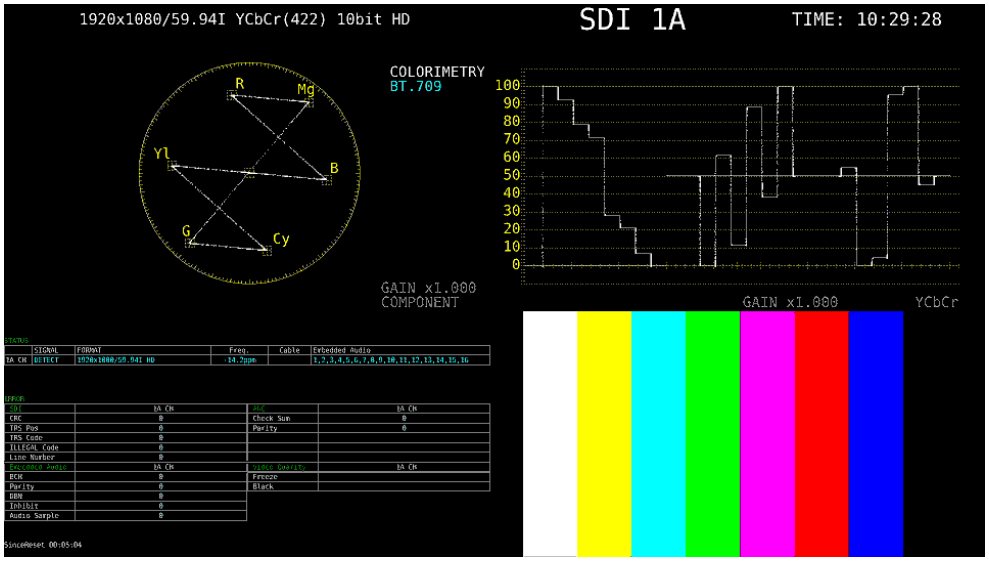
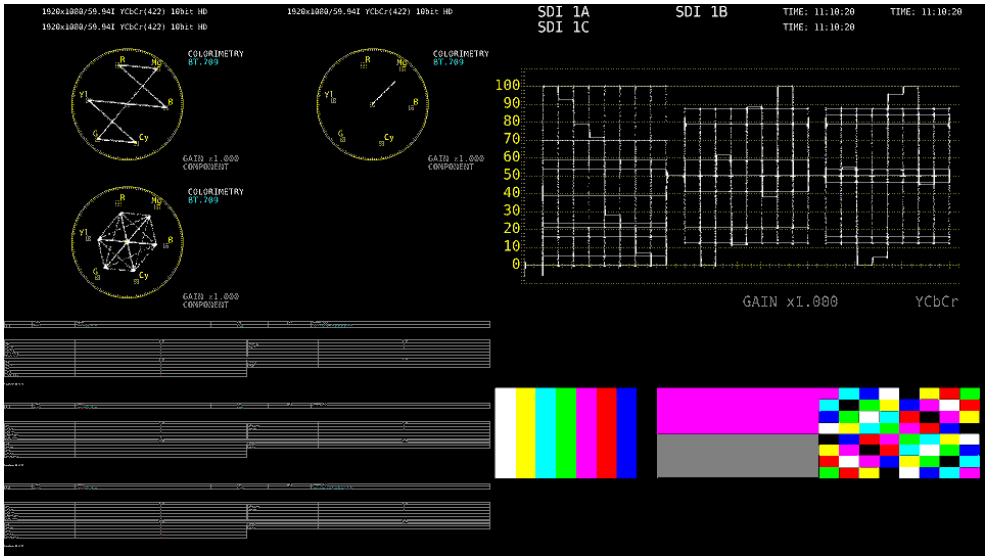


Figure 5-55 Single input mode

- **When Display Mode Is NORMAL**

  The screen is divided by channel within each item. Select the division format with Style.

TILE (tile the screens) MIX (cascade the screens)



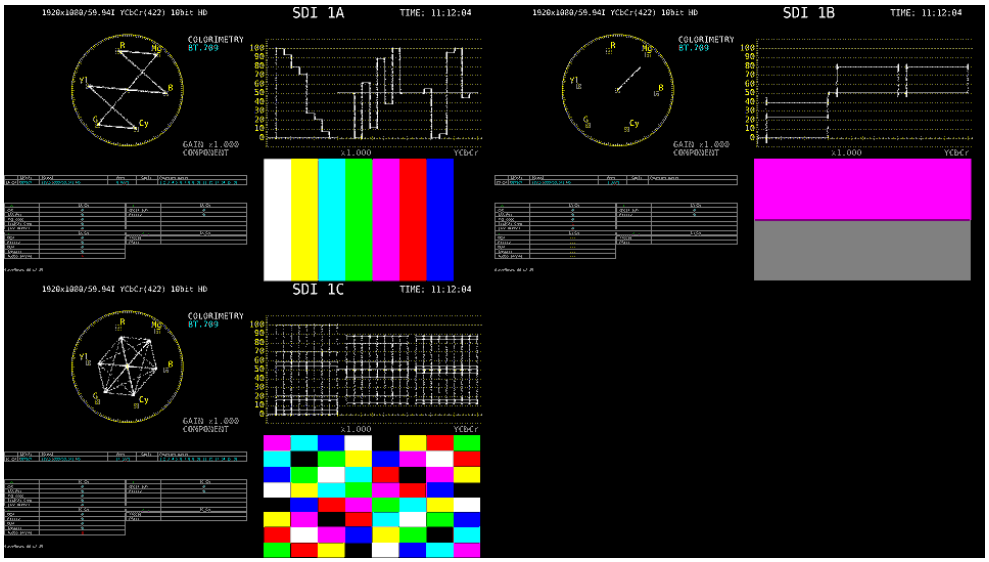
ALIGN-V (arrange vertically) ALIGN-H (arrange horizontally)

Figure 5-56 Normal display

- **When Display Mode Is TILE**

  The screen is divided by channel.

Ach Bch



Cch

Figure 5-57 Tiled display

- **When Display Mode Is ALIGN-H**

  The screen is divided by channel and arranged side by side.

Ach Bch Cch

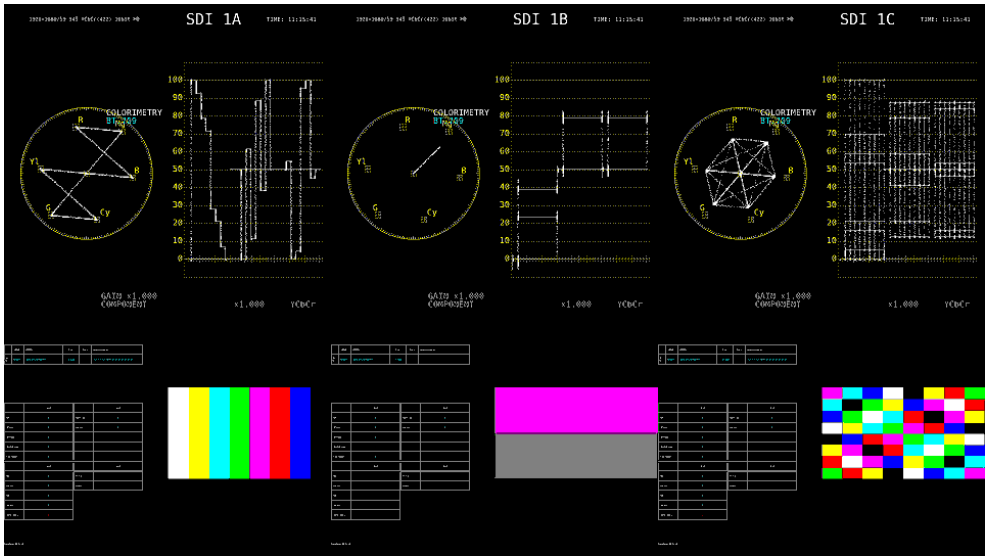


Figure 5-58 ALIGN-H display

- **When Display Mode Is ALIGN-V**

  The screen is divided by channel and arranged top to bottom.

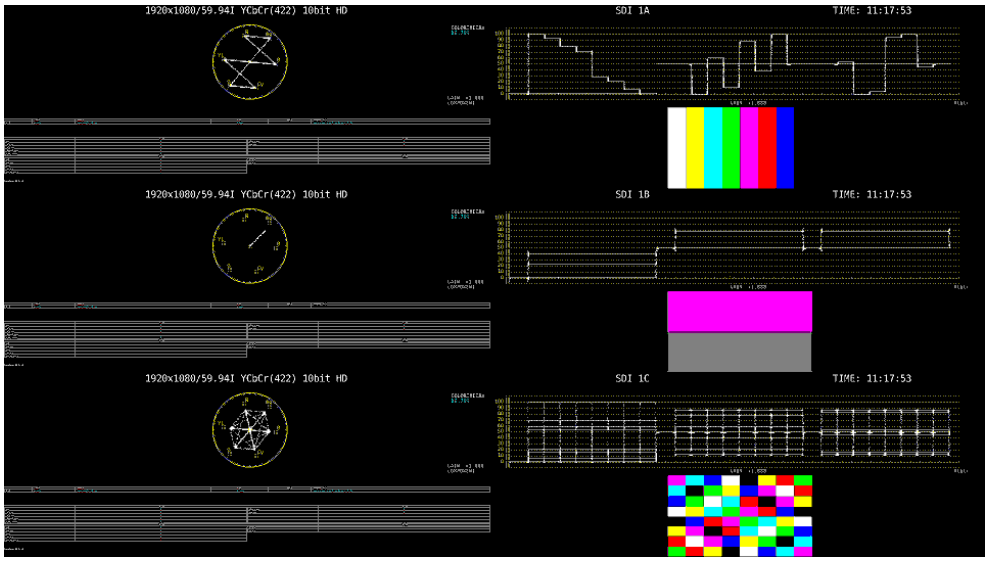


Figure 5-59 ALIGN-V display

6 Main

Measurement item.

- **WFM**

  Shows the video signal waveform display.

- **PIC**

  Shows the picture display.

- **VECT**

  Click this after selecting the display mode on the VECT tab to show the vector waveform display.
  A CIE chromaticity diagram (SER05) will not be displayed properly if the VECT item is overlapping other items.

- **AUDIO**

  Click this after selecting the display mode on the AUDIO tab to show the audio display.
  If SER03 is not installed, the message “Not installed” is displayed.

- **STATUS**

  Click this after selecting the display mode on the STATUS tab to show the status display.

- **EYE**

  Click this after selecting the display mode on the EYE tab to show the eye pattern or jitter.
  If SER02/SER09 is not installed, the message “Not installed” is displayed.

7 Sub

Items for displaying information.

- **FORMAT**

  Displays the format (e.g., 1920x1080/59.94I YCbCr(422) 10bit HD).
  If you place this item, you can show and hide it using the GENERAL SETUP tab in the system settings.
  It is normally displayed in white, but if the input format is not appropriate, it turns red.

- **INPUT**

  Displays the input signal (e.g., SDI 1A).
  If you place this item, you can show and hide it using the GENERAL SETUP tab in the system settings.

- **TIME**

  Displays the time (e.g., TIME: 00:00:00).
  If you place this item, you can select the display format using the GENERAL SETUP tab in the system settings.

- **DATE**

  Displays the date (e.g., DATE: 2000/01/01).
  If you place this item, you can select the display format using the GENERAL SETUP tab in the system settings.
  Only one item is displayed even if you switch to simul mode.

8 Area

Set the position and size of the selected item.
The coordinates at the upper left corner of the screen are (0, 0). Those at the lower right corner are (1920, 1080). Based on these references, the coordinates of the upper left corner of the item is (x0, y0), and those of the lower right corner is (x1, y1).
You can change the values using the ▲▼ button or the wheel on the mouse.

9 Option

Set the options for the selected item.

- **Format**

  Turns on and off the format display (e.g., 1920x1080/59.94I YCbCr(422) 10bit HD).
  This option cannot be displayed for an AUDIO item, an EYE item, or an item on the Sub tab.
  If you enable this option, you can show and hide it using the GENERAL SETUP tab in the system settings.
  It is normally displayed in white, but if the input format is not appropriate, it turns red.

- **Input**

  Turns on and off the input signal display (e.g., SDI 1A).
  This option cannot be displayed for an AUDIO item, an EYE item, or an item on the Sub tab.
  If you enable this option, you can show and hide it using the GENERAL SETUP tab in the system settings.

- **Time**

  Turns on and off the time display (e.g., TIME: 00:00:00).
  This option cannot be displayed for an AUDIO item, an EYE item, or an item on the Sub tab.
  If you enable this option, you can select the display format using the GENERAL SETUP tab in the system settings.

- **Background Transparent**

  Selects the transmittance of the background when the sub item is superimposed on a picture.
  When enabled, the transmittance is set to 100 %; when disabled, the transmittance is set to 50 %.
  You cannot set this option for a PIC item.

10 VECT

Selects the display mode of the VECT item. Select the mode before clicking the VECT item.

VECT / HIST / CIE	This is the normal vector waveform display. You can switch the display between vector waveform, histogram, and CIE chromaticity diagram. It cannot be arranged with the items below at the same time. If you want to arrange the items below, delete this item first.
VECT	The vector waveform is displayed.
5BAR	The 5 bar is displayed.
HIST	The histogram is displayed.
CIE	The CIE diagram is displayed. If SER05 is not installed, the message “Not installed” is displayed.

For example, you can arrange VECT and HIST to be displayed at the same time.

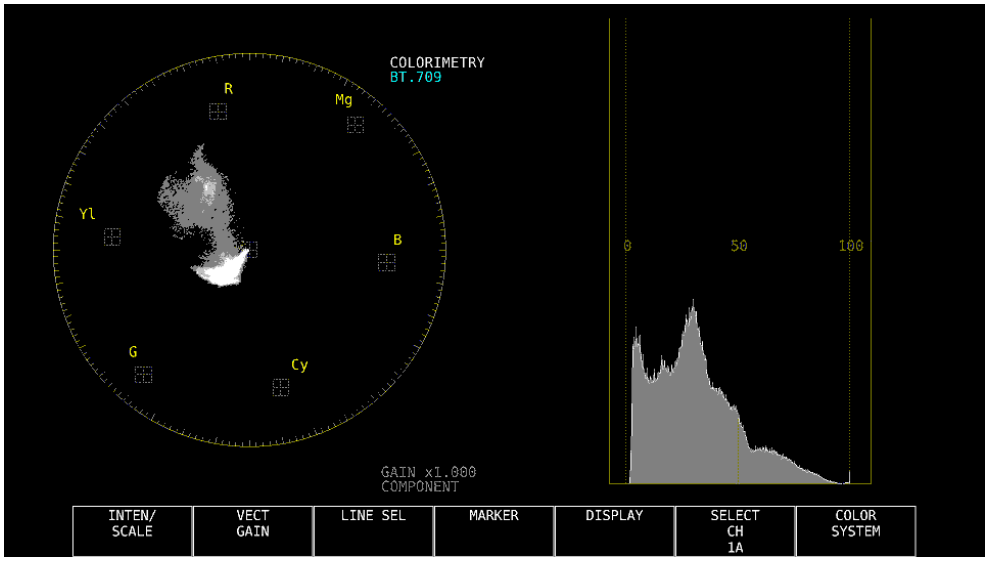


Figure 5-60 Vector waveform display

11 AUDIO

Selects the display mode of the AUDIO item. Select the mode before clicking the AUDIO item.

LEVEL BAR + etc.	This is the normal audio display. The display switches between Lissajous, surround, meter, and status. It cannot be arranged with the items below at the same time. If you want to arrange the items below, delete this item first.
LEVEL BAR	Meters are displayed. When 16 channels are being measured, meters will not be displayed correctly if arranged at the same time with LISSAJOU, STATUS, and SURROUND.
LISSAJOU	Lissajous curves are displayed. It cannot be arranged with STATUS or SURROUND at the same time. When 16 channels are being measured, lissajous curves will not be displayed correctly if arranged at the same time with LEVEL BAR.
STATUS	The status is displayed. It cannot be arranged with LISSAJOU or SURROUND at the same time. When 16 channels are being measured, the status will not be displayed correctly if arranged at the same time with LEVEL BAR.
SURROUND	Surround waveforms are displayed. It cannot be arranged with LISSAJOU or STATUS at the same time. Surround waveforms will not be displayed correctly when 16 channels are being measured or when in embedded audio measurement Simul mode.

12 STATUS

Selects the display mode of the STATUS item. Select the mode before clicking the STATUS item.

STATUS ALL	This is the normal status display. The display switches between error count, data dump, etc. It cannot be arranged with the items below at the same time. If you want to arrange the items below, delete this item first.
STATUS ERROR	Error counts are displayed.
DATA DUMP	Data dump is displayed.
EVENT LOG	The event log is displayed.
EXT REF	Phase differences are displayed. If the input signal is 12G, the message “Not supported” is displayed.
ANC PACKET SUMMARY	A summary of ancillary pockets is displayed.
ANC	One of the following is displayed. • STATUS EDH: EDH display • STATUS PAYLOAD: Payload ID display • STATUS CONTROL: Audio control packet display • STATUS ARIB CC: Closed caption display • STATUS ARIB NETQ: NET-Q display • STATUS ARIB TRIG: Data trigger display • STATUS ARIB USER1: User data 1 display • STATUS ARIB USER2: User data 2 display • STATUS SMPTE AFD: AFD display • STATUS SEARCH: Ancillary packet search display

For example, you can arrange DATA DUMP, EXT REF, and ANC STATUS SEARCH to be displayed at the same time.

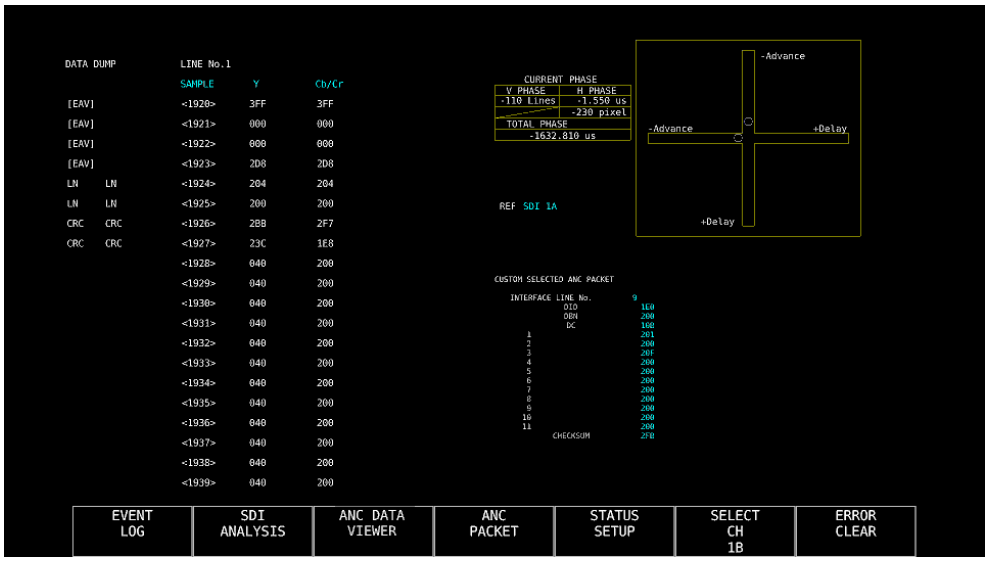


Figure 5-61 Status display

13 EYE

Selects the display mode of the EYE item. Select the mode before clicking the EYE item.

EYE / JITTER	This is the normal eye pattern display. The display switches between eye pattern and jitter. It cannot be arranged with the items below at the same time. If you want to arrange the items below, delete this item first.
EYE	The eye pattern is displayed.
JITTER	The jitter waveform is displayed.

For example, you can arrange EYE and JITTER to be displayed at the same time.

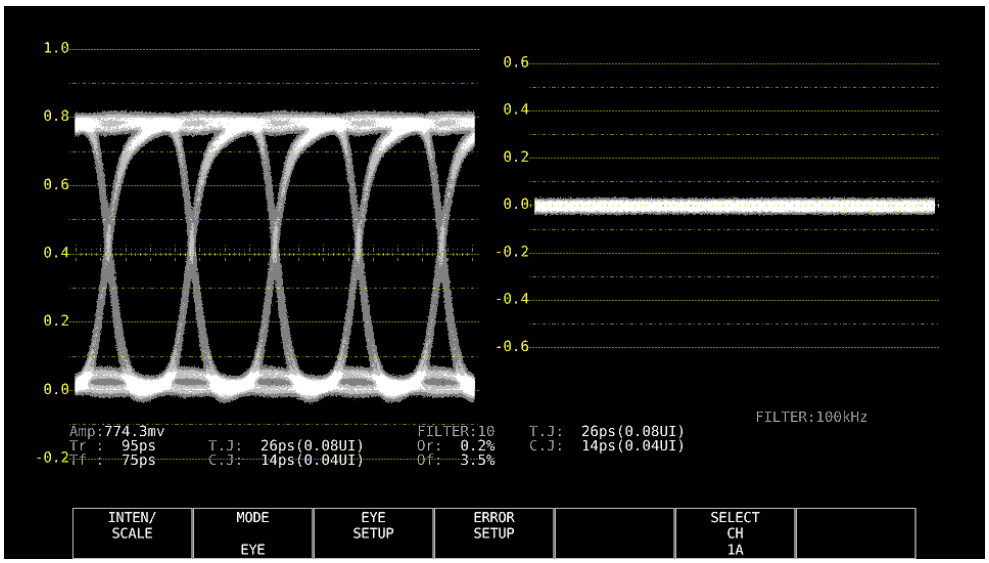


Figure 5-62 Eye pattern display

14 DELETE

Deletes the selected item.

15 DEFAULT LAYOUT

Resets the layout to the initial settings defined for each measurement mode. Grid Size is not reset.

16 Grid Size: 10x10 / 30x30

Select the grid size.
The position and size of items snap to the grid specified here.

6. SYSTEM SETTINGS

The system settings can be used to configure the LV 5490 and unit settings.
Press SYS, and use the SYS menu.

SYS →

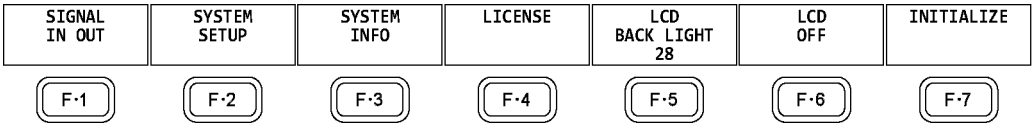


Figure 6-1 SYS menu

6.1 Configuring the I/O Connectors

To configure the I/O connector settings, use F•1 SIGNAL IN OUT on the SYS menu.

6.1.1 Configuring the SDI Input Connectors

Use the SDI IN tab to configure the format of the SDI signals applied to SDI INPUT or the IP (NMI) signals applied to NMI on the rear panel.

SYS → F•1 SIGNAL IN OUT →

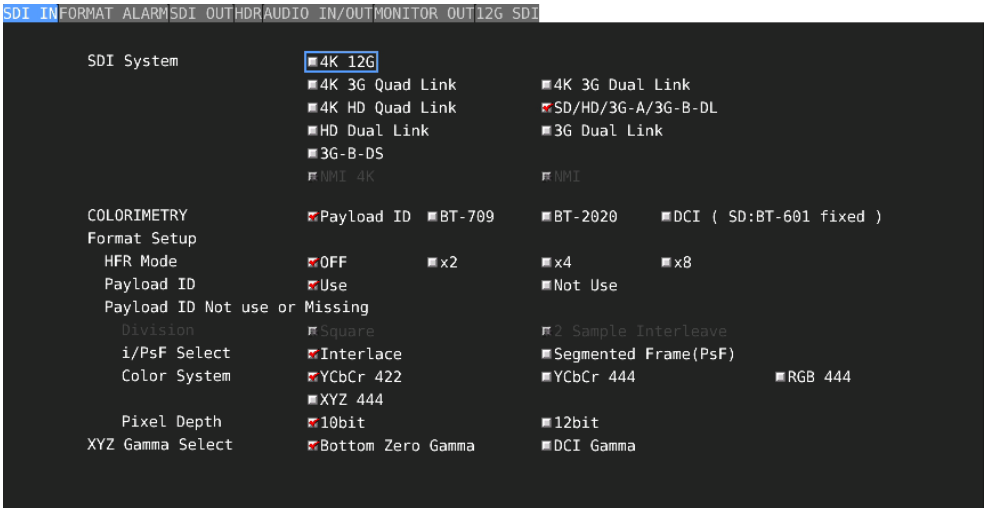


Figure 6-2 SDI IN tab

- **SDI System**

  Select the input format.

  4K 12G / 4K 3G Quad Link / 4K 3G Dual Link / 4K HD Quad Link / SD/HD/3G-A/3G-B-DL / HD Dual Link / 3G Dual Link / 3G-B-DS / 4K NMI / NMI

- **COLORIMETRY**

  Select the colorimetry to use on the video-signal-waveform, vector, picture, and CIE-chromaticity-diagram (SER05) displays.

  During XYZ input, if you change the colorimetry between BT-709 or BT2020 and DCI, a message “TONE CURVE SETUP” will be displayed for 10 to 20 seconds when you press F•1 COMPLETE.

  The current applied colorimetry is displayed in cyan in the upper right of the vectorscope display and in the lower right of the CIE chromaticity diagram (SER05) display. For 3G(DL)-4K, 3G(QL), 4K NMI and NMI, if you select a payload ID, the current applied colorimetry is displayed in yellow if the colorimetries of all links are not matched.

  For SD input, the colorimetry is fixed to BT.601, regardless of the colorimetry selection.

  The picture display on the LV 5490 LCD is not capable of expressing the color space of the applied colorimetry.

Payload ID:	If SDI System is 4K 12G, 4K 3G Quad Link, or 4K 3G Dual Link and the division transmission system is 2 sample interleave of if SDI System is 4K NMI or NMI, the LV 5490 automatically detects BT.2020 from the payload ID and operates. For the square format or for modes other than BT.2020, the LV 5490 runs in BT.709 mode.
BT-709:	Runs in BT.709 mode.
BT-2020:	Runs in BT.2020 mode.
DCI:	Runs in DCI mode.

- **HFR Mode**

  When SDI System is SD/HD/3G-A/3G-B-DL or HD Dual Link, select the display format of the format. The format can be converted into a notation compatible with HFR (High Frame Rate). This cannot be selected when SDI System is 4K NMI or NMI.

  OFF / x2 / x4 / x8

  The display formats when x2, x4, or x8 is selected are shown below. Items marked with a hyphen or if OFF is selected, the format is displayed as-is.

  Table 6-1 Selecting the format display format

SDI System	Input Signal		HFR Mode		
			x2	x4	x8
SD/HD/3G-A/3G-B-DL	3G-B-DL	50P	50I(x2)	50P(x4)	50I(x8)
	3G-B-DL	59.94P	59.94I(x2)	59.94P(x4)	59.94I(x8)
	3G-B-DL	60P	60I(x2)	60P(x4)	60I(x8)
	3G-A	50P	-	50P(x4)	-
	3G-A	59.94P	-	59.94P(x4)	-
	3G-A	60P	-	60P(x4)	-
	HD	50I	-	50I(x4)	-
	HD	59.94I	-	59.94I(x4)	-
	HD	60I	-	60I(x4)	-
HD Dual Link	HD	50P	50I(x2)	-	-
	HD	59.94P	59.94I(x2)	-	-
	HD	60P	60I(x2)	-	-

- **Payload ID**

  Select whether to use the payload ID for input format identification.
  This cannot be selected when SDI System is 4K HD Quad Link.

  Use / Not Use

  If you select Not Use, set the items marked with a ✓ in the table below. The LV 5490 will operate using the specified settings.

  If you select Use, the items marked with a ✓ will be detected from the payload ID. There is no need to set these items, but if you set them and a payload ID is not embedded in the input signal, the LV 5490 will operate using the specified settings.

  Regardless of whether you select Use or Not Use, items such as scanning and frame frequency will be detected from the TRS.

  Table 6-2 Payload ID settings

Input Signal	Division	i/PsF Select	Color System	Pixel Depth
HD	Cannot be set	✓	No need to set (fixed to YCbCr 422)	No need to set (fixed to 10 bits)
SD	Cannot be set	No need to set (fixed to interlace)	No need to set (fixed to YCbCr 422)	No need to set (fixed to 10 bits)
3G-A, 3G-B-DL	Cannot be set	✓	✓	✓
3G-B-DS	Cannot be set	✓	Cannot be set	Cannot be set
12G	✓	Cannot be set	✓	✓
HD (DL)	Cannot be set	✓	✓	✓
3G (DL)-2K	Cannot be set	Cannot be set	✓	✓
3G (DL)-4K	✓	Cannot be set	Cannot be set	Cannot be set
3G (QL)	✓	Cannot be set	✓	✓
4K NMI	Cannot be set (fixed to 2 Sample Interleave)	Cannot be set (fixed to interlace)	Cannot be set (fixed to YCbCr 422)	Cannot be set (fixed to 10 bits)
NMI	Cannot be set (fixed to 2 Sample Interleave)	Cannot be set (fixed to interlace)	Cannot be set (fixed to YCbCr 422)	Cannot be set (fixed to 10 bits)

- **Division**

  Selects the division transmission system when SDI System is 4K. When SDI System is 4K NMI or NMI, this is fixed to 2 Sample Interleave and cannot be changed.

  Square / 2 Sample Interleave

- **i/PsF Select**

  The LV 5490 cannot detect the following formats. Therefore, select whether to use interlace or segmented frame for displaying.
  This cannot be selected when SDI System is 4K or 3G Dual Link. When SDI System is 4K NMI or NMI, this is fixed to Interlace and cannot be changed.

  • 1080/60I and 1080/30PsF
  • 1080/59.94I and 1080/29.97PsF
  • 1080/50I and 1080/25PsF

  Interlace / Segmented Frame(PsF)

- **Color System**

  Select the color system of the input signal.
  SDI System is 3G-B-DS, 4K 3G Dual Link, 4K NMI or NMI, this is fixed to YCbCr 422, and you cannot change it.

  YCbCr 422 / YCbCr 444 / RGB 444 / XYZ 444

- **Pixel Depth**

  Select the quantization of the input signal.
  SDI System is 3G-B-DS, 4K 3G Dual Link, 4K NMI or NMI, this is fixed to 10bit, and you cannot change it.

  10bit / 12bit

- **XYZ Gamma Select**

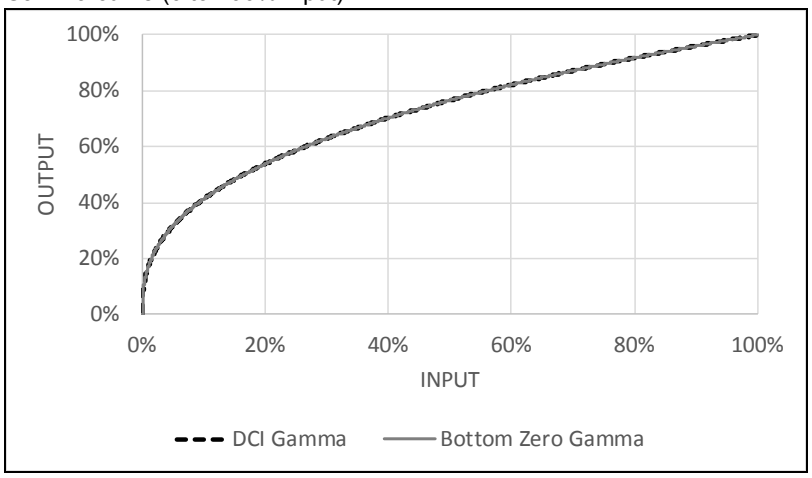
  Select the gamma correction system for XYZ input.

  XYZ signals can be converted into RGB signals and shown on the video signal waveform display or vector display, but at the 12-bit quantization defined in the standard (when DCI Gamma is selected), the conversion error near 0% input will be large. As such, showing an RGB display or vector display using the SMPTE RP 431 color bar (color patch) will cause the bright line to deviate greatly from the scale in some areas.

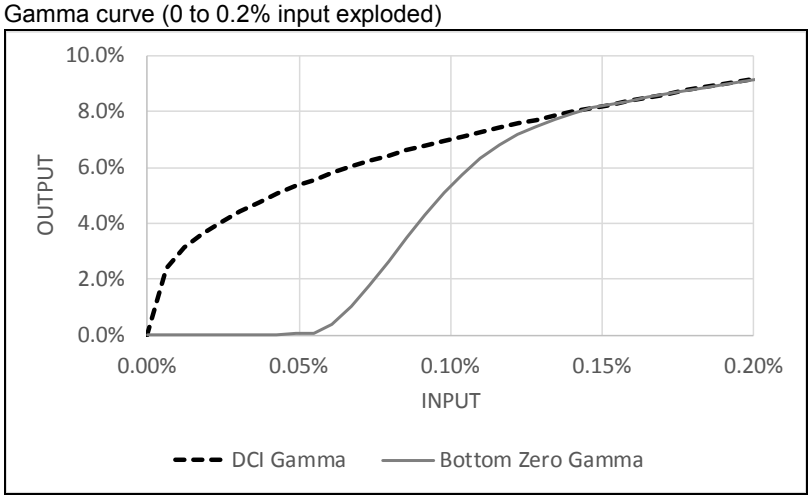
  To reduce the error, the LV 5490 uses “Bottom Zero Gamma” in which input up to 0.05% is fixed at 0% as the default setting. Select this setting when adjusting devices and the like.

Bottom Zero Gamma:	Gamma in which input up to 0.05% is fixed at 0% in comparison to DCI Gamma
DCI Gamma:	Input to the (1/2.6) power gamma

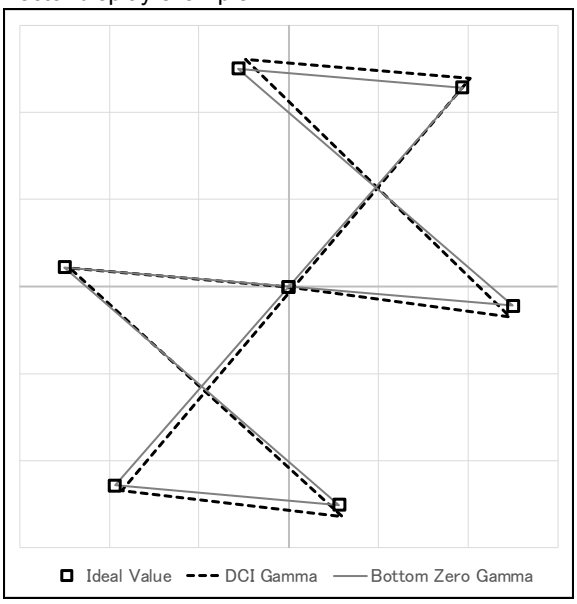
Gamma curve (0 to 100% input)



Gamma curve (0 to 0.2% input exploded)



Vector display example



6.1.2 Configuring the IP(NMI) Input (SER08)

On the NMI IN tab, select the input from the IP (NMI) signals received through NMI on the rear panel or the SDI signal received through SDI INPUT when SDI System is set to NMI on the SDI IN tab. When SDI System on the SDI IN tab is 4K NMI, you cannot select the input.

SYS → F•1 SIGNAL IN OUT →F•2 PREV TAB or F•3 NEXT TAB →

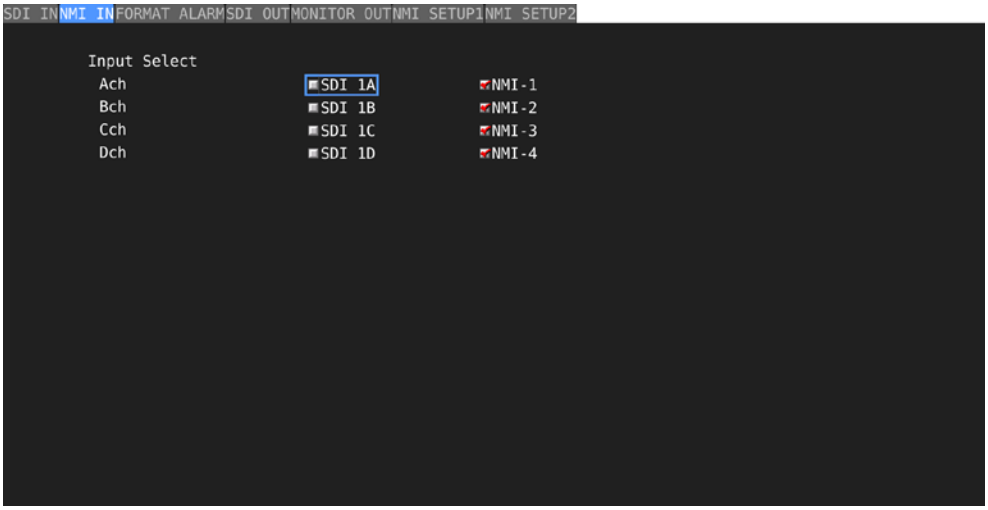


図 6-3 NMI IN tab

- **Ach**

  Selects the input received through Ach.

SDI 1A / NMI-1

- **Bch**

  Selects the input received through Bch.

SDI 1B / NMI-2

- **Cch**

  Selects the input received through Cch.

SDI 1C / NMI-3

- **Dch**

  Selects the input received through Dch.

SDI 1D / NMI-4

6.1.3 Configuring FORMAT ALARM

Use the FORMAT ALARM tab to configure the expected SDI signal format.
When SDI System is 4K NMI or NMI, cannot be changed.

SYS → F•1 SIGNAL IN OUT → F•2 PREV TAB or F•3 NEXT TAB →

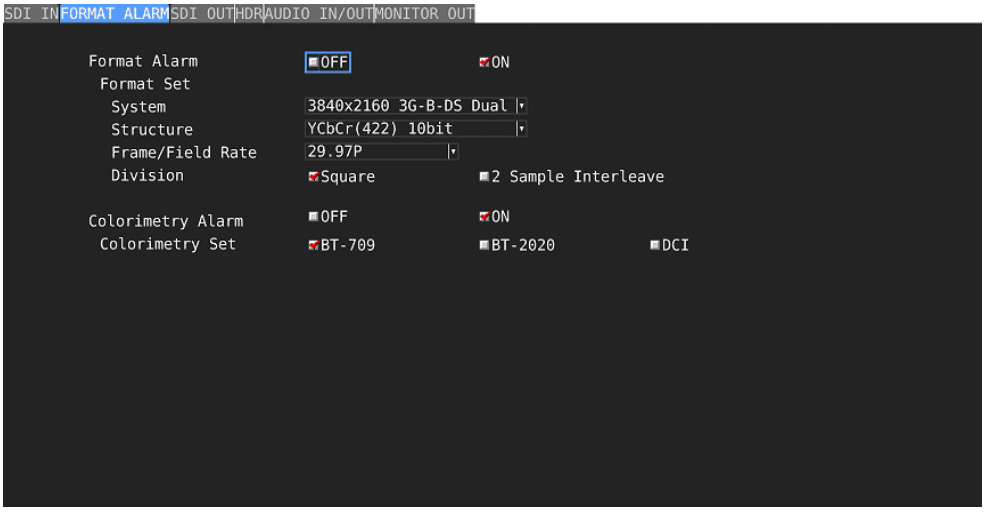


Figure 6-4 FORMAT ALARM tab

- **Format Alarm**

  Turn on and off the format alarm detection.
  If alarm detection is set to ON and a format other than the format specified with Format Set is received, the LV 5490 operates in the following manner.
  - Displays the format in yellow
  - Displays errors in the event log of the status display
  - Displays “ERROR” in the upper right of the display
  - Alarm output from the remote connector

  OFF / ON

- **Format Set**

  When Format Alarm is set to ON, specify the expected format. For information on the format combinations that are available, see section 2.3.1, “SDI Formats and Standards.”

  Table 6-3 Selecting the format

SDI System	System	Structure	Frame/Field Rate	Division
4K 12G	3840x2160 12G TYPE 1 4096x2160 12G TYPE 1	YCbCr(422) 10bit YCbCr(422) 12bit YCbCr(444) 10bit YCbCr(444) 12bit RGB(444) 10bit RGB(444) 12bit	60/59.94/50/48/47.95/ 30/29.97/25/24/23.98/P	-
4K 3G Quad Link	3840x2160 3G-B-DL Quad 4096x2160 3G-B-DL Quad 3840x2160 3G-A Quad 4096x2160 3G-A Quad	YCbCr(422) 10bit YCbCr(422) 12bit YCbCr(444) 10bit YCbCr(444) 12bit RGB(444) 10bit RGB(444) 12bit XYZ(444) 12bit	60/59.94/50/48/47.95/ 30/29.97/25/24/23.98/P 30/29.97/25/24/23.98/PsF	Square/ 2 Sample Interleave
4K 3G Dual Link	3840x2160 3G-B-DS Dual 4096x2160 3G-B-DS Dual	YCbCr(422) 10bit	30/29.97/25/24/23.98/P 30/29.97/25/24/23.98/PsF	Square/ 2 Sample Interleave
4K HD Quad Link	3840x2160 HD Quad 4096x2160 HD Quad	YCbCr(422) 10bit	30/29.97/25/24/23.98/P 30/29.97/25/24/23.98/PsF	-
SD/HD/3G-A/3G-B-DL	1920x1080 3G-B-DL 2048x1080 3G-B-DL 1280x720 3G-A 1920x1080 3G-A 2048x1080 3G-A 1280x720 HD 1920x1080 HD 720x487 SD 720x576 SD	YCbCr(422) 10bit YCbCr(422) 12bit YCbCr(444) 10bit YCbCr(444) 12bit RGB(444) 10bit RGB(444) 12bit XYZ(444) 12bit	60/59.94/50/I 60/59.94/50/48/47.95/ 30/29.97/25/24/23.98/P 30/29.97/25/24/23.98/PsF	-
HD Dual Link	1920x1080 HD Dual 2048x1080 HD Dual	YCbCr(422) 10bit YCbCr(422) 12bit YCbCr(444) 10bit YCbCr(444) 12bit RGB(444) 10bit RGB(444) 12bit XYZ(444) 12bit	60/59.94/50/I 60/59.94/50/48/47.95/ 30/29.97/25/24/23.98/P 30/29.97/25/24/23.98/PsF	-
3G Dual Link	1920x1080 3G-B-DL Dual 2048x1080 3G-B-DL Dual 1920x1080 3G-A Dual 2048x1080 3G-A Dual	YCbCr(422) 12bit YCbCr(444) 10bit YCbCr(444) 12bit RGB(444) 10bit RGB(444) 12bit	60/59.94/50/48/47.95/P	-

SDI System	System	Structure	Frame/Field Rate	Division
3G-B-DS	1280x720 3G-B-DS 1920x1080 3G-B-DS	YCbCr(422) 10bit	60/59.94/50/I 60/59.94/50/ 30/29.97/25/24/23.98/P 30/29.97/25/24/23.98/PsF	-

- **Colorimetry Alarm**

  Turn on and off the colorimetry alarm detection.

  Normally, colorimetry is displayed in cyan on the vector waveform display and CIE chromaticity diagram display (SER05). But for 3G(QL) and 3G(DL)-4K, if any of the colorimetries does not match, it is displayed in yellow.

  If alarm detection is set to ON and a colorimetry other than that specified with Colorimetry Set is received, the colorimetry is displayed in red. It is also displayed in red on the video signal waveform display.

  Note that this is invalid when the input signal is SD.

  OFF / ON

- **Colorimetry Set**

  If Colorimetry Alarm is set to ON, specify the colorimetry.

  BT-709 / BT-2020 / DCI

6.1.4 Configuring the SDI I/O Connectors

Use the SDI OUT tab to configure the SDI INPUT/OUTPUT connectors on the rear panel.

SYS → F•1 SIGNAL IN OUT → F•2 PREV TAB or F•3 NEXT TAB →

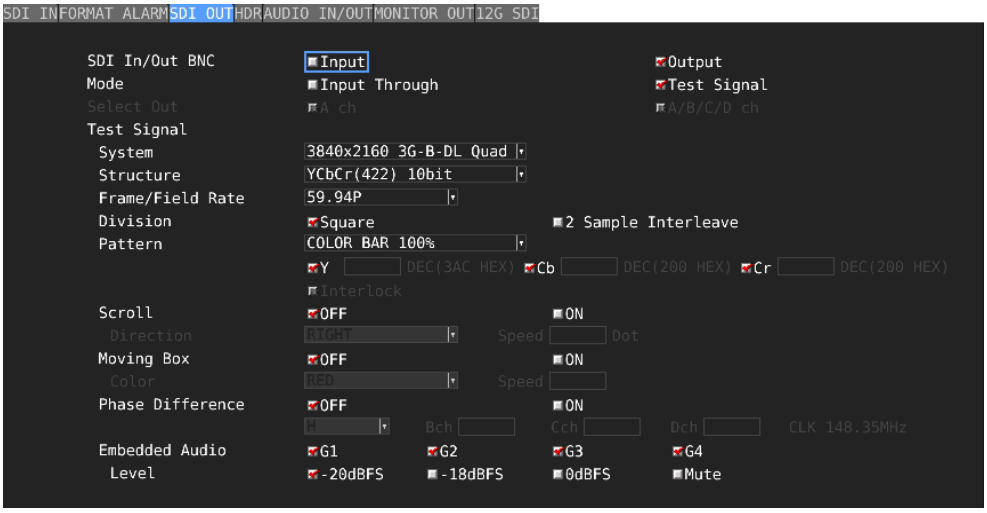


Figure 6-5 SDI OUT tab

- **SDI In/Out BNC**

  Select whether to use SDI INPUT/OUTPUT as input connectors or output connectors. If SDI System on the SDI IN tab is set to 4K 12G, signals received through 3G-SDI INPUT/OUTPUT cannot be measured even if input is specified.

Input / Output

- **Mode**

  Select the signal to output from SDI INPUT/OUTPUT for when SDI In/Out BNC is set to Output.

Input Through:	Transmits the reclocked version of the signals that have been received by the SDI INPUT 1A to 1D connectors. However, if SDI System on the SDI IN tab is set to 4K 12G, reclocked signals are not transmitted.
Test Signal:	Transmits the pattern specified by Test Signal.

- **Select Out**

  Select the signal to output from SDI INPUT/OUTPUT 2A for when Mode is set to Input Through. This is fixed to A ch (except for 3G(DL)-4K) during multi link (cannot be set).

A ch:	Transmits the reclocked version of the signal that has been received by the SDI INPUT 1A connector.
A/B/C/D ch:	Transmits the reclocked version of the signals that have been received by the SDI INPUT 1A to 1D connectors. To select the output channel, use the INPUT menu or F•6 SELECT CH on each measurement screen.

- **System**
- **Structure**
- **Frame/Field Rate**

  Set the output format. The possible format combinations are shown below.
  The default setting is 3840×2160 3G-B-DL Quad, YCbCr (422) 10 bits, 59.94P.

  Table 6-4 Selecting the output format

System	Structure	Frame/Field Rate
3840×2160 3G-B-DL Quad	YCbCr(422) 10bit	60/59.94/50/48/47.95/P
4096×2160 3G-B-DL Quad 3840×2160 3G-A Quad 4096×2160 3G-A Quad 2048×1080 3G-B-DL 2048×1080 3G-A	YCbCr(444) 10bit RGB(444) 10bit	30/29.97/25/24/23.98/P 30/29.97/25/24/23.98/PsF
3840×2160 3G-B-DS Dual 4096×2160 3G-B-DS Dual	YCbCr(422) 10bit	30/29.97/25/24/23.98/P 30/29.97/25/24/23.98/PsF
1920×1080 3G-B-DL 1920×1080 3G-A	YCbCr(422) 10bit	60/59.94/50/48/47.95/P
	YCbCr(444) 10bit RGB(444) 10bit	60/59.94/50/I 30/29.97/25/24/23.98/P 30/29.97/25/24/23.98/PsF
1920×1080 HD	YCbCr(422) 10bit	60/59.94/50/I 30/29.97/25/24/23.98/P 30/29.97/25/24/23.98/PsF

- **Division**

  Selects the division transmission system when System is Quad or Dual.

  Square / 2 Sample Interleave

- **Pattern**

  Select the output pattern. The selectable patterns are shown below. Depending on the pattern, you can turn on and off YCbCr or RGB separately.

  For COLOR RASTER, you can set the YCbCr or RGB levels separately. Moreover, if Structure is set to RGB, you can select the Interlock check box to synchronize the RGB levels.

  Bandwidth is not limited for MULTI COLOR BAR, COLOR RASTER, CROSS HATCH, 10 STEP, or LIMIT RAMP.

  Table 6-5 Selecting the output pattern

Pattern	YCbCr/RGB on/off	Level adjustment
COLOR BAR 100%	Yes	No
COLOR BAR 75%	Yes	No
MULTI COLOR BAR(*1)	Yes	No
COLOR RASTER	Yes	Yes
CROSS HATCH	No	No
10 STEP	No	No
LIMIT RAMP	Yes	No

  *1 This cannot be selected when the system is 4096x2160 or 2048x1080.

  * The signal will be interrupted when the pattern is changed.

- **Scroll**

  Scrolls the pattern.
  When set to ON, Moving Box and Phase Difference are turned off. You cannot select this when Pattern is set to CROSS HATCH.

  OFF / ON

- **Direction**

  When Scroll is set to ON, set the scroll direction.

RIGHT:	Scrolls from left to right.
LEFT:	Scrolls from right to left.
UP:	Scrolls from down to up.
DOWN:	Scrolls from up to down.
RIGHT & UP:	Scrolls from left_down to right_up.
RIGHT & DOWN:	Scrolls from left_up to right_down.
LEFT & UP:	Scrolls from right_down to left_up.
LEFT & DOWN:	Scrolls from right_up to left_down.

- **Speed**

  When Scroll is set to ON, set the scroll speed.

  4 - 124 Dot (in 4 dot steps)

- **Moving Box**

  Superimposes a square that moves randomly.
  When set to ON, Scroll and Phase Difference are turned off.

OFF / ON

- **Color**

  When Moving Box is set to ON, set the moving box color.

WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE / BLACK

- **Speed**

  When Moving Box is set to ON, set the moving box speed.
  Greater the value, higher the speed.

1 - 3

- **Phase Difference**

  When System is set to Quad, you can adjust the Bch, Cch, and Dch phases relative to Ach.
  When System is set to Dual, you can adjust the Bch phase relative to Ach and the Dch phase relative to Cch.
  When set to ON, Scroll and Moving Box are turned off.

OFF / ON

- **Bch**、**Cch**、**Dch**

  When Phase Difference is set to ON, you can adjust the Bch, Cch, and Dch phases. Switch between H and V to set each value. When System is set to Dual, the Bch and Dch phases are shared.

H:	-1374 - 0 - 1374 Dot (depending on frame/field rate)
V:	-562 - 0 - 562 Dot

- **Embedded Audio**

  When the pattern is set to COLOR BAR 100%, COLOR BAR 75%, or MULTI COLOR BAR, select the audio channels to embed in the SDI signal.
  Channels 1 to 4 are called group 1, channels 5 to 8 group 2, channels 9 to 12 group 3, and channels 13 to 16 group 4.

  The channels that can be embedded are 8 channels or 16 channels depending on the system and frame/field rate as shown below.

  Table 6-6 Configuring Embedded Audio

System	Frame/Field Rate	G1	G2	G3	G4
3840x2160 3G-B-DL Quad 3840x2160 3G-A Quad 4096x2160 3G-A Quad 3840x2160 3G-B-DS Dual 1920x1080 3G-B-DL 1920x1080 3G-A 2048x1080 3G-A 1920x1080 HD	-	✓	✓	✓	✓
4096x2160 3G-B-DL Quad 2048x1080 3G-B-DL	60/59.94/30/29.97/P 30/29.97/PsF	✓	✓	Cannot be set	Cannot be set
	50/48/47.95/25/24/23.98/P 25/24/23.98/PsF	✓	✓	✓	✓
4096x2160 3G-B-DS Dual	30/29.97/P 30/29.97/PsF	✓	✓	Cannot be set	Cannot be set
	25/24/23.98/P 25/24/23.98/PsF	✓	✓	✓	✓

- **Level**

  Select the embedded audio level.

  -20dBFS / -18dBFS / 0dBFS / Mute

6.1.5 Configuring HDR (SER07)

On the HDR tab, configure the settings of HDR measurement.

SYS → F•1 SIGNAL IN OUT → F•2 PREV TAB or F•3 NEXT TAB →

Figure 6-6 HDR tab

- **HDR MODE**

  Turn the HDR measurement on or off. If set to ON, HDR signals can be measured on the video-signal-waveform, vector, and picture displays.
  If you change the setting, a message “TONE CURVE SETUP” will be displayed for 10 to 20 seconds when you press F•1 COMPLETE.

  When HDR measurement is turned on, the following occurs.
  When 5-bar display, gamut error display on the picture, gamut error display on the status, composite gamut error display, luminance level error, or chrominance level error turns on, the SDR conversion format selection is reduced to DISABLE only. If the SDR conversion format is set to a value other than DISABLE, it is changed to DISABLE.

  OFF / ON

- **STANDARD**

  Select the HDR signal standard.
  If you change the setting, a message “TONE CURVE SETUP” will be displayed for 10 to 20 seconds when you press F•1 COMPLETE.

  HLG denotes ARIB STD-B67 (HLG), PQ denotes SMPTE ST 2084 (PQ curve), and S-Log3 denotes the log curve output from cameras from other manufacturers.

  HLG / PQ / S-Log3

- **HDR->SDR HIGH UPPER LIMIT**

  When STANDARD is set to PQ, select the upper limit of the display range.
  This setting is valid when SDR conversion is set to HIGH.

  10000cd/m2 / 4000cd/m2 / 1000cd/m2

- **SYSTEM GAMMA**

  If SYSTEM GAMMA is set to ON when STANDARD is set to HLG or S-Log3, the scale corresponding to the HDR signal of the video signal waveform display and picture display is shown in cd/m^2, which is a unit of display intensity for HLG displays.
  When STANDARD is set to HLG, gamma 1.2 is used to calculate the intensity with the full scale ranging up to 1000cd/m^2.
  When STANDARD is set to S-Log3, the intensity is displayed with the full scale ranging up to 3000cd/m^2.

  OFF / ON

- **REFERENCE LEVEL**

  When STANDARD is set to HLG or PQ, select the reference level for the program production.
  On the video signal waveform display, the selected reference level is shown using broken lines on the scale.
  On the picture display, the selected reference level is set to the REF default value on the HDR signal CINEZONE display. The REF default value is applied when you press the function dial (F•D).

  When STANDARD is HLG

  50% / 75%

  When STANDARD is PQ

  51% / 58%

6.1.6 Configuring Audio I/O Connectors (SER03)

Use the AUDIO IN/OUT tab to configure the DIGITAL AUDIO INPUT/OUTPUT connectors on the rear panel.

SYS → F•1 SIGNAL IN OUT → F•3 NEXT TAB (×4) →

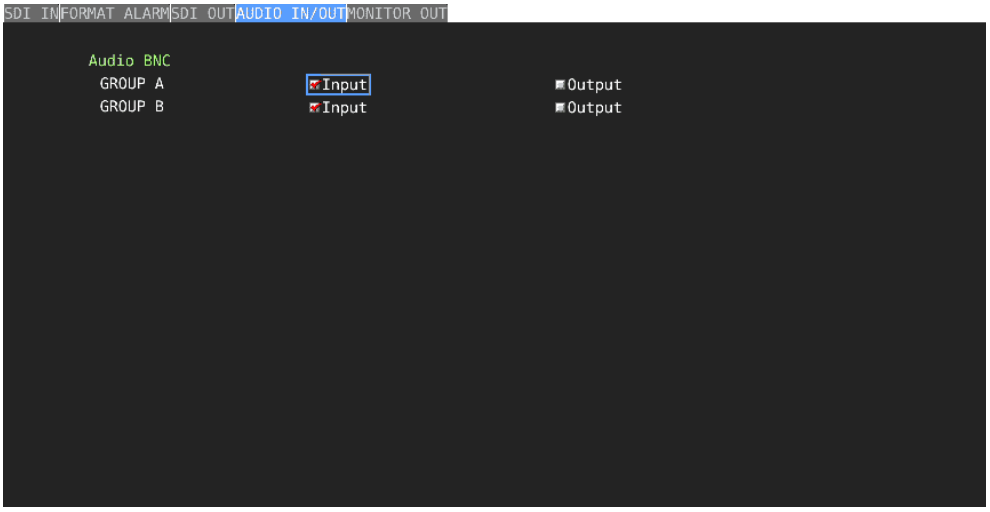


Figure 6-7 AUDIO IN/OUT tab

- **Audio BNC**

  Select whether to use the DIGITAL AUDIO INPUT/OUTPUT connectors of each group as input connectors or output connectors.

Input / Output

6.1.7 Configuring the Monitor Output Connectors

Use the MONITOR OUT tab to configure the MONITOR OUTPUT connectors on the rear panel and the LV 5490 LCD.

SYS → F•1 SIGNAL IN OUT → F•2 PREV TAB or F•3 NEXT TAB →

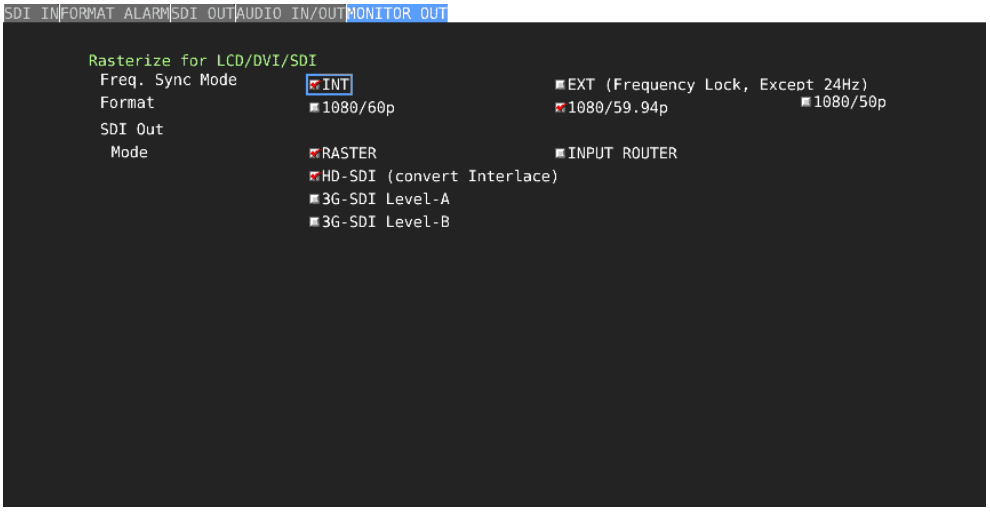


Figure 6-8 MONITOR OUT tab

- **Freq. Sync Mode**

  Select the sync mode.

INT:	Transmits in the selected format by using the internal clock.
EXT:	Transmits by using the external sync signal received through EXT REF. The output signal format varies depending on the frame frequency of the external sync signal as follows.
	30 Hz: 1080/60p
	29.97 Hz: 1080/59.94p
	25 Hz: 1080/50p
	24 Hz or 23.98 Hz: INT
	When there is no external sync signal: INT

- **Format**

  When Freq Sync Mode is set to INT, select the output signal format.

1080/60p / 1080/59.94p / 1080/50p

- **SDI Out**

  Select the signal to transmit from the SDI connector of MONITOR OUTPUT.

RASTER:	Transmits the measurement screen. Set the output format to HD-SDI (converted to interlace), 3G-SDI Level-A or 3G-SDI Level-B.
INPUT ROUTER:	Transmits the reclocked version of the signals that have been received by the SDI INPUT 1A to 1D connectors. The output channel is the displayed channel in single input mode or the channel selected with F•6 SELECT CH on the appropriate measurement screen in simul mode. This option cannot be selected for 3G-B-DS or multi link.

6.1.8 Configuring the 12G SDI I/O Connector (SER06)

Use the 12G SDI tab to configure the 12G-SDI INPUT connector and the 12G-SDI OUTPUT connector on the rear panel.

SYS → F•1 SIGNAL IN OUT → F•2 PREV TAB or F•3 NEXT TAB →

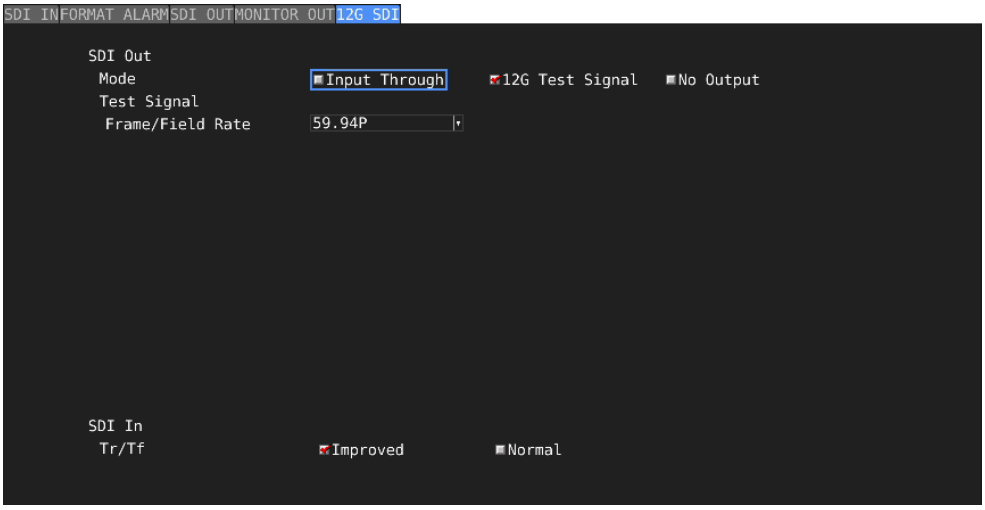


Figure 6-9 12G SDI tab

- **Mode**

  Select the signal to output from 12G-SDI OUTPUT.

Input Through:	Transmits the reclocked version of the signals that have been received by the SDI INPUT 1A to 1D connectors.
12G Test Signal:	Transmits the 12G SDI signal specified by Test Signal
No Output:	12G SDI is not output. The receiving performance of 12G SDI input will improve.

- **Frame/Field Rate**

  If Mode is set to 12G Test Signal, select the frame frequency of the output signal.

60P / 59.94P / 50P

- **Tr/Tf**

  If a 12G-SDI is being received, select the automatic measurement algorithm for Tr/Tf.

Improved:	This mode supports the high data rate of 12G-SDI and is optimized for automatic measurement. Under normal conditions, using the Improved setting is recommended.
Normal:	This mode is compatible with the conventional mode.

6.1.9 Configuring IP (NMI) Pat 1 (SER08)

Use the NMI SETUP1 tab to configure the NMI(IP A, IP B) on the rear panel.

SYS → F•1 SIGNAL IN OUT → F•2 PREV TAB or F•3 NEXT TAB →

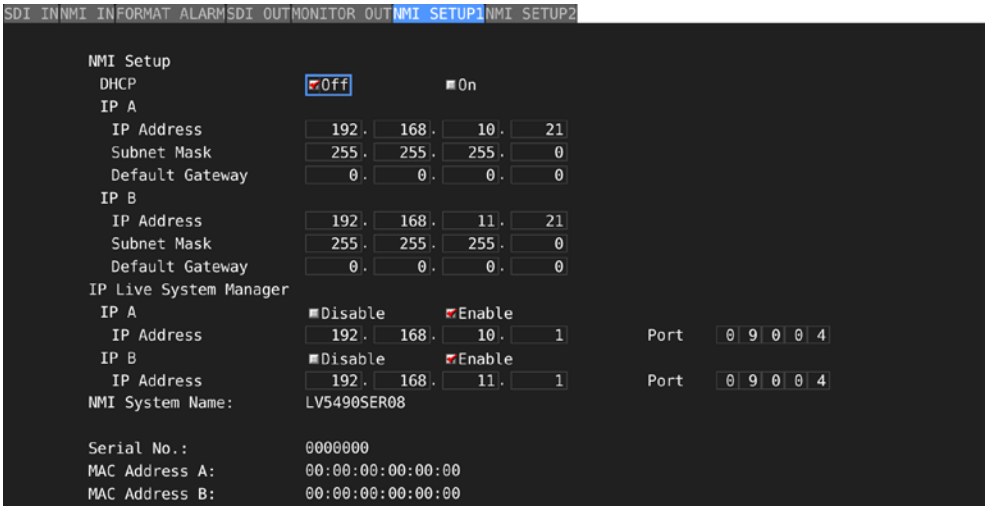


Figure 6-10 NMI SETUP1 tab

- **NMI Setup DHCP**

  Select how to set the IP address.
  If set to OFF, manually set the IP address, subnet mask, and default gateway of the IP Live Production System devices connected to IP A and IP B. If set to ON, the IP address, subnet mask, and default gateway of devices connected to IP A and IP B are assigned automatically.

  OFF / ON

- **NMI Setup IP A、IP B (IP Address / Subnet Mask / Default Gateway)**

  Set the IP address, subnet mask, and default gateway of the IP Live Production System devices connected to IP A and IP B.

- **IP Live System Manager IP A**

  Configure the communication with IP A and IP Live System Manager. When set to Enable, communication is activated. When set to Enable, set the IP address of the IP Live System Manager.

  Disable / Enable

- **IP Live System Manager IP A IP Address**

  Set the IP address of the IP Live System Manager connected to IP A.

- **IP Live System Manager IP B**

  Configure the communication with IP B and IP Live System Manager. When set to Enable, communication is activated. When set to Enable, set the IP address of the IP Live System

  Disable / Enable

- **IP Live System Manager IP B IP Address**

  Set the IP address of the IP Live System Manager connected to IP B.

- **NMI System Name**

  Set the NMI system name to read from the IP Live System Manager.
  The default name is LV5490SER08, but you can change is with F•5 EDIT SYSTEM NAME.
  Enter up to 10 characters.

  You can use the following keys on the NMI system name input screen.

F•1 CLEAR ALL	Deletes all characters
F•2 DELETE	Deletes the character at the cursor
F•4 <=	Moves the cursor to the left
F•5 =>	Moves the cursor to the right
F•6 CHAR SET	Enters the character
Function dial (F•D)	Turn to select a character, and press to enter the character.

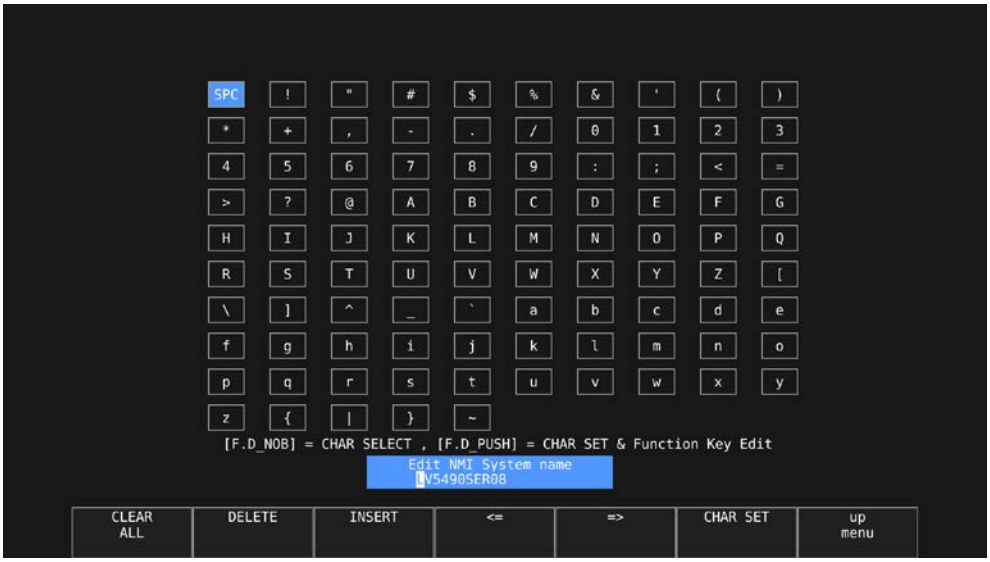


Figure 6-11 NMI SYSTEM NAME input screen

- **Serial No.**

  Displays the SER08 serial number.

- **MAC Address A, B**

  Displays the MAC addresses of IP A and IP B.

6.1.10 Configuring IP (NMI) Pat 2 (SER08)

Use the NMI SETUP1 tab to configure the format of the NMI(IP A, IP B) on the rear panel.

SYS → F•1 SIGNAL IN OUT → F•2 PREV TAB or F•3 NEXT TAB →

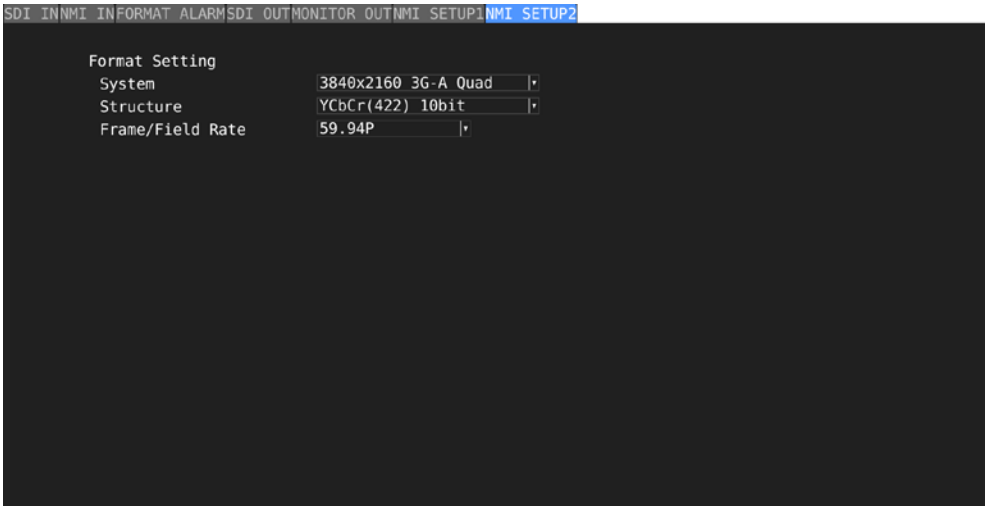


Figure 6-12 NMI SETUP2 tab

- **System**

  When SDI System is 4K NMI on the SDI IN tab, this is fixed to 3840X2160 3G-A Quad.
  When SDI System is NMI, this is fixed to 1920x1080 HD.

- **Structure**

  This is fixed to YCbCr (422) 10 bit.

- **Frame/Field Rate**

  When SDI System is 4K NMI on the SDI IN tab, select 59.94P or 50P.

59.94P / 50P

When SDI System is NMI on the SDI IN tab, select 59.94I or 50I.

59.94I / 50I

6.2 LV 5490 Configuration

To configure the LV 5490, press F•2 SYSTEM SETUP on the SYS menu.

6.2.1 General Settings

Use the GENERAL SETUP tab to configure general LV 5490 settings.

SYS → F•2 SYSTEM SETUP →

Figure 6-13 GENERAL SETUP tab

- **Boot Mode**

  Select the boot mode.

Normal:	The LV 5490 starts normally.
Fast:	The LV 5490 starts quickly. The mode must be set to Normal when updating the firmware.

- **Capture Mode**

  Select the capture mode for when you press CAP.

  Reference 7, “CAPTURE FEATURE”

Screen:	The screen will be captured as still images.
Video Frame:	Single frames of data will be captured.

- **Format**

  Turns on and off the format display (e.g., 1920x1080/59.94I YCbCr(422) 10bit HD).
  This setting is valid when a FORMAT item or Format option is placed in the layout.

  OFF / ON

- **Date**

  Select the display format of the date. y is the Gregorian year, m is the month, and d is the day.
  This setting is valid when a DATE item is placed in the layout.

  OFF / y/m/d / m/d/y / d/m/y

- **Time**

  Select the display format of the time.
  This setting is valid when a TIME item or Time option is placed in the layout and in the event log of the status display.

  OFF / Real Time / LTC / VITC / D-VITC

- **Input**

  Turns on and off the input signal display (e.g., SDI 1A).
  This setting is valid when a INPUT item or Input option is placed in the layout.

  OFF / ON

- **Icon**

  Turns on and off the mouse icon, key lock icon, and USB memory icon.

  OFF / ON

- **Auto Off**

  Select whether to make the function menu automatically disappear.

OFF:	The menu does not disappear automatically. For example, the measurement menu can be temporarily hidden by pressing the appropriate measurement key again.
ON:	The menu disappears automatically when the time specified by Time elapses after the last key operation. Some menus, such as the SYS menu, never automatically disappear.

- **Time**

  When Auto Off is set to ON, select the length of time that must elapse without any key operations for the menu to disappear automatically.

  1 - 5 - 60 Sec

- **Recall**

  Select the menu to be displayed when recalling presets. Select this first, and then register presets.

Recall Menu:	The PSET menu is displayed.
Function Menu:	The measurement menu is displayed.

- **LCD Auto Off**

  Select the length of time that must elapse without any key operations for the backlight to turn off automatically.
  To turn it on again, press any key excluding the power switch, or double-click.

OFF / 5min / 30min / 60min

- **FAN Speed**

  Select the fan speed.
  The larger the value, the higher the speed and the higher the cooling capability. In contrast, the smaller the value, the quieter the fan noise.

1 - 5

- **Temperature Warning**

  Turns on and off the alarm display (TEMPERATURE) that appears when the internal temperature increases.
  “OVER HEAT” will still be displayed even if this is set to off.
  Reference 6.3, “Displaying System Information”

OFF / ON

6.2.2 Configuring Ethernet Settings

Use the ETHERNET SETUP tab to configure Ethernet settings and view the MAC address. The settings that you specify here will not be initialized even if you initialize the LV 5490. In addition, they are not recorded to presets.

SYS → F•2 SYSTEM SETUP → F•2 PREV TAB or F•3 NEXT TAB →

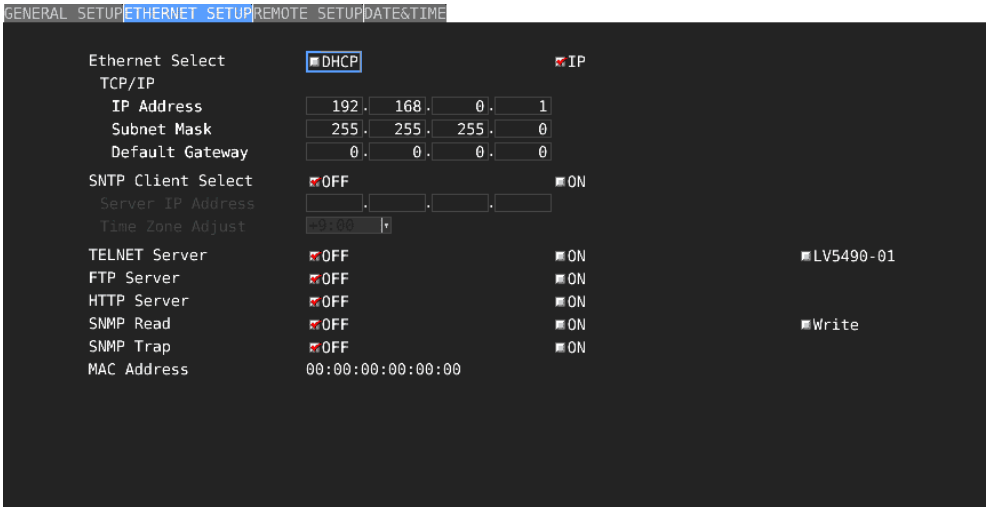


Figure 6-14 ETHERNET SETUP tab

- **Ethernet Select**

  Select how to set the IP address.

DHCP:	The IP address, subnet mask, and default gateway are set automatically.
IP:	Set the IP address, subnet mask, and default gateway manually.

- **SNTP Client Select**

  Select whether to enable the SNTP client feature.
  When set to ON, Server IP Address is set to the IP address of the NTP server, and Time Zone Adjust is set to the appropriate clock adjustment value.

OFF / ON

- **TELNET Server**

  Select whether to enable the TELNET server feature and the LV 5490-01 (REMOTE CONTROLLER). You cannot use TELNET and the LV 5490-01 at the same time.

OFF / ON / LV5490-01

- **FTP Server**

  Select whether to enable the FTP server feature.

OFF / ON

- **HTTP Server**

  Select whether to enable the HTTP server feature.

OFF / ON

- **SNMP Read**

  Select the SNMP access mode.

OFF:	SNMP cannot be used.
ON:	Settings can be read.
Write:	Settings can be read and written.

- **SNMP Trap**

  Select whether to enable SNMP trap output.

OFF / ON

- **MAC Address**

  Displays the MAC address.

6.2.3 Remote Control Settings

Use the REMOTE SETUP tab to configure remote control settings.
The settings that you specify here will not be initialized even if you initialize the LV 5490. In addition, they are not registered to presets.

Reference 9, “REMOTE CONTROL”

SYS → F•2 SYSTEM SETUP → F•2 PREV TAB or F•3 NEXT TAB →

Figure 6-15 REMOTE SETUP tab

- **Remote Mode**

  Select the method for loading presets.

Bit:	Use pin 2 (/P1) to pin 9 (/P8) to load presets 1 to 8.
Binary:	Set pin 2 (/P1) as the least significant bit and pin 7 (/P6) as the most significant bit, and use binary code to load presets 1 to 60.

- **Alarm Polarity**

  Select the alarm output polarity.

Positive:	A high signal is transmitted when an error is detected.
Negative:	A low signal is transmitted when an error is detected.

- **Alarm Select**

  Select the channel that errors are detected on for transmitting alarms.
  By default, all the check boxes are selected.

A / B / C / D

6.2.4 Setting the Date and Time

Use the DATE&TIME tab to set the date and time.
The settings that you specify here will not be initialized even if you initialize the LV 5490. In addition, they are not recorded to presets.

SYS → F•2 SYSTEM SETUP → F•2 PREV TAB or F•3 NEXT TAB →

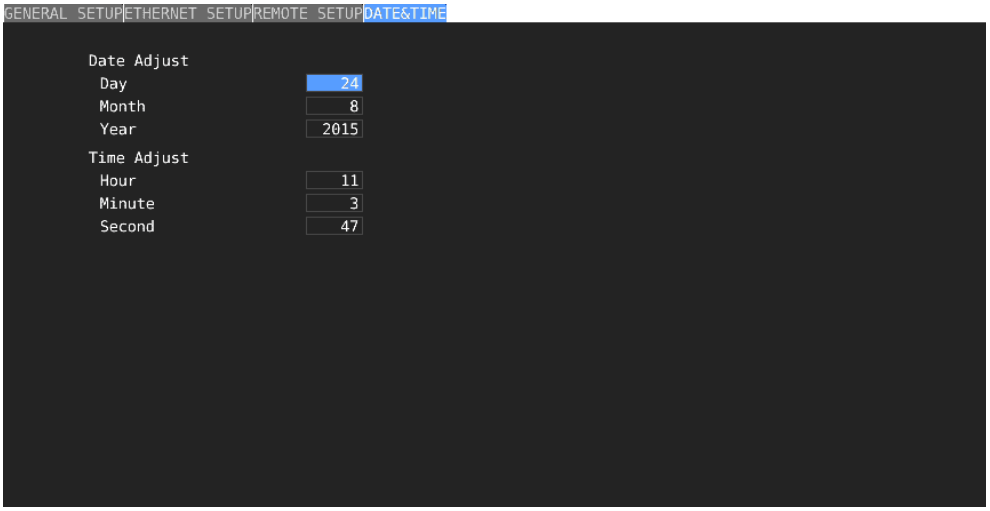


Figure 6-16 DATE&TIME tab

6.3 Displaying System Information

To display the system information, press F•3 SYSTEM INFO on the SYS menu.
You can view the LV 5490 version and the internal temperature on this tab.

SYS → F•3 SYSTEM INFO →

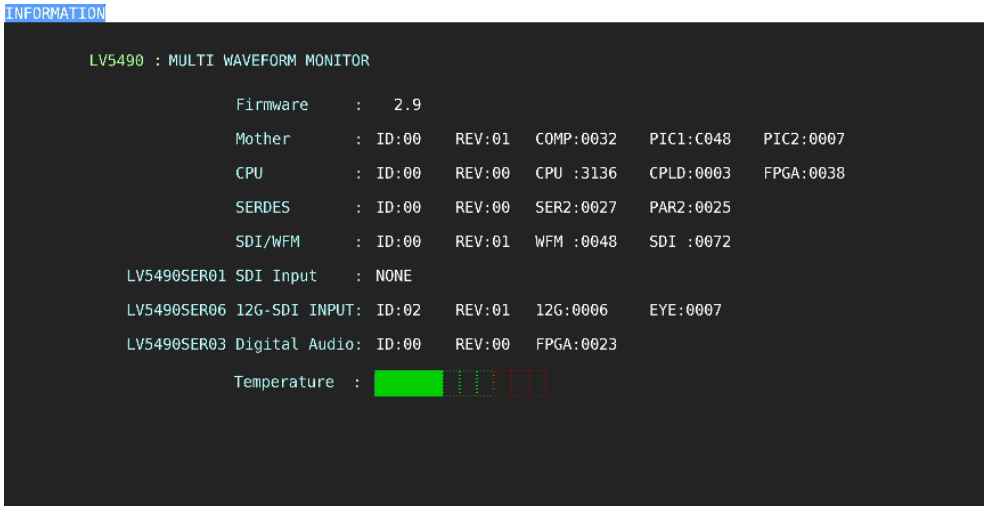


Figure 6-17 INFORMATION tab

- **Firmware**

  Displays the firmware version.

- **Mother, CPU, SERDES, SDI/WFM**

  Displays the hardware versions.

  For LV 5490 products that do not support the gamut error detection function, 5-bar display function or Video Noise Meter (SER10), the upper two digits of the four-digit version number displayed next to “PIC1:” under “Mother” will not be “00.” In this case, the menu for the gamut error detection function, 5-bar display function and Video Noise Meter (SER10) will not be displayed.

- **LV5490SER01, LV5490SER02, LV5490SER03, LV5490SER06, LV5490SER08**

  Displays the versions of the installed units.
  Units displayed as “NONE” are not installed.

- **Temperature**

  The internal temperature is displayed in a bar graph.

  The internal temperature is displayed using 10 levels. Green levels indicate normal temperature. If the temperature increases and reaches the red area, a “TEMPERATURE” alarm appears at the top of the screen.
  If the internal temperature increases still further, “OVER HEAT” appears. When a specific temperature is reached, the power will be shut down.

  If either of these alarm appears, immediately turn the power off, and then check for problems with the operating environment. If this alarm appears even though there are no problems with the operating environment, contact your local LEADER agent.

6.4 Installing Options

To install options, use F•4 LICENSE on the SYS menu.
You can use this screen to view the MAC address and install options.
Reference 4.5, “About Options”

SYS → F•4 LICENSE →

Figure 6-18 LICENSE tab

- **Installing an Option**

  Have your license key ready, and follow the procedure below.

  1. **Use the function dial (F • D) to enter the license key number.**

     Press F•2 CLEAR to clear the license key to 0000000000.

  2. **Press F • 3 REGISTER.**

     "Accepted" appears if the license key has been entered correctly, and the corresponding option becomes usable. The name of the option that has been installed appears in the License List.
     "Failed" appears if the license key is not correct. Reenter the license key correctly.

- **Disabling an Option**

  Have your license key ready, and follow the procedure below.

  1. **Use the function dial (F • D) to enter the license key number.**

     Press F•2 CLEAR to clear the license key to 0000000000.

  2. **Press F • 4 REMOVE.**

     "Accepted" appears if the license key has been entered correctly, and the corresponding option is disabled. The name of the option is deleted from the License List.
     "Failed" appears if the license key is not correct. Reenter the license key correctly.

  3. **Restart the LV 5490.**

6.5 Adjusting the Backlight

To adjust the backlight, use F•5 LCD BACK LIGHT in the SYS menu.
The larger the value, the brighter the backlight. Press the function dial (F•D) to return the setting to its default value (28).

1 - 28 - 32

6.6 Turning Off the LCD Panel

To turn off the LCD, press F•6 LCD OFF on the SYS menu.
To turn it on again, press any key excluding the power switch, or double-click.

6.7 Initialization

To initialize the LV 5490 settings and layout, use F•7 INITIALIZE in the SYS menu.

SYS → F•7 INITIALIZE →

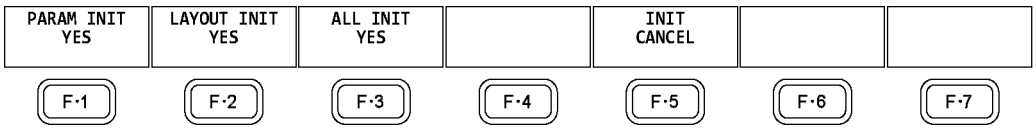


Figure 6-19 INITIALIZE menu

6.7.1 Initializing Settings

To initialize the settings, press F•1 PARAM INIT YES. To cancel, press F•5 INIT CANCEL. When you initialize the settings, all the settings—excluding those listed below—are initialized. For information about the default values, see chapter 10, “MENU TREES.”

- Ethernet settings (ETHERNET SETUP tab)
- Remote settings (REMOTE SETUP tab)
- Date and time settings (DATE&TIME tab)
- Preset contents
- Measurement screen layout

- **Factory Default Settings**

  If you also want to initialize the above settings (excluding the date and time settings), turn on the power while holding down the V POS and H POS knobs. Release them when about 3 seconds (after the key LED switch from bright to dim) elapse after the power is turned on, and then press F•3 SRAM/FLASH INIT YES.

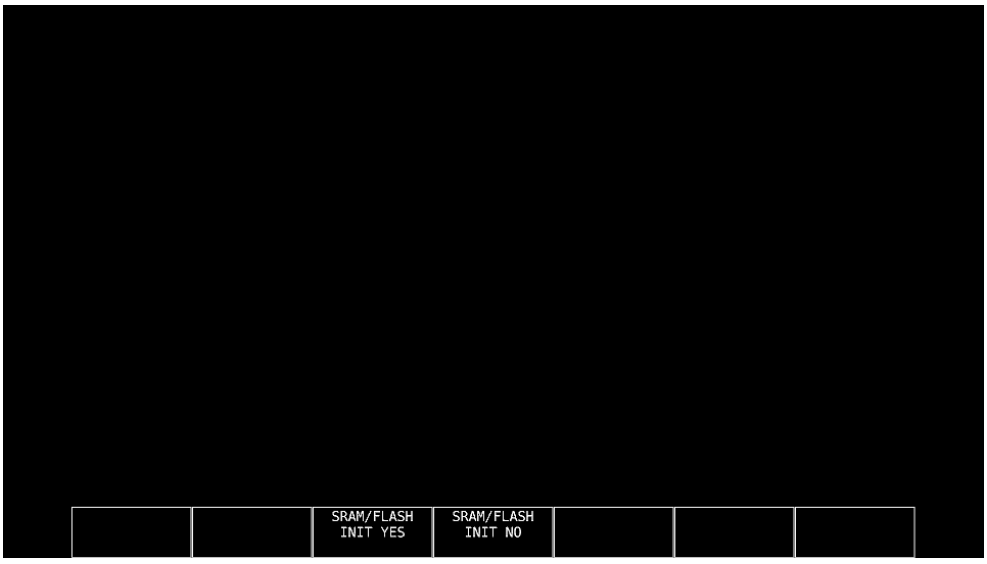


Figure 6-20 Factory default settings

6.7.2 Initializing the Layout

To initialize the layout, press F•2 LAYOUT INIT YES.
To cancel, press F•5 INIT CANCEL.

When you initialize the layout, the layouts configured in all measurement displays (11 total) will be initialized. To initialize the layout in each measurement display, click DEFAULT LAYOUT in the appropriate layout window.

Reference DEFAULT LAYOUT → 5.4.3, “Layout Screen Description”

6.7.3 Initializing the Settings and Layout

To initialize the settings and layout, press F•3 ALL INIT YES.
To cancel, press F•5 INIT CANCEL.

7. CAPTURE FEATURE

The capture feature consists of screen capture and frame capture.

- **Screen Capture**

  You can use the screen capture feature to capture still-image data of the screen. You can save the captured data to USB memory or overlay it on the input signal on the LV 5490 display.

- **Frame Capture**

  You can use the frame capture feature to capture single frames of data from the SDI signal. You can save the captured data to USB memory or overlay it on the input signal on the LV 5490 display.

  Because data is captured as frame data, the data can be displayed on the LV 5490 in different display modes. The supported display modes are the video signal waveform, vector waveform, picture, and status (data dump) displays. For details on the data dump display, see the FUNCTION MENU EXPLANATIONS.

- **Switching between Screen Capture and Frame Capture**

  Change the Capture Mode setting on the GENERAL SETUP tab.

SYS → F•2 SYSTEM SETUP →

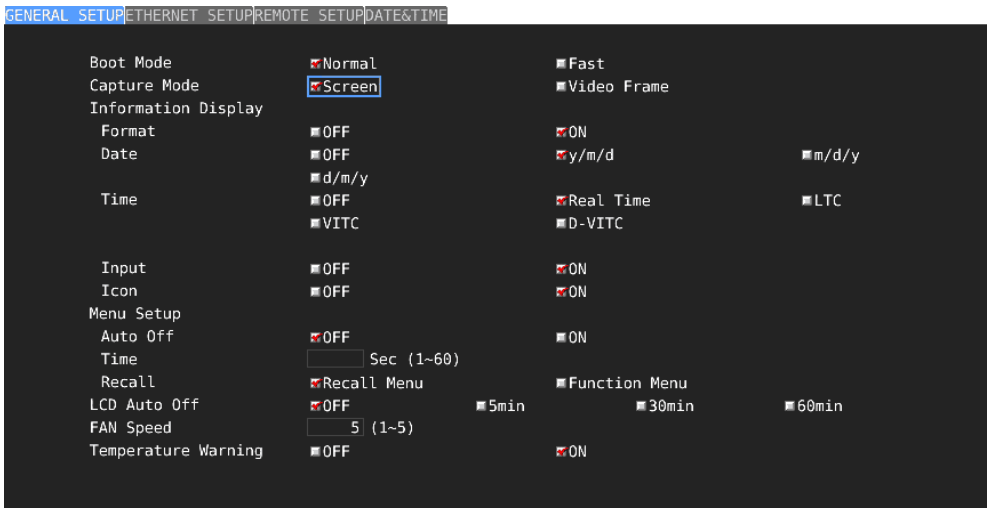


Figure 7-1 GENERAL SETUP tab

7.1 Screen Capture

7.1.1 Capturing the Screen

To take a screen capture of the display, follow the procedure below.
You cannot take screen captures of some screens such as tab menus and file lists.

1. **Display the screen you want to capture.**
2. **Press CAP.**

   When you press CAP, the LV 5490 stores a screen capture of the display in its internal memory. You can also take screen captures by pressing F•2 REFRESH while the CAP menu is displayed.

   Note that if you perform one of the following operations after capturing a display, the captured data will be deleted.

   • Change the measurement screen
   • Press INPUT, MULTI, SYS, or PSET
   • Turn OFF the power

CAP →

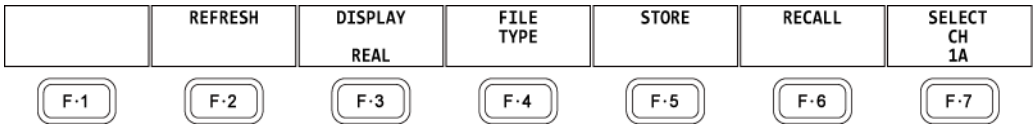


Figure 7-2 CAP menu

7.1.2 Displaying Screen Capture Data

If you press CAP, you can display the acquired screen capture data on the LV 5490 or overlay it on the current input signal.

You can display captured video signal waveform, vector waveform, picture, audio waveform, and eye pattern waveform display data on the LV 5490. Other kinds of data (such as status and scale data) cannot be displayed. However, these other kinds of data can be saved to USB memory as BMP files.

To display screen capture data, press F•3 DISPLAY on the CAP menu.

REAL	The current input signal is displayed.
HOLD:	The screen capture data is displayed. The video signal waveforms, vectors, and eye pattern waveforms are shown in cyan.
BOTH:	The current input signal and the screen capture data are displayed on top of each other with their intensities halved.

7.1.3 Saving to USB Memory Device

If you press CAP and perform an operation such as changing the measurement screen, the acquired screen capture data is deleted. However, by saving the screen capture data to a USB memory device in BSG format, you can display the screen capture data on the LV 5490 even after you restart the instrument.
Also, if you save the screen capture data in BMP format, you can view the captured data on a PC.

1. **Connect a USB memory device to the LV 5490.**
2. **Press F•4 FILE TYPE on the CAP menu.**

   The FILE TYPE menu appears.

CAP → F•4 FILE TYPE →

Figure 7-3 FILE TYPE menu

3. **Select the file format.**

   If you set F•1 BMP to ON, the screen capture data will be saved to the USB memory device as .bmp files. You can view the saved files on a PC.
   If you set F•2 BSG to ON, the screen capture data will be saved to the USB memory device as .bsg files. You can view the saved data on the LV 5490.
   The default setting for both F•1 BMP and F•2 BSG is ON. You cannot set both of these settings to OFF.

4. **Press F•7 up menu.**

   The CAP menu appears.

5. **Press F•5 STORE.**

   The message “Please wait. Saving file” is displayed on the screen, and the screen capture data is saved to USB memory.

   It takes approximately 10 seconds to save a file. The file size is approximately 6 MB for a BMP file and 9 MB for a BSG file.

   The file is automatically assigned a name that consists of the year, month, day, hour, minute, and second (in that order) that are set in the system settings. (Example: 20090501100859.bmp)

   Screen capture data is saved to the following locations.

USB memory device
└ LV5490_USER
  └ BMP
    ├ YYYYMMDDhhmmss.bmp
    └ YYYYMMDDhhmmss.bsg

7.1.4 Displaying Screen Capture Data Saved to a USB Memory Device

To display or overlay on the current input signal the BSG-format screen capture data that has been saved to USB memory, follow the procedure below.
(Screen capture data that has been saved in BMP format and screen capture data that has been saved in BSG format on a different model cannot be displayed on the LV 5490.)

1. **Connect a USB memory device to the LV 5490.**
2. **Press CAP.**

   The CAP menu appears.
3. **Press F•6 RECALL.**

   The file list display appears.

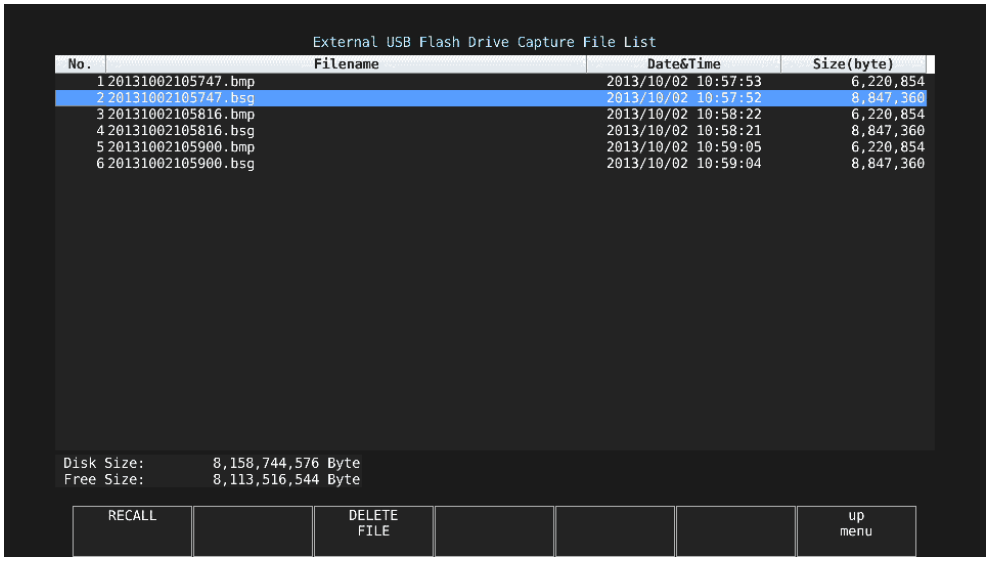


Figure 7-4 File list display

4. **Turn the function dial (F•D) to select the .bsg file that you want to display.**
5. **Press F•1 RECALL.**

   The file list display closes, and the CAP menu appears.
6. **Press F•3 DISPLAY to select the display format.**

   After you press F•1 RECALL, the display format is BOTH.

7.1.5 Deleting Screen Capture Data Saved to a USB Memory Device

To delete screen capture data that has been saved to USB memory, follow the procedure below. (You can also delete the data on the PC.)

1. **Connect a USB memory device to the LV 5490.**
2. **Press CAP.**

   The CAP menu appears.
3. **Press F•6 RECALL.**

   The file list display appears.

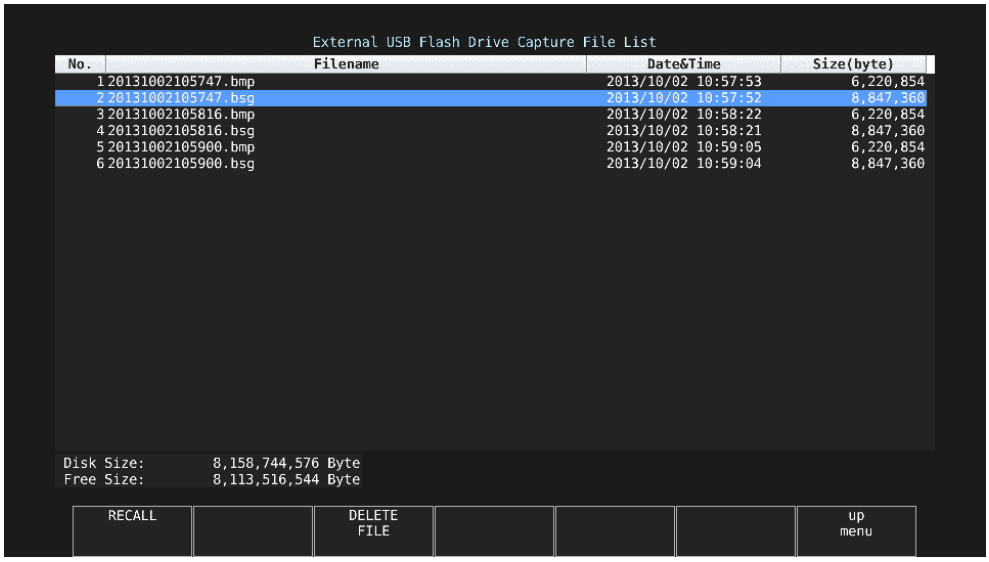


Figure 7-5 File list display

4. **Turn the function dial (F•D) to select the file that you want to delete.**
5. **Press F•3 DELETE FILE.**

   The DELETE FILE menu appears.

CAP → F•6 RECALL → F•3 DELETE FILE →

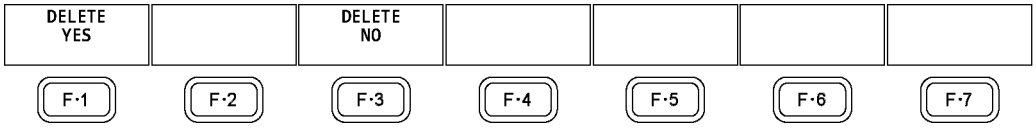


Figure 7-6 DELETE FILE menu

6. **Press F•1 DELETE YES.**

   To cancel the operation, press F•3 DELETE NO.

7.2 Frame Capture

7.2.1 Capturing Frame Data

There are two ways to capture frame data. One way is to capture frame data manually, and the other is to capture frame data automatically when errors occur (error capture).
When using error capture, use single input mode. It will not work properly in simul mode.

1. Display the screen you want to capture.

The display must be showing video signal waveforms, vector waveforms, or a picture. However, capturing is not possible if an eye pattern (SER02/SER09) or audio (SER03) is shown in the same display.
For vector waveforms, press F•6 DISPLAY and then F•1 MODE to select VECTOR.
This feature does not support the 5-bar display.

2. Press CAP.

The CAP menu appears.
Unlike screen captures, frame data is not captured when you press CAP.

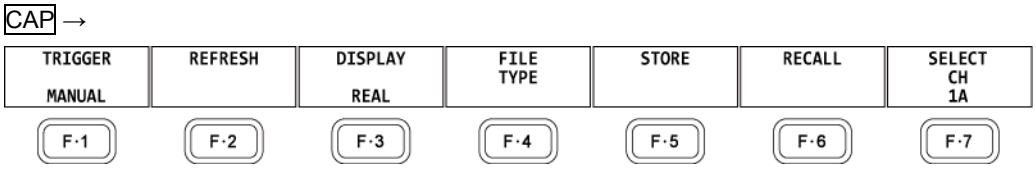


Figure 7-7 CAP menu

- **Capturing frame data manually**

3. Press F•1 TRIGGER to select MANUAL.

4. Press F•2 REFRESH.

One frame of data is captured in the LV 5490.

- **Capturing frame data automatically (error capture)**

3. **Press F•1 TRIGGER to select ERROR.**
4. **Press F•7 SELECT CH to select a channel.**
5. **Press F•2 REFRESH.**

   Error capture for the selected channel begins.
   To begin error capture on other channels, repeat steps 4 and 5.
   The LV 5490 switches to error standby mode and Channels for which capture is in progress appear in the upper right of the screen. Standby mode is cleared by setting F•1 TRIGGER to MANUAL.
   In Simul mode, “Capture is invalid” will appear, and the capture function will not work.

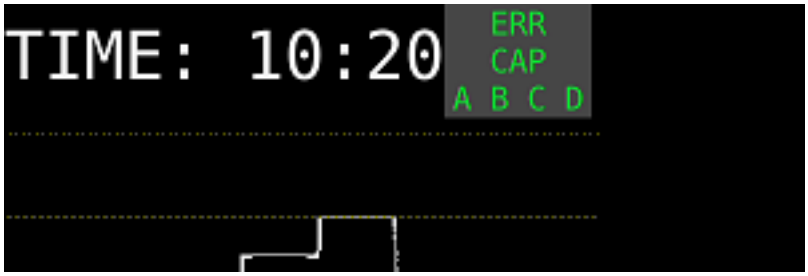


Figure 7-8 Error standby

6. **When the message below appears, press any key except for the power key.**

   If an error occurs during error standby, the LV 5490 captures the frame data at that point and stops the frame capture.

   The applicable errors are those listed under “Applicable Errors” below whose detection setting has been set to ON through F•5 STATUS SETUP on the STATUS menu.

Table 7-1 Applicable errors for error capturing

	Applicable Errors	Inapplicable Errors
SDI Error	TRS, Line Number, CRC, EDH, Illegal Code	Frequency, Cable
Ancillary Data Error	Parity, Checksum	-
Embedded Audio Error	BCH, DBN, Parity, Inhibit Line	Sample Count
Video Error	Gamut, Composite Gamut, Level	Freeze, Black

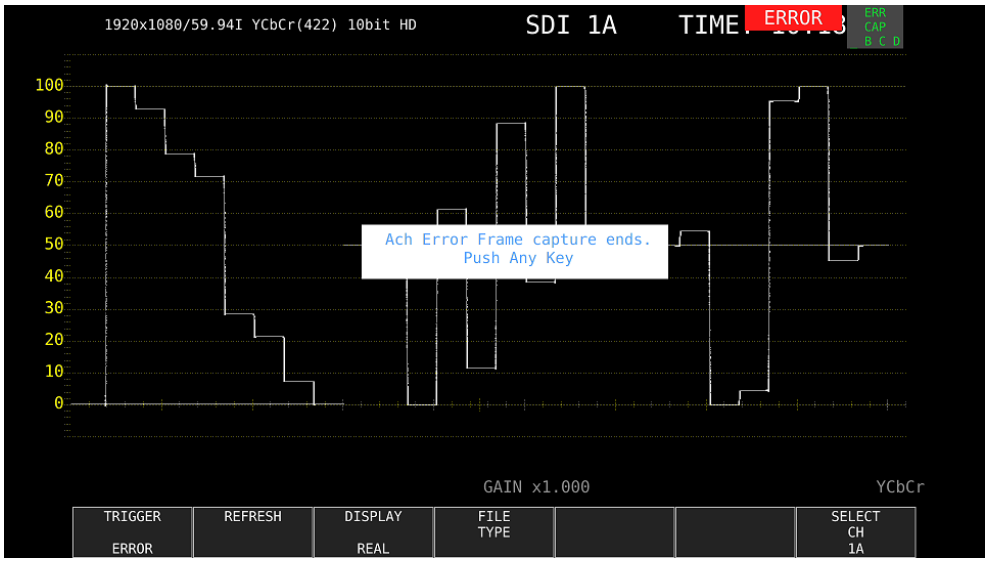


Figure 7-9 Error capture end

7.2.2 Displaying Frame Capture Data

You can display the captured frame data on the LV 5490 or overlay it on the current input signal. You can also display the frame data in different display modes.
To select the display mode, follow the procedure below.

- First, show the video signal waveform display, vector waveform display (except the 5-bar display), or picture display.
- To display frame data, the LV 5490 must be receiving a signal whose format is the same as that of the captured data.
- The display may blink when you operate the V POS knob, H POS knob, or function dial (F•D).
- The scale and measured values are those of the current signal, not those of the captured data.

Procedure

CAP → F•3 DISPLAY: REAL / HOLD / BOTH

Settings

REAL:	The current input signal is displayed.
HOLD:	The frame capture data is displayed. The video signal waveforms and vectors are shown in cyan.
BOTH:	The current input signal and the frame capture data are displayed on top of each other with their intensities halved.

7.2.3 Saving to a USB Memory Device

The frame data captured in the LV 5490 is cleared when the power is turned off. If you want to display it later even after the power is turned off, save the data to USB memory by following the procedure below (save the data in FRM format).

1. **Connect a USB memory device to the LV 5490.**
2. **Press F•4 FILE TYPE on the CAP menu.**

   The FILE TYPE menu appears.

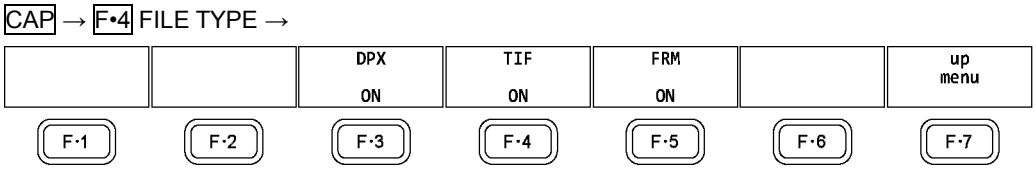


Figure 7-10 FILE TYPE menu

3. **Select the file format.**

   Set the file types for saving the data to ON. By default, all types are set to ON. You cannot turn all the settings off.

   F•3 DPX: Only the picture area is saved as 10-bit .dpx files.
   Even when the input signal is 12 bits, it is rounded to 10 bits and saved.
   F•4 TIF: Only the picture area is saved as .tif files.
   This data is DPX converted into TIF.
   F•5 FRM: A single frame of data is saved.

4. **Press F•7 up menu.**

   The CAP menu appears.

5. **Press F•5 STORE.**

   The message “Please wait. Saving file...” is displayed on the screen, and the frame capture data is saved to the USB memory device. This menu item does not appear when there is no frame data captured in the LV 5490.

   When the input signal is 1080i/59.94 and all the file types that you can select with F•4 FILE TYPE are set to ON, it takes about 50 seconds to save the data. The approximate file sizes for saving the data are 7.9 MB for DPX, 11.8 MB for TIF, and 9.4 MB for FRM.

   The file is automatically assigned a name that consists of the year, month, day, hour, minute, second, and CH(in that order) that are set in the system settings.
   (Example: 20090501100859A.bmp)

   Frame capture data is saved to the following locations.

USB memory device
└ LV5490_USER
  └ BMP
    ├ yyyymmddhhmmss.dpx
    ├ yyyymmddhhmmss.frm
    └ yyyymmddhhmmss.tif

7.2.4 Displaying Frame Capture Data Saved to a USB Memory Device

To display or overlay on the current input signal the frame capture data that has been saved to USB memory as .frm files, follow the procedure below.
(Frame capture data that has been saved in FRM format on a different model cannot be displayed on the LV 5490.)

1. **Connect a USB memory device to the LV 5490.**
2. **Press CAP.**

   The CAP menu appears.
3. **Press F•6 RECALL.**

   The file list display appears.

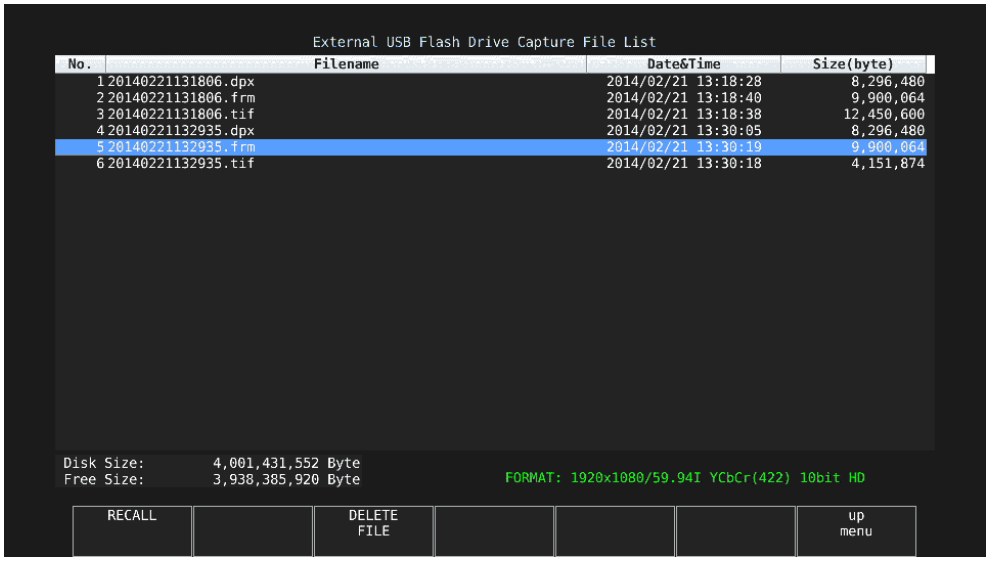


Figure 7-11 File list display

4. **Turn the function dial (F•D) to select the .frm file that you want to display.**
5. **Press F•1 RECALL.**

   To display frame data, the LV 5490 must be receiving a signal whose format is the same as that of the saved data. The FORMAT item at the bottom of the display shows the format of the saved data. It is displayed in green if the format is the same as the current format or in red if the format is not the same. If the FORMAT item is in red, F•1 RECALL does not appear.
6. **Press F•3 DISPLAY to select the display format.**

7.2.5 Deleting Frame Capture Data Saved to a USB Memory Device

To delete frame capture data that has been saved to a USB memory device, follow the procedure below. (You can also use a PC to delete the data.)

1. **Connect a USB memory device to the LV 5490.**
2. **Press CAP.**

   The CAP menu appears.
3. **Press F•6 RECALL.**

   The file list display appears.

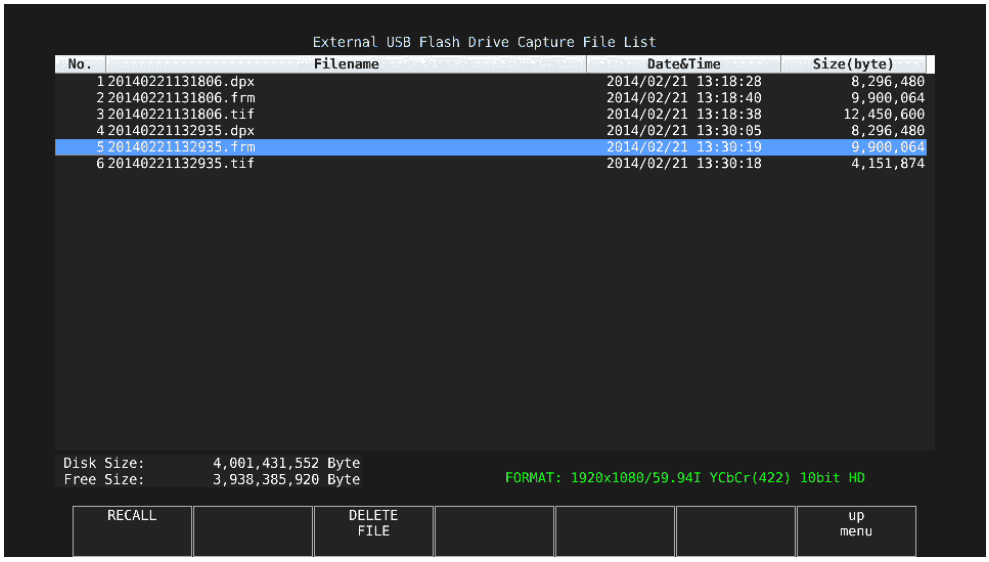


Figure 7-12 File list display

4. **Turn the function dial (F•D) to select the file that you want to delete.**
5. **Press F•3 DELETE FILE.**

   The DELETE FILE menu appears.

CAP → F•6 RECALL → F•3 DELETE FILE →

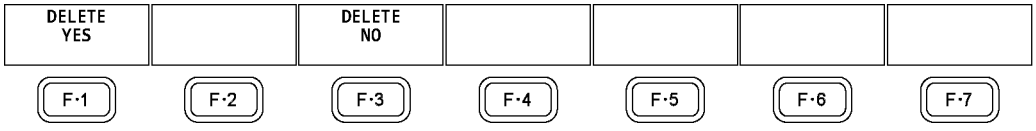


Figure 7-13 DELETE FILE menu

6. **Press F•1 DELETE YES.**

   To cancel the deletion operation, press F•3 DELETE NO.

8. PRESET SETTINGS

The preset feature stores up to 60 sets of panel settings. It can be used to easily recall fixed settings. Also, you can use the same settings on multiple LV 5490s by copying presets to USB memory.

All items except the items below are stored in a preset. Stored items are not deleted even if you initialize the settings.

- Ethernet settings (ETHERNET SETUP tab)
- Remote settings (REMOTE SETUP tab)
- Date and time settings (DATE&TIME tab)

8.1 Registering Presets

To register a preset, follow the procedure below.

1. Display the screen you want to register.

You can set the menu that appears when a preset is recalled by setting Recall on the GENERAL SETUP tab in the system settings in advance.

Reference GENERAL SETUP tab → 6.2.1, “General Settings.”

2. Hold down PSET.

The preset registration display appears.

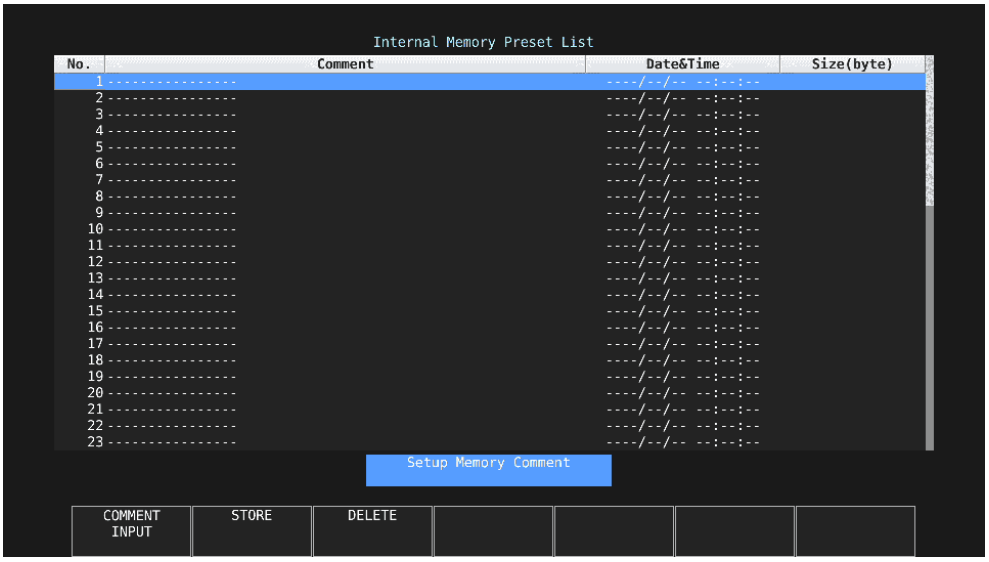


Figure 8-1 Preset registration display

3. Press F•1 COMMENT INPUT.

The comment input display appears.
You can also copy a comment from a preset that already has a comment saved to it. To copy a comment, on the preset registration display, move the cursor to the preset that has the comment that you want to copy, and press the function dial (F•D).

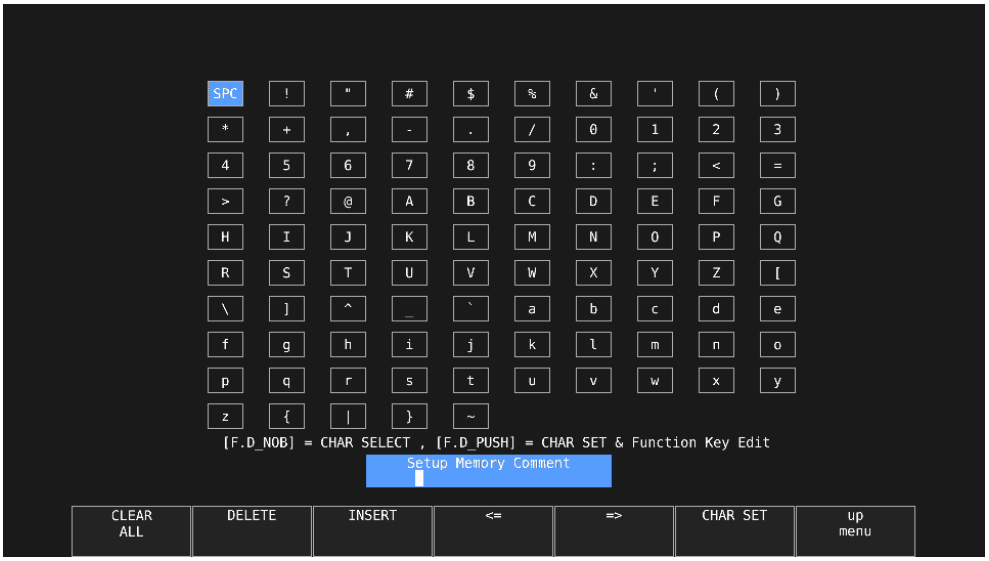


Figure 8-2 Comment input display

4. Enter a comment of up to 16 characters.

You can use the following keys on the comment input display.

F•1 CLEAR ALL:	Deletes all characters
F•2 DELETE:	Deletes the character at the cursor
F•3 INSERT:	Inserts the selected character at the cursor position
F•4 <=:	Moves the cursor to the left
F•5 =>:	Moves the cursor to the right
F•6 CHAR SET:	Enters the character
Function dial (F•D):	Turn to select a character, and press to enter the character.

5. Press F•7 up menu.

6. Turn the function dial (F•D) to select the number of the preset you want to register.

7. Press F•2 STORE.

If a preset has already been stored with the number that you selected, the STORE menu appears. To overwrite the existing preset, press F•1 OVER WRITE YES. Otherwise, press F•3 OVER WRITE NO.

Figure 8-3 STORE menu

8.2 Recalling Presets

To recall a preset, follow the procedure below.

1. Press PSET.

The PSET menu appears.

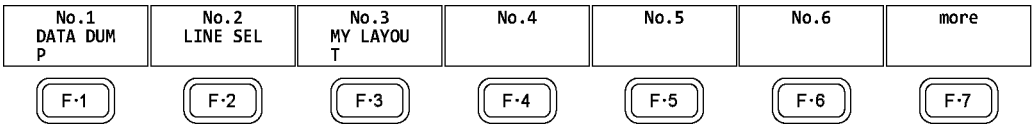


Figure 8-4 PSET menu

2. Press a key from F•1 No.1 to F•6 No.6.

If the preset that you want to load is number 7 or greater, press F•7 more or turn the function dial (F•D).

The menu that appears immediately after loading the preset is either the PSET menu or measurement menu depending on the setting that was specified on the GENERAL SETUP tab when the preset was registered.

Reference GENERAL SETUP tab → 6.2.1, “General Settings.”

8.3 Deleting Presets

To delete a preset, follow the procedure below.

1. Hold down PSET.

The preset registration display appears.

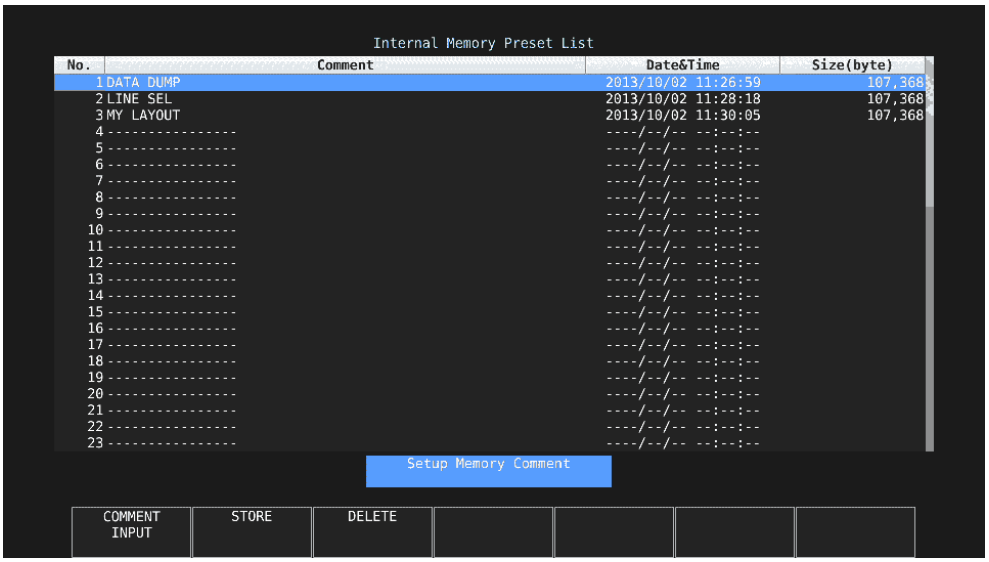


Figure 8-5 Preset registration display

2. Turn the function dial (F • D) to select the file that you want to delete.

3. Press F • 3 DELETE.

The DELETE menu appears.

Figure 8-6 DELETE menu

4. Press F • 1 DELETE YES.

To cancel the operation, press F•3 DELETE NO.

8.4 Copying All Presets from the LV 5490 to USB Memory

To copy all the presets from the LV 5490 to USB memory, follow the procedure below.

1. **Connect a USB memory device to the LV 5490.**
2. **Hold down PSET.**

   The preset registration display appears.

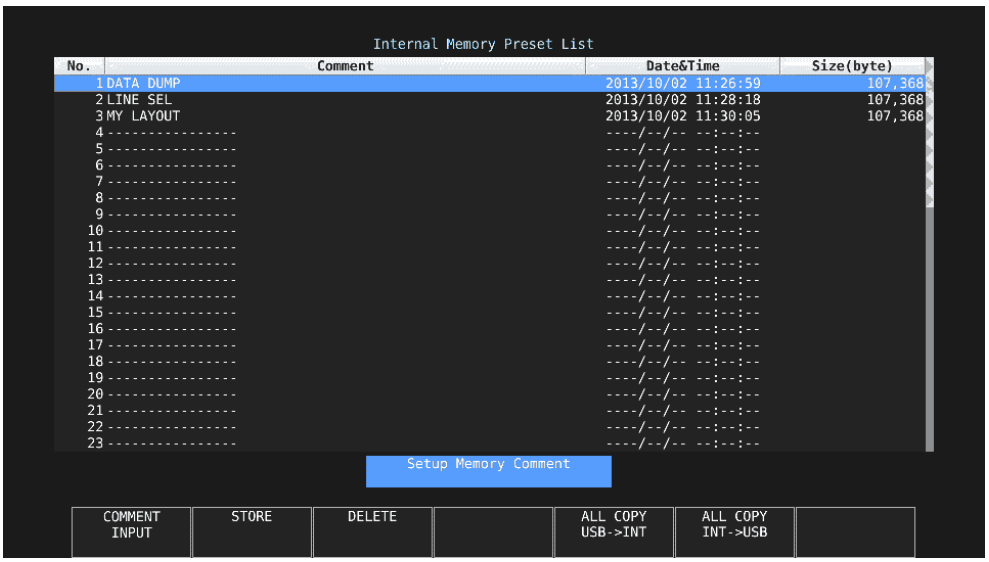


Figure 8-7 Preset registration display

3. **Press F•6 ALL COPY INT->USB.**

   The ALL COPY INT->USB menu appears.

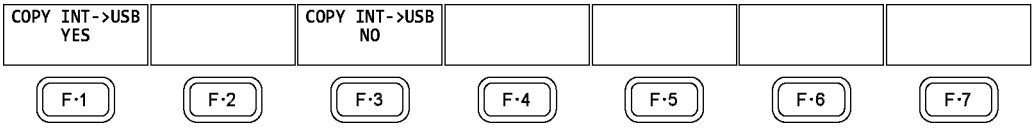


Figure 8-8 ALL COPY INT->USB menu

4. **Press F•1 COPY INT->USB YES.**

   To cancel the copy operation, press F•3 COPY INT->USB NO. If presets already exist on the USB memory, they will be overwritten.

   Presets are saved to the following location.
   Note that if you use a PC to change the names of the files stored in the USB memory, you will no longer be able to copy the altered presets from USB memory to an LV 5490.

   USB memory device
   └ LV5490_USER
   　└ pset
   　　└ PRESET_01.PRE (to PRESET_60.PRE)

8.5 Copying All Presets from USB Memory to the LV 5490

To copy all the presets from USB memory to the LV 5490, follow the procedure below.

1. **Connect a USB memory device to the LV 5490.**
2. **Hold down PSET.**

   The preset registration display appears.

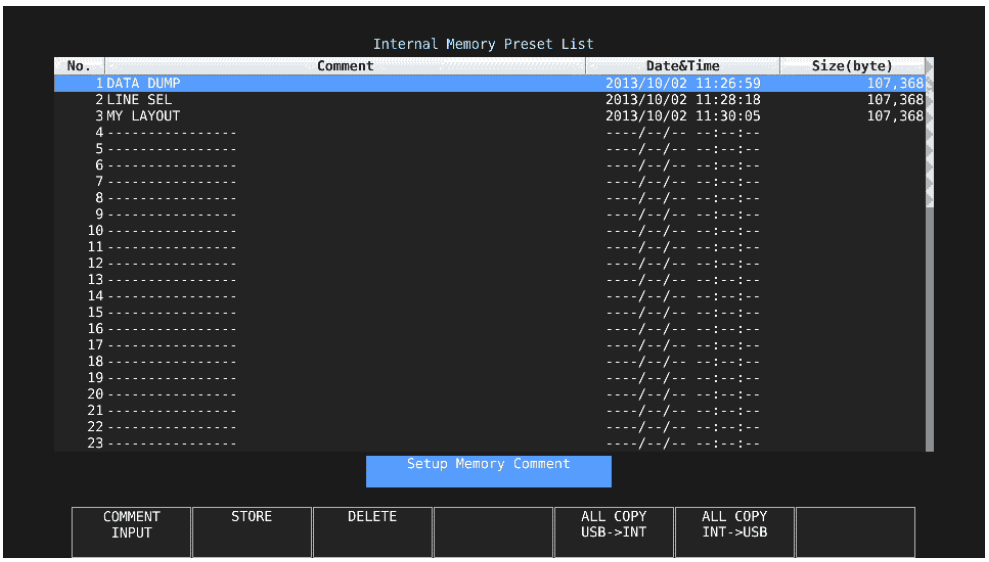


Figure 8-9 Preset registration display

3. **Press F•5 ALL COPY USB->INT.**

   The ALL COPY USB->INT menu appears.

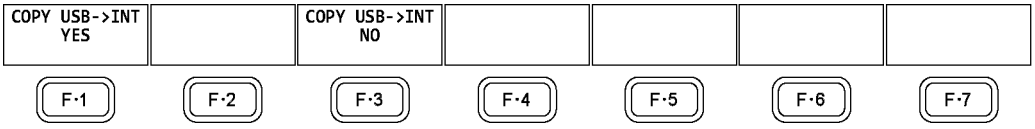


Figure 8-10 ALL COPY USB->INT menu

4. **Press F•1 COPY USB->INT YES.**

   To cancel the copy operation, press F•3 COPY USB->INT NO. If presets already exist within the LV 5490 internal memory, they will be overwritten.

9. REMOTE CONTROL

You can use the remote control connector on the rear panel to load presets, transmit alarm signals, and perform other operations. Use the supplied 15-pin D-sub connector to control the LV 5490.

- **Pinout Example**

  This section contains a diagram of the remote control connector, displayed as it appears on the rear panel, and a table that describes the connector's pinout.

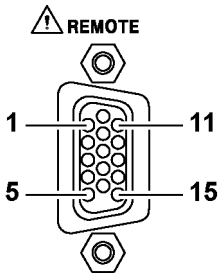


Figure 9-1 Remote control connector (female, inch screws)

Table 9-1 Remote control connector pinout example

Pin No.	Name	I/O (*1)	Function
1	OPEN	-	Open (*2)
2	/P1	I	Loads preset 1
3	/P2	I	Loads preset 2
4	/P3	I	Loads preset 3
5	/P4	I	Loads preset 4
6	/P5	I	Loads preset 5
7	/P6	I	Loads preset 6
8	/P7	I	Loads preset 7
9	/P8	I	Loads preset 8
10	/ACH	I	Selects channel A
11	/BCH	I	Selects channel B
12	/CCH	I	Selects channel C
13	/DCH	I	Selects channel D
14	ALARM	O	Transmits alarms
15	GND	-	Ground

*1 Is (inputs) are all pulled up to +3.3 V but can also receive +5 V.

*2 Do not connect anything.

- **Configuring the LV 5490**

  To set the remote control connector, use the system settings. For details, see section 6.2.3, “Remote Control Settings.”

SYS → F•2 SYSTEM SETUP → F•3 NEXT TAB (×2) →

Figure 9-2 REMOTE SETUP tab

- **Remote Control**

  The input connectors respond to active-low signals. Do not apply negative voltages or voltages that exceed +5 V. After you make a setting, a period of time of 350 ms or more in which the electrical potential is stable is required, so wait at least 1 second before you make the subsequent setting.

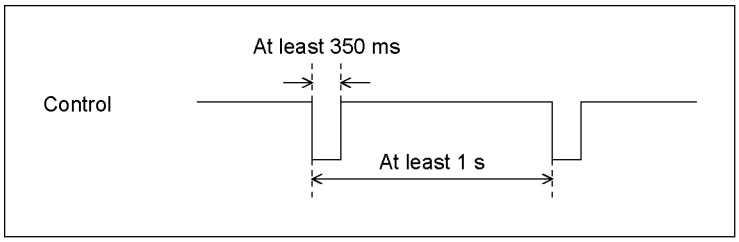


Figure 9-3 Remote control timing 1

After a setting is made, it may take about 3 seconds for the operation to finish. If you configure subsequent settings before the initial operation finishes, only the last setting will take effect. All settings in between will be discarded. (In the following example, remote control 2 will be discarded.)

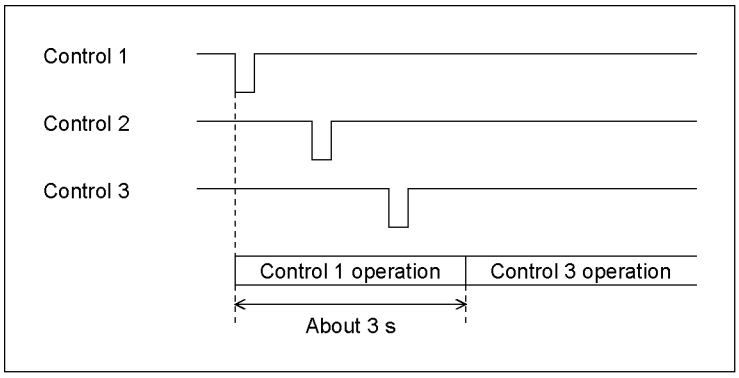


Figure 9-4 Remote control timing 2

- **Loading Presets**

The control table when Remote Mode is set to Bit is shown below.
When Remote Select is set to Recall and Loudness, preset No. 7 and 8 cannot be recalled.

Table 9-2 Loading presets (Bit)

Preset No.	9p /P8	8p /P7	7p /P6	6p /P5	5p /P4	4p /P3	3p /P2	2p /P1
1	H	H	H	H	H	H	H	L
2	H	H	H	H	H	H	L	H
3	H	H	H	H	H	L	H	H
4	H	H	H	H	L	H	H	H
5	H	H	H	L	H	H	H	H
6	H	H	L	H	H	H	H	H
7	H	L	H	H	H	H	H	H
8	L	H	H	H	H	H	H	H

The control table when Remote Mode is set to Binary is shown below.

Table 9-3 Loading presets (Binary)

Preset No.	7p /P6	6p /P5	5p /P4	4p /P3	3p /P2	2p /P1
1	H	H	H	H	H	L
2	H	H	H	H	L	H
3	H	H	H	H	L	L
4	H	H	H	L	H	H
5	H	H	H	L	H	L
6	H	H	H	L	L	H
7	H	H	H	L	L	L
8	H	H	L	H	H	H
9	H	H	L	H	H	L
10	H	H	L	H	L	H
11	H	H	L	H	L	L
12	H	H	L	L	H	H
13	H	H	L	L	H	L
14	H	H	L	L	L	H
15	H	H	L	L	L	L
16	H	L	H	H	H	H
17	H	L	H	H	H	L
18	H	L	H	H	L	H
19	H	L	H	H	L	L
20	H	L	H	L	H	H
21	H	L	H	L	H	L
22	H	L	H	L	L	H
23	H	L	H	L	L	L
24	H	L	L	H	H	H
25	H	L	L	H	H	L
26	H	L	L	H	L	H
27	H	L	L	H	L	L
28	H	L	L	L	H	H
29	H	L	L	L	H	L
30	H	L	L	L	L	H
31	H	L	L	L	L	L
32	L	H	H	H	H	H
33	L	H	H	H	H	L
34	L	H	H	H	L	H
35	L	H	H	H	L	L
36	L	H	H	L	H	H
37	L	H	H	L	H	L
38	L	H	H	L	L	H
39	L	H	H	L	L	L
40	L	H	L	H	H	H
41	L	H	L	H	H	L

Preset No.	7p /P6	6p /P5	5p /P4	4p /P3	3p /P2	2p /P1
42	L	H	L	H	L	H
43	L	H	L	H	L	L
44	L	H	L	L	H	H
45	L	H	L	L	H	L
46	L	H	L	L	L	H
47	L	H	L	L	L	L
48	L	L	H	H	H	H
49	L	L	H	H	H	L
50	L	L	H	H	L	H
51	L	L	H	H	L	L
52	L	L	H	L	H	H
53	L	L	H	L	H	L
54	L	L	H	L	L	H
55	L	L	H	L	L	L
56	L	L	L	H	H	H
57	L	L	L	H	H	L
58	L	L	L	H	L	H
59	L	L	L	H	L	L
60	L	L	L	L	H	H

- **Alarm Output**

  The LV 5490 outputs an alarm from pin 14 (ALARM) when any of the conditions below is true. The applicable alarm output channels are all the channels in the selected group (1A to 1D or 2A to 2D). However, when measuring 3G-B-DS or 3G (DL)-4K, alarms are output only for the currently displayed channels.

  - When a format other than that specified with Format Set on the FORMAT ALARM tab of the SYS menu is received
  - When an error occurs in the item that you have set to ON using F•5 STATUS SETUP on the STATUS menu
  - When an error occurs in the item that you have set to ON using F•4 ERROR SETUP on the EYE menu
  - When a fan error occurs
  - When the internal temperature rises to an abnormal level
    (When Temperature of F•3 SYSTEM INFO on the SYS menu turns red.)

10. ETHERNET REMOTE CONTROL

The LV 5490 can be remotely controlled through its Ethernet port on the rear panel. Controlling an LV 5490 remotely through its Ethernet interface has only been confirmed to work in a local network environment. LEADER does not guarantee that this feature will work in any network environment.

10.1 TELNET

From a PC connected to the same network as the LV 5490, most of the operations that you can perform from the front panel can be controlled remotely.

10.1.1 Procedure

1. **Configure the Ethernet settings on the LV 5490's ETHERNET SETUP tab.**

   Set the IP Address, and set TELNET Server Select to ON.
   You cannot use the LV 5490-01 (REMOTE CONTROLLER) while you are using TELNET. Conversely, if you set LV 5490-01 to ON, you cannot use TELNET.
   Reference 6.2.2, "Configuring Ethernet Settings"

   SYS → F•2 SYSTEM SETUP → F•2 PREV TAB or F•3 NEXT TAB →

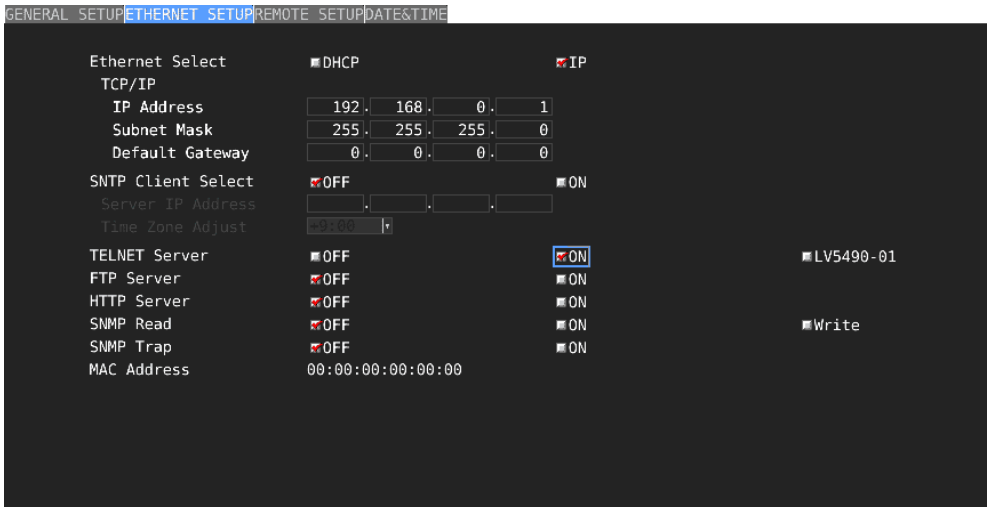


Figure 10-1 ETHERNET SETUP tab

2. **Press F•1 COMPLETE.**
3. **Connect the LV 5490's Ethernet port to the network.**
4. **On the PC, start a TELNET client.**

   On Windows 7, on the taskbar, click Start, and then click Run. Type "TELNET " and the IP address that you set in step 1. Then, click OK.
   (To use TELNET, open Control Panel, click Turn Windows features on or off under Program and Features, and select the Telnet Client check box.)

5. Type the login name and password.

The login name and password are "LV5490". Use uppercase for all characters. When the login name and password are entered correctly, "LV5490@LV5490:~$" appears.

```
LV5490 login: LV5490
Password: ******
LV5490@LV5490:~$
```

6. Enter TELNET commands.

Enter commands while referring to sections 10.1.2, "How to Enter Commands," and 10.1.3, "TELNET Commands."
To end a TELNET session, type “exit” in lowercase letters.

```
LV5490@LV5490:~$ exit
```

10.1.2 How to Enter Commands

The command syntax is explained below. (Some commands do not have parameters.)
To query a current setting, use a question mark as the parameter.

```
LV5490@LV5490: ~$ [Command] + [Space] + [Parameter]
```

Examples of how to enter commands are shown below.

● Showing the Status Display

```
LV5490@LV5490: ~$ STATUS
```

● Displaying the Center Marker in the Picture Display

```
LV5490@LV5490: ~$ PIC:MARKER:CENTER ON
```

● Querying the Vector Intensity

```
LV5490@LV5490: ~$ VECTOR:INTEN ?
```

* You can enter commands using uppercase or lowercase letters.

* Because the display channel selection command is different depending on the display mode (single or simul) and SDI signal input settings, check the INPUT KEY command.

* To query the measured value or detected value, you must use the INPUT KEY command to show the measurement screen of the appropriate channel.
Further, for 4K 3G QUAD LINK, 4K 3G DUAL LINK, 4K HD QUAD LINK, 3G DUAL LINK, and HD DUAL LINK settings, you must also select the link according to the link selection command of each measurement item.

10.1.3 TELNET Commands

TELNET commands follow the LV 5490 or the unit menu structure. For explanations of each item, see this manual or the FUNCTION MENU EXPLANATIONS. Depending on the current settings, some of the items that are described in this manual may be invalid.

● **INPUT KEY**

r/w Limitation	Command	Parameter	
-	INP:SIMUL	SINGLE / SIMUL / ?	
-	INP_SINGLE:A	ON / ? (Return value: ON (channel A selected) / OFF (not selected))	SD/HD/3G-A/3G-B-DL or 3G-B-DS setting, Select the display channel in single input mode.
-	INP_SINGLE:B	ON / ? (Return value: ON (channel A selected) / OFF (not selected))	
-	INP_SINGLE:C	ON / ? (Return value: ON (channel A selected) / OFF (not selected))	
-	INP_SINGLE:D	ON / ? (Return value: ON (channel A selected) / OFF (not selected))	
-	INP:SIMUL:A	OFF / ON / ? (Return value: Channel A display on/off)	SD/HD/3G-A/3G-B-DL or 3G-B-DS setting, Select the display channel in simul mode.
-	INP:SIMUL:B	OFF / ON / ? (Return value: Channel B display on/off	
-	INP:SIMUL:C	OFF / ON / ? (Return value: Channel C display on/off	
-	INP:SIMUL:D	OFF / ON / ? (Return value: Channel D display on/off	
-	INP_12G:A	ON / ? (Return value: ON (channel A selected) / OFF (not selected))	4K 12G setting, Select the display channel.
-	INP_12G:B	ON / ? (Return value: ON (channel A selected) / OFF (not selected))	
-	INP_12G:C	ON / ? (Return value: ON (channel A selected) / OFF (not selected))	
-	INP_12G:D	ON / ? (Return value: ON (channel A selected) / OFF (not selected))	
-	INP:D_SINGLE:AB	ON / ? (Return value: Channel A-B pair display on/off)	4K 3G Dual Link, HD Dual Link or 3G Dual Link setting, Select the display channel in single input mode.
-	INP:D_SINGLE:CD	ON / ? (Return value: Channel C-Ddisplay on/off)	
-	INP:D_SIMUL:AB	OFF / ON / ? (Return value: Channel A-B pair display on/off)	HD Dual Link or 3G Dual Link setting, Select the display channel in simul mode.
-	INP:D_SIMUL:CD	OFF / ON / ? (Return value:Channel C-D pair display on/off)	
-	INP_GROUP	GROUP1 / GROUP2 / ?	
-	INP_OPERATE	COM / INDIVIDUAL / ?	

● **EXT KEY**

r/w Limitation	Command	Parameter
-	EXT	INT / EXT / ?

● **MULTI KEY**

r/w Limitation	Command	Parameter
WO	MULTI	None
-	USER:LYT	USER1 / USER2 / USER3 / USER4 / USER5 / ?

● **CAP KEY**

r/w Limitation	Command	Parameter
-	CAP:TRIGGER	MANUAL / ERROR / ?
WO	CAP:REFRESH	None
-	CAP:DISPLAY	REAL / HOLD / BOTH / ?
-	CAP:FILE:BMP	OFF / ON / ?
-	CAP:FILE:BSG	OFF / ON / ?
-	CAP:FILE:DPX	OFF / ON / ?
-	CAP:FILE:TIF	OFF / ON / ?
-	CAP:FILE:FRM	OFF / ON / ?
WO	CAP:FILE:STORE	None
WO	MAKE	CAP_BMP / CAP_BSG / CAP_FRM / CAP_DPX / CAP_TIF / LOG / DUMP * File make command. Use FTP to retrieve created files.

● **PSET KEY**

r/w Limitation	Command	Parameter
WO	PSET	1 to 60

● **SYS KEY**

r/w Limitation	Command	Parameter
WO	SYS:INITIALIZE	None
WO	SYS:LAYOUT:INIT	None
WO	SYS:ALL:INIT	None
WO	SYS:LCD:OFF	None
WO	SYS:LCD:ON	None
-	SYS:LCD:BACKLIGHT	1 to 32 / ?

● SDI IN TAB MENU (SYS → SIGNAL IN OUT) (*1)

r/w Limitation	Command	Parameter
-	SYS:SDI:SYSTEM	4K_12G / 4K_3G_QLINK / 4K_3G_DLINK / 4K_HD_QLINK / SINGLE_LINK / HD_DLINK / 3G_DLINK / 3GB_DSTREAM / ? * Correspondence between parameters and settings 4K_12G : 4K 12G 4K_3G_QLINK : 4K 3G QUAD LINK 4K_3G_DLINK : 4K 3G DUAL LINK 4K_HD_QLINK : 4K HD QUAD LINK SINGLE_LINK : SD/HD/3G-A/3G-B-DL HD_DLINK : HD DUAL LINK 3G_DLINK : 3G DUAL LINK 3GB_DSTREAM : 3G-B-DS
-	SYS:COLORIMETRY	PID / BT709 / BT2020 / DCI / ?
-	SYS:HFR_MODE	OFF / X2 / X4 / X8 / ?
-	SYS:FMT:PID	USE / NOTUSE / ?
-	SYS:FMT:IPSF	INTERLACE / SEGMENTFRAME / ?
-	SYS:FMT:DIVISION	SQUARE / 2SAMPLE / ?
-	SYS:FMT:COLORSYS	YCBCR422 / YCBCR444 / RGB444 / XYZ444 / ?
-	SYS:FMT:PIXDEPTH	10BIT / 12BIT / ?
-	SYS:XYZ_GAMMA	BOTTOM_ZERO / DCI / ?
WO	SYS:SIGNAL_IN_OUT:COMPLETE	None (must be executed after changing the tab menu)

*1 Execute SYS:SIGNAL_IN_OUT:COMPLETE after changing the setting.

● FORMAT ALARM TAB MENU (SYS → SIGNAL IN OUT) (*1)

r/w Limitation	Command	Parameter
-	SYS:FMT_ALM	OFF / ON / ?
-	SYS:FMT_ALM:SYSTEM	3840_2160_12G_TYPE1 / 4096_2160_12G_TYPE1 / 3840_2160_3GBDL_QUAD / 4096_2160_3GBDL_QUAD / 3840_2160_3GA_QUAD / 4096_2160_3GA_QUAD / 3840_2160_3GBDS_DUAL / 4096_2160_3GBDS_DUAL / 3840_2160_HD_QUAD / 4096_2160_HD_QUAD / 1920_1080_3GBDL / 2048_1080_3GBDL / 1280_720_3GA / 1920_1080_3GA / 2048_1080_3GA / 1280_720_HD / 1920_1080_HD / 720_487_SD / 720_576_SD / 1920_1080_HD_DUAL / 2048_1080_HD_DUAL / 1280_720_3GBDS / 1920_1080_3GBDS / 1920_1080_3GBDL_DUAL / 2048_1080_3GBDL_DUAL / 1920_1080_3GA_DUAL / 2048_1080_3GA_DUAL / ?
-	SYS:FMT_ALM:STRUCT	YCBCR422_10BIT / YCBCR422_12BIT / YCBCR444_10BIT / YCBCR444_12BIT / RGB444_10BIT / RGB444_12BIT / XYZ444_12BIT / ?

r/w Limitation	Command	Parameter
-	SYS:FMT_ALM:FRAME_FIELD	60P / 5994P / 50P / 48P / 30P / 2997P / 25P / 4795P / 24P / 2398P / 60I / 5994I / 50I / 30PSF / 2997PSF / 25PSF / 24PSF / 2398PSF / ?
-	SYS:FMT_ALM:DIVI	SQUARE / 2SAMPLE / ?
-	SYS:FMT_ALM:FLAG:COLOR	OFF / ON / ?
-	SYS:FMT_ALM:COLOR	BT_709 / BT_2020 / DCI / ?
RO	SYS:FMT:SDIIN:A	? * Video format information of channel A
RO	SYS:FMT:SDIIN:B	? * Video format information of channel B
RO	SYS:FMT:SDIIN:C	? * Video format information of channel C
RO	SYS:FMT:SDIIN:D	? * Video format information of channel D
WO	SYS:SIGNAL_IN_OUT:COMPLETE	None (must be executed after changing the tab menu)

*1 Execute SYS:SIGNAL_IN_OUT:COMPLETE after changing the setting.

● SDI OUT TAB MENU (SYS → SIGNAL IN OUT) (*1)

r/w Limitation	Command	Parameter
-	SYS:SDI:BNC	OUTPUT / INPUT / ?
-	SYS:SDI:OUTPUT:MODE	INPUT_THROUGH / TEST_SIGNAL / ?
-	SYS:SDI:OUTPUT	ACH / ABCD / ?
-	SYS:TSG:SYSTEM	3840_2160_3GBDL_QUAD / 4096_2160_3GBDL_QUAD / 3840_2160_3GA_QUAD / 4096_2160_3GA_QUAD / 3840_2160_3GBDS_DUAL / 4096_2160_3GBDS_DUAL / 1920_1080_3GBDL / 2048_1080_3GBDL / 1920_1080_3GA / 2048_1080_3GA / 1920_1080_HD / ?
-	SYS:TSG:STRUCT	YCBCR422_10BIT / YCBCR444_10BIT / RGB444_10BIT / XYZ444_12BIT / ?
-	SYS:TSG:FRAME_FIELD	60P / 5994P / 50P / 48P / 30P / 2997P / 25P / 4795P / 24P / 2398P / 60I / 5994I / 50I / 30PSF / 2997PSF / 25PSF / 24PSF / 2398PSF / ?
-	SYS:TSG:DIVI	SQUARE / 2SAMPLE / ?
-	SYS:TSG:PTN	COLOR_BAR_100 / COLOR_BAR_75 / MULTI_COL_BAR / COLOR_RASTER / CROSS_HATCH / 10STEP / LIMIT_RAMP / ?
-	SYS:TSG:YCB:Y	OFF / ON / ?
-	SYS:TSG:YCB:Y:VAL	4 to 1019 / ?
-	SYS:TSG:YCB:CB	OFF / ON / ?
-	SYS:TSG:YCB:CB:VAL	4 to 1019 / ?
-	SYS:TSG:YCB:CR	OFF / ON / ?
-	SYS:TSG:YCB:CR:VAL	4 to 1019 / ?
-	SYS:TSG:RGB:R	OFF / ON / ?
-	SYS:TSG:RGB:R:VAL	4 to 1019 / ?

r/w Limitation	Command	Parameter
-	SYS:TSG:RGB:G	OFF / ON / ?
-	SYS:TSG:RGB:G:VAL	4 to 1019 / ?
-	SYS:TSG:RGB:B	OFF / ON / ?
-	SYS:TSG:RGB:B:VAL	4 to 1019 / ?
-	SYS:TSG:SCRL	OFF / ON / ?
-	SYS:TSG:SCRL:DIREC	RIGHT / LEFT / UP / DOWN / RIGHT_UP / RIGHT_DOWN / LEFT_UP / LEFT_DOWN / ?
-	SYS:TSG:SCRL:SPEED	4 to 124 / ?
-	SYS:TSG:BOX	OFF / ON / ?
-	SYS:TSG:BOX:COLOR	WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE / BLACK / ?
-	SYS:TSG:BOX:SPEED	1 to 3 / ?
-	SYS:TSG:PHS	OFF / ON / ?
-	SYS:TSG:PHS:DIREC	H / V / ?
-	SYS:TSG:PHS:H:BCH	-1374 to 1374 / ?
-	SYS:TSG:PHS:H:CCH	-1374 to 1374 / ?
-	SYS:TSG:PHS:H:DCH	-1374 to 1374 / ?
-	SYS:TSG:PHS:V:BCH	-562 to 562 / ?
-	SYS:TSG:PHS:V:CCH	-562 to 562 / ?
-	SYS:TSG:PHS:V:DCH	-562 to 562 / ?
-	SYS:TSG:AUDIO:G1	OFF / ON / ?
-	SYS:TSG:AUDIO:G2	OFF / ON / ?
-	SYS:TSG:AUDIO:G3	OFF / ON / ?
-	SYS:TSG:AUDIO:G4	OFF / ON / ?
-	SYS:TSG:AUDIO:LVL	M20DBFS / M18DBFS / 0DBFS / MUTE / ?
WO	SYS:SIGNAL_IN_OUT:COMPLETE	None (must be executed after changing the tab menu)

*1 Execute SYS:SIGNAL_IN_OUT:COMPLETE after changing the setting.

● HDR TAB MENU (SYS → SIGNAL IN OUT) (*1)

r/w Limitation	Command	Parameter
-	SYS:HDR:ENABLE	OFF / ON / ?
-	SYS:HDR:HDR_CURVE	HLG / PQ / SLOG3 / ?
-	SYS:HDR:MAX	MAX_10000 / MAX_4000 / MAX_1000 / ?
-	SYS:HDR:GAMMA	OFF / ON / ?
-	SYS:HDR:REF:PQ	P51 / P58 / ?
-	SYS:HDR:REF:HLG	P50 / P75 / ?
WO	SYS:SIGNAL_IN_OUT:COMPLETE	None (must be executed after changing the tab menu)

*1 Execute SYS:SIGNAL_IN_OUT:COMPLETE after changing the setting.

● **AUDIO IN/OUT TAB MENU (SYS → SIGNAL IN OUT) (*1)**

r/w Limitation	Command	Parameter
-	SYS:AUD:BNC:A	INPUT / OUTPUT / ?
-	SYS:AUD:BNC:B	INPUT / OUTPUT / ?
WO	SYS:SIGNAL_IN_OUT:COMPLETE	None (must be executed after changing the tab menu)

*1 Execute SYS:SIGNAL_IN_OUT:COMPLETE after changing the setting.

● **MONITOR OUT TAB MENU (SYS → SIGNAL IN OUT) (*1)**

r/w Limitation	Command	Parameter
-	SYS:RASTER:SYNC	INT / EXTSIG / ?
-	SYS:RASTER:FORMAT	1080_60P / 1080_5994P / 1080_50P / ?
-	SYS:RASTER:SDIOUT:MODE	RASTER / ROUTER / ?
-	SYS:RASTER:SDIOUT:FMT	HD_SDI / 3G_SDI-A / 3G_SDI-B / ?
WO	SYS:SIGNAL_IN_OUT:COMPLETE	None (must be executed after changing the tab menu)

*1 Execute SYS:SIGNAL_IN_OUT:COMPLETE after changing the setting.

● **12G SDI OUT TAB MENU (SYS → SIGNAL IN OUT) (*1)**

r/w Limitation	Command	Parameter
-	SYS:12G:OUTPUT	INPUT / 12G / NO / ?
-	SYS:12G:FRAME_RATE	60P / 5994P / 50P / ?
WO	SYS:SIGNAL_IN_OUT:COMPLETE	None (must be executed after changing the tab menu)

*1 Execute SYS:SIGNAL_IN_OUT:COMPLETE after changing the setting.

● **GENERAL SETUP TAB MENU (SYS → SYSTEM SETUP) (*2)**

r/w Limitation	Command	Parameter
-	SYS:BOOT:MODE	NORMAL / FAST / ?
-	SYS:CAPMODE	SCREEN / VIDEO_FRAME / ?
-	SYS:INFODISP:FORMAT	OFF / ON / ?
-	SYS:INFODISP:DATE	OFF / YMD / MDY / DMY / ?
-	SYS:INFODISP:TIME	OFF / REALTIME / LTC / VITC / DVITC / ?
-	SYS:INFODISP:INPUT	OFF / ON / ?
-	SYS:INFODISP:ICON	OFF / ON / ?
-	SYS:MENU:AUTOOFF	OFF / ON / ?
-	SYS:MENU:OFFTIME	1 to 60 / ?
-	SYS:MENU:RECALL_MENU	RECALL / FUNCTION / ?
-	SYS:LCD:AUTO:OFF	OFF / 5MIN / 30MIN / 60MIN / ?
-	SYS:FAN:SPEED	1 to 5 / ?

r/w Limitation	Command	Parameter
-	SYS:FAN:WARNING	OFF / ON / ?
WO	SYS:SYSTEM_SETUP:COMPLETE	None (must be executed after changing the tab menu)

*2 Execute SYS:SYSTEM_SETUP:COMPLETE after changing the setting.

● ETHERNET SETUP TAB MENU (SYS → SYSTEM SETUP) (*3)

r/w Limitation	Command	Parameter
-	SYS:ETHERNET:SELECT	DHCP / IP / ?
-	SYS:IP:IPADR:SEG1	0 to 255 / ?
-	SYS:IP:IPADR:SEG2	0 to 255 / ?
-	SYS:IP:IPADR:SEG3	0 to 255 / ?
-	SYS:IP:IPADR:SEG4	0 to 255 / ?
-	SYS:IP:MASK:SEG1	0 to 255 / ?
-	SYS:IP:MASK:SEG2	0 to 255 / ?
-	SYS:IP:MASK:SEG3	0 to 255 / ?
-	SYS:IP:MASK:SEG4	0 to 255 / ?
-	SYS:IP:GATE:SEG1	0 to 255 / ?
-	SYS:IP:GATE:SEG2	0 to 255 / ?
-	SYS:IP:GATE:SEG3	0 to 255 / ?
-	SYS:IP:GATE:SEG4	0 to 255 / ?
-	SYS:SNTP:SELECT	OFF / ON / ?
-	SYS:SNTP:IPADR:SEG1	0 to 255 / ?
-	SYS:SNTP:IPADR:SEG2	0 to 255 / ?
-	SYS:SNTP:IPADR:SEG3	0 to 255 / ?
-	SYS:SNTP:IPADR:SEG4	0 to 255 / ?
-	SYS:SNTP:TZ:ADJ	0(-12) to 24(+12)
-	SYS:TELNET:SELECT	OFF / ON / ?
-	SYS:FTP:SELECT	OFF / ON / ?
-	SYS:HTP:SELECT	OFF / ON / ?
-	SYS:SNMP:READ	OFF / ONLY(read only) / WRITE / ?
-	SYS:SNMP:TRAP	OFF / ON / ?
WO	SYS:ETHERNET:UPDATE	None

*3 Execute SYS:ETHERNET:UPDATE after changing the setting.

● REMOTE SETUP TAB MENU (SYS → SYSTEM SETUP) (*2)

r/w Limitation	Command	Parameter
-	SYS:REMOTE:MODE	BIT / BINARY / ?
-	SYS:REMOTE:ALM:POLARITY	POSITIVE / NEGATIVE / ?
-	SYS:REMOTE:ALM:A	OFF / ON / ?
-	SYS:REMOTE:ALM:B	OFF / ON / ?
-	SYS:REMOTE:ALM:C	OFF / ON / ?
-	SYS:REMOTE:ALM:D	OFF / ON / ?
WO	SYS:SYSTEM_SETUP:COMPLETE	None (must be executed after changing the tab menu)

*2 Execute SYS:SYSTEM_SETUP:COMPLETE after changing the setting.

● DATA & TIME TAB MENU (SYS → SYSTEM SETUP) (*4)

r/w Limitation	Command	Parameter
-	SYS:DATE:DAY	1 to 31 / ?
-	SYS:DATE:MONTH	1 to 12 / ?
-	SYS:DATE:YEAR	2000 to 2099 / ?
-	SYS:TIME:HOUR	0 to 23 / ?
-	SYS:TIME:MIN	0 to 59 / ?
-	SYS:TIME:SEC	0 to 59 / ?
WO	SYS:SET:DATE_TIME	None * To synchronize the clock to a specific time, specify all commands: DAY, MONTH, YEAR, HOUR, MIN, and SEC.

*4 Execute SYS:SET:DATE_TIME after changing the setting.

● INFORMATION TAB MENU (SYS → SYSTEM INFO)

r/w Limitation	Command	Parameter
RO	SYS:INFO:FIRMWARE	?
RO	SYS:INFO:BOARD:SDIIN	? / not installed / installed * LV5490SER01 SDI INPUT board, LV 5490SER02 SDI INPUT/EYE board, LV 5490SER06 12G INPUT/EYE board installation status
RO	SYS:INFO:BOARD:SDIEYE	? / not installed / installed * LV5490SER02 SDI INPUT/EYE board, LV 5490SER06 12G INPUT/EYE board installation status
RO	SYS:INFO:BOARD:AUDIO	? / not installed / installed * LV5490SER03 DIGITAL AUDIO board installation status
RO	SYS:IP:MAC	?

● **WFM KEY**

r/w Limitation	Command	Parameter
WO	WFM	None
-	WFM:INTEN	-128 to 127 / ?
-	WFM:COLOR	WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE / MULTI / ?
-	WFM:COLOR:S1	WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE / MULTI / ?
-	WFM:COLOR:S2	WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE / MULTI / ?
-	WFM:SCALE:INTEN	-8 to 7 / ?
-	WFM:SCALE:COLOR	WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE / ?
-	WFM:SCALE:UNIT	HDV_SDP / HDV_SDV / HDP_SDP / 150P / 1023_NRM / 1023_255 / 3FF / ?
-	WFM:SCALE:UNIT:NTSC	HDP_SDP / ?
-	WFM:SCALE:UNIT:PAL	HDV_SDV / ?
-	WFM:SCALE:75_COLOR	OFF / ON / ?
-	WFM:GAIN:VAR	CAL / VAR / ?
-	WFM:GAIN:MAG	X1 / X5 / ?
-	WFM:GAIN:VAL	20 to 200 / ? * Correspondence 20: x0.200 to 200: x2.000
-	WFM:FILTER:NORMAL	LOWPASS / FLAT / ?
-	WFM:FILTER:CMPST	FLAT / LUM / FLAT_LUM / LUM_CRMA / ?
-	WFM:SWEEP:SWEEP	H / V / ?
-	WFM:SWEEP:H_MAG	X1 / X10 / X20 / BLANK / ACTIVE / ?
-	WFM:SWEEP:V_MAG	X1 / X20 / X40 / ?
-	WFM:SWEEP:H_SWEEP	1H / 2H / ?
-	WFM:SWEEP:V_SWEEP	1V / 2V / ?
-	WFM:SWEEP:FIELD	FIELD1 / FIELD2 / ?
-	WFM:BLANKING:NORMAL	REMOVE / V_VIEW / H_VIEW / ALL_VIEW / ?
-	WFM:BLANKING:CMPST	REMOVE / V_VIEW / ?
-	WFM:CURSOR	ON / ON_XY / OFF / ?
-	WFM:CURSOR:SEL	X / Y / ?
-	WFM:CURSOR:FD	REF / DELTA / TRACK / ?
-	WFM:CURSOR:UNIT	sec / Hz / ? (when X is selected) MV / % / R% / DEC / HEX / HDR / ? (when Y is selected)
-	WFM:CURSOR:REF	0 to 927 / ? (when X is selected) 0 to 504 / ? (when Y is selected)
-	WFM:CURSOR:DELTA	0 to 927 / ? (when X is selected) 0 to 504 / ? (when Y is selected)
WO	WFM:CURSOR:TRACK	-927 to 927 / ? (when X is selected) -504 to 504 / ? (when Y is selected)
WO	WFM:CURSOR:REFSET	None
-	WFM:MATRIX:YCBCR	YCBCR / GBR / RGB / COMPOSIT / ?

r/w Limitation	Command	Parameter
-	WFM:MATRIX:RGB	GBR / RGB / COMPOSIT / ?
-	WFM:MATRIX:YGBR	OFF / ON / ?
-	WFM:MATRIX:YRGB	OFF / ON / ?
-	WFM:MATRIX:XYZ	XYZ / GBR / RGB / COMPOSIT / ?
-	WFM:MATRIX:CMPST:FORMAT	AUTO / NTSC / PAL / ?
-	WFM:MATRIX:CMPST:SETUP	0P / 7.5P / ?
-	WFM:DISP:OVLAY	PARADE / OVERLAY / ?
-	WFM:DISP:YCBCR:CH1	OFF / ON / ?
-	WFM:DISP:YCBCR:CH2	OFF / ON / ?
-	WFM:DISP:YCBCR:CH3	OFF / ON / ?
-	WFM:DISP:GBR:CH1	OFF / ON / ?
-	WFM:DISP:GBR:CH2	OFF / ON / ?
-	WFM:DISP:GBR:CH3	OFF / ON / ?
-	WFM:DISP:RGB:CH1	OFF / ON / ?
-	WFM:DISP:RGB:CH2	OFF / ON / ?
-	WFM:DISP:RGB:CH3	OFF / ON / ?
-	WFM:DISP:XYZ:CH1	OFF / ON / ?
-	WFM:DISP:XYZ:CH2	OFF / ON / ?
-	WFM:DISP:XYZ:CH3	OFF / ON / ?
-	WFM:DISP:3G-B-DS	STREAM1 / STREAM2 / MIX / ALIGN / ?
-	WFM:DISP:4Y_PARADE	OFF / ON / ?
WO	WFM:POS:MOVE:H	-32768 to 32767
WO	WFM:POS:MOVE:V	-32768 to 32767
RO	WFM:POS:ABS:H	?
RO	WFM:POS:ABS:V	?
-	WFM:LINE_SELECT	OFF / ON / ?
-	WFM:LINE_NUMBER	-32768 to 32767 / ?
-	WFM:LINE_FIELD	FRAME / FIELD1 / FIELD2 / ?

● **VECTOR KEY**

r/w Limitation	Command	Parameter
WO	VECTOR	None
-	VECTOR:MODE	VECTOR / 5BAR / HISTOGRAM / CIE_DIAGRAM / ?
-	VECTOR:INTEN	-128 to 127 / ?
-	VECTOR:COLOR	WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE / ?
-	VECTOR:COLOR:S1	WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE / ? * Valid for 3G-B-DS stream 1
-	VECTOR:COLOR:S2	WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE / ? * Valid for 3G-B-DS stream 2
-	VECTOR:SCALE:INTEN	-8 to 7 / ?

r/w Limitation	Command	Parameter
-	VECTOR:SCALE:COLOR	WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE / ?
-	VECTOR:SCALE:IQ	OFF / ON / ?
-	VECTOR:SCALE:VEC	AUTO / BT_601 / BT_709 / DCI / BT_2020 / ?
-	VECTOR:SCALE:5BAR	P / MV
-	VECTOR:SCALE:5BAR:SEQ	GBR / RGB
-	VECTOR:GAIN:VARIABLE	CAL / VARIABLE / ?
-	VECTOR:GAIN:MAG	X1 / X5 / IQ / ?
-	VECTOR:GAIN:VAR	200 to 10000 / ? * Correspondence 200: x0.200 to 10000: x10.000
-	VECTOR:MATRIX	COMPONENT / COMPOSITE / ?
-	VECTOR:MATRIX:COLORBAR	100P / 75P / ?
-	VECTOR:MATRIX:CMPST:FORMAT	AUTO / NTSC / PAL / ?
-	VECTOR:MATRIX:CMPST:SETUP	0P / 7.5P / ?
-	VECTOR:MARKER	OFF / ON / ?
-	VECTOR:MARKER:POS_H	-32768 to 32767 / ?
-	VECTOR:MARKER:POS_V	-32768 to 32767 / ?
-	VECTOR:DISP:3G-B-DS	STREAM1 / STREAM2 / MIX / ALIGN / ?
-	VEC:LINE_SELECT	OFF / ON / ?
-	VEC:LINE_NUMBER	-32768 to 32767 / ?
-	VEC:LINE_FIELD	FRAME / FIELD1 / FIELD2 / ?
-	VECTOR:HIST:SCALE:HDR	% / HDR / ?

● LV 5490SER05 CIE DIAGRAM

r/w Limitation	Command	Parameter
-	VECTOR:CIE:CURSOR	OFF / ON / ?
-	VECTOR:CIE:CURSOR:POS_H	-32768 to 32767 / ?
-	VECTOR:CIE:CURSOR:POS_V	-32768 to 32767 / ?
-	VECTOR:CIE:SCALE:SUB:TEMP_SCALE	OFF / ON / ?
-	VECTOR:CIE:SCALE:COLOR	OFF / ON / ?
-	VECTOR:CIE:SCALE:TRIANGLE1	OFF / BT_601_525 / BT_601_625 / BT_709 / DCI / BT_2020 / ?
-	VECTOR:CIE:SCALE:TRIANGLE2	OFF / BT_601_525 / BT_601_625 / BT_709 / DCI / BT_2020 / ?
-	VECTOR:CIE:SCALE:SUB:GRID	OFF / ON / ?
-	VECTOR:CIE:SCALE:SUB:D65	OFF / ON / ?
-	VECTOR:CIE:SCALE:SUB:CAP	OFF / ON / ?
-	VECTOR:CIE:SCALE:USER_TRIANGLE	OFF / 1 / 2 / ?
-	VECTOR:CIE:SCALE:USER_TRIANGLE:COLOR	G / B / R / ?
-	VECTOR:CIE:SCALE:USER_TRIANGLE1:G:X	0 to 1000 / ? * Correspondence 0: 0.000 to 1000: 1.000
-	VECTOR:CIE:SCALE:USER_TRIANGLE1:B:X	0 to 1000 / ? * Correspondence 0: 0.000 to 1000: 1.000

r/w Limitation	Command	Parameter
-	VECTOR:CIE:SCALE:USER_TRIANGLE1:R:X	0 to 1000 / ? * Correspondence 0: 0.000 to 1000: 1.000
-	VECTOR:CIE:SCALE:USER_TRIANGLE1:G:Y	0 to 1000 / ? * Correspondence 0: 0.000 to 1000: 1.000
-	VECTOR:CIE:SCALE:USER_TRIANGLE1:B:Y	0 to 1000 / ? * Correspondence 0: 0.000 to 1000: 1.000
-	VECTOR:CIE:SCALE:USER_TRIANGLE1:R:Y	0 to 1000 / ? * Correspondence 0: 0.000 to 1000: 1.000
-	VECTOR:CIE:SCALE:USER_TRIANGLE2:G:X	0 to 1000 / ? * Correspondence 0: 0.000 to 1000: 1.000
-	VECTOR:CIE:SCALE:USER_TRIANGLE2:B:X	0 to 1000 / ? * Correspondence 0: 0.000 to 1000: 1.000
-	VECTOR:CIE:SCALE:USER_TRIANGLE2:R:X	0 to 1000 / ? * Correspondence 0: 0.000 to 1000: 1.000
-	VECTOR:CIE:SCALE:USER_TRIANGLE2:G:Y	0 to 1000 / ? * Correspondence 0: 0.000 to 1000: 1.000
-	VECTOR:CIE:SCALE:USER_TRIANGLE2:B:Y	0 to 1000 / ? * Correspondence 0: 0.000 to 1000: 1.000
-	VECTOR:CIE:SCALE:USER_TRIANGLE2:R:Y	0 to 1000 / ? * Correspondence 0: 0.000 to 1000: 1.000
-	VECTOR:CIE:DIAGRAM:TYPE	DIAGRAM / TEMP / ?
-	VECTOR:CIE:DIAGRAM:FILTER	OFF / ON / ?
-	VECTOR:CIE:DIAGRAM:CLIP	OFF / ON / ?
-	VECTOR:CIE:DIAGRAM:CIE_STD	CIE1931 / CIE1976 / ?
-	VECTOR:CIE:DIAGRAM:MANUAL	OFF / ON / ?
-	VECTOR:CIE:DIAGRAM:MANUAL:GAMMA	2_2 / 2_6 / ?
-	VECTOR:CIE:DIAGRAM:MANUAL:COLORIMETRY	BT_601_525 / BT_601_625 / BT_709 / DCI / BT_2020 / ?
-	VECTOR:CIE:DIAGRAM:MANUAL:GAMMA:SETUP	150 to 300 / ? * Correspondence 150: 1.50 to 300: 3.00

● **PICTURE KEY**

r/w Limitation	Command	Parameter
WO	PICTURE	None
-	PIC:COLOR	COLOR / MONO / ?
-	PIC:CHROMA	NORMAL / UP / ?
-	PIC:BRIGHTNESS	-500 to 500 / ? * -500: -50.0% to 500: 50.0%
-	PIC:CONTRAST	0 to 2000 / ? * 0: 0.0% to 2000: 200.0%
-	PIC:GAIN:R	0 to 2000 / ? * 0: 0.0% to 2000: 200.0%

r/w Limitation	Command	Parameter
-	PIC:GAIN:G	0 to 2000 / ? * 0: 0.0% to 2000: 200.0%
-	PIC:GAIN:B	0 to 2000 / ? * 0: 0.0% to 2000: 200.0%
-	PIC:BIAS:R	-500 to 500 / ? * -500: -50.0% to 500: 50.0%
-	PIC:BIAS:G	-500 to 500 / ? * -500: -50.0% to 500: 50.0%
-	PIC:BIAS:B	-500 to 500 / ? * -500: -50.0% to 500: 50.0%
-	PIC:GAIN:CHROMA	0 to 2000 / ? * 0: 0.0% to 2000: 200.0%
-	PIC:MARKER:FRAME	OFF / ON / ?
-	PIC:MARKER:CENTER	OFF / ON / ?
-	PIC:MARKER:ASPECT	OFF / 17_9 / 16_9 / 14_9 / 13_9 / 4_3 / 2.39_1 / AFD / ?
-	PIC:MARKER:ASPECT:SHADOW	0 to 100 / ?
-	PIC:MARKER:SAFETY:ACTION	OFF / ARIB / SMPTE / USER1 / ?
-	PIC:MARKER:SAFETY:TITLE	OFF / ARIB / SMPTE / USER2 / ?
-	PIC:MARKER:SAFETY:USER1_W	0 to 100 / ?
-	PIC:MARKER:SAFETY:USER1_H	0 to 100 / ?
-	PIC:MARKER:SAFETY:USER2_W	0 to 100 / ?
-	PIC:MARKER:SAFETY:USER2_H	0 to 100 / ?
-	PIC:DISPLAY:SIZE	FIT / REAL / X2 / FULL_FRM / ?
-	PIC:DISPLAY:GAMUT	OFF / WHITE / RED / MESH
-	PIC:DISPLAY:3G-B-DS	STREAM1 / STREAM2 / MIX / ALIGN / ?
-	PIC:POS:H	-32768 to 32767 / ?
-	PIC:POS:V	-32768 to 32767 / ?
-	PIC:CINELITE:DISPLAY	OFF / f_Stop / P_DISPLAY / CINEZONE / ?
-	PIC:CINELITE:ADVANCE	OFF / ON / ?
-	PIC:CINELITE:MEAS_POS	P1 / P2 / P3 / ?
-	PIC:CINELITE:MEAS_NUMS	P1 / P1+P2 / P1+P2+P3 / ?
-	PIC:CINELITE:MEAS_SIZE	1X1 / 3X3 / 9X9 / ?
-	PIC:CINELITE:RGB:UNIT	Y_P / RGB_P / RGB_255 / REAL / CODE_VALUE/ CODE_VALUE_DEC / HDR / ?
WO	PIC:CINELITE:FSTOP:18P_REFSET	None
-	PIC:CINELITE:FSTOP:GAMMA_SEL	0.45 / USER1 / USER2 / USER3 / USER_A / USER_B / USER_C / USER_D / USER_E / ?
-	PIC:CINELITE:FSTOP:GAMMA:CAL:F	22_0 / 16_0 / 11_0 / 8_0 / 5_6 / 4_0 / 2_8 / 2_0 / ?
WO	PIC:CINELITE:FSTOP:GAMMA:CAL:SET	None
WO	PIC:CINELITE:FSTOP:GAMMA:CAL:1DATACLEAR	None

r/w Limitation	Command	Parameter
WO	PIC:CINELITE:FSTOP:GAMMA:CAL:TABLECLEAR	None
WO	PIC:CINELITE:FSTOP:GAMMA:FILE:TABLECLEAR	None
RO	PIC:CINELITE:DATA:P1	?
RO	PIC:CINELITE:DATA:P2	?
RO	PIC:CINELITE:DATA:P3	?
-	PIC:CINELITE:CINEZONE:FORM	GRADATE / STEP / SEARCH / ?
-	PIC:CINELITE:CINEZONE:UPPER	-63 to 1094 / ? * -63: -6.3 to 1094: 109.4
-	PIC:CINELITE:CINEZONE:LOWER	-73(-7.3) to 1084(108.4) / ? * -73: -7.3 to 1084: 108.4
-	PIC:CINELITE:CINEZONE:LEVEL	-73(-7.3) to 1094(109.4) / ? * -73: -7.3 to 1094: 109.4
-	PIC:LINE_SELECT	OFF / ON
-	PIC:LINE_NUMBER	-32768 to 32767 / ?
-	PIC:LINE_FIELD	FRAME / FIELD1 / FIELD2 / ?
-	PIC:STATUS_INFO	OFF / ON
-	PIC:SN:NOISE	STOP / START / ?
-	PIC:SN:CH	A1 / A2 / TRACK / OFF / ?
-	PIC:SN:SIGNAL	Y / G / B / R / ?
-	PIC:SN:LPF	0_404 / 0_323 / 0_269 / 0_202 / 0_101 / 0_0505 / THROUGH / ?
-	PIC:SN:SIZE	SMALL / LARGE / ?
-	PIC:SN:HPF	ON / OFF / ?
-	PIC:SN:ALARM:UNIT	ON / OFF / ?
-	PIC:SN:ALARM:LEVEL	-80 to 0 / ?

● LV5490SER04 FOCUS ASSIST

r/w Limitation	Command	Parameter
-	PIC:FOCUS:ASSIST	OFF / ON / ?
-	PIC:FOCUS:EDGE_COLOR	WHITE / GREEN / RED / BLUE / ?
-	PIC:FOCUS:PIC_LEVEL	OFF / LVL25 / LVL50 / LVL75 / LVL100 / EMBOSS / ?
-	PIC:FOCUS:SENSITIVE	LOW / MIDDLE / HIGH / V_HIGH / U_HIGH / ?

● LV 5490SER07 HDR

r/w Limitation	Command	Parameter
-	PIC:HDR:UPPER:HLG	0 to 1000 / ? * 0: 0.0% to 1000: 100.0%
-	PIC:HDR:LOWER:HLG	0 to 1000 / ? * 0: 0.0% to 1000: 100.0%
-	PIC:HDR:REF:HLG	0 to 1000 / ? * 0: 0.0% to 1000: 100.0%

r/w Limitation	Command	Parameter
-	PIC:HDR:UPPER:PQ_10000	0 to 1000 / ? * 0: 0.0% to 1000: 100.0%
-	PIC:HDR:LOWER:PQ_10000	0 to 1000 / ? * 0: 0.0% to 1000: 100.0%
-	PIC:HDR:REF:PQ_10000	0 to 1000 / ? * 0: 0.0% to 1000: 100.0%
-	PIC:HDR:UPPER:PQ_4000	0 to 1000 / ? * 0: 0.0% to 1000: 100.0%
-	PIC:HDR:LOWER:PQ_4000	0 to 1000 / ? * 0: 0.0% to 1000: 100.0%
-	PIC:HDR:REF:PQ_4000	0 to 1000 / ? * 0: 0.0% to 1000: 100.0%
-	PIC:HDR:UPPER:PQ_1000	0 to 1000 / ? * 0: 0.0% to 1000: 100.0%
-	PIC:HDR:LOWER:PQ_1000	0 to 1000 / ? * 0: 0.0% to 1000: 100.0%
-	PIC:HDR:REF:PQ_1000	0 to 1000 / ? * 0: 0.0% to 1000: 100.0%
-	PIC:HDR:UPPER:SLOG	35 to 1094 / ? * 35: 3.5% to 1094: 109.4%
-	PIC:HDR:REF:SLOG	35 to 1094 / ? * 35: 3.5% to 1094: 109.4%
-	PIC:HDR:LOWER:SLOG	35 to 1094 / ? * 35: 3.5% to 1094: 109.4%
-	PIC:HDR:D_RANGE	NORMAL / HIGH / DISABLE / ?
-	PIC:HDR:MODE	OFF / ON / ?
-	PIC:HDR:BRIGHTNESS	OFF / ON / ?

- **STATUS KEY**

r/w Limitation	Command	Parameter
WO	STATUS	None
WO	STS:SDI_ANLYS:DUMP	None
WO	STS:SDI_ANLYS:EXT_REF	None
WO	STS:ANCVIEW	None
WO	STS:ANCVIEW:DUMP	None
WO	STS:LOG	None
WO	STS:ANCPKT	None
WO	STS:ANCPKT:PKT_ANLYS:EDH	None
WO	STS:ANCPKT:PKT_ANLYS:PAYLOAD	None
WO	STS:ANCPKT:PKT_ANLYS:CTRL_PKT	None
WO	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:CC	None
WO	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ	None
WO	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:TRIG	None

r/w Limitation	Command	Parameter
WO	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:USER1	None
WO	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:USER2	None
WO	STS:ANCPKT:PKT_ANLYS:V_ANC:SMPTE:AFD	None
WO	STS:ANCPKT:PKT_ANLYS:SEARCH	None
WO	STS:ERROR:CLEAR	None
-	STS:LOG:LOG	STOP / START / ?
-	STS:LOG:MODE	OVER_WR / STOP / ?
-	STS:LOG:USB:AUTO_NAME	OFF / ON / ?
WO	STS:LOG:USB:FILE:STORE	None * Valid only when STS:LOG:USB:AUTO_NAME is set to ON
-	STS:SDI_ANLYS:DUMP:MODE	RUN / HOLD / ?
-	STS:SDI_ANLYS:DUMP:MODE_CAP	RUN / HOLD / FRMCAP / ?
-	STS:SDI_ANLYS:DUMP:DISPLAY	SERIAL / COMPONENT / BINARY / LINK_A / LINK_B / LINK_AB / STREAM1 / STREAM2 / PICTURE / S1_SERIAL / S1_COMPONENT / S1_BINARY / S2_SERIAL / S2_COMPONENT / S2_BINARY / ?
-	STS:SDI_ANLYS:DUMP:OPE:JUMP	EAV / SAV / END / START / ?
-	STS:SDI_ANLYS:DUMP:OPE:USB:AUTO_NAME	OFF / ON / ?
WO	STS:SDI_ANLYS:DUMP:OPE:USB:FILE:STORE	None * Valid only when STS:SDI_ANLYS:DUMP:OPE:USB:AUTO_NAME is set to ON
-	STS:SDI_ANLYS:DUMP:OPE:SAMPLE	0 to 32767 / ?
-	STS:SDI_ANLYS:DUMP:OPE:LINE	0 to 32767 / ?
-	STS:SDI_ANLYS:DUMP:LINK_SELECT	PICTURE / A / B / C / D / ? * Supports links A: channel A, B: channel B, C: channel C, and D: channel D : when using 4K 3G QUAD LINK or 4K HD QUAD LINK Supports links A: channel A and B: channel B : when using 4K 3G DUAL LINK, 3G DUAL LINK, or HD DUAL LINK and channels A and B are selected Supports links A: channel C and B: channel D : when channels C and D are selected
WO	STS:SDI_ANLYS:EXT_REF:USER_REF	None

r/w Limitation	Command	Parameter
WO	STS:SDI_ANLYS:EXT_REF:DEFAULT	None
-	STS:SDI_ANLYS:EXT_REF:SELECT	EXT / SDI / ?
-	STS:SDI_ANLYS:EXT_REF:TIMING	LEGACY / SERIAL / ?
-	STS:ANCVIEW:CURSOR	0 to 73 / ? * 0: S291M MARK DEL to 73: RP196 VITC
-	STS:ANCVIEW:DUMP:HOLD	HOLD / 1S / 3S / ?
-	STS:ANCVIEW:DUMP:MODE	HEX / BINARY / ?
-	STS:ANCVIEW:DUMP:SAMPLE	0 to 258 / ?
WO	STS:ANCVIEW:PAGE:UP	None
WO	STS:ANCVIEW:PAGE:DOWN	None
-	STS:ANCVIEW:STREAM	STREAM1 / STREAM2 / ?
-	STS:ANCPKT:PKT_ANLYS:EDH:DISP	TEXT / DUMP / ?
-	STS:ANCPKT:PKT_ANLYS:EDH:MODE	HEX / BINARY / ?
-	STS:ANCPKT:PKT_ANLYS:PAYLOAD_ID:STREAM	STREAM1 / STREAM2 / ?
-	STS:ANCPKT:PKT_ANLYS:CTRL_PKT:DISPLAY	TEXT / DUMP / ?
-	STS:ANCPKT:PKT_ANLYS:CTRL_PKT:MODE	HEX / BINARY / ?
-	STS:ANCPKT:PKT_ANLYS:CTRL_PKT:GROUP	0 / 1 / 2 / 3 / ? * 0: 1GROUP / 1: 2GROUP / 2: 3GROUP / 3: 4GROUP
-	STS:ANCPKT:PKT_ANLYS:CTRL_PKT:STREAM	STREAM1 / STREAM2 / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:CC:DISP	TEXT / DUMP / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:CC:TYPE	HD / SD / ANALOG / CELLULAR / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:CC:MODE	HEX / BINARY / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:CC:SMPL	0 to 258 / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:CC:STREAM	STREAM1 / STREAM2 / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:DISP	TEXT / DUMP / Q_LOG / FORMAT / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:MODE	HEX / BINARY / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:DUMP	0 to 258 / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:LOG	-50 to 50 / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:STREAM	STREAM1 / STREAM2 / ?
WO	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:CLEAR	None
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q1	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q2	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q3	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q4	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q5	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q6	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q7	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q8	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q9	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q10	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q11	OFF / ON / ?

r/w Limitation	Command	Parameter
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q12	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q13	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q14	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q15	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q16	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q17	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q18	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q19	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q20	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q21	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q22	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q23	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q24	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q25	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q26	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q27	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q28	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q29	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q30	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q31	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q32	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S1	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S2	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S3	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S4	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S5	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S6	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S7	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S8	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S9	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S10	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S11	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S12	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S13	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S14	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S15	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S16	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:USB:AUTO_NAME	OFF / ON / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:USB:FILE:STORE	None
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:TRIG:DISP	TEXT / DUMP / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:TRIG:MODE	HEX / BINARY / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:TRIG:SMPL	0 to 258 / ?

r/w Limitation	Command	Parameter
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:TRIG:STREAM	STREAM1 / STREAM2 / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:USER1:MODE	HEX / BINARY / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:USER1:DUMP	0 to 258 / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:USER1:STREAM	STREAM1 / STREAM2 / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:USER2:MODE	HEX / BINARY / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:USER2:DUMP	0 to 258 / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:USER2:STREAM	STREAM1 / STREAM2 / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:SMPTE:AFD:DISP	TEXT / DUMP / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:SMPTE:AFD:MODE	HEX / BINARY / ?
-	STS:ANCPKT:PKT_ANLYS:V_ANC:SMPTE:AFD:STREAM	STREAM1 / STREAM2 / ?
-	STS:ANCPKT:PKT_ANLYS:CSTM:ID_SET:DID	0 to 255 / ?
-	STS:ANCPKT:PKT_ANLYS:CSTM:ID_SET:SDID	-1 to 255 / ?
WO	STS:ANCPKT:PKT_ANLYS:CSTM:ID_SET:SET	None
-	STS:ANCPKT:PKT_ANLYS:CSTM:MODE	HEX / BINARY / ?
-	STS:ANCPKT:PKT_ANLYS:CSTM:YC	Y / C / ?
-	STS:ANCPKT:PKT_ANLYS:CSTM:STREAM	STREAM1 / STREAM2 / ?
-	STS:ANCPKT:PKT_ANLYS:CSTM:SMPL	0 to 258 / ?
-	STS:ANCVIEW:LINK_SELECT	A / B / C / D / ? * Supports links A: channel A, B: channel B, C: channel C, and D: channel D : when using 4K 3G QUAD LINK or 4K HD QUAD LINK Supports links A: channel A and B: channel B : when using 4K 3G DUAL LINK, 3G DUAL LINK, or HD DUAL LINK and channels A and B are selected Supports links A: channel C and B: channel D : when channels C and D are selected

r/w Limitation	Command	Parameter
-	STS:ANCPKT:LINK_SELECT	A / B / C / D / ? * Supports links A: channel A, B: channel B, C: channel C, and D: channel D : when using 4K 3G QUAD LINK or 4K HD QUAD LINK Supports links A: channel A and B: channel B : when using 4K 3G DUAL LINK, 3G DUAL LINK, or HD DUAL LINK and channels A and B are selected Supports links A: channel C and B: channel D : when channels C and D are selected

● ERROR SETUP1 TAB MENU(STATUS → STATUS SETUP) (*5)

r/w Limitation	Command	Parameter
-	STS:ERROR:SDI:COUNTER	SEC / FIELD / ?
-	STS:ERROR:SDI:TRS	OFF / ON / ?
-	STS:ERROR:SDI:HD_LINE	OFF / ON / ?
-	STS:ERROR:SDI:HD_CRC	OFF / ON / ?
-	STS:ERROR:SDI:SD_EDH	OFF / ON / ?
-	STS:ERROR:SDI:ILLEGAL_CODE	OFF / ON / ?
-	STS:ERROR:SDI:FREQ	OFF / ON / ?
-	STS:ERROR:SDI:CABLE	OFF / ON / ?
-	STS:ERROR:SDI:CABLE_3G	LS_5CFB / 1694A / ?
-	STS:ERROR:SDI:CABLE_HD	LS_5CFB / 1694A / ?
-	STS:ERROR:SDI:CABLE_SD	L_5C2V / SD_8281 / ?
-	STS:ERROR:SDI:CABLE_ERR_3G	10 to 105 / ?
-	STS:ERROR:SDI:CABLE_WAR_3G	10 to 105 / ?
-	STS:ERROR:SDI:CABLE_ERR_HD	5 to 130 / ?
-	STS:ERROR:SDI:CABLE_WAR_HD	5 to 130 / ?
-	STS:ERROR:SDI:CABLE_ERR_SD	50 to 300 / ?
-	STS:ERROR:SDI:CABLE_WAR_SD	50 to 300 / ?
WO	STS:SETUP:COMPLETE	None (must be executed after changing the tab menu)

*5 Execute STS:SETUP:COMPLETE after changing the setting.

● **ERROR SETUP2 TAB MENU (STATUS → STATUS SETUP) (*5)**

r/w Limitation	Command	Parameter
-	STS:ERROR:ANC:PARITY	OFF / ON / ?
-	STS:ERROR:ANC:CHECKSUM	OFF / ON / ?
-	STS:ERROR:AUDIO:BCH	OFF / ON / ?
-	STS:ERROR:AUDIO:DBN	OFF / ON / ?
-	STS:ERROR:AUDIO:PARITY	OFF / ON / ?
-	STS:ERROR:AUDIO:INHIBIT	OFF / ON / ?
-	STS:ERROR:AUDIO:SAMPLE	OFF / ON / ?
WO	STS:SETUP:COMPLETE	None (must be executed after changing the tab menu)

*5 Execute STS:SETUP:COMPLETE after changing the setting.

● **ERROR SETUP3 TAB MENU (STATUS → STATUS SETUP) (*5)**

r/w Limitation	Command	Parameter
-	STS:ERROR:GAMUT:LPF	OFF / HD1M_SD1M / HD28M_SD1M / ?
-	STS:ERROR:GAMUT	OFF / ON / ?
-	STS:ERROR:GAMUT:UPPER	908 to 1094 / ?
-	STS:ERROR:GAMUT:LOWER	-72 to 61 / ?
-	STS:ERROR:GAMUT:AREA	0 to 50 / ?
-	STS:ERROR:GAMUT:DURATION	1 to 60 / ?
-	STS:ERROR:C_GAMUT	OFF / ON / ?
-	STS:ERROR:C_GAMUT:SETUP	0% / 7.5 % / ?
-	STS:ERROR:C_GAMUT:UPPER	900 to 1350 / ?
-	STS:ERROR:C_GAMUT:LOWER	-400 to 200 / ?
-	STS:ERROR:C_GAMUT:AREA	0 to 50 / ?
-	STS:ERROR:C_GAMUT:DURATION	1 to 60 / ?
WO	STS:SETUP:COMPLETE	None (must be executed after changing the tab menu)

*5 Execute STS:SETUP:COMPLETE after changing the setting.

● **ERROR SETUP4 TAB MENU (STATUS → STATUS SETUP) (*5)**

r/w Limitation	Command	Parameter
-	STS:ERROR:FREEZE	OFF / ON / ?
-	STS:ERROR:FREEZE:UPPER	0 to 100 / ?
-	STS:ERROR:FREEZE:LOWER	0 to 100 / ?
-	STS:ERROR:FREEZE:LEFT	0 to 100 / ?
-	STS:ERROR:FREEZE:RIGHT	0 to 100 / ?
-	STS:ERROR:FREEZE:DURATION	2 to 300 / ?
-	STS:ERROR:BLACK	OFF / ON / ?
-	STS:ERROR:BLACK:LEVEL	0 to 100 / ?
-	STS:ERROR:BLACK:AREA	1 to 100 / ?

r/w Limitation	Command	Parameter
-	STS:ERROR:BLACK:DURATION	1 to 300 / ?
-	STS:ERROR:LEVEL	OFF / ON / ?
-	STS:ERROR:LEVEL:LUMA:UPPER	-51 to 766 / ?
-	STS:ERROR:LEVEL:LUMA:LOWER	-51 to 766 / ?
-	STS:ERROR:LEVEL:CHROMA:UPPER	-400 to 399 / ?
-	STS:ERROR:LEVEL:CHROMA:LOWER	-400 to 399 / ?
WO	STS:SETUP:COMPLETE	None (must be executed after changing the tab menu)

*5 Execute STS:SETUP:COMPLETE after changing the setting.

● STATUS Query measured or detected values

r/w Limitation	Command	Parameter
RO	STS:DATA:SIGNAL_A	? (Return value: DETECT(installed) / NO_SIGNAL(not installed)) * Signal available or not available only
RO	STS:DATA:SIGNAL_B	? (Return value: DETECT(installed) / NO_SIGNAL(not installed)) * Signal available or not available only
RO	STS:DATA:SIGNAL_C	? (Return value: DETECT(installed) / NO_SIGNAL(not installed)) * Signal available or not available only
RO	STS:DATA:SIGNAL_D	? (Return value: DETECT(installed) / NO_SIGNAL(not installed)) * Signal available or not available only
RO	STS:DATA:LINK_A	? * The returned values are the SDI signal type and the number of links. SD / HD / 3G-B-DL / 3G-A / 3G-B-DS / HD DUAL / HD QUAD / 3G-B-DS-DUAL / 3G-B-DL QUAD / 3G-A QUAD / 12G-TYPE1
RO	STS:DATA:LINK_B	? * The returned values are the SDI signal type and the number of links. SD / HD / 3G-B-DL / 3G-A / 3G-B-DS / HD DUAL / HD QUAD / 3G-B-DS-DUAL / 3G-B-DL QUAD / 3G-A QUAD / 12G-TYPE1
RO	STS:DATA:LINK_C	? * The returned values are the SDI signal type and the number of links. SD / HD / 3G-B-DL / 3G-A / 3G-B-DS / HD DUAL / HD QUAD / 3G-B-DS-DUAL / 3G-B-DL QUAD / 3G-A QUAD / 12G-TYPE1

r/w Limitation	Command	Parameter
RO	STS:DATA:LINK_D	? * The returned values are the SDI signal type and the number of links. SD / HD / 3G-B-DL / 3G-A / 3G-B-DS / HD DUAL / HD QUAD / 3G-B-DS-DUAL / 3G-B-DL QUAD / 3G-A QUAD / 12G-TYPE1
RO	STS:DATA:FORMAT_A	? (Return value: Resolution and frame rate) * Example: 3840×2160 /59.94P
RO	STS:DATA:FORMAT_B	? (Return value: Resolution and frame rate) * Example: 3840×2160 /59.94P
RO	STS:DATA:FORMAT_C	? (Return value: Resolution and frame rate) * Example: 3840×2160 /59.94P
RO	STS:DATA:FORMAT_D	? (Return value: Resolution and frame rate) * Example: 3840×2160 /59.94P
RO	STS:DATA:AUDIO_A	? (Return value: 1 / 2 / .. / 16(embedded audio channel display) * 1: 1ch to 16: 16ch, - : Channels without
RO	STS:DATA:AUDIO_B	? (Return value: 1 / 2 / .. / 16(embedded audio channel display) * 1: 1ch to 16: 16ch, - : Channels without
RO	STS:DATA:AUDIO_C	? (Return value: 1 / 2 / .. / 16(embedded audio channel display) * 1: 1ch to 16: 16ch, - : Channels without
RO	STS:DATA:AUDIO_D	? (Return value: 1 / 2 / .. / 16(embedded audio channel display) * 1: 1ch to 16: 16ch, - : Channels without
RO	STS:DATA:EXTREF_A	? (Return value: USER_REF / DEFAULT)
RO	STS:DATA:EXTREF_STAT_A	? (Return value: INT / 1A / 2A / 1C / 2C / LINKA / LINK1 / EXTHD / EXTBB / NOSIGNAL)
RO	STS:DATA:EXTREF_HTIME_A	? (Return value: time (us)) * Horizontal axis phase difference of channel A
RO	STS:DATA:EXTREF_HPIX_A	? (Return value: Number of samples) * Horizontal axis phase difference of channel A
RO	STS:DATA:EXTREF_VLINE_A	? (Return value: Number of lines) * Vertical axis phase difference of channel A
RO	STS:DATA:EXTREF_TOTAL_A	? (Return value: time (us)) * Total phase difference of horizontal and vertical axes of channel A
RO	STS:DATA:EXTREF_B	? (Return value: USER_REF / DEFAULT)
RO	STS:DATA:EXTREF_STAT_B	? (Return value: INT / 1A / 2A / 1C / 2C / LINKA / LINK1 / EXTHD / EXTBB / NOSIGNAL)
RO	STS:DATA:EXTREF_HTIME_B	? (Return value: time(us)) * Horizontal axis phase difference of channel B
RO	STS:DATA:EXTREF_HPIX_B	? (Return value: Number of samples) * Horizontal axis phase difference of channel B

r/w Limitation	Command	Parameter
RO	STS:DATA:EXTREF_VLINE_B	? (Return value: Number of lines) * Vertical axis phase difference of channel B
RO	STS:DATA:EXTREF_TOTAL_B	? (Return value: time (us)) * Total phase difference of horizontal and vertical axes of channel B
RO	STS:DATA:EXTREF_C	? (Return value: USER_REF / DEFAULT)
RO	STS:DATA:EXTREF_STAT_C	? (Return value: INT / 1A / 2A / 1C / 2C / LINKA / LINK1 / EXTHD / EXTBB / NOSIGNAL)
RO	STS:DATA:EXTREF_HTIME_C	? (Return value: time(us)) * Horizontal axis phase difference of channel C
RO	STS:DATA:EXTREF_HPIX_C	? (Return value: Number of samples) * Horizontal axis phase difference of channel C
RO	STS:DATA:EXTREF_VLINE_C	? (Return value: Number of lines) * Vertical axis phase difference of channel C
RO	STS:DATA:EXTREF_TOTAL_C	? (Return value: time (us)) * Total phase difference of horizontal and vertical axes of channel C
RO	STS:DATA:EXTREF_D	? (Return value: USER_REF / DEFAULT)
RO	STS:DATA:EXTREF_STAT_D	? (Return value: INT / 1A / 2A / 1C / 2C / LINKA / LINK1 / EXTHD / EXTBB / NOSIGNAL)
RO	STS:DATA:EXTREF_HTIME_D	? (Return value: time(us)) * Horizontal axis phase difference of channel D
RO	STS:DATA:EXTREF_HPIX_D	? (Return value: Number of samples) * Horizontal axis phase difference of channel D
RO	STS:DATA:EXTREF_VLINE_D	? (Return value: Number of lines) * Vertical axis phase difference of channel D
RO	STS:DATA:EXTREF_TOTAL_D	? (Return value: time (us)) * Total phase difference of horizontal and vertical axes of channel C
RO	STS:DATA:ANC:AUDIO_CTRL1	? (Return value: DETECT / MISSING)
RO	STS:DATA:ANC:AUDIO_CTRL2	? (Return value: DETECT / MISSING)
RO	STS:DATA:ANC:EDH	? (Return value: DETECT / MISSING)
RO	STS:DATA:ANC:LTC1	? (Return value: DETECT / MISSING)
RO	STS:DATA:ANC:LTC2	? (Return value: DETECT / MISSING)
RO	STS:DATA:ANC:VLTC1	? (Return value: DETECT / MISSING)
RO	STS:DATA:ANC:VLTC2	? (Return value: DETECT / MISSING)
RO	STS:DATA:ANC:PAYLOAD1	? (Return value: DETECT / MISSING)
RO	STS:DATA:ANC:PAYLOAD2	? (Return value: DETECT / MISSING)
RO	STS:DATA:ANC:AFD1	? (Return value: DETECT / MISSING)
RO	STS:DATA:ANC:AFD2	? (Return value: DETECT / MISSING)
RO	STS:DATA:ANC:JPN_CC1	? (Return value: DETECT / MISSING)
RO	STS:DATA:ANC:JPN_CC2	? (Return value: DETECT / MISSING)
RO	STS:DATA:ANC:JPN_CC3	? (Return value: DETECT / MISSING)
RO	STS:DATA:ANC:NETQ1	? (Return value: DETECT / MISSING)

r/w Limitation	Command	Parameter
RO	STS:DATA:ANC:NETQ2	? (Return value: DETECT / MISSING)
RO	STS:DATA:ANC:TRIGGER	? (Return value: DETECT / MISSING)
RO	STS:DATA:ANC:USER1	? (Return value: DETECT / MISSING)
RO	STS:DATA:ANC:USER2	? (Return value: DETECT / MISSING)
RO	STS:DATA:ANC:PKT:PAYLOAD	? (Return value: Payload ID (4 byte display)) * Example: 8A 4A 20 01
RO	STS:DATA:ANC:PKT:ARIB:NETQ:STATION	? (Return value: Station code)
RO	STS:DATA:ANC:PKT:ARIB:NETQ:VCURR	? (Return value: Current video format)
RO	STS:DATA:ANC:PKT:ARIB:NETQ:VNEXT	? (Return value: Next video format)
RO	STS:DATA:ANC:PKT:ARIB:NETQ:ACURR	? (Return value: Current audio mode)
RO	STS:DATA:ANC:PKT:ARIB:NETQ:ANEXT	? (Return value: Next audio mode)
RO	STS:DATA:ANC:PKT:ARIB:NETQ:DCURR	? (Return value: Current audio downmix mode)
RO	STS:DATA:ANC:PKT:ARIB:NETQ:DNEXT	? (Return value: Next audio downmix mode)
RO	STS:DATA:ANC:PKT:SMPTE:AFD:CODE	? (Return value: AFD code)
RO	STS:DATA:ANC:PKT:SMPTE:AFD:FRAME	? (Return value: Aspect ratio)
RO	STS:DATA:ANC:PKT:SMPTE:AFD:BAR:FLG	? (Return value: AFD bar data flag)
RO	STS:DATA:ANC:PKT:SMPTE:AFD:BAR:VAL1	? (Return value: AFD bar data 1)
RO	STS:DATA:ANC:PKT:SMPTE:AFD:BAR:VAL2	? (Return value: AFD bar data 2)

● **EYE KEY**

r/w Limitation	Command	Parameter
WO	EYE	None
-	EYE:EYE:INTEN	-128 to 127 / ?
-	EYE:EYE:COLOR	WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE / ?
-	EYE:EYE:SCALE:INTEN	-8 to 7 / ?
-	EYE:EYE:SCALE:COLOR	WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE / ?
-	EYE:MODE	EYE / JITTER / ?
-	EYE:EYE:SETUP:GAIN:VAR	CAL / VAR / ?
-	EYE:EYE:SETUP:GAIN:VAL	50 to 200 / ? * 50: x0.50 to 200: x2.00
-	EYE:EYE:SETUP:SWEEP	2UI / 4UI / 16UI / ?
-	EYE:EYE:SETUP:FILTER	100KHZ / 1KHZ / 100HZ / 10HZ / TIMING / ALIGNMENT / ?
-	EYE:EYE:SETUP:CURSOR	OFF / ON
-	EYE:EYE:SETUP:CURSOR:XY_SEL	X / Y / TR_TF / ?
-	EYE:EYE:SETUP:CURSOR:FD	REF / DELTA / TRACK / ?
WO	EYE:EYE:SETUP:CURSOR:REFSET	None
WO	EYE:EYE:SETUP:CURSOR:RESET	None
WO	EYE:JIT:SETUP:CURSOR:RESET	None
-	EYE:EYE:SETUP:CURSOR:X:UNIT	SEC / HZ / UI_PP / ?
-	EYE:EYE:SETUP:CURSOR:X:REF	0 to 1710 / ?
WO	EYE:EYE:SETUP:CURSOR:X:TRACK	-1710 to 1710
-	EYE:EYE:SETUP:CURSOR:X:DELTA	0 to 1710 / ?
-	EYE:EYE:SETUP:CURSOR:Y:UNIT	V / P / ?
-	EYE:EYE:SETUP:CURSOR:Y:REF	0 to 900 / ?
WO	EYE:EYE:SETUP:CURSOR:Y:TRACK	-900 to 900
-	EYE:EYE:SETUP:CURSOR:Y:DELTA	0 to 900 / ?
-	EYE:JIT:INTEN	-128 to 127 / ?
-	EYE:JIT:COLOR	WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE / ?
-	EYE:JIT:SCALE:INTEN	-8 to 7 / ?
-	EYE:JIT:SCALE:COLOR	WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE / ?
-	EYE:JIT:SETUP:GAIN_SWEEP:MAG	X1 / X2 / X8 / ?
-	EYE:JIT:SETUP:GAIN_SWEEP:12G:MAG	X1 / X2 / X4 / X16 / ?
-	EYE:JIT:SETUP:GAIN_SWEEP:SWEEP	1H / 2H / 1V / 2V / ?
-	EYE:JIT:SETUP:FILTER	100KHZ / 1KHZ / 100HZ / 10HZ / TIMING / ALIGNMENT / ?
-	EYE:JIT:SETUP:PEAK_HOLD	OFF / ON
WO	EYE:JIT:SETUP:PEAK_CLEAR	None
-	EYE:JIT:SETUP:CURSOR	OFF / ON
-	EYE:JIT:SETUP:CURSOR:XY_SEL	X / Y / ?

r/w Limitation	Command	Parameter
-	EYE:JIT:SETUP:CURSOR:FD	REF / DELTA / TRACK / ?
-	EYE:JIT:SETUP:CURSOR:X:UNIT	SEC / HZ / ?
-	EYE:JIT:SETUP:CURSOR:X:REF	0 to 1710 / ?
WO	EYE:JIT:SETUP:CURSOR:X:TRACK	-1710 to 1710
-	EYE:JIT:SETUP:CURSOR:X:DELTA	0 to 1710 / ?
-	EYE:JIT:SETUP:CURSOR:Y:UNIT	SEC / UI_PP / ?
-	EYE:JIT:SETUP:CURSOR:Y:REF	0 to 624 / ?
WO	EYE:JIT:SETUP:CURSOR:Y:TRACK	-624 to 624
-	EYE:JIT:SETUP:CURSOR:Y:DELTA	0 to 624 / ?
-	EYE:LINK_SEL:HD_DLINK:AB	A / B / ? * Displayed link selection for HD DUAL LINK
-	EYE:LINK_SEL:HD_DLINK:CD	C / D / ? * Displayed link selection for HD DUAL LINK
-	EYE:LINK_SEL:4K3G_DLINK:AB	A / B / ? * Displayed link selection for 4K 3G DUAL LINK / 3G DHUAL LINK
-	EYE:LINK_SEL:4K3G_DLINK:CD	C / D / ? * Displayed link selection for 4K 3G DUAL LINK / 3G DHUAL LINK
-	EYE:LINK_SEL:QLINK	A / B / C / D / ? * Displayed link selection for 4K 3G QUAD LINK / 4K HD QUAD LINK

● 12G-SDI ERROR SETUP TAB MENU (EYE → ERROR SETUP) (*6)

r/w Limitation	Command	Parameter
-	EYE:ERROR:12G:AMP	OFF / ON / ?
-	EYE:ERROR:12G:AMP:UPPER	80 to 140 / ?
-	EYE:ERROR:12G:AMP:LOWER	40 to 100 / ?
-	EYE:ERROR:12G:RISE	OFF / ON / ?
-	EYE:ERROR:12G:RISE:MAX	40 to 140 / ?
-	EYE:ERROR:12G:FALL	OFF / ON / ?
-	EYE:ERROR:12G:FALL:MAX	40 to 140 / ?
-	EYE:ERROR:12G:DELTA	OFF / ON / ?
-	EYE:ERROR:12G:DELTA:MAX	40 to 140 / ?
-	EYE:ERROR:12G:TIMING_JIT	OFF / ON / ?
-	EYE:ERROR:12G:TIMING_JIT:MAX	10 to 200 / ?
-	EYE:ERROR:12G:CURRENT_JIT	OFF / ON / ?
-	EYE:ERROR:12G:CURRENT_JIT:MAX	10 to 200 / ?
-	EYE:ERROR:12G:OVERSHOOT_RISE	OFF / ON / ?
-	EYE:ERROR:12G:OVERSHOOT_RISE:MAX	0 to 200 / ?
-	EYE:ERROR:12G:OVERSHOOT_FALL	OFF / ON / ?
-	EYE:ERROR:12G:OVERSHOOT_FALL:MAX	0 to 200 / ?

r/w Limitation	Command	Parameter
WO	EYE:ERROR:SETUP:COMPLETE	None (must be executed after changing the tab menu)

*6 Execute EYE:ERROR:SETUP:COMPLETE after changing the setting.

● 3G-SDI ERROR SETUP TAB MENU (EYE → ERROR SETUP) (*6)

r/w Limitation	Command	Parameter
-	EYE:ERROR:3G:AMP	OFF / ON / ?
-	EYE:ERROR:3G:AMP:UPPER	80 to 140 / ?
-	EYE:ERROR:3G:AMP:LOWER	40 to 100 / ?
-	EYE:ERROR:3G:RISE	OFF / ON / ?
-	EYE:ERROR:3G:RISE:MAX	40 to 140 / ?
-	EYE:ERROR:3G:FALL	OFF / ON / ?
-	EYE:ERROR:3G:FALL:MAX	40 to 140 / ?
-	EYE:ERROR:3G:DELTA	OFF / ON / ?
-	EYE:ERROR:3G:DELTA:MAX	40 to 140 / ?
-	EYE:ERROR:3G:TIMING_JIT	OFF / ON / ?
-	EYE:ERROR:3G:TIMING_JIT:MAX	10 to 200 / ?
-	EYE:ERROR:3G:CURRENT_JIT	OFF / ON / ?
-	EYE:ERROR:3G:CURRENT_JIT:MAX	10 to 200 / ?
-	EYE:ERROR:3G:OVERSHOOT_RISE	OFF / ON / ?
-	EYE:ERROR:3G:OVERSHOOT_RISE:MAX	0 to 200 / ?
-	EYE:ERROR:3G:OVERSHOOT_FALL	OFF / ON / ?
-	EYE:ERROR:3G:OVERSHOOT_FALL:MAX	0 to 200 / ?
WO	EYE:ERROR:SETUP:COMPLETE	None (must be executed after changing the tab menu)

*6 Execute EYE:ERROR:SETUP:COMPLETE after changing the setting.

● HD-SDI ERROR SETUP TAB MENU (EYE → ERROR SETUP) (*6)

r/w Limitation	Command	Parameter
-	EYE:ERROR:HD:AMP	OFF / ON / ?
-	EYE:ERROR:HD:AMP:UPPER	80 to 140 / ?
-	EYE:ERROR:HD:AMP:LOWER	40 to 100 / ?
-	EYE:ERROR:HD:RISE	OFF / ON / ?
-	EYE:ERROR:HD:RISE:MAX	40 to 140 / ?
-	EYE:ERROR:HD:FALL	OFF / ON / ?
-	EYE:ERROR:HD:FALL:MAX	40 to 140 / ?
-	EYE:ERROR:HD:DELTA	OFF / ON / ?
-	EYE:ERROR:HD:DELTA:MAX	40 to 140 / ?
-	EYE:ERROR:HD:TIMING_JIT	OFF / ON / ?
-	EYE:ERROR:HD:TIMING_JIT:MAX	10 to 200 / ?
-	EYE:ERROR:HD:CURRENT_JIT	OFF / ON / ?

r/w Limitation	Command	Parameter
-	EYE:ERROR:HD:CURRENT_JIT:MAX	10 to 200 / ?
-	EYE:ERROR:HD:OVERSHOOT_RISE	OFF / ON / ?
-	EYE:ERROR:HD:OVERSHOOT_RISE:MAX	0 to 200 / ?
-	EYE:ERROR:HD:OVERSHOOT_FALL	OFF / ON / ?
-	EYE:ERROR:HD:OVERSHOOT_FALL:MAX	0 to 200 / ?
WO	EYE:ERROR:SETUP:COMPLETE	None (must be executed after changing the tab menu)

*6 Execute EYE:ERROR:SETUP:COMPLETE after changing the setting.

● SD-SDI ERROR SETUP TAB MENU (EYE → ERROR SETUP) (*6)

r/w Limitation	Command	Parameter
-	EYE:ERROR:SD:AMP	OFF / ON / ?
-	EYE:ERROR:SD:AMP:UPPER	80 to 140 / ?
-	EYE:ERROR:SD:AMP:LOWER	40 to 100 / ?
-	EYE:ERROR:SD:RISE	OFF / ON / ?
-	EYE:ERROR:SD:RISE:MAX	40 to 140 / ?
-	EYE:ERROR:SD:FALL	OFF / ON / ?
-	EYE:ERROR:SD:FALL:MAX	40 to 140 / ?
-	EYE:ERROR:SD:DELTA	OFF / ON / ?
-	EYE:ERROR:SD:DELTA:MAX	40 to 140 / ?
-	EYE:ERROR:SD:TIMING_JIT	OFF / ON / ?
-	EYE:ERROR:SD:TIMING_JIT:MAX	10 to 200 / ?
-	EYE:ERROR:SD:CURRENT_JIT	OFF / ON / ?
-	EYE:ERROR:SD:CURRENT_JIT:MAX	10 to 200 / ?
-	EYE:ERROR:SD:OVERSHOOT_RISE	OFF / ON / ?
-	EYE:ERROR:SD:OVERSHOOT_RISE:MAX	0 to 200 / ?
-	EYE:ERROR:SD:OVERSHOOT_FALL	OFF / ON / ?
-	EYE:ERROR:SD:OVERSHOOT_FALL:MAX	0 to 200 / ?
-	EYE:EYE:OFFSET:X	-32768 to 32767 / ?
-	EYE:EYE:OFFSET:Y	-32768 to 32767 / ?
-	EYE:JIT:OFFSET:X	-32768 to 32767 / ?
-	EYE:JIT:OFFSET:Y	-32768 to 32767 / ?
-	EYE:TRIGGER	RUN / STOP / ?
WO	EYE:ERROR:SETUP:COMPLETE	None (must be executed after changing the tab menu)

*6 Execute EYE:ERROR:SETUP:COMPLETE after changing the setting.

● **EYE Query measured or detected values**

r/w Limitation	Command	Parameter
RO	EYE:DATA:AMP	?
RO	EYE:DATA:TR	?
RO	EYE:DATA:TF	?
RO	EYE:DATA:TJ	?
RO	EYE:DATA:CJ	?
RO	EYE:DATA:OR	?
RO	EYE:DATA:OF	?

● **AUDIO KEY**

r/w Limitation	Command	Parameter
WO	AUDIO	None
-	AUDIO:DISPLAY_MODE	LISSAJOU / SURROUND / METER / STATUS / ?
-	AUDIO:METER:RANGE	60DBFS / 90DBFS / MAG / ?
-	AUDIO:METER:RESPONSE	TRUEPEAK / PPM / VU / ?
-	AUDIO:METER:RESPONSE:PPM	PPM_I / PPM_II / ?
-	AUDIO:METER:RESPONSE:VU	TRUE / PPM_I / PPM_II / ?
-	AUDIO:METER:PEAK_HOLD	0 / 5 / 10 / 15 / 20 / 25 / 30 / 35 / 40 / 45 / 50 / 55 / ? * 0: 0.0, 5: 0.5, to 50: 5.0, 55: HOLD
-	AUDIO:METER:LEVEL_SET:OVER_LEVEL_DB	-400 to 0 / ? * -400: -40.0 to 0: 0.0
-	AUDIO:METER:LEVEL_SET:WARNING_LEVEL_DB	-400 to 0 / ? * -400: -40.0 to 0: 0.0
-	AUDIO:METER:LEVEL_SET:REF_LEVEL_DB	-400 to 0 / ? * -400: -40.0 to 0: 0.0
-	AUDIO:LISSAJOU:LISSAJOU:INTEN	-8 to 7 / ?
-	AUDIO:LISSAJOU:SCALE:INTEN	-8 to 7 / ?
-	AUDIO:LISSAJOU:DISPLAY	MULTI / SINGLE / ?
-	AUDIO:LISSAJOU:FORM	X_Y / MATRIX / ?
-	AUDIO:LISSAJOU:AUTO_GAIN	OFF / ON / ?
-	AUDIO:SURROUND:SURROUND:INTEN	-8 to 7 / ?
-	AUDIO:SURROUND:SCALE:INTEN	-8 to 7 / ?
-	AUDIO:SURROUND:5.1	NORMAL / PHANTOM / ?
-	AUDIO:SURROUND:AUTO_GAIN	OFF / ON / ?
-	AUDIO:DOLBY:META:PROGRAM	PRM1 / PRM2 / PRM3 / PRM4 / PRM5 / PRM6 / PRM7 / PRM8 / ?
-	AUDIO:STATUS:CH_STATUS	1 to 16 / ?
-	AUDIO:STATUS:CH_STATUS_SIMUL	A1 to A16 / B1 to B16 / C1 to C16 / D1 to D16 / ?
-	AUDIO:STATUS:CH_STATUS_DOLBY	1 to 16 / ?
-	AUDIO:STATUS:CH_STATUS_EXT	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?

r/w Limitation	Command	Parameter
-	AUDIO:STATUS:CH_STATUS:ALIGN	LSB 1st / MSB 1st / ?
-	AUDIO:STATUS:USER_BIT	1 to 16 / ?
-	AUDIO:STATUS:USER_BIT_SIMUL	A1 to A16 / B1 to B16 / C1 to C16 / D1 to D16 / ?
-	AUDIO:STATUS:USER_BIT_DOLBY	1 to 16 / ?
-	AUDIO:STATUS:USER_BIT_EXT	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:STATUS:USER_BIT:ALIGN	LSB / MSB / ?
WO	AUDIO:STATUS:ERROR_RESET	None
-	AUDIO:PHONES:VOLUME	0 to 63 / ?
RO	AUDIO:DOLBY:DETECT	? (Return value: E / D / DP)

● AUDIO MAPPING (AUDIO → MAPPING) (*7)

r/w Limitation	Command	Parameter
-	AUDIO:MAPPING:INPUT	SDI / EXT DIGI / ?
-	AUDIO:MAPPING:LINK_SELECT	1 / 2 / 3 / 4 / ? * Supports links 1: channel A, 2: channel B, 3: channel C, and 4: channel D : when using 4K 3G QUAD LINK or 4K HD QUAD LINK Supports links 1: channel A and 2: channel B : when using 4K 3G DUAL LINK, 3G DUAL LINK, or HD DUAL LINK and channels A and B are selected Supports links 1: channel C and 2: channel D : when channels C and D are selected
-	AUDIO:MAPPING:STREAM:SELECT	STREAM1 / STREAM2 / ?
-	AUDIO:MAPPING:CH_MODE	8ch / 16ch / ?
-	AUDIO:MAPPING:SOURCE:SDI:1ST_GRP	G1 / G2 / G3 / G4 / ?
-	AUDIO:MAPPING:SOURCE:SDI:2ND_GRP	G1 / G2 / G3 / G4 / ?
-	AUDIO:MAPPING:SOURCE:SDI:3RD_GRP	G1 / G2 / G3 / G4 / ?
-	AUDIO:MAPPING:SOURCE:SDI:4TH_GRP	G1 / G2 / G3 / G4 / ?
-	AUDIO:MAPPING:PHONES:L	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / LT / ?
-	AUDIO:MAPPING:PHONES:R	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / RT / ?
-	AUDIO:MAPPING:DOLBY	OFF / ON / ?
-	AUDIO:MAPPING:DOLBY:E:LINE:POS	OFF / ON / ?
-	AUDIO:MAPPING:DOLBY:E:LINE:SELECT	VALID / IDEAL / CUSTOM / ?

r/w Limitation	Command	Parameter
-	AUDIO:MAPPING:DOLBY:E:EARLIEST	8 to 104 / ?
-	AUDIO:MAPPING:DOLBY:E:LATEST	9 to 105 / ?
-	AUDIO:MAPPING:LISSAJOU:SINGLE_L	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / LT / ?
-	AUDIO:MAPPING:LISSAJOU:SINGLE_R	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / RT / ?
-	AUDIO:MAPPING:LISSAJOU:MULTI_L1	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:MULTI_R1	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:MULTI_L2	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:MULTI_R2	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:MULTI_L3	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:MULTI_R3	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:MULTI_L4	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:MULTI_R4	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:MULTI_L5	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:MULTI_R5	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:MULTI_L6	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:MULTI_R6	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?

r/w Limitation	Command	Parameter
-	AUDIO:MAPPING:LISSAJOU:MULTI_L7	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:MULTI_R7	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:MULTI_L8	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:MULTI_R8	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?
-	AUDIO:MAPPING:SURROUND:CH:L	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?
-	AUDIO:MAPPING:SURROUND:CH:R	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?
-	AUDIO:MAPPING:SURROUND:CH:C	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?
-	AUDIO:MAPPING:SURROUND:CH:LFE	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?
-	AUDIO:MAPPING:SURROUND:CH:LS	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?
-	AUDIO:MAPPING:SURROUND:CH:RS	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?
-	AUDIO:MAPPING:SURROUND:CH:LL	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?
-	AUDIO:MAPPING:SURROUND:CH:RR	CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11 / CH12 / CH13 / CH14 / CH15 / CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:DOLBY:SINGLE_L	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / LT / ?
-	AUDIO:MAPPING:LISSAJOU:DOLBY:SINGLE_R	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / RT / ?
-	AUDIO:MAPPING:LISSAJOU:DOLBY:MULTI_L1	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:LISSAJOU:DOLBY:MULTI_R1	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:LISSAJOU:DOLBY:MULTI_L2	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:LISSAJOU:DOLBY:MULTI_R2	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:LISSAJOU:DOLBY:MULTI_L3	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?

r/w Limitation	Command	Parameter
-	AUDIO:MAPPING:LISSAJOU:DOLBY:MULTI_R3	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:LISSAJOU:DOLBY:MULTI_L4	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:LISSAJOU:DOLBY:MULTI_R4	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:SURROUND:CH:DOLBY:L	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:SURROUND:CH:DOLBY:R	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:SURROUND:CH:DOLBY:C	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:SURROUND:CH:DOLBY:LFE	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:SURROUND:CH:DOLBY:LS	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:SURROUND:CH:DOLBY:RS	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:SURROUND:CH:DOLBY:LL	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:SURROUND:CH:DOLBY:RR	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:PHONES:DOLBY:L	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / DAUX / ?
-	AUDIO:MAPPING:PHONES:DOLBY:R	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / DAUX / ?
-	AUDIO:MAPPING:SOURCE:SIM:SDI:1ST_GRP	G1 / G2 / G3 / G4 / ? * 0: GROUP1 / 1: GROUP2 / 2: GROUP3 / 3: GROUP4
-	AUDIO:MAPPING:SOURCE:SIM:SDI:2ND_GRP	G1 / G2 / G3 / G4 / ? * 0: GROUP1 / 1: GROUP2 / 2: GROUP3 / 3: GROUP4
-	AUDIO:MAPPING:SOURCE:SIM:SDI:3RD_GRP	G1 / G2 / G3 / G4 / ? * 0: GROUP1 / 1: GROUP2 / 2: GROUP3 / 3: GROUP4
-	AUDIO:MAPPING:SOURCE:SIM:SDI:4TH_GRP	G1 / G2 / G3 / G4 / ? * 0: GROUP1 / 1: GROUP2 / 2: GROUP3 / 3: GROUP4
-	AUDIO:MAPPING:SOURCE:SIM:SDI:1ST_GRP_CH	SDI_A / SDI_B / SDI_C / SDI_D / ?
-	AUDIO:MAPPING:SOURCE:SIM:SDI:2ND_GRP_CH	SDI_A / SDI_B / SDI_C / SDI_D / ?
-	AUDIO:MAPPING:SOURCE:SIM:SDI:3RD_GRP_CH	SDI_A / SDI_B / SDI_C / SDI_D / ?
-	AUDIO:MAPPING:SOURCE:SIM:SDI:4TH_GRP_CH	SDI_A / SDI_B / SDI_C / SDI_D / ?
-	AUDIO:MAPPING:LISSAJOU:SIM:MULTI_L1	A:CH1 to A:CH16 / B:CH1 to B:CH16 / C:CH1 to C:CH16 /D:CH1 to D:CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:SIM:MULTI_R1	A:CH1 to A:CH16 / B:CH1 to B:CH16 / C:CH1 to C:CH16 /D:CH1 to D:CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:SIM:MULTI_L2	A:CH1 to A:CH16 / B:CH1 to B:CH16 / C:CH1 to C:CH16 /D:CH1 to D:CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:SIM:MULTI_R2	A:CH1 to A:CH16 / B:CH1 to B:CH16 / C:CH1 to C:CH16 /D:CH1 to D:CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:SIM:MULTI_L3	A:CH1 to A:CH16 / B:CH1 to B:CH16 / C:CH1 to C:CH16 /D:CH1 to D:CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:SIM:MULTI_R3	A:CH1 to A:CH16 / B:CH1 to B:CH16 / C:CH1 to C:CH16 /D:CH1 to D:CH16 / ?

r/w Limitation	Command	Parameter
-	AUDIO:MAPPING:LISSAJOU:SIM:MULTI_L4	A:CH1 to A:CH16 / B:CH1 to B:CH16 / C:CH1 to C:CH16 /D:CH1 to D:CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:SIM:MULTI_R4	A:CH1 to A:CH16 / B:CH1 to B:CH16 / C:CH1 to C:CH16 /D:CH1 to D:CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:SIM:MULTI_L5	A:CH1 to A:CH16 / B:CH1 to B:CH16 / C:CH1 to C:CH16 /D:CH1 to D:CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:SIM:MULTI_R5	A:CH1 to A:CH16 / B:CH1 to B:CH16 / C:CH1 to C:CH16 /D:CH1 to D:CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:SIM:MULTI_L6	A:CH1 to A:CH16 / B:CH1 to B:CH16 / C:CH1 to C:CH16 /D:CH1 to D:CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:SIM:MULTI_R6	A:CH1 to A:CH16 / B:CH1 to B:CH16 / C:CH1 to C:CH16 /D:CH1 to D:CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:SIM:MULTI_L7	A:CH1 to A:CH16 / B:CH1 to B:CH16 / C:CH1 to C:CH16 /D:CH1 to D:CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:SIM:MULTI_R7	A:CH1 to A:CH16 / B:CH1 to B:CH16 / C:CH1 to C:CH16 /D:CH1 to D:CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:SIM:MULTI_L8	A:CH1 to A:CH16 / B:CH1 to B:CH16 / C:CH1 to C:CH16 /D:CH1 to D:CH16 / ?
-	AUDIO:MAPPING:LISSAJOU:SIM:MULTI_R8	A:CH1 to A:CH16 / B:CH1 to B:CH16 / C:CH1 to C:CH16 /D:CH1 to D:CH16 / ?
-	AUDIO:MAPPING:SIM:PHONES:L	A:CH1 to A:CH16 / B:CH1 to B:CH16 / C:CH1 to C:CH16 /D:CH1 to D:CH16 / ?
-	AUDIO:MAPPING:SIM:PHONES:R	A:CH1 to A:CH16 / B:CH1 to B:CH16 / C:CH1 to C:CH16 /D:CH1 to D:CH16 / ?
-	AUDIO:MAPPING:SOURCE:EXT:GRP	A / B / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:SINGLE_L	A:CH1 to A:CH8 / B:CH1 to B:CH8 / LT / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:SINGLE_R	A:CH1 to A:CH8 / B:CH1 to B:CH8 / RT / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:MULTI_L1	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:MULTI_R1	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:MULTI_L2	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:MULTI_R2	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:MULTI_L3	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:MULTI_R3	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:MULTI_L4	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:MULTI_R4	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:MULTI_L5	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:MULTI_R5	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:MULTI_L6	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:MULTI_R6	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:MULTI_L7	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:MULTI_R7	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:MULTI_L8	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:MULTI_R8	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:MAPPING:EXT:SURROUND:CH:L	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?

r/w Limitation	Command	Parameter
-	AUDIO:MAPPING:EXT:SURROUND:CH:R	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:MAPPING:EXT:SURROUND:CH:C	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:MAPPING:EXT:SURROUND:CH:LFE	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:MAPPING:EXT:SURROUND:CH:LS	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:MAPPING:EXT:SURROUND:CH:RS	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:MAPPING:EXT:SURROUND:CH:LL	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:MAPPING:EXT:SURROUND:CH:RR	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
-	AUDIO:MAPPING:EXT:PHONES:L	A:CH1 to A:CH8 / B:CH1 to B:CH8 / LT / ?
-	AUDIO:MAPPING:EXT:PHONES:R	A:CH1 to A:CH8 / B:CH1 to B:CH8 / RT / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:DOLBY:SINGLE_L	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / LT / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:DOLBY:SINGLE_R	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / RT / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:DOLBY:MULTI_L1	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:DOLBY:MULTI_R1	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:DOLBY:MULTI_L2	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:DOLBY:MULTI_R2	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:DOLBY:MULTI_L3	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:DOLBY:MULTI_R3	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:DOLBY:MULTI_L4	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:EXT:LISSAJOU:DOLBY:MULTI_R4	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:EXT:SURROUND:CH:DOLBY:L	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:EXT:SURROUND:CH:DOLBY:R	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:EXT:SURROUND:CH:DOLBY:C	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:EXT:SURROUND:CH:DOLBY:LFE	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:EXT:SURROUND:CH:DOLBY:LS	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:EXT:SURROUND:CH:DOLBY:RS	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:EXT:SURROUND:CH:DOLBY:LL	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:EXT:SURROUND:CH:DOLBY:RR	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / ?
-	AUDIO:MAPPING:EXT:PHONES:DOLBY:L	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / DAUX / ?
-	AUDIO:MAPPING:EXT:PHONES:DOLBY:R	D1 / D2 / D3 / D4 / D5 / D6 / D7 / D8 / DAUX / ?
WO	AUDIO:MAPPING:MAPPING_COMPLETE	None (must be executed after changing the tab menu)

*7 Execute AUDIO:MAPPING:MAPPING_COMPLETE after changing the setting.

● DOLBY SETTING (AUDIO → MAPPING) (*7)

r/w Limitation	Command	Parameter
-	AUDIO:MAPPING:DOLBY:GROUP	CH_1_2 / CH_3_4 / CH_5_6 / CH_7_8 / CH_9_10 / CH11_12 / CH13_14 / CH15_16 / ?
-	AUDIO:MAPPING:DOLBY:E:ONAIR	OFF / ON / ?

-	AUDIO:MAPPING:DOLBY:E:DRC:MAIN	BYPASS / DIALNORM / LINE / RF / ?
-	AUDIO:MAPPING:DOLBY:E:DRC:AUX	BYPASS / DIALNORM / LINE / RF / ?
-	AUDIO:MAPPING:DOLBY:D:DRC:MAIN	DIALNORM / LINE / RF / ?
-	AUDIO:MAPPING:DOLBY:D:DRC:AUX	DIALNORM / LINE / RF / ?
-	AUDIO:MAPPING:DOLBY:D:PROLOGIC	OFF / ON / ?
-	AUDIO:MAPPING:DOLBY:D:DOWNMIX	AUTO / LT_RT / LO_RO / PROLOGIC_II / PROLOGIC_IIP / ?
-	AUDIO:MAPPING:DOLBY:MIX	OFF / ON / ?
WO	AUDIO:MAPPING:MAPPING_COMPLETE	None (must be executed after changing the tab menu)

*7 Execute AUDIO:MAPPING:MAPPING_COMPLETE after changing the setting.

● ERROR SETUP (AUDIO → ERROR SETUP) (*8)

r/w Limitation	Command	Parameter
-	AUDIO:ERROR_SETUP:LEVEL_OVER	OFF / ON / ?
-	AUDIO:ERROR_SETUP:CLIP	OFF / ON / ?
-	AUDIO:ERROR_SETUP:MUTE	OFF / ON / ?
-	AUDIO:ERROR_SETUP:PARITY	OFF / ON / ?
-	AUDIO:ERROR_SETUP:VALIDITY	OFF / ON / ?
-	AUDIO:ERROR_SETUP:CRC	OFF / ON / ?
-	AUDIO:ERROR_SETUP:CODE_VIOLATION	OFF / ON / ?
-	AUDIO:ERROR_SETUP:CLIP:DURATION	1 to 100 / ?
-	AUDIO:ERROR_SETUP:MUTE:DURATION	1 to 5000 / ?
-	AUDIO:ERROR_SETUP:METER:CLIP	OFF / ON / ?
-	AUDIO:ERROR_SETUP:METER:MUTE	OFF / ON / ?
-	AUDIO:ERROR_SETUP:METER:E_ACMOD	OFF / ON / ?
WO	AUDIO:ERROR_SETUP:COMPLETE	None (must be executed after changing the tab menu)

*8 Execute AUDIO:ERROR_SETUP:COMPLETE after changing the setting.

● **AUDIO Query measured or detected values**

r/w Limitation	Command	Parameter
RO	AUDIO:DATA:STATUS:LEVEL:CH1	?
RO	AUDIO:DATA:STATUS:LEVEL:CH2	?
RO	AUDIO:DATA:STATUS:LEVEL:CH3	?
RO	AUDIO:DATA:STATUS:LEVEL:CH4	?
RO	AUDIO:DATA:STATUS:LEVEL:CH5	?
RO	AUDIO:DATA:STATUS:LEVEL:CH6	?
RO	AUDIO:DATA:STATUS:LEVEL:CH7	?
RO	AUDIO:DATA:STATUS:LEVEL:CH8	?
RO	AUDIO:DATA:STATUS:LEVEL:CH9	?
RO	AUDIO:DATA:STATUS:LEVEL:CH10	?
RO	AUDIO:DATA:STATUS:LEVEL:CH11	?
RO	AUDIO:DATA:STATUS:LEVEL:CH12	?
RO	AUDIO:DATA:STATUS:LEVEL:CH13	?
RO	AUDIO:DATA:STATUS:LEVEL:CH14	?
RO	AUDIO:DATA:STATUS:LEVEL:CH15	?
RO	AUDIO:DATA:STATUS:LEVEL:CH16	?

10.2 FTP

The files that are generated by the LV 5490 can be transferred to a PC connected to the same network.

10.2.1 Procedure

1. **Configure the Ethernet settings on the LV 5490's ETHERNET SETUP tab.**

   Set the IP Address, and set FTP Server Select to ON.

   Reference 6.2.2, "Configuring Ethernet Settings"

   SYS → F•2 SYSTEM SETUP → F•2 PREV TAB or F•3 NEXT TAB →

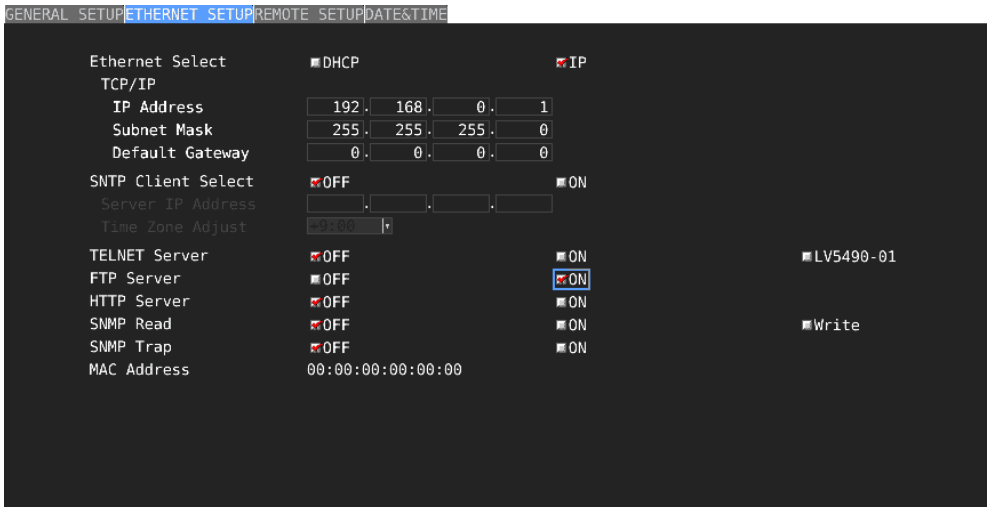


Figure 10-2 ETHERNET SETUP tab

2. **Press F•1 COMPLETE.**
3. **Connect the LV 5490's Ethernet port to the network.**
4. **On the PC, start an FTP client.**

   On Windows 7, on the taskbar, click Start, and then click Run. Type "FTP" and the IP address that you set in step 1. Then, click OK.

5. **Type the user name and password.**

   The user name and password are "LV5490". Use uppercase for all characters. When the user name and password are entered correctly, "ftp>" appears.

```
Connected to ***.***.***.***.
220 Walcome to LV5490 FTP service.
User (***.***.***.***:(none)): LV5490 .....user name
331 Please specify the password.
Password: LV5490 .....password (The password is not actually displayed.)
230 Login successful
ftp>
```

6. Enter FTP commands.

Enter commands while referring to sections 10.2.2, "How to Enter Commands," and 10.2.3, "FTP Commands." You must generate files using the TELNET "MAKE" command before you use FTP commands.
To end an FTP session, type “bye.”

```
ftp> bye
```

10.2.2 How to Enter Commands

The command syntax is explained below.

```
ftp> [Command] + [Space] + [Parameter 1] + [Space] + [Parameter 2]
```

Examples of how to enter commands are shown below.

```
ftp> get log.txt D:¥log.txt ..... Transfer the event log file to the PC.
200 PORT Command successful..... Return value
 ⋮
ftp>
```

10.2.3 FTP Commands

Table 10-1 FTP commands

Command	Parameter 1	Parameter 2
get	log.txt	Storage location on the PC and file name (example: D:¥log.txt)
	dump.txt	Storage location on the PC and file name (example: D:¥dump.txt)
	cap_bmp.bmp	Storage location on the PC and file name (example: D:¥capture.bmp)
	cap_bsg.bsg	Storage location on the PC and file name (example: D:¥capture.bsg)
	cap_frm.frm	Storage location on the PC and file name (example: D:¥capture.frm)
	cap_dpx.dpx	Storage location on the PC and file name (example: D:¥capture.dpx)
	cap_tif.tif	Storage location on the PC and file name (example: D:¥capture.tif)

10.3 SNMP

By using SNMP (Simple Network Management Protocol), you can control an LV 5490 from SNMP managers. Additionally, you can notify the SNMP managers of errors that the LV 5490 generates.
The LV 5490 supports SNMPv2.

10.3.1 SMI Definitions

```
INPORTS
MODULE-IDENTITY, OBJECT-TYPE, NOTIFICATION-TYPE, enterprises
FROM SNMPv2-SMI
DisplayString
FROM SNMPv2-TC
OBJECT-GROUP, MODULE-COMPLIANCE
FROM SNMPv2-CONF;
```

10.3.2 Procedure

1. **Configure the Ethernet settings on the LV 5490's ETHERNET SETUP tab.**

   Set the IP Address, and set SNMP READ to WRITE and SNMP TRAP to ON.

   Reference 6.2.2, "Configuring Ethernet Settings"

   SYS → F•2 SYSTEM SETUP → F•2 PREV TAB or F•3 NEXT TAB →

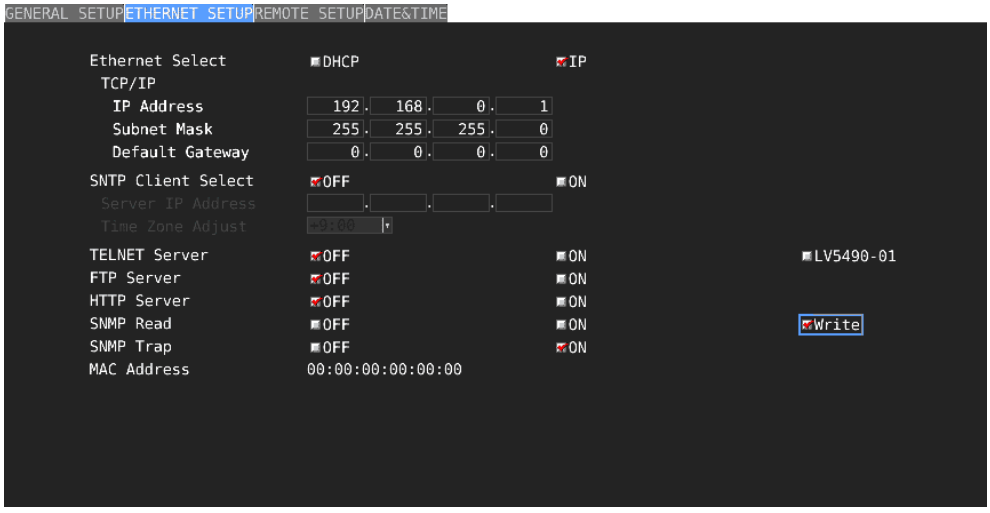


Figure 10-3 ETHERNET SETUP tab

2. **Press F•1 COMPLETE.**
3. **Connect the LV 5490's Ethernet port to the network.**
4. **On the PC, start an SNMP manager.**

   You must provide the SNMP manager yourself.
   The community name is shown below.

   Read community : LDRUser
   Write community : LDRAdm
   TRAP community : LDRUser

5. **Check that the SNMP managers can perform GET and SET operations.**
6. **From the SNMP manager, set the following MIB items to the SNMP managers' IP addresses.**

   Up to four locations can be set.

   [IP address of TRAP transmission destination 1]
   1.3.6.1.4.1.leader(20111).lv5490(30).lv5490ST1(1).l30trapTBL(9).l30trapIpTBL(1).l30trapIp1TBL(1).l30trapManagerIp1(1).0

   [IP address of TRAP transmission destination 2]
   1.3.6.1.4.1.leader(20111).lv5490(30).lv5490ST1(1).l30trapTBL(9).l30trapIpTBL(1).l30trapIp2TBL(2).l30trapManagerIp1(1).0

   [IP address of TRAP transmission destination 3]
   1.3.6.1.4.1.leader(20111).lv5490(30).lv5490ST1(1).l30trapTBL(9).l30trapIpTBL(1).l30trapIp3TBL(3).l30trapManagerIp1(1).0

   [IP address of TRAP transmission destination 4]
   1.3.6.1.4.1.leader(20111).lv5490(30).lv5490ST1(1).l30trapTBL(9).l30trapIpTBL(1).l30trapIp4TBL(4).l30trapManagerIp1(1).0

7. **Enable the TRAP transmission destinations.**

   To alleviate communication load, disable the transmission destinations that you are not using. The factory default setting is disabled.

   [Enable (1) or disable (2) TRAP transmission destination 1]
   1.3.6.1.4.1.leader(20111).lv5490(30).lv5490ST1(1).l30trapTBL(9).l30trapIpTBL(1).l30trapIp1TBL(1).l30trapManagerIp1Act(2).0

   [Enable (1) or disable (2) TRAP transmission destination 2]
   1.3.6.1.4.1.leader(20111).lv5490(30).lv5490ST1(1).l30trapTBL(9).l30trapIpTBL(1).l30trapIp2TBL(2).l30trapManagerIp1Act(2).0

   [Enable (1) or disable (2) TRAP transmission destination 3]
   1.3.6.1.4.1.leader(20111).lv5490(30).lv5490ST1(1).l30trapTBL(9).l30trapIpTBL(1).l30trapIp3TBL(3).l30trapManagerIp1Act(2).0

   [Enable (1) or disable (2) TRAP transmission destination 4]
   1.3.6.1.4.1.leader(20111).lv5490(30).lv5490ST1(1).l30trapTBL(9).l30trapIpTBL(1).l30trapIp4TBL(4).l30trapManagerIp1Act(2).0

8. **Restart the LV 5490.**
9. **When the LV 5490 starts, it transmits the standard TRAP "coldStart(0)." Check that this is received by the SNMP managers.**

10.3.3 Standard MIB

The LV 5490 uses the following standard MIBs:

・RFC1213 (MIB-Ⅱ)

・RFC1354 (IP Forwarding Table MIB)

In the tables, "ACCESS" and "SUPPORT" indicate the following:

	Indication	Description
ACCESS	R/O	Information that can be read from the SNMP managers.
	R/W	Information that can be read and written from the SNMP managers.
SUPPORT	Y	Supports the MIB object as defined by the standard.
	R/O	Reading and writing are possible according to the standard, but the LV 5490 only supports reading.
	N	Not supported.

● system group

MIB	OID	SYNTAX	ACCESS	SUPPORT
sysDescr	system.1	DisplayString	R/O	Y
sysObjectID	system.2	ObjectID	R/O	Y
sysUpTime	system.3	TimeTicks	R/O	Y
sysContact	system.4	DisplayString	R/W	Y
sysName	system.5	DisplayString	R/O	R/O
sysLocation	system.6	DisplayString	R/W	Y
sysServices	system.7	INTEGER	R/O	Y

● interface group

MIB	OID	SYNTAX	ACCESS	SUPPORT
ifNumber	interfaces.1	INTEGER	R/O	Y
ifTable	interfaces.2	Aggregate	-	Y
ifEntry	ifTable.1	Aggregate	-	Y
ifIndex	ifEntry.1	INTEGER	R/O	Y
ifDescr	ifEntry.2	DisplayString	R/O	Y
ifType	ifEntry.3	INTEGER	R/O	Y
ifMtu	ifEntry.4	INTEGER	R/O	Y
ifSpeed	ifEntry.5	Gauge	R/O	Y
ifPhysAddress	ifEntry.6	OctetString	R/O	Y
ifAdminStatus	ifEntry.7	INTEGER	R/O	R/O
ifOperStatus	ifEntry.8	INTEGER	R/O	Y
ifLastChange	ifEntry.9	TimeTicks	R/O	Y
ifInOctets	ifEntry.10	Counter	R/O	Y
ifInUcastPkts	ifEntry.11	Counter	R/O	Y
ifInNUcastPkts	ifEntry.12	Counter	R/O	Y
ifInDiscards	ifEntry.13	Counter	R/O	Y
ifInErrors	ifEntry.14	Counter	R/O	Y
ifInUnknownProtos	ifEntry.15	Counter	R/O	Y
ifOutOctets	ifEntry.16	Counter	R/O	Y

MIB	OID	SYNTAX	ACCESS	SUPPORT
ifOutUcastPkts	ifEntry.17	Counter	R/O	Y
ifOutNUcastPkts	ifEntry.18	Counter	R/O	Y
ifOutDiscards	ifEntry.19	Counter	R/O	Y
ifOutErrors	ifEntry.20	Counter	R/O	Y
ifOutQLen	ifEntry.21	Gauge	R/O	Y
ifSpecific	ifEntry.22	ObjectID	R/O	Y

- **ip group**

MIB	OID	SYNTAX	ACCESS	SUPPORT
ipForwarding	ip.1	INTEGER	R/O	Y
ipDefaultTTL	ip.2	INTEGER	R/O	R/O
ipInReceives	ip.3	Counter	R/O	Y
ipInHdrErrors	ip.4	Counter	R/O	Y
ipInAddrErrors	ip.5	Counter	R/O	Y
ipForwDatagrams	ip.6	Counter	R/O	Y
ipInUnknownProtos	ip.7	Counter	R/O	Y
ipInDiscards	ip.8	Counter	R/O	Y
ipInDelivers	ip.9	Counter	R/O	Y
ipOutRequests	ip.10	Counter	R/O	Y
ipOutDiscards	ip.11	Counter	R/O	Y
ipOutNoRoutes	ip.12	Counter	R/O	Y
ipReasmTimeout	ip.13	INTEGER	R/O	Y
ipReasmReqds	ip.14	Counter	R/O	Y
ipReasmOKs	ip.15	Counter	R/O	Y
ipReasmFails	ip.16	Counter	R/O	Y
ipFragOKs	ip.17	Counter	R/O	Y
ipFragFails	ip.18	Counter	R/O	Y
ipFragCreates	ip.19	Counter	R/O	Y
ipAddrTable	ip.20	Aggregate	-	-
ipAddrEntry	ipAddrTable.1		R/O	Y
ipAdEntAddr	ipAddrEntry.1	IpAddress	R/O	Y
ipAdEntIfIndex	ipAddrEntry.2	INTEGER	R/O	Y
ipAdEntNetMask	ipAddrEntry.3	IpAddress	R/O	Y
ipAdEntBcastAddr	ipAddrEntry.4	INTEGER	R/O	Y
ipAdEntReasmMaxSize	ipAddrEntry.5	INTEGER	R/O	Y
ipRouteTable	ip.21	Aggregate	-	-
ipRouteEntry	ipRouteTable.1	Aggregate	-	-
ipRouteDest	ipRouteEntry.1	IpAddress	R/O	R/O
ipRouteIfIndex	ipRouteEntry.2	INTEGER	R/O	R/O
ipRouteMetric1	ipRouteEntry.3	INTEGER	R/O	R/O
ipRouteMetric2	ipRouteEntry.4	INTEGER	R/O	R/O
ipRouteMetric3	ipRouteEntry.5	INTEGER	R/O	R/O
ipRouteMetric4	ipRouteEntry.6	INTEGER	R/O	R/O
ipRouteNextHop	ipRouteEntry.7	IpAddress	R/O	R/O
ipRouteType	ipRouteEntry.8	INTEGER	R/O	R/O

MIB	OID	SYNTAX	ACCESS	SUPPORT
ipRouteProto	ipRouteEntry.9	INTEGER	R/O	Y
ipRouteAge	ipRouteEntry.10	INTEGER	-	N
ipRouteMask	ipRouteEntry.11	IpAddress	R/O	R/O
ipRouteMetric5	ipRouteEntry.12	INTEGER	-	N
ipRouteInfo	ipRouteEntry.13	ObjectID	R/O	Y
ipNetToMediaTable	ip.22	Aggregate	-	-
ipNetToMediaEntry	ipNetToMediaTable.1	Aggregate	-	-
ipNetToMediaIfIndex	ipNetToMediaEntry.1	INTEGER	R/O	R/O
ipNetToMediaPhysAddress	ipNetToMediaEntry.2	OctetString	R/O	R/O
ipNetToMediaNetAddress	ipNetToMediaEntry.3	IpAddress	R/O	R/O
ipNetToMediaType	ipNetToMediaEntry.4	INTEGER	R/O	R/O
ipRoutingDiscards	ip.23	Counter	R/O	Y

- **icmp group**

MIB	OID	SYNTAX	ACCESS	SUPPORT
icmpInMsgs	icmp.1	Counter	R/O	Y
icmpInErrors	icmp.2	Counter	R/O	Y
icmpInDestUnreachs	icmp.3	Counter	R/O	Y
icmpInTimeExcds	icmp.4	Counter	R/O	Y
icmpInParmProbs	icmp.5	Counter	R/O	Y
icmpInSrcQuenchs	icmp.6	Counter	R/O	Y
icmpInRedirects	icmp.7	Counter	R/O	Y
icmpInEchos	icmp.8	Counter	R/O	Y
icmpInEchoReps	icmp.9	Counter	R/O	Y
icmpInTimestamps	icmp.10	Counter	R/O	Y
icmpInTimestampReps	icmp.11	Counter	R/O	Y
icmpInAddrMasks	icmp.12	Counter	R/O	Y
icmpInAddrMaskReps	icmp.13	Counter	R/O	Y
icmpOutMsgs	icmp.14	Counter	R/O	Y
icmpOutErrors	icmp.15	Counter	R/O	Y
icmpOutDestUnreachs	icmp.16	Counter	R/O	Y
icmpOutTimeExcds	icmp.17	Counter	R/O	Y
icmpOutParmProbs	icmp.18	Counter	R/O	Y
icmpOutSrcQuenchs	icmp.19	Counter	R/O	Y
icmpOutRedirects	icmp.20	Counter	R/O	Y
icmpOutEchos	icmp.21	Counter	R/O	Y
icmpOutEchoReps	icmp.22	Counter	R/O	Y
icmpOutTimestamps	icmp.23	Counter	R/O	Y
icmpOutTimestampReps	icmp.24	Counter	R/O	Y
icmpOutAddrMasks	icmp.25	Counter	R/O	Y
icmpOutAddrMaskReps	icmp.26	Counter	R/O	Y

● **tcp group**

MIB	OID	SYNTAX	ACCESS	SUPPORT
tcpRtoAlgorithm	tcp.1	INTEGER	R/O	Y
tcpRtoMin	tcp.2	INTEGER	R/O	Y
tcpRtoMax	tcp.3	INTEGER	R/O	Y
tcpMaxConn	tcp.4	INTEGER	R/O	Y
tcpActiveOpens	tcp.5	Counter	R/O	Y
tcpPassiveOpens	tcp.6	Counter	R/O	Y
tcpAttemptFails	tcp.7	Counter	R/O	Y
tcpEstabResets	tcp.8	Counter	R/O	Y
tcpCurrEstab	tcp.9	Gauge	R/O	Y
tcpInSegs	tcp.10	Counter	R/O	Y
tcpOutSegs	tcp.11	Counter	R/O	Y
tcpRetransSegs	tcp.12	Counter	R/O	Y
tcpConnTable	tcp.13	Aggregate	-	-
tcpConnEntry	tcpConnTable.1	Aggregate	-	-
tcpConnState	tcpConnEntry.1	INTEGER	R/O	R/O
tcpConnLocalAddress	tcpConnEntry.2	IpAddress	R/O	Y
tcpConnLocalPort	tcpConnEntry.3	INTEGER	R/O	Y
tcpConnRemAddress	tcpConnEntry.4	IpAddress	R/O	Y
tcpConnRemPort	tcpConnEntry.5	INTEGER	R/O	Y
tcpInErrs	tcp.14	Counter	R/O	Y
tcpOutRsts	tcp.15	Counter	R/O	Y

● **udp group**

MIB	OID	SYNTAX	ACCESS	SUPPORT
udpInDatagrams	udp.1	Counter	R/O	Y
udpNoPorts	udp.2	Counter	R/O	Y
udpInErrors	udp.3	Counter	R/O	Y
udpOutDatagrams	udp.4	Counter	R/O	Y
udpTable	udp.5	Aggregate	-	-
udpEntry	udpTable.1	Aggregate	-	-
udpLocalAddress	udpEntry.1	IpAddress	R/O	Y
udpLocalPort	udpEntry.2	INTEGER	R/O	Y

- **snmp group**

MIB	OID	SYNTAX	ACCESS	SUPPORT
snmpInPkts	snmp.1	Counter	R/O	Y
snmpOutPkts	snmp.2	Counter	R/O	Y
snmpInBadVersions	snmp.3	Counter	R/O	Y
snmpInBadCommunityNames	snmp.4	Counter	R/O	Y
snmpInBadCommunityUses	snmp.5	Counter	R/O	Y
snmpInASNParseErrs	snmp.6	Counter	R/O	Y
snmpInTooBigs	snmp.7	Counter	R/O	Y
snmpInNoSuchNames	snmp.8	Counter	R/O	Y
snmpInBadValues	snmp.9	Counter	R/O	Y
snmpInReadOnlys	snmp.10	Counter	R/O	Y
snmpInGenErrs	snmp.11	Counter	R/O	Y
snmpInTotalReqVars	snmp.12	Counter	R/O	Y
snmpInTotalSetVars	snmp.13	Counter	R/O	Y
snmpInGetRequests	snmp.14	Counter	R/O	Y
snmpInGetNexts	snmp.15	Counter	R/O	Y
snmpInSetRequests	snmp.16	Counter	R/O	Y
snmpInGetResponses	snmp.17	Counter	R/O	Y
snmpInTraps	snmp.18	Counter	R/O	Y
snmpOutTooBigs	snmp.19	Counter	R/O	Y
snmpOutNoSuchNames	snmp.20	Counter	R/O	Y
snmpOutBadValues	snmp.21	Counter	R/O	Y
snmpOutGenErrs	snmp.22	Counter	R/O	Y
snmpOutGetRequests	snmp.23	Counter	R/O	Y
snmpOutGetNexts	snmp.24	Counter	R/O	Y
snmpOutSetRequests	snmp.25	Counter	R/O	Y
snmpOutGetResponses	snmp.26	Counter	R/O	Y
snmpOutTraps	snmp.27	Counter	R/O	Y
snmpEnableAuthenTraps	snmp.28	IpAddress	R/W	Y

10.3.4 Enterprise MIB

- **Enterprise Number**

  The Enterprise Number of LEADER ELECTRONICS CORP. is 20111.
  iso(1).org(3).dod(6).internet(1).private(4).enterprises(1).leader(20111)

- **Enterprise MIB File**

  Download the enterprise MIB file using FTP.
  The file name is "lv5490.my." (Example: get lv5490.my D:\lv5490.my)

- **Enterprise MIB Structure**

  The enterprise MIB structure is shown below. On products that do not have units installed, the MIBs for the units cannot be controlled.

```
leader              OBJECT IDENTIFIER ::= { enterprises 20111 }
lv5490              OBJECT IDENTIFIER ::= { leader 30 }
lv5490ST1           OBJECT IDENTIFIER ::= { lv5490 1 }
l30notificationTBL  OBJECT IDENTIFIER ::= { lv5490ST1 0 }
l30basicTBL         OBJECT IDENTIFIER ::= { lv5490ST1 1 }
l30systemTBL        OBJECT IDENTIFIER ::= { lv5490ST1 2 }
l30wfmTBL           OBJECT IDENTIFIER ::= { lv5490ST1 3 }
l30vectorTBL        OBJECT IDENTIFIER ::= { lv5490ST1 4 }
l30pictureTBL       OBJECT IDENTIFIER ::= { lv5490ST1 5 }
l30statusTBL        OBJECT IDENTIFIER ::= { lv5490ST1 6 }
l30eyeTBL           OBJECT IDENTIFIER ::= { lv5490ST1 7 }
l30audioTBL         OBJECT IDENTIFIER ::= { lv5490ST1 8 }
l30trapTBL          OBJECT IDENTIFIER ::= { lv5490ST1 9 }
```

- **ACCESS**

  In the tables, "ACCESS" indicates the following:

	Indication	Description
ACCESS	R/O	Information that can be read from the SNMP managers.
	R/W	Information that can be read and written from the SNMP managers.
	R/WO	Information that can be read and written from the SNMP managers. (However, the retrieved data consists of meaningless fixed values.)

● **I30basicTBL(1) group**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
I30basInputTBL	I30basicTBL.1	Aggregate	-	-
I30basInputCh	I30basInputTBL.1	INTEGER	R/W	1 = a 2 = b 3 = c 4 = d
I30basInputSimul	I30basInputTBL.2	INTEGER	R/W	1 = off 2 = on
I30basInputOperate	I30basInputTBL.3	INTEGER	R/W	1 = com 2 = individual
I30basInputExtref	I30basInputTBL.4	INTEGER	R/W	1 = int 2 = ext
I30basInputGroupSelect	I30basInputTBL.5	INTEGER	R/W	1 = group1 2 = group2
I30basInput12gCh	I30basInputTBL.6	INTEGER	R/W	1 = ch-1a 2 = ch-1b 3 = ch-1c 4 = ch-1d
I30basDispTBL	I30basicTBL.3	Aggregate	-	-
I30basDispMulti	I30basDispTBL.1	INTEGER	R/WO	1 (fixed)
I30basDispAssignWfm	I30basDispTBL.2	INTEGER	R/WO	1 (fixed)
I30basDispAssignVec	I30basDispTBL.3	INTEGER	R/WO	1 (fixed)
I30basDispAssignPic	I30basDispTBL.4	INTEGER	R/WO	1 (fixed)
I30basDispAssignSts	I30basDispTBL.5	INTEGER	R/WO	1 (fixed)
I30basDispAssignEye	I30basDispTBL.6	INTEGER	R/WO	1 (fixed)
I30basDispAssignAud	I30basDispTBL.7	INTEGER	R/WO	1 (fixed)
I30basPresetTBL	I30basicTBL.4	Aggregate	-	-
I30basPresetStore	I30basPresetTBL.1	INTEGER	R/W	1 to 60
I30basPresetDelete	I30basPresetTBL.2	INTEGER	R/W	1 to 60
I30basPresetCopyUsbInt	I30basPresetTBL.3	INTEGER	R/WO	1 (fixed)
I30basPresetCopyIntUsb	I30basPresetTBL.4	INTEGER	R/WO	1 (fixed)
I30basPresetRecall	I30basPresetTBL.5	INTEGER	R/W	1 to 60
I30basCaptureTBL	I30basicTBL.5	Aggregate	-	-
I30basCaptureMode	I30basCaptureTBL.1	INTEGER	R/W	1 = screen 2 = frame
I30basCaptureTrigger	I30basCaptureTBL.2	INTEGER	R/W	1 = manual 2 = error
I30basCaptureRefresh	I30basCaptureTBL.3	INTEGER	R/WO	1 (fixed)
I30basCaptureDisplay	I30basCaptureTBL.4	INTEGER	R/W	1 = real 2 = hold 3 = both
I30basCaptureFileBmp	I30basCaptureTBL.5	INTEGER	R/W	1 = off 2 = on
I30basCaptureFileBsg	I30basCaptureTBL.6	INTEGER	R/W	1 = off 2 = on

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30basCaptureFileDpx	l30basCaptureTBL.7	INTEGER	R/W	1 = off 2 = on
l30basCaptureFileTif	l30basCaptureTBL.8	INTEGER	R/W	1 = off 2 = on
l30basCaptureFileFrm	l30basCaptureTBL.9	INTEGER	R/W	1 = off 2 = on
l30basCaptureFileStore	l30basCaptureTBL.10	INTEGER	R/WO	1 (fixed)
l30basMakeTBL	l30basicTBL.6	Aggregate	-	-
l30basMakeFile	l30basMakeTBL.1	INTEGER	R/WO	1 = cap-bmp 2 = cap-bsg 3 = cap-frm 4 = cap-dpx-a 5 = cap-tif-a 6 = cap-frm-b 7 = cap-dpx b 8 = cap-tif-b 9 = cap-frm-c 10 = cap-dpx-c 11 = cap-tif-c 12 = cap-frm-d 13 = cap-dpx-d 14 = cap-tif-d 15 = log 16 = dump

- **l30systemTBL(2) group**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30sysInitTBL	l30systemTBL.1	Aggregate	-	-
l30sysSystemInit	l30sysInitTBL.1	INTEGER	R/WO	1 (fixed)
l30sysLayoutInit	l30sysInitTBL.4	INTEGER	R/WO	1 (fixed)
l30sysSystemLayoutInit	l30sysInitTBL.5	INTEGER	R/WO	1 (fixed)
l30sysLcdTBL	l30systemTBL.2	Aggregate	-	-
l30sysLcdDisp	l30sysLcdTBL.1	INTEGER	R/W	1 = off 2 = on
l30sysLcdBackLight	l30sysLcdTBL.2	INTEGER	R/W	1 to 32
l30sysLcdAutoOff	l30sysLcdTBL.3	INTEGER	R/W	1 = auto-off 2 = auto-5min 3 = auto-30min 4 = auto-60min
l30sysSdiInTBL	l30systemTBL.3	Aggregate	-	-
l30sysSdiInSystem	l30sysSdiInTBL.1	INTEGER	R/W	1 = sys-4k-3g-qlink 2 = sys-4k-3g-dlink 3 = sys-4k-hd-qlink 4 = sys-single-link 5 = sys-hd-dlink

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				6 = sys-3g-dlink 7 = sys-3gb-dstream 11 = sys-4k-12g
l30sysSdiInColorimetry	l30sysSdiInTBL.2	INTEGER	R/W	1 = pid 2 = bt709 3 = bt2020 4 = dci
l30sysSdiInSettingPid	l30sysSdiInTBL.3	INTEGER	R/W	1 = use 2 = notuse
l30sysSdiInSettingIpsf	l30sysSdiInTBL.4	INTEGER	R/W	1 = interlace 2 = psf
l30sysSdiInSettingDivision	l30sysSdiInTBL.5	INTEGER	R/W	1 = div-square 2 = div-2sampleinterleave
l30sysSdiInSettingColorsys	l30sysSdiInTBL.6	INTEGER	R/W	1 = ycbcr422 2 = ycbcr444 3 = rgb444 4 = xyz444
l30sysSdiInSettingPixDepth	l30sysSdiInTBL.7	INTEGER	R/W	1 = dep-10bit 2 = dep-12bit
l30sysSdiInFormatA	l30sysSdiInTBL.8	DisplayString	R/O	Input A Format
l30sysSdiInFormatB	l30sysSdiInTBL.9	DisplayString	R/O	Input B Format
l30sysSdiInFormatC	l30sysSdiInTBL.10	DisplayString	R/O	Input C Format
l30sysSdiInFormatD	l30sysSdiInTBL.11	DisplayString	R/O	Input D Format
l30sysSdiInXyzGammaSelect	l30sysSdiInTBL.12	INTEGER	R/W	1 = bottom-zero 2 = dci
l30sysSdiInHfrMode	l30sysSdiInTBL.13	INTEGER	R/W	1 = off 2 = x2 3 = x4 4 = x8
l30sysSdiOutTBL	l30systemTBL.4	Aggregate	-	-
l30sysSdiOutBncInOut	l30sysSdiOutTBL.1	INTEGER	R/W	1 = input 2 = output
l30sysSdiOutInOut	l30sysSdiOutTBL.2	INTEGER	R/W	1 = a 2 = abcd
l30sysSdiOutMode	l30sysSdiOutTBL.3	INTEGER	R/W	1 = through 2 = test
l30sysSdiOutSystem	l30sysSdiOutTBL.4	INTEGER	R/W	1 = sys-3840-3gbdl-quad 2 = sys-4096-3gbdl-quad 3 = sys-3840-3ga-quad 4 = sys-4096-3ga-quad 5 = sys-3840-3gbds-dual

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				6 = sys-4096-3gbds-dual 7 = sys-1920-3gbdl 8 = sys-2048-3gbdl 9 = sys-1920-3ga 10 = sys-2048-3ga 11 = sys-1920-hd
l30sysSdiOutStruct	l30sysSdiOutTBL.5	INTEGER	R/W	1 = ycbcr422 2 = ycbcr444 3 = rgb444 4 = xyz444
l30sysSdiOutFrameRate	l30sysSdiOutTBL.6	INTEGER	R/W	1 = frm-60p 2 = frm-5994p 3 = frm-50p 4 = frm-48p 5 = frm-30p 6 = frm-2997p 7 = frm-25p 8 = frm-4795p 9 = frm-24p 10 = frm-2398p 11 = frm-60i 12 = frm-5994i 13 = frm-50i 14 = frm-30psf 15 = frm-2997psf 16 = frm-25psf 17 = frm-24psf 18 = frm-2398psf
l30sysSdiOutDivision	l30sysSdiOutTBL.7	INTEGER	R/W	1 = div-square 2 = div-2sampleinterleave
l30sysSdiOutPattern	l30sysSdiOutTBL.8	INTEGER	R/W	1 = ptn-colbar100 2 = ptn-colbar75 3 = ptn-multicol 4 = ptn-colraster 5 = ptn-cross 6 = ptn-10step 7 = ptn-ramp 8 = ptn-limitramp
l30sysSdiOutYOn	l30sysSdiOutTBL.9	INTEGER	R/W	1 = off 2 = on
l30sysSdiOutYValue	l30sysSdiOutTBL.10	INTEGER	R/W	4 to 1019
l30sysSdiOutCbOn	l30sysSdiOutTBL.11	INTEGER	R/W	1 = off 2 = on
l30sysSdiOutCbValue	l30sysSdiOutTBL.12	INTEGER	R/W	4 to 1019
l30sysSdiOutCrOn	l30sysSdiOutTBL.13	INTEGER	R/W	1 = off 2 = on

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30sysSdiOutCrValue	l30sysSdiOutTBL.14	INTEGER	R/W	4 to 1019
l30sysSdiOutROn	l30sysSdiOutTBL.15	INTEGER	R/W	1 = off 2 = on
l30sysSdiOutRValue	l30sysSdiOutTBL.16	INTEGER	R/W	4 to 1019
l30sysSdiOutGOn	l30sysSdiOutTBL.17	INTEGER	R/W	1 = off 2 = on
l30sysSdiOutGValue	l30sysSdiOutTBL.18	INTEGER	R/W	4 to 1019
l30sysSdiOutBOn	l30sysSdiOutTBL.19	INTEGER	R/W	1 = off 2 = on
l30sysSdiOutBValue	l30sysSdiOutTBL.20	INTEGER	R/W	4 to 1019
l30sysSdiOutScroll	l30sysSdiOutTBL.21	INTEGER	R/W	1 = off 2 = on
l30sysSdiOutScrollDirection	l30sysSdiOutTBL.22	INTEGER	R/W	1 = right 2 = left 3 = up 4 = down 5 = right_up 6 = right_down 7 = left_up 8 = left_down
l30sysSdiOutScrollSpeed	l30sysSdiOutTBL.23	INTEGER	R/W	4 to 124
l30sysSdiOutBox	l30sysSdiOutTBL.24	INTEGER	R/W	1 = off 2 = on
l30sysSdiOutBoxColor	l30sysSdiOutTBL.25	INTEGER	R/W	1 = white 2 = yellow 3 = cyan 4 = green 5 = magenta 6 = red 7 = blue 8 = black
l30sysSdiOutBoxSpeed	l30sysSdiOutTBL.26	INTEGER	R/W	1 to 3
l30sysSdiOutPhaseDiff	l30sysSdiOutTBL.27	INTEGER	R/W	1 = off 2 = on
l30sysSdiOutPhaseDirection	l30sysSdiOutTBL.28	INTEGER	R/W	1 = h 2 = v
l30sysSdiOutPhaseHBch	l30sysSdiOutTBL.29	INTEGER	R/W	-1374 to 1374
l30sysSdiOutPhaseHCch	l30sysSdiOutTBL.30	INTEGER	R/W	-1374 to 1374
l30sysSdiOutPhaseHDch	l30sysSdiOutTBL.31	INTEGER	R/W	-1374 to 1374
l30sysSdiOutPhaseVBch	l30sysSdiOutTBL.32	INTEGER	R/W	-562 to 562
l30sysSdiOutPhaseVCch	l30sysSdiOutTBL.33	INTEGER	R/W	-562 to 562
l30sysSdiOutPhaseVDch	l30sysSdiOutTBL.34	INTEGER	R/W	-562 to 562
l30sysSdiOutAudioG1	l30sysSdiOutTBL.35	INTEGER	R/W	1 = off 2 = on
l30sysSdiOutAudioG2	l30sysSdiOutTBL.36	INTEGER	R/W	1 = off

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				2 = on
l30sysSdiOutAudioG3	l30sysSdiOutTBL.37	INTEGER	R/W	1 = off 2 = on
l30sysSdiOutAudioG4	l30sysSdiOutTBL.38	INTEGER	R/W	1 = off 2 = on
l30sysSdiOutAudioLevel	l30sysSdiOutTBL.39	INTEGER	R/W	1 = lvl-20dBFS 2 = lvl-18 dBFS 3 = lvl-0 dBFS 4 = lvl-mute
l30sysAudioInOutTBL	l30systemTBL.5	Aggregate	-	-
l30sysAudBncGrpA	l30sysAudioInOutTBL.1	INTEGER	R/W	1 = input 2 = output
l30sysAudBncGrpB	l30sysAudioInOutTBL.2	INTEGER	R/W	1 = input 2 = output
l30sysMonitorOutTBL	l30systemTBL.6	Aggregate	-	-
l30sysRasterSync	l30sysMonitorOutTBL.1	INTEGER	R/W	1 = int 2 = external
l30sysRasterFmt	l30sysMonitorOutTBL.2	INTEGER	R/W	1 = fmt-1080-60p 2 = fmt-1080-59p 3 = fmt-1080-50p
l30sysRasterSdiOut	l30sysMonitorOutTBL.3	INTEGER	R/W	1 = raster 2 = input
l30sysRasterSdiOutFmt	l30sysMonitorOutTBL.4	INTEGER	R/W	1 = fmt-hd 2 = fmt-3ga 3 = fmt-3gb
l30sysGeneralTBL	l30systemTBL.7	Aggregate	-	-
l30sysGeneralBootMode	l30sysGeneralTBL.1	INTEGER	R/W	1 = Normal 2 = Fast
l30sysGeneralInfoDispFmt	l30sysGeneralTBL.2	INTEGER	R/W	1 = off 2 = on
l30sysGeneralInfoDispDate	l30sysGeneralTBL.3	INTEGER	R/W	1 = off 2 = ymd 3 = mdy 4 = dmy
l30sysGeneralInfoDispTime	l30sysGeneralTBL.4	INTEGER	R/W	1 = off 2 = real 3 = ltc 4 = vitc 5 = d-vitc
l30sysGeneralInfoDispInput	l30sysGeneralTBL.6	INTEGER	R/W	1 = off 2 = on
l30sysGeneralInfoDispIcon	l30sysGeneralTBL.7	INTEGER	R/W	1 = off 2 = on
l30sysGeneralMenuAutoOff	l30sysGeneralTBL.8	INTEGER	R/W	1 = off 2 = on

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30sysGeneralMenuAutoOffTime	l30sysGeneralTBL.9	INTEGER	R/W	1 to 60
l30sysGeneralFanSpeed	l30sysGeneralTBL.11	INTEGER	R/W	1 to 5
l30sysGeneralFanWarning	l30sysGeneralTBL.12	INTEGER	R/W	1 = off 2 = on
l30sysEthernetTBL	l30systemTBL.8	Aggregate	-	-
l30sysEthernetSel	l30sysEthernetTBL.1	INTEGER	R/O	1 = dhcp 2 = ip
l30sysEthernetAddress	l30sysEthernetTBL.2	IpAddress	R/O	IP Address
l30sysEthernetSubnet	l30sysEthernetTBL.3	IpAddress	R/O	Subnet Mask
l30sysEthernetGateway	l30sysEthernetTBL.4	IpAddress	R/O	Default Gateway
l30sysEthernetSntp	l30sysEthernetTBL.5	INTEGER	R/W	1 = off 2 = on
l30sysEthernetSntpAddress	l30sysEthernetTBL.6	IpAddress	R/W	IP Address
l30sysEthernetSntpTz	l30sysEthernetTBL.7	INTEGER	R/W	1 = m12 2 = m11 3 = m10 4 = m9 5 = m8 6 = m7 7 = m6 8 = m5 9 = m4 10 = m3 11 = m2 12 = m1 13 = p0 14 = p1 15 = p2 16 = p3 17 = p4 18 = p5 19 = p6 20 = p7 21 = p8 22 = p9 23 = p10 24 = p11 25 = p12
l30sysEthernetTelnet	l30sysEthernetTBL.8	INTEGER	R/W	1 = off 2 = on
l30sysEthernetFtp	l30sysEthernetTBL.9	INTEGER	R/W	1 = off 2 = on
l30sysEthernetSnmpTrap	l30sysEthernetTBL.11	INTEGER	R/W	1 = off 2 = on
l30sysEthernetMacAddr	l30sysEthernetTBL.12	DisplayStri	R/O	MAC Address

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
		ng		
l30sysRemoteTBL	l30systemTBL.9	Aggregate	-	-
l30sysRemoteMode	l30sysRemoteTBL.1	INTEGER	R/W	1 = bit 2 = binary
l30sysRemotePole	l30sysRemoteTBL.2	INTEGER	R/W	1 = positive 2 = negative
l30sysRemoteAlarmAch	l30sysRemoteTBL.3	INTEGER	R/W	1 = off 2 = on
l30sysRemoteAlarmBch	l30sysRemoteTBL.4	INTEGER	R/W	1 = off 2 = on
l30sysRemoteAlarmCch	l30sysRemoteTBL.5	INTEGER	R/W	1 = off 2 = on
l30sysRemoteAlarmDch	l30sysRemoteTBL.6	INTEGER	R/W	1 = off 2 = on
l30sysRemoteTallyColor1	l30sysRemoteTBL.8	INTEGER	R/W	1 = white 2 = red 3 = green 4 = blue 5 = cyan 6 = magenta 7 = yellow 8 = orange
l30sysRemoteTallyColor2	l30sysRemoteTBL.9	INTEGER	R/W	1 = white 2 = red 3 = green 4 = blue 5 = cyan 6 = magenta 7 = yellow 8 = orange
l30sysRemoteTallyColor3	l30sysRemoteTBL.10	INTEGER	R/W	1 = white 2 = red 3 = green 4 = blue 5 = cyan 6 = magenta 7 = yellow 8 = orange
l30sysRemoteTallyFrame	l30sysRemoteTBL.11	INTEGER	R/W	1 = off 2 = on
l30sysRemoteTallyLayout	l30sysRemoteTBL.12	INTEGER	R/W	1 = left 2 = right
l30sysDateTBL	l30systemTBL.10	Aggregate	-	-
l30sysDateTime	l30sysDateTBL.3	DisplayStri ng	R/O	Date and Time
l30sysFormatAlarmTBL	l30systemTBL.11	Aggregate	-	-

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30sysFormatAlarm	l30sysFormatAlarmTBL.1	INTEGER	R/W	1 = off 2 = on
l30sysFormatAlarmSystem	l30sysFormatAlarmTBL.2	INTEGER	R/W	1 = fmt-3840-3gbdl-quad 2 = fmt-4096-3gbdl-quad 3 = fmt-3840-3ga-quad 4 = fmt-4096-3ga-quad 5 = fmt-3840-3gbds-dual 6 = fmt-4096-3gbds-dual 7 = fmt-3840-hd-quad 8 = fmt-4096-hd-quad 9 = fmt-1920-3gbdl 10 = fmt-2048-3gbdl 11 = fmt-1280-3ga 12 = fmt-1920-3ga 13 = fmt-2048-3ga 14 = fmt-1280-hd 15 = fmt-1920-hd 16 = fmt-487-sd 17 = fmt-576-sd 18 = fmt-1920-hd-dual 19 = fmt-2048-hd-dual 20 = fmt-1280-3gbds 21 = fmt-1920-3gbds 22 = fmt-1920-3gbdl-dual 23 = fmt-2048-3gbdl-dual 24 = fmt-1920-3ga-dual 25 = fmt-2048-3ga-dual 26 = fmt-3840-12g-type1 27 = fmt-4096-12g-type1
l30sysFormatAlarmStruct	l30sysFormatAlarmTBL.3	INTEGER	R/W	1 = ycbcr422-10bit 2 = ycbcr422-12bit 3 = ycbcr444-10bit 4 = ycbcr444-12bit 5 = rgb444-10bit 6 = rgb444-12bit 7 = xyz444-12bit
l30sysFormatAlarmFramerate	l30sysFormatAlarmTBL.4	INTEGER	R/W	1 = fmt-60p 2 = fmt-5994p 3 = fmt-50p 4 = fmt-48p 5 = fmt-30p 6 = fmt-2997p 7 = fmt-25p 8 = fmt-4795p

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				9 = fmt-24p 10 = fmt-2398p 11 = fmt-60i 12 = fmt-5994i 13 = fmt-50i 14 = fmt-30psf 15 = fmt-2997psf 16 = fmt-25psf 17 = fmt-24psf 18 = fmt-2398psf
l30sysFormatAlarmDiv	l30sysFormatAlarmTBL.5	INTEGER	R/W	1 = div-square 2 = div-2sampleinterleave
l30sysFormatAlarmColor	l30sysFormatAlarmTBL.6	INTEGER	R/W	1 = bt709 2 = bt2020 3 = dci
l30sysFormatAlarmFlagColor	l30sysFormatAlarmTBL.7	INTEGER	R/W	1 = off 2 = on
l30sysCompleteTBL	l30systemTBL.12	Aggregate	-	-
l30sysSignalInOutComplete	l30sysCompleteTBL.1	INTEGER	R/WO	1 (fixed)
l30sysSystemSetupComplete	l30sysCompleteTBL.2	INTEGER	R/WO	1 (fixed)
l30sysEthernetSettingUpdate	l30sysCompleteTBL.3	INTEGER	R/WO	1 (fixed)
l30sysInfoTBL	l30systemTBL.13	Aggregate	-	-
l30sysInfoFirmware	l30sysInfoTBL.1	DisplayString	R/O	Firmware Version
l30sysInfoBoardSdiIn	l30sysInfoTBL.2	INTEGER	R/O	1 = notavailable 2 = available
l30sysInfoBoardSdiEye	l30sysInfoTBL.3	INTEGER	R/O	1 = notavailable 2 = available
l30sysInfoBoardAudio	l30sysInfoTBL.4	INTEGER	R/O	1 = notavailable 2 = available
l30sysHdrTBL	l30systemTBL.14	Aggregate	-	-
l30sysHdrEnable	l30sysHdrTBL.1	INTEGER	R/W	1 = off 2 = on
l30sysHdrHdrCurve	l30sysHdrTBL.2	INTEGER	R/W	2 = hlg 3 = pq 4 = slog3
l30sysHdrMax	l30sysHdrTBL.3	INTEGER	R/W	1 = cd10000 2 = cd4000 3 = cd1000
l30sysHdrGamma	l30sysHdrTBL.4	INTEGER	R/W	1 = off 2 = on
l30sysHdrRefPq	l30sysHdrTBL.5	INTEGER	R/W	3 = p51 4 = p58
l30sysHdrRefHlg	l30sysHdrTBL.6	INTEGER	R/W	1 = p50 2 = p75

● **l30wfmTBL(1) group**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30wfmIntenTBL	l30wfmTBL.1	Aggregate	-	-
l30wfmInten	l30wfmIntenTBL.1	INTEGER	R/W	-128 to 127
l30wfmColor	l30wfmIntenTBL.2	INTEGER	R/W	1 = white 2 = yellow 3 = cyan 4 = green 5 = magenta 6 = red 7 = blue 8 = multi
l30wfmColorS1	l30wfmIntenTBL.3	INTEGER	R/W	1 = white 2 = yellow 3 = cyan 4 = green 5 = magenta 6 = red 7 = blue 8 = multi
l30wfmColorS2	l30wfmIntenTBL.4	INTEGER	R/W	1 = white 2 = yellow 3 = cyan 4 = green 5 = magenta 6 = red 7 = blue 8 = multi
l30wfmScaleTBL	l30wfmTBL.2	Aggregate	-	-
l30wfmScaleInten	l30wfmScaleTBL.1	INTEGER	R/W	-8 to 7
l30wfmScaleColor	l30wfmScaleTBL.2	INTEGER	R/W	1 = white 2 = yellow 3 = cyan 4 = green 5 = magenta 6 = red 7 = blue
l30wfmScaleUnit	l30wfmScaleTBL.3	INTEGER	R/W	1 = unit-hdv-sdp 2 = unit-hdv-sdv 3 = unit-hdp-sdp 4 = unit-150p 5 = unit-1023 6 = unit-1023-255 7 = unit-3ff
l30wfmScaleUnitNtsc	l30wfmScaleTBL.4	INTEGER	R/W	3 = unit-hdp-sdp
l30wfmScaleUnitPal	l30wfmScaleTBL.5	INTEGER	R/W	2 = unit-hdv-sdv
l30wfmScale75perCol	l30wfmScaleTBL.6	INTEGER	R/W	1 = off

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				2 = on
l30wfmGainTBL	l30wfmTBL.3	Aggregate	-	-
l30wfmGainVar	l30wfmGainTBL.1	INTEGER	R/W	1 = cal 2 = variable
l30wfmGainMag	l30wfmGainTBL.2	INTEGER	R/W	1 = x1 2 = x5
l30wfmGainValue	l30wfmGainTBL.3	DisplayString	R/W	0.2 to 2.000
l30wfmGainFilter	l30wfmGainTBL.4	INTEGER	R/W	1 = lowpass 2 = flat
l30wfmGainFilterCmp	l30wfmGainTBL.5	INTEGER	R/W	2 = flat 3 = lum 4 = flatlum 5 = lumchroma
l30wfmSweepTBL	l30wfmTBL.4	Aggregate	-	-
l30wfmSweep	l30wfmSweepTBL.1	INTEGER	R/W	1 = h 2 = v
l30wfmSweepMagH	l30wfmSweepTBL.2	INTEGER	R/W	1 = x1 2 = x10 3 = x20 4 = blank 5 = active
l30wfmSweepMagV	l30wfmSweepTBL.3	INTEGER	R/W	1 = x1 2 = x20 3 = x40
l30wfmSweepH	l30wfmSweepTBL.4	INTEGER	R/W	1 = sweep-1h 2 = sweep-2h
l30wfmSweepV	l30wfmSweepTBL.5	INTEGER	R/W	1 = sweep-1v 2 = sweep-2v
l30wfmSweepField	l30wfmSweepTBL.6	INTEGER	R/W	1 = field1 2 = field2
l30wfmBlanking	l30wfmSweepTBL.7	INTEGER	R/W	1 = remove 2 = v 3 = h 4 = all
l30wfmBlankingCmp	l30wfmSweepTBL.8	INTEGER	R/W	1 = remove 2 = v
l30wfmMatrixTBL	l30wfmTBL.5	Aggregate	-	-
l30wfmMatrix	l30wfmMatrixTBL.1	INTEGER	R/W	1 = ycbcr 2 = gbr 3 = rgb 4 = composite
l30wfmMatrixRgb	l30wfmMatrixTBL.2	INTEGER	R/W	2 = gbr 3 = rgb 4 = composite
l30wfmMatrixYgbr	l30wfmMatrixTBL.3	INTEGER	R/W	1 = off 2 = on

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30wfmMatrixYrgb	l30wfmMatrixTBL.4	INTEGER	R/W	1 = off 2 = on
l30wfmCmpFormat	l30wfmMatrixTBL.5	INTEGER	R/W	1 = auto 2 = ntsc 3 = pal
l30wfmCmpSetup	l30wfmMatrixTBL.6	INTEGER	R/W	1 = setup-0p 2 = setup-75p
l30wfmMatrixXyz	l30wfmMatrixTBL.7	INTEGER	R/W	2 = gbr 3 = rgb 4 = composite 5 = xyz
l30wfmDisplayTBL	l30wfmTBL.6	Aggregate	-	-
l30wfmDisplayMode	l30wfmDisplayTBL.1	INTEGER	R/W	1 = parade 2 = overlay
l30wfmDisplayCh1Y	l30wfmDisplayTBL.2	INTEGER	R/W	1 = off 2 = on
l30wfmDisplayCh2Cb	l30wfmDisplayTBL.3	INTEGER	R/W	1 = off 2 = on
l30wfmDisplayCh3Cr	l30wfmDisplayTBL.4	INTEGER	R/W	1 = off 2 = on
l30wfmDisplayCh1G	l30wfmDisplayTBL.5	INTEGER	R/W	1 = off 2 = on
l30wfmDisplayCh2B	l30wfmDisplayTBL.6	INTEGER	R/W	1 = off 2 = on
l30wfmDisplayCh3R	l30wfmDisplayTBL.7	INTEGER	R/W	1 = off 2 = on
l30wfmDisplayCh1R	l30wfmDisplayTBL.8	INTEGER	R/W	1 = off 2 = on
l30wfmDisplayCh2G	l30wfmDisplayTBL.9	INTEGER	R/W	1 = off 2 = on
l30wfmDisplayCh3B	l30wfmDisplayTBL.10	INTEGER	R/W	1 = off 2 = on
l30wfmDisplay3gbds	l30wfmDisplayTBL.11	INTEGER	R/W	1 = stream1 2 = stream2 3 = mix 4 = align
l30wfmDisplayYParade	l30wfmDisplayTBL.12	INTEGER	R/W	1 = off 2 = on
l30wfmDisplayCh1X	l30wfmDisplayTBL.13	INTEGER	R/W	1 = off 2 = on
l30wfmDisplayCh2Y	l30wfmDisplayTBL.14	INTEGER	R/W	1 = off 2 = on
l30wfmDisplayCh3Z	l30wfmDisplayTBL.15	INTEGER	R/W	1 = off 2 = on
l30wfmLineselTBL	l30wfmTBL.7	Aggregate	-	-
l30wfmLinesel	l30wfmLineselTBL.1	INTEGER	R/W	1 = off

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				2 = on
l30wfmLineselNo	l30wfmLineselTBL.2	INTEGER	R/W	0 to 32767
l30wfmLineselField	l30wfmLineselTBL.3	INTEGER	R/W	1 = frame 2 = field1 3 = field2

●l30vectorTBL(1) group

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30vectorIntenTBL	l30vectorTBL.1	Aggregate	-	-
l30vctorInten	l30vectorIntenTBL.1	INTEGER	R/W	-128 to 127
l30vctorColor	l30vectorIntenTBL.2	INTEGER	R/W	1 = white 2 = yellow 3 = cyan 4 = green 5 = magenta 6 = red 7 = blue
l30vectorColorS1	l30vectorIntenTBL.3	INTEGER	R/W	1 = white 2 = yellow 3 = cyan 4 = green 5 = magenta 6 = red 7 = blue
l30vectorColorS2	l30vectorIntenTBL.4	INTEGER	R/W	1 = white 2 = yellow 3 = cyan 4 = green 5 = magenta 6 = red 7 = blue
l30vctorScaleTBL	l30vectorTBL.2	Aggregate	-	-
l30vectorScaleInten	l30vctorScaleTBL.1	INTEGER	R/W	-8 to 7
l30vectorScaleColor	l30vctorScaleTBL.2	INTEGER	R/W	1 = white 2 = yellow 3 = cyan 4 = green 5 = magenta 6 = red 7 = blue
l30vectorScaleIq	l30vctorScaleTBL.3	INTEGER	R/W	1 = off 2 = on
l30vectorScaleVec	l30vctorScaleTBL.4	INTEGER	R/W	1 = auto 2 = bt601 3 = bt709

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				4 = bt2020 5 = dci
l30vectorScale5Bar	l30vctorScaleTBL.5	INTEGER	R/W	1 = p 2 = mv
l30vectorScale5BarSeq	l30vctorScaleTBL.6	INTEGER	R/W	1 = gbr 2 = rgb
l30vectorGainTBL	l30vectorTBL.3	Aggregate	-	-
l30vectorGainVariable	l30vectorGainTBL.1	INTEGER	R/W	1 = cal 2 = variable
l30vectorGainMag	l30vectorGainTBL.2	INTEGER	R/W	1 = x1 2 = x5 3 = iq
l30vectorGainVar	l30vectorGainTBL.3	DisplayString	R/W	0.200 to 10.000
l30vectorDispTBL	l30vectorTBL.4	Aggregate	-	-
l30vectorDispMode	l30vectorDispTBL.1	INTEGER	R/W	1 = vec 2 = bar 3 = hist 4 = ciediagram
l30vectorDisp3gbds	l30vectorDispTBL.2	INTEGER	R/W	1 = stream1 2 = stream2 3 = mix 4 = align
l30vectorMatrixTBL	l30vectorTBL.5	Aggregate	-	-
l30vectorMatrixColor	l30vectorMatrixTBL.1	INTEGER	R/W	1 = component 2 = composit
l30vectorMatrixColorBar	l30vectorMatrixTBL.2	INTEGER	R/W	1 = bar-100p 2 = bar-75p
l30vectorMatrixCompositFmt	l30vectorMatrixTBL.3	INTEGER	R/W	1 = auto 2 = ntsc 3 = pal
l30vectorMatrixCompositSetup	l30vectorMatrixTBL.4	INTEGER	R/W	1 = setup-0p 2 = setup-75p
l30vectorHistTBL	l30vectorTBL.6	Aggregate	-	-
l30vectorHistScaleHdr	l30vectorHistTBL.6	INTEGER	R/W	1 = per 2 = hdr
l30vectorMarkerTBL	l30vectorTBL.7	Aggregate	-	-
l30vectorMarker	l30vectorMarkerTBL.1	INTEGER	R/W	1 = off 2 = on
l30vectorCieTBL	l30vectorTBL.8	Aggregate	-	-
l30vectorCieCursor	l30vectorCieTBL.1	INTEGER	R/W	1 = off 2 = on
l30vectorCieTempScale	l30vectorCieTBL.2	INTEGER	R/W	1 = off 2 = on
l30vectorCieMode	l30vectorCieTBL.3	INTEGER	R/W	1 = diagram 2 = temp

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30vectorCieFilter	l30vectorCieTBL.4	INTEGER	R/W	1 = off 2 = on
l30vectorCieColor	l30vectorCieTBL.6	INTEGER	R/W	1 = off 2 = on
l30vectorCieFigure1	l30vectorCieTBL.7	INTEGER	R/W	1 = off 4 = bt601-525 5 = bt601-625 6 = bt709 7 = dci 8 = bt2020
l30vectorCieFigure2	l30vectorCieTBL.8	INTEGER	R/W	1 = off 4 = bt601-525 5 = bt601-625 6 = bt709 7 = dci 8 = bt2020
l30vectorCieGamma	l30vectorCieTBL.9	INTEGER	R/W	2 = gamma22 3 = gamma26
l30vectorCieColorimetry	l30vectorCieTBL.10	INTEGER	R/W	1 = bt601-525 2 = bt601-625 3 = bt709 4 = dci 5 = bt2020
l30vectorCieStandard	l30vectorCieTBL.11	INTEGER	R/W	5 = cie1391 6 = cie1976
l30vectorCieGrid	l30vectorCieTBL.12	INTEGER	R/W	1 = off 2 = on
l30vectorCieD65	l30vectorCieTBL.13	INTEGER	R/W	1 = off 2 = on
l30vectorCieFigureCap	l30vectorCieTBL.14	INTEGER	R/W	1 = off 2 = on
l30vectoCieClip	l30vectorCieTBL.15	INTEGER	R/W	1 = off 2 = on
l30vectorCieManualSetup	l30vectorCieTBL.16	INTEGER	R/W	1 = off 2 = on
l30vectorCieGammaSetup	l30vectorCieTBL.17	DisplayString	R/W	1.50 to 3.00
l30vectorCieUserTriangle	l30vectorCieTBL.18	INTEGER	R/W	1 = off 2 = user1 3 = user2
l30vectorCieUserTriangleColor	l30vectorCieTBL.19	INTEGER	R/W	1 = g 2 = b 3 = r
l30vectorCieUserTriangle1GX	l30vectorCieTBL.20	DisplayString	R/W	0 to 1.000
l30vectorCieUserTriangle1BX	l30vectorCieTBL.21	DisplayString	R/W	0 to 1.000
l30vectorCieUserTriangle1RX	l30vectorCieTBL.22	DisplayString	R/W	0 to 1.000
l30vectorCieUserTriangle1GY	l30vectorCieTBL.23	DisplayString	R/W	0 to 1.000

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30vectorCieUserTriangle1BY	l30vectorCieTBL.24	DisplayString	R/W	0 to 1.000
l30vectorCieUserTriangle1RY	l30vectorCieTBL.25	DisplayString	R/W	0 to 1.000
l30vectorCieUserTriangle2GX	l30vectorCieTBL.26	DisplayString	R/W	0 to 1.000
l30vectorCieUserTriangle2BX	l30vectorCieTBL.27	DisplayString	R/W	0 to 1.000
l30vectorCieUserTriangle2RX	l30vectorCieTBL.28	DisplayString	R/W	0 to 1.000
l30vectorCieUserTriangle2GY	l30vectorCieTBL.29	DisplayString	R/W	0 to 1.000
l30vectorCieUserTriangle2BY	l30vectorCieTBL.30	DisplayString	R/W	0 to 1.000
l30vectorCieUserTriangle2RY	l30vectorCieTBL.31	DisplayString	R/W	0 to 1.000
l30vectorLineselTBL	l30vectorTBL.9	Aggregate	-	-
l30vectorLinesel	l30vectorLineselTBL.1	INTEGER	R/W	1 = off 2 = on
l30vectorLineselNo	l30vectorLineselTBL.2	INTEGER	R/W	0 to 32767
l30vectorLineselField	l30vectorLineselTBL.7	INTEGER	R/W	1 = frame 2 = field1 3 = fiedl2

- **l30pictureTBL(1) group**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30pictureAdjustTBL	l30pictureTBL.1	Aggregate	-	-
l30pictureAdjustColor	l30pictureAdjustTBL.1	INTEGER	R/W	1 = color 2 = mono
l30pictureChroma	l30pictureAdjustTBL.2	INTEGER	R/W	1 = normal 2 = up
l30pictureBrightness	l30pictureAdjustTBL.3	DisplayString	R/W	-50.0 to 50.0
l30pictureContrast	l30pictureAdjustTBL.4	DisplayString	R/W	0 to 200.0
l30pictureGainR	l30pictureAdjustTBL.5	DisplayString	R/W	0 to 200.0
l30pictureGainG	l30pictureAdjustTBL.6	DisplayString	R/W	0 to 200.0
l30pictureGainB	l30pictureAdjustTBL.7	DisplayString	R/W	0 to 200.0
l30pictureBiasR	l30pictureAdjustTBL.8	DisplayString	R/W	-50.0 to 50.0
l30pictureBiasG	l30pictureAdjustTBL.9	DisplayString	R/W	-50.0 to 50.0
l30pictureBiasB	l30pictureAdjustTBL.10	DisplayString	R/W	-50.0 to 50.0
l30pictureGainChroma	l30pictureAdjustTBL.11	DisplayString	R/W	0 to 200.0
l30pictureMarkerTBL	l30pictureTBL.2	Aggregate	-	-
l30pictureMarkerFrame	l30pictureMarkerTBL.1	INTEGER	R/W	1 = off 2 = on
l30pictureMarkerCenter	l30pictureMarkerTBL.2	INTEGER	R/W	1 = off 2 = on
l30pictureMarkerAspect	l30pictureMarkerTBL.3	INTEGER	R/W	1 = off 2 = asp-17x9 3 = asp-16x9 4 = asp-14x9 5 = asp-13x9 6 = asp-4x3 7 = asp-239x1 8 = asp-afd

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30pictureAspectShadow	l30pictureMarkerTBL.4	INTEGER	R/W	0 to 100
l30pictureSafeAction	l30pictureMarkerTBL.5	INTEGER	R/W	1 = off 2 = arib 3 = smpte 4 = user
l30pictureSafeTitle	l30pictureMarkerTBL.6	INTEGER	R/W	1 = off 2 = arib 3 = smpte 4 = user
l30pictureUserZone1W	l30pictureMarkerTBL.7	INTEGER	R/W	0 to 100
l30pictureUserZone1H	l30pictureMarkerTBL.8	INTEGER	R/W	0 to 100
l30pictureUserZone2W	l30pictureMarkerTBL.9	INTEGER	R/W	0 to 100
l30pictureUserZone2H	l30pictureMarkerTBL.10	INTEGER	R/W	0 to 100
l30pictureDispTBL	l30pictureTBL.4	Aggregate	-	-
l30pictureDispSize	l30pictureDispTBL.1	INTEGER	R/W	1 = fit 2 = real 3 = x2 4 = full
l30pictureDispGamut	l30pictureDispTBL.2	INTEGER	R/W	1 = off 2 = white 3 = red 4 = mesh
l30pictureDisp3gbds	l30pictureDispTBL.3	INTEGER	R/W	1 = Stream1 2 = Stream2 3 = Mix 4 = Align
l30pictureDispPosH	l30pictureDispTBL.4	INTEGER	R/W	-32768 to 32767
l30pictureDispPosV	l30pictureDispTBL.5	INTEGER	R/W	-32768 to 32767
l30pictureDispStatusInfo	l30pictureDispTBL.6	INTEGER	R/W	1 = off 2 = on
l30pictureEdgeTBL	l30pictureTBL.6	Aggregate	-	-
l30pictureAperture	l30pictureEdgeTBL.1	INTEGER	R/W	0 to 100
l30pictureEdgeDetect	l30pictureEdgeTBL.2	INTEGER	R/W	1 = off 2 = on
l30pictureEdgeLevel	l30pictureEdgeTBL.3	INTEGER	R/W	0 to 100
l30pictureEdgeColor	l30pictureEdgeTBL.4	INTEGER	R/W	1 = white 4 = green 6 = red 7 = blue
l30pictureEdgePicLevel	l30pictureEdgeTBL.5	INTEGER	R/W	1 = lvl-off 2 = lvl-25 3 = lvl-50 4 = lvl-75 5 = lvl-100 6 = lvl-emboss
l30pictureEdgeDisp	l30pictureEdgeTBL.6	INTEGER	R/W	1 = off

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				2 = on
l30pictureEdgeSensitive	l30pictureEdgeTBL.7	INTEGER	R/W	1 = low 2 = middle 3 = high 4 = v-high 5 = u-high
l30pictureCITBL	l30pictureTBL.7	Aggregate	-	-
l30pictureCIDisplay	l30pictureCITBL.1	INTEGER	R/W	1 = off 2 = fstop 3 = perdisplay 4 = cinezone
l30pictureCIAdvance	l30pictureCITBL.2	INTEGER	R/W	1 = off 2 = on
l30pictureCIMeasurePos	l30pictureCITBL.3	INTEGER	R/W	1 = p1 2 = p2 3 = p3
l30pictureCIMeasureNums	l30pictureCITBL.4	INTEGER	R/W	1 = p1 2 = p1p2 3 = p1p2p3
l30pictureCIMeasureSize	l30pictureCITBL.5	INTEGER	R/W	1 = size-1x1 2 = size-3x3 3 = size-9x9
l30pictureCIRgbUnit	l30pictureCITBL.6	INTEGER	R/W	1 = yper 2 = rgbper 3 = rgb255 4 = codevalue 5 = hdr 6 = codevaluedec
l30pictureCIFstopRefSet	l30pictureCITBL.7	INTEGER	R/WO	1 (fixed)
l30pictureCIFstopGammaSel	l30pictureCITBL.8	INTEGER	R/W	2 = user1 3 = user2 4 = user3 5 = usera 6 = userb 7 = userc 8 = userd 9 = usere
l30pictureCIFstopGammaCalF	l30pictureCITBL.9	INTEGER	R/W	1 = gamma220 2 = gamma160 3 = gamma110 4 = gamma080 5 = gamma056 6 = gamma040 7 = gamma028 8 = gamma020
l30pictureCIFstopGammaCalSet	l30pictureCITBL.10	INTEGER	R/WO	1 (fixed)

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30pictureClFstopGammaCalDataClear	l30pictureClTBL.11	INTEGER	R/WO	1 (fixed)
l30pictureClFstopGammaCalTableClear	l30pictureClTBL.12	INTEGER	R/WO	1 (fixed)
l30pictureClSample	l30pictureClTBL.13	INTEGER	R/W	0 to 32767
l30pictureClLine	l30pictureClTBL.14	INTEGER	R/W	0 to 32767
l30pictureClCzDisplay	l30pictureClTBL.15	INTEGER	R/W	1 = gradate 2 = step 3 = search
l30pictureClCzUpper	l30pictureClTBL.16	DisplayString	R/W	-6.3 to 109.4
l30pictureClCzLower	l30pictureClTBL.17	DisplayString	R/W	-7.3 to 108.4
l30pictureClCzLevel	l30pictureClTBL.18	DisplayString	R/W	-7.3 to 109.4
l30pictureLineselTBL	l30pictureTBL.8	Aggregate	-	-
l30pictureLinesel	l30pictureLineselTBL.1	INTEGER	R/W	1 = off 2 = on
l30pictureLineselNo	l30pictureLineselTBL.2	INTEGER	R/W	0 to 32767
l30pictureLineselField	l30pictureLineselTBL.3	INTEGER	R/W	1 = frame 2 = field1 3 = field2
l30pictureDataTBL	l30pictureTBL.9	Aggregate	-	-
l30pictureDataCineliteP1	l30pictureDataTBL.1	DisplayString	R/O	Cinelite Data
l30pictureDataCineliteP2	l30pictureDataTBL.2	DisplayString	R/O	Cinelite Data
l30pictureDataCineliteP3	l30pictureDataTBL.3	DisplayString	R/O	Cinelite Data
l30pictureHdrTBL	l30pictureTBL.10	Aggregate	-	-
l30pictureHdrUpperPq10000	l30pictureHdrTBL.1	DisplayString	R/W	0.0 to 100.0
l30pictureHdrUpperPq4000	l30pictureHdrTBL.2	DisplayString	R/W	0.0 to 100.0
l30pictureHdrUpperPq1000	l30pictureHdrTBL.3	DisplayString	R/W	0.0 to 100.0
l30pictureHdrUpperHlg	l30pictureHdrTBL.4	DisplayString	R/W	0.0 to 100.0
l30pictureHdrUpperSlog	l30pictureHdrTBL.5	DisplayString	R/W	3.5 to 109.4
l30pictureHdrRefPq10000	l30pictureHdrTBL.6	DisplayString	R/W	0.0 to 100.0
l30pictureHdrRefPq4000	l30pictureHdrTBL.7	DisplayString	R/W	0.0 to 100.0
l30pictureHdrRefPq1000	l30pictureHdrTBL.8	DisplayString	R/W	0.0 to 100.0
l30pictureHdrRefHlg	l30pictureHdrTBL.9	DisplayString	R/W	0.0 to 100.0
l30pictureHdrRefSlog	l30pictureHdrTBL.10	DisplayString	R/W	3.5 to 109.4
l30pictureHdrLowerPq10000	l30pictureHdrTBL.11	DisplayString	R/W	0.0 to 100.0
l30pictureHdrLowerPq4000	l30pictureHdrTBL.12	DisplayString	R/W	0.0 to 100.0
l30pictureHdrLowerPq1000	l30pictureHdrTBL.13	DisplayString	R/W	0.0 to 100.0
l30pictureHdrLowerHlg	l30pictureHdrTBL.14	DisplayString	R/W	0.0 to 100.0
l30pictureHdrLowerSlog	l30pictureHdrTBL.15	DisplayString	R/W	3.5 to 109.4
l30pictureHdrDrange	l30pictureHdrTBL.16	INTEGER	R/W	1 = normal 2 = high 4 = disable
l30pictureHdrMode	l30pictureHdrTBL.17	INTEGER	R/W	1 = off 2 = on
l30pictureHdrBrightness	l30pictureHdrTBL.18	INTEGER	R/W	1 = off 2 = on

● **I30statusTBL(1) group**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
I30statusModeTBL	I30statusTBL.1	Aggregate	-	-
I30statusModeTop	I30statusModeTBL.1	INTEGER	R/WO	1 (fixed)
I30statusModeDump	I30statusModeTBL.2	INTEGER	R/WO	1 (fixed)
I30statusModeExtref	I30statusModeTBL.3	INTEGER	R/WO	1 (fixed)
I30statusModeAncView	I30statusModeTBL.5	INTEGER	R/WO	1 (fixed)
I30statusModeAncViewDump	I30statusModeTBL.6	INTEGER	R/WO	1 (fixed)
I30statusModeLog	I30statusModeTBL.7	INTEGER	R/WO	1 (fixed)
I30statusModeAncPkt	I30statusModeTBL.8	INTEGER	R/WO	1 (fixed)
I30statusModeEdh	I30statusModeTBL.9	INTEGER	R/WO	1 (fixed)
I30statusModePayload	I30statusModeTBL.10	INTEGER	R/WO	1 (fixed)
I30statusCtrlPkt	I30statusModeTBL.11	INTEGER	R/WO	1 (fixed)
I30statusModeAribCc	I30statusModeTBL.12	INTEGER	R/WO	1 (fixed)
I30statusAribNetq	I30statusModeTBL.13	INTEGER	R/WO	1 (fixed)
I30statusModeAribTrig	I30statusModeTBL.14	INTEGER	R/WO	1 (fixed)
I30statusModeAribUser1	I30statusModeTBL.15	INTEGER	R/WO	1 (fixed)
I30statusModeAribUser2	I30statusModeTBL.16	INTEGER	R/WO	1 (fixed)
I30statusModeSmpteAfd	I30statusModeTBL.19	INTEGER	R/WO	1 (fixed)
I30statusModeSearch	I30statusModeTBL.22	INTEGER	R/WO	1 (fixed)
I30statusErrClear	I30statusModeTBL.23	INTEGER	R/WO	1 (fixed)
I30statusLogTBL	I30statusTBL.2	Aggregate	-	-
I30statusLogging	I30statusLogTBL.1	INTEGER	R/W	1 = stop 2 = start
I30statusLogMode	I30statusLogTBL.2	INTEGER	R/W	1 = overwr 2 = stop
I30statusLogAutoFilename	I30statusLogTBL.3	INTEGER	R/W	1 = off 2 = on
I30statusLogClear	I30statusLogTBL.4	INTEGER	R/WO	1 (fixed)
I30statusLogStore	I30statusLogTBL.5	INTEGER	R/WO	1 (fixed)
I30statusDumpTBL	I30statusTBL.3	Aggregate	-	-
I30statusDumpMode	I30statusDumpTBL.1	INTEGER	R/W	1 = run 2 = hold
I30statusDumpModeCap	I30statusDumpTBL.2	INTEGER	R/W	1 = run 2 = hold 3 = frmcap
I30statusDumpDisp	I30statusDumpTBL.3	INTEGER	R/W	1 = serial 2 = compo 3 = binary 4 = linka 5 = linkb 6 = linkab 7 = stream1 8 = stream2 9 = stream12 10 = s1serial

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				11 = s1compo 12 = s1binary 13 = s2serial 14 = s2compo 15 = s2binary
l30statusDumpJump	l30statusDumpTBL.4	INTEGER	R/W	1 = eav 2 = sav
l30statusDumpAutoFilename	l30statusDumpTBL.6	INTEGER	R/W	1 = off 2 = on
l30statusDumpUsbFileStore	l30statusDumpTBL.7	INTEGER	R/W	1 (fixed)
l30statusDumpSample	l30statusDumpTBL.8	INTEGER	R/W	0 to 32767
l30statusDumpLine	l30statusDumpTBL.9	INTEGER	R/W	0 to 32767
l30statusExtrefTBL	l30statusTBL.4	Aggregate	-	-
l30statusExtrefUserRef	l30statusExtrefTBL.1	INTEGER	R/WO	1 (fixed)
l30statusExtrefDefaultRef	l30statusExtrefTBL.2	INTEGER	R/WO	1 (fixed)
l30statusExtrefSel	l30statusExtrefTBL.3	INTEGER	R/W	1 = ext 2 = sdi
l30statusExtrefTiming	l30statusExtrefTBL.4	INTEGER	R/W	1 = legacy 2 = serial
l30statusAncTBL	l30statusTBL.6	Aggregate	-	-
l30statusAncDumpHold	l30statusAncTBL.1	INTEGER	R/W	1 = hold-hold 2 = hold-1s 3 = hold-3s
l30statusAncDumpMode	l30statusAncTBL.2	INTEGER	R/W	1 = hex 2 = binary
l30statusAncDumpSample	l30statusAncTBL.3	INTEGER	R/W	0 to 258
l30statusAncEdhDisp	l30statusAncTBL.4	INTEGER	R/W	1 = text 2 = dump
l30statusAncEdhMode	l30statusAncTBL.5	INTEGER	R/W	1 = hex 2 = binary
l30statusAncEdhSample	l30statusAncTBL.6	INTEGER	R/W	0 to 19
l30statusAncViewStream	l30statusAncTBL.7	INTEGER	R/W	1 = stream1 2 = stream2
l30statusAncPayloadStream	l30statusAncTBL.8	INTEGER	R/W	1 = stream1 2 = stream2
l30statusAncCtrlDisp	l30statusAncTBL.9	INTEGER	R/W	1 = text 2 = dump
l30statusAncCtrlMode	l30statusAncTBL.10	INTEGER	R/W	1 = hex 2 = binary
l30statusAncCtrlGroup	l30statusAncTBL.11	INTEGER	R/W	1 = group1 2 = group2 3 = group3 4 = group4
l30statusAncCtrlStream	l30statusAncTBL.12	INTEGER	R/W	1 = stream1 2 = stream2

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
I30statusAribTBL	I30statusTBL.7	Aggregate	-	-
I30statusAribCcDisp	I30statusAribTBL.1	INTEGER	R/W	1 = text 2 = dump
I30statusAribCcType	I30statusAribTBL.2	INTEGER	R/W	1 = hd 2 = sd 3 = analog 4 = cellular
I30statusAribCcMode	I30statusAribTBL.3	INTEGER	R/W	1 = hex 2 = binary
I30statusAribCcSample	I30statusAribTBL.4	INTEGER	R/W	0 to 258
I30statusAribCcStream	I30statusAribTBL.5	INTEGER	R/W	1 = stream1 2 = stream2
I30statusAribNetqDisp	I30statusAribTBL.6	INTEGER	R/W	1 = text 2 = dump 3 = qlog 4 = format
I30statusAribNetqMode	I30statusAribTBL.7	INTEGER	R/W	1 = hex 2 = binary
I30statusAribNetqSample	I30statusAribTBL.9	INTEGER	R/W	0 to 258
I30statusAribNetqLogPos	I30statusAribTBL.10	INTEGER	R/W	-50 to 50
I30statusAribNetqStream	I30statusAribTBL.11	INTEGER	R/W	1 = stream1 2 = stream2
I30statusAribNetqClear	I30statusAribTBL.12	INTEGER	R/WO	1 (fixed)
I30statusAribNetqMaskNetQ1	I30statusAribTBL.13	INTEGER	R/W	1 = off 2 = on
I30statusAribNetqMaskNetQ2	I30statusAribTBL.14	INTEGER	R/W	1 = off 2 = on
I30statusAribNetqMaskNetQ3	I30statusAribTBL.15	INTEGER	R/W	1 = off 2 = on
I30statusAribNetqMaskNetQ4	I30statusAribTBL.16	INTEGER	R/W	1 = off 2 = on
I30statusAribNetqMaskNetQ5	I30statusAribTBL.17	INTEGER	R/W	1 = off 2 = on
I30statusAribNetqMaskNetQ6	I30statusAribTBL.18	INTEGER	R/W	1 = off 2 = on
I30statusAribNetqMaskNetQ7	I30statusAribTBL.19	INTEGER	R/W	1 = off 2 = on
I30statusAribNetqMaskNetQ8	I30statusAribTBL.20	INTEGER	R/W	1 = off 2 = on
I30statusAribNetqMaskNetQ9	I30statusAribTBL.21	INTEGER	R/W	1 = off 2 = on
I30statusAribNetqMaskNetQ10	I30statusAribTBL.22	INTEGER	R/W	1 = off 2 = on
I30statusAribNetqMaskNetQ11	I30statusAribTBL.23	INTEGER	R/W	1 = off 2 = on

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30statusAribNetqMaskNetQ12	l30statusAribTBL.24	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetQ13	l30statusAribTBL.25	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetQ14	l30statusAribTBL.26	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetQ15	l30statusAribTBL.27	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetQ16	l30statusAribTBL.28	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetQ17	l30statusAribTBL.29	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetQ18	l30statusAribTBL.30	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetQ19	l30statusAribTBL.31	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetQ20	l30statusAribTBL.32	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetQ21	l30statusAribTBL.33	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetQ22	l30statusAribTBL.34	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetQ23	l30statusAribTBL.35	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetQ24	l30statusAribTBL.36	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetQ25	l30statusAribTBL.37	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetQ26	l30statusAribTBL.38	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetQ27	l30statusAribTBL.39	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetQ28	l30statusAribTBL.40	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetQ29	l30statusAribTBL.41	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetQ30	l30statusAribTBL.42	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetQ31	l30statusAribTBL.43	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetQ32	l30statusAribTBL.44	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetS1	l30statusAribTBL.45	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetS2	l30statusAribTBL.46	INTEGER	R/W	1 = off

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				2 = on
l30statusAribNetqMaskNetS3	l30statusAribTBL.47	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetS4	l30statusAribTBL.48	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetS5	l30statusAribTBL.49	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetS6	l30statusAribTBL.50	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetS7	l30statusAribTBL.51	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetS8	l30statusAribTBL.52	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetS9	l30statusAribTBL.53	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetS10	l30statusAribTBL.54	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetS11	l30statusAribTBL.55	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetS12	l30statusAribTBL.56	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetS13	l30statusAribTBL.57	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetS14	l30statusAribTBL.58	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetS15	l30statusAribTBL.59	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqMaskNetS16	l30statusAribTBL.60	INTEGER	R/W	1 = off 2 = on
l30statusAribTriggerDisp	l30statusAribTBL.61	INTEGER	R/W	1 = text 2 = dump
l30statusAribTriggerMode	l30statusAribTBL.62	INTEGER	R/W	1 = hex 2 = binary
l30statusAribTriggerSample	l30statusAribTBL.63	INTEGER	R/W	0 to 258
l30statusAribTriggerStream	l30statusAribTBL.64	INTEGER	R/W	1 = stream1 2 = stream2
l30statusAribTriggerUser1Mode	l30statusAribTBL.65	INTEGER	R/W	1 = hex 2 = binary
l30statusAribTriggerUser1Sample	l30statusAribTBL.66	INTEGER	R/W	0 to 258
l30statusAribTriggerUser1Stream	l30statusAribTBL.67	INTEGER	R/W	1 = stream1 2 = stream2
l30statusAribTriggerUser2Mode	l30statusAribTBL.68	INTEGER	R/W	1 = hex 2 = binary
l30statusAribTriggerUser2Sa	l30statusAribTBL.69	INTEGER	R/W	0 to 258

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
mple				
l30statusAribTriggerUser2Stream	l30statusAribTBL.70	INTEGER	R/W	1 = stream1 2 = stream2
l30statusAribNetqUsbAutoFilename	l30statusAribTBL.71	INTEGER	R/W	1 = off 2 = on
l30statusAribNetqUsbFileStore	l30statusAribTBL.72	INTEGER	R/W	1 (fixed)
l30statusSmpteTBL	l30statusTBL.8	Aggregate	-	-
l30statusSmpteAfdDisp	l30statusSmpteTBL.11	INTEGER	R/W	1 = text 2 = dump
l30statusSmpteAfdMode	l30statusSmpteTBL.12	INTEGER	R/W	1 = hex 2 = binary
l30statusSmpteAfdStream	l30statusSmpteTBL.13	INTEGER	R/W	1 = stream1 2 = stream2
l30statusCustomTBL	l30statusTBL.9	Aggregate	-	-
l30statusCustomSearchDid	l30statusCustomTBL.1	DisplayString	R/W	0 to FF
l30statusCustomSearchSdid	l30statusCustomTBL.2	DisplayString	R/W	-1 to FF
l30statusCustomSearchMode	l30statusCustomTBL.3	INTEGER	R/W	1 = hex 2 = binary
l30statusCustomSearchYc	l30statusCustomTBL.4	INTEGER	R/W	1 = y 2 = c
l30statusCustomSearchStream	l30statusCustomTBL.5	INTEGER	R/W	1 = stream1 2 = stream2
l30statusCustomSearchSet	l30statusCustomTBL.6	INTEGER	R/WO	1 (fixed)
l30statusCustomSearchSample	l30statusCustomTBL.7	INTEGER	R/W	0 to 258
l30statusLinkTBL	l30statusTBL.10	Aggregate	-	-
l30statusLinkAncSelect	l30statusLinkTBL.2	INTEGER	R/W	1 = ach 2 = bch 3 = cch 4 = dch
l30statusSetupTBL	l30statusTBL.11	Aggregate	-	-
l30statusSetupErrCounter	l30statusSetupTBL.1	INTEGER	R/W	1 = sec 2 = field
l30statusSetupTrsErr	l30statusSetupTBL.2	INTEGER	R/W	1 = off 2 = on
l30statusSetupLineErr	l30statusSetupTBL.3	INTEGER	R/W	1 = off 2 = on
l30statusSetupCrcErr	l30statusSetupTBL.4	INTEGER	R/W	1 = off 2 = on
l30statusSetupEdhErr	l30statusSetupTBL.5	INTEGER	R/W	1 = off 2 = on
l30statusSetupIllegalErr	l30statusSetupTBL.6	INTEGER	R/W	1 = off 2 = on
l30statusSetupFreqErr	l30statusSetupTBL.7	INTEGER	R/W	1 = off

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				2 = on
l30statusSetupCableErr	l30statusSetupTBL.8	INTEGER	R/W	1 = off 2 = on
l30statusSetupCable3g	l30statusSetupTBL.9	INTEGER	R/W	1 = cable-ls5cfb 2 = cable-1694a
l30statusSetupCableHd	l30statusSetupTBL.10	INTEGER	R/W	1 = cable-ls5cfb 2 = cable-1694a
l30statusSetupCableSd	l30statusSetupTBL.11	INTEGER	R/W	1 = cable-l5c2v 2 = cable-8281
l30statusSetupCable3gErr	l30statusSetupTBL.12	INTEGER	R/W	10 to 105
l30statusSetupCable3gWarn	l30statusSetupTBL.13	INTEGER	R/W	10 to 105
l30statusSetupCableHdErr	l30statusSetupTBL.14	INTEGER	R/W	5 to 130
l30statusSetupCableHdWarn	l30statusSetupTBL.15	INTEGER	R/W	5 to 130
l30statusSetupCableSdErr	l30statusSetupTBL.16	INTEGER	R/W	50 to 300
l30statusSetupCableSdWarn	l30statusSetupTBL.17	INTEGER	R/W	50 to 300
l30statusSetupParityErr	l30statusSetupTBL.18	INTEGER	R/W	1 = off 2 = on
l30statusSetupChecksumErr	l30statusSetupTBL.19	INTEGER	R/W	1 = off 2 = on
l30statusSetupAudioBch	l30statusSetupTBL.20	INTEGER	R/W	1 = off 2 = on
l30statusSetupAudioDbnErr	l30statusSetupTBL.21	INTEGER	R/W	1 = off 2 = on
l30statusSetupAudioPrityErr	l30statusSetupTBL.22	INTEGER	R/W	1 = off 2 = on
l30statusSetupAudioInhibitErr	l30statusSetupTBL.23	INTEGER	R/W	1 = off 2 = on
l30statusSetupAudioSampleErr	l30statusSetupTBL.24	INTEGER	R/W	1 = off 2 = on
l30statusSetupLowpassFreq	l30statusSetupTBL.25	INTEGER	R/W	1 = off 2 = hdsd1mhz 3 = hd2p8sd1mhz
l30statusSetupGamutErr	l30statusSetupTBL.26	INTEGER	R/W	1 = off 2 = on
l30statusSetupGamutUpper	l30statusSetupTBL.27	INTEGER	R/W	908 to 1094
l30statusSetupGamutLower	l30statusSetupTBL.28	INTEGER	R/W	-72 to 61
l30statusGamutArea	l30statusSetupTBL.31	INTEGER	R/W	0 to 50
l30statusGamutDuration	l30statusSetupTBL.32	INTEGER	R/W	1 to 60
l30statusCmpstGamut	l30statusSetupTBL.33	INTEGER	R/W	1 = off 2 = on
l30statusCmstSetup	l30statusSetupTBL.34	INTEGER	R/W	1 = setup-0 2 = setup-75
l30statusCmpstUpper	l30statusSetupTBL.35	INTEGER	R/W	900 to 1350
l30statusCmpstLower	l30statusSetupTBL.36	INTEGER	R/W	-400 to 200
l30statusCmpstArea	l30statusSetupTBL.39	INTEGER	R/W	0 to 50

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30statusCmpstDuration	l30statusSetupTBL.40	INTEGER	R/W	1 to 60
l30statusFreezeErr	l30statusSetupTBL.41	INTEGER	R/W	1 = off 2 = on
l30statusFreezeUpper	l30statusSetupTBL.42	INTEGER	R/W	0 to 100
l30statusFreezeLower	l30statusSetupTBL.43	INTEGER	R/W	0 to 100
l30statusFreezeLeft	l30statusSetupTBL.44	INTEGER	R/W	0 to 100
l30statusFreezeRight	l30statusSetupTBL.45	INTEGER	R/W	0 to 100
l30statusFreezeDuration	l30statusSetupTBL.46	INTEGER	R/W	2 to 300
l30statusBlackErr	l30statusSetupTBL.47	INTEGER	R/W	1 = off 2 = on
l30statusBlackLevel	l30statusSetupTBL.48	INTEGER	R/W	0 to 100
l30statusBlackArea	l30statusSetupTBL.49	INTEGER	R/W	1 to 100
l30statusBlackDuration	l30statusSetupTBL.50	INTEGER	R/W	1 to 300
l30statusLevelErr	l30statusSetupTBL.51	INTEGER	R/W	1 = off 2 = on
l30statusLevelLumUpper	l30statusSetupTBL.52	INTEGER	R/W	-51 to 766
l30statusLevelLumLower	l30statusSetupTBL.53	INTEGER	R/W	-51 to 766
l30statusLevelChromaUpper	l30statusSetupTBL.54	INTEGER	R/W	-400 to 399
l30statusLevelChromaLower	l30statusSetupTBL.55	INTEGER	R/W	-400 to 399
l30statusDataTBL	l30statusTBL.12	Aggregate	-	-
l30statusDataSignalA	l30statusDataTBL.1	DisplayString	R/O	Signal Data
l30statusDataSignalB	l30statusDataTBL.2	DisplayString	R/O	Signal Data
l30statusDataSignalC	l30statusDataTBL.3	DisplayString	R/O	Signal Data
l30statusDataSignalD	l30statusDataTBL.4	DisplayString	R/O	Signal Data
l30statusDataLinkA	l30statusDataTBL.5	DisplayString	R/O	Link Data
l30statusDataLinkB	l30statusDataTBL.6	DisplayString	R/O	Link Data
l30statusDataLinkC	l30statusDataTBL.7	DisplayString	R/O	Link Data
l30statusDataLinkD	l30statusDataTBL.8	DisplayString	R/O	Link Data
l30statusDataFormatA	l30statusDataTBL.9	DisplayString	R/O	Format Data
l30statusDataFormatB	l30statusDataTBL.10	DisplayString	R/O	Format Data
l30statusDataFormatC	l30statusDataTBL.11	DisplayString	R/O	Format Data
l30statusDataFormatD	l30statusDataTBL.12	DisplayString	R/O	Format Data
l30statusDataAudioA	l30statusDataTBL.13	DisplayString	R/O	Audio Data
l30statusDataAudioB	l30statusDataTBL.14	DisplayString	R/O	Audio Data
l30statusDataAudioC	l30statusDataTBL.15	DisplayString	R/O	Audio Data
l30statusDataAudioD	l30statusDataTBL.16	DisplayString	R/O	Audio Data
l30statusDataExtrefA	l30statusDataTBL.17	INTEGER	R/O	1 = userref 2 = default
l30statusDataExtrefStatA	l30statusDataTBL.18	INTEGER	R/O	1 = int 2 = sdi1a 3 = sdi2a 4 = sdi1c 5 = sdi2c 6 = linka 7 = link1

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				8 = exthd 9 = extbb 10 = nosignal
I30statusDataExtrefHtimeA	I30statusDataTBL.19	DisplayString	R/O	H Phase [us]
I30statusDataExtrefHpixA	I30statusDataTBL.20	DisplayString	R/O	H Phase [pix/dot]
I30statusDataExtrefVlineA	I30statusDataTBL.21	DisplayString	R/O	V Phase
I30statusDataExtrefTotalA	I30statusDataTBL.22	DisplayString	R/O	Total Pahse
I30statusDataExtrefB	I30statusDataTBL.23	INTEGER	R/O	1 = userref 2 = default
I30statusDataExtrefStatB	I30statusDataTBL.24	INTEGER	R/O	1 = int 2 = sdi1a 3 = sdi2a 4 = sdi1c 5 = sdi2c 6 = linka 7 = link1 8 = exthd 9 = extbb 10 = nosignal
I30statusDataExtrefHtimeB	I30statusDataTBL.25	DisplayString	R/O	H Phase [us]
I30statusDataExtrefHpixB	I30statusDataTBL.26	DisplayString	R/O	H Phase [pix/dot]
I30statusDataExtrefVlineB	I30statusDataTBL.27	DisplayString	R/O	V Phase
I30statusDataExtrefTotalB	I30statusDataTBL.28	DisplayString	R/O	Total Phase
I30statusDataExtrefC	I30statusDataTBL.29	INTEGER	R/O	1 = userref 2 = default
I30statusDataExtrefStatC	I30statusDataTBL.30	INTEGER	R/O	1 = int 2 = sdi1a 3 = sdi2a 4 = sdi1c 5 = sdi2c 6 = linka 7 = link1 8 = exthd 9 = extbb 10 = nosignal
I30statusDataExtrefHtimeC	I30statusDataTBL.31	DisplayString	R/O	H Phase [us]
I30statusDataExtrefHpixC	I30statusDataTBL.32	DisplayString	R/O	H Phase [pix/dot]
I30statusDataExtrefVlineC	I30statusDataTBL.33	DisplayString	R/O	V Phase
I30statusDataExtrefTotalC	I30statusDataTBL.34	DisplayString	R/O	Total Phase
I30statusDataExtrefD	I30statusDataTBL.35	INTEGER	R/O	1 = userref 2 = default
I30statusDataExtrefStatD	I30statusDataTBL.36	INTEGER	R/O	1 = int 2 = sdi1a 3 = sdi2a 4 = sdi1c 5 = sdi2c

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				6 = linka 7 = link1 8 = exthd 9 = extbb 10 = nosignal
I30statusDataExtrefHtimeD	I30statusDataTBL.37	DisplayString	R/O	H Phase [us]
I30statusDataExtrefHpixD	I30statusDataTBL.38	DisplayString	R/O	H Phase [pix/dot]
I30statusDataExtrefVlineD	I30statusDataTBL.39	DisplayString	R/O	V Phase
I30statusDataExtrefTotalD	I30statusDataTBL.40	DisplayString	R/O	Total Phase
I30statusDataAncAudioCtrl1	I30statusDataTBL.49	INTEGER	R/O	1 = detect 2 = missing
I30statusDataAncAudioCtrl2	I30statusDataTBL.50	INTEGER	R/O	1 = detect 2 = missing
I30statusDataAncEdh	I30statusDataTBL.51	INTEGER	R/O	1 = detect 2 = missing
I30statusDataAncLtc1	I30statusDataTBL.52	INTEGER	R/O	1 = detect 2 = missing
I30statusDataAncLtc2	I30statusDataTBL.53	INTEGER	R/O	1 = detect 2 = missing
I30statusDataAncVitc1	I30statusDataTBL.54	INTEGER	R/O	1 = detect 2 = missing
I30statusDataAncVitc2	I30statusDataTBL.55	INTEGER	R/O	1 = detect 2 = missing
I30statusDataAncPayload1	I30statusDataTBL.56	INTEGER	R/O	1 = detect 2 = missing
I30statusDataAncPayload2	I30statusDataTBL.57	INTEGER	R/O	1 = detect 2 = missing
I30statusDataAncAfd1	I30statusDataTBL.64	INTEGER	R/O	1 = detect 2 = missing
I30statusDataAncAfd2	I30statusDataTBL.65	INTEGER	R/O	1 = detect 2 = missing
I30statusDataAncJpnCc1	I30statusDataTBL.66	INTEGER	R/O	1 = detect 2 = missing
I30statusDataAncJpnCc2	I30statusDataTBL.67	INTEGER	R/O	1 = detect 2 = missing
I30statusDataAncJpnCc3	I30statusDataTBL.68	INTEGER	R/O	1 = detect 2 = missing
I30statusDataAncNetq1	I30statusDataTBL.69	INTEGER	R/O	1 = detect 2 = missing
I30statusDataAncNetq2	I30statusDataTBL.70	INTEGER	R/O	1 = detect 2 = missing
I30statusDataAncTrigger	I30statusDataTBL.71	INTEGER	R/O	1 = detect 2 = missing
I30statusDataAncUser1	I30statusDataTBL.72	INTEGER	R/O	1 = detect 2 = missing

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30statusDataAncUser2	l30statusDataTBL.73	INTEGER	R/O	1 = detect 2 = missing
l30statusDataAncPktPayload	l30statusDataTBL.74	DisplayString	R/O	Payload ID
l30statusDataAncPktAribNetqStation	l30statusDataTBL.75	DisplayString	R/O	Station Code
l30statusDataAncPktAribNetqVcurr	l30statusDataTBL.76	DisplayString	R/O	Video Current
l30statusDataAncPktAribNetqVNext	l30statusDataTBL.77	DisplayString	R/O	Video Next
l30statusDataAncPktAribNetqACurr	l30statusDataTBL.78	DisplayString	R/O	Audio Current
l30statusDataAncPktAribNetqANext	l30statusDataTBL.79	DisplayString	R/O	Audio Next
l30statusDataAncPktAribNetqDCurr	l30statusDataTBL.80	DisplayString	R/O	Downmix Current
l30statusDataAncPktAribNetqDNext	l30statusDataTBL.81	DisplayString	R/O	Downmix Next
l30statusDataAncPktSmpteAfdCode	l30statusDataTBL.82	DisplayString	R/O	AFD Code
l30statusDataAncPktSmpteAfdFrame	l30statusDataTBL.83	DisplayString	R/O	Coded Frame
l30statusDataAncPktSmpteAfdBarFlg	l30statusDataTBL.84	DisplayString	R/O	Bar Data Flags
l30statusDataAncPktSmpteAfdBarVal1	l30statusDataTBL.85	DisplayString	R/O	Bar Data Value1
l30statusDataAncPktSmpteAfdBarVal2	l30statusDataTBL.86	DisplayString	R/O	Bar Data Value2

- **l30eyeTBL(1) group**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30eyeModeTBL	l30eyeTBL.1	Aggregate	-	-
l30eyeMode	l30eyeModeTBL.1	INTEGER	R/W	1 = eye 2 = jit
l30eyeIntenTBL	l30eyeTBL.2	Aggregate	-	-
l30eyeInten	l30eyeIntenTBL.1	INTEGER	R/W	-128 to 127
l30eyeColor	l30eyeIntenTBL.2	INTEGER	R/W	1 = white 2 = yellow 3 = cyan 4 = green 5 = magenta 6 = red 7 = blue
l30eyeScaleTBL	l30eyeTBL.3	Aggregate	-	-
l30eyeScaleInten	l30eyeScaleTBL.1	INTEGER	R/W	-8 to 7
l30eyeScaleColor	l30eyeScaleTBL.2	INTEGER	R/W	1 = white

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				2 = yellow 3 = cyan 4 = green 5 = magenta 6 = red 7 = blue
l30eyeGainTBL	l30eyeTBL.4	Aggregate	-	-
l30eyeGainMode	l30eyeGainTBL.1	INTEGER	R/W	1 = cal 2 = variable
l30eyeGainVar	l30eyeGainTBL.2	DisplayString	R/W	0.50 to 2.00
l30eyeSweep	l30eyeGainTBL.3	INTEGER	R/W	1 = sweep-2ui 2 = sweep-4ui 3 = sweep-16ui
l30eyeFilter	l30eyeGainTBL.4	INTEGER	R/W	1 = filter-100khz 2 = filter-1khz 3 = filter-100hz 4 = filter-10hz 5 = filter-timing 6 = filter-alignment
l30eyeJitTBL	l30eyeTBL.5	Aggregate	-	-
l30eyeJitIntenTBL	l30eyeJitTBL.5	Aggregate	-	-
l30eyeJitInten	l30eyeJitIntenTBL.1	INTEGER	R/W	-128 to 127
l30eyeJitColor	l30eyeJitIntenTBL.2	INTEGER	R/W	1 = white 2 = yellow 3 = cyan 4 = green 5 = magenta 6 = red 7 = blue
l30eyeJitScaleTBL	l30eyeJitTBL.5	Aggregate	-	-
l30eyeJitScaleInten	l30eyeJitScaleTBL.1	INTEGER	R/W	-8 to 7
l30eyeJitScaleColor	l30eyeJitScaleTBL.2	INTEGER	R/W	1 = white 2 = yellow 3 = cyan 4 = green 5 = magenta 6 = red 7 = blue
l30eyeJitSweepTBL	l30eyeJitTBL.5	Aggregate	-	-
l30eyeJitMag	l30eyeJitSweepTBL.1	INTEGER	R/W	1 = x1 2 = x2 3 = x8
l30eyeJitSweep	l30eyeJitSweepTBL.2	INTEGER	R/W	1 = sweep-1h 2 = sweep-2h 3 = sweep-1v 4 = sweep-2v

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30eyeJitMag12g	l30eyeJitSweepTBL.3	INTEGER	R/W	1 = x1 2 = x2 3 = x4 4 = x16
l30eyeJitFilterTBL	l30eyeJitTBL.5	Aggregate	-	-
l30eyeJitFilter	l30eyeJitFilterTBL.1	INTEGER	R/W	1 = filter-100khz 2 = filter-1khz 3 = filter-100hz 4 = filter-10hz 5 = filter-timing 6 = filter-alignment
l30eyeJitFilterPeakHold	l30eyeJitFilterTBL.2	INTEGER	R/W	1 = off 2 = on
l30eyeJitFileterPeakClear	l30eyeJitFilterTBL.3	INTEGER	R/WO	1 (fixed)
l30eyeLinkTBL	l30eyeTBL.6	Aggregate	-	-
l30eyeHdDlinkSelAb	l30eyeLinkTBL.1	INTEGER	R/W	1 = sel-1 2 = sel-2
l30eyeHdDlinkSelCd	l30eyeLinkTBL.2	INTEGER	R/W	1 = sel-3 2 = cel-4
l30eye4k3gDlinkSelAb	l30eyeLinkTBL.3	INTEGER	R/W	1 = sel-1 2 = sel-2
l30eye4k3gDlinkSelCd	l30eyeLinkTBL.4	INTEGER	R/W	1 = sel-3 2 = cel-4
l30eyeQlinkSel	l30eyeLinkTBL.5	INTEGER	R/W	1 = sel-1 2 = sel-2 3 = sel-3 4 = sel-4
l30eyeSetupTBL	l30eyeTBL.7	Aggregate	-	-
l30eyeSetupErr3gAmp	l30eyeSetupTBL.1	INTEGER	R/W	1 = off 2 = on
l30eyeSetupErr3gAmpUpper	l30eyeSetupTBL.2	INTEGER	R/W	80 to 140
l30eyeSetupErr3gAmpLower	l30eyeSetupTBL.3	INTEGER	R/W	40 to 100
l30eyeSetupErr3gRise	l30eyeSetupTBL.4	INTEGER	R/W	1 = off 2 = on
l30eyeSetupErr3gRizeMax	l30eyeSetupTBL.5	INTEGER	R/W	40 to 140
l30eyeSetupErr3gFall	l30eyeSetupTBL.6	INTEGER	R/W	1 = off 2 = on
l30eyeSetupErr3gFallMax	l30eyeSetupTBL.7	INTEGER	R/W	40 to 140
l30eyeSetupErr3gDelta	l30eyeSetupTBL.8	INTEGER	R/W	1 = off 2 = on
l30eyeSetupErr3gDeltaMax	l30eyeSetupTBL.9	INTEGER	R/W	40 to 140
l30eyeSetupErr3gTjit	l30eyeSetupTBL.10	INTEGER	R/W	1 = off 2 = on
l30eyeSetupErr3gTjitMax	l30eyeSetupTBL.11	INTEGER	R/W	10 to 200
l30eyeSetupErr3gCjit	l30eyeSetupTBL.12	INTEGER	R/W	1 = off

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				2 = on
l30eyeSetupErr3gCjitMax	l30eyeSetupTBL.13	INTEGER	R/W	10 to 200
l30eyeSetupErr3gOsR	l30eyeSetupTBL.14	INTEGER	R/W	1 = off 2 = on
l30eyeSetupErr3gOsRMax	l30eyeSetupTBL.15	INTEGER	R/W	0 to 200
l30eyeSetupErr3gOsF	l30eyeSetupTBL.16	INTEGER	R/W	1 = off 2 = on
l30eyeSetupErr3gOsFMax	l30eyeSetupTBL.17	INTEGER	R/W	0 to 200
l30eyeSetupErrHdAmp	l30eyeSetupTBL.18	INTEGER	R/W	1 = off 2 = on
l30eyeSetupErrHdAmpUpper	l30eyeSetupTBL.19	INTEGER	R/W	80 to 140
l30eyeSetupErrHdAmpLower	l30eyeSetupTBL.20	INTEGER	R/W	40 to 100
l30eyeSetupErrHdRise	l30eyeSetupTBL.21	INTEGER	R/W	1 = off 2 = on
l30eyeSetupErrHdRizeMax	l30eyeSetupTBL.22	INTEGER	R/W	40 to 140
l30eyeSetupErrHdFall	l30eyeSetupTBL.23	INTEGER	R/W	1 = off 2 = on
l30eyeSetupErrHdFallMax	l30eyeSetupTBL.24	INTEGER	R/W	40 to 140
l30eyeSetupErrHdDelta	l30eyeSetupTBL.25	INTEGER	R/W	1 = off 2 = on
l30eyeSetupErrHdDeltaMax	l30eyeSetupTBL.26	INTEGER	R/W	40 to 140
l30eyeSetupErrHdTjit	l30eyeSetupTBL.27	INTEGER	R/W	1 = off 2 = on
l30eyeSetupErrHdTjitMax	l30eyeSetupTBL.28	INTEGER	R/W	10 to 200
l30eyeSetupErrHdCjit	l30eyeSetupTBL.29	INTEGER	R/W	1 = off 2 = on
l30eyeSetupErrHdCjitMax	l30eyeSetupTBL.30	INTEGER	R/W	10 to 200
l30eyeSetupErrHdOsR	l30eyeSetupTBL.31	INTEGER	R/W	1 = off 2 = on
l30eyeSetupErrHdOsRMax	l30eyeSetupTBL.32	INTEGER	R/W	0 to 200
l30eyeSetupErrHdOsF	l30eyeSetupTBL.33	INTEGER	R/W	1 = off 2 = on
l30eyeSetupErrHdOsFMax	l30eyeSetupTBL.34	INTEGER	R/W	0 to 200
l30eyeSetupErrSdAmp	l30eyeSetupTBL.35	INTEGER	R/W	1 = off 2 = on
l30eyeSetupErrSdAmpUpper	l30eyeSetupTBL.36	INTEGER	R/W	80 to 140
l30eyeSetupErrSdAmpLower	l30eyeSetupTBL.37	INTEGER	R/W	40 to 100
l30eyeSetupErrSdRise	l30eyeSetupTBL.38	INTEGER	R/W	1 = off 2 = on
l30eyeSetupErrSdRizeMax	l30eyeSetupTBL.39	INTEGER	R/W	40 to 140
l30eyeSetupErrSdFall	l30eyeSetupTBL.40	INTEGER	R/W	1 = off 2 = on
l30eyeSetupErrSdFallMax	l30eyeSetupTBL.41	INTEGER	R/W	40 to 140
l30eyeSetupErrSdDelta	l30eyeSetupTBL.42	INTEGER	R/W	1 = off 2 = on

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
I30eyeSetupErrSdDeltaMax	I30eyeSetupTBL.43	INTEGER	R/W	40 to 140
I30eyeSetupErrSdTjit	I30eyeSetupTBL.44	INTEGER	R/W	1 = off 2 = on
I30eyeSetupErrSdTjitMax	I30eyeSetupTBL.45	INTEGER	R/W	10 to 200
I30eyeSetupErrSdCjit	I30eyeSetupTBL.46	INTEGER	R/W	1 = off 2 = on
I30eyeSetupErrSdCjitMax	I30eyeSetupTBL.47	INTEGER	R/W	10 to 200
I30eyeSetupErrSdOsR	I30eyeSetupTBL.48	INTEGER	R/W	1 = off 2 = on
I30eyeSetupErrSdOsRMax	I30eyeSetupTBL.49	INTEGER	R/W	0 to 200
I30eyeSetupErrSdOsF	I30eyeSetupTBL.50	INTEGER	R/W	1 = off 2 = on
I30eyeSetupErrSdOsFMax	I30eyeSetupTBL.51	INTEGER	R/W	0 to 200
I30eyeSetupComplete	I30eyeSetupTBL.52	INTEGER	R/WO	1 (fixed)
I30eyeSetupErr12gAmp	I30eyeSetupTBL.53	INTEGER	R/W	1 = off 2 = on
I30eyeSetupErr12gAmpUpper	I30eyeSetupTBL.54	INTEGER	R/W	80 to 140
I30eyeSetupErr12gAmpLower	I30eyeSetupTBL.55	INTEGER	R/W	40 to 100
I30eyeSetupErr12gRise	I30eyeSetupTBL.56	INTEGER	R/W	1 = off 2 = on
I30eyeSetupErr12gRizeMax	I30eyeSetupTBL.57	INTEGER	R/W	40 to 140
I30eyeSetupErr12gFall	I30eyeSetupTBL.58	INTEGER	R/W	1 = off 2 = on
I30eyeSetupErr12gFallMax	I30eyeSetupTBL.59	INTEGER	R/W	40 to 140
I30eyeSetupErr12gDelta	I30eyeSetupTBL.60	INTEGER	R/W	1 = off 2 = on
I30eyeSetupErr12gDeltaMax	I30eyeSetupTBL.61	INTEGER	R/W	40 to 140
I30eyeSetupErr12gTjit	I30eyeSetupTBL.62	INTEGER	R/W	1 = off 2 = on
I30eyeSetupErr12gTjitMax	I30eyeSetupTBL.63	INTEGER	R/W	10 to 200
I30eyeSetupErr12gCjit	I30eyeSetupTBL.64	INTEGER	R/W	1 = off 2 = on
I30eyeSetupErr12gCjitMax	I30eyeSetupTBL.65	INTEGER	R/W	10 to 200
I30eyeSetupErr12gOsR	I30eyeSetupTBL.66	INTEGER	R/W	1 = off 2 = on
I30eyeSetupErr12gOsRMax	I30eyeSetupTBL.67	INTEGER	R/W	0 to 200
I30eyeSetupErr12gOsF	I30eyeSetupTBL.68	INTEGER	R/W	1 = off 2 = on
I30eyeSetupErr12gOsFMax	I30eyeSetupTBL.69	INTEGER	R/W	0 to 200
I30eyeTrigTBL	I30eyeTBL.8	Aggregate	-	-
I30eyeTrigStop	I30eyeSetupTBL.1	INTEGER	R/W	1 = off 2 = on
I30eyeDataTBL	I30eyeTBL.10	Aggregate	-	-
I30eyeDataAmp	I30eyeSetupTBL.1	DisplayString	R/O	Amp
I30eyeDataTr	I30eyeSetupTBL.2	DisplayString	R/O	Tr

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30eyeDataTf	l30eyeSetupTBL.3	DisplayString	R/O	Tf
l30eyeDataTj	l30eyeSetupTBL.4	DisplayString	R/O	Tj
l30eyeDataCj	l30eyeSetupTBL.5	DisplayString	R/O	Cj
l30eyeDataOr	l30eyeSetupTBL.6	DisplayString	R/O	Or
l30eyeDataOf	l30eyeSetupTBL.7	DisplayString	R/O	Of

- **l30audioTBL(1) group**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30audioMapTBL	l30audioTBL.1	Aggregate	-	-
l30audioMapInputSrc	l30audioMapTBL.1	INTEGER	R/W	1 = sdi 2 = ext-digi
l30audioMapLinkSelect	l30audioMapTBL.2	INTEGER	R/W	1 = a 2 = b 3 = c 4 = d
l30audioMapStreamSelect	l30audioMapTBL.3	INTEGER	R/W	1 = stream1 2 = stream2
l30audioMapChMode	l30audioMapTBL.4	INTEGER	R/W	1 = mode-8ch 2 = mode-16ch
l30audioMapSdiGroup1	l30audioMapTBL.5	INTEGER	R/W	1 = g1 2 = g2 3 = g3 4 = g4
l30audioMapSdiGroup2	l30audioMapTBL.6	INTEGER	R/W	1 = g1 2 = g2 3 = g3 4 = g4
l30audioMapSdiGroup3	l30audioMapTBL.7	INTEGER	R/W	1 = g1 2 = g2 3 = g3 4 = g4
l30audioMapSdiGroup4	l30audioMapTBL.8	INTEGER	R/W	1 = g1 2 = g2 3 = g3 4 = g4
l30audioMapPhonesL	l30audioMapTBL.9	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16 17 = chlt
l30audioMapPhonesR	l30audioMapTBL.10	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16 18 = chrt
l30audioMapDolbyDec	l30audioMapTBL.13	INTEGER	R/W	1 = off 2 = on

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30audioMapDolbyCh	l30audioMapTBL.14	INTEGER	R/W	1 = ch1-2 2 = ch3-4 3 = ch5-6 4 = ch7-8 5 = ch9-10 6 = ch11-12 7 = ch13-14 9 = ch15-16
l30audioDolbyDetect	l30audioMapTBL.15	INTEGER	R/W	2 = e 3 = d 4 = dp
l30audioDolbyEOnair	l30audioMapTBL.16	INTEGER	R/W	1 = off 2 = on
l30audioDolbyEDrcMain	l30audioMapTBL.17	INTEGER	R/W	1 = bypass 2 = dialnorm 3 = line 4 = rf
l30audioDolbyEDrcAux	l30audioMapTBL.18	INTEGER	R/W	1 = bypass 2 = dialnorm 3 = line 4 = rf
l30audioDolbyELinePos	l30audioMapTBL.19	INTEGER	R/W	1 = off 2 = on
l30audioDolbyELineSelect	l30audioMapTBL.20	INTEGER	R/W	1 = valid 2 = ideal 3 = custom
l30audioDolbyEEarliest	l30audioMapTBL.21	DisplayStrin g	R/W	8 to 104
l30audioDolbyELatest	l30audioMapTBL.22	DisplayStrin g	R/W	9 to 105
l30audioDolbyDDrcMain	l30audioMapTBL.23	INTEGER	R/W	1 = dialnorm 2 = line 3 = rf
l30audioDolbyDDrcAux	l30audioMapTBL.24	INTEGER	R/W	1 = dialnorm 2 = line 3 = rf
l30audioDolbyDPrologic	l30audioMapTBL.25	INTEGER	R/W	1 = off 2 = on
l30audioDolbyDDownmix	l30audioMapTBL.26	INTEGER	R/W	1 = auto 2 = lt-rt 3 = lo-ro 4 = pro-ii 5 = pro-ii-pro
l30audioMapDolbyMix	l30audioMapTBL.31	INTEGER	R/W	1 = off 2 = on
l30audioMapLissajouSL	l30audioMapTBL.32	INTEGER	R/W	1 = ch1

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				(omitted) 16 = ch16 17 = chlt
l30audioMapLissajouSR	l30audioMapTBL.33	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16 18 = chrt
l30audioMapLissajouML1	l30audioMapTBL.34	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioMapLissajouMR1	l30audioMapTBL.35	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioMapLissajouML2	l30audioMapTBL.36	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioMapLissajouMR2	l30audioMapTBL.37	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioMapLissajouML3	l30audioMapTBL.38	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioMapLissajouMR3	l30audioMapTBL.39	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioMapLissajouML4	l30audioMapTBL.40	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioMapLissajouMR4	l30audioMapTBL.41	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioMapLissajouML5	l30audioMapTBL.42	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioMapLissajouMR5	l30audioMapTBL.43	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioMapLissajouML6	l30audioMapTBL.44	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioMapLissajouMR6	l30audioMapTBL.45	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioMapLissajouML7	l30audioMapTBL.46	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30audioMapLissajouMR7	l30audioMapTBL.47	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioMapLissajouML8	l30audioMapTBL.48	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioMapLissajouMR8	l30audioMapTBL.49	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioMapSurroundL	l30audioMapTBL.50	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioMapSurroundR	l30audioMapTBL.51	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioMapSurroundC	l30audioMapTBL.52	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioMapSurroundLfe	l30audioMapTBL.53	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioMapSurroundLs	l30audioMapTBL.54	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioMapSurroundRs	l30audioMapTBL.55	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioMapSurroundLl	l30audioMapTBL.56	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioMapSurroundRr	l30audioMapTBL.57	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioMapDolbyLissajouSL	l30audioMapTBL.58	INTEGER	R/W	17 = chlt 83 = d1 (omitted) 90 = d8
l30audioMapDolbyLissajouSR	l30audioMapTBL.59	INTEGER	R/W	18 = chrt 83 = d1 (omitted) 90 = d8
l30audioMapDolbyLissajouML1	l30audioMapTBL.60	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioMapDolbyLissajouMR1	l30audioMapTBL.61	INTEGER	R/W	83 = d1 (omitted)

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				90 = d8
l30audioMapDolbyLissajouML2	l30audioMapTBL.62	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioMapDolbyLissajouMR2	l30audioMapTBL.63	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioMapDolbyLissajouML3	l30audioMapTBL.64	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioMapDolbyLissajouMR3	l30audioMapTBL.65	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioMapDolbyLissajouML4	l30audioMapTBL.66	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioMapDolbyLissajouMR4	l30audioMapTBL.67	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioDolbySurroundL	l30audioMapTBL.68	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioDolbySurroundR	l30audioMapTBL.69	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioDolbySurroundC	l30audioMapTBL.70	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioDolbySurroundLfe	l30audioMapTBL.71	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioDolbySurroundLs	l30audioMapTBL.72	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioDolbySurroundRs	l30audioMapTBL.73	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioDolbySurroundLl	l30audioMapTBL.74	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioDolbySurroundRr	l30audioMapTBL.75	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioMapDolbyPhonesL	l30audioMapTBL.76	INTEGER	R/W	17 = chlt 83 = d1 (omitted)

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				90 = d8 91 = daux
l30audioMapDolbyPhonesR	l30audioMapTBL.77	INTEGER	R/W	18 = chrt 83 = d1 (omitted) 90 = d8 91 = daux
l30audioMapSimSdiGroup1	l30audioMapTBL.78	INTEGER	R/W	1 = group1 2 = group2 3 = group3 4 = group4
l30audioMapSimSdiGroup2	l30audioMapTBL.79	INTEGER	R/W	1 = group1 2 = group2 3 = group3 4 = group4
l30audioMapSimSdiGroup3	l30audioMapTBL.80	INTEGER	R/W	1 = group1 2 = group2 3 = group3 4 = group4
l30audioMapSimSdiGroup4	l30audioMapTBL.81	INTEGER	R/W	1 = group1 2 = group2 3 = group3 4 = group4
l30audioMapSimSdiGroup1Ch	l30audioMapTBL.82	INTEGER	R/W	1 = a 2 = b 3 = c 4 = d
l30audioMapSimSdiGroup2Ch	l30audioMapTBL.83	INTEGER	R/W	1 = a 2 = b 3 = c 4 = d
l30audioMapSimSdiGroup3Ch	l30audioMapTBL.84	INTEGER	R/W	1 = a 2 = b 3 = c 4 = d
l30audioMapSimSdiGroup4Ch	l30audioMapTBL.85	INTEGER	R/W	1 = a 2 = b 3 = c 4 = d
l30audioMapSimLissajouML1	l30audioMapTBL.88	INTEGER	R/W	19 = a-ch1 (omitted) 82 = d-ch16
l30audioMapSimLissajouMR1	l30audioMapTBL.89	INTEGER	R/W	19 = a-ch1 (omitted) 82 = d-ch16
l30audioMapSimLissajouML2	l30audioMapTBL.90	INTEGER	R/W	19 = a-ch1

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				(omitted) 82 = d-ch16
l30audioMapSimLissajouMR2	l30audioMapTBL.91	INTEGER	R/W	19 = a-ch1 (omitted) 82 = d-ch16
l30audioMapSimLissajouML3	l30audioMapTBL.92	INTEGER	R/W	19 = a-ch1 (omitted) 82 = d-ch16
l30audioMapSimLissajouMR3	l30audioMapTBL.93	INTEGER	R/W	19 = a-ch1 (omitted) 82 = d-ch16
l30audioMapSimLissajouML4	l30audioMapTBL.94	INTEGER	R/W	19 = a-ch1 (omitted) 82 = d-ch16
l30audioMapSimLissajouMR4	l30audioMapTBL.95	INTEGER	R/W	19 = a-ch1 (omitted) 82 = d-ch16
l30audioMapSimLissajouML5	l30audioMapTBL.96	INTEGER	R/W	19 = a-ch1 (omitted) 82 = d-ch16
l30audioMapSimLissajouMR5	l30audioMapTBL.97	INTEGER	R/W	19 = a-ch1 (omitted) 82 = d-ch16
l30audioMapSimLissajouML6	l30audioMapTBL.98	INTEGER	R/W	19 = a-ch1 (omitted) 82 = d-ch16
l30audioMapSimLissajouMR6	l30audioMapTBL.99	INTEGER	R/W	19 = a-ch1 (omitted) 82 = d-ch16
l30audioMapSimLissajouML7	l30audioMapTBL.100	INTEGER	R/W	19 = a-ch1 (omitted) 82 = d-ch16
l30audioMapSimLissajouMR7	l30audioMapTBL.101	INTEGER	R/W	19 = a-ch1 (omitted) 82 = d-ch16
l30audioMapSimLissajouML8	l30audioMapTBL.102	INTEGER	R/W	19 = a-ch1 (omitted) 82 = d-ch16
l30audioMapSimLissajouMR8	l30audioMapTBL.103	INTEGER	R/W	19 = a-ch1 (omitted) 82 = d-ch16
l30audioMapSimPhonesL	l30audioMapTBL.104	INTEGER	R/W	19 = a-ch1 (omitted) 82 = d-ch16
l30audioMapSimPhonesR	l30audioMapTBL.105	INTEGER	R/W	19 = a-ch1 (omitted)

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				82 = d-ch16
l30audioMapExtInputGroup	l30audioMapTBL.108	INTEGER	R/W	1 = group1 2 = group2
l30audioMapExtLissajouSL	l30audioMapTBL.109	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16 17 = chlt
l30audioMapExtLissajouSR	l30audioMapTBL.110	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16 18 = chrt
l30audioMapExtLissajouML1	l30audioMapTBL.111	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16
l30audioMapExtLissajouMR1	l30audioMapTBL.112	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16
l30audioMapExtLissajouML2	l30audioMapTBL.113	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16
l30audioMapExtLissajouMR2	l30audioMapTBL.114	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16
l30audioMapExtLissajouML3	l30audioMapTBL.115	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16
l30audioMapExtLissajouMR3	l30audioMapTBL.116	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16
l30audioMapExtLissajouML4	l30audioMapTBL.117	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16
l30audioMapExtLissajouMR4	l30audioMapTBL.118	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16
l30audioMapExtLissajouML5	l30audioMapTBL.119	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16
l30audioMapExtLissajouMR5	l30audioMapTBL.120	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16
l30audioMapExtLissajouML6	l30audioMapTBL.121	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16
l30audioMapExtLissajouMR6	l30audioMapTBL.122	INTEGER	R/W	19 = a-ch1 (omitted)

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				50 = b-ch16
l30audioMapExtLissajouML7	l30audioMapTBL.123	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16
l30audioMapExtLissajouMR7	l30audioMapTBL.124	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16
l30audioMapExtLissajouML8	l30audioMapTBL.125	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16
l30audioMapExtLissajouMR8	l30audioMapTBL.126	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16
l30audioMapExtSurroundL	l30audioMapTBL.127	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16
l30audioMapExtSurroundR	l30audioMapTBL.128	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16
l30audioMapExtSurroundC	l30audioMapTBL.129	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16
l30audioMapExtSurroundLfe	l30audioMapTBL.130	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16
l30audioMapExtSurroundLs	l30audioMapTBL.131	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16
l30audioMapExtSurroundRs	l30audioMapTBL.132	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16
l30audioMapExtSurroundLl	l30audioMapTBL.133	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16
l30audioMapExtSurroundRr	l30audioMapTBL.134	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16
l30audioMapExtPhonesL	l30audioMapTBL.135	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16 17 = chlt
l30audioMapExtPhonesR	l30audioMapTBL.136	INTEGER	R/W	19 = a-ch1 (omitted) 50 = b-ch16 18 = chrt
l30audioMapExtDolbyLissajouSL	l30audioMapTBL.139	INTEGER	R/W	83 = d1

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				(omitted) 90 = d8 91 = daux
l30audioMapExtDolbyLissajouSR	l30audioMapTBL.140	INTEGER	R/W	83 = d1 (omitted) 90 = d8 91 = daux
l30audioMapExtDolbyLissajouML1	l30audioMapTBL.141	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioMapExtDolbyLissajouMR1	l30audioMapTBL.142	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioMapExtDolbyLissajouML2	l30audioMapTBL.143	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioMapExtDolbyLissajouMR2	l30audioMapTBL.144	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioMapExtDolbyLissajouML3	l30audioMapTBL.145	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioMapExtDolbyLissajouMR3	l30audioMapTBL.146	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioMapExtDolbyLissajouML4	l30audioMapTBL.147	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioMapExtDolbyLissajouMR4	l30audioMapTBL.148	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioMapExtDolbySurroundL	l30audioMapTBL.149	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioMapExtDolbySurroundR	l30audioMapTBL.150	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioMapExtDolbySurroundC	l30audioMapTBL.151	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioMapExtDolbySurroundLfe	l30audioMapTBL.152	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioMapExtDolbySurroundLs	l30audioMapTBL.153	INTEGER	R/W	83 = d1 (omitted) 90 = d8

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30audioMapExtDolbySurroundRs	l30audioMapTBL.154	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioMapExtDolbySurroundLl	l30audioMapTBL.155	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioMapExtDolbySurroundRr	l30audioMapTBL.156	INTEGER	R/W	83 = d1 (omitted) 90 = d8
l30audioMapExtDolbyPhonesL	l30audioMapTBL.157	INTEGER	R/W	83 = d1 (omitted) 90 = d8 91 = daux
l30audioMapExtDolbyPhonesR	l30audioMapTBL.158	INTEGER	R/W	83 = d1 (omitted) 90 = d8 91 = daux
l30audioMapComplete	l30audioMapTBL.160	INTEGER	R/WO	1 (fixed)
l30audioDispTBL	l30audioTBL.2	Aggregate	-	-
l30audioDispMode	l30audioDispTBL.1	INTEGER	R/W	1 = lissajou 2 = surround 3 = meter 4 = error 5 = chstatus 6 = userbit 7 = status 9 = dolbymdeebi 10 = dolbymddebi 11 = dolbymddpebi 15 = dolbymde 16 = dolbymdd 17 = dolbymddp 18 = log
l30audioMeterTBL	l30audioTBL.3	Aggregate	-	-
l30audioMeterRange	l30audioMeterTBL.1	INTEGER	R/W	1 = range-60dBFS 2 = range-90dBFS 3 = range-mag
l30audioMeterResponse	l30audioMeterTBL.2	INTEGER	R/W	1 = truepeak 2 = ppm 3 = vu
l30audioMeterPpmMode	l30audioMeterTBL.3	INTEGER	R/W	1 = mode1 2 = mode2
l30audioMeterPeakMeter	l30audioMeterTBL.4	INTEGER	R/W	1 = true 2 = ppm1 3 = ppm2

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30audioMeterPeakHold	l30audioMeterTBL.5	INTEGER	R/W	0 = hold-0 5 = hold-500ms 10 = hold-1000ms 15 = hold-1500ms 20 = hold-2000ms 25 = hold-2500ms 30 = hold-3000ms 35 = hold-3500ms 40 = hold-4000ms 45 = hold-4500ms 50 = hold-5000ms 55 = hold-hold
l30audioMeterOverDbfs	l30audioMeterTBL.6	DisplayString	R/W	-40.0 to 0
l30audioMeterWarnDbfs	l30audioMeterTBL.8	DisplayString	R/W	-40.0 to 0
l30audioMeterRefDbfs	l30audioMeterTBL.10	DisplayString	R/W	-40.0 to 0
l30audioLissajouIntenTBL	l30audioTBL.4	Aggregate	-	-
l30audioLissajouInten	l30audioLissajouIntenTBL.1	INTEGER	R/W	-8 to 7
l30audioLissajouScaleInten	l30audioLissajouIntenTBL.2	INTEGER	R/W	-8 to 7
l30audioLissajouMode	l30audioLissajouIntenTBL.3	INTEGER	R/W	1 = multi 2 = single
l30audioLissajouForm	l30audioLissajouIntenTBL.4	INTEGER	R/W	1 = xy 2 = matrix
l30audioLissajouAutoGain	l30audioLissajouIntenTBL.5	INTEGER	R/W	1 = off 2 = on
l30audioSurroundTBL	l30audioTBL.5	Aggregate	-	-
l30audioSurroundInten	l30audioSurroundTBL.1	INTEGER	R/W	-8 to 7
l30audioSurroundScaleInten	l30audioSurroundTBL.2	INTEGER	R/W	-8 to 7
l30audioSurroundMode	l30audioSurroundTBL.3	INTEGER	R/W	1 = normal 2 = phantom
l30audioSurroundAutoGain	l30audioSurroundTBL.4	INTEGER	R/W	1 = off 2 = on
l30audioStatusTBL	l30audioTBL.6	Aggregate	-	-
l30audioStatusDolbyProg	l30audioStatusTBL.1	INTEGER	R/W	1 = prm1 (omitted) 8 = prm8
l30audioStatusCh	l30audioStatusTBL.3	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l30audioStatusChSimul	l30audioStatusTBL.4	INTEGER	R/W	19 = cha1 (omitted) 34 = cha16 35 = chb1 (omitted) 50 = chb16 51 = chc1 (omitted)

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				66 = chc16 67 = chd1 (omitted) 82 = chd16
I30audioStatusChDolby	I30audioStatusTBL.5	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
I30audioStatusChExt	I30audioStatusTBL.6	INTEGER	R/W	19 = cha1 (omitted) 26 = cha8 35 = chb1 (omitted) 42 = chb8
I30audioStatusChAlign	I30audioStatusTBL.7	INTEGER	R/W	1 = lsb 2 = msb
I30audioStatusBitDisp	I30audioStatusTBL.8	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
I30audioStatusBitDispSimul	I30audioStatusTBL.9	INTEGER	R/W	19 = cha1 (omitted) 34 = cha16 35 = chb1 (omitted) 50 = chb16 51 = chc1 (omitted) 66 = chc16 67 = chd1 (omitted) 82 = chd16
I30audioStatusBitDispDolby	I30audioStatusTBL.10	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
I30audioStatusBitDispExt	I30audioStatusTBL.11	INTEGER	R/W	19 = cha1 (omitted) 26 = cha8 35 = chb1 (omitted) 42 = chb8
I30audioStatusBitDispAlign	I30audioStatusTBL.12	INTEGER	R/W	1 = lsb 2 = msb
I30audioPhonesTBL	I30audioTBL.8	Aggregate	-	-
I30audioPhonesVolume	I30audioPhonesTBL.1	INTEGER	R/W	0 to 63
I30audioErrorTBL	I30audioTBL.9	Aggregate	-	-
I30audioErrorLevel	I30audioErrorTBL.1	INTEGER	R/W	1 = off 2 = on

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30audioErrorClip	l30audioErrorTBL.2	INTEGER	R/W	1 = off 2 = on
l30audioErrorMute	l30audioErrorTBL.3	INTEGER	R/W	1 = off 2 = on
l30audioErrorParity	l30audioErrorTBL.4	INTEGER	R/W	1 = off 2 = on
l30audioErrorValidity	l30audioErrorTBL.5	INTEGER	R/W	1 = off 2 = on
l30audioErrorCrc	l30audioErrorTBL.6	INTEGER	R/W	1 = off 2 = on
l30audioErrorCode	l30audioErrorTBL.7	INTEGER	R/W	1 = off 2 = on
l30audioErrorClipDuration	l30audioErrorTBL.8	INTEGER	R/W	1 to 100
l30audioErrorMuteDuration	l30audioErrorTBL.9	INTEGER	R/W	1 to 5000
l30audioErrorReset	l30audioErrorTBL.10	INTEGER	R/WO	1 (fixed)
l30audDataTBL	l30audioTBL.11	Aggregate	-	-
l30audDataStatusLevelCh1	l30audDataTBL.1	DisplayString	R/O	Ch1 Level
l30audDataStatusLevelCh2	l30audDataTBL.2	DisplayString	R/O	Ch2 Level
l30audDataStatusLevelCh3	l30audDataTBL.3	DisplayString	R/O	Ch3 Level
l30audDataStatusLevelCh4	l30audDataTBL.4	DisplayString	R/O	Ch4 Level
l30audDataStatusLevelCh5	l30audDataTBL.5	DisplayString	R/O	Ch5 Level
l30audDataStatusLevelCh6	l30audDataTBL.6	DisplayString	R/O	Ch6 Level
l30audDataStatusLevelCh7	l30audDataTBL.7	DisplayString	R/O	Ch7 Level
l30audDataStatusLevelCh8	l30audDataTBL.8	DisplayString	R/O	Ch8 Level
l30audDataStatusLevelCh9	l30audDataTBL.9	DisplayString	R/O	Ch9 Level
l30audDataStatusLevelCh10	l30audDataTBL.10	DisplayString	R/O	Ch10 Level
l30audDataStatusLevelCh11	l30audDataTBL.11	DisplayString	R/O	Ch11 Level
l30audDataStatusLevelCh12	l30audDataTBL.12	DisplayString	R/O	Ch12 Level
l30audDataStatusLevelCh13	l30audDataTBL.13	DisplayString	R/O	Ch13 Level
l30audDataStatusLevelCh14	l30audDataTBL.14	DisplayString	R/O	Ch14 Level
l30audDataStatusLevelCh15	l30audDataTBL.15	DisplayString	R/O	Ch15 Level
l30audDataStatusLevelCh16	l30audDataTBL.16	DisplayString	R/O	Ch16 Level

- **l30trapTBL(1) group**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30trapIpTBL	l30trapTBL.1	Aggregate	-	-
l30trapIp1TBL	l30trapIpTBL.1	Aggregate	-	-
l30trapManagerIp1	l30trapIp1TBL.1	IpAddress	R/W	IP Address
l30trapManagerIp1Act	l30trapIp1TBL.2	INTEGER	R/W	1 = enable 2 = disable
l30trapIp2TBL	l30trapIpTBL.2	Aggregate	-	-
l30trapManagerIp2	l30trapIp2TBL.1	IpAddress	R/W	IP Address
l30trapManagerIp2Act	l30trapIp2TBL.2	INTEGER	R/W	1 = enable 2 = disable
l30trapIp3TBL	l30trapIpTBL.3	Aggregate	-	-

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30trapManagerIp3	l30trapIp3TBL.1	IpAddress	R/W	IP Address
l30trapManagerIp3Act	l30trapIp3TBL.2	INTEGER	R/W	1 = enable 2 = disable
l30trapIp4TBL	l30trapIpTBL.4	Aggregate	-	-
l30trapManagerIp4	l30trapIp4TBL.1	IpAddress	R/W	IP Address
l30trapManagerIp4Act	l30trapIp4TBL.2	INTEGER	R/W	1 = enable 2 = disable

10.3.5 Extended TRAP (Variable Binding List)

- **index 1**

  OID： iso(1).org(3).dod(6).internet(1).mgmt(2).mib-2(1).system(1).sysUpTime(3).0
  Syntax： TimeTicks
  Range: 1 to 4294967295 (overflow occurs if this range is exceeded)
  Description: Elapsed time after starting the agent

- **index 2**

  OID： iso(1).org(3).dod(6).internet(1).snmpV2(6).snmpModules(3).snmpMIB(1).snmpMIBObjects(1).snmpTrap(4).snmpTrapOID(1).0
  Syntax： OBJECT IDENTIFIER
  Range: ---
  Description: Trap OID

- **index 3**

  OID： leader(20111).lv5490(30).lv5490ST1(1).l30notificationTBL(0).l30trapStrTBL(2).l30trapCounter(1)
  Syntax： Counter32
  Range: 1 to 4294967295
  Description: The total number of enterprise traps sent after starting up

- **index 4**

  OID： leader(20111).lv5490(30).lv5490ST1(1).l30notificationTBL(0).l30trapStrTBL(2).l30trapInternalTimestamp(2)
  Syntax： DisplayString
  Range: Up to 20 characters
  Description: Date and time of error occurrence

- **index 5**

  OID： leader(20111).lv5490(30).lv5490ST1(1).l30notificationTBL(0).l30trapStrTBL(2).l30trapInputCh(3)
  Syntax： INTEGER
  Range: a(1), b(2), c(3), d(4)
  Description: Input channel where the error occurred (A/B/C/D)

- **index 6**

  OID： leader(20111).lv5490(30).lv5490ST1(1).l30notificationTBL(0).l30trapStrTBL(2).l30trapInputSignal(4)
  Syntax： DisplayString
  Range: Up to 20 characters
  Description: Format information

- **index 7**

  OID： leader(20111).lv5490(30).lv5490ST1(1).l30notificationTBL(0).
  l30trapContentTBL(1).l30trapErrorTBL(1).X
  Or
  leader(20111).lv5490(30).lv5490ST1(1).l30notificationTBL(0).
  l30trapContentTBL(1).l30trapNormalTBL(2).X
  Syntax： DisplayString
  Range: Up to 16 characters
  Description: OID indicating the error and error information character string (see the table below)
  When an error occurs, OID and error information character string of l30notificationTBL(0).l30trapContentTBL(1).l30trapErrorTBL(1).X (see the table below)
  When an error restores, OID and error information character string of l30notificationTBL(0).l30trapContentTBL(1). l30trapNormalTBL(2).X (see the table below)

- **index 8**

  OID： leader(20111).lv5490(30).lv5490ST1(1).l30notificationTBL(0).
  l30trapStrTBL(2).l30trapCableLen(5)
  Syntax： INTEGER
  Range: 1 to 32767
  Description: Cable length
  Output only when index7 is l30trapContentTBL(1).l30TrapErrorTBL(1). l30trapErrorCableWarn(5)

● **l30notificationTBL(1) group**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30trapContentTBL	l30notificationTBL.1		-	-
l30trapErrorTBL	l30trapContentTBL.1	Aggregate	-	-
l30trapErrorFan	l30TrapErrorTBL.1	-	-	FAN_STOP
l30trapErrorNoSignal	l30TrapErrorTBL.2	-	-	NO_SIGNAL
l30trapErrorUnknown	l30TrapErrorTBL.3	-	-	FORMAT_UNKNOWN
l30trapErrorCable	l30TrapErrorTBL.4	-	-	CABLE_ERR
l30trapErrorCableWarn	l30TrapErrorTBL.5	-	-	CABLE_WAR
l30trapErrorAudioSample	l30TrapErrorTBL.6	-	-	A_SMPL_ERR
l30trapErrorAudioInhibit	l30TrapErrorTBL.7	-	-	A_INH_ERR
l30trapErrorAudioDbn	l30TrapErrorTBL.8	-	-	A_DBN_ERR
l30trapErrorAudioParity	l30TrapErrorTBL.9	-	-	A_PRTY_ERR
l30trapErrorAudioBch	l30TrapErrorTBL.10	-	-	A_BCH_ERR
l30trapErrorSdiLevelC	l30TrapErrorTBL.11	-	-	LVL_C_ERR
l30trapErrorSdiLevelY	l30TrapErrorTBL.12	-	-	LVL_Y_ERR
l30trapErrorSdiBlack	l30TrapErrorTBL.13	-	-	BLK_ERR
l30trapErrorSdiFreeze	l30TrapErrorTBL.14	-	-	FRZ_ERR
l30trapErrorSdiCompGamut	l30TrapErrorTBL.15	-	-	CGMUT_ERR
l30trapErrorSdiGamut	l30TrapErrorTBL.16	-	-	GMUT_ERR
l30trapErrorSdiAncParity	l30TrapErrorTBL.17	-	-	PRTY_ERR
l30trapErrorSdiAncChecksum	l30TrapErrorTBL.18	-	-	CHK_ERR
l30trapErrorSdiLineNumber	l30TrapErrorTBL.19	-	-	LINE_ERR
l30trapErrorSdiIllegalCode	l30TrapErrorTBL.20	-	-	ILLEGAL_ERR
l30trapErrorSdiTrsCode	l30TrapErrorTBL.21	-	-	TRS_C_ERR
l30trapErrorSdiTrsPos	l30TrapErrorTBL.22	-	-	TRS_P_ERR
l30trapErrorSdiEdh	l30TrapErrorTBL.23	-	-	EDH_ERR
l30trapErrorSdiCrc	l30TrapErrorTBL.24	-	-	CRC_ERR
l30trapErrorSdiDualDelay	l30TrapErrorTBL.25	-	-	SDI_DELAY_ERR
l30trapErrorSdiFrequency	l30TrapErrorTBL.26	-	-	FREQ_ERR
l30trapErrorEyeSdUndershoot	l30TrapErrorTBL.27	-	-	EYE_SD_OF_ERR
l30trapErrorEyeSdOvershoot	l30TrapErrorTBL.28	-	-	EYE_SD_OR_ERR
l30trapErrorEyeSdCjit	l30TrapErrorTBL.29	-	-	EYE_SD_C_JIT_ERR
l30trapErrorEyeSdTjit	l30TrapErrorTBL.30	-	-	EYE_SD_T_JIT_ERR
l30trapErrorEyeSdTrTf	l30TrapErrorTBL.31	-	-	EYE_SD_TR_TF_ERR
l30trapErrorEyeSdTf	l30TrapErrorTBL.32	-	-	EYE_SD_TF_ERR
l30trapErrorEyeSdTr	l30TrapErrorTBL.33	-	-	EYE_SD_TR_ERR
l30trapErrorEyeSdAmp	l30TrapErrorTBL.34	-	-	EYE_SD_AMP_ERR
l30trapErrorEyeHdUndershoot	l30TrapErrorTBL.35	-	-	EYE_HD_OF_ERR
l30trapErrorEyeHdOvershoot	l30TrapErrorTBL.36	-	-	EYE_HD_OR_ERR
l30trapErrorEyeHdCJit	l30TrapErrorTBL.37	-	-	EYE_HD_C_JIT_ERR
l30trapErrorEyeHdTJit	l30TrapErrorTBL.38	-	-	EYE_HD_T_JIT_ERR
l30trapErrorEyeHdTrTf	l30TrapErrorTBL.39	-	-	EYE_HD_TR_TF_ERR

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
I30trapErrorEyeHdTf	I30TrapErrorTBL.40	-	-	EYE_HD_TF_ERR
I30trapErrorEyeHdTr	I30TrapErrorTBL.41	-	-	EYE_HD_TR_ERR
I30trapErrorEyeHdAmp	I30TrapErrorTBL.42	-	-	EYE_HD_AMP_ERR
I30trapErrorEye3gUndershoot	I30TrapErrorTBL.43	-	-	EYE_3G_OF_ERR
I30trapErrorEye3gOvershoot	I30TrapErrorTBL.44	-	-	EYE_3G_OR_ERR
I30trapErrorEyeCJit	I30TrapErrorTBL.45	-	-	EYE_3G_C_JIT_ERR
I30trapErrorEyeTJit	I30TrapErrorTBL.46	-	-	EYE_3G_T_JIT_ERR
I30trapErrorEyeTrTf	I30TrapErrorTBL.47	-	-	EYE_3G_TR_TF_ERR
I30trapErrorEyeTf	I30TrapErrorTBL.48	-	-	EYE_3G_TF_ERR
I30trapErrorEyeTr	I30TrapErrorTBL.49	-	-	EYE_3G_TR_ERR
I30trapErrorEyeAmp	I30TrapErrorTBL.50	-	-	EYE_3G_AMP_ERR
I30trapErrorAudioValidity	I30TrapErrorTBL.51	-	-	VAL:XX (where XX is the channel on which the error is occurring in hexadecimal notation)
I30trapErrorAudioCrc	I30TrapErrorTBL.52	-	-	CRC:XX (where XX is the channel on which the error is occurring in hexadecimal notation)
I30trapErrorAudioClip	I30TrapErrorTBL.53	-	-	CLIP:XX (where XX is the channel on which the error is occurring in hexadecimal notation)
I30trapErrorAudioMute	I30TrapErrorTBL.54	-	-	MUTE:XX (where XX is the channel on which the error is occurring in hexadecimal notation)
I30trapErrorAudioLevel	I30TrapErrorTBL.55	-	-	OVER:XX (where XX is the channel on which the error is occurring in hexadecimal notation)
I30trapErrorAudioParity	I30TrapErrorTBL.56	-	-	PAR:XX (where XX is the channel on which the error is occurring in hexadecimal notation)
I30trapErrorAudioCode	I30TrapErrorTBL.57	-	-	CODE:XX (where XX is the channel on which the error is occurring in

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				hexadecimal notation)
I30trapErrorSdiBlackSt2	I30TrapErrorTBL.58	-	-	BLK_ST2_ERR
I30trapErrorSdiFreezeSt2	I30TrapErrorTBL.59	-	-	FRZ_ST2_ERR
I30trapErrorSdiLevelC_St2	I30TrapErrorTBL.69	-	-	LVL_C_ST2_ERR
I30trapErrorSdiLevelY_St2	I30TrapErrorTBL.70	-	-	LVL_Y_ST2_ERR
I30trapErrorSdiCompGamutSt2	I30TrapErrorTBL.71	-	-	CGMUT_ST2_ERR
I30trapErrorSdiGamutSt2	I30TrapErrorTBL.72	-	-	GMUT_ST2_ERR
I30trapNormalTBL	I30trapContentTBL.2	Aggregate	-	-
I30trapNormalFan	I30TrapNormalTBL.1	-	-	FAN_STOP
I30trapNormalNoSignal	I30TrapNormalTBL.2	-	-	NO_SIGNAL
I30trapNormalUnknown	I30TrapNormalTBL.3	-	-	FORMAT_UNKNOWN
I30trapNormalCable	I30TrapNormalTBL.4	-	-	CABLE_ERR
I30trapNormalCableWarn	I30TrapNormalTBL.5	-	-	CABLE_WAR
I30trapNormalAudioSample	I30TrapNormalTBL.6	-	-	A_SMPL_ERR
I30trapNormalAudioInhibit	I30TrapNormalTBL.7	-	-	A_INH_ERR
I30trapNormalAudioDbn	I30TrapNormalTBL.8	-	-	A_DBN_ERR
I30trapNormalAudioParity	I30TrapNormalTBL.9	-	-	A_PRTY_ERR
I30trapNormalAudioBch	I30TrapNormalTBL.10	-	-	A_BCH_ERR
I30trapNormalSdiLevelC	I30TrapNormalTBL.11	-	-	LVL_C_ERR
I30trapNormalSdiLevelY	I30TrapNormalTBL.12	-	-	LVL_Y_ERR
I30trapNormalSdiBlack	I30TrapNormalTBL.13	-	-	BLK_ERR
I30trapNormalSdiFreeze	I30TrapNormalTBL.14	-	-	FRZ_ERR
I30trapNormalSdiCompGamut	I30TrapNormalTBL.15	-	-	CGMUT_ERR
I30trapNormalSdiGamut	I30TrapNormalTBL.16	-	-	GMUT_ERR
I30trapNormalSdiAncParity	I30TrapNormalTBL.17	-	-	PRTY_ERR
I30trapNormalSdiAncChecksum	I30TrapNormalTBL.18	-	-	CHK_ERR
I30trapNormalSdiLineNumber	I30TrapNormalTBL.19	-	-	LINE_ERR
I30trapNormalSdiIllegalCode	I30TrapNormalTBL.20	-	-	ILLEGAL_ERR
I30trapNormalSdiTrsCode	I30TrapNormalTBL.21	-	-	TRS_C_ERR
I30trapNormalSdiTrsPos	I30TrapNormalTBL.22	-	-	TRS_P_ERR
I30trapNormalSdiEdh	I30TrapNormalTBL.23	-	-	EDH_ERR
I30trapNormalSdiCrc	I30TrapNormalTBL.24	-	-	CRC_ERR
I30trapNormalSdiDualDelay	I30TrapNormalTBL.25	-	-	SDI_DELAY_ERR
I30trapNormalSdiFrequency	I30TrapNormalTBL.26	-	-	FREQ_ERR
I30trapNormalEyeSdUndershoot	I30TrapNormalTBL.27	-	-	EYE_SD_OF_ERR
I30trapNormalEyeSdOvershoot	I30TrapNormalTBL.28	-	-	EYE_SD_OR_ERR
I30trapNormalEyeSdCjit	I30TrapNormalTBL.29	-	-	EYE_SD_C_JIT_ERR
I30trapNormalEyeSdTjit	I30TrapNormalTBL.30	-	-	EYE_SD_T_JIT_ERR
I30trapNormalEyeSdTrTf	I30TrapNormalTBL.31	-	-	EYE_SD_TR_TF_ERR
I30trapNormalEyeSdTf	I30TrapNormalTBL.32	-	-	EYE_SD_TF_ERR
I30trapNormalEyeSdTr	I30TrapNormalTBL.33	-	-	EYE_SD_TR_ERR
I30trapNormalEyeSdAmp	I30TrapNormalTBL.34	-	-	EYE_SD_AMP_ERR
I30trapNormalEyeHdUndershoot	I30TrapNormalTBL.35	-	-	EYE_HD_OF_ERR

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l30trapNormalEyeHdOvershoot	l30TrapNormalTBL.36	-	-	EYE_HD_OR_ERR
l30trapNormalEyeHdCJit	l30TrapNormalTBL.37	-	-	EYE_HD_C_JIT_ERR
l30trapNormalEyeHdTJit	l30TrapNormalTBL.38	-	-	EYE_HD_T_JIT_ERR
l30trapNormalEyeHdTrTf	l30TrapNormalTBL.39	-	-	EYE_HD_TR_TF_ER R
l30trapNormalEyeHdTf	l30TrapNormalTBL.40	-	-	EYE_HD_TF_ERR
l30trapNormalEyeHdTr	l30TrapNormalTBL.41	-	-	EYE_HD_TR_ERR
l30trapNormalEyeHdAmp	l30TrapNormalTBL.42	-	-	EYE_HD_AMP_ERR
l30trapNormalEye3gUndershoot	l30TrapNormalTBL.43	-	-	EYE_3G_OF_ERR
l30trapNormalEye3gOvershoot	l30TrapNormalTBL.44	-	-	EYE_3G_OR_ERR
l30trapNormalEyeCJit	l30TrapNormalTBL.45	-	-	EYE_3G_C_JIT_ERR
l30trapNormalEyeTJit	l30TrapNormalTBL.46	-	-	EYE_3G_T_JIT_ERR
l30trapNormalEyeTrTf	l30TrapNormalTBL.47	-	-	EYE_3G_TR_TF_ER R
l30trapNormalEyeTf	l30TrapNormalTBL.48	-	-	EYE_3G_TF_ERR
l30trapNormalEyeTr	l30TrapNormalTBL.49	-	-	EYE_3G_TR_ERR
l30trapNormalEyeAmp	l30TrapNormalTBL.50	-	-	EYE_3G_AMP_ERR
l30trapNormalAudioValidity	l30TrapNormalTBL.51	-	-	VAL
l30trapNormalAudioCrc	l30TrapNormalTBL.52	-	-	CRC
l30trapNormalAudioClip	l30TrapNormalTBL.53	-	-	CLIP
l30trapNormalAudioMute	l30TrapNormalTBL.54	-	-	MUTE
l30trapNormalAudioLevel	l30TrapNormalTBL.55	-	-	OVER
l30trapNormalAudioParity	l30TrapNormalTBL.56	-	-	PAR
l30trapNormalAudioCode	l30TrapNormalTBL.57	-	-	CODE
l30trapNormalSdiBlackSt2	l30TrapNormalTBL.58	-	-	BLK_ST2_ERR
l30trapNormalSdiFreezeSt2	l30TrapNormalTBL.59	-	-	FRZ_ST2_ERR
l30trapNormalNoError	l30TrapNormalTBL.60	-	-	NO_ERROR
l30trapErrorSdiLevelC_St2	l30TrapNormalTBL.69	-	-	LVL_C_ST2_ERR
l30trapErrorSdiLevelY_St2	l30TrapNormalTBL.70	-	-	LVL_Y_ST2_ERR
l30trapErrorSdiCompGamutSt2	l30TrapNormalTBL.71	-	-	CGMUT_ST2_ERR
l30trapErrorSdiGamutSt2	l30TrapNormalTBL.72	-	-	GMUT_ST2_ERR
l30trapStrTBL	l30notificationTBL.2	Aggregate	-	-
l30trapCounter	l30trapStrTBL.1	INTEGER	R/O	1 to 4294967295
l30trapInternalTimestamp	l30trapStrTBL.2	DisplayString	R/O	Date and time
l30trapInputCh	l30trapStrTBL.3	INTEGER	R/O	1 = a 2 = b 3 = c 4 = d
l30trapInputSignal	l30trapStrTBL.4	DisplayString	R/O	Signal format
l30trapCableLen	l30trapStrTBL.5	INTEGER	R/O	0 to 32767

● **Error information**

Error Number (*1)	Error Information Character String	Description
1	FAN_STOP	Fan stop detection
2	NO_SIGNAL	No input signal detection
3	FORMAT_UNKNOWN	Unknown signal format detection
4	CABLE_ERR	Cable length measurement error detection
5	CABLE_WAR	Cable length measurement warning detection
6	A_SMPL_ERR	(EMB AUDIO) SAMPLE error detection
7	A_INH_ERR	(EMB AUDIO) INH error detection
8	A_DBN_ERR	(EMB AUDIO) DBN error detection
9	A_PRTY_ERR	(EMB AUDIO) PARITY error detection
10	A_BCH_ERR	(EMB AUDIO) BCH error detection
11	LVL_C_ERR	Chroma level error detection
12	LVL_Y_ERR	Luminance level error detection
13	BLK_ERR	Black error detection
14	FRZ_ERR	Freeze error detection
15	CGMUT_ERR	Composite gamut error detection
16	GMUT_ERR	Gamut error detection
17	PRTY_ERR	Parity error detection
18	CHK_ERR	Checksum error detection
19	LINE_ERR	Line number error detection
20	ILLEGAL_ERR	Illegal command error detection
21	TRS_C_ERR	TRS Code error detection
22	TRS_P_ERR	TRS Pos error detection
23	EDH_ERR	EDH error detection
24	CRC_ERR	CRC error detection
25	SDI_DELAY_ERR	SDI delay error detection
26	FREQ_ERR	FREQUENCY error detection
27	EYE_SD_OF_ERR	(EYE) SD Overshoot Falling error detection
28	EYE_SD_OR_ERR	(EYE) SD Overshoot Rising error detection
29	EYE_SD_C_JIT_ERR	(EYE) SD Current jitter error detection
30	EYE_SD_T_JIT_ERR	(EYE) SD Timing jitter error detection
31	EYE_SD_TR_TF_ERR	(EYE) SD Delta Time error detection
32	EYE_SD_TF_ERR	(EYE) SD Fall Time error detection
33	EYE_SD_TR_ERR	(EYE) SD Rise Time error detection
34	EYE_SD_AMP_ERR	(EYE) SD amplitude error detection
35	EYE_HD_OF_ERR	(EYE) HD Overshoot Falling error detection
36	EYE_HD_OR_ERR	(EYE) HD Overshoot Rising error detection
37	EYE_HD_C_JIT_ERR	(EYE) HD Current jitter error detection
38	EYE_HD_T_JIT_ERR	(EYE) HD Timing jitter error detection
39	EYE_HD_TR_TF_ERR	(EYE) HD Delta Time error detection
40	EYE_HD_TF_ERR	(EYE) HD Fall Time error detection
41	EYE_HD_TR_ERR	(EYE) HD Rise Time error detection
42	EYE_HD_AMP_ERR	(EYE) HD amplitude error detection
43	EYE_3G_OF_ERR	(EYE) 3G Overshoot Falling error detection
44	EYE_3G_OR_ERR	(EYE) 3G Overshoot Rising error detection

Error Number (*1)	Error Information Character String	Description
45	EYE_3G_C_JIT_ERR	(EYE) 3G Current jitter error detection
46	EYE_3G_T_JIT_ERR	(EYE) 3G Timing jitter error detection
47	EYE_3G_TR_TF_ERR	(EYE) 3G Delta Time error detection
48	EYE_3G_TF_ERR	(EYE) 3G Fall Time error detection
49	EYE_3G_TR_ERR	(EYE) 3G Rise Time error detection
50	EYE_3G_AMP_ERR	(EYE) 3G amplitude error detection
51	VAL	(AUDIO) VALIDITY error detection
52	CRC	(AUDIO) CRC error detection
53	CLIP	(AUDIO) CLIP error detection
54	MUTE	(AUDIO) MUTE error detection
55	OVER	(AUDIO) LEVEL error detection
56	PAR	(AUDIO) PARITY error detection
57	CODE	(AUDIO) CODE VIOLATION error detection
58	BLK_ST2_ERR	Black error detection (stream2)
59	FRZ_ST2_ERR	Freeze error detection (stream2)
60 (*2)	NO_ERROR	No error
61	EYE_12G_OF_ERR	(EYE) 12G Overshoot Falling error detection
62	EYE_12G_OR_ERR	(EYE) 12G Overshoot Rising error detection
63	EYE_12G_C_JIT_ERR	(EYE) 12G Current jitter error detection
64	EYE_12G_T_JIT_ERR	(EYE) 12G Timing jitter error detection
65	EYE_12G_TR_TF_ERR	(EYE) 12G Delta Time error detection
66	EYE_12G_TF_ERR	(EYE) 12G Fall Time error detection
67	EYE_12G_TR_ERR	(EYE) 12G Rise Time error detection
68	EYE_12G_AMP_ERR	(EYE) 12G amplitude error detection
69	LVL_C_ST2_ERR	Chroma level error detection (stream2)
70	LVL_Y_ST2_ERR	Luminance level error detection (stream2)
71	CGMUT_ST2_ERR	Composite gamut error detection (stream2)
72	GMUT_ST2_ER	Gamut error detection (stream2)

*1 Each OID number of l30TrapErrorTBL(1) and l30TrapNormalTBL(2) of l30trapContentTBL(1)

*2 l30trapNormalNoError(60) is only defined for l30trapNormalTBL(2) and is not available for l30trapErrorTBL(1).

10.4 HTTP Server Feature

You can use this feature to control the LV 5490 from a web browser on a PC in the same manner as you would control the LV 5490 from the panel.

10.4.1 Operating Environment

The following web browsers have been confirmed to work.

- Internet Explorer Ver.11.0
- Mozilla Firefox Ver.37.0.2

10.4.2 Precautions

- After you press a key in the web browser interface, wait for the screen to update before you perform the next operation. The screen cannot redraw fast enough to keep up with consecutive key presses. In this situation, a completely gray screen may be displayed temporarily. (After a few seconds the screen will return to normal.)
- When you are using the HTTP server feature, perform as few panel operations on the LV 5490 as possible. The LV 5490's internal processing load increases when it is redrawing the web browser screen, so there is a lag of 1 to 2 seconds from the time that you perform panel operations on the LV 5490 to the time that the operations are actually carried out.
- The HTTP server feature only supports a single connection to a PC at any one time. Multiple simultaneous connections are not supported.

10.4.3 Procedure

1. Configure the Ethernet settings on the LV 5490's ETHERNET SETUP tab.

Set the IP Address, and set HTTP Server Select to ON.

See section 6.2.2, “Configuring Ethernet Settings.”

SYS → F•2 SYSTEM SETUP → F•2 PREV TAB or F•3 NEXT TAB →

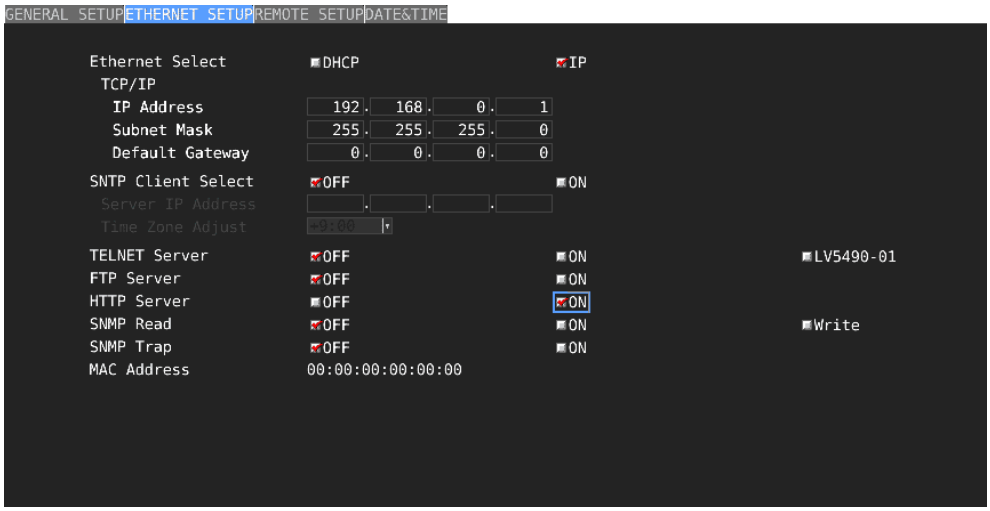


Figure 10-4 ETHERNET SETUP display

2. Press F•1 COMPLETE.

3. Connect the LV 5490's Ethernet port to the network.

4. Start the web browser on your PC.

The HTTP server feature uses JavaScript.
Enable JavaScript in your web browser.

5. In the address box, enter “http://” and the IP address that you set in step 1.

Figure 10-5 IP address input

6. **When the display selection page appears, select Web Server (with Display) or Web Server.**

   If you select Web Server (with Display), a screen much like the screen on the LV 5490 is displayed, but responses to operations can take 4 to 10 seconds, and auto display updating is every 10 seconds.
   If you select Web Server, a screen is not displayed, but the response time is reduced to 2 to 3 seconds.
   Select the mode that meets your needs.

Figure 10-6 Display selection page

7. **After the main screen is displayed, you can click the keys in the web browser to control the LV 5490.**

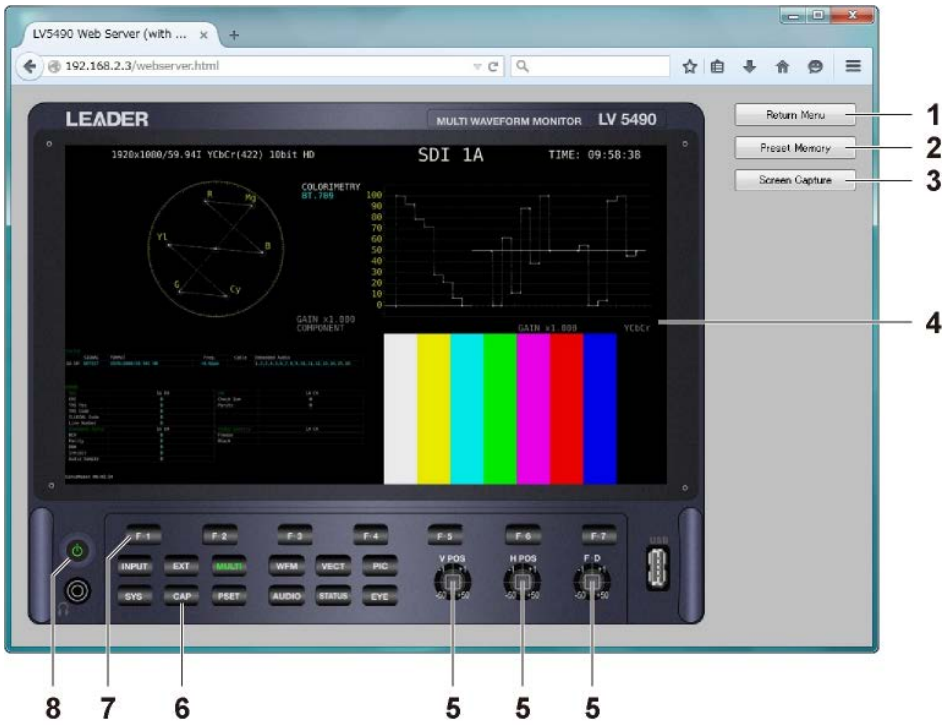


Figure 10-7 Main display

Table 10-2 Main display description

No.	Name	Description
1	Return Menu	Click this to return to the display selection page.
2	Preset Memory	Click this to perform the same action as when the PSET key is held down. See chapter 8, “PRESET SETTINGS.”
3	Screen Capture (*1)	Click this to capture the currently displayed screen and display it in a different window. You can use the window's menu to save the screen as a .bmp file.
4	Display screen (*1)	Click this to update the screen. (The screen updates automatically every 10 seconds even if you do not click the screen.)
5	V POS H POS F•D	-50, -1, +1, and +50 are assigned to the four areas. Click the square in the center of each of these controls to perform the same operation as pressing the corresponding control on the LV 5490. On tab menus and some screens, -50 operates as -5 and +50 operates as +5. Also, in places where the setting resolution is a value other than 1, the value that is set is “resolution × the setting specified by the knob.”
6	CAP	Pressing the CAP key does not capture the screen correctly. Use the Screen Capture button on the Web Server (with Display).
8	Power switch	Pressing the power switch has no effect.
7	Function keys	When you use the function keys to select settings, pop-ups are displayed in the web browser, so select the option within 2 seconds of the pop-up being displayed. The timing at which the function menus disappear is different between the LV 5770A and the browser, so when you control a function menu in the browser, the corresponding response may not be what you would expect. In this situation, set MENU Auto Off to a long time in the system menu. For information on the MENU Auto Off setting, see section 6.2.1, “General Settings.”

*1 Not displayed in Web Server mode.

10.5 SNTP Client Function

The LV 5490 can display time that is synchronized to an NTP server on the network.

10.5.1 Procedure

1. **Configure the Ethernet settings on the LV 5490's ETHERNET SETUP tab.**

   Set SNTP Client Select to ON, and set the IP address, server IP address, and time zone adjustment. For details on time zone adjustment, see the next section.

   Reference 6.2.2, "Configuring Ethernet Settings"

   SYS → F•2 SYSTEM SETUP → F•2 PREV TAB or F•3 NEXT TAB →

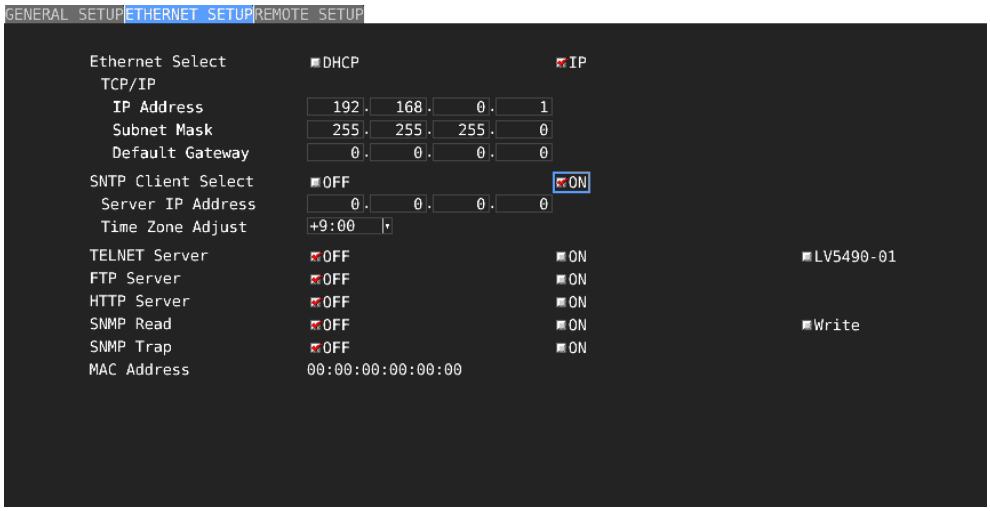


Figure 10-8 ETHERNET SETUP tab

2. **Press F•1 COMPLETE.**
3. **Connect the LV 5490's Ethernet port to the network.**

   The LV 5490 connects to the NTP server at the following times.
   • When you press F•1 COMPLETE in SYSTEM SETUP
   • Once every approximately 10 minutes

   When the LV 5490 connects normally to an NTP server, the date and time are displayed at the upper right of the screen.
   Otherwise, "NTP ERR" appears next to TIME.

10.5.2 Time Adjustment Value

The date and time exchanged with an NTP (SNTP) are basically Coordinated Universal Time (UTC). Therefore, the time must be adjusted in accordance with the country or region where the device is used in. On the ETHERNET SETUP tab, set Time Zone Adjust to one of the following values.

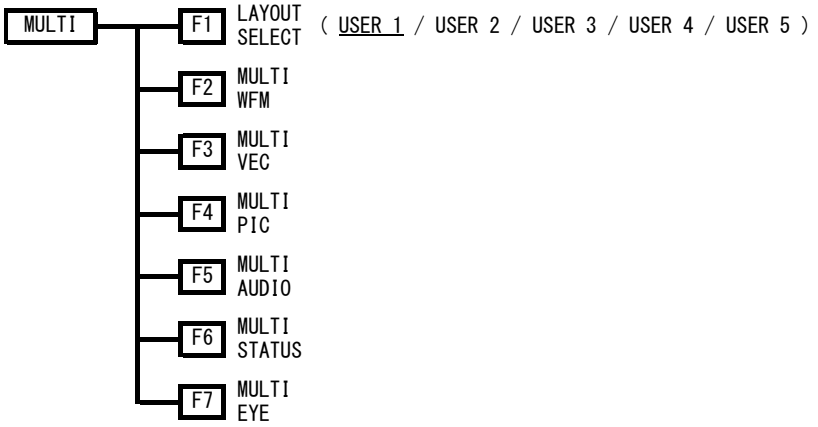
Table 10-3 Time adjustment values

Country or region	Time Zone Adjust
Eniwetok, Kwajalein	-12:0
Midway Island, Samoa	-11:0
Hawaii	-10:0
Alaska	-9:0
Pacific Time (US & Canada), Tijuana	-8:0
Mountain Time (US & Canada), Arizona	-7:0
Central Time (US & Canada), Central America, Saskatchewan, Mexico City	-6:0
Eastern Time (US & Canada), Indiana (East), Bogota, Lima, Quito	-5:0
Atlantic Time (Canada), Caracas, La Paz, Santiago	-4:0
Greenland, Buenos Aires, Georgetown, Brasilia	-3:0
Mid-Atlantic	-2:0
Azores, Cape Verde Is.	-1:0
Greenwich Mean Time (Dublin, Edinburgh, Lisbon, London), Casablanca, Monrovia	-/+0:0
Amsterdam, Berlin, Bern, Rome, Stockholm, Sarajevo, Skopje, Sofija, Vilnius, Warsaw, Zagreb, Brussels, Madrid, Copenhagen, Paris, Belgrade, Bratislava, Budapest, Ljubljana, Prague, West Central Africa	+1:0
Athens, Istanbul, Minsk, Jerusalem, Cairo, Harare, Pretoria, Bucharest, Helsinki, Riga, Tallinn	+2:0
Kuwait, Riyadh, Nairobi, Baghdad, Moscow, Volgograd, St. Petersburg	+3:0
Abu Dhabi, Muscat, Baku, Tbilisi, Yerevan	+4:0
Islamabad, Karachi, Tashkent, Ekaterinburg	+5:0
Astana, Dhaka, Almaty, Novosibirsk, Sri Jayawardenepura	+6:0
Krasnoyarsk, Bangkok, Hanoi, Jakarta	+7:0
Irkutsk, Ulaan Bataar, Kuala Lumpur, Singapore, Perth, Taipei, Beijing, Chongqing, Hong Kong SAR, Urumqi	+8:0
Seoul, Yakutsk, Osaka, Sapporo, Tokyo	+9:0
Vladivostok, Canberra, Melbourne, Sydney, Guam, Port Moresby, Brisbane, Hobart	+10:0
Magadan, Solomon Is., New Caledonia	+11:0
Auckland, Wellington, Fiji Islands, Kamchatka, Marshall Is.	+12:0

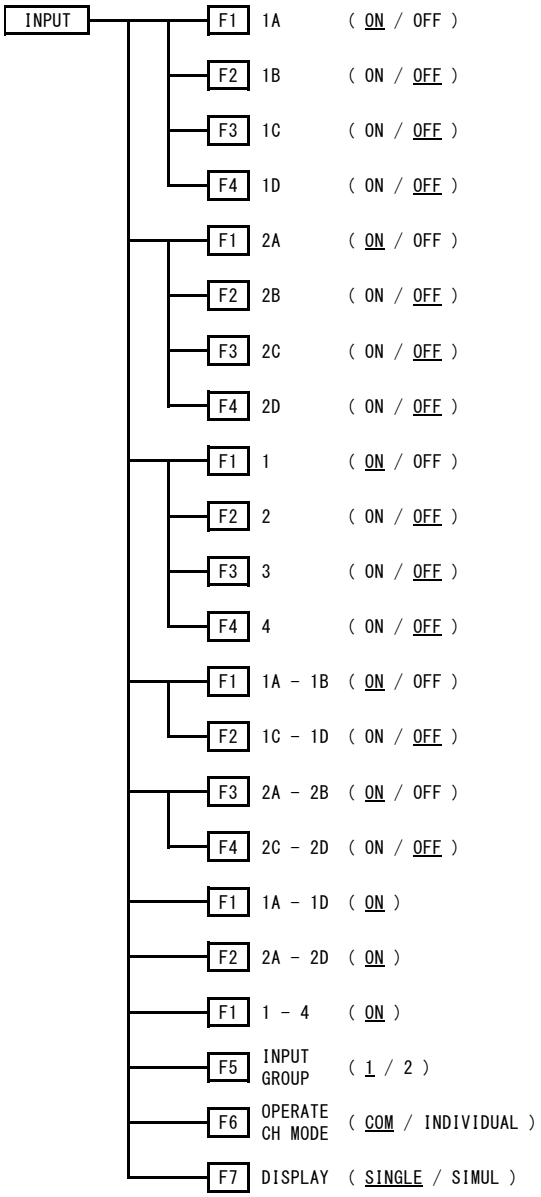
11. MENU TREE

This chapter shows the menu trees that correspond to each key.
The default settings are underlined.
The menus that are displayed vary depending on the LV 5490 settings and whether a USB memory device is connected to the LV 5490.

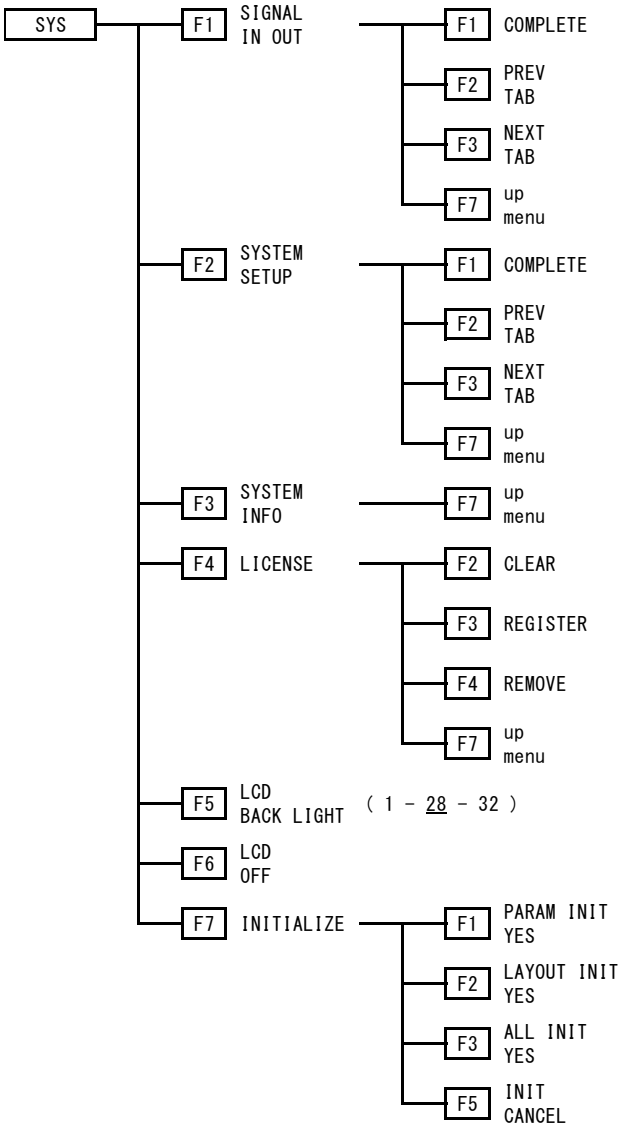
11.1 MULTI Menu



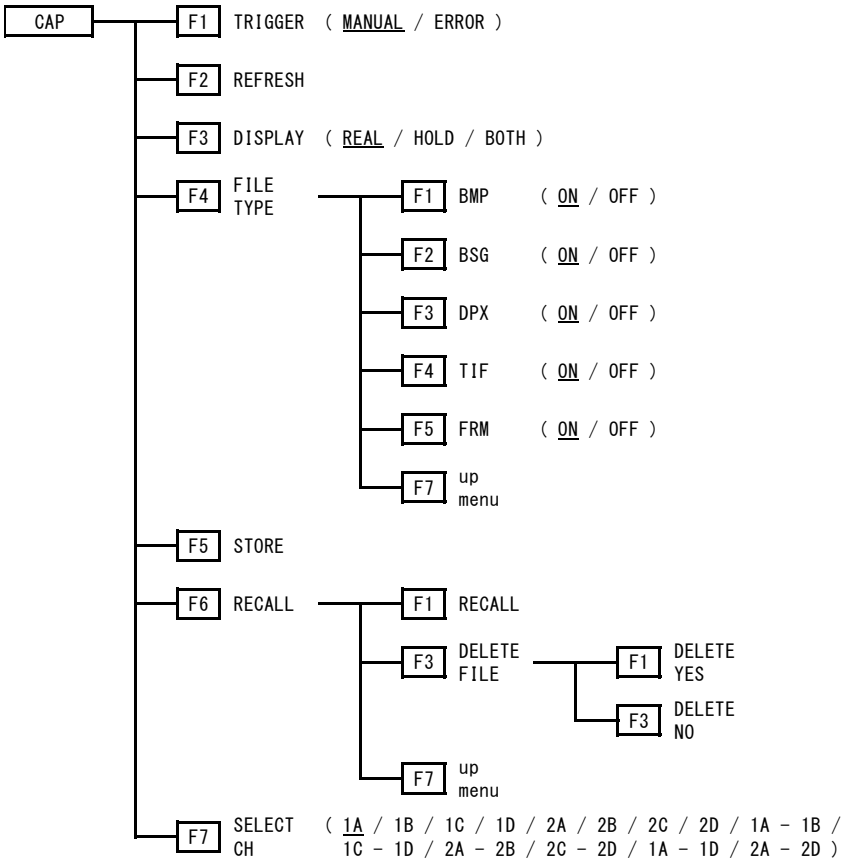
11.2 INPUT Menu



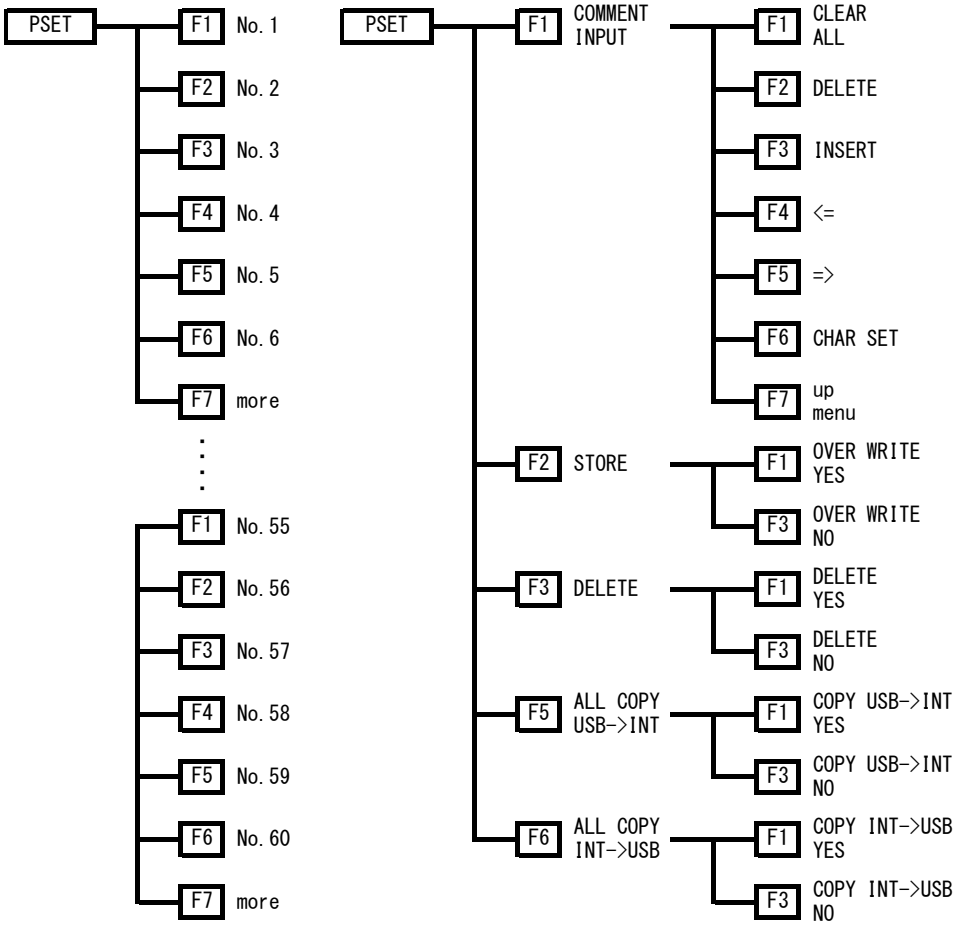
11.3 SYS Menu


SYS
F1 SIGNAL IN OUT
F1 COMPLETE
F2 PREV TAB
F3 NEXT TAB
F7 up menu
F2 SYSTEM SETUP
F1 COMPLETE
F2 PREV TAB
F3 NEXT TAB
F7 up menu
F3 SYSTEM INFO
F7 up menu
F4 LICENSE
F2 CLEAR
F3 REGISTER
F4 REMOVE
F7 up menu
F5 LCD BACK LIGHT (1 - 28 - 32)
F6 LCD OFF
F7 INITIALIZE
F1 PARAM INIT YES
F2 LAYOUT INIT YES
F3 ALL INIT YES
F5 INIT CANCEL

11.4 CAP Menu


CAP
F1 TRIGGER (MANUAL / ERROR)
F2 REFRESH
F3 DISPLAY (REAL / HOLD / BOTH)
F4 FILE TYPE
F1 BMP (ON / OFF)
F2 BSG (ON / OFF)
F3 DPX (ON / OFF)
F4 TIF (ON / OFF)
F5 FRM (ON / OFF)
F7 up menu
F5 STORE
F6 RECALL
F1 RECALL
F3 DELETE FILE
F1 DELETE YES
F3 DELETE NO
F7 up menu
F7 SELECT CH (1A / 1B / 1C / 1D / 2A / 2B / 2C / 2D / 1A - 1B / 1C - 1D / 2A - 2B / 2C - 2D / 1A - 1D / 2A - 2D)

11.5 PSET Menu



12. FIRMWARE UPDATE HISTORY

This manual was written for the following firmware version:
• Ver. 4.4 on the LV 5490
• Ver. 2.8 on the LV 5480
You can view the firmware version by pressing F•3 SYSTEM INFO on the SYS menu.

Ver. 4.4 on the LV 5490, Ver. 2.8 on the LV 5480)

- [SER07] Support has been added for system gamma.

Ver. 3.7 on the LV 5490, Ver. 2.1 on the LV 5480)

- [SER10] Support has been added for LV 5490SER10 (VIDEO NOISE METER).

Ver. 3.3 on the LV 5490, Ver. 1.7 on the LV 5480)

- [SER08] Support has been added for LV 5490SER08 (IP(NMI)).

Ver. 3.2 on the LV 5490, Ver. 1.6 on the LV 5480)

- [SER01/02/06] Gamut error detection function was added.
- [SER01/02/06] 5-bar display function was added.
- [SER01/02/06] Aspect ratio display was added to the user markers on the picture display.

Ver. 2.9 on the LV 5490, Ver. 1.3 on the LV 5480)

- [SER06] Support has been added for LV 5490SER06 (12G-SDI INPUT).
- [SER09] Support has been added for LV 5490SER09 (12G-SDI EYE).

Ver. 2.7 on the LV 5490, Ver. 1.1 on the LV 5480

- [LV 5490/5480] The waveform color during capturing has been changed to cyan.
- [LV 5490/5480] BT.709 and BT.2020 color spaces is now supported for XYZ input.
- [LV 5490/5480] Colorimetry alarm function has been added.
- [SER01/SER02] Simultaneous display of cursor values and X/Y is now supported in the cursor measurement of waveform display.
- [SER01/SER02] In the frequency deviation measurement of the status display, the display range has been improved from ±50 ppm to ±100 ppm.
- [SER03] The Dolby option now supports frame location display.
- [SER07] Support has been added for LV 5490SER07 (HDR).

Ver. 2.5 on the LV 5490, Ver. 1.1 on the LV 5480

- [SER01/SER02] Support for XYZ signals has been added.
- [SER01/SER02] A histogram function has been added to the vector display.
- [SER01/SER02] The Q signal log of the status display has been improved so that it can be saved to a USB memory device.

Ver. 2.3 on the LV 5490

- [LV 5490] WEB server support has been added.
- [LV 5480] Support has been added for LV 5480 (MULTI WAVEFORM MONITOR).
- [SER01/SER02] Support for freeze and black errors has been added.
- [SER01/SER02] Pattern diagonal scrolling has been added to the test signal generation function.
- [SER01/SER02] DCI color space has been added to the waveform display, vectorscope display, and CINELITE display.

- [SER01/SER02] The color space settings of the waveform display and vectorscope display has been improved so that they can be set at once on the system menu.
- [SER05] The color spaces of the chromaticity diagram has been improved so that they can be set at once on the system menu. Manual color space settings has been deleted.

Ver. 2.0 on the LV 5490

- [LV 5490] Support for remote control using TELNET, FTP, and SNMP has been added.
- [LV 5490] Support for time configuration function using an SNTP server has been added.
- [LV 5490] Support for the LV5490-01 remote controller (sold separately) has been added.
- [LV 5490] ALIGN-H and ALIGN-V have been added to DISPLAY MODE of user-defined layout.
- [SER01/SER02] Embedded audio has been added to the test signal generation function.
- [SER01/SER02] Multiformat color bar pattern has been added to the test signal generation function.
- [SER01/SER02] Support for double-speed format display has been added.
- [SER01/SER02] CODE VALUE, which shows the video data value on the CINELITE % display, has been added.
- [SER03] Dolby support (option)
- [SER05] User-defined triangle, which shows a specified triangle on the chromaticity diagram, has been added.
- [SER05] User-defined gamma, which is used to vary the gamma between 1.5 and 3.0, has been added.
- [SER05] Coordinate value display has been added to the link marker of CINELITE Advanced.

Ver. 1.8 on the LV 5490

- [SER01/SER02] Support for 3G-SDI dual link RGB444 and other formats has been added.
- [SER01/SER02] A function that indicates a warning when an SDI signal in a format other than the expected format is received has been added.
- [SER01/SER02] ANC DATA VIEWER is now supported in the status display.
- [SER01/SER02] Support for 2020 color space on the waveform and vectorscope displays has been added.
- [SER01/SER02] Support for the CINELITE II.
- [SER01/SER02] A progress bar is now displayed when saving to USB memory during a frame capture.
- [SER01/SER02] Waveform display now includes 1023 and 255 scales.

Ver. 1.5 on the LV 5490

- [SER01/SER02] Support for the focus assist option (LV 5490SER04) has been added.
- [SER01/SER02] Support for the CIE chromaticity diagram option (LV 5490SER05) has been added.
- [SER01/SER02] Square (SQ) and 2 sample interleave (2S) have been added to the format display.
- [SER01/SER02] 16:9 has been added to the aspect marker of the picture display (during 17:9 aspect ratio input).
- [SER01/SER02] Data dump in the status display has been improved so that line and sample can be selected using the V POS and H POS knobs.
- [SER01/SER02] In the phase difference measurement of the status display, the measurement range for 3G-B (1080/60P, 59.94P, and 60P) has been changed to ±1 frame.
- [SER01/SER02] A 0H reference setting (legacy or serial) has been added to the phase difference measurement of the status display.
- [SER01/SER02] An ARIB ancillary analysis feature has been added to the status display.

Ver. 1.4 on the LV 5490

- [LV 5490] A test signal generation function has been added.
- [LV 5490] Fast startup mode has been added.
- [LV 5490] A feature has been added that allows multiple functions to be arranged simultaneously in the status and audio of the free layout.
- [LV 5490] A preset feature has been added that allows either the recall menu or function menu to be displayed when a preset is recalled.
- [LV 5490] A feature for clearing icons, such as that appears when a USB connection is made, has been added.
- [LV 5490] The tab menu that was used previously is now displayed until the power is turn off and on.
- [LV 5490] ALL INIT has been added to the initialization feature in the system settings.
- [SER01/SER02] A frame capture feature has been added.
- [SER01/SER02] 4K HD quad link is now supported.
- [SER01/SER02] A phase difference display feature has been added to the status.
- [SER01/SER02] EDH, payload ID, audio control packet, custom search, and AFD ancillary analysis features have been added to the status.
- [SER01/SER02] A shadow feature has been added to the picture aspect marker.
- [SER01/SER02] An AFD feature has been added to the picture aspect marker.
- [SER01/SER02] Full frame display and 2x display have been added to picture.
- [SER01/SER02] The format display now appears in red when the SDI signal is inconsistent with the payload ID embedded in the SDI signal or the SDI system settings.
- [SER03] A status display feature has been added.
- [SER03] The scale and Lissajous waveform are now updated simultaneously when a switch is made between multi-Lissajous display and single-Lissajous display.

Ver. 1.2 on the LV 5490

- [LV 5490] Remote control feature using a 15-pin D-sub connector has been added.
- [LV 5490] The LCD backlight can now be turned off automatically.
- [LV 5490] The layouts of all measurement displays can now be initialized at once.
- [SER01] Support has been added for HD dual link and 3G-SDI level B dual stream.
- [SER01] An event logging feature has been added to the status display.
- [SER02] Support has been added for LV 5490SER02(SDI INPUT /EYE).

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Following information is for Chinese RoHS only

所含有毒有害物质信息

部件号码：LV 5490 / LV 5480

此标志适用于在中国销售的电子信息产品，依据2006年2月28日公布的《电子信息产品污染控制管理办法》以及SJ/T11364-2006《电子信息产品污染控制标识要求》，表示该产品在使用完结后可再利用。数字表示的是环境保护使用期限，只要遵守与本产品有关的安全和使用上的注意事项，从制造日算起在数字所表示的年限内，产品不会产生环境污染和对人体、财产的影响。
产品适当使用后报废的方法请遵从电子信息产品的回收、再利用相关法令。
详细请咨询各级政府主管部门。

产品中有毒有害物质或元素的名称及含量

部件名称 Parts	有毒有害物质或元素 Hazardous Substances in each Part					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
实装基板	×	○	○	○	○	○
主体部	×	○	○	○	○	○
液晶显示模组	×	○	○	○	○	○
开关电源	×	○	○	○	○	○
风扇	×	○	○	○	○	○
外筐	×	○	○	○	○	○
线材料一套	×	○	○	○	○	○
附件	×	○	○	○	○	○
包装材	○	○	○	○	○	○
电池	○	○	○	○	○	○
选件						
5490SER01	×	○	○	○	○	○
5490SER02	×	○	○	○	○	○
5490SER03	×	○	○	○	○	○

备注）

○：表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006 规定的限量要求以下。

×：表示该有毒有害物质或元素至少在该部件的某一均质材料中的含量超出SJ/T11363-2006 标准规定的限量要求。

Ver.3

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