LEADER

LV 7390 SDI RASTERIZER

LV 7390SER01	SDI INPUT VF SDI INPUT (Option)
LV 7390SER03	DIGITAL AUDIO DOLBY (Option)
LV 7390SER20	4K

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 % 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 gases, explosive gazes, 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

■ 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.

■ 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

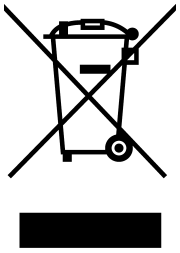
- Calibration and Repairs

  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.

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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.

This Warranty is valid only in Japan.

1.2 Operating Precautions

1.2.1 Maximum Allowable Input Voltage

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
Main unit	EXT REF	±5 V (DC + peak AC)
Main unit	REMOTE	0 to +5 V
SER01	(VF) SDI INPUT	±2 V (DC + peak AC)
SER03	AUDIO INPUT/OUTPUT	±5 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 an I/O connector of 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.

1.3 About Trademarks and Licenses

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

1.4 Terminology Used in This Manual

● About This Manual

This manual describes the menus and screens that appear when an LV 7390SER01, LV 7390SER03, LV 7390SER20, VF option, or DOLBY option is installed in the LV 7390. Therefore, if these options are not installed, the menus and screens may not appear.

● Operation Keys

The FORM, SHORTCUT, OVLAY, FILTER, GAIN, SWEEP, and MAG keys are collectively referred to as operation keys.

● SER

The LV 7390SER01 is referred to as the SER01, the LV 7390SER03 is referred to as the SER03, the LV 7390SER20 is referred to as the SER20.

● VF Option

VF option refers to the LV 7390SER01 installed in the VF SDI INPUT slot.

● 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.

● 1-Screen Display

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

● Multi-screen Display

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

● Underlining (_)

Underlined options indicate the default values.

● **Input Format and Link Systems**

The following names are used for the various input formats and link systems.

Table 1-2 Input format 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
3G (DL)	3G-B-DS dual link	Dual Link
HD (QL)	HD-SDI quad link	Dual Link
3G (QL)	3G-A, 3G-B-DL dual link	Dual Link
3G	Collective name for 3G links	-
3G-B	Collective name for 3G-B-DL and 3G-B-DS	-
4K	Collective name for 3G (DL), HD (QL) , and 3G (QL)	-

2. SPECIFICATIONS

2.1 General

The LV 7390 is a rasterizer that can measure up to four SDI signals simultaneously.
It supports 3G, HD, and SD input signals.
The measurement screen can be output at full HD resolution to SDI and DVI-I and supports 3G and HD.
The LV 7390 is equipped with a free layout function that enables the displayed screens to be arranged freely. It can be customized according to your application. Further, the new operation keys allow quick operation.
Adding options makes it possible to expand the functions of LV 7390 according to your application. Such expansions include support for 4K formats, input dedicated to picture display, and audio measurement analysis.

Options

LV 7390SER01:	SDI INPUT (*1)
LV 7390SER02:	SDI INPUT/EYE (*1, to be supported in the future)
LV 7390SER03:	DIGITAL AUDIO
LV 7390SER20:	4K

*1 The LV 7390 requires an LV 7390SER01 or LV 7390SER02 to be installed in the SDI INPUT slot. These units cannot be installed simultaneously.

2.2 Features

● HD 4-Signal Simultaneous Display

The LV 7390 has four SDI input connectors compatible with 3G, HD, and SD and can display up to four HD video signals simultaneously. Serially reclocked signals of each input signal is output from the four SDI output connectors.

● Variety of 4K Video Formats

4K formats (4096×2160, 3840×2160) can be supported by adding the LV 7390SER20 option.
Video signal formats such as 3G-SDI dual link and quad link as well as HD-SDI quad link are supported. They provide powerful tools for you to manage the high-definition video quality in 4K content production.

● Full HD Display

The measurement screen can be output in SDI or DVI-I from the monitor output connector. The output signal can be displayed on an external LCD in full high definition resolution.

● Free Layout of Measurement Screens

The flexible free layout function not only enables video signal waveforms, vector waveform, pictures, camera ID, tally, and so on of the input SDI signals to be simultaneously displayed but also they can be displayed in the sizes and positions of your liking. Moreover, several SDI input signals can be displayed simultaneously and arranged in a manner that allows them to be compared. Different layout configurations can be achieved simply by using the mouse while viewing the monitor screen.

● **Enhanced Free Layout Function**

You can display a specific channel enlarged or arrange all display items freely. In addition, a tool to help you create layouts is included. This function provides a reliable monitoring environment with layouts suitable for different applications.

● **Smart Operation Function That Achieve Quick Control**

Dedicated operation keys are available for functions that are used frequently in video content production, providing much improved operability. Moreover, operation keys can be customized to your needs. Camera adjustment and the like can be performed smoothly and quickly.

● **Equivalent Cable Length Measurement**

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.

● **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-I, you can control the LV 7390 by using a USB mouse while viewing the external monitor.

● **Status Display**

The status display also has a feature for detecting CRC and other types of errors. It also has event log and phase difference measurement features enabling you to monitor SDI signals in detail.

● **CINELITE II**

The CINELITE feature makes it easy to manage the levels of specific points on the picture display. On the video signal waveform or vector waveform, a marker can be displayed at the position corresponding to a point on the picture display. Further, the CINEZONE feature makes it possible to check the luminance distribution of the whole picture display at a glance.

● **HDR Display Option**

HDR display becomes available by adding the LV 7390SER20 option.
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.
On video signal waveform display, a scale corresponding to the HDR standard can be shown, making it possible to manage video in Scene linear.

● **Picture Display SDI Input Option**

The picture of an SDI signal separate from the measurement system can be displayed by adding the LV 7390SER01 to the VF SDI INPUT slot. Waveforms and vectors of the main signal can be monitored while showing camera operation such as viewfinder out or the operation menu on the picture display.

● **SDI Input Eye Pattern Display Option (to be supported in the future)**

This feature can display eye pattern waveforms and jitter waveforms of SDI signals as well as measurement results of various parameters by adding the LV 7390SER02 to the SDI INPUT slot. It can display any of the signals received through the four SDI input connectors.

● **Audio Display**

Embedded audio can be separated from the SDI signal and shown in a meter display. It can be used as a simple audio level meter for test tone verification and the like.

The addition of the LV 7390SER03 option enables the LV 7390 to display not only embedded audio but also external digital audio. Detailed digital audio monitoring is possible with the level meter display expanded to 16 channels, Lissajous display, surround display, loudness display and various analysis displays. DIN 1.0/2.3 I/O connectors can be switched between input and output in groups of four connectors (8 channels). Therefore, the LV 7390 can also be used to extract and transmit the embedded audio's digital audio.

● **Screen Capture**

The LV 7390 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 7390, 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.

● **External Remote Connector**

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

● **RS-422/485 Serial Communication**

The RS-422/485 serial communication function can be used to display camera IDs, iris, and the like as well as tally display. Camera information can be monitored centrally on the monitor screen.

● **Ethernet Port, HTTP Server**

By connecting the Ethernet interface to a PC, you can control the LV 7390 remotely over TELNET, transfer files over FTP, and control the LV 7390 remotely and detect errors over SNMP.
The HTTP server provides comprehensive remote control and monitoring features including picture view, error monitoring with the event log viewer, and log acquisition.

● **REMOTE CONTROLLER (LV 7290, sold separately)**

Because the REMOTE CONTROLLER panel has keys similar to those on the LV 7390 panel, you can think of it as an extension of the LV 7390 panel when you use it to remotely control the LV 7390. (You cannot use TELNET while you are using the LV 7290.)

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	Corresponding Standard
YC_BC_R 4:2:2	10bit	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	Corresponding Standard
YC_BC_R 4:2:2	10bit	1280×720	60/59.94/50/30/29.97/25/24/23.98/P	SMPTE ST 296
		1920×1080	60/59.94/50/I	SMPTE ST 274
			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	Corresponding Standard
YC_BC_R 4:2:2	10bit	1920×1080	60/59.94/50/P	SMPTE ST 274
		2048×1080	60/59.94/50/48/47.95/P	SMPTE ST 2048-2
RGB 4:4:4	10bit	1920×1080	60/59.94/50/I	SMPTE ST 274
			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 2048-2
			30/29.97/25/24/23.98/PsF	
	12bit	1920×1080	60/59.94/50/I	SMPTE ST 274
			30/29.97/25/24/23.98/P	
		2048×1080	30/29.97/25/24/23.98/P	SMPTE ST 2048-2
			30/29.97/25/24/23.98/PsF	

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

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

Table 2-5 3G-B-DS video signal formats and standards (*1)

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

* The frame frequency of all input signals must be synchronized.

*1 The VF option takes effect when 3G-B-DS is received through SDI INPUT.

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

Division Transmission System	Color System	Quantization	Image	Frame Frequency/Scanning	Compliant Standard
Square	YC_BC_R 4:2:2	10bit	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	10bit	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 2-7 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	10bit	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 2-8 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	10bit	3840×2160	60/59.94/50/P	SMPTE ST 425-5 SMPTE ST 2036-1
			4096×2160	60/59.94/50/48/47.95/P	SMPTE ST 425-5 SMPTE ST 2048-1
		12bit	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	10bit	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	-
		12bit	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	-
2 sample interleave	YC_BC_R 4:2:2	10bit	3840×2160	60/59.94/50/P	SMPTE ST 425-5 SMPTE ST 2036-1
			4096×2160	60/59.94/50/48/47.95/P	SMPTE ST 425-5 SMPTE ST 2048-1
		12bit	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	10bit	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
		12bit	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

* 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.

2.3.2 Embedded Audio Playback Format

Compliant Standards	
3G, HD	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 bit
Clock Generation	Generated from the video clock
Synchronization	Must be synchronized to the video clock. All SDI signals must be synchronized.
Channel Separation	
Simple Level Meter	Separates up to four groups (8 channels) from an SDI input.
SER03	Separates up to four groups (16 channels) from an SDI input.

2.3.3 SDI I/O Connectors

SDI Input Connectors (SER01)	
Connector Type	BNC
Number of Input Connectors	4 (A, B, C, D)
Input Impedance	75Ω
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	±2 V (DC + peak AC)
Input Signal Selection	
SD/HD/3G-A/3G-B-DL	Four inputs A, B, C, D
3G-B-DS	One input signal selected from A, B, C, D
3G (DL)	One input signal selected from (A, B) and (C, D)
HD (QL), 3G (QL)	One input signal selected from (A, B, C, D)
SDI Output Connector	
Connector Type	BNC
Number of Output Connectors	4 (A, B, C, D)
Output Impedance	75Ω
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	Reclocked signal of SDI input

2.3.4 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 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 and phase difference display using an external sync signal is not possible for the following formats.
  · 3G's 720/30P, 720/29.97P, 720/25P, 720/24P, 720/23.98P
  · 4K
  · Frame frequency 48P, 47.95P
* Phase difference display using an external sync signal is not possible for the following formats.
  · 3G's 720/30P, 720/29.97P, 720/25P, 720/24P, 720/23.98P
  · Frame frequency 48P, 47.95P

2.3.5 Audio Input/Output Connectors

Digital Audio I/O Connectors (SER03)

Connector Type	DIN 1.0/2.3
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 (DIN 1.0/2.3 connector)
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.

Headphone Output

Connector Type	One stereo jack
Output Signal	2 channels from the audio signals that are being displayed on the screen (Downmixed Lt and Rt channel output is also possible with the SER03.)
Sampling Frequency	48kHz
Volume Adjustment	Using the menu
Power Output	100 mW maximum (into 8 Ω load)

2.3.6 Monitor Output Connector

SDI Output Connector

Connector Type	BNC
Number of Output Connectors	1
Output Impedance	75Ω
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 display screen
Output Format	
SDI Format	HD, 3G-A, 3G-B-DL
Image Format	1920×1080, YC_BC_R 4:2:2, 10 bit
Frame Frequency	
3G	60P, 59.94P, 50P
HD	60I, 59.94I, 50I
Corresponding Standard	
3G	SMPTE ST 424, SMPTE ST 425
HD	SMPTE ST 292

DVI-I Output

Connector Type	DVI-I Connector
Number of Output Connectors	1
Signal Format	Single Link T.M.D.S, analog RGB (separate sync signal TTL level)
DDC	Not supported
HOT PLUG Detection	Not supported
Output Signal	Outputs the display screen
Image	1920×1080
Frame Frequency	60P, 59.94P, 50P

2.3.7 Control Connectors

USB Port

Port Type	Standard A
Number of Ports	1
Specifications	USB 2.0
Compatible Devices	USB memory, USB mouse
USB Memory Feature	Saves capture data, preset data, event log data, data dumps, and loudness data (SER03)
USB Mouse Feature	Used to control on the screen

Ethernet Port (*1)

Port Type	RJ-45
Number of Ports	1
Specifications	IEEE802.3
Supported Protocols	TELNET, FTP, SNMP, HTTP, SNTP
Function	Used to monitor the LV 7390 from a PC, retrieve various types of data, and monitor errors or remotely control from the LV 7290
Type	10Base-T, 100Base-TX, 1000Base-T

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
Function	Used to load preset settings, switch input signals, transmit alarm signals, activate tally displays, and start, stop, and clear the loudness measurement (SER03)
Alarm Output	Outputs signals when format alarms occur, when various type of errors occur, when the fan malfunctions, or when the internal temperature is abnormal

RS-422/485 Connector

Port Type	RJ-45
Number of Ports	2 (INPUT and OUTPUT, one of each)
Control Signal	RS-485 level
Communication System	Full duplex
Function	Camera ID display, iris display, and tally display through serial communication

*1 You cannot use TELNET and the LV 7290 at the same time.

2.3.8 Front Panel

Key LEDs	All the keys are dimly back-lit. The selected key is lit more brightly.
Power Switch	Stores the on/off state
Last Memory	Backs up the panel settings to memory
Key Lock	Prevents erroneous operation

2.3.9 Screen Capture

Function	Captures the screen
Display	Displays only the captured image or overlays the captured image over the input signal
Media	Internal memory (RAM) and USB memory You can only save 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 7390 can load.
Data Input	Data saved to a USB memory device can be loaded and displayed on the LV 7390.

2.3.10 Presets

Presets	Saves the panel settings (*1)
Number of Presets	60
Preset Loading Method	Front panel or remote connector (*2)
Recall Mode	Recall menu, function menu
Recall Menu	Displays the recall menu after recalling
Function menu	Displays the function menu that was available when panel settings were stored after recalling
Copying	All preset data can be copied from the LV 7390 to a USB memory device or from a USB memory device to the LV 7390.

*1 The power on/off state, Ethernet settings, remote settings (with exceptions), date and time, and RS-422/485 settings are not saved.

*2 The number of presets loaded from the remote connector can be 8 (6 when loudness measurement is being controlled) or 60.

2.3.11 Display

Free Layout

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

Enhanced Layout

Function	Create measurement screen layouts for up to four inputs on a single screen
Display Format	Displays up to four input signals (in simul mode using multi-screen display with Picture Input Select set to SD INPUT)

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)
Corresponding Standard	
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

2.3.12 Video Signal Waveform Display

Waveform Control

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 YC_BC_R 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	±0.5 % (single default display)
Frequency Response	
3G (1080/60P, 1080/59.94P, 1080/50P)	
Y Signal	±0.5 % (1 to 60 MHz)
C_BC_R Signal	±0.5 % (0.5 to 30 MHz)
Low-Pass Attenuation	≥ 20 dB (at 40 MHz)
3G, HD (1080/60P, 1080/59.94P, 1080/50P)	
Y Signal	±0.5 % (1 to 30 MHz)
C_BC_R 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)
C_BC_R 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, BLANK
Field Display	
Display Format	Overlay (1V, 2V) (*3) Parade (1V, 2V, 3V)
Magnification	×1, ×20, ×40
Time Accuracy	±0.5 % (single default display)
Cursor Measurement	
Composition	
Horizontal Cursors	2 (REF and DELTA)
Vertical Cursors	2 (REF and DELTA)
Amplitude Measurement	mV, %, R%, DEC, HEX, HDR (SER20)
Time Measurement	Second display
Frequency Display	Computes and displays the frequency with the length of one period set to the time between two 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.

2.3.13 Vector 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 % (single default display)
Scale	
Type	ITU-R BT.601, ITU-R BT.709, AUTO
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

2.3.14 Picture Screen

Quantization	8bit
Display Sizes	Reduced, actual size, ×2, full frame
Quality Adjustment and Color Selection	
	Brightness, contrast, gain, bias, chroma gain, monochrome display
Frame Rate	Converts to 60P, 59.94P, or 50P
Aspect Marker Display	
3G (17:9 aspect ratio)	16:9, 14:9, 13:9, 4:3, 2.39:1
3G (16:9 aspect ratio), HD	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), or black
Safety Marker Size	ARIB TR-B4, SMPTE RP-218, or user-defined
Line Select (*2)	Marks the selected line
AFD Display (*1)	Displays abbreviations for SMPTE ST 2016-1-2007 standard AFD codes
Additional Display Features	
Tally Frame Display (*3)	Displays tally 1 and tally 2 on the picture frame
Audio Level Meter Display(*4)	Displays an audio level meter next to the picture

* The LV 7390SER01 installed in the VF SDI INPUT slot (VF option) supports only picture display.

*1 Supports only SD or HD.

*2 VF option is not supported.

*3 3G-B-DS is not supported.

*4 Picture with the audio level meter cannot be displayed simultaneously with audio.
3G-B-DS and VF option are not supported.

2.3.15 CINELITE Display

Function	Measures the luminance on the picture screen
Display Format	f Stop display, percentage display, and gradient 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 (data acquired on the main unit)
External Correction Table	5 types (loaded from USB memory)
% Display	Luminance or RGB components are displayed as percentages.
Gradation Display	RGB components are displayed using an 8-bit, 256-step gradient.
Measured Points	3
Measurement Sizes	1 x 1 pixel, 3 x 3 pixels, and 9 x 9 pixels

* 3G-B-DS and VF option are not supported.

2.3.16 CINELITE Advanced Display

Display Format	Link marker display, vector marker display
Link Marker Display	CINELITE measurement points are linked to the video signal waveform and vector and displayed with markers.
Number of Link Markers	Up to 4
Vector Marker 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

* 3G-B-DS and VF option are not supported.

2.3.17 CINEZONE Display

Function	Adds colors to the display in accordance with luminance levels
Color	Gradation (1024 colors) and 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	The specified luminance level ±0.5 % is displayed using green on an otherwise monochrome picture display.
Luminance Level	-7.3 to 109.4%

* 3G-B-DS and VF option are not supported.

2.3.18 Digital Audio Display

Input Signal	SDI embedded audio signal, external audio signal (SER03)
Displayed Channels	
Simple Level Meter	8 channels
SER03	Up to 16 channels
Select the embedded audio channel	
Simple Level Meter	Select up to four groups (8 channels) from the available SDI inputs
SER03	Select up to four groups (16 channels) from the available SDI inputs
Display Types	Level meter, Lissajous (SER03), correlation meter (SER03), surround (SER03), status (SER03), loudness (SER03)
Level Meter Display	
Displayed Channels	8 or 16 (SER03) channels
Dynamic Range	-60 dBFS, -90 dBFS (SER03), reference level±3 dB (SER03)
Meter Response Model	TRUE PEAK, PPM type I (SER03), PPM type II (SER03), VU (SER03)
Peak Hold Response Model (SER03)	TRUE PEAK, PPM type I, PPM type II
Peak Hold Time (SER03)	0.0 to 5.0 s (in 0.5 s steps), HOLD
Level Setting	-40.0 to 0.0 dBFS (reference level, warning level, over level)
Lissajous Display (SER03)	
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	Displays Dolby E frame locations with indicators (option)
Surround Display (SER03)	
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
Correlation Display	Detects the case of the channel being 180 ° out of phase with its adjacent channels

Status Display (SER03)	
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 7390 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 metadata	Text display (option)
Loudness Display (SER03)	
Function	Loudness chart display, numeric display, log, level meter display, peak value display
Compliant Standard	ITU-R BS.1770, ARIB TR-B32, EBU R128, ATSC A/85
Measurement Channel	Simultaneous measurement of two audio sources
Mode (Main)	Mono, stereo, 5.1, user specified channel
Mode (Sub)	Off, mono, stereo
Channel Selection	User-defined assignment of eight channels
LFE Gain	0 to 10 times
Measurement Trigger	Manual (panel), remote, timecode, mute
Measurement Mode	BS1770, ARIB, EBU, ATSC
Target Level	
BS1770	-24.0 LKFS
ARIB	-24.0 LKFS (±1 LK)
EBU	-23.0 LUFS (±1 LU)
ATSC	-24.0 LKFS (±2 LK)
Average Time	
Momentary Loudness	200 to 10000 ms
Short-term Loudness	200 to 10000 ms

Chart Display	
1 During Audio Measurement	Graph display of integrated loudness and momentary or short-term loudness
2 During Audio Measurement	Graph display of integrated, momentary, or short-term loudness
Measurement Time	2min, 10min, 30min, 1hour, 2hour, 6hour, 12hour, 24hour
MAG	Zoomed display of the target level from -18 to +9 (LK/LU)
Numeric Display	Absolute value and relative value displays of integrated loudness and momentary or short-term loudness
Integrated Loudness (Average Loudness)	Displayed in red when the target level range is exceeded
Momentary, Short-term Loudness	Displayed in red when the target level is exceeded
Log	
Log Time	Up to 24 hours
File	
Log	Saves gating block loudness in CSV format
Summary	Saves settings and measurement results in text format
Level Meter Display	Displays level meters for eight channels
Peak Value Display	Displays peak values of a measurement channel numerically

2.3.19 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	
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	±20m
Resolution	5m
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 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 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

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

2.3.20 SDI Analysis Features

Event Log Display

Function	Records detected errors, events—such as the LV 7390 switching between input signals, and timestamps.
Log Capacity	Up to 1000 events
Operation	Logs all events from start to finish
Data Output	Text output 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
3G (DL)	PICTURE, link 1, link 2
3G (QL), HD (QL)	PICTURE, link 1, link 2, link 3, link 4
Display Format Details	
PICTURE	Streams 1 and 2 are combined and displayed in a picture structure. (displays only the image area for 4K)
Stream 1/2	Displays each stream in a transmission structure
Link 1/2/3/4	Displays the selected link
Line Select	Displays the selected line
Sample Select	Displays from the selected sample
Jump Feature	Jumps to an EAV or SAV (Moves to 0 or 3839/4095 for 4K PICTURE)
Data Output	Text output to USB memory

Phase Difference Display (*1)

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

EDH Display (Only for SD)

Corresponding Standard	SMPTE RP 165
Displayed Contents	Analyzes and displays EDH packets and displays received CRC errors
Display Format	Text, hexadecimal, binary

Payload ID Display

Corresponding Standard	SMPTE ST 352
Displayed Contents	Analyzes and displays payload information
Display Format	Text and binary

Displaying Audio Control Packets

Corresponding Standard	SMPTE ST 299-1, SMPTE ST 272
Displayed Contents	Displays audio control packet analysis
Display Format	Text, hexadecimal, binary
Group Selection	1, 2, 3, 4

Closed Caption Display (*2)

Corresponding Standard	ARIB STD-B37
Displayed Contents	Analysis display of closed caption signals
Display Format	Text, hexadecimal, binary

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

Corresponding Standard	ARIB STD-B39
Displayed Contents	Analysis display of inter-stationary control signals
Display Format	Text, hexadecimal, binary
Logging Feature	Q-signal logging
Format ID Display	Analysis display of the format ID

Data Broadcast Trigger Signal Display (*2)

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

V-ANC User Data Display (*2)

Corresponding Standard	ARIB TR-B23
Display Format	Hexadecimal and binary

AFD Packet Display (*2)

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

User-Defined ANC Packet Display

ANC Specification Method	DID, SDID
Displayed Contents	Y, C
Display Format	Hexadecimal and binary

*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.

2.3.21 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.

2.3.22 HDR Display (SER20)

Compliant Standards	ARIB STD-B67, ITU-R BT.2100 (HLG; Hybrid Log Gamma) SMPTE ST 2084, ITU-R BT.2100 (PQ curve, Narrow Range only) S-Log3
Supported Formats	All except SD
CINEZONE Display Color	
Upper Limit or Higher	Magenta
HDR area	Coloring according to the brightness
SDR area	Monochrome
Lower Limit or Lower	Black

2.3.23 Tally Display

Number of Displays	3 (TALLY-1, TALLY-2, TALLY-EXT) (*1)
Color	7 colors to choose from
Control Method	Remote connector, RS-422/485 connector

*1 The number of displays per channel. Arranged using the free layout function.

2.3.24 Camera ID Display

Number of Displays	2 (LABEL-1, LABEL-2) (*1)
Iris Display	1 (IRIS) (*1)
Control Method	Panel, RS-422/485 Connector

*1 The number of displays per channel. Arranged using the free layout function.

2.3.25 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	50/60Hz
Power Consumption	90W max.
Dimensions	482 (W) × 44 (H) × 300 (D) mm (excluding protrusions)
Weight	3.5 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
	Instruction manual 1

3. PANEL DESCRIPTION

3.1 Front Panel

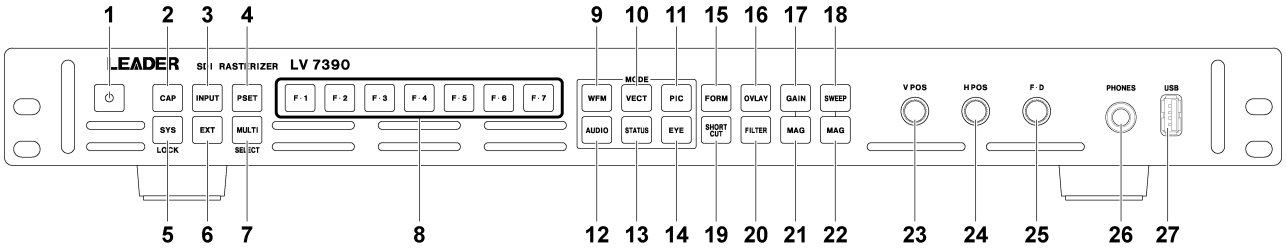


Figure 3-1 Front panel

Table 3-1 Front panel description

No.	Name	Description
1	Power Switch	Press to turn the instrument on. Hold down to turn the instrument off. [See also] 4.4, “Turning the Instrument On and Off”
2	CAP	Captures the screen [See also] 7, “CAPTURE FEATURE”
3	INPUT	Sets the signal to measure. [See also] 5.1, “Setting the Signals to Measure”
4	PSET	Press to recall a preset; hold down to register, delete, or collectively copy presets. [See also] 8, "PRESET FEATURE"
5	SYS	Press to configure the main unit settings. Hold down to enable and disable the key lock. [See also] 6, “SYSTEM SETTINGS,” and 4.7.5, “Enabling the Key Lock”
6	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 also] 4.6.5, “External Sync Signal Input”
7	MULTI	Shows a combination of measurement screens. You can change the layout as you like. Hold down in multi-screen display to select the layout. [See also] 5.3.7, “Multi Display”
8	F•1 to F•7	Carries out the corresponding function menu operation. [See also] 4.7.2, “Function Menu Operations”
9	WFM	Shows the video signal waveform display. You can change the layout as you like. [See also] 9, “VIDEO SIGNAL WAVEFORM DISPLAY”
10	VECT	Shows vectors. You can change the layout as you like. [See also] 10, “VECTOR DISPLAY”
11	PIC	Shows the picture display. You can change the layout as you like. [See also] 11, “PICTURE DISPLAY”
12	AUDIO	Shows the audio display. You can change the layout as you like. [See also] 12, “AUDIO DISPLAY (SIMPLE LEVEL METER),” and 13, “AUDIO DISPLAY (SER03)”
13	STATUS	Shows the status. You can change the layout as you like. [See also] 13.10, “STATUS DISPLAY”
14	EYE (to be supported in the future)	The eye pattern is displayed. You can change the layout as you like. [See also] 15, "EYE PATTERN DISPLAY"

No.	Name	Description
15	FORM	Switches the video signal waveform and vector display format. The display format types and order can be changed as you like. [See also] 5.4, “Operation Key Actions”
16	OVLAY	Switches the video signal waveform display format. When the overlay display (video signal waveforms are displayed on top of each other) is in use, this key's LED lights. When the parade display (video signal waveforms are displayed side by side) is in use, this key's LED turns off. [See also] 5.4, “Operation Key Actions”
17	GAIN	Switches the video signal waveform and vector gain. When fixed gain is being used, this key’s LED turns off. When variable gain is being used, this key’s LED lights. [See also] 5.4, “Operation Key Actions”
18	SWEEP	Switches the video signal waveform sweep method. When line display is being used, this key’s LED turns off. When field/frame display is being used, this key’s LED lights. The sweep method types and order can be changed as you like. [See also] 5.4, “Operation Key Actions”
19	SHORTCUT	Loads panel settings, saves a screen capture to the USB memory device, adjusts the intensity, performs cursor measurement, or adjusts the headphone volume. [See also] 5.4, “Operation Key Actions”
20	FILTER	Switches the video signal waveform filter. When FLAT is being used, this key’s LED turns off. Otherwise, this key’s LED lights. During pseudo-composite display, the filter types and order can be changed as you like. [See also] 5.4, “Operation Key Actions”
21	MAG (GAIN)	Switches the video signal waveform and vector gain. When X1 is being used, this key’s LED turns off. Otherwise, this key’s LED lights. The vector gain types and order can be changed as you like. [See also] 5.4, “Operation Key Actions”
22	MAG (SWEEP)	Switches the video signal waveform horizontal magnification. When X1 is being used, this key’s LED turns off. Otherwise, this key’s LED lights. The magnification types and order can be changed as you like. [See also] 5.4, “Operation Key Actions”
23	V POS	Turn to adjust the vertical position of the video signal waveform or other item. Press to return to the reference position.
24	H POS	Turn to adjust the horizontal position of the video signal waveform or other item. Press to return to the reference position.
25	F•D	Turn to specify a numeric value or to move cursors. In most cases, press to reset the value to its default value.
26	Headphone Jack	This is a standard-plug headphone jack. It outputs the audio embedded in the SDI signal.
27	USB	Connect a USB memory device or USB mouse. [See also] 4.5, “Connecting USB Devices.”

3.2 Rear Panel

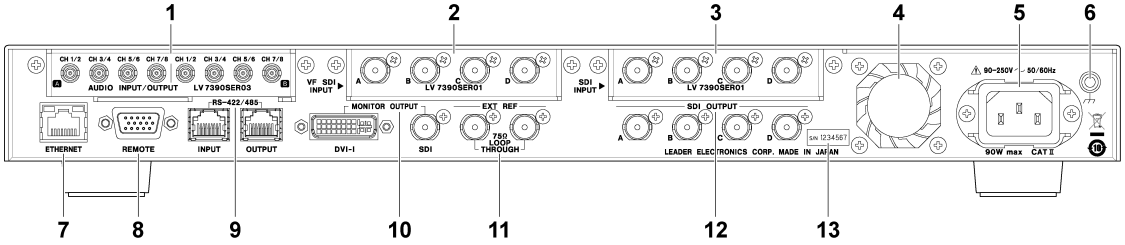


Figure 3-2 Rear panel

Table 3-2 Rear panel description

No.	Name	Description
1	AUDIO INPUT/OUTPUT (SER03)	Audio signal I/O connectors. Switch between input and output using system settings. [See also] 13, “AUDIO DISPLAY (SER03)”
2	VF SDI INPUT (VF option)	SDI signal input connectors. Only picture display is supported. [See also] 4.6.3, “SDI Signal Input (VF option)”
3	SDI INPUT	SDI signal input connectors. [See also] 4.6.2, “SDI Signal Input”
4	Fan	Cooling fan for the instrument. The rotation speed increases when the internal temperature of the main unit increases. It maintains the speed even when the temperature decreases until the power is cycled.
5	AC inlet	Attach the included cover/inlet stopper to the AC inlet. [See also] 4.1, “Attaching the Cover Inlet Stopper”
6	Ground terminal	Connect the instrument to an external ground.
7	ETHERNET	Ethernet port. Supports TELNET, FTP, SNMP, HTTP, and SNTP. [See also] 16, “ETHERNET”
8	REMOTE	15-pin D-sub remote connector. This can be used to execute actions such as recalling preset settings. [See also] 18, "REMOTE"
9	RS-422/485	Camera ID can be displayed using serial communication. [See also] 19, “RS-422/485”
10	MONITOR OUTPUT	Transmits the screen image. [See also] 4.6.1, “Transmitting Monitor Signals”
11	SDI OUTPUT	SDI signal output connector. [See also] 4.6.4, “SDI Signal Output”
12	EXT REF	External reference input connector. This is a loop-through connector. [See also] 4.6.5, “External Sync Signal Input”
13	Serial number label	The serial number is printed on this label.

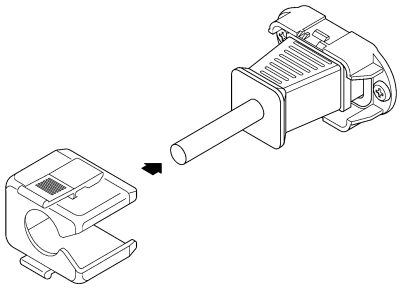
4. BEFORE YOU BEGIN MEASURING

4.1 Attaching the Cover Inlet Stopper

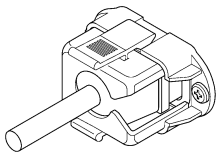
A cover/inlet stopper is included with the LV 7390. Use this device to prevent the power cord from being pulled free of the AC inlet. To attach the cover/inlet stopper, follow the procedure below.

● Attaching the Cover/Inlet Stopper

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



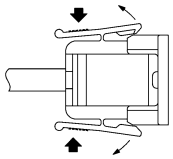
2. **Push the cover/inlet stopper, until you hear a click, to attach it to the AC inlet.**



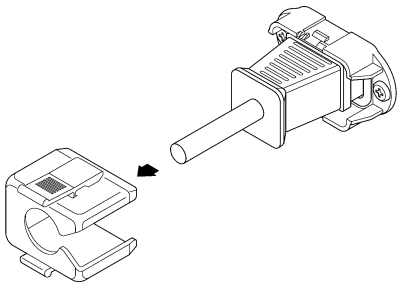
3. **Check that the cover/inlet stopper is securely attached to the AC inlet.**

● 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 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	Installation Location	Main Function
LV 7390SER01	SDI INPUT	SDI INPUT	SDI signal measurement
LV 7390SER01 (VF option)	SDI INPUT	VF SDI INPUT	SDI signal picture display
LV 7390SER02 (to be supported in the future)	SDI INPUT, EYE	SDI INPUT	SDI signal measurement and eye pattern display
LV 7390SER03	DIGITAL AUDIO	-	Audio signal measurement Dolby signal measurement (option)

* The LV 7390 requires an LV 7390SER01 or LV 7390SER02 to be installed in the SDI INPUT slot. These units cannot be installed simultaneously.

4.3 About Options

The following options (sold separately) can be installed in the LV 7390.
If you want to obtain an option, provide your local LEADER agent with the LV 7390'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 7390 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 7390SER20	4K	4K signal measurement

4.4 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 7390 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 at least 2 seconds. The power switch LED and the instrument turn OFF.

4.5 Connecting USB Devices

Connect a USB memory device or USB mouse to the USB port on the front panel.
USB devices can be connected or removed with the LV 7390 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.
Note that not all mouse devices are guaranteed to work. Compatibility has been confirmed for the following mouse devices.

- DELL M-UAR DEL7
- Nakabayashi MUS-UKF90N
- Hewlett-Packard MOFXUO
- Logicool M325t, M-U0026
- Microsoft GMF-00297

[See also] 4.7.3, “Mouse Operation”, 5.5, “Arranging the Measurement Screen Layout,” and 5.6, “Enhanced Layout”

4.6 Signal I/O

4.6.1 Monitor Signal Output

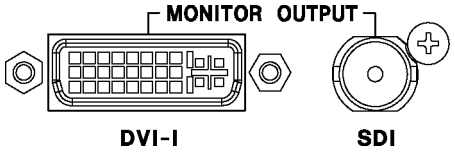


Figure 4-1 Monitor output connectors

By connecting a display to the DVI-I connector or SDI connector, you can view the measurement screen. Connect to a full high definition (1920×1080) display.

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.

[See also] MONITOR OUT tab → 6.1.4, “Configuring the Monitor Output Connectors”

4.6.2 SDI Signal Input

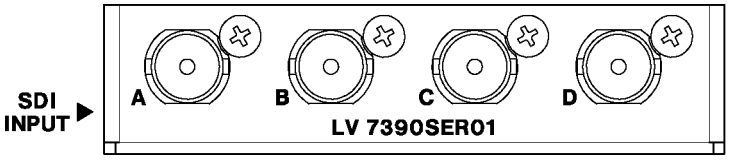


Figure 4-2 SDI input connectors

● Input Format

Specify the input signal settings on the SDI IN tab in the system settings, and apply signals that are specified in section 2.3.1, “SDI Formats and Standards.” For 3G (DL), signals are input in pairs: A and B or C and D.

Note that the frame frequency of all input signals must be synchronized.

[See also] SDI IN tab → 6.1.1, “Configuring the SDI Input Connectors.”

● 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.

● Setting the Signals to Measure

Set the signal to measure on the INPUT menu or use F•6 SELECT CH on each measurement screen.

Signals received through channels A to D can be measured simultaneously by using Simul mode.

[See also] 5.1, “Setting the Signals to Measure”

● Cables

It has been confirmed that errors do not occur when the LV 7390 receives an 800 mVp-p stress pattern through the following cables.

3G: LS-5CFB cable, 70 m
HD: LS-5CFB cable, 110 m
SD: L-5C2V cable, 260 m

4.6.3 SDI Signal Input (VF option)

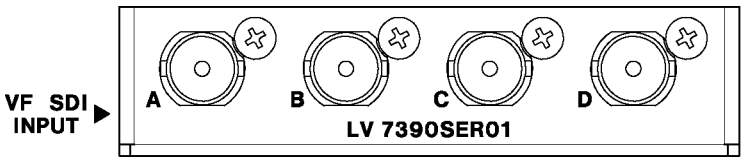


Figure 4-3 SDI input connectors

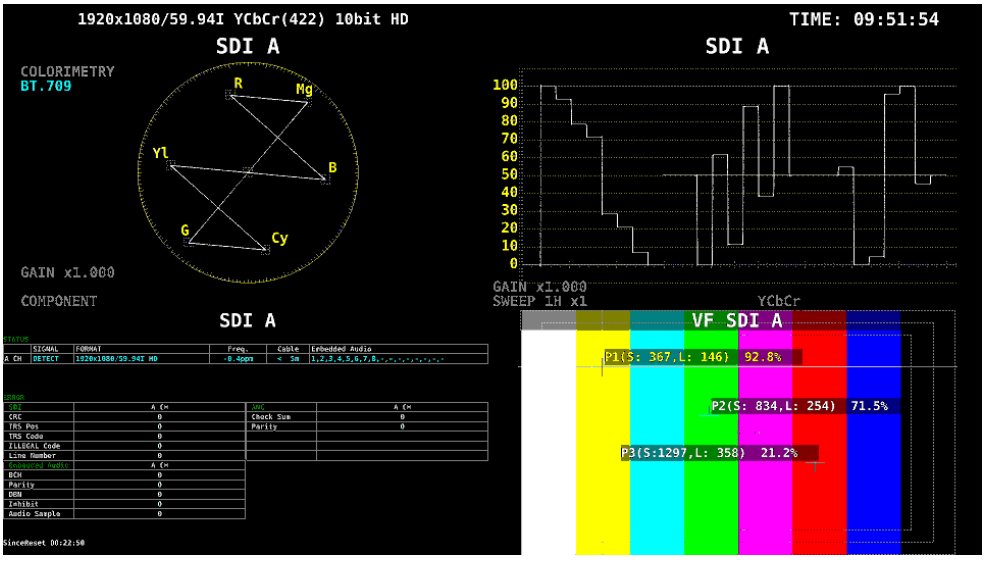
● About the VF Option

The VF option displays only the picture of the input signal. By applying the signal with viewfinder information to VF SDI INPUT and the signal of the main signal to SDI INPUT, these signals can be displayed simultaneously.

On the VF SDI IN tab in the system settings, set Picture Input Select to View Finder SDI Input.

[See also] VF SDI IN tab → 6.1.3, “Configuring the VF SDI Input Connectors (VF option)”

SDI INPUT SDI INPUT



SDI INPUT VF SDI INPUT

Figure 4-4 Viewfinder display screen

● Input Format

Set SDI System on the VF SDI IN tab in the system settings, and apply signals that are specified in section 2.3.1, “SDI Formats and Standards”. The SDI System settings that can be selected on the VF SDI IN tab vary depending on the SDI System selected on the SDI IN tab.

Note that the frame frequency of all input signals must be synchronized.

● Terminators

● Setting the Signals to Measure

This is the same as SDI INPUT. For details, see section 4.6.2, “SDI Signal Input.”

4.6.4 SDI Signal Output

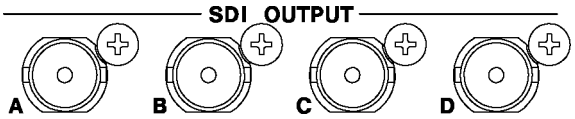


Figure 4-5 SDI output connectors

SDI OUTPUT transmit reclocked signals of the signals received through SDI INPUT. Use the signals for monitoring.
When the input signal is 3G-B-DS or 3G (DL), signals are output only from the currently selected channels.

4.6.5 External Sync Signal Input

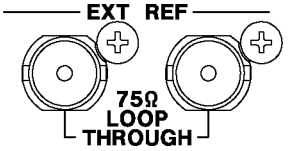


Figure 4-6 External sync signal input connectors

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 7390 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.

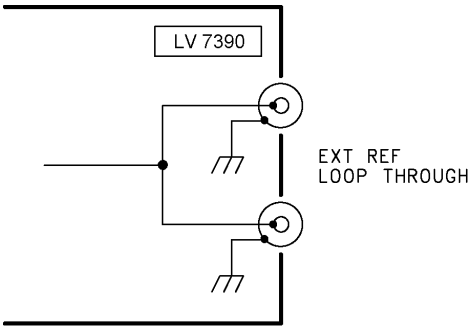


Figure 4-7 Loop-through

*1 Waveform display using an external sync signal is not possible for the following formats.
- 3G’s 720/30P, 720/29.97P, 720/25P, 720/24P, 720/23.98P
- 4K
- 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 4-3 External sync signal formats (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 4-4 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.

4.6.6 Audio I/O (SER03)

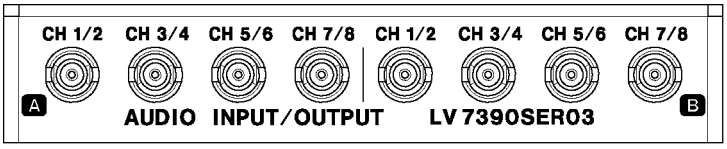


Figure 4-8 Audio I/O connectors

● 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.

[See also] AUDIO IN/OUT tab → 6.1.4, “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 4-5 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)

4.7 Operation Basics

4.7.1 Displaying the Function Menu

Use the function menu to change the various settings.
Normally the function menu is displayed, but it can be cleared by pressing the MODE key that is currently selected. You can also set it to disappear automatically on the GENERAL SETUP tab in the system settings.
[See also] 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 MODE to Display the Menu

Press the MODE 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.

4.7.2 Function Menu Operations

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

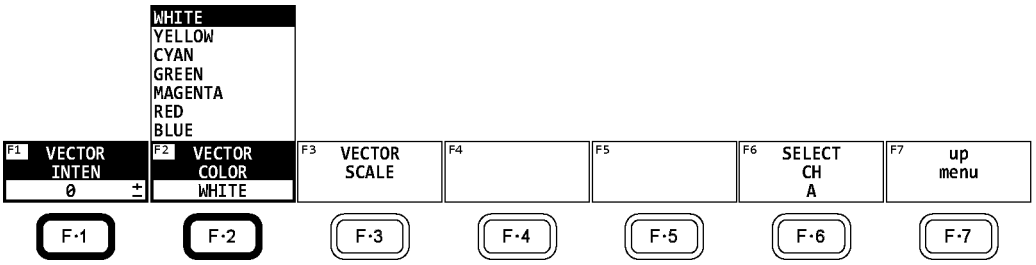


Figure 4-9 Function menu operations

● Specifying Values

To set the value of a setting like F•1 VECTOR 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 VECTOR 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.

4.7.3 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.

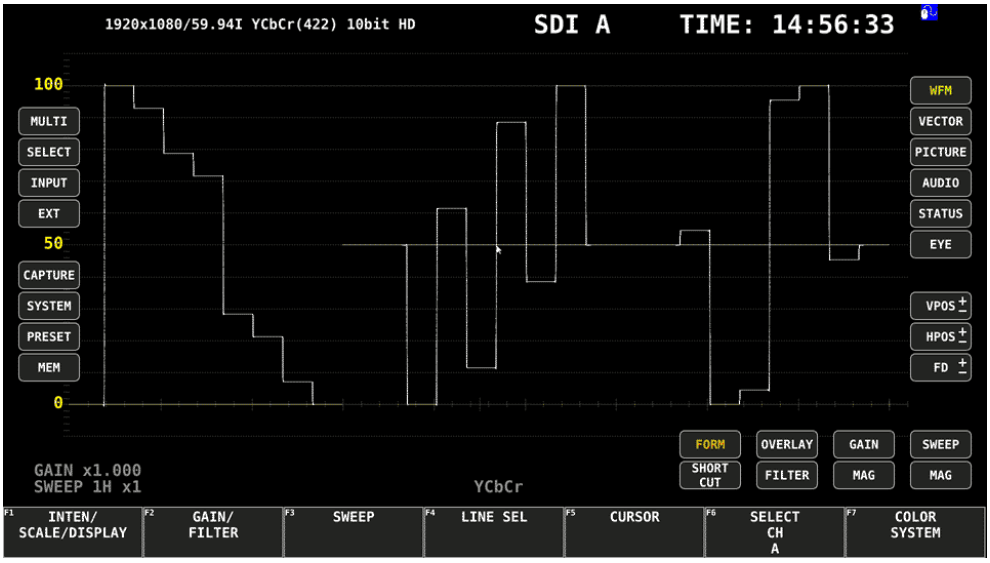


Figure 4-10 Mouse operations

● 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 PSET key is divided into PRESET and MEM keys on the screen. To specify PRESET, press the key (recalls presets), and to specify MEM, hold down the key (registers presets).

The MULTI key is divided into MULTI and SELECT keys on the screen. To specify MULTI, press the key (switches between 1-screen display and multi-screen display), and to specify SELECT, hold down the key (Selects the layout).

● 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.

● Cursor and Marker Movement

Cursors, markers, and the like on video signal waveforms and CINLITE can be moved easily with a mouse.

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

A portion of the cursors and markers 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 and ENHANCED LAYOUT are items that can only be set using the mouse.

Table 4-6 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. [See also] 5.5, “Arranging the Measurement Screen Layout”
ENHANCED LAYOUT	Creates a measurement screen layout of four channels simultaneously. [See also] 5.6, “Enhanced Layout”

4.7.4 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.

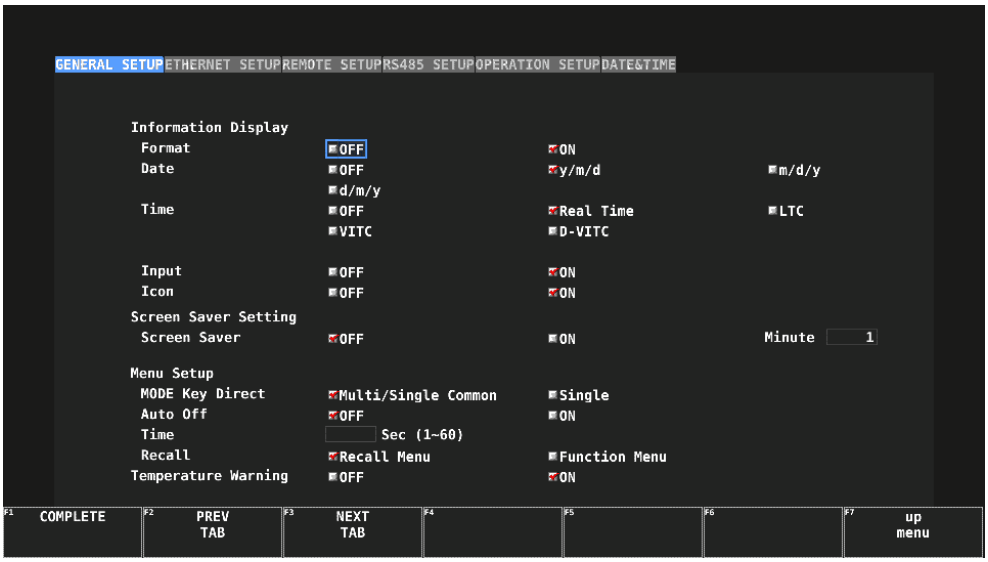


Figure 4-11 Tab menu operations

● **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.

4.7.5 Setting the Key Lock

You can prevent unintentional operations on the LV 7390 by enabling the key lock. The key lock disables all LV 7390 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.

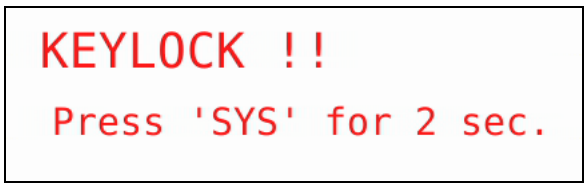


Figure 4-12 Enabling the key lock

- **Releasing the Key Lock**

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

Figure 4-13 Releasing the key lock

4.8 Measurement Screen Description

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

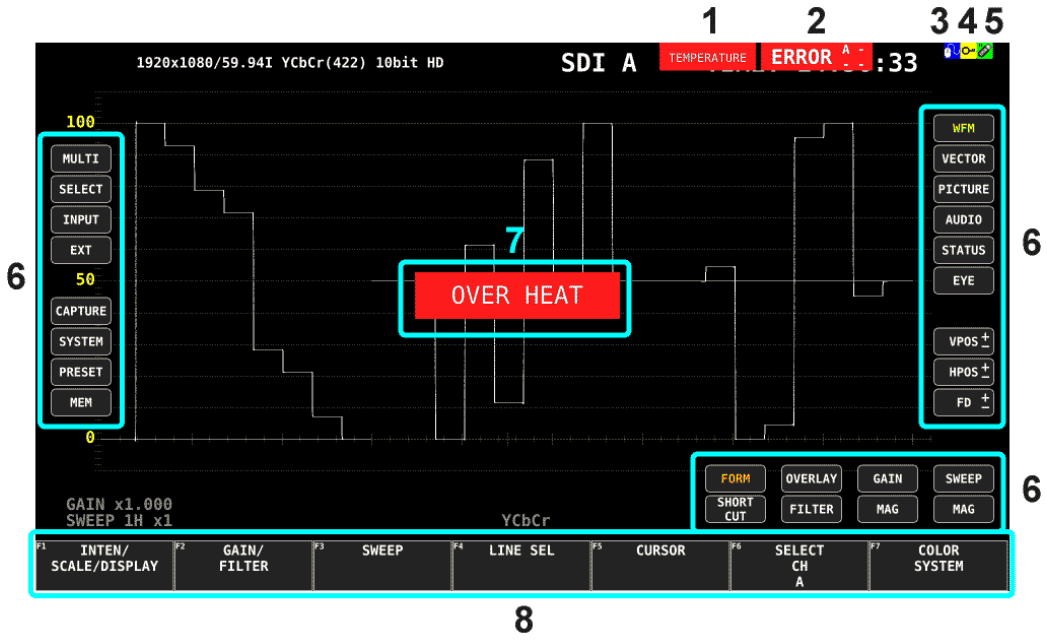


Figure 4-14 Measurement screen description

Table 4-7 Measurement screen description

No.	Name	Description
1	TEMPERATURE	Appears when the internal temperature increases. You can also choose to hide this information. [See also] 6.2.7, “Displaying System Information” and 6.2.1, “General Settings.”
2	ERROR	Errors are displayed for each channel. Errors are detected on all channels, but for 3G-B-DS or 3G (DL), errors are detected only on the displayed channels. To configure error detection, use the FORMAT ALARM tab in the system settings and F•5 STATUS SETUP on the STATUS menu.
3	Mouse icon	Appears when a USB mouse is connected. You can also choose to hide this information. [See also] 4.5, “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 also] 4.7.5, “Enabling the Key Lock,” and 6.2.1, “General Settings”
5	USB memory device icon	This appears when a USB memory device is connected. You can also choose to hide this information. [See also] 4.5, “Connecting USB Devices,” and 6.2.1, “General Settings”
6	Screen keys	Keys on the screen that you operate with a mouse. [See also] 4.7.3, “Mouse Operations.”
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 also] 6.2.7, “Displaying System Information.”
8	Function key menu	A menu for configuring settings. [See also] 4.7.1, “Displaying the Function Menu.”

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, to select the input mode, follow the procedure below.

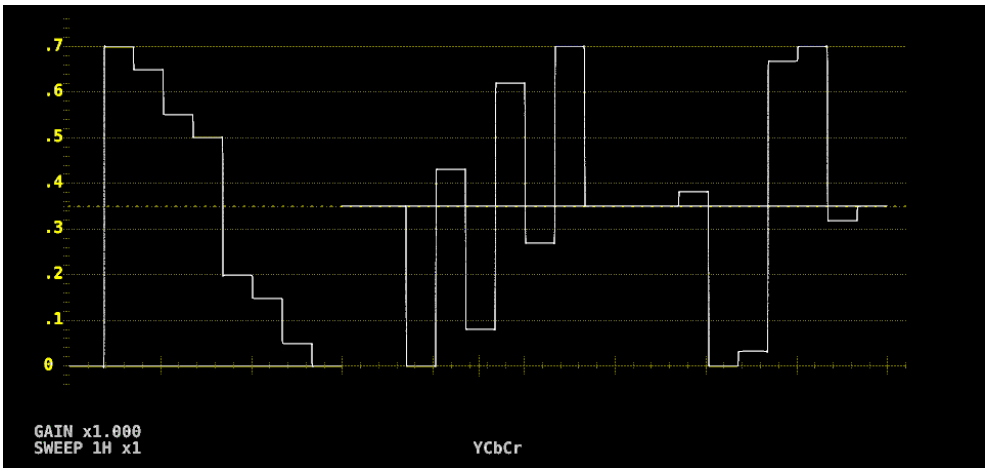
Procedure

INPUT → F•7 DISPLAY: SINGLE, SIMUL

Settings

SINGLE:	The LV 7390 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 7390 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

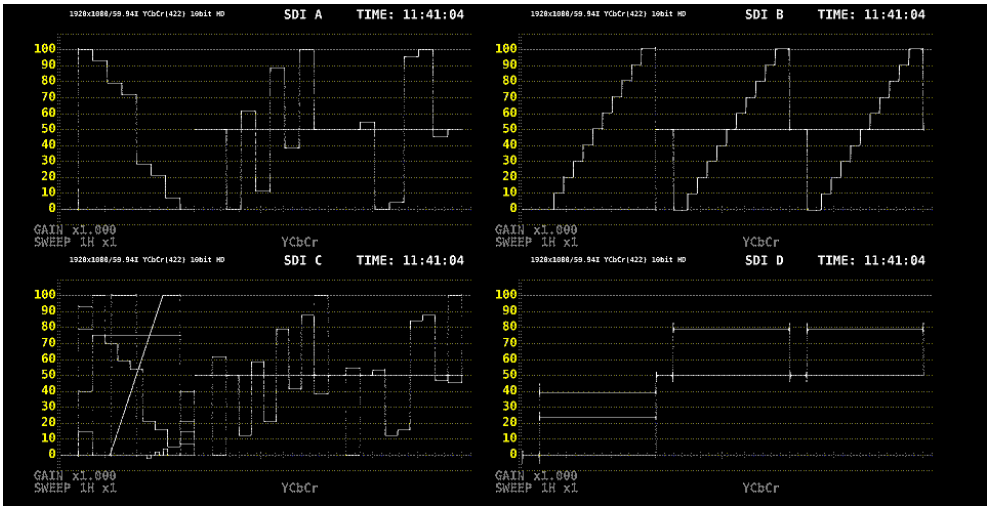


Figure 5-1 Selecting the Input Mode

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 Channels to Measure

To select the channels to measure, follow the procedure below.
In single input mode, you can also select the measurement channel by using F•6 SELECT CH that appears on each measurement screen.

Procedure (when the link format is set to single)

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

Procedure (when the link format is set to dual)

INPUT
→ F•1 A - B: ON, OFF
→ F•2 C - D: ON, OFF

Procedure (when the link format is set to quad)

INPUT
→ F•1 A - D: ON

5.1.4 Input Format Error Display

If the input signal or payload ID is not appropriate for the settings specified on the SDI IN tab and VF SDI IN tab in the system settings, the format of the signal currently received is displayed in red.
If this occurs, check the settings on the SDI IN tab, the settings on the VF SDI IN tab, the input signal, and payload ID.

[See also] SDI IN tab → 6.1.1, “Configuring the SDI Input Connectors.”
VF SDI IN tab →6.1.3, “Configuring the VF SDII Input Connectors (VF option).”

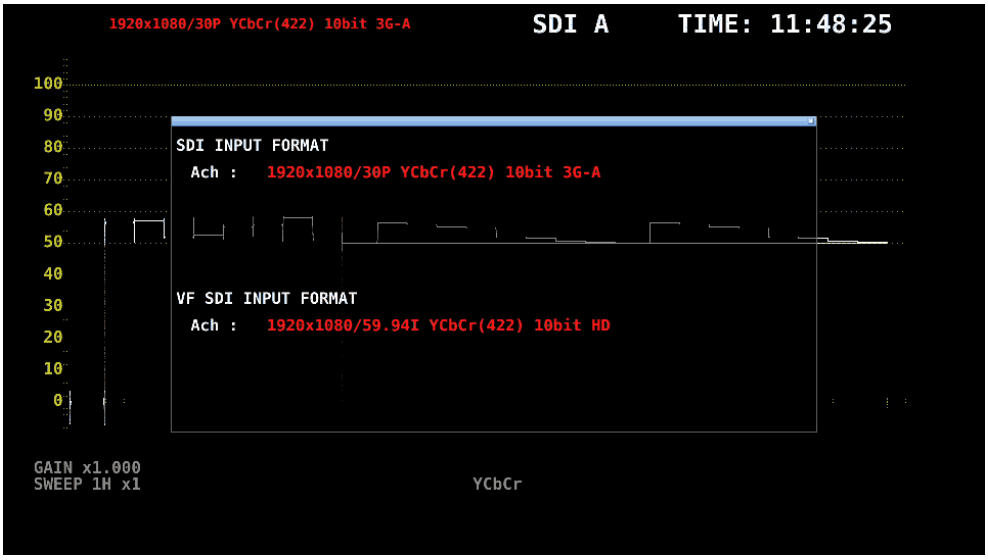


Figure 5-2 Input Format Error Display

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 SD, HD, 3G-A, and 3G-B-DL Measurement

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 →

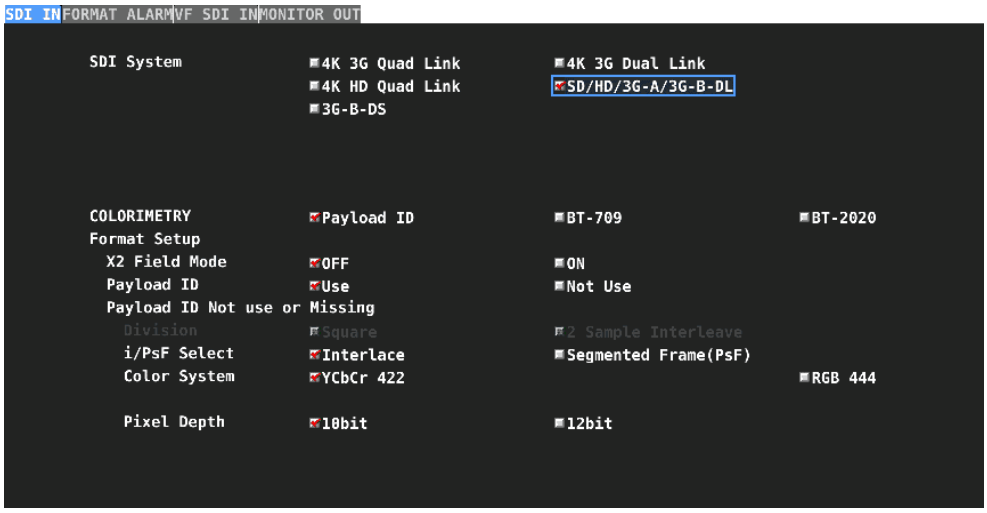


Figure 5-3 SDI IN tab

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.

[See also] 6.1.1, “Configuring the SDI Input Connectors”

3. Press F•1 COMPLETE.

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

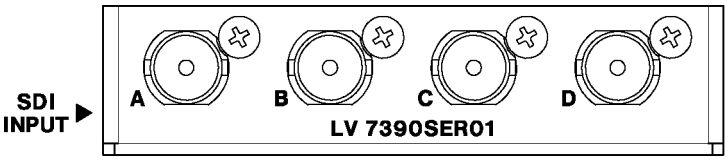


Figure 5-4 SDI input connectors

5. 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•1 to F•4 to turn on the channels you want to measure.

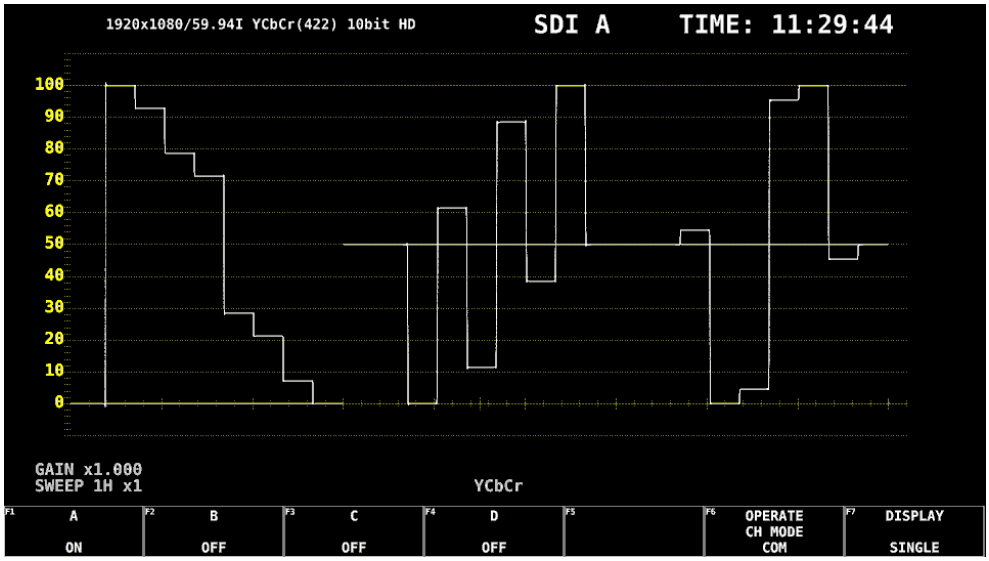


Figure 5-5 Measurement screen

5.2.2 3G-B-DS Measurement

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

SYS → F•1 SIGNAL IN OUT →

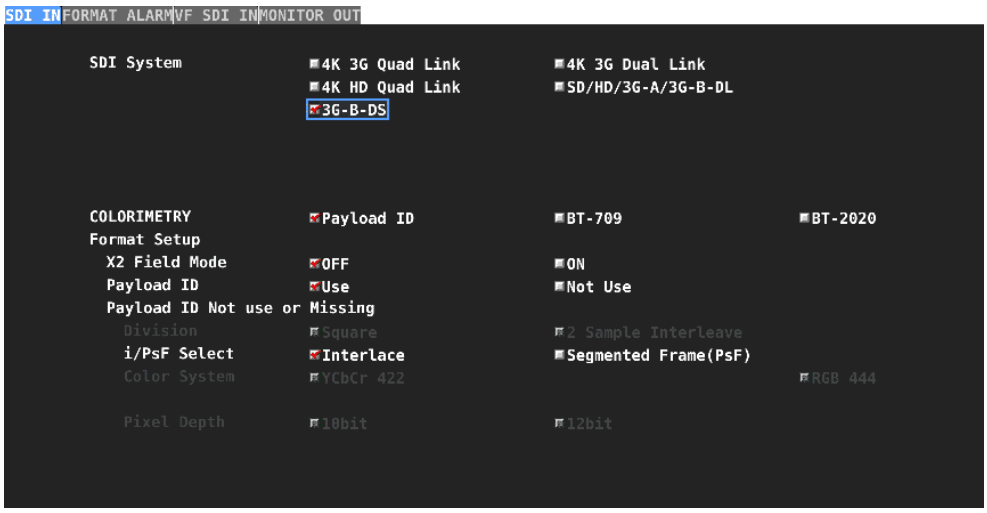


Figure 5-6 SDI IN tab

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 7390 will detect is as a 3G-B-DS signal.

[See also] 6.1.1, “Configuring the SDI Input Connectors”

3. Press F•1 COMPLETE.

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

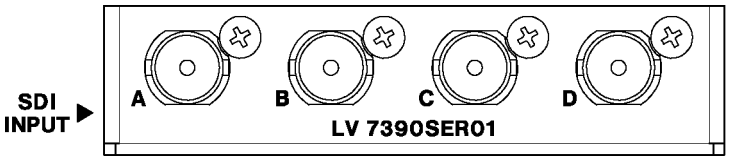


Figure 5-7 SDI input connectors

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.

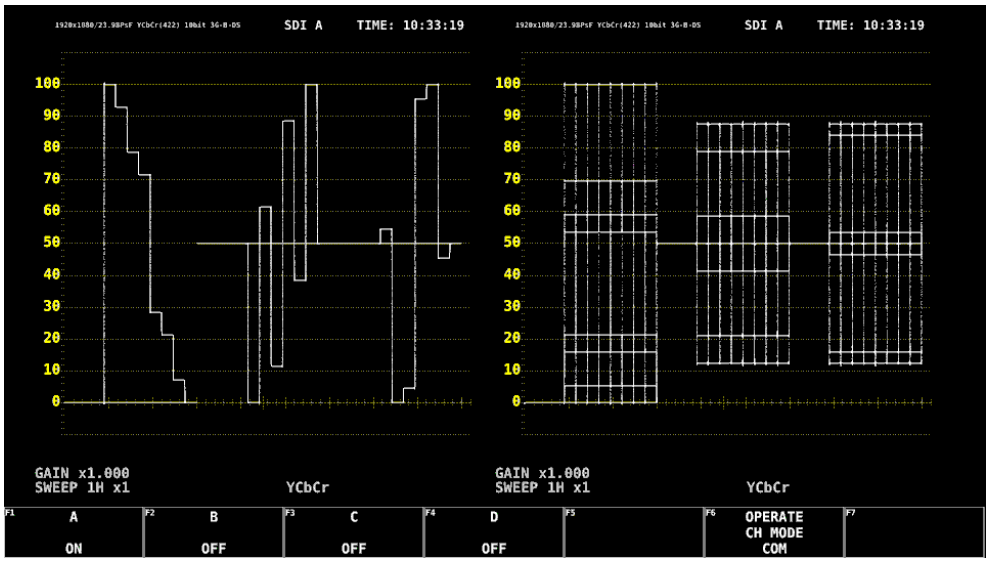


Figure 5-8 Measurement screen

5.2.3 3G (DL) Measurement

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

SYS → F•1 SIGNAL IN OUT →

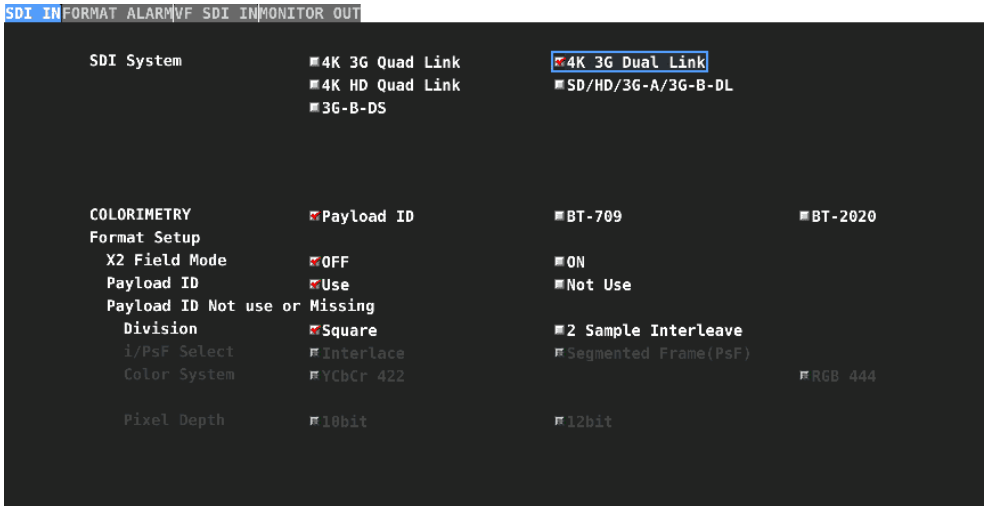


Figure 5-9 SDI IN tab

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 7390 will detect is as a 3G-B-DS signal.

[See also] 6.1.1, “Configuring the SDI Input Connectors”

3. Press F•1 COMPLETE.

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

A-B and C-D are pairs.

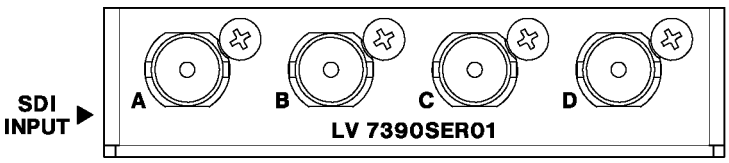


Figure 5-10 SDI input connectors

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

Press F•1 or F•2 to turn on the channels you want to measure. Simul mode cannot be used.

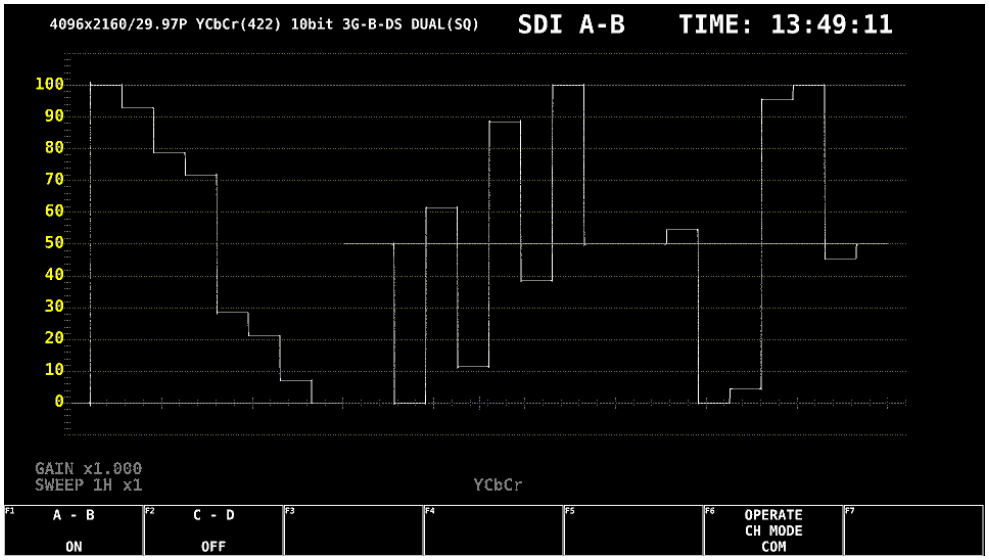


Figure 5-11 Measurement screen

5.2.4 HD (QL) Measurement

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

SYS → F•1 SIGNAL IN OUT →

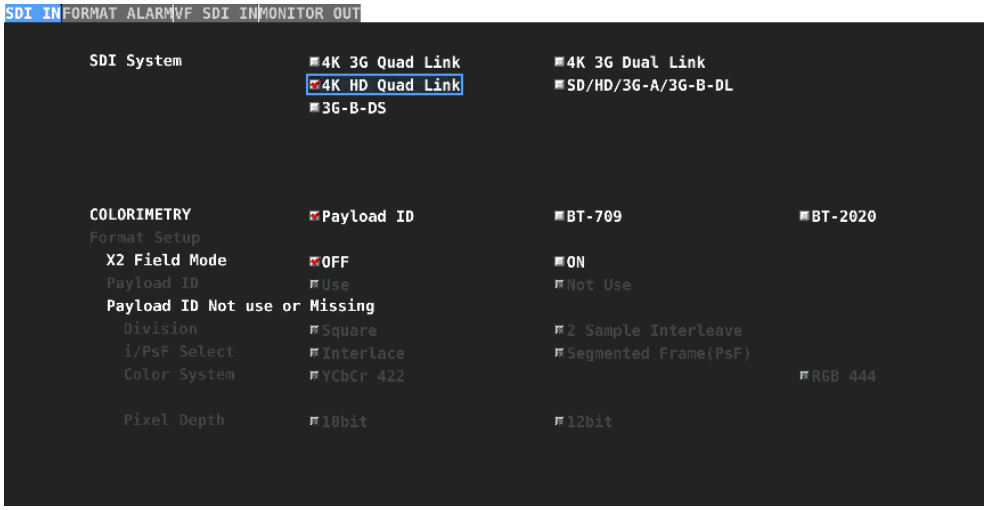


Figure 5-12 SDI IN tab

2. Press F•1 COMPLETE.

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

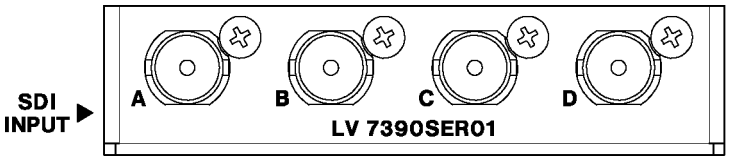


Figure 5-13 SDI input connectors

The measurement screen appears.

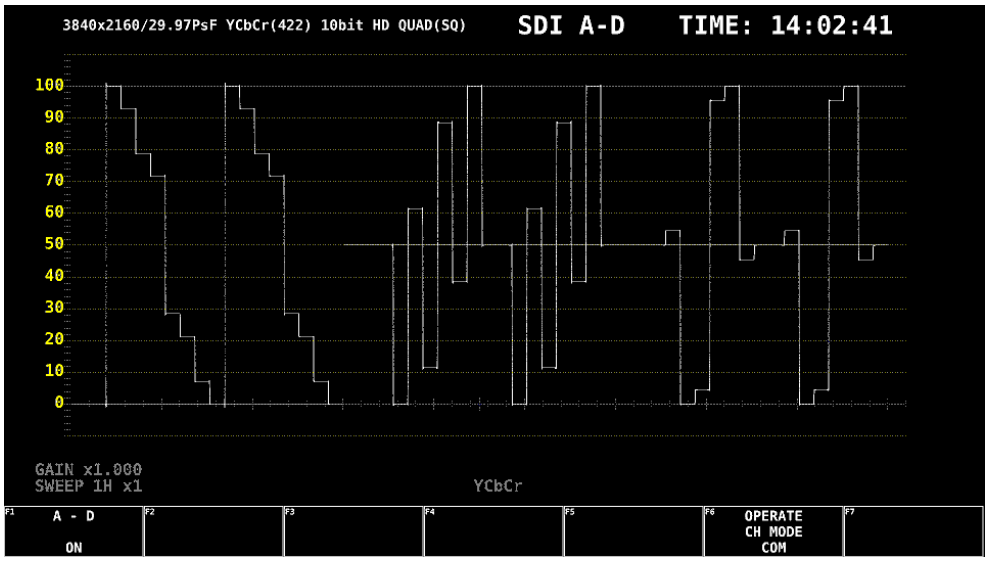


Figure 5-14 Measurement screen

5.2.5 3G (QL) Measurement

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

SYS → F•1 SIGNAL IN OUT →

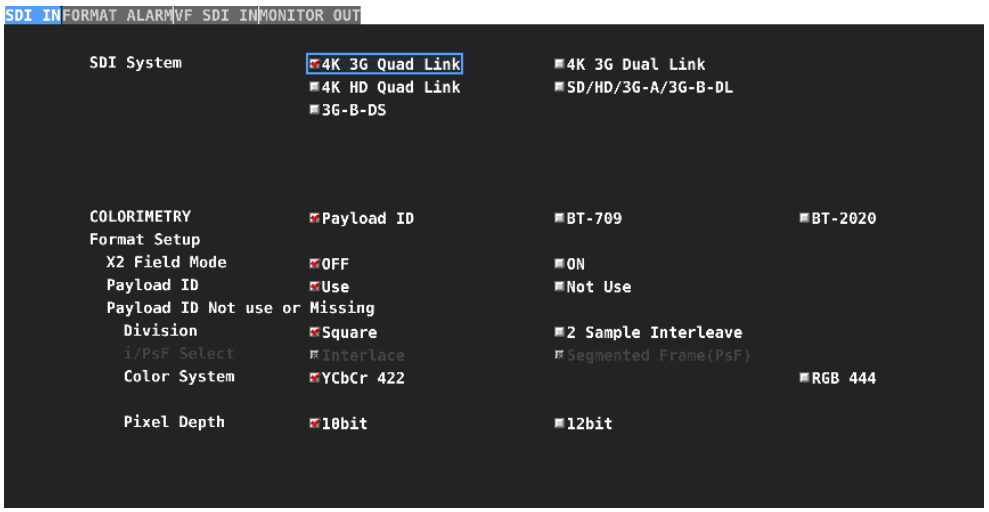


Figure 5-15 SDI IN tab

2. Set the payload ID.

Select Use or Not Use. If you select Not Use, set Division, Color System, Pixel Depth. Even if Use is selected, if a 3G-B-DS signal is applied, the LV 7390 will detect is as a 3G-B-DL signal.

[See also] 6.1.1, “Configuring the SDI Input Connectors”

3. Press F•1 COMPLETE.

4. Apply 3G-A or 3G-B-DL signals to the SDI INPUT connectors on the rear panel.

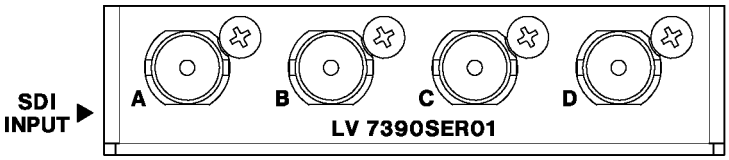


Figure 5-16 SDI input connectors

The measurement screen appears.

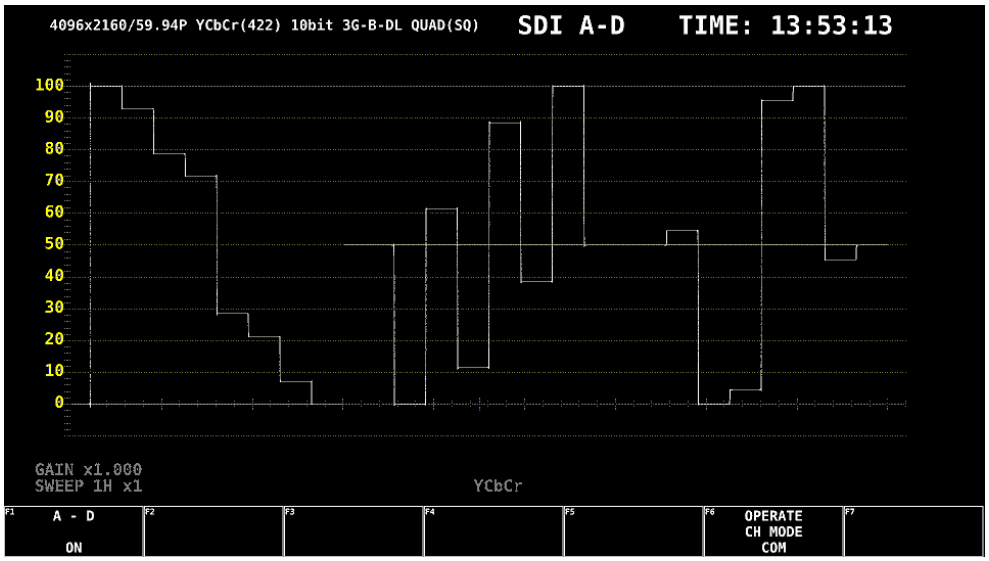


Figure 5-17 Measurement screen

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 MODE 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, RGB display, and pseudo-composite display.

[See also] 9, “VIDEO SIGNAL WAVEFORM DISPLAY”

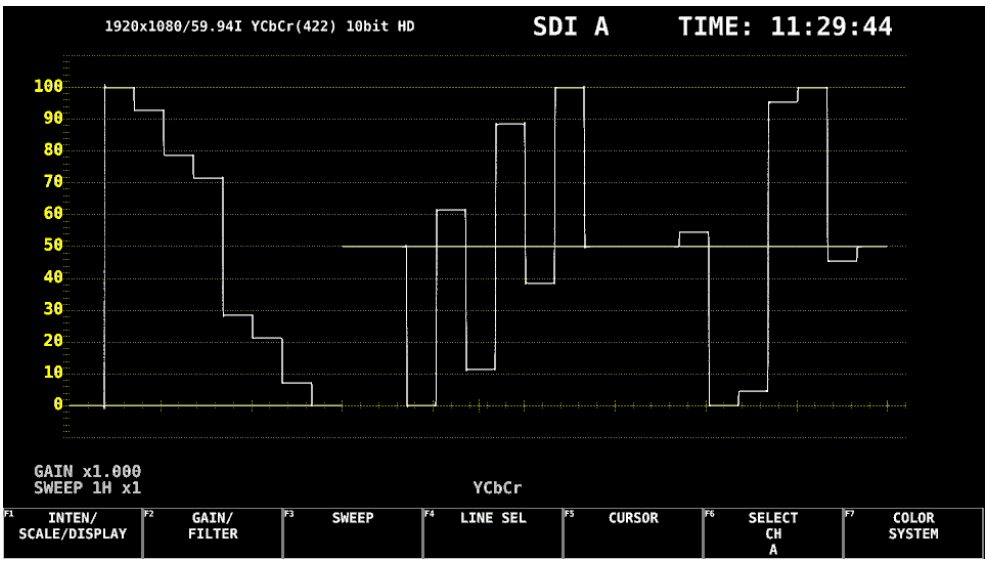


Figure 5-18 Video signal waveform display

5.3.2 Vector Display

To display vectors, press VECT.
The available features include line select display, marker display, and pseudo-composite display.

[See also] 10, “VECTOR DISPLAY”

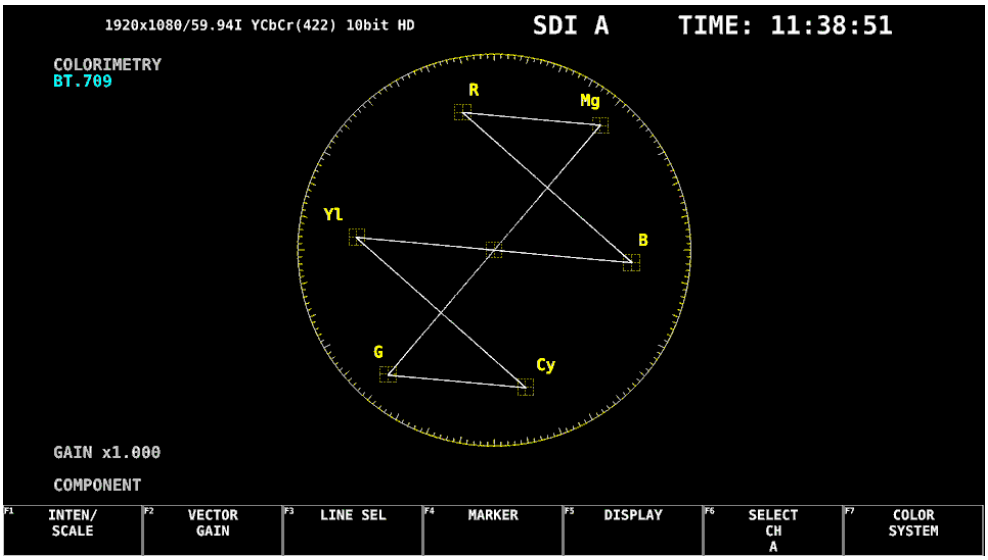


Figure 5-19 Vector display

5.3.3 Picture Screen

To show the picture display, press PIC.
The available features include monochrome display, marker display, and line select display.

[See also] 11, “PICTURE DISPLAY”

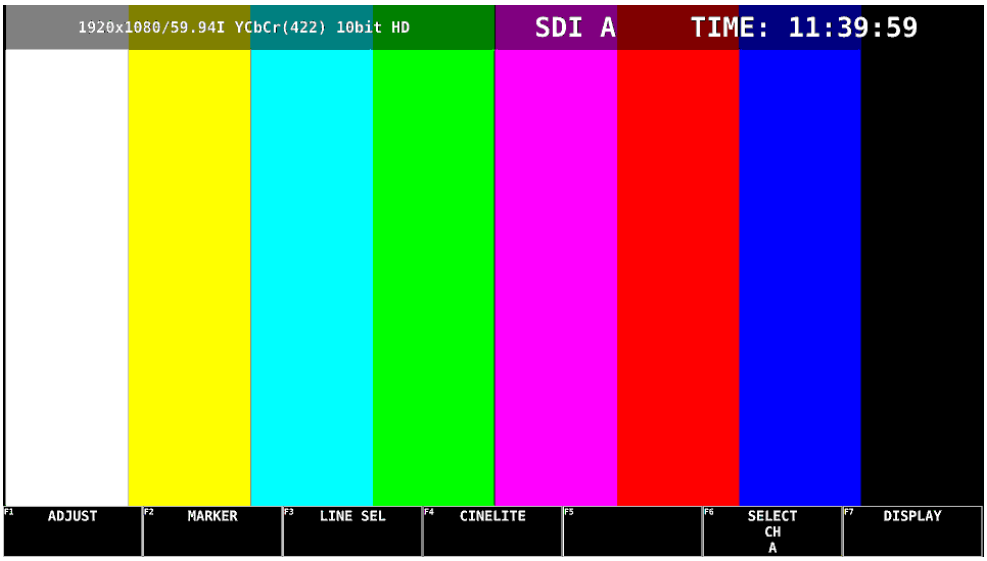


Figure 5-20 Picture display

5.3.4 Audio Display

To show the audio display, press AUDIO.
Meter display is possible for the signal selected with F•1 MAPPING. Lissajous, surround, loudness, and status can also be displayed if the SER03 is installed.

[See also] 12, “AUDIO DISPLAY (SIMPLE LEVEL METER),” and 13, “AUDIO DISPLAY (SER03)”

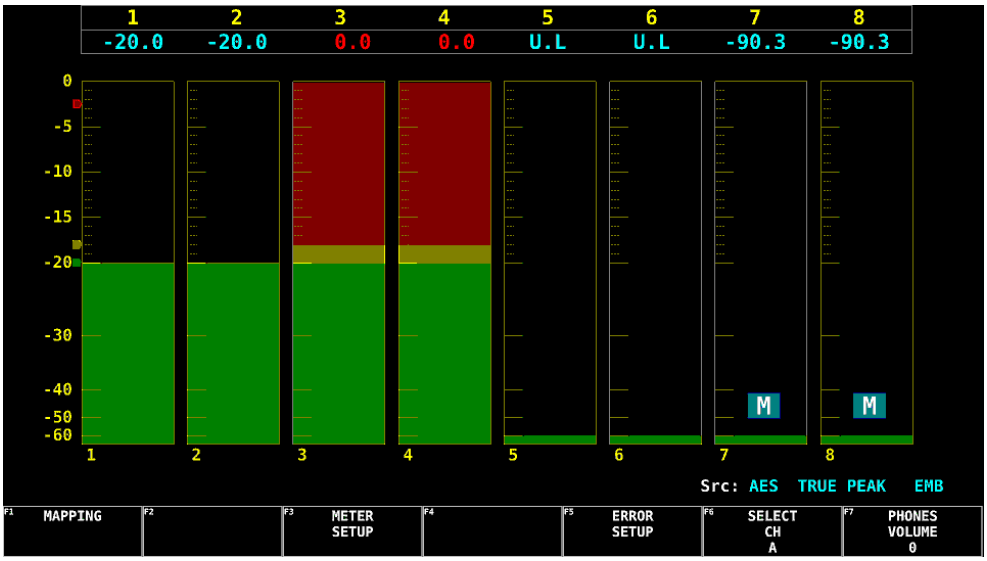


Figure 5-21 Audio display

5.3.5 Status Display

To show the status display, press STATUS.
Event log display and data dump display are available.

[See also] 13.10, “STATUS DISPLAY”

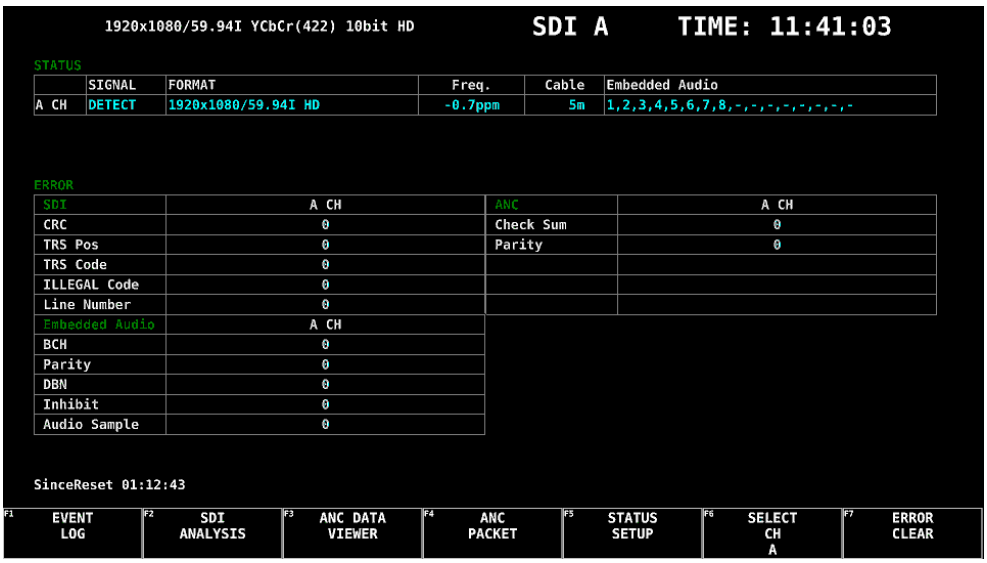


Figure 5-22 Status display

5.3.6 Eye Pattern Display

Eye pattern display is to be supported in the future.
The EYE key is invalid.

5.3.7 Multi Display

Multi display is a combination of measurement screens. Press MULTI to switch between the 1 screen display and the multi screen display.
When multi display is in use, you can hold down the MULTI key to select the layout from the available six types. To configure each screen, use the MODE key.
You can set MODE Key Direct to Single as described in section 6.2.1, “General Settings,” to allow switching to the multi display by pressing the MULTI key and 1 screen display by pressing the MODE key.

- **USER 1**

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

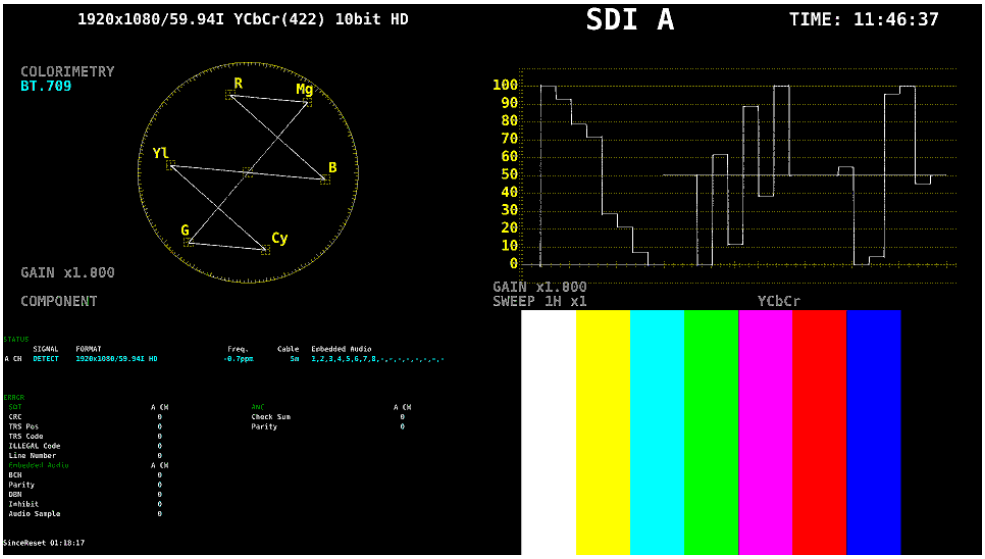


Figure 5-23 Multi display (USER 1)

● **USER 2**

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

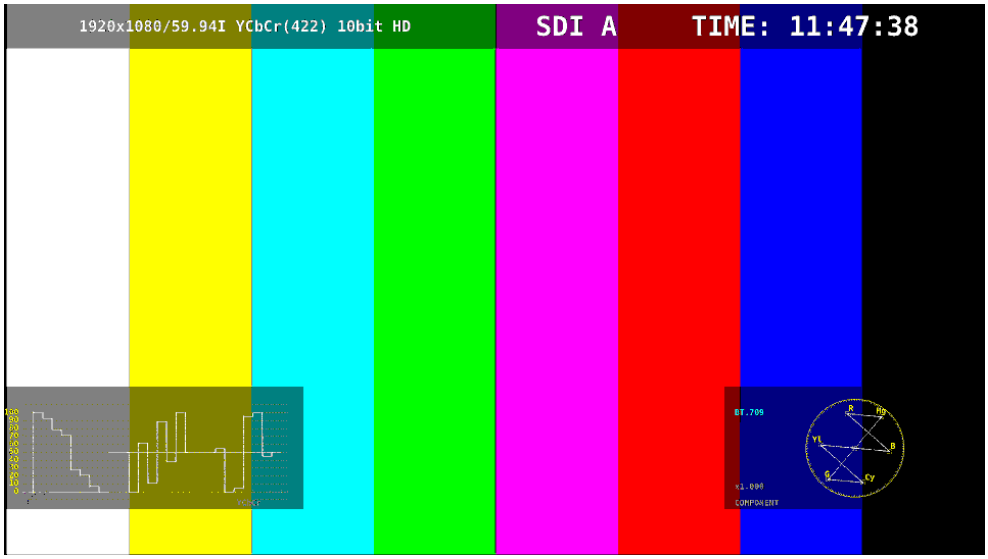


Figure 5-24 Multi display (USER 2)

● **USER 3**

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

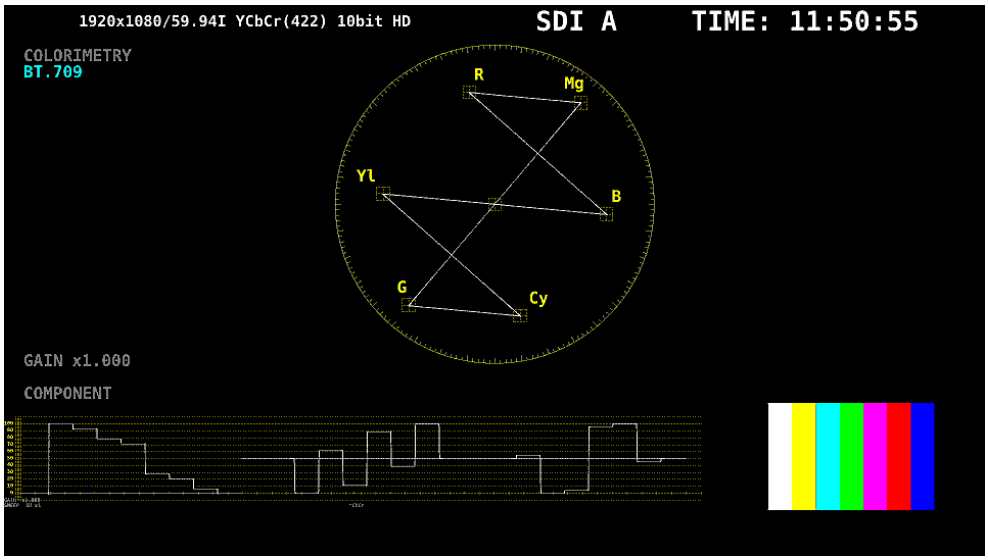


Figure 5-25 Multi display (USER 3)

● **USER 4**

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

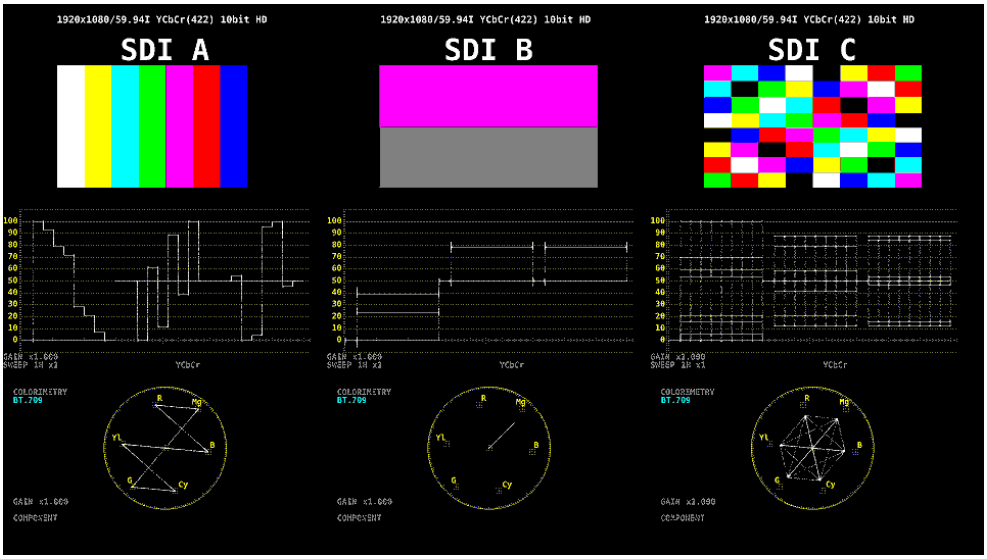


Figure 5-26　Multi display (USER 4)

● **USER 5**

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

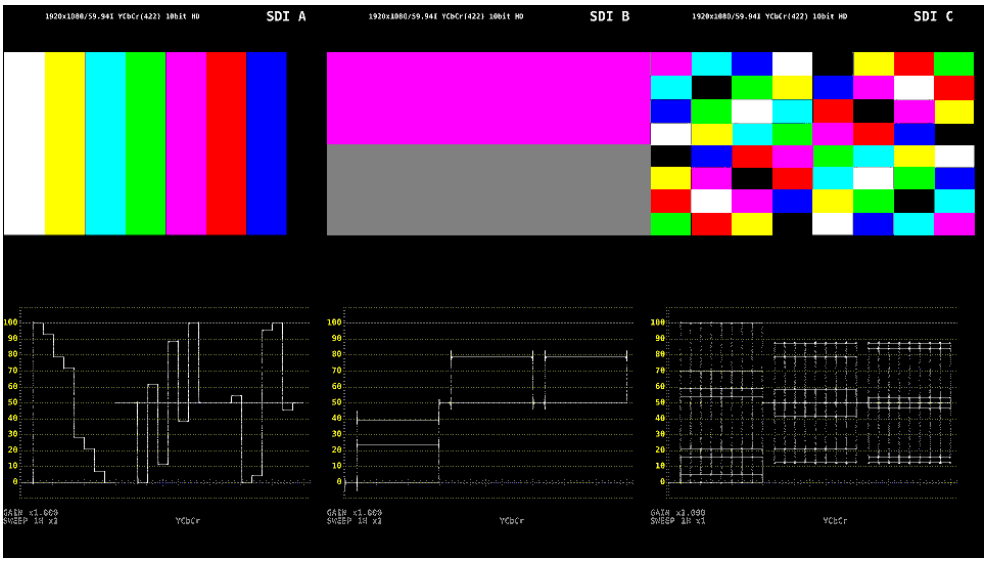


Figure 5-27　Multi display (USER 5)

● **USER 6**

The picture and video signal waveform are displayed side by side.
Tally and camera ID are also displayed on the picture.

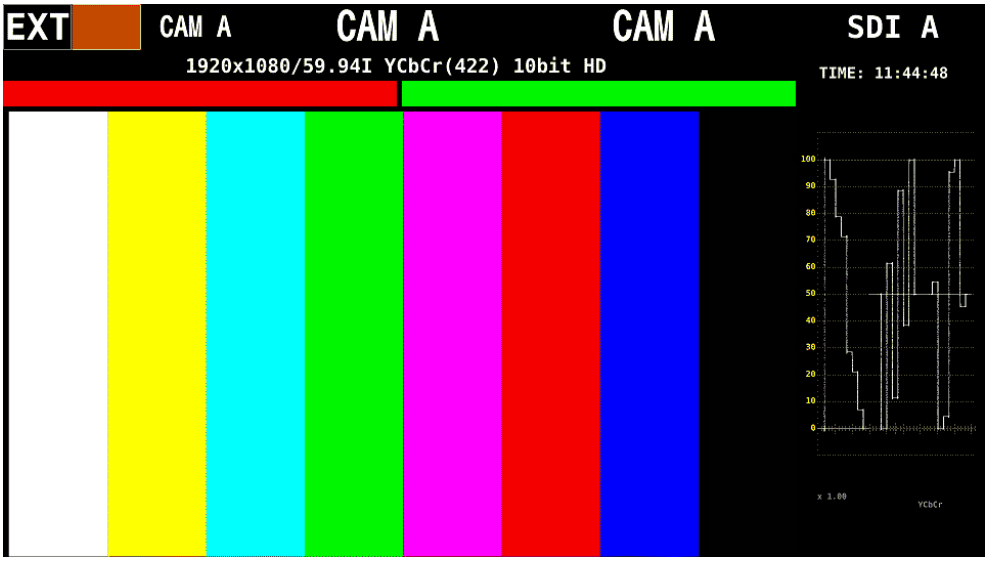


Figure 5-28 Multi display (USER 6)

5.4 Operation Key Actions

Operation keys are shortcut keys for functions that are frequently used in video content production. Key assignments can be changed freely on the OPERATION SETUP tab.

[See also] OPERATION SETUP tab → 6.2.5, “Setting the Operation keys”

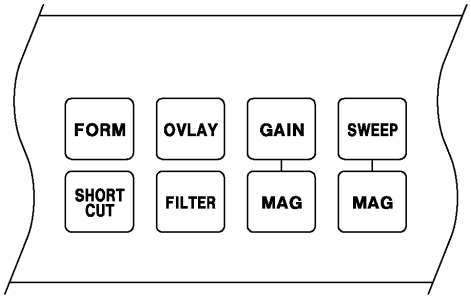


Figure 5-29 Operation keys

● SHORTCUT Keys

Performs the action selected with SHORT CUT on the OPERATION SETUP tab.

Table 5-1 SHORTCUT key action

DIRECT	The previously registered panel settings will be loaded. To register the panel settings, configure the LV 7390 to the settings that you want to register, press PSET, and then press SHORTCUT.
CAP&WAIT	A screen capture will be taken and saved to a USB memory device. Connect a USB memory device in advance.
INTEN	Use the function menu shown in the lower right of the screen to adjust the waveform intensity. This is valid on the video signal waveform display vector display and audio display (SER03). When a mouse is connected, clicking the function menu resets the value to the default.
CURSOR	Performs cursor measurement. This is valid on the video signal waveform display and vector display.
VOLUME	Use the function menu shown in the lower right of the screen to adjust the headphone volume. When a mouse is connected, clicking the function menu resets the value to the default.

● Keys Other Than SHORTCUT

This is valid on the video signal waveform display and vector display. Each time you press the key, the settings assigned to the key switch.

[See also] Video signal waveform display → 9.1, “Operation Key Description”
Vector display →10.1, “Operation Key Description”

5.5 Arranging the Measurement Screen Layout

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

The layout that you specify will not be initialized even if PARAM INIT YES is executed from the SYS menu. To initialize, perform any of the procedures below.

[See also] 6.4, “Initialization”

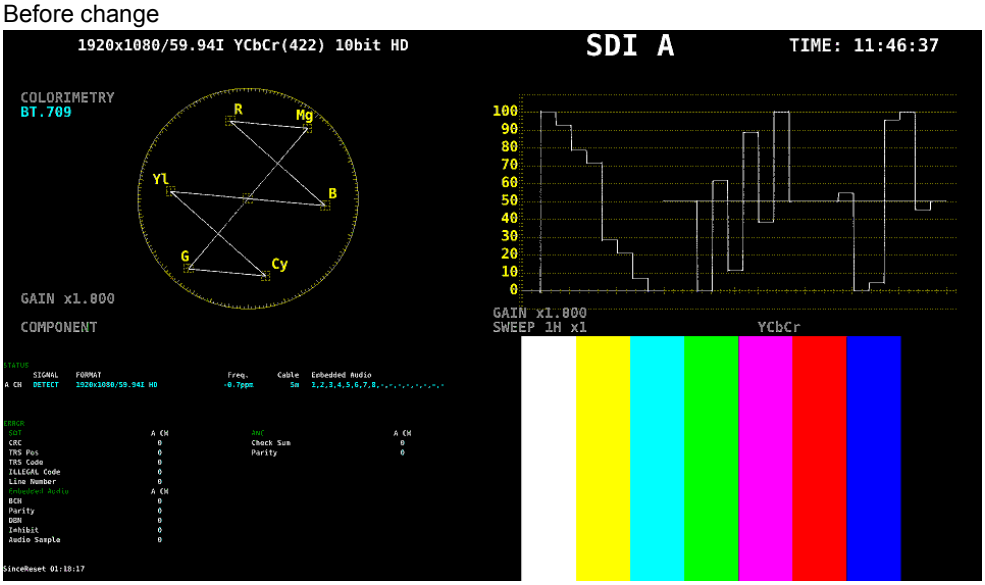
LAYOUT INIT YES on the SYS menu:	The entire layout is initialized.
ALL INIT YES on the SYS menu:	The entire layout is initialized.
Factory default settings:	The entire layout is initialized.
DEFAULT LAYOUT in the layout window:	The layout of the selected measurement display is initialized.

5.5.1 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 a tally
e) Add TIME to the status
f) Apply the changes

Before change



After change

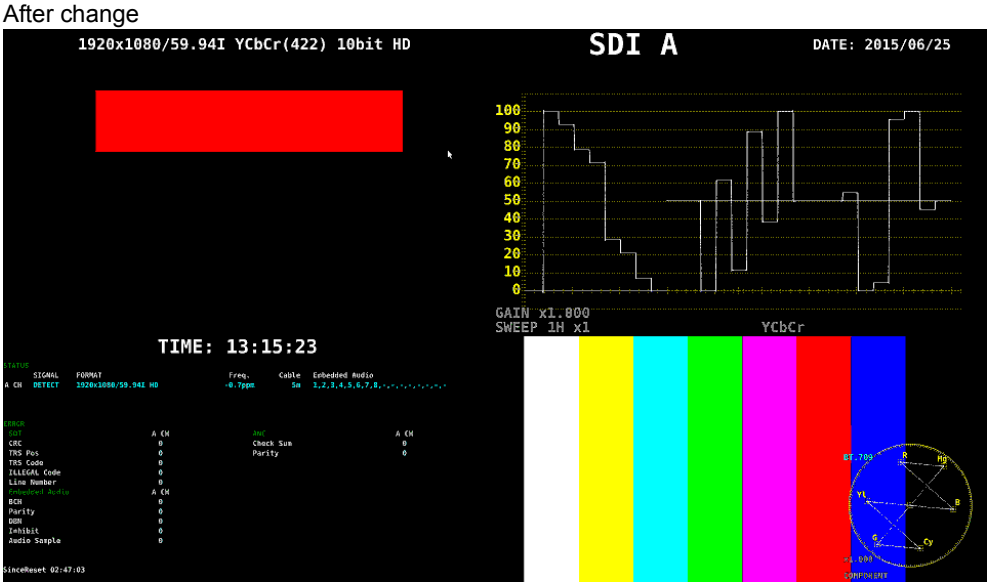


Figure 5-30 Arranging the multi display layout

a) Display the layout screen

1. Press MULTI and then hold down MULTI. Select F•1 LAYOUT USER 1.

There are six layouts for the multi screen. You can use LAYOUT USER 1 to LAYOUT USER 6 to switch between the layouts.

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

The layout screen appears.

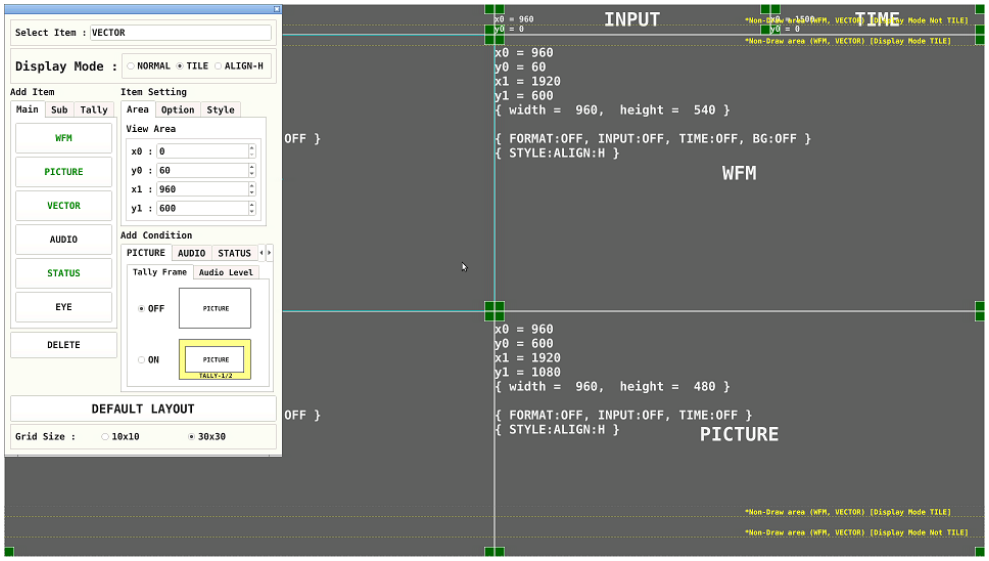


Figure 5-31 Layout screen

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 Add Item. The selected item will move to the front.

c) Superimpose the vector on the picture

7. Select the VECTOR 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 VECTOR item on top of the picture.

Resize as necessary.

d) Add a tally

9. Click TALLY-1 on the Tally tab.

The TALLY-1 item appears.

10. Place the TALLY-1 item in the area where the VECTOR 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.

5.5.2 Layout Screen Description

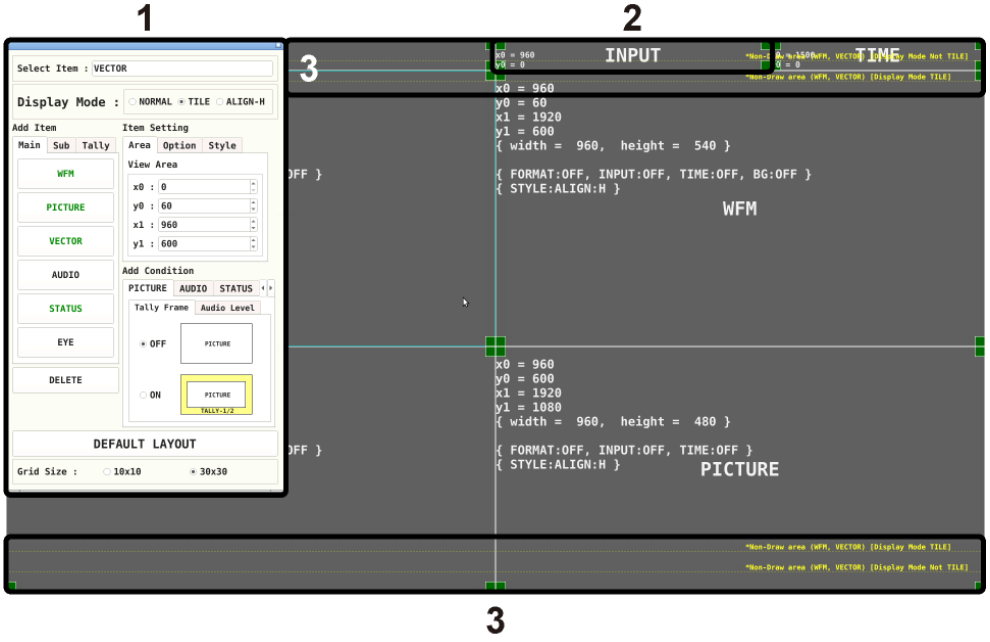


Figure 5-32 Layout screen description

1 Layout Window

The Layout window is used to create layouts.
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, Sub, or Tally 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 Guides

A gray guide is displayed at the bottom. Yellow guides are displayed at the top and bottom. Use these as guides when placing items.

The gray guide indicates the position where the function menu is displayed. Items can be placed in this guide, but they will be hidden when the function menu is displayed.

Yellow guides indicate the area where WFM items and VECTOR items can be placed. If the layout Display Mode is set to TILE and three or more channels are displayed in simul mode, place the items in the inner area. Otherwise, place them within the outer guide. Items can be displayed outside the guide, but the waveform may be cut off.

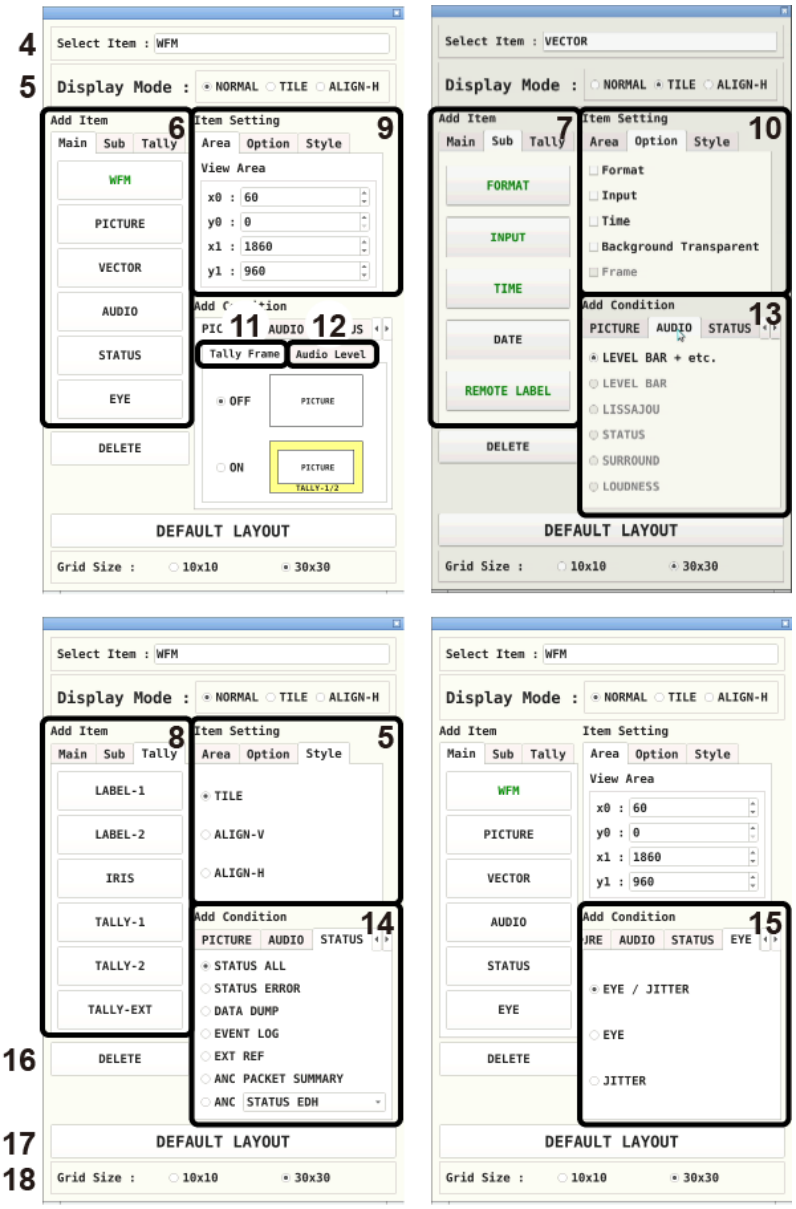


Figure 5-33 Layout window

4 Select Item

Displays the selected item name.

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 set to TILE or ALIGN-H or if the selected item is AUDIO, Style cannot be selected.

If Display Mode is set to TILE or ALIGN-H and multiple channels are displayed in simul mode, “Not supported” is supported for the AUDIO item.

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.

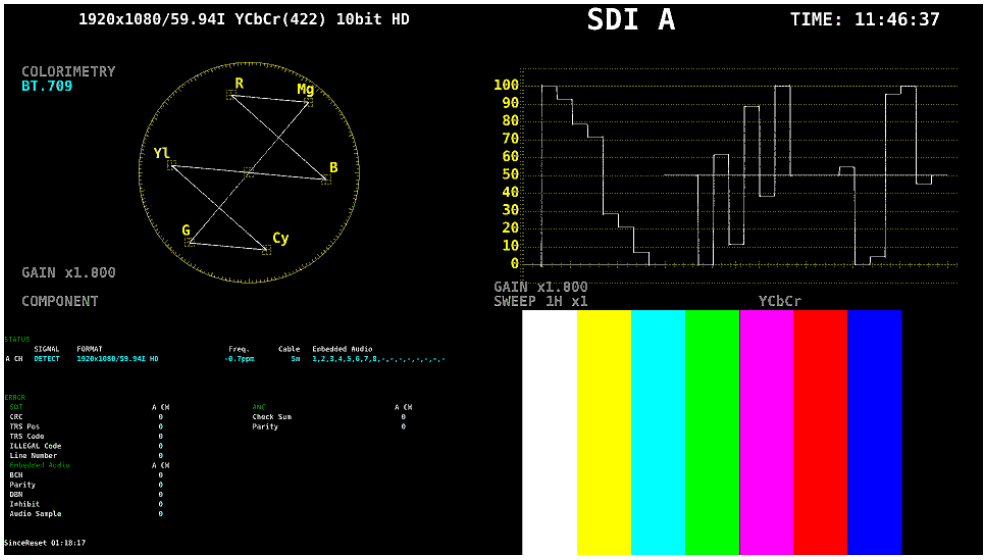
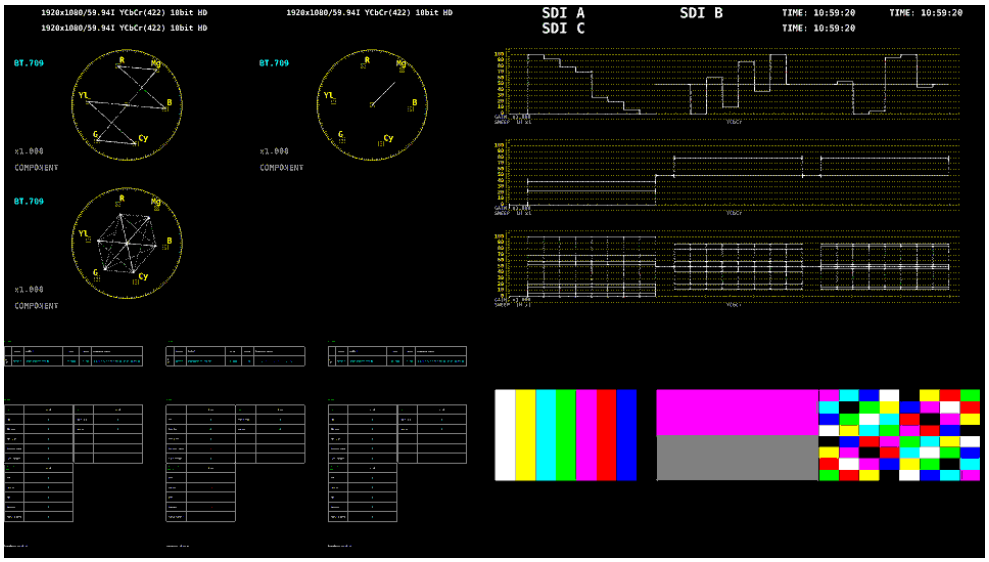


Figure 5-34 Single input mode

- **When Display Mode Is NORMAL**

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

TILE (tile the screens) ALIGN-V (arrange vertically)



ALIGN-H (arrange horizontally) ALIGN-H (arrange horizontally)

Figure 5-35 NORMAL display

- **When Display Mode Is TILE**

  The screen is divided by channel and tiled.

Ach Bch

Cch

Figure 5-36 TILE display

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

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

Ach Bch Cch

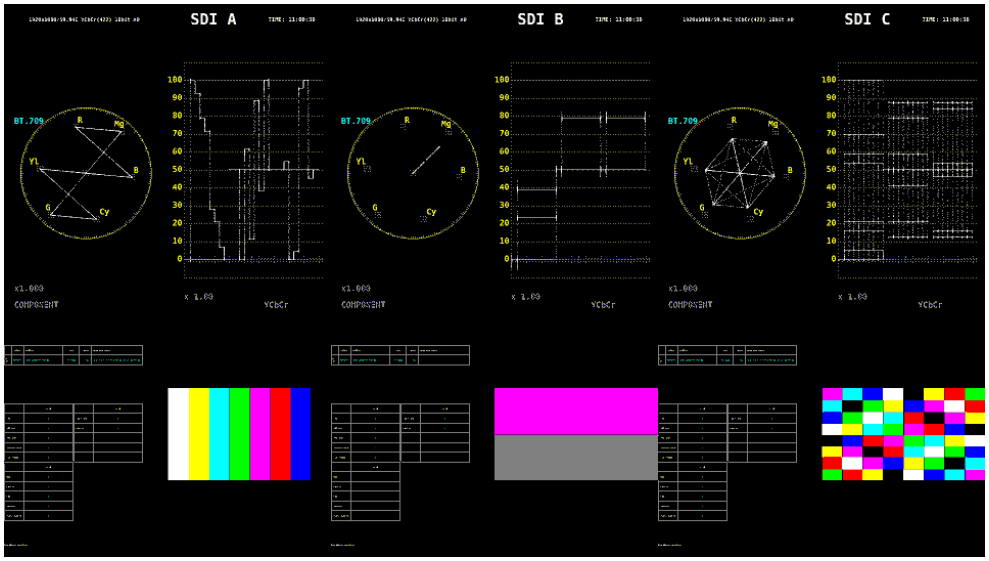


Figure 5-37 ALIGN-H display

6 Main

Measurement items.
Unarranged items are displayed with black characters. Clicking an item places the item.
Arranged items are displayed with green characters. Clicking an item selects the item.

- **WFM**

  Shows the video signal waveform display.

- **PICTURE**

  Shows the picture display. On the PICTURE tab, you can turn on and off the tallies and audio display.

- **VECTOR**

  Shows vectors.

- **AUDIO**

  Click this after selecting the display mode on the AUDIO tab to show the audio display.

- **STATUS**

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

- **EYE**

  Shows eye patterns and jitter. To be supported in the future.

7 Sub

Items for displaying information.
Unarranged items are displayed with black characters. Clicking an item places the item.
Arranged items are displayed with green characters. Clicking an item selects the item.

- **FORMAT**

  Shows 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. If the specified format is not received, it turns yellow.

- **INPUT**

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

- **TIME**

  Shows 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**

  Shows 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.

- **REMOTE LABEL**

  Shows the label of the connected LV 7290 (REMOTE CONTROLLER, sold separately).
  You can set the label on the LV7290 SETUP tab in the system settings.

8 Tally

Items for tally display and camera ID display.
Unarranged items are displayed with black characters. Clicking an item places the item.
Arranged items are displayed with green characters. Clicking an item selects the item.

- **LABEL-1, LABEL-2**

  Shows the camera ID set on the RS485 SETUP tab or through RS-422/485.
  The default values are CAM A to CAM D and vary depending on the channel.
  [See also] RS485 SETUP tab → 6.2.4, “Configuring the RS-422/485 Settings”

- **IRIS**

  Shows the IRIS set on the RS485 SETUP tab or through RS-422/485.
  The default values are CAM A to CAM D and vary depending on the channel.

- **TALLY-1, TALLY-2, TALLY-EXT**

  Shows the tally set through the remote connector or RS-422/485.
  TALLY-EXT (EXTENDED) is a tally display with a comment of up to eight characters.
  You can edit the comment on the REMOTE SETUP tab.
  [See also] REMOTE SETUP tab → 6.2.3, “Remote Control Settings”

9 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.

10 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 items on the Audio, Sub, or Tally 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. If the specified format is not received, it turns yellow.

- **Input**

  Turns on and off the input signal display (e.g., SDI A).
  This option cannot be displayed for items on the Audio, Sub or Tally 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 items on the Audio, Sub or Tally 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 %.
  This is not possible for PICTURE, TALLY-1, TALLY-2, or TALLY-EXT item.

- **Frame**

  Turns on and off the frame display of PICTURE items.

11 Tally Frame

Select whether to display tallies on the outer frame of the PICTURE item.
This setting applies to all PICTURE items and Enhanced Layout.

When set to ON, TALLY-1 and TALLY-2, which have been set through the remote connector or RS-422/485, are displayed on the outside and inside, respectively. Tallies are not displayed when the input signal is 3G-B-DS.

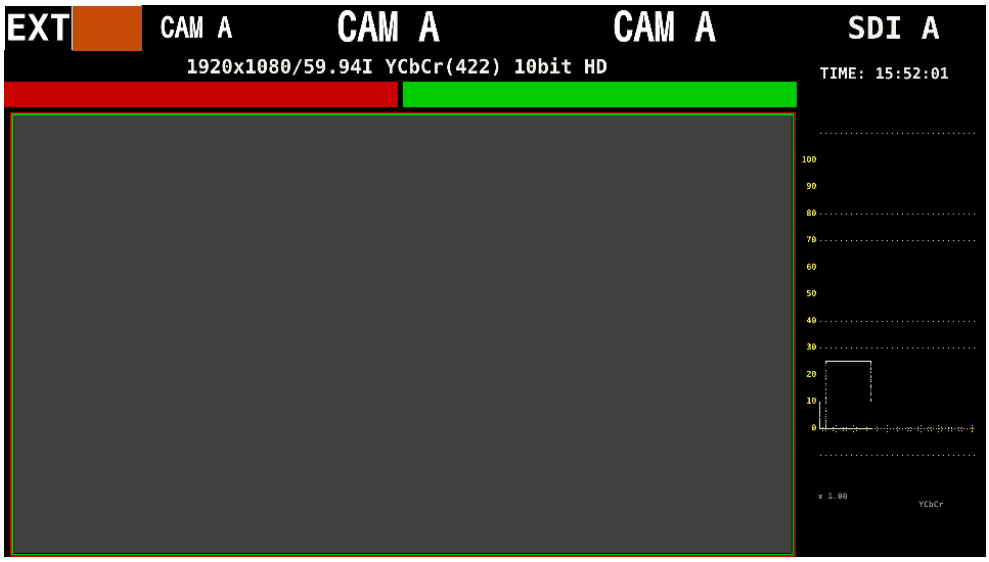


Figure 5-38 Tally display

12 Audio Level

Select whether to display audio meters on either side of the PICTURE item.
This setting applies to all PICTURE items and Enhanced Layout.
If the AUDIO item is also displayed simultaneously, if the input signal is 3G-B-DS, or if the VF option is selected, audio meters are not displayed.

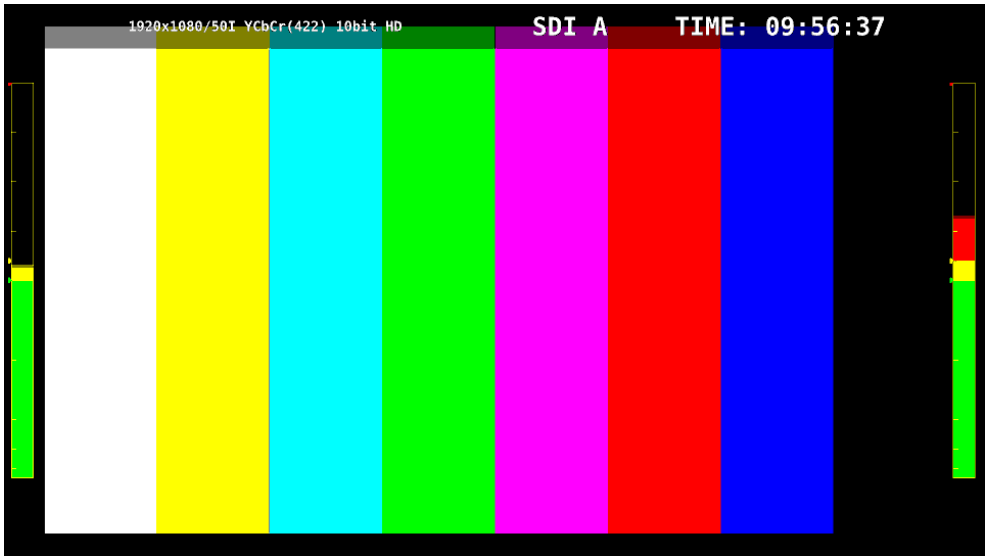
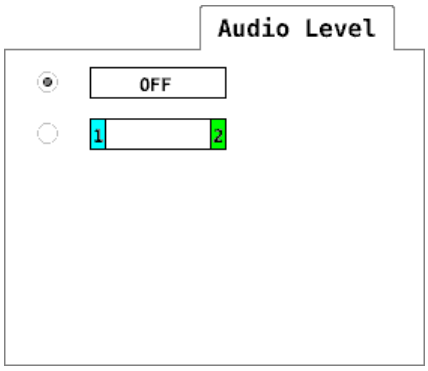


Figure 5-39 Audio meter display

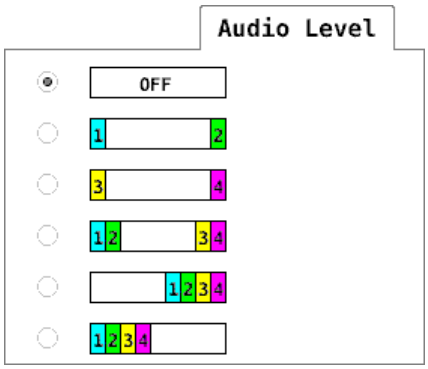
・**Simple Level Meter**



The 1 and 2 columns under Audio Level show the channel selected using GROUP SELECT on the AUDIO MAPPING tab.

Measure Mode	GROUP CH ASSIGN	Measurement channels	Audio Level	
			1	2
Single input mode	-	SDI A to SDI D	1st channel in 1st GROUP	2ch channel in 1st GROUP
Simul mode	CH:1-4	SDI A	1st channel in 1st GROUP	2nd channel in 1st GROUP
		SDI B	3rd channel in 1st GROUP	4th channel in 1st GROUP
		SDI C	1st channel in 2nd GROUP	2nd channel in 2nd GROUP
		SDI D	3rd channel in 2nd GROUP	4th channel in 2nd GROUP
	CH:1/2	SDI A	1st channel in 1st GROUP	2nd channel in 1st GROUP
		SDI B	1st channel in 2nd GROUP	2nd channel in 2nd GROUP
		SDI C	1st channel in 3rd GROUP	2nd channel in 3rd GROUP
		SDI D	1st channel in 4th GROUP	2nd channel in 4th GROUP
	CH:3/4	SDI A	3rd channel in 1st GROUP	4th channel in 1st GROUP
		SDI B	3rd channel in 2nd GROUP	4th channel in 2nd GROUP
		SDI C	3rd channel in 3rd GROUP	4th channel in 3rd GROUP
		SDI D	3rd channel in 4th GROUP	4th channel in 4th GROUP

・**SER03**



The 1 and 4 columns under Audio Level show the channel selected using LISSAJOU MAPPING (MULTI) on the AUDIO MAPPING tab. To display audio meters for SDI C and SDI D in simul mode, CH MODE must be set to 16ch.

Measure Mode	Measurement channels	Audio Level			
		1	2	3	4
Single input mode	SDI A to SDI D	L1	R1	L2	R2
Simul mode	SDI A	L1	R1	L2	R2
	SDI B	L3	R3	L4	R4
	SDI C	L5	R5	L6	R6
	SDI D	L7	R7	L8	R8

13 AUDIO

Selects the display mode of the AUDIO item.
The mode is fixed to “LEVEL BAR + etc.” if the SER03 is not installed.
If the SER03 is installed, select the mode before clicking the AUDIO item.

LEVEL BAR + etc.	This is the normal audio display. The display switches between Lissajous, surround, meter, status, and loudness. It cannot be arranged with other items at the same time. If you want to arrange other the items, 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, SURROUND, and LOUDNESS at the same time. When 16 channels are being measured, Lissajous 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, SURROUND, and LOUDNESS at the same time. When 16 channels are being measured, 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, STATUS, and LOUDNESS 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.
LOUDNESS	Loudness are displayed. It cannot be arranged with LEVEL BAR, LISSAJOU, STATUS, and SURROUND at the same time. Loudness will not be displayed correctly when 16 channels are being measured or when in embedded audio measurement simul mode.

14 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.
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 CONTROL to be displayed at the same time.

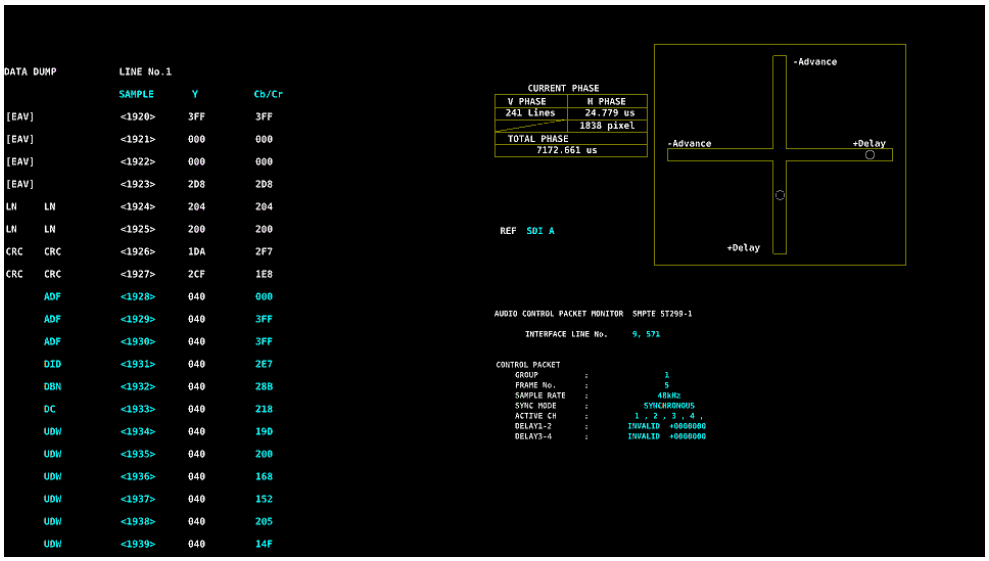


Figure 5-40 Status display

15 EYE

Selects the display mode of the EYE item. To be supported in the future.

16 DELETE

Deletes the selected item.

17 DEFAULT LAYOUT

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

18 Grid Size: 10x10, 30x30

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

5.6 Enhanced Layout

Enhanced Layout is an extended function that enables the measurement screens of up to four channels to be laid out on a single screen simultaneously. To use this function, connect a mouse to the front panel USB port.

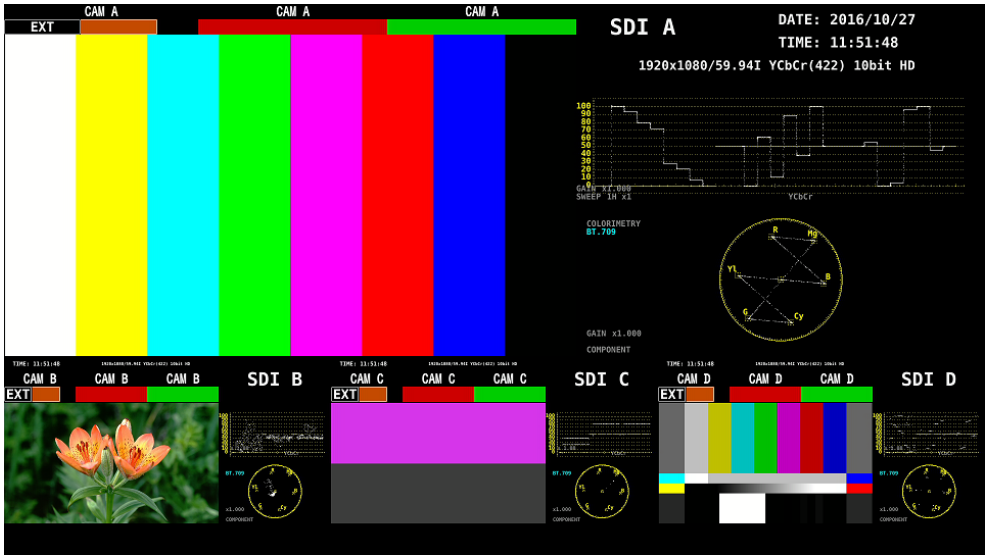


Figure 5-41 Enhanced Layout

One set of Enhanced Layout can be stored in the main unit. This is not initialized even if PARAM INIT YES is executed from the SYS menu. To initialize it, execute LAYOUT INIT YES or ALL INIT YES from the SYS menu, factory default initialization, or DEFAULT LAYOUT from the Enhanced Layout window.

[See also] 6.5, “Initialization”

Here, a layout created according to section 5.5, “Arranging the Measurement Screen Layout” will be called normal layout. The differences between Enhanced Layout and normal layout are as follows:

Table 5-2 Layout comparison

	Enhanced Layout	Normal layout
Number of layout channels	1 to 4	1
Number of layouts	1	11 (five 1-screen displays + six multi-screen displays)
Picture + tally Picture + audio meter	According to the normal layout settings	Supported
Audio display	Not supported	Supported
Viewfinder display	Not supported	Supported

5.6.1 Enhanced Layout Procedure

As an example, this section will explain the procedure to display the Enhanced Layout of channels A to D.
Enhanced Layout can be shown in simul mode when multi-screen display is in use.

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 →

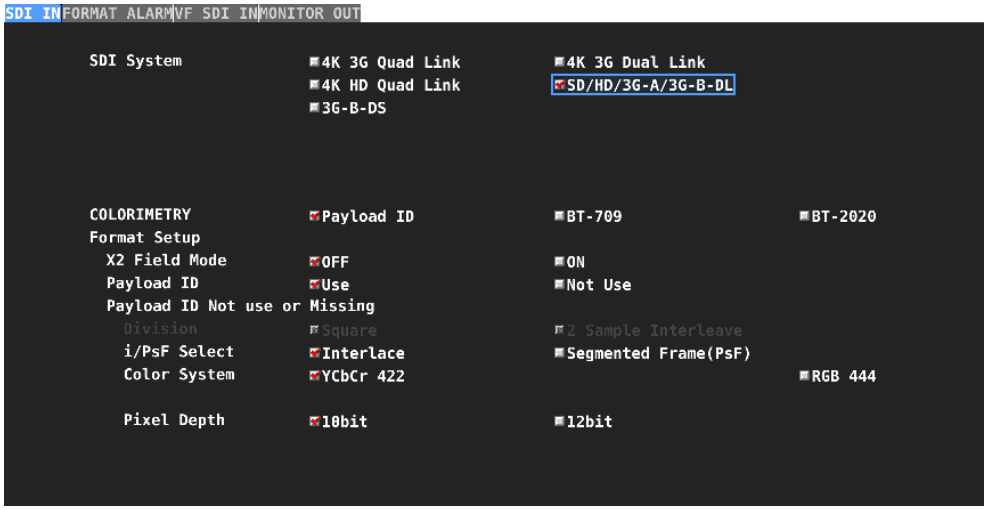


Figure 5-42 SDI IN tab

2. If the VF option is installed, on the VF SDI IN tab in the system settings, set Picture Input Select to SDI Input.

SYS → F•1 SIGNAL IN OUT → F•3 NEXT TAB (×2) →

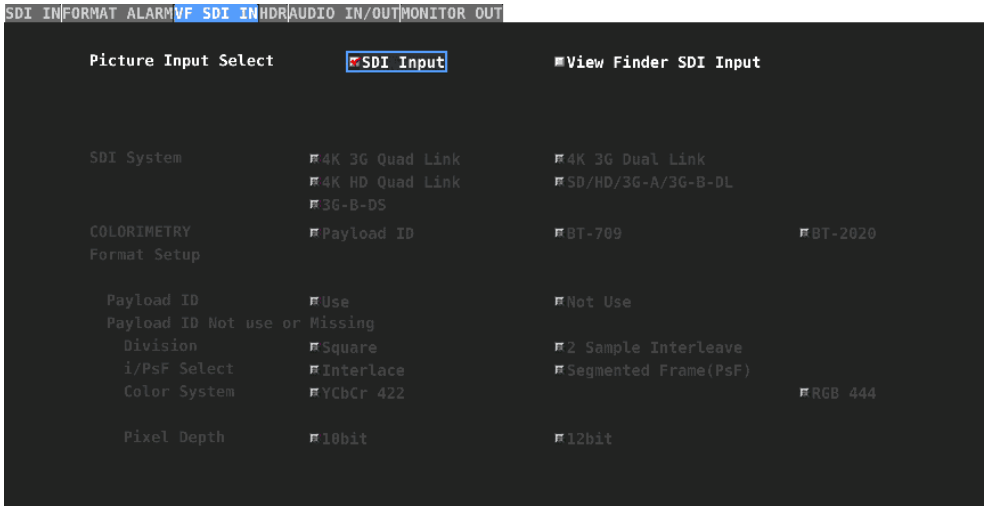


Figure 5-43 VF SDI IN tab

3. Set F•7 DISPLAY of the INPUT menu to SIMUL, and set F•1 A to F•4 D to ON.

INPUT →

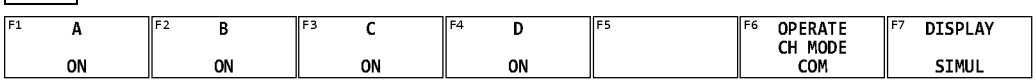


Figure 5-44 INPUT menu

4. **Press MULTI.**

5. **Right-click in the measurement screen, and click ENHANCED LAYOUT.**

   An Enhanced Layout screen appears.

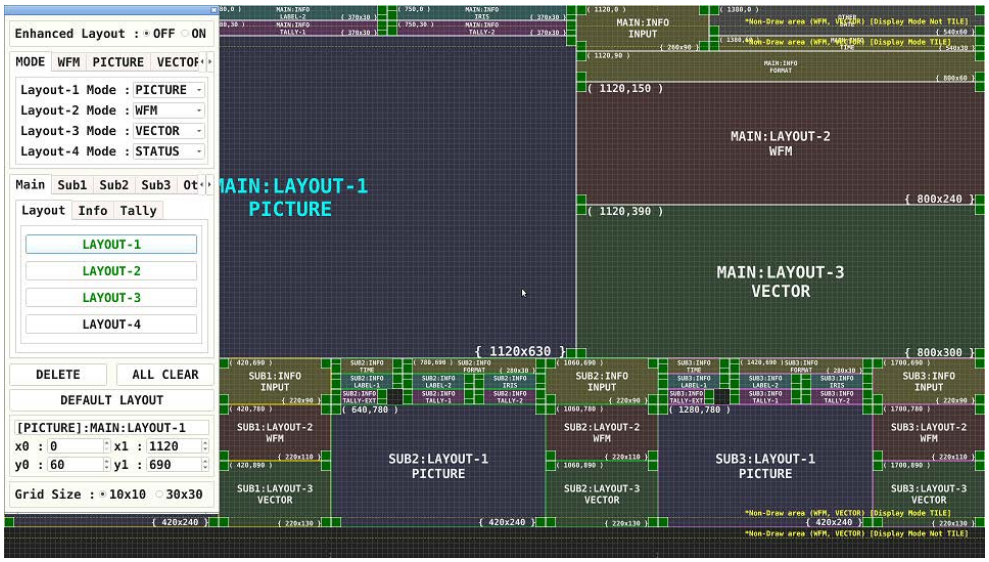


Figure 5-45 Enhanced Layout display

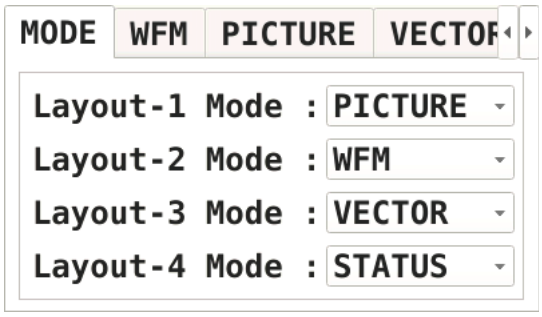
6. **Change the layout as necessary.**

   A default layout is initially stored in the main unit. Even after you change the layout, you can return to the default layout by clicking DEFAULT LAYOUT.
   To create a new layout after clearing the default layout, click ALL CLEAR.

   The basic operation is the same as with the normal layout. See section 5.5.2, “Layout Screen Description.”
   For details on the Enhanced Layout screen, see section 5.6.2, “Enhanced Layout Screen Description.”

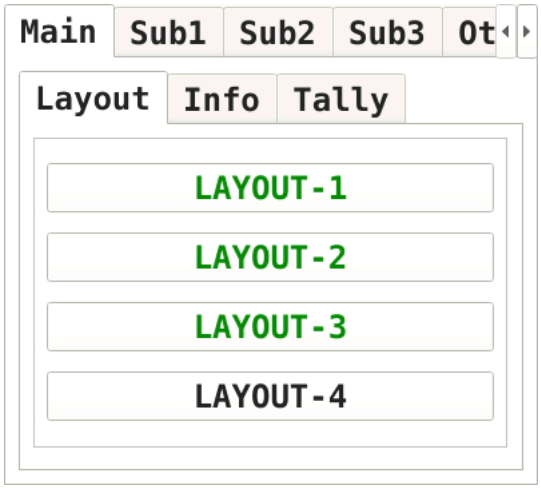
   ● Selecting the Measurement Mode

   You can select up to four measurement modes. Assign measurement modes to Layout-1 to Layout-4.



● Arranging Items

Arrange items on the Main, Sub1, Sub2, Sub3, and Other tabs.
Main, Sub1, Sub2, and Sub3 represent four channels. The channel selected with F•6 SELECT CH on each measurement screen is displayed in Main.



● Notes

• Arrange PICTURE items so they do not overlap.
• Arrange waveform display items (WFM, VECTOR) so they do not overlap.
• Arrange Main, Sub1, Sub2, and Sub3 according to the number of channels to be used with the following combinations. Arrangements other than these combinations are possible, but they will not be displayed correctly.

Number of channels	Main	Sub1	Sub2	Sub3
1	√	-	-	-
2	√	√	-	-
3	√	√	√	-
4	√	√	√	√

7. Set Enhanced Layout to ON.

8. Right-click in the Enhanced 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.

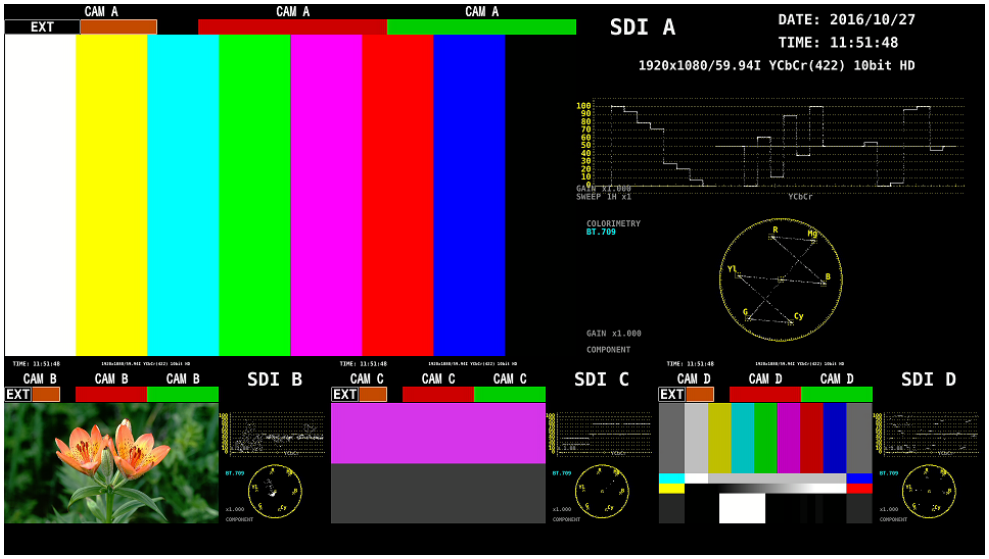


Figure 5-46 Enhanced Layout (SELECT CH = A)

Items arranged on Main show the channels selected with F•6 SELECT CH on each measurement screen. However, if you click a picture of Sub1, Sub2, or Sub3, the channel that you click appears on Main.

For example, in the above figure, if you click the picture of Sub2 (Cch), Cch appears on Main. (Sub1 to Sub3 show channels other than the channel shown on Main in the A, B, C, D order.)

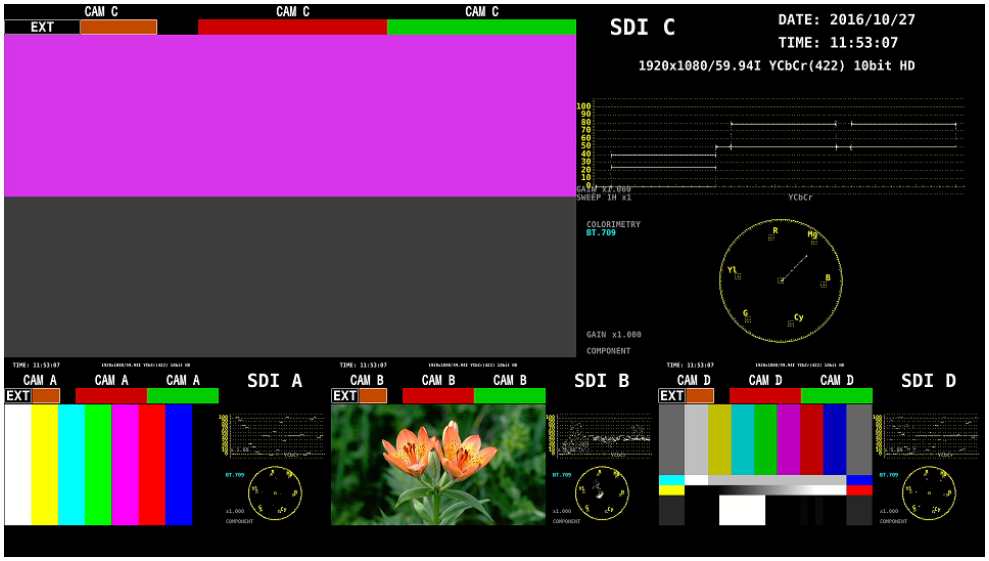


Figure 5-47 Enhanced Layout (SELECT CH = C)

5.6.2 Enhanced Layout Screen Description

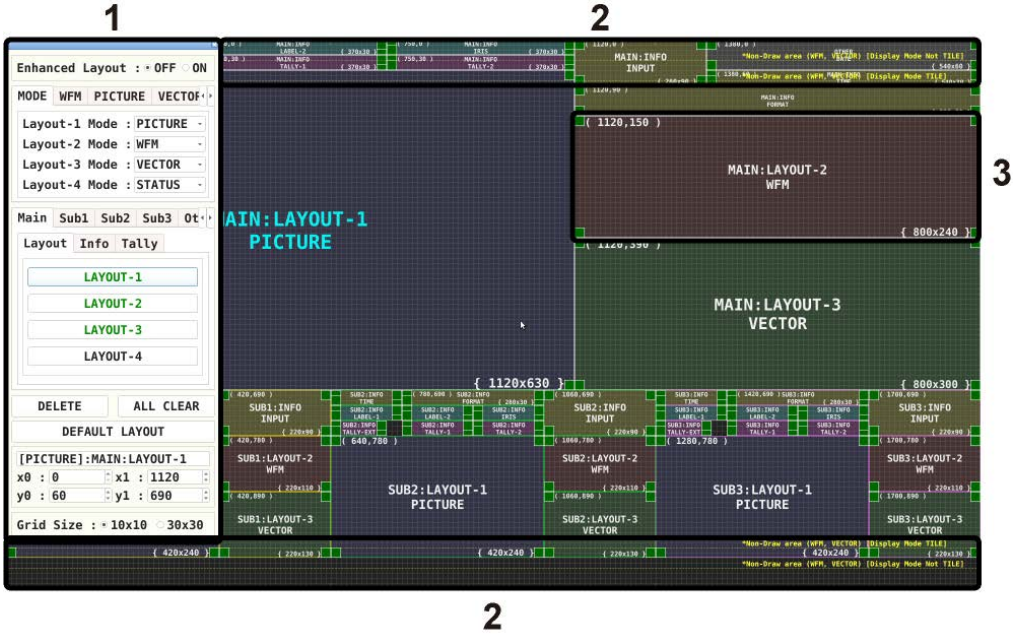


Figure 5-48 Enhanced Layout screen description

1 Enhanced Layout window

The Layout window is used to create layouts.
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 Enhanced Layout screen.

2 Guide

Guides for arranging items are displayed in yellow.
Arrange WFM items and VECTOR items within the outer guides. They can be arranged outside the guide, but the waveform may be cut off.

3 Item

Items arranged on the Main, Sub1 to Sub3, and Other tabs are displayed.
The upper-left coordinate, item name, and size are displayed in the frame.
If you select it, the item name color changes from white to light blue.

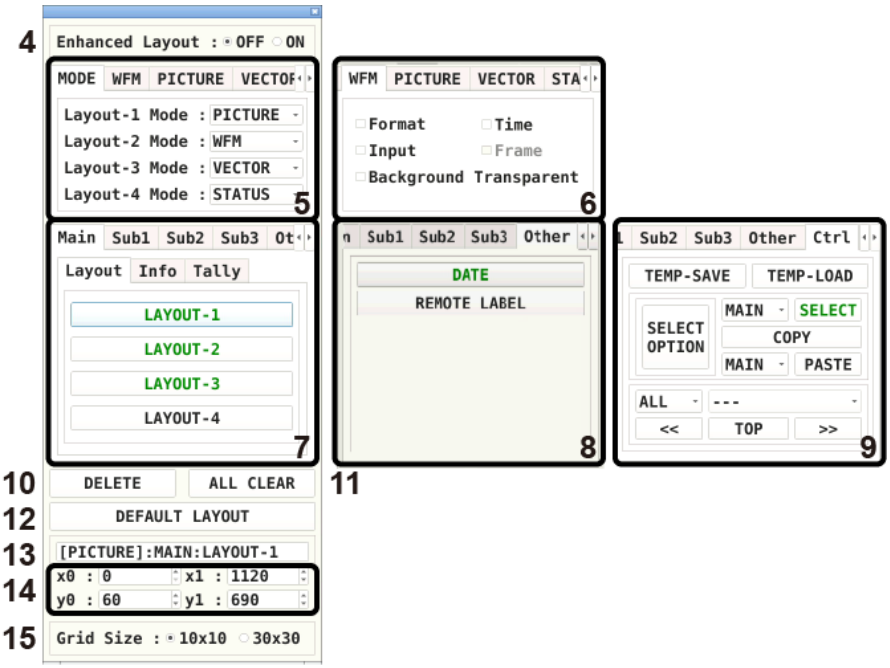


Figure 5-49 Enhanced Layout window

4 Enhanced Layout: OFF / ON

Switches between Enhanced Layout display and normal layout display.
Enhanced Layout is valid in simul mode when multi-screen display is in use. Even when it is turned on, normal layout is displayed in the following situations.

- In single input mode
- When 1-screen display is shown
- When viewfinder display is shown

5 MODE

Assign measurement modes to Layout-1 to Layout-4. You can select from the following measurement modes.
WFM / VECTOR / PICTURE / STATUS

6 WFM / PICTURE / VECTOR / STATUS

Set the options for each measurement mode.
You can set these items when you arrange an item.

- **Format**

Turns on and off the format display (e.g., 1920x1080/59.94I YCbCr(422) 10bit HD).
If you set this to ON, 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. If the specified format is not received, it turns yellow.

- **Time**

Turns on and off the time display (e.g., TIME: 00:00:00).
If you set this option to ON, you can select the display format using the GENERAL SETUP tab in the system settings.

- **Input**

  Turns on and off the input signal display (e.g., SDI A).
  If you set this to ON, you can show and hide it using the GENERAL SETUP tab in the system settings.

- **Frame**

  Turns on and off the frame display of PICTURE items.

- **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 PICTURE item.

7 Main / Sub1 / Sub2 / Sub3

Main, Sub1, Sub2, and Sub3 represent four channels. For each channel, you arrange items. (To arrange items for three channels, use the Main, Sub1, Sub2 combination. For two channels, use the Main, Sub1 combination. For one channel, use Main.)

Main displays the channel selected with F•6 SELECT CH on each measurement screen.
Sub1 to Sub3 show channels other than the channel shown on Main in the A, B, C, D order.

Items are categorized into Layout, Info, and Tally.
Unarranged items are displayed with black characters. Clicking an item places the item.
Arranged items are displayed with green characters. Clicking an item selects the item.

- **LAYOUT-1, LAYOUT-2, LAYOUT-3, LAYOUT-4**

  Shows the measurement mode assigned on the MODE tab.

- **FORMAT**

  Shows 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. If the specified format is not received, it turns yellow.

- **INPUT**

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

- **TIME**

  Shows 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.

- **TALLY-1, TALLY-2, TALLY-EXT**

  Shows the tally set through the remote connector or RS-422/485.
  TALLY-EXT (EXTENDED) is a tally display with a comment of up to eight characters.
  You can edit the comment on the REMOTE SETUP tab.
  [See also] REMOTE SETUP tab → 6.2.3, “Remote Control Settings”

- **LABEL-1, LABEL-2**

  Shows the camera ID set on the RS485 SETUP tab or through RS-422/485.
  The default values are CAM A to CAM D and vary depending on the channel.
  [See also] RS485 SETUP tab → 6.2.4, “Configuring the RS-422/485 Settings”

- **IRIS**

  Shows the iris set on the RS485 SETUP tab or through RS-422/485.
  The default values are CAM A to CAM D and vary depending on the channel.

8 Other

- **DATE**

  Place the DATE item.
  The DATE item shows 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.

- **REMOTE LABEL**

  Place the REMOTE LABEL item.
  The REMOTE LABEL item shows the label of the connected LV 7290 (REMOTE CONTROLLER, sold separately).
  You can set the label on the LV7290 SETUP tab in the system settings.
  [See also] LV7290 SETUP tab →6.2.7, “LV7290 Settings”

9 Ctrl

Manipulates items such as select, copy, and paste.

- **TEMP-SAVE**

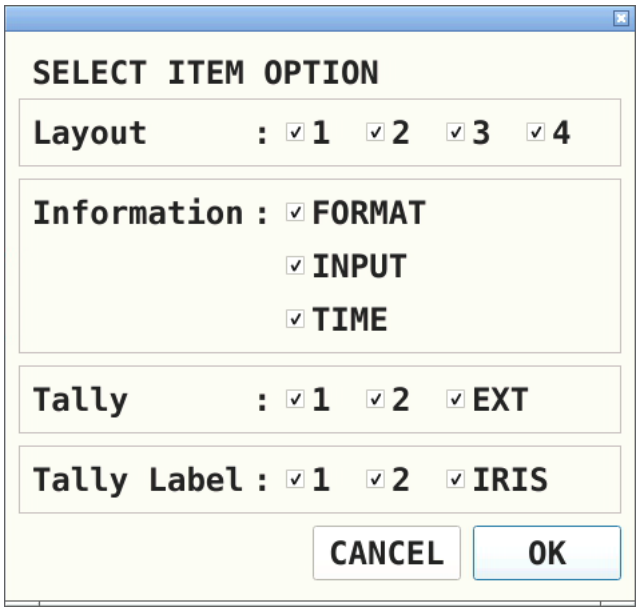
  Temporarily saves the current layout.
  Note that the layout that is present when you enter the Enhanced Layout screen is automatically saved even if you don’t click TEMP-SAVE.
  The saved layout is deleted when you exit from the Enhanced Layout screen.

- **TEMP-LOAD**

  Loads the layout saved with TEMP-SAVE or the layout that was present when you entered the Enhanced Layout screen.

- **SELECT OPTION**

  Selects the target items when you group items with the SELECT function.



- **MAIN/SUB1/SUB2/SUB3 - SELECT**

  Selects the items of the selected channels as a group.
  If items are not grouped, SELECT is displayed with black characters.
  If items are grouped, SELECT is displayed with green characters, and the selected item range is displayed in white. Moving by dragging, COPY, and DELETE can be used on grouped items.

- **COPY**

  Temporarily saves the layout of items grouped with SELECT.
  The saved layout is deleted when you exit from the Enhanced Layout screen or change the SELECT OPTION.

- **MAIN/SUB1/SUB2/SUB3 - PASTE**

  Pastes the layout saved with COPY to the selected channel.
  This is useful such as when you want to make Sub1 to Sub3 the same layout.
  If there is a same item as the copied item at the paste destination channel, the position and size are overwritten.

- **ALL - ---**
  CH - MAIN/SUB1/SUB2/SUB3
  ITEM - LAYOUT-1/LAYOUT-2 and the like

  Selects the target items when you select items with << and >>.
  If you select ALL, all items of all channels are selected in order.
  If you select CH, all items of the selected channel are selected in order.
  If you select ITEM, the selected items of all channels are selected in order.

- **<<, >>**

  Selects the items specified by ALL/CH/ITEM in order. You can select an item by clicking it directly, but this is useful when items are overlapped and you want to select items in the back.
  Moving by dragging, COPY, DELETE, and TOP can be used on selected items.

- **TOP**

  Moves the selected items to the top.

10 DELETE

Deletes individually selected or grouped items.
If the Ctrl tab is displayed, individually selected items can only be deleted if they are part of the ALL/CH/ITEM target.

11 ALL CLEAR

Deletes all items.

12 DEFAULT LAYOUT

Resets the layout to factory default.

13 Item name

Displays the selected item name.

14 x0, y0, x1, y1

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.

15 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 7390 and unit settings.
Press SYS, and use the SYS menu.

SYS →

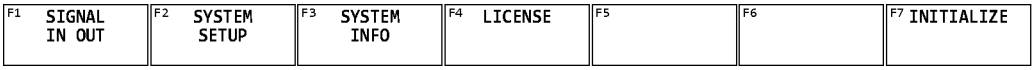


Figure 6-1 SYS menu

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 on the rear panel.

SYS → F•1 SIGNAL IN OUT →

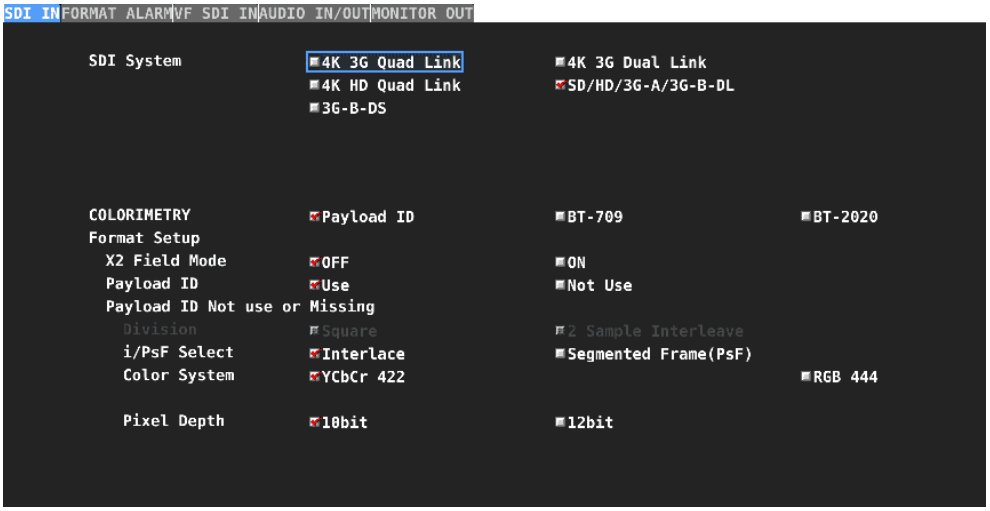


Figure 6-2 SDI IN tab

- **SDI System**

  Select the input format.

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

● **COLORIMETRY**

Select the colorimetry to use on the video-signal-waveform, vector, and picture displays.

The currently applied colorimetry is displayed in cyan in the vector display. For 3G (DL)-4K and 3G (QL), 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 display connected to the LV 7390 is not capable of expressing the color space of the applied colorimetry.

Payload ID:	If SDI System is 4K 3G Dual Link or 4K 3G Quad Link and the division transmission system is 2 sample interleave, the LV 7390 automatically detects BT.2020 from the payload ID and operates. For the square format or for modes other than BT.2020, the LV 7390 runs in BT.709 mode.
BT-709:	Runs in BT.709 mode.
BT-2020:	Runs in BT.2020 mode.

● **X2 Field Mode**

If set to ON and the input signal is 3G-B-DL 60/59.94/50P, the format will be displayed as 60I(x2), 59.94I(x2), or 50I(x2). The line selection function of the video signal waveform display or the data dump function of the picture display or status display will operate as 60/59.94/50P.

OFF, ON

● **Payload ID**

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

Use, Not Use

If you select Not Use, set the items marked with a √ in the table below. The LV 7390 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 7390 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 6-1 Payload ID settings

Input Signal	Division	i/PsF Select	Color System	Pixel Depth
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)
HD	Cannot be set	√	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
3G (DL)	√	Cannot be set	Cannot be set	Cannot be set
3G (QL)	√	Cannot be set	√	√

● **Division**

Selects the division transmission system when SDI System is 4K.

Square, 2 Sample Interleave

● **i/PsF Select**

Select whether to use interlace or segmented frame for displaying the following formats.
This cannot be selected when SDI System is set to 4K.

- 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.
If SDI System is set to 3G-B-DS or 4K 3G Dual Link, the color system is fixed to YCbCr 422 and cannot be selected.

YCbCr 422, RGB 444

● **Pixel Depth**

Select the quantization of the input signal.
If SDI System is set to 3G-B-DS or 4K 3G Dual Link, the quantization is fixed to 10 bits and cannot be selected.

10bit, 12bit

6.1.2 Setting the Format Alarm

Use the FORMAT ALARM tab to configure the expected format of the SDI signals applied to SDI INPUT on the rear panel.

SYS → F•1 SIGNAL IN OUT → F•3 NEXT TAB →

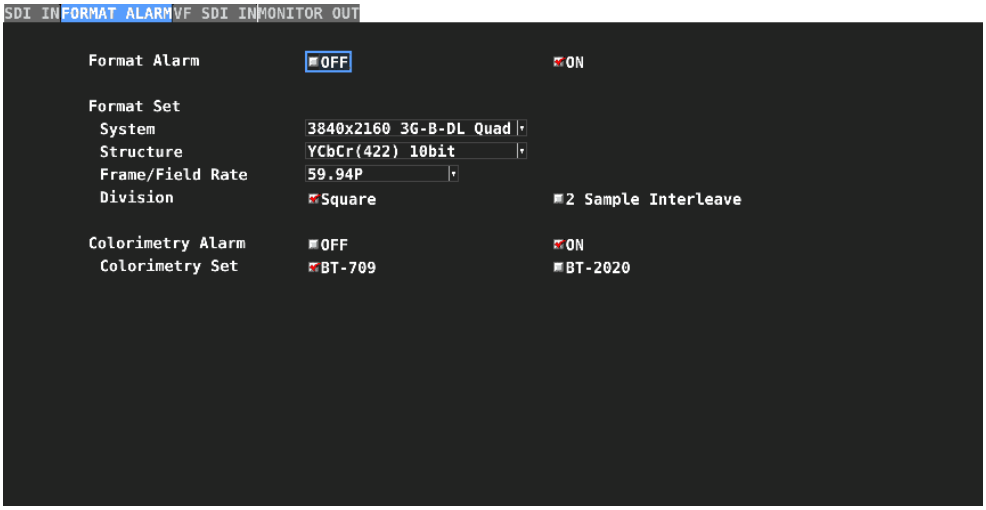


Figure 6-3 FORMAT ALARM tab

● **Format Alarm**

Turns on and off the format alarm detection. If set to ON and a format other than the format specified with Format Set is received, the LV 7390 operates in the following manner.

- Displays the format in yellow
- Displays “ERROR” in the upper right of the display.
- Displays errors in the event log of the status display
- Transmits a signal from the alarm output remote terminal

OFF, ON

● **Format Set**

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

● **Colorimetry Alarm**

Turn on and off the colorimetry alarm detection.

Normally, colorimetry is displayed in cyan on the vector waveform display. 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

6.1.3 Configuring the VF SDI Input Connectors (VF option)

Use the VF SDI IN tab to configure the format of the VF SDI signals applied to SDI INPUT on the rear panel.

SYS → F•1 SIGNAL IN OUT → F•3 NEXT TAB (×2) →

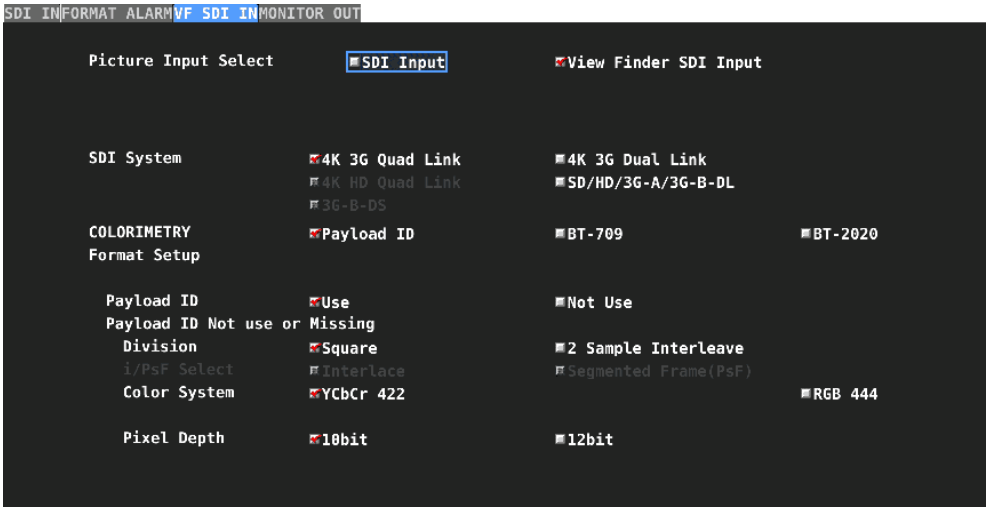


Figure 6-4 VF SDI IN tab

- **Picture Input Select**

  Select what to display on the picture display.

SDI Input:	The picture of the signal applied to SDI INPUT is displayed.
View Finder SDI Input:	The picture of the signal applied to VF SDI INPUT is displayed. All displays other than picture show the signal applied to SDI INPUT.

- **SDI System**

  When Picture Input Select is set to View Finder SDI Input, Select the input format. The SDI System settings that can be selected vary depending on the SDI System selected on the SDI IN tab. (Y: selectable, N: not selectable)

Table 6-2 SDI System

		VF SDI IN tab				
		4K 3G Quad Link	4K 3G Dual Link	4K HD Quad Link	SD/HD/3G-A/ 3G-B-DL	3G-B-DS
SDI IN tab	4K 3G Quad Link	Y	Y	N	Y	N
	4K 3G Dual Link	N	Y	N	Y	N
	4K HD Quad Link	N	N	Y	Y	N
	SD/HD/3G-A/3G-B-DL	N	N	N	Y	N
	3G-B-DS	N	N	N	N	Y

- **COLORIMETRY**
- **Format Setup**

  When Picture Input Select is set to View Finder SDI Input, set the colorimetry and the input format. The setting procedure is the same as the SDI IN tab. See section 6.1.1, “Configuring the SDI Input Connectors.”

6.1.4 Configuring the HDR Settings (SER20)

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

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

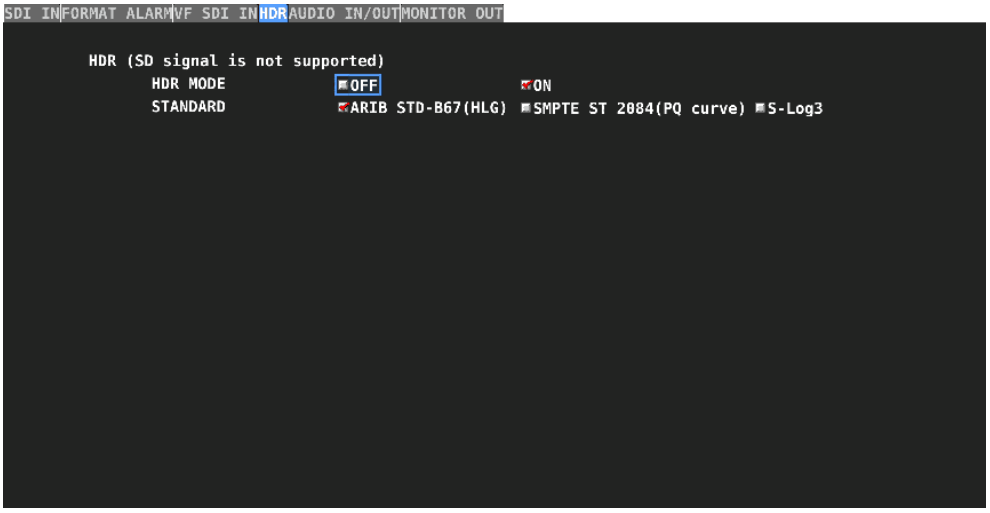


Figure 6-5 HDR tab

●HDR MODE

Turns the HDR measurement on and off. If set to ON, HDR signals can be measured on the video-signal-waveform and picture displays.

OFF, ON

●STANDARD

Select the HDR signal standard.

ARIB STD-B67(HLG), SMPTE ST 2084(PQ curve), S-Log3

6.1.5 Configuring Audio I/O Connectors (SER03)

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

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

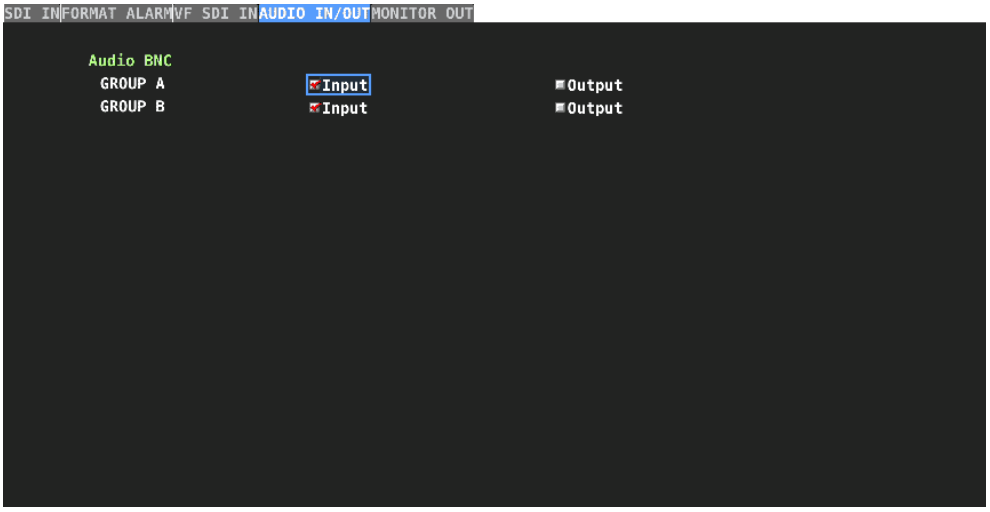


Figure 6-6 AUDIO IN/OUT tab

- **Audio BNC**

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

Input, Output

6.1.6 Configuring the Monitor Output Connectors

Use the MONITOR OUT tab to configure the MONITOR OUTPUT connectors on the rear panel.

SYS → F•1 SIGNAL IN OUT → F•3 NEXT TAB (×5) →

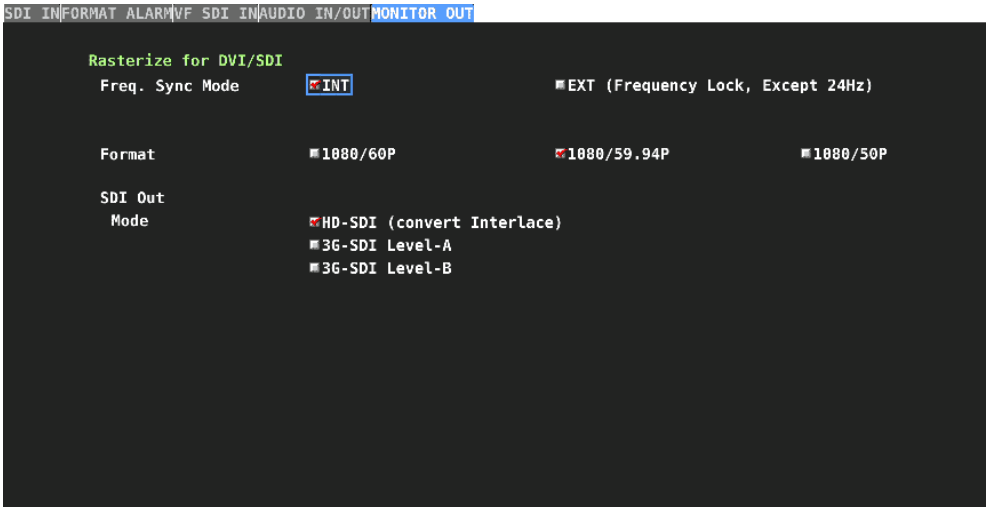


Figure 6-7 MONITOR OUT tab

- **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

- **Mode**

  Select the format of the signal to output from SDI. HD signals are converted into interlace before output.

HD-SDI, 3G-SDI Level-A, 3G-SDI Level-B

6.2 LV 7390 Configuration

To configure the LV 7390, press F•2 SYSTEM SETUP on the SYS menu.

6.2.1 General Settings

Use the GENERAL SETUP tab to configure general LV 7390 settings.

SYS → F•2 SYSTEM SETUP →

Figure 6-8 GENERAL SETUP tab

- **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.
  To display time using SNTP, select Real Time.

  OFF, Real Time, LTC, VITC, D-VITC

- **Input**

  Turns on and off the input signal display (e.g., SDI A).
  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

- **Screen Saver**

  Turns the screen saver on and off.

  OFF, ON

- **Minute**

  Set the length of time that must elapse without any key operations for the screen saver to start.

  1 - 59

- **MODE Key Direct**

  Select the multi-screen display key operation.

Multi/Single Common:	Each time MULTI is pressed, the display switches between 1-screen display and multi-screen display. When multi display is in use, you can hold down MULTI to select the layout and MODE to set each measurement screen.
Single:	Press MULTI to show the multi-screen display and MODE to show the 1-screen display. When multi display is in use, you can use F•1 LAYOUT SELECT to select the layout and F•2 MULTI WFM to F•6 MULTI STATUS to set each measurement screen.

- **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 MODE key again.
ON:	The menu disappears automatically when the time specified by Time elapses after the last key operation. The menu does not disappear automatically on some screens such as file lists.

- **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.

● **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.
[See also] 6.2.7, “Displaying System Information”

OFF, <u>ON</u>

6.2.2 Configuring Ethernet Settings

Use the ETHERNET SETUP tab to configure Ethernet settings and view the MAC address. These settings will not be initialized even if INITIALIZE is executed from the SYS menu. In addition, they are not recorded to presets.

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

Figure 6-9 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.

OFF, ON

● Time Zone Adjust

When SNTP Client Select is set to ON, enter the time adjustment value.
Because the time information exchanged with an NTP (SNTP) is UTC (Coordinated Universal Time), enter the appropriate adjustment according to the country or region.

-12:00 - +9:00 - +12:00

Table 6-3 Time adjustment values

Country or region	Time Zone Adjust
Eniwetok, Kwajalein	-12:00
Midway Island, Samoa	-11:00
Hawaii	-10:00
Alaska	-9:00
Pacific Time (US & Canada), Tijuana	-8:00
Mountain Time (US & Canada), Arizona	-7:00
Central Time (US & Canada), Central America, Saskatchewan, Mexico City	-6:00
Eastern Time (US & Canada), Indiana (East), Bogota, Lima, Quito	-5:00
Atlantic Time (Canada), La Paz, Santiago	-4:00
Greenland, Buenos Aires, Georgetown, Brasilia	-3:00
Mid-Atlantic	-2:00
Azores, Cape Verde Is.	-1:00
Greenwich Mean Time (Dublin, Edinburgh, Lisbon, London), Casablanca, Monrovia	+0:00
Amsterdam, Berlin, Bern, Rome, Stockholm, Sarajevo, Skopje, Sofija, Vilnius, Warsaw, Zagreb, Brussels, Madrid, Copenhagen, Paris, Belgrade, Bratislava, Budapest, Ljubljana, Prague, West Central Africa	+1:00
Athens, Istanbul, Minsk, Jerusalem, Cairo, Harare, Pretoria, Bucharest, Helsinki, Riga, Tallinn	+2:00
Kuwait, Riyadh, Nairobi, Baghdad, Moscow, Volgograd, St. Petersburg	+3:00
Abu Dhabi, Muscat, Baku, Tbilisi, Yerevan	+4:00
Islamabad, Karachi, Tashkent, Ekaterinburg	+5:00
Astana, Dhaka, Almaty, Novosibirsk	+6:00
Krasnoyarsk, Bangkok, Hanoi, Jakarta	+7:00
Irkutsk, Ulaan Bataar, Kuala Lumpur, Singapore, Perth, Taipei, Beijing, Chongqing, Hong Kong SAR, Urumqi	+8:00
Seoul, Yakutsk, Osaka, Sapporo, Tokyo	+9:00
Vladivostok, Canberra, Melbourne, Sydney, Guam, Port Moresby, Brisbane, Hobart	+10:00
Magadan, Solomon Is., New Caledonia	+11:00
Auckland, Wellington, Fiji Islands, Kamchatka, Marshall Is.	+12:00

● **TELNET Server**

Select whether to enable the TELNET server feature and the LV 7290 (REMOTE CONTROLLER). You cannot use TELNET and the LV 7290 at the same time.

OFF, ON, LV 7290

● **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.
These settings (except Tally Display Settings) will not be initialized even if INITIALIZE is executed from the SYS menu. In addition, they are not recorded to presets.
[See also] 18, “REMOTE”

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

Figure 6-10 REMOTE SETUP tab

● **Remote Mode**

Select the function to assign to the remote connector.

Bit:	Recalls presets (1 to 6 or 1 to 8), selects channels, and outputs alarms.
Binary:	Recalls presets (1 to 60), selects channels, and outputs alarms.
Command:	Recalls presets (1 to 60), selects channels, outputs alarms, and displays tallies (1/2).
Tally:	Outputs alarms and displays tallies (1/2/EXT).

● **Remote Select (SER03)**

When Remote Mode is Bit or Binary, select the function to assign to pin 8 (/P7) and pin 9 (/P8) of the remote control connector. When Remote Mode is Command or Tally, select Recall.

Recall:	Assigned to preset recalling
Recall and Loudness:	Assigned to loudness measurement control

● **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.
However, when measuring 3G-B-DS, alarms are output only for the currently displayed channels.

A, B, C, D

● **Tally Control Select**

Select whether to control the tally using the remote connector or RS-422/485 connector.

Remote, RS485

● **Color**

Select the color of the TALLY item placed in the layout. The default values are red for Tally-1, green for Tally-2, and orange for Tally-EXT.

Red, Green, Blue, Cyan, Magenta, Yellow, Orange

● **Tally Off Color**

Select the color of the TALLY item placed in the layout and that of the tally frame for when the tally is off.

Black：	No color is displayed.
DIM COLOR：	The selected color is displayed dimly.

- **Frame**

  Turns on and off the frame of the LABEL-1, LABEL-2, IRIS, TALLY-1, and TALLY-2 items placed in the layout.
  (The frame of the TALLY-EXT item is always shown.)

  OFF, ON

- **Gray Background**

  Turns on and off the frame of the LABEL-1, LABEL-2, IRIS, and TALLY-EXT items placed in the layout.

  OFF, ON

- **Tally-EXT Comment**

  Displays the comment of the TALLY-EXT item placed in the layout.
  The default value is EXT, but you can change it using F•5 TALLY EXT COMMENT INPUT.
  Enter a comment using up to eight characters.

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

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.

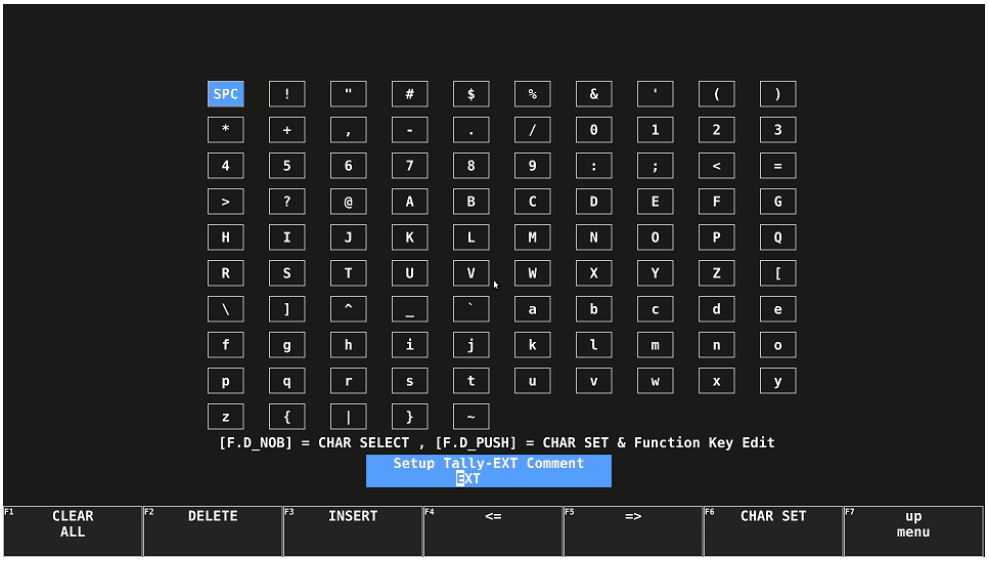


Figure 6-11 Comment input screen

- **Layout**

  Select the comment position of the TALLY-EXT item placed in the layout.

  Comment on the left: Places the comment on the left.
  Comment on the right: Places the comment on the right.

6.2.4 Configuring the RS-422/485 Settings

Use the RS485 SETUP tab to configure the RS-422/485 settings.
These settings (except Local ID Settings) will not be initialized even if INITIALIZE is executed from the SYS menu.
In addition, they are not recorded to presets.

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

Figure 6-12 RS485 SETUP tab

- **Baud Rate**

  Select the baud rate.

9600, 19200, 38400, 57600, <u>115200</u>

- **Device Address**

  Set the LV 7390 address. If you are connecting several LV 7390s, assign different numbers.

<u>0</u> - 99

- **Termination Setting**

  Terminates the RS-422/485 connector. If you are connecting several LV 7390s, set the LV 7390 at the end to ON and all others to OFF.

OFF, <u>ON</u>

- **ID Control Select**

  Select whether to set the camera ID on the LV 7390 or through the RS-422/485 connector. To camera ID is displayed for the LABEL-1, LABEL-2, and IRIS items on the layout.

Local, <u>RS485</u>

- **Local ID Setting**

When ID Control Select is set to Local, set the placement of the camera ID.

LEFT, CENTER, RIGHT

The default camera IDs are CAM A to CAM D, but you can change them by selecting their check boxes and pressing F•5 CAMERA ID LOCAL LABEL INPUT. Enter up to 16 characters.

You can use the following keys on the camera ID input screen.

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.

The camera IDs can also be changed through RS-422/485. (When using this method, you can use Japanese Shift-JIS codes in addition to ASCII codes.)

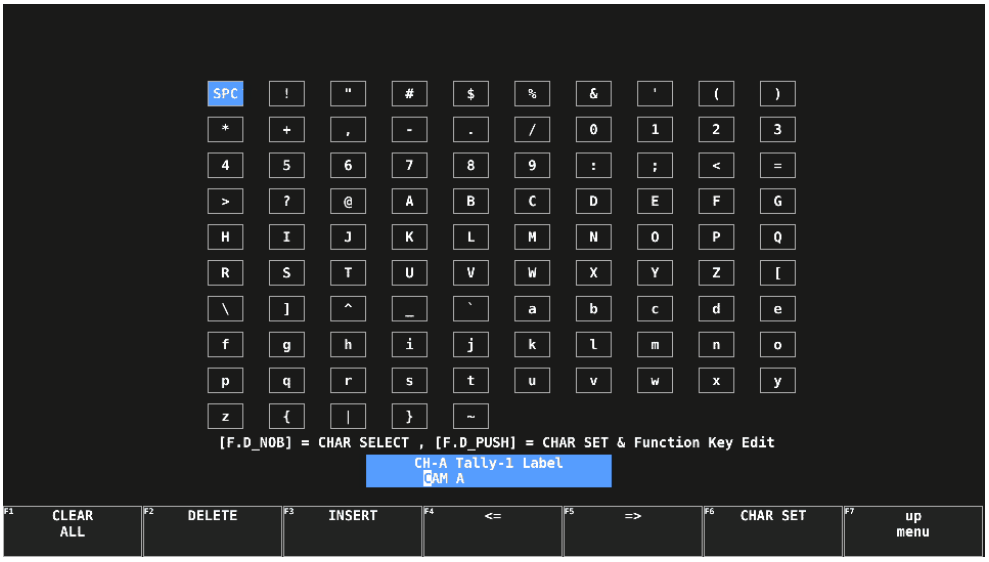


Figure 6-13 Camera ID input screen

6.2.5 Setting the Operation keys

Use the OPERATION SETUP tab to set the operation keys.

SYS → F•2 SYSTEM SETUP → F•3 NEXT TAB (×4) →

Figure 6-14 OPERATION SETUP tab

● **FORM**

Set the display format and display order to apply when the FORM key is pressed on the video signal waveform display or vector display. Select SKIP to skip an item.

WFM: Y, YCbCr, YGBR, GBR, YRGB, RGB, COMPOSITE, SKIP VECTOR: COMPONENT, COMPOSITE, SKIP

● **SHORT CUT**

Select the action to perform when the SHORTCUT key is pressed.

DIRECT:	The previously registered panel settings will be loaded. To register the panel settings, configure the LV 7390 to the settings that you want to register, press PSET, and then press SHORTCUT.
CAP&WAIT:	A screen capture will be taken and saved to a USB memory device. Connect a USB memory device in advance.
INTEN:	Use the function menu shown in the lower right of the screen to adjust the waveform intensity. This is valid on the video signal waveform display, vector display and audio display (SER03). When a mouse is connected, clicking the function menu resets the value to the default.
CURSOR:	Performs cursor measurement. This is valid on the video signal waveform display and vector display.
VOLUME:	Use the function menu shown in the lower right of the screen to adjust the headphone volume. When a mouse is connected, clicking the function menu resets the value to the default.

● **FILTER**

Set the filter and display order to apply when the FILTER key is pressed in the pseudo-composite display of the video signal waveform display. Select SKIP to skip an item.
Note that for component display, the FILTER key is used to switch between FLAT and LOWPASS.

FLAT, LUM, FLAT+LUM, LUM+CRMA, SKIP

● **MAG(GAIN)**

Set the magnification and display order to apply when the MAG (GAIN) key is pressed on the video signal waveform display or the vector display. Select SKIP to skip an item.

WFM: X1, X5 0, X5 +10, X5 +20, X5 +30, X5 +40, X5 +50, X5 +60, X5 +70, X5 +80, X5 +90, CURSOR, SKIP
VECTOR: X1, X5, IQ-MAG, SKIP

● **SWEEP**

Set the sweep method and display order to apply when the SWEEP key is pressed on the video signal waveform display. Select SKIP to skip an item.

1H, 2H, 1V, 2V, SKIP

● **MAG(SWEEP)**

Set the horizontal magnification and display order to apply when the MAG (SWEEP) key is pressed on the video signal waveform display. Select SKIP to skip an item.

X1, X10, X20, X40, ACTIVE, BLANK, SKIP

6.2.6 Setting the Date and Time

Use the DATE&TIME tab to set the date and time.
You cannot set the date and time when SNTP Client Select on the ETHERNET SETUP tab is set to ON.
These settings will not be initialized even if INITIALIZE is executed from the SYS menu. In addition, they are not recorded to presets.

SYS → F•2 SYSTEM SETUP → F•3 NEXT TAB (×5) →

Figure 6-15 DATE&TIME tab

6.2.7 LV 7290 Settings

You can configure the LV 7290 (REMOTE CONTROLLER, sold separately) on the LV7290 SETUP tab.
The LV7290 SETUP tab does not appear if the LV 7290 is not connected.
Note that the connection between this instrument and the LV 7290 will be disconnected as soon as you change the LV 7290 settings.
These settings will not be initialized even if INITIALIZE is executed from the SYS menu. Nor are they recorded to presets.

SYS → F•2 SYSTEM SETUP → F•3 NEXT TAB (×6) →

Figure 6-16 LV7290 SETUP tab

● Remote Controller

Select whether to send the IP address, subnet mask, and default gateway settings to the LV 7290.

OFF, ON

● IP Address, Subnet Mask, Default Gateway

Set the LV 7290's IP address, subnet mask, and default gateway.

● Remote Label

Displays the label of the REMOTE LABEL item placed in the layout.
There is no label in the default settings, but, you can press F•5 REMOTE LABEL INPUT to enter a label.
Enter up to 16 characters.

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

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.

Figure 6-17　ラベル入力画面

● **Frame**

Turns on and off the frame of the REMOTE LABEL item placed in the layout.

OFF, ON

● **Gray Background**

Select whether to display the background of the REMOTE LABEL item placed in the layout in gray.

OFF, ON

● **Connect Distination**

Select whether to send the LV 7390's IP address to the LV 7290.

OFF, ON

● **UNIT-1 to 8 IP Address**

Set the connection destination LV 7390 IP addresses.

6.3 Displaying System Information

To display the system information, press F•3 SYSTEM INFO on the SYS menu.
You can view the LV 7390 version and the internal temperature on this tab.

SYS → F•3 SYSTEM INFO →

Figure 6-18 INFORMATION tab

● **FIRMWARE**

Displays the firmware version.

● **MOTHER**

Displays the hardware versions.

● **LV7390SER01 SDI INPUT, LV7390SER01 VF SDI INPUT, LV7390SER03 DIGITAL AUDIO**

Displays the unit versions.
“NONE” is displayed for units that 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 yellow 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 4.3, “About Options”

SYS → F•4 LICENSE →

Figure 6-19 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 7390.**

6.5 Initialization

To initialize the LV 7390 settings, use F•7 INITIALIZE in the SYS menu.

SYS → F•7 INITIALIZE →

F1 PARAM INIT YES	F2 LAYOUT INIT YES	OPERATE INIT YES	F4 ALL INIT YES	F5 INIT CANCEL	F6	F7

Figure 6-20 INITIALIZE menu

There are four types of initialization that can be performed from the menu and another factory default initialization. The items that are initialized vary depending on the type of initialization as follows.

Table 6-4 Initialized items

	F•1 PARAM INIT	F•2 LAYOUT INIT	F•3 OPERATE INIT	F•4 ALL INIT	SRAM/FLASH INIT
ETHERNET SETUP tab	No	No	No	No	Yes
REMOTE SETUP tab (*1)	No	No	No	No	Yes
RS485 SETUP tab (*2)	No	No	No	No	Yes
OPERATION SETUP tab	Yes	No	Yes	Yes	Yes
DATE&TIME tab	No	No	No	No	No
Presets	No	No	No	No	Yes
Layout	No	Yes	No	Yes	Yes
Other settings	Yes	No	No	Yes	Yes

(Yes: initialized, No: not initialized)

*1 Excludes Tally Display Settings.
*2 Excludes Local ID Setting.

6.5.1 Initializing Settings

To initialize the settings, press F•1 PARAM INIT YES.
To cancel, press F•5 INIT CANCEL.

6.5.2 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 (WFM, VECT, PIC, STATUS, MULTI) and Enhanced Layout will all be initialized. To initialize the layout in each measurement display, click DEFAULT LAYOUT in the appropriate layout window.

[See also] DEFAULT LAYOUT → 5.5.2, “Layout Screen Description”

6.5.3 Initializing the Operation keys

To initialize the operation keys, press F•3 OPERATE INIT YES.
To cancel, press F•5 INIT CANCEL.

6.5.4 Initializing the Settings and Layout

To initialize the settings and layout, press F•4 ALL INIT YES.
To cancel, press F•5 INIT CANCEL.

6.5.5 Factory Default Settings

To reset the LV 7390 to factory default settings, turn on the power while holding down the V POS and H POS knobs. Release them when about 10 seconds (after the key LED switches from bright to dim and then F•3 lights) elapse after the power is turned on, and then press F•3 SRAM/FLASH INIT YES.

Figure 6-21 Factory default settings

7. SCREEN CAPTURE FEATURE

The screen capture feature acquires the current display as still image data and stores the data in the LV 7390. You can save the captured data to a USB memory device or overlay it on the input signal on the LV 7390 display.

7.1 Capturing the Screen

To take a screen capture, 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.**

   The screen is captured to the 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 taking a screen capture, the captured data will be deleted.

   • Change the measurement screen
   • Press INPUT, PSET, SYS, MULTI, or GAIN INIT (when valid)
   • Turn off the power

CAP →

F1	F2 REFRESH	F3 DISPLAY REAL	F4 FILE TYPE	F5 STORE	F6 RECALL	F7 SELECT CH A

Figure 7-1 CAP menu

7.2 Displaying Screen Capture Data

Press CAP to display the acquired screen capture data on the LV 7390 or overlay it on the current input signal.

You can display captured video signal waveforms, vectors, pictures, and audio waveforms on the LV 7390. Other kinds of data (such as status and scale data) cannot be displayed. However, these other kinds of data can be saved to a USB memory device 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.
BOTH:	The current input signal and the screen capture data are overlaid with their intensities halved.

7.3 Saving to a USB Memory Device

Captured data acquired by pressing CAP is deleted when you perform an operation such as changing the measurement screen. However, by saving the screen capture data to a USB memory device in BSG format, you will be able to display the screen capture data on the LV 7390 even after it is restarted.
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 7390.**
2. **Press F•4 FILE TYPE on the CAP menu.**

   The FILE TYPE menu appears.

   CAP → F•4 FILE TYPE →

F1	F2	F3	F4	F5	F6	F7
BMP ON	BSG ON					up menu

   Figure 7-2 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 files on the LV 7390.
   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 5 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
   └ LV7390_USER
   　└ BMP
   　　├ yyyymmddhhmmss.bmp
   　　└ yyyymmddhhmmss.bsg

7.4 Displaying Screen Capture Data from a USB Memory Device

To display or overlay on the current input signal the BSG screen capture data that has been saved to a USB memory device, 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 7390.)

1. **Connect a USB memory device to the LV 7390.**
2. **Press CAP.**

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

   The file list screen appears.

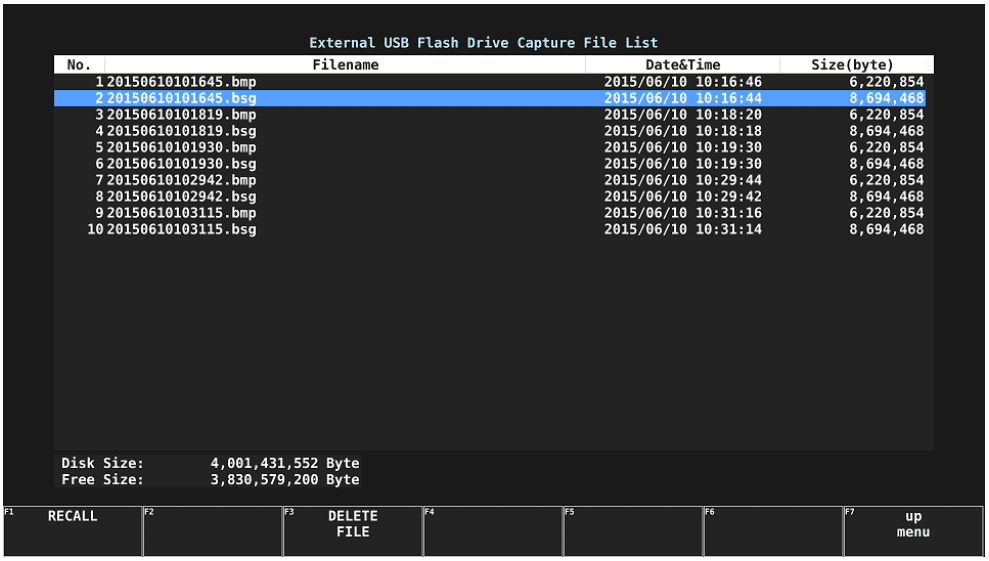


Figure 7-3 File list screen

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.

7.5 Deleting Screen Capture Data from a USB Memory Device

To delete screen capture data from a USB memory device, follow the procedure below. (You can also delete the data on the PC.)

1. **Connect a USB memory device to the LV 7390.**
2. **Press CAP.**

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

   The file list screen appears.

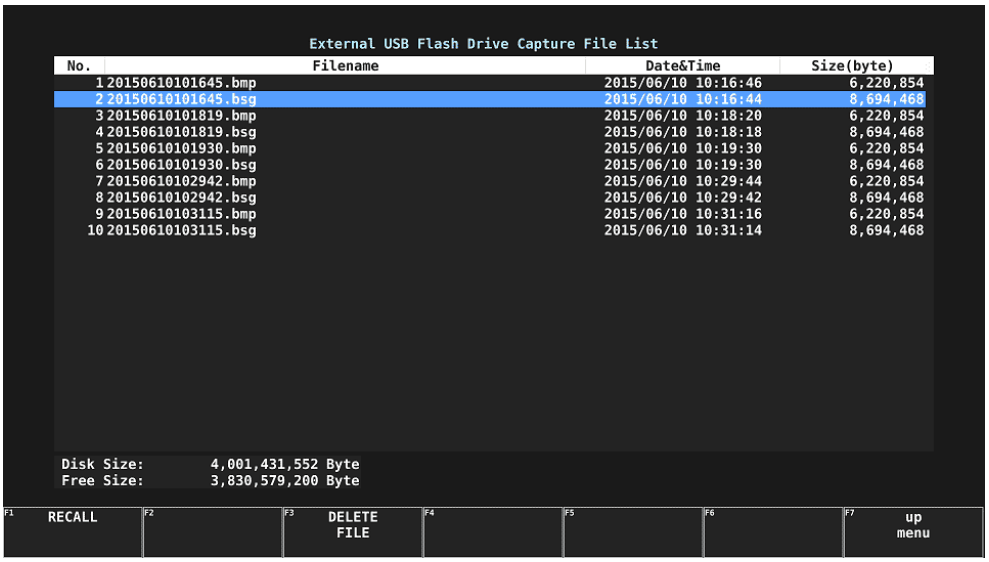


Figure 7-4 File list screen

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 →

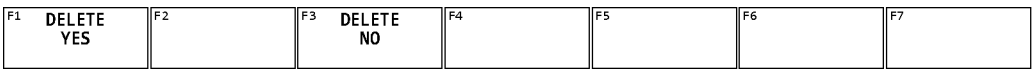


Figure 7-5 DELETE FILE menu

6. **Press F•1 DELETE YES.**

   To cancel the 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 7390s by copying presets to USB memory.

All items except the items below are stored in a preset. Stored items are not deleted even if INITIALIZE is executed from the SYS menu.

- ETHERNET SETUP tab — Ethernet settings
- REMOTE SETUP tab — Remote settings (excluding Tally Display Settings)
- RS485 SETUP tab — RS-422/485 settings (excluding Local ID Setting)
- DATE&TIME tab — Date and time settings

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.

[See also] GENERAL SETUP tab → 6.2.1, “General Settings”

2. Hold down PSET.

The preset registration screen appears.

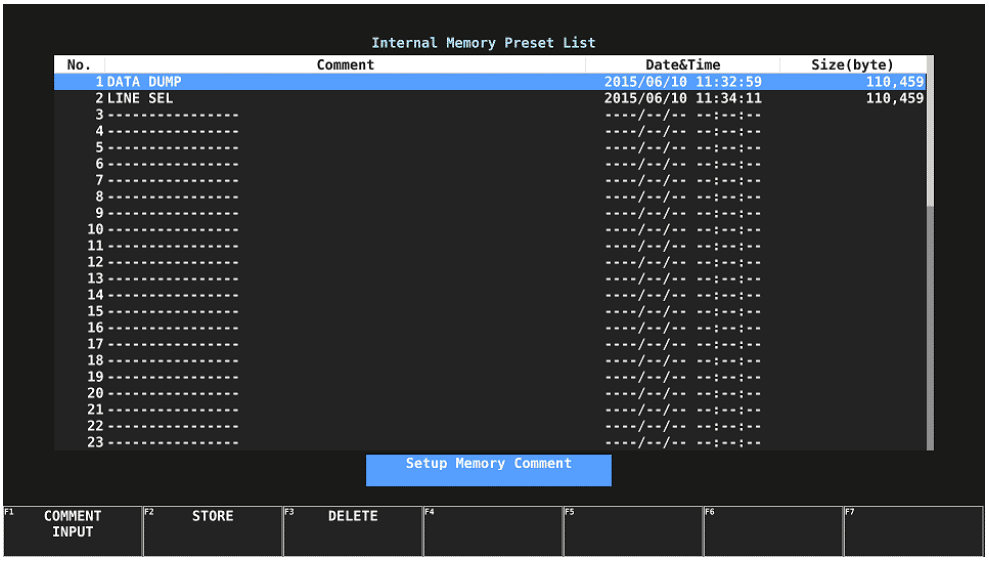


Figure 8-1 Preset registration screen

3. Press F•1 COMMENT INPUT.

The comment input screen 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).

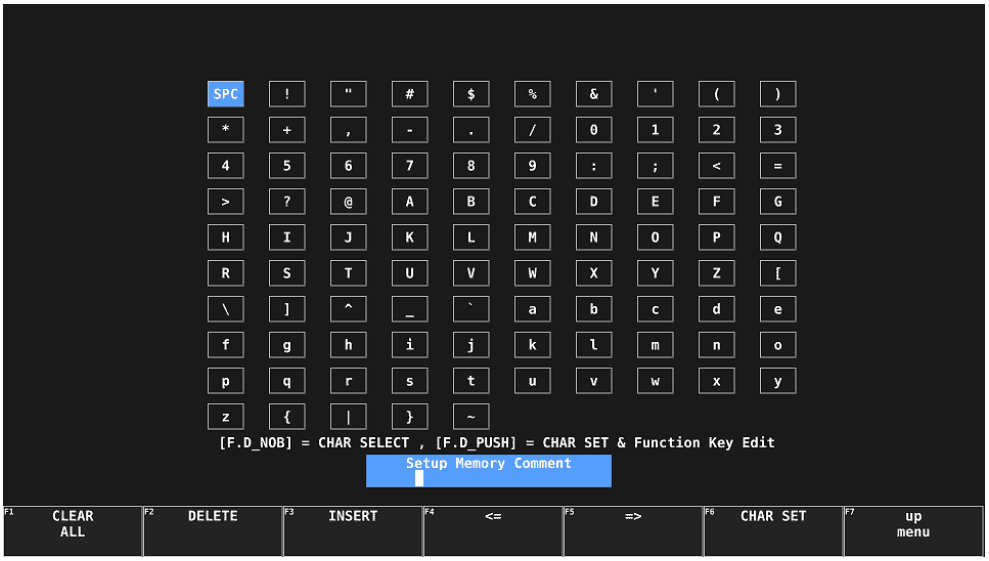


Figure 8-2 Comment input screen

4. Enter a comment of up to 16 characters.

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

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.

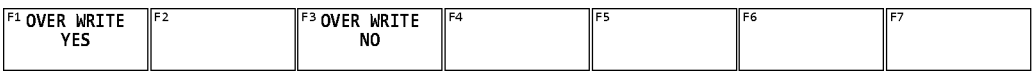


Figure 8-3 STORE menu

8.2 Loading Presets

To recall a preset, follow the procedure below.

1. Press PSET.

The PSET menu appears.

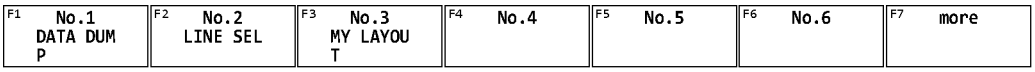


Figure 8-4 PSET menu

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.

[See also] 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 screen appears.

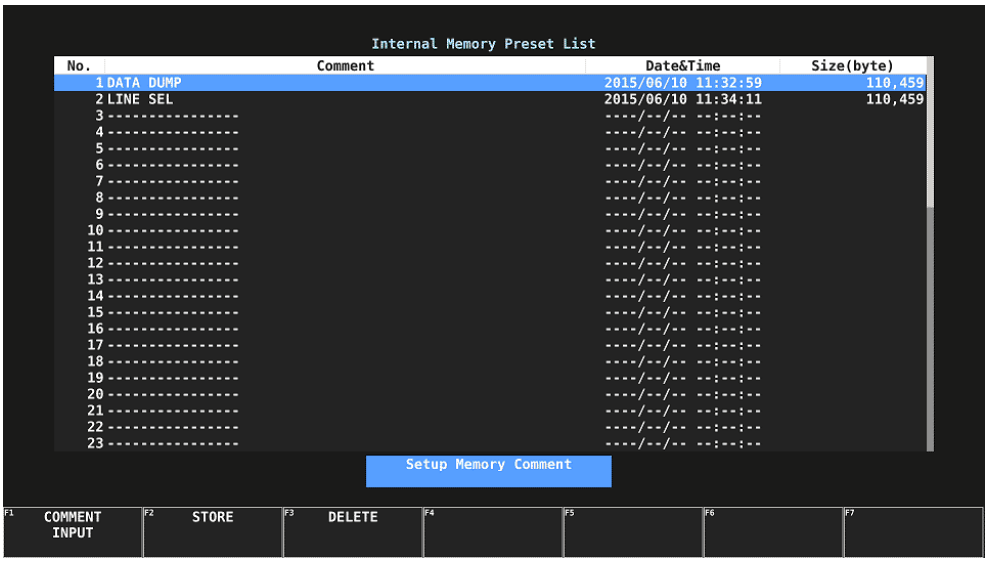


Figure 8-5 Preset registration screen

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 7390 to a USB Memory Device

To copy all the presets from the LV 7390 to a USB memory device, follow the procedure below.

1. **Connect a USB memory device to the LV 7390.**
2. **Hold down PSET.**

   The preset registration screen appears.

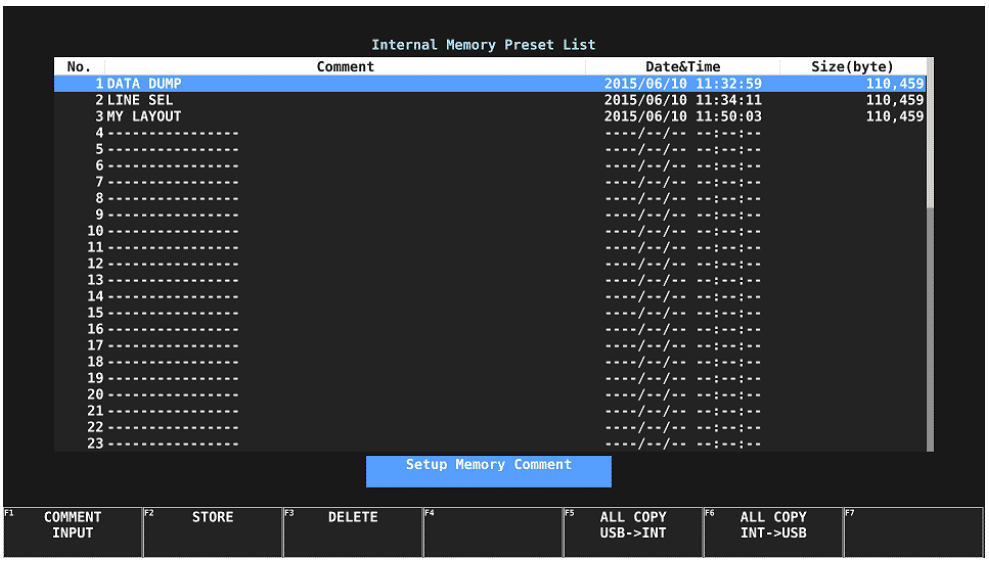


Figure 8-7 Preset registration screen

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 the USB memory device already contains presets, 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 device, you will no longer be able to copy the altered presets from the USB memory device to an LV 7390.

   USB memory device
   └ LV7390_USER
   └ PSET
   └ PRESET_01.PRE (to PRESET_60.PRE)

8.5 Copying All Presets from a USB Memory Device to the LV 7390

To copy all the presets from a USB memory device to the LV 7390, follow the procedure below.

1. **Connect a USB memory device to the LV 7390.**
2. **Hold down PSET.**

   The preset registration screen appears.

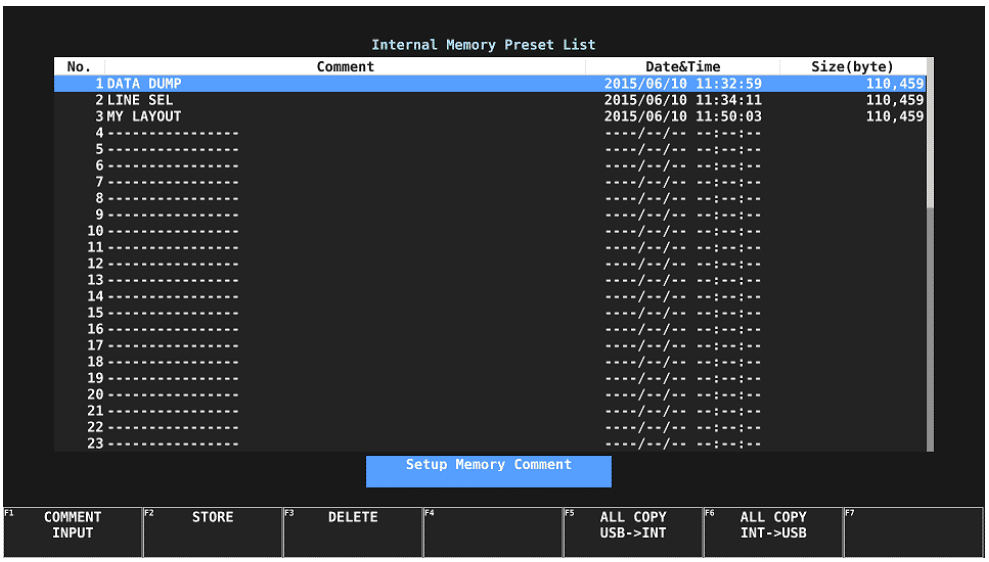


Figure 8-9 Preset registration screen

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 the LV 7390 internal memory already contains presets, they will be overwritten.

9. VIDEO SIGNAL WAVEFORM DISPLAY

To display the video signal waveform, press WFM.

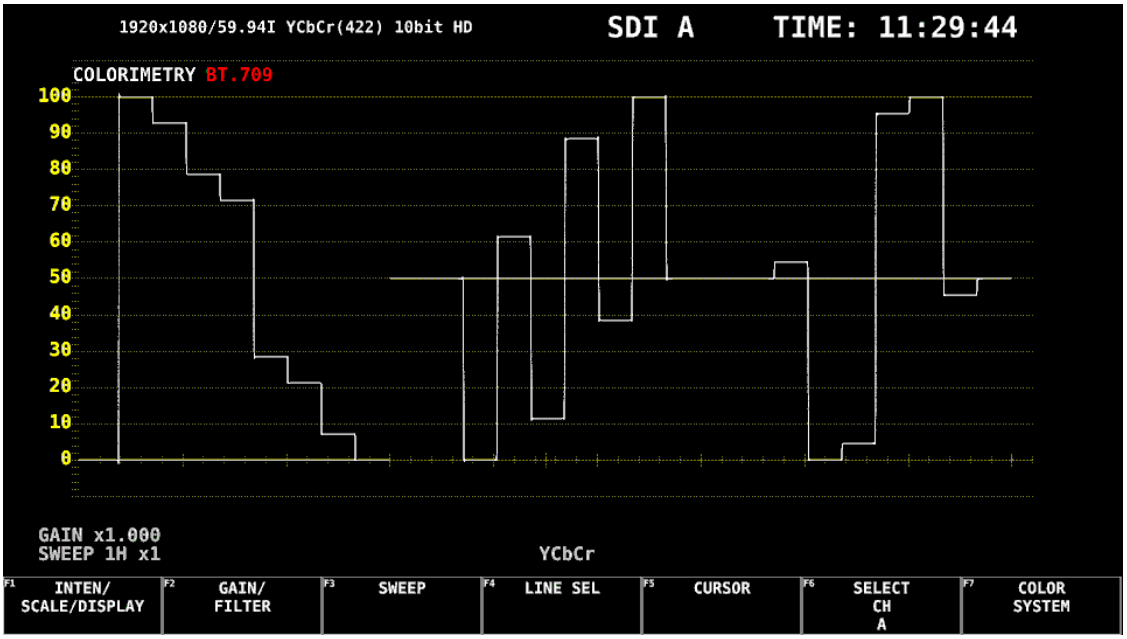


Figure 9-1 Video signal waveform display

● **Colorimetry**

Normally, colorimetry is not displayed, but when the colorimetry alarm is set to on and a colorimetry different from the one specified is received, the alarm is indicated in red in the upper left of the screen.

[See also] COLORIMETRY ALARM →6.1.2, “Setting the Format Alarm“

9.1 Operation Key Description

On the video signal waveform display, you can press the operation keys to change the following settings. (Some settings may not be changed.) The key LEDs light when the underlined setting is selected.

Key assignments can be changed freely on the OPERATION SETUP tab.

[See also] OPERATION SETUP tab → 6.2.5, “Setting the Operation keys”

Table 9-1 Operation Key Actions

	Value	Notes
FORM	Y, YCbCr, YGBR, GBR, YRGB, RGB, COMPOSITE	
OVLAY	OVERLAY, PARADE	
FILTER	FLAT, LOWPASS	During component display
	FLAT, LUM, FLAT+LUM, LUM+CRMA	During pseudo-composite display
GAIN	CAL, VARIABLE	
MAG (GAIN)	X1, X5 0, X5 +90	X5 +10 to X5 +80 and CURSOR are also selectable.
SWEEP	1H, 2H, 1V, 2V	
MAG (SWEEP)	X1, X10, X20, X40	ACTIVE and BLANK are also selectable.

9.2 Setting the Waveform Display Position

Use the V POS and H POS knobs to adjust the display position of video signal waveforms.

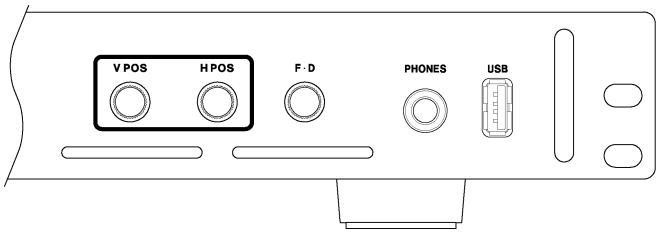


Figure 9-2 V POS and H POS knobs

● V POS Knob

This knob adjusts the vertical position of the video signal waveform.
Pressing the knob returns the waveform to its default position.

● H POS Knob

This knob adjusts the horizontal position of the video signal waveform.
Pressing the knob returns the waveform to its default position.

9.3 Configuring the Display Settings

To configure the display settings, press F•1 INTEN/SCALE/DISPLAY on the WFM menu.

WFM → F•1 INTEN/SCALE/DISPLAY →

F1	F2	F3	F4	F5	F6	F7
WFM INTEN 0	WFM COLOR WHITE	WFM SCALE	WFM DISPLAY		SELECT CH A	up menu

Figure 9-3 INTEN/SCALE/DISPLAY menu

9.3.1 Adjusting the Vector Intensity

To adjust the video signal waveform intensity, follow the procedure below.
Press the function dial (F•D) to return the setting to its default value (0).

Procedure

WFM → F•1 INTEN/SCALE/DISPLAY → F•1 WFM INTEN: -128 - 0 - 127

9.3.2 Selecting the Waveform Color

To select the video signal waveform color, follow the procedure below.
On the multi display, the following colors are assigned to the video signal waveforms. When the layout Style is set to MIX, MULTI cannot be selected.
Y: white, Cb: cyan, Cr: magenta, G: green, B: blue, R: red, COMPOSITE: white

Procedure

WFM → F•1 INTEN/SCALE/DISPLAY → F•2 WFM COLOR: WHITE, YELLOW, CYAN, GREEN, MAGENTA, RED, BLUE, MULTI

9.3.3 Adjusting the Scale Intensity

To configure the scale, press F•3 WFM SCALE on the INTEN/SCALE/DISPLAY menu.

WFM → F•1 INTEN/SCALE/DISPLAY → F•3 WFM SCALE →

F1	F2	F3	F4	F5	F6	F7
SCALE INTEN 4	SCALE COLOR YELLOW	SCALE UNIT HD%,SD%	75%COLOR SCALE OFF		SELECT CH A	up menu

Figure 9-4 WFM SCALE menu

To adjust the scale intensity, follow the procedure below.
Press the function dial (F•D) to return the setting to its default value (4).

Procedure

WFM → F•1 INTEN/SCALE/DISPLAY → F•3 WFM SCALE → F•1 SCALE INTEN: -8 - 4 - 7

9.3.4 Selecting the Scale Color

To select the scale color, follow the procedure below.

Procedure

WFM → F•1 INTEN/SCALE/DISPLAY → F•3 WFM SCALE → F•2 SCALE COLOR: WHITE, YELLOW, CYAN, GREEN, MAGENTA, RED, BLUE

9.3.5 Selecting the Scale Unit

To select the scale unit, follow the procedure below.

When COLOR MATRIX is set to COMPOSITE and the composite display format is NTSC, this is fixed to HD%,SD%. When the composite display format is PAL, this is fixed to HDV,SDV.

Video signal white (100 %) becomes 0.7 V or 100 % on the scale.
Video signal black (0 %) becomes 0 V or 0 % on the scale.
[See also] COLOR MATRIX → section 9.8.1, “Selecting the Color Matrix.”

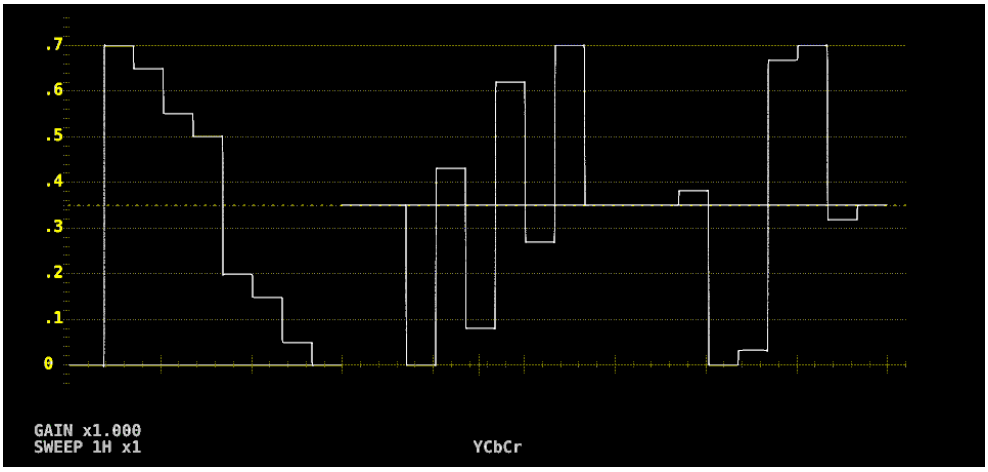
Procedure

WFM → F•1 INTEN/SCALE/DISPLAY → F•3 WFM SCALE → F•3 SCALE UNIT: HDV,SD%, HDV,SDV, HD%,SD%, 150%, 1023, 1023,255, 3FF

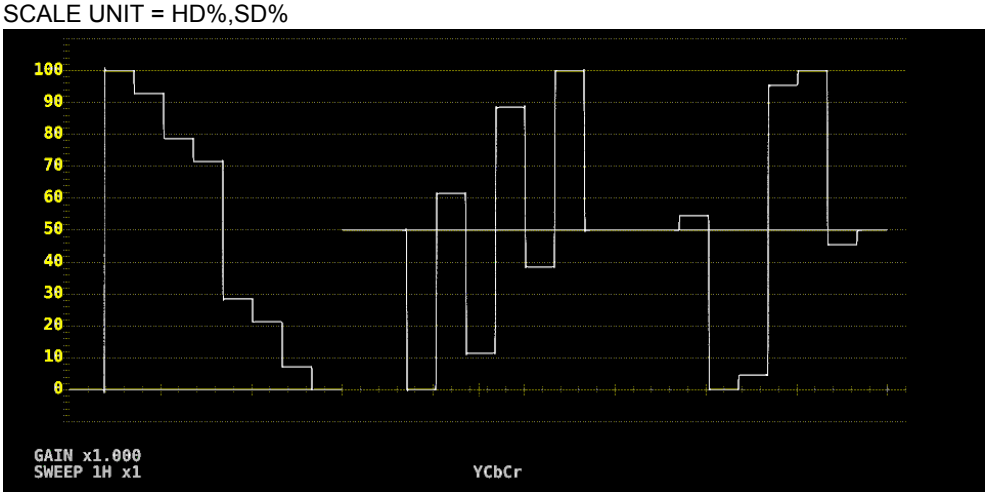
Settings

HDV,SD%:	The scale shows voltages when the input signal is not SD and percentages when the input signal is SD.
HDV,SDV:	The scale shows voltages.
HD%,SD%:	The scale shows percentages.
150%:	The scale shows percentages. (The scale starts from -50 %.)
1023:	0 to 100 % is displayed as 64 to 940 (YGBR) or 64 to 960 (CbCr).
1023,255:	0 to 100% is displayed as 64 to 940 (YGBR) or 16 to 235 (YGBR).
3FF:	0 to 100 % is displayed as 040 to 3AC (YGBR) or 040 to 3C0 (CbCr).

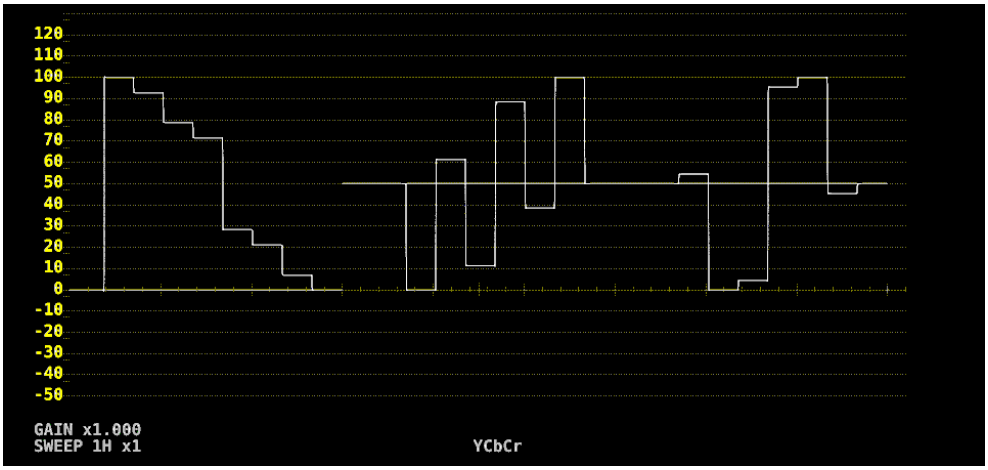
SCALE UNIT = HDV,SDV



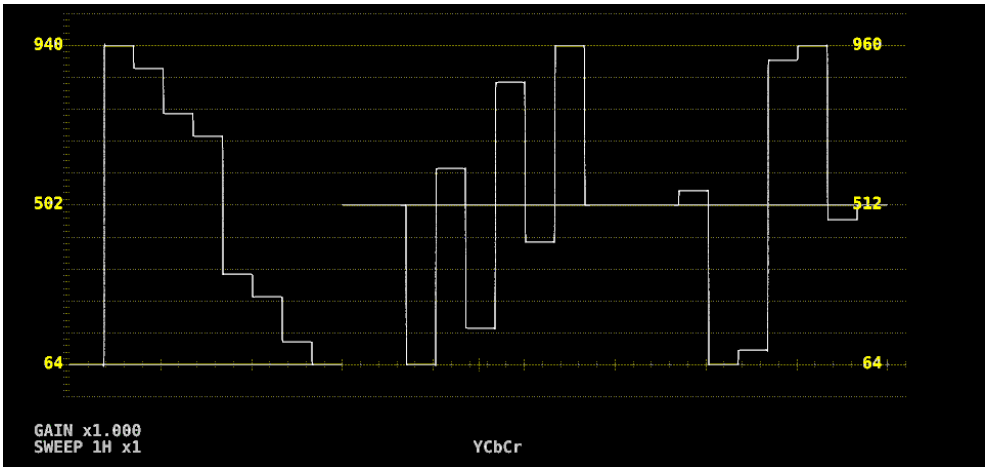
SCALE UNIT = HD%,SD%



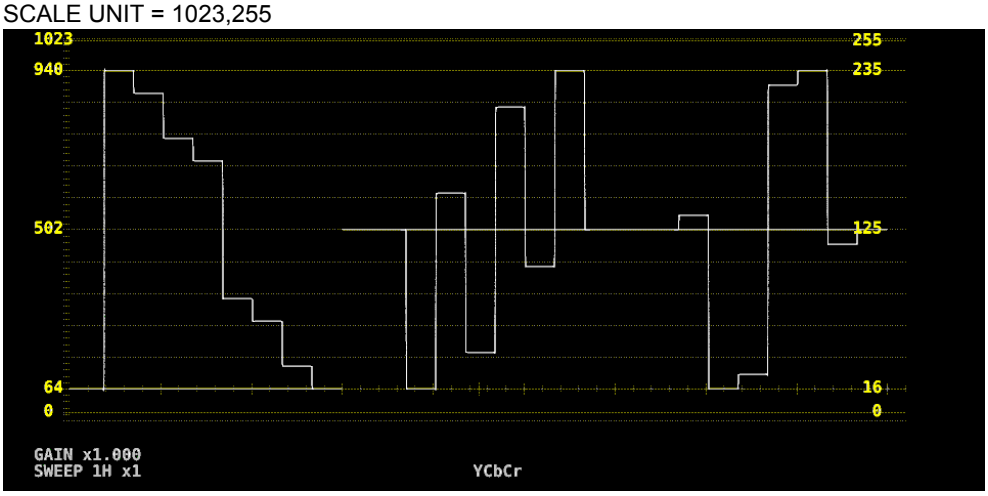
SCALE UNIT = 150%



SCALE UNIT = 1023



SCALE UNIT = 1023,255



SCALE UNIT = 3FF

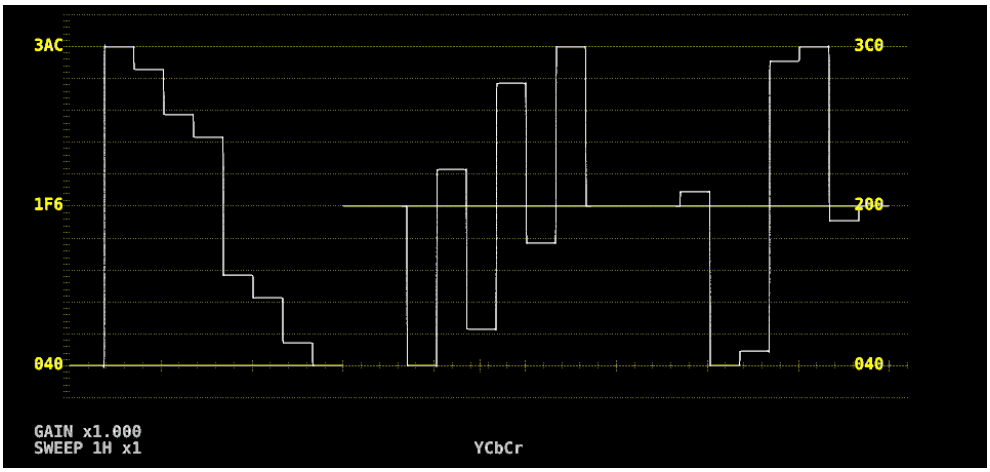


Figure 9-5 Selecting the scale unit

9.3.6 Displaying a Scale for 75% Color Bars

When COLOR MATRIX is set to YCbCr, to display a scale on which a 75% color bar signal input is mapped to the peak level of the chrominance, follow the procedure below.

[See also] COLOR MATRIX → section 9.8.1, “Selecting the Color Matrix.”

Procedure

WFM → F•1 INTEN/SCALE/DISPLAY → F•3 WFM SCALE → F•4 75%COLOR SCALE: ON, OFF

75%COLOR SCALE = ON

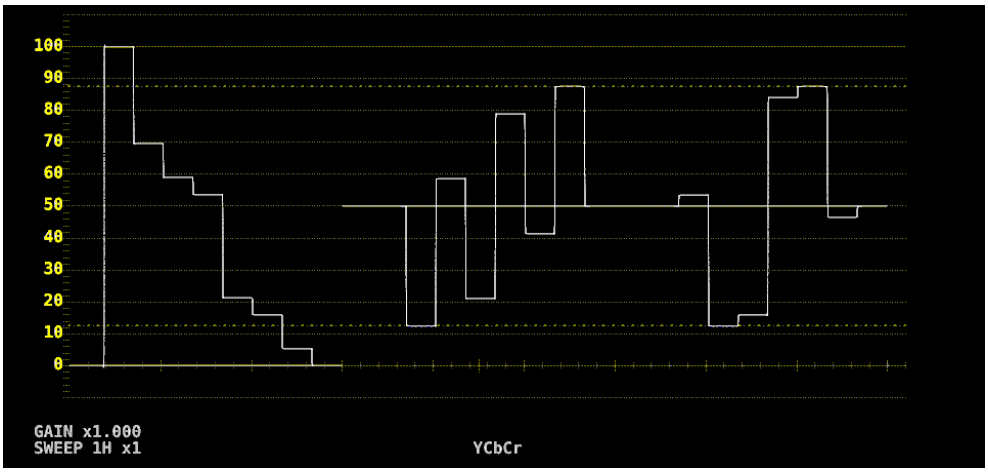


Figure 9-6 Displaying a scale for 75 % color bars

9.3.7 Selecting the Display Mode

To configure the display, press F•4 WFM DISPLAY on the INTEN/SCALE/DISPLAY menu.

WFM → F•1 INTEN/SCALE/DISPLAY → F•4 WFM DISPLAY →

F1	F2	F3	F4	F5	F6	F7
WFM MODE PARADE	CH1 Y ON	CH2 Cb ON	CH3 Cr ON	4Y PARADE OFF	SELECT CH A	up menu

Figure 9-7 WFM DISPLAY menu

To select the video signal waveform display mode, follow the procedure below.
This setting is invalid when COLOR MATRIX is set to COMPOSITE.

[See also] COLOR MATRIX → section 9.8.1, “Selecting the Color Matrix.”

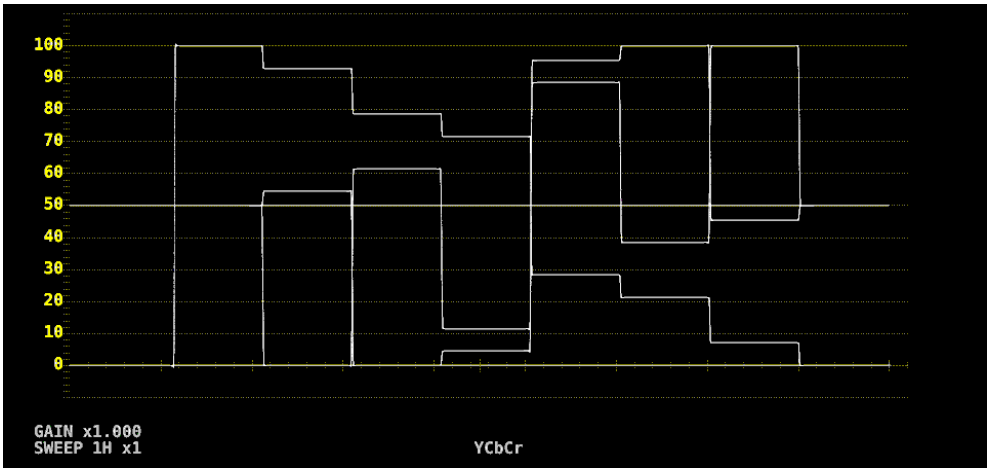
Procedure

WFM → F•1 INTEN/SCALE/DISPLAY → F•4 WFM DISPLAY → F•1 WFM MODE: OVERLAY, PARADE

Settings

OVERLAY:	YCbCr signals or RGB signals are displayed on top of each other.
PARADE:	YCbCr signals or RGB signals are displayed side by side.

WFM MODE = OVERLAY



WFM MODE = PARADE

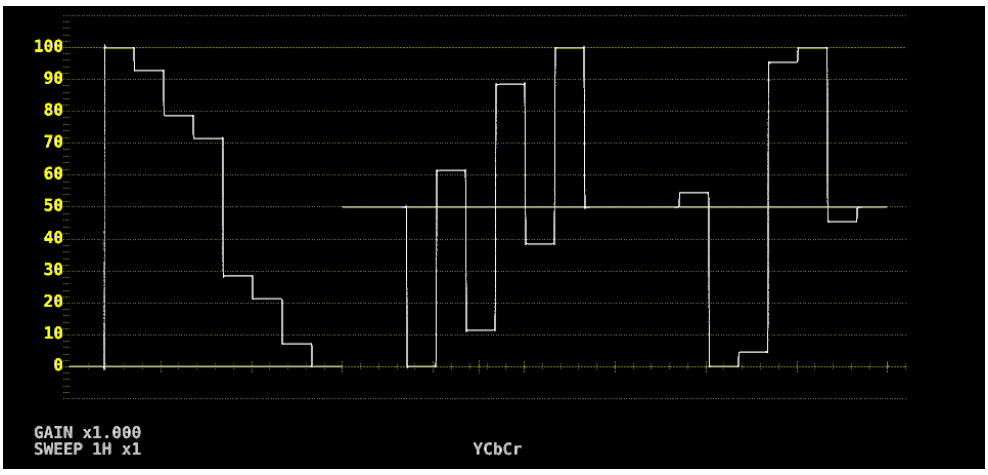


Figure 9-8 Selecting the display mode

9.3.8 Turning the Channels On and Off

To turn individual channels on and off, follow the procedure below.
You cannot turn off all the channels.
This menu item is not displayed when COLOR MATRIX is set to COMPOSITE or when YGBR or YRGB is set to ON.

[See also] COLOR MATRIX → section 9.8.1, “Selecting the Color Matrix.”
YGBR, YRGB → section 9.8.2, “Turning the Luminance Signal On and Off.”

Procedure

WFM → F•1 INTEN/SCALE/DISPLAY → F•4 WFM DISPLAY
→ F•2 CH1 Y, CH1 G, CH1 R: ON, OFF
→ F•3 CH2 Cb, CH2 B, CH2 G: ON, OFF
→ F•4 CH3 Cr, CH3 R, CH3 B: ON, OFF

9.3.9 4Y Parade Display

To extract the Y signals from channels A to D and display them side by side, follow the procedure below.

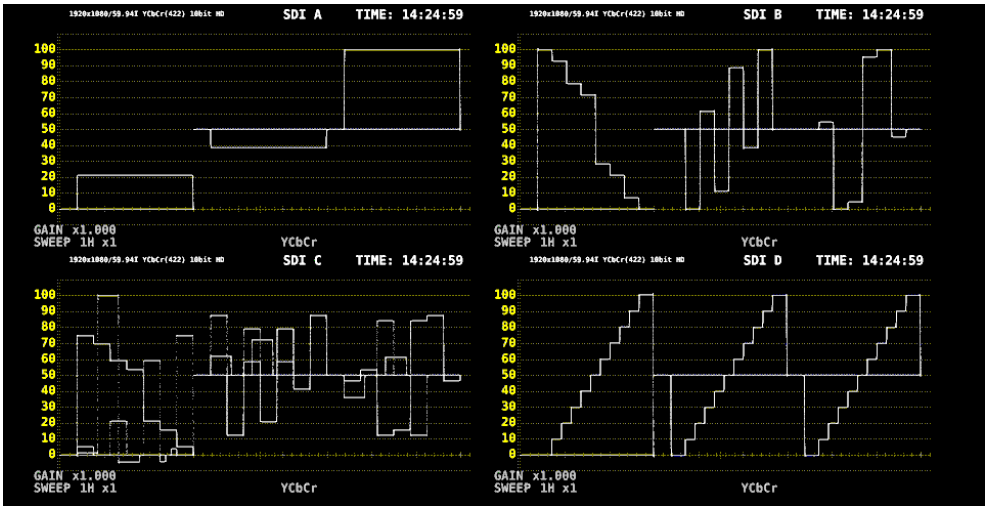
The conditions for displaying the 4Y parade display are listed below.
• Simul mode
• F•7 COLOR SYSTEM → F•1 COLOR MATRIX on the WFM menu is set to YCbCr or COMPOSITE.
• F•6 OPERATE CH MODE on the INPUT menu is set to COM.
• The layout display mode is set to NORMAL.
• Enhanced Layout is off.

Also, note the following points.
• Only the channels that have been set to ON on the INPUT menu are displayed.
• Option in layout will be hidden.
• Style in layout will be invalid.
• The scale jump function cannot be used.

Procedure

WFM → F•1 INTEN/SCALE/DISPLAY → F•4 WFM DISPLAY → F•5 4Y PARADE: ON, OFF

4Y PARADE = OFF



4Y PARADE = ON

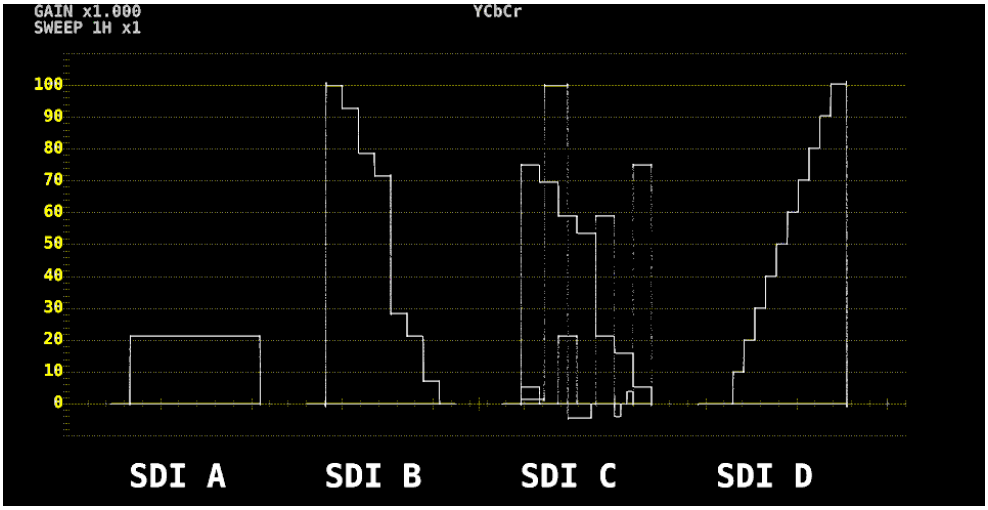


Figure 9-9 4Y parade display

9.3.10 Configuring the 3G-B-DS Display

When measuring 3G-B-DS, to select the display mode, follow the procedure below.

Procedure

WFM → F•1 INTEN/SCALE/DISPLAY → F•4 WFM DISPLAY → F•5 3G-B-DS DISPLAY: STREAM1, STREAM2, ALIGN

Settings

STREAM1:	Stream 1 is displayed.
STREAM2:	Stream 2 is displayed.
ALIGN:	Streams 1 and 2 are displayed side by side.

3G-B-DS DISPLAY = ALIGN

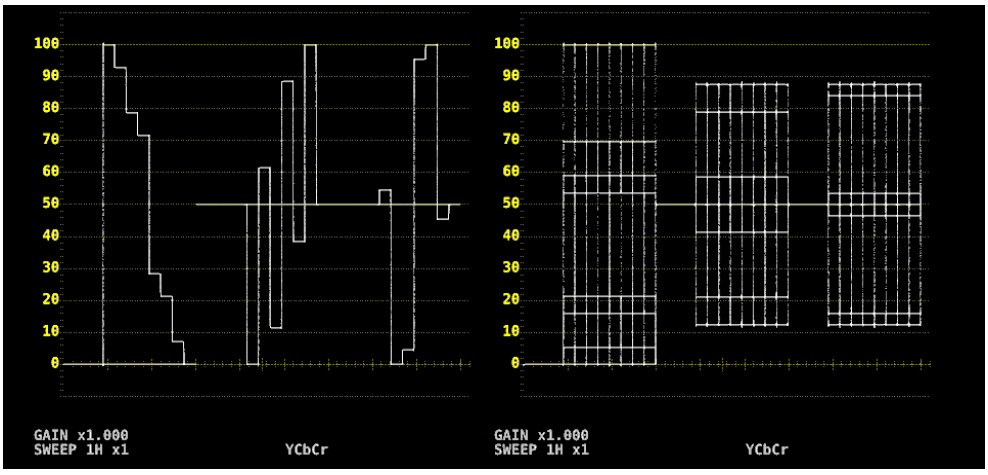


Figure 9-10 Configuring the 3G-B-DS Display

9.4 Configuring the Gain and Filter Settings

To configure the gain and filter settings, press F•2 GAIN/FILTER on the WFM menu.

WFM → F•2 GAIN/FILTER →

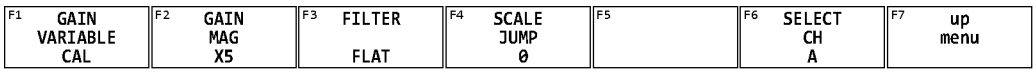


Figure 9-11 GAIN/FILTER menu

9.4.1 Selecting the Fixed Gain

To select the fixed video signal waveform gain, follow the procedure below.

Procedure

WFM → F•2 GAIN/FILTER → F•2 GAIN MAG: X1, X5

9.4.2 Setting the Variable Gain

To set the variable video signal waveform gain, follow the procedure below.

Procedure

WFM → F•2 GAIN/FILTER → F•1 GAIN VARIABLE: CAL, VARIABLE

Settings

CAL:	The waveform gain is fixed.
VARIABLE:	You can adjust the waveform gain by turning the function dial (F•D). Press the function dial (F•D) to return the setting to its default value (1.000 or 5.000). The adjusted gain value (the combination of F•1 GAIN VARIABLE and F•2 GAIN MAG) appears in the lower left of the screen. 0.200 - 1.000 - 2.000 (for X1) 1.000 - 5.000 - 10.000 (for X5)

9.4.3 Selecting the Filter

To select the filter to apply to video signal waveforms, follow the procedure below.
The filters that you can select vary depending on the COLOR MATRIX setting.
[See also] COLOR MATRIX → section 9.8.1, “Selecting the Color Matrix.”

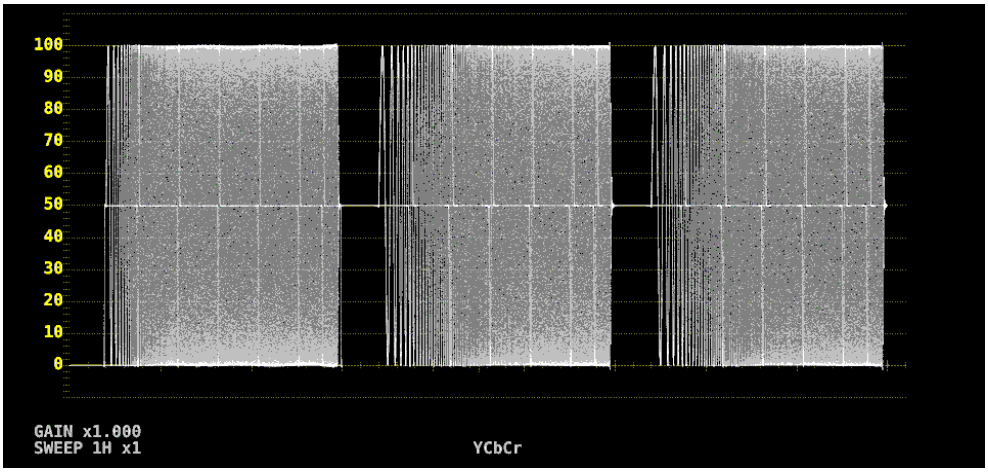
Procedure (When COLOR MATRIX is set to YCbCr, GBR, or RGB)

WFM → F•2 GAIN/FILTER → F•3 FILTER: FLAT, LOWPASS

Settings

FLAT:	A filter with a flat frequency response over the entire bandwidth of the input signal is applied.
LOWPASS:	A low-pass filter with the following characteristics is applied. At 40 MHz, 20 dB attenuation or more (when the input signal is 1080/60P, 59.94P, or 50P) At 20 MHz, 20 dB attenuation or more (when the input signal is 3G or HD excluding 1080/60P, 59.94P, or 50P) At 3.8 MHz, 20 dB attenuation or more (when the input signal is SD)

FILTER = FLAT



FILTER = LOWPASS

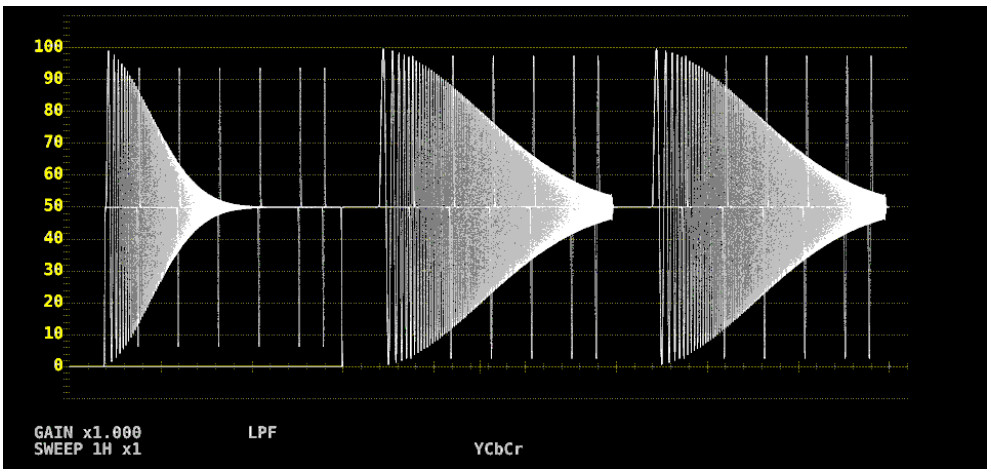


Figure 9-12 Selecting the filter (component)

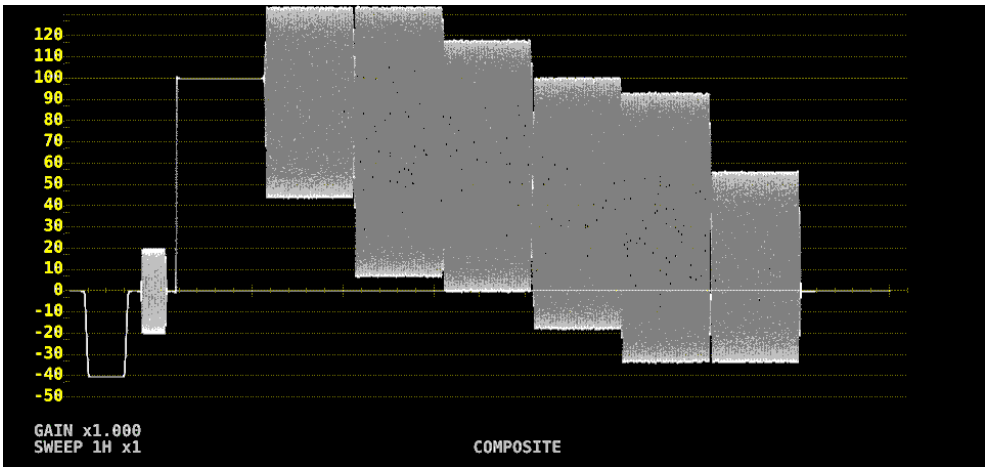
Procedure (When COLOR MATRIX is set to COMPOSITE)

WFM → F•2 GAIN/FILTER → F•3 FILTER: FLAT, LUM, FLAT+LUM, LUM+CRMA

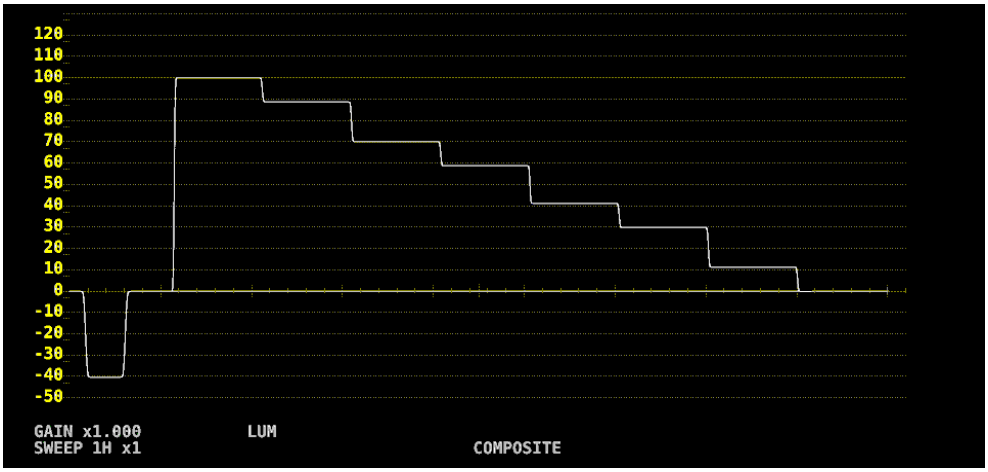
Settings

FLAT:	Only the pseudo-composite signal is displayed.
LUM:	Only the luminance signal is displayed.
FLAT+LUM:	The pseudo-composite and luminance signals are displayed side by side. A filter with an attenuation of 20 dB or more at 40 MHz is applied to the luminance signal.
LUM+CRMA:	The luminance and chrominance signals are displayed side by side. A filter with an attenuation of 20 dB or more at 40 MHz is applied to the luminance signal.

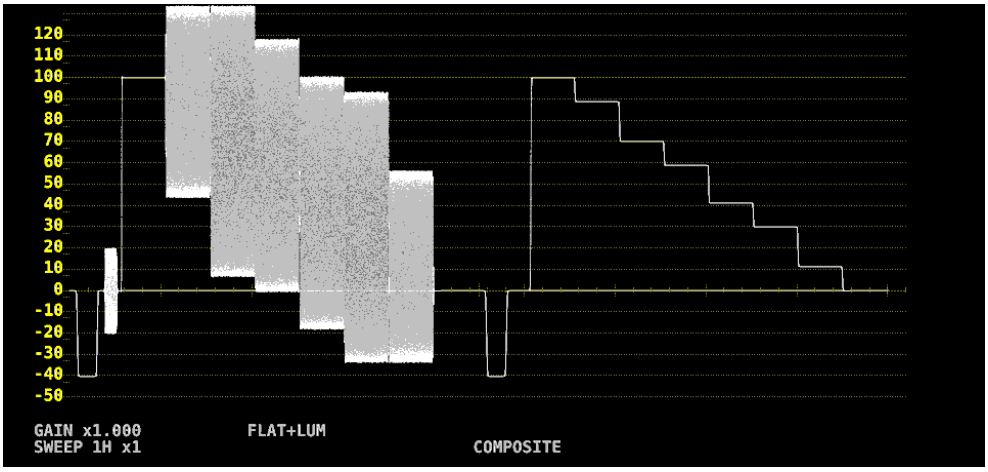
FILTER = FLAT



FILTER = LUM



FILTER = FLAT+LUM



FILTER = LUM+CRMA

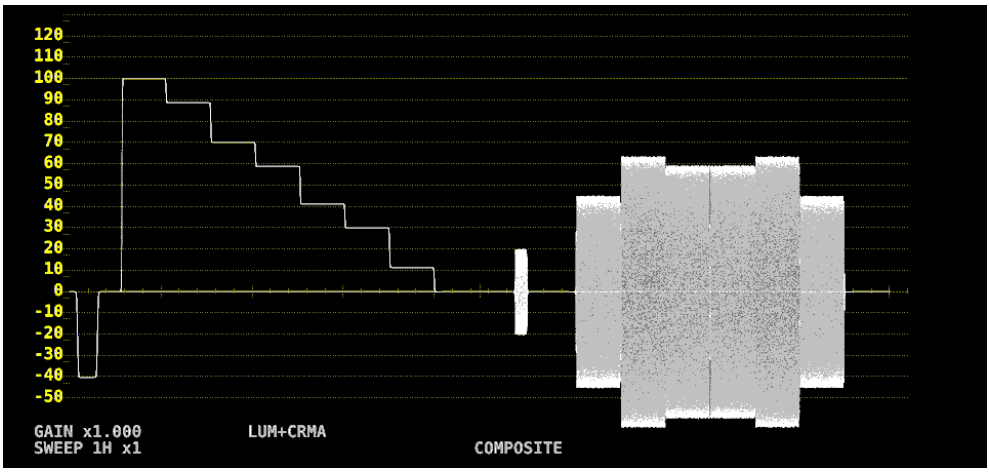


Figure 9-13 Selecting the filter (composite)

9.4.4 Setting the Scale Jump

If F•2 GAIN MAG is set to X5, the waveform is expanded five times in the Y-axis direction. To select the area you want to see expanded, follow the procedure below. You can view the area that is currently displayed with respect to the entire waveform on the scale shown on the right side of the screen.

This menu appears when F•1 GAIN VARIABLE is set to CAL. When set to VARIABLE, the value is fixed to 0, and the scale on the right side of the screen does not appear.

Procedure

WFM → F•2 GAIN/FILTER → F•4 SCALE JUMP: 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, CURSOR

● 0 to 90

The LV 7390 has 10 types of screens in the Y-axis direction, and 0 to 90 is used to switch between these screens.
For example, if the scale unit is % and YCbCr is displayed, selecting 0 displays the 0 to 20% range, selecting 10 displays the 10 to 30% range, and selecting 90 displays the 90 to 110% range.
When the scale unit is V, 80 and 90 cannot be selected.

● CURSOR

The scale jump function operates based on the Y-axis cursor, and the area near the currently selected cursor (▼ mark) is expanded.

An example operation is indicated below. The following procedure can be executed quickly by using MAG (GAIN) key.

【Preparation】

1. On the CURSOR menu, set F•1 CURSOR to ON and F•2 XY SEL to Y.
2. On the GAIN/FILTER menu, set F•2 GAIN MAG to X5.
3. Set F•4 SCALE JUMP to CURSOR.

【Operation】

4. Set F•2 GAIN MAG to X1.
5. Move the Y-axis cursor to the area you want to display expanded. (You can move the cursor on the GAIN/FILTER menu. You can switch between REF, DELTA, and TRACK by pressing the function dial (F•D).)
6. Set F•2 GAIN MAG to X5 to expand the area near the Y-axis cursor.

SCALE JUMP = CURSOR

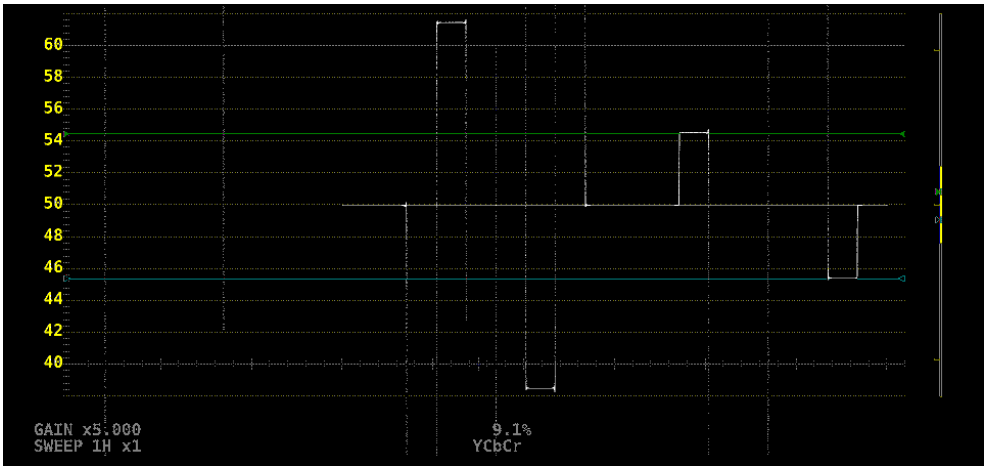


Figure 9-14　Setting the Scale Jump

9.5 Configuring the Sweep Settings

To configure the sweep settings, press F•3 SWEEP on the WFM menu.

WFM → F•3 SWEEP →

F1	F2	F3	F4	F5	F6	F7
SWEEP V	V SWEEP 1V	SWEEP MAG X1	FIELD FIELD1	BLANKING REMOVE	SELECT CH A	up menu

Figure 9-15 SWEEP menu

9.5.1 Selecting the Sweep Method

To select the video signal waveform sweep method, follow the procedure below.

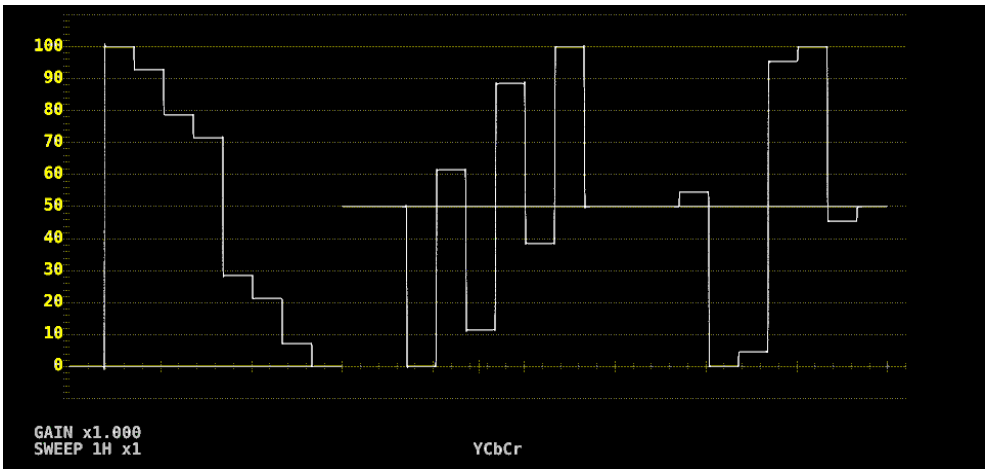
Procedure

WFM → F•3 SWEEP → F•1 SWEEP: H, V

Settings

H:	Lines are displayed.
V:	Fields or frames are displayed. Because the sampled data is downsampled, aliasing distortion occurs.

SWEEP = H



SWEEP = V

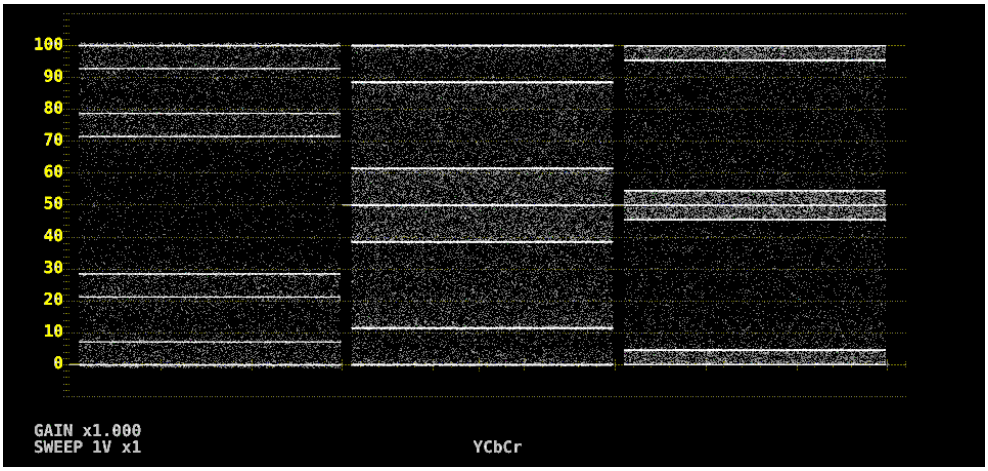


Figure 9-16 Selecting the sweep method

9.5.2 Selecting the Line Display Format

When F•1 SWEEP is set to H, to select the sweep time, follow the procedure below.

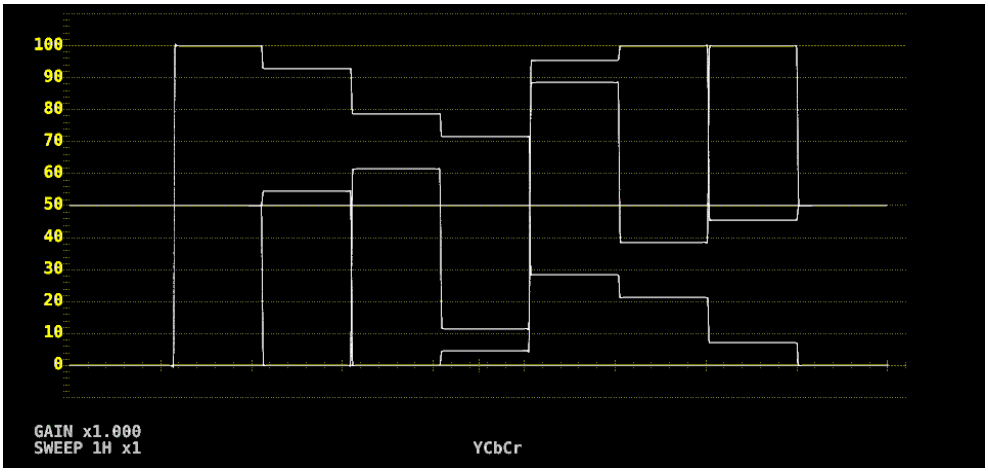
Procedure

WFM → F•3 SWEEP → F•2 H SWEEP: 1H, 2H

Settings

1H:	One line is displayed.
2H:	Two lines are displayed. This cannot be selected in the following situations. • When using 4K • When F•1 INTEN/SCALE/DISPLAY → F•4 WFM DISPLAY → F•1 WFM MODE is set to PARADE •When F•7 COLOR SYSTEM → F•1 COLOR MATRIX is set to COMPOSITE

H SWEEP = 1H



H SWEEP = 2H

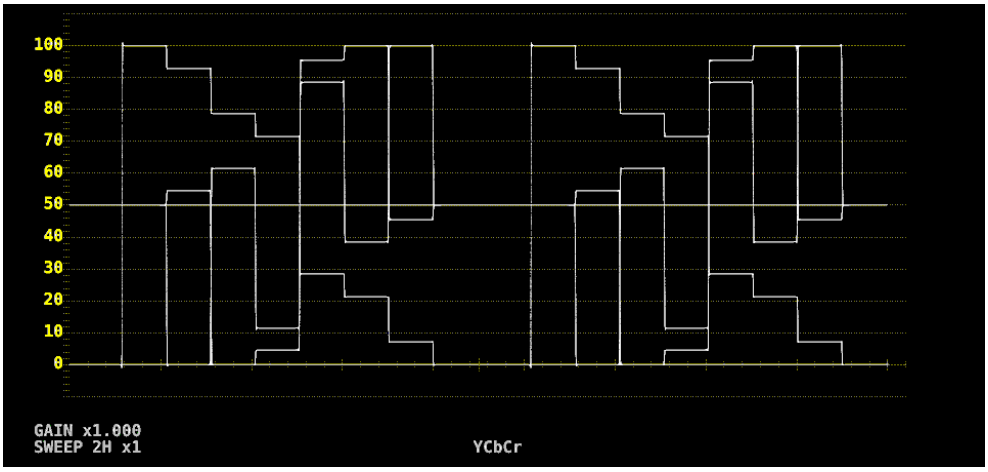


Figure 9-17 Selecting the line display format

9.5.3 Selecting the Field Display Format

When F•1 SWEEP is set to V, to select the sweep time, follow the procedure below.

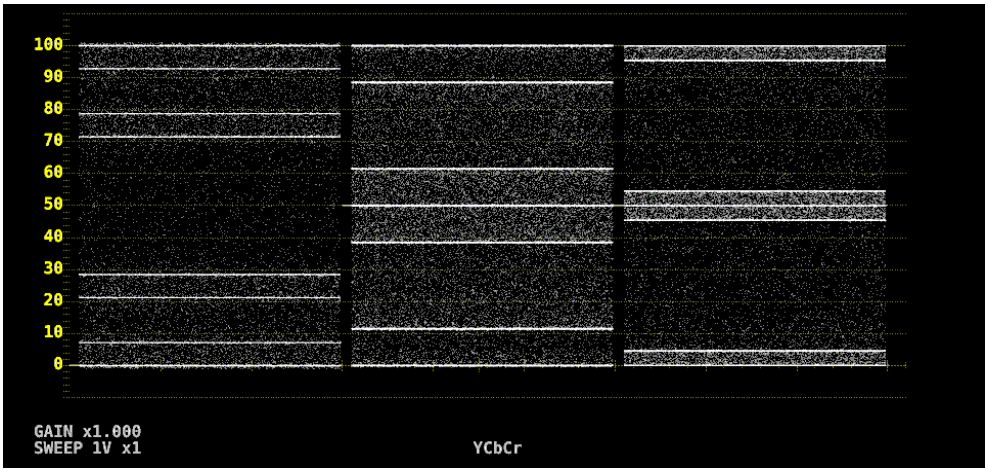
Procedure

WFM → F•3 SWEEP → F•2 V SWEEP: 1V, 2V

Settings

1V:	One field is displayed.
2V:	One frame is displayed. This option cannot be selected when the input signal is progressive.

V SWEEP = 1V



V SWEEP = 2V

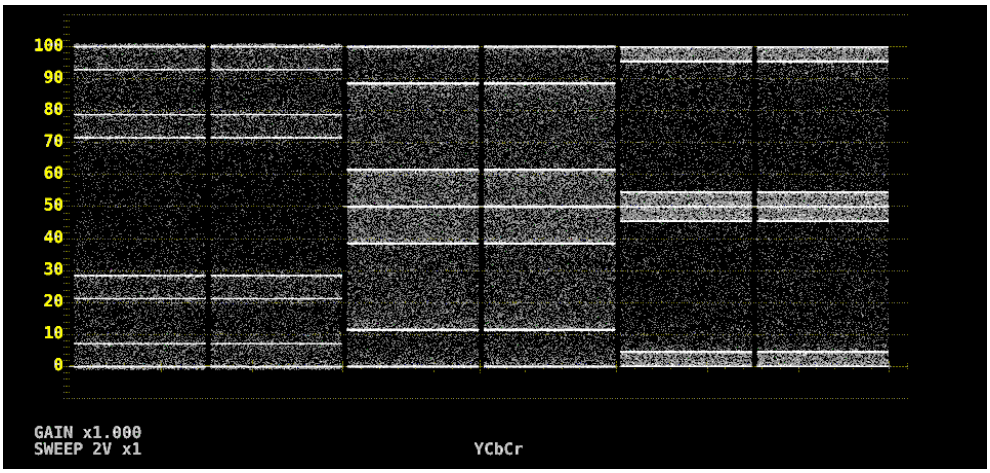


Figure 9-18 Selecting the field display format

Furthermore, when the input signal is interlace or segmented frame and F•2 V SWEEP is set to 1V, to select which field is displayed, follow the procedure below.

Procedure

WFM → F•3 SWEEP → F•4 FIELD: FIELD1, FIELD2

9.5.4 Selecting the Horizontal Magnification

To select the horizontal magnification, follow the procedure below. The magnifications that you can select vary as shown below depending on settings such as COLOR MATRIX.

[See also] COLOR MATRIX → section 9.8.1, “Selecting the Color Matrix.”

Table 9-2 Horizontal magnifications

F•1 SWEEP	COLOR MATRIX	F•2 H SWEEP	X1	X10	X20	X40	ACTIVE	BLANK
H	YCbCr, GBR, RGB	1H	Yes	Yes	Yes	No	Yes	Yes
		2H	Yes	Yes	Yes	No	No	Yes
	COMPOSITE	-	Yes	Yes	Yes	No	Yes	No
V	-	-	Yes	No	Yes	Yes	No	No

(Yes: Settable. No: Not settable.)

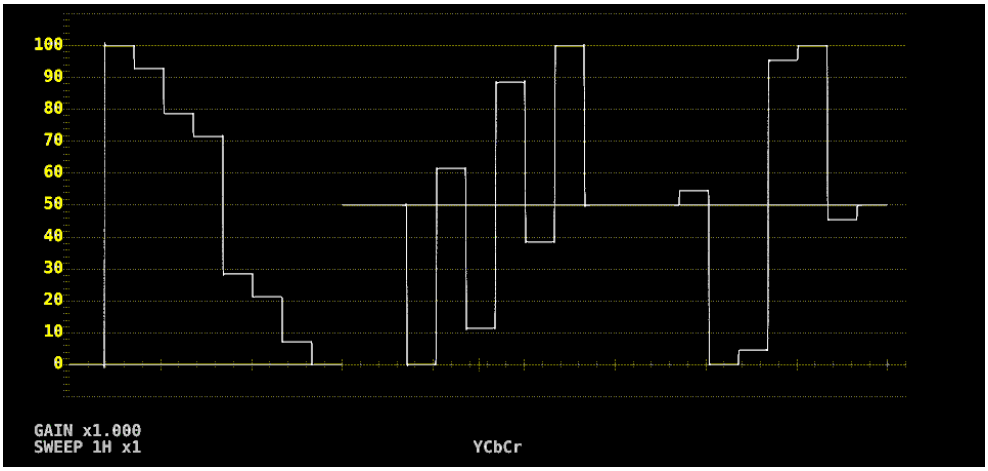
Procedure

WFM → F•3 SWEEP → F•3 SWEEP MAG: X1, X10, X20, X40, ACTIVE, BLANK

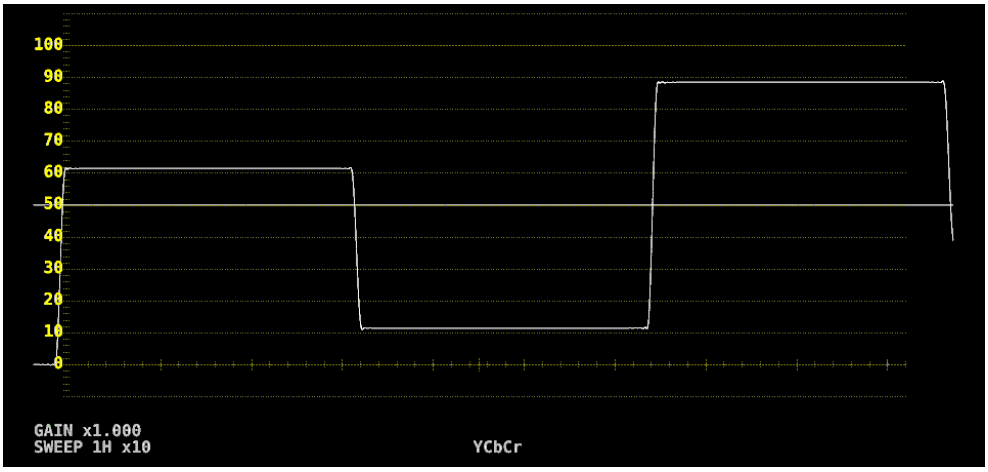
Settings

X1:	The video signal waveforms are displayed so that they fit on the screen.
X10:	The video signal waveforms are magnified from the center of the display to 10 times the size of X1.
X20:	The video signal waveforms are magnified from the center of the display to 20 times the size of X1.
X40:	The video signal waveforms are magnified from the center of the display to 40 times the size of X1.
ACTIVE:	Everything but the video signal waveform blanking interval is magnified.
BLANK:	The video signal waveform blanking interval is magnified. The vertical blanking interval is also displayed on the vector display.

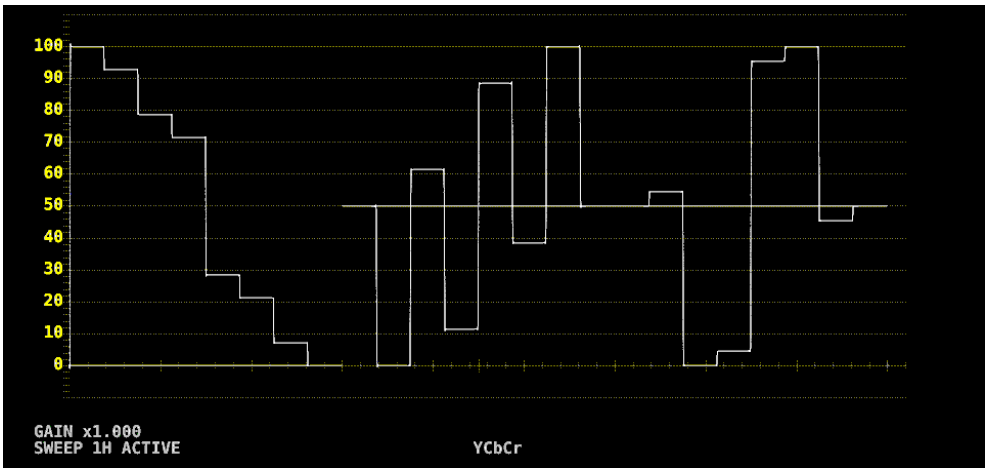
SWEEP MAG = X1



SWEEP MAG = X10



SWEEP MAG = ACTIVE



SWEEP MAG = BLANK

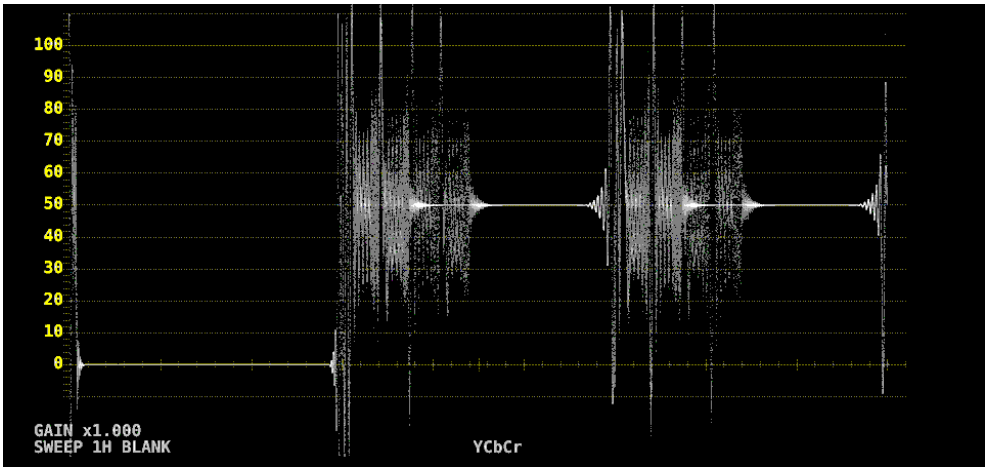


Figure 9-19 Horizontal magnifications

9.5.5 Displaying the Blanking Interval

To set how the waveforms in the blanking interval are displayed, follow the procedure below. If a setting other than REMOVE is selected, the vertical blanking interval is also displayed on the vector display.

[See also] COLOR MATRIX → section 9.8.1, “Selecting the Color Matrix.”

Procedure

WFM → F•3 SWEEP → F•5 BLANKING: REMOVE, V VIEW, H VIEW, ALL VIEW

Settings

REMOVE:	Only the active interval is displayed.
V VIEW:	The active interval and the vertical blanking interval are displayed.
H VIEW:	The active interval and the horizontal blanking interval are displayed. This option cannot be selected when COLOR MATRIX is set to COMPOSITE.
ALL VIEW:	The entire input signal is displayed. This option cannot be selected when COLOR MATRIX is set to COMPOSITE.

BLANKING = ALL VIEW

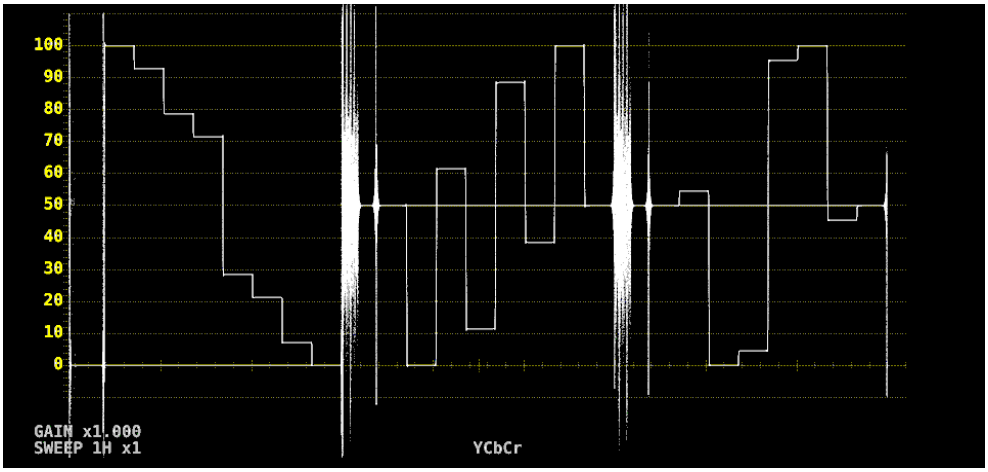


Figure 9-20 Displaying blanking intervals

9.6 Configuring the Line Selection Settings

To configure the line selection settings, press F•4 LINE SEL on the WFM menu.

WFM → F•4 LINE SEL →

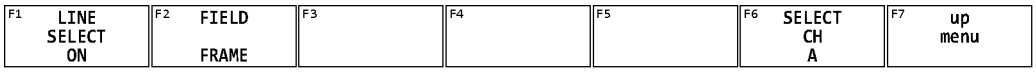


Figure 9-21 LINE SEL menu

9.6.1 Turning Line Selection On and Off

To display the vector of the selected line, follow the procedure below. You can use the function dial (F•D) to select a line. The number of the selected line appears in the lower left of the screen.
Changing this setting will also change the vector-display and picture-display line selection settings.
This menu item does not appear when SWEEP is set to V.
[See also] SWEEP → Section 9.5.1, “Selecting the Sweep Method”

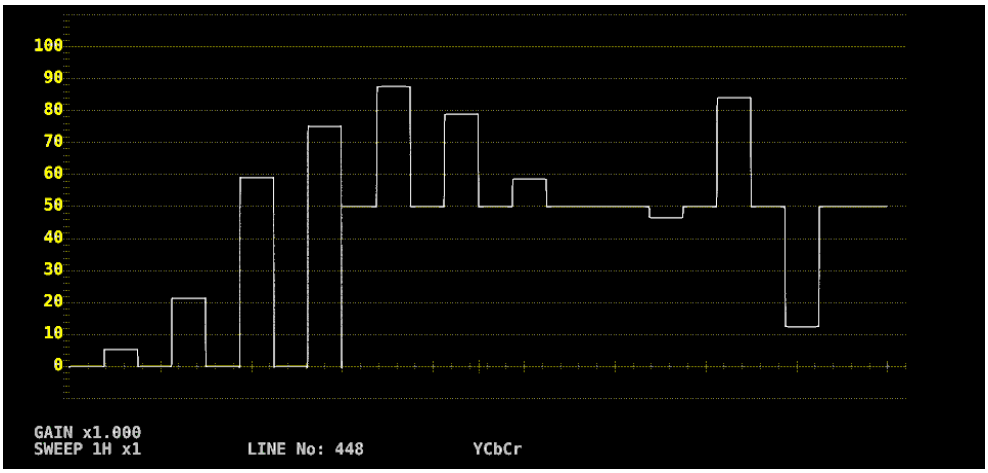
Procedure

WFM → F•4 LINE SEL → F•1 LINE SELECT: ON, OFF, CINELITE

Settings

ON:	Line select is turned on.
OFF:	Line select is turned off.
CINELITE:	The waveform of the line set on the picture display’s CINELITE is displayed. This can be selected when CINELITE ADVANCE is set to ON in multi-screen display.

LINE SELECT = ON



LINE SELECT = OFF

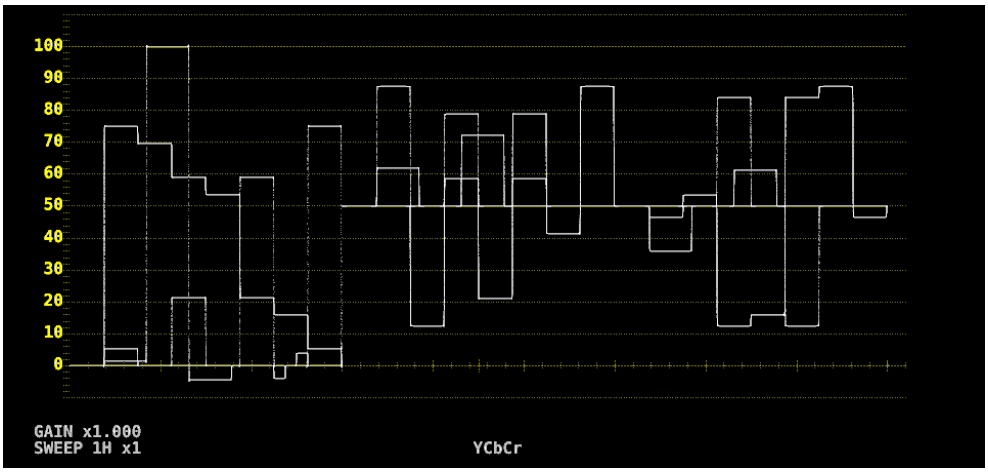


Figure 9-22 Turning line selection on and off

9.6.2 Setting the Line Selection Range

When F•1 LINE SELECT is set to ON and the input signal format is interlaced or segmented frame, to set the line selection range, follow the procedure below.
Changing this setting will also change the selected line on the vector, picture, and status (data dump) displays.

Procedure

WFM → F•4 LINE SEL → F•2 FIELD: FIELD1, FIELD2, FRAME

Settings

FIELD1:	A line from field 1 can be selected. (Example: 1 to 563)
FIELD2:	A line from field 2 can be selected. (Example: 564 to 1125)
FRAME:	All lines can be selected. (Example: 1 to 1125)

9.7 Configuring the Cursor Settings

To configure the cursor settings, press F•5 CURSOR on the WFM menu.

WFM → F•5 CURSOR →

F1 CURSOR OFF	F2 XY SEL Y	F3 Y UNIT %	F4 FD VAR REF	F5 CURSOR VALUE OFF	F6 SELECT CH A	F7 up menu

Figure 9-23 CURSOR menu

9.7.1 Turning Cursors On and Off

To turn cursors on and off, follow the procedure shown below.
The REF cursor is displayed in blue, and the DELTA cursor is displayed in green. The value of DELTA - REF appears as a measured value at the bottom of the screen. (When F•3 Y UNIT is set to DEC or HEX, absolute values are displayed.)

Procedure

WFM → F•5 CURSOR → F•1 CURSOR: ON, OFF

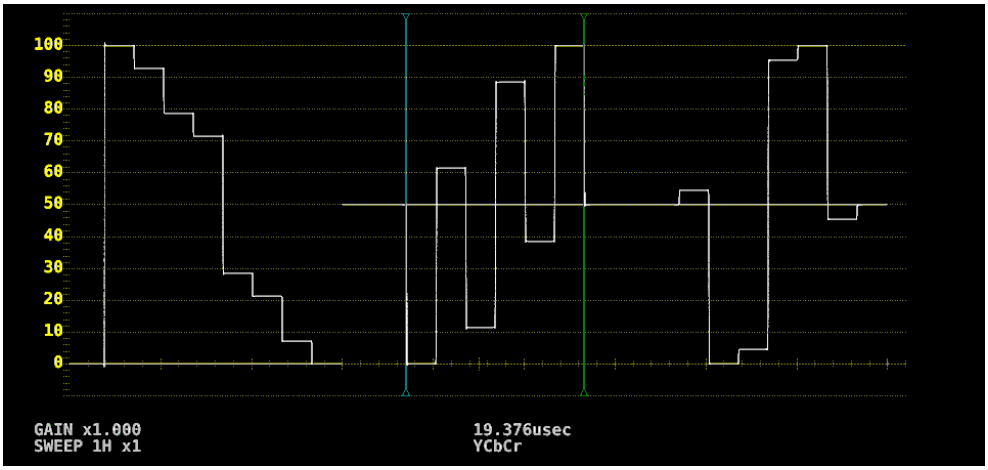
9.7.2 Selecting the Cursor

To select the X (time measurement) or Y (amplitude measurement) cursor, follow the procedure below.

Procedure

WFM → F•5 CURSOR → F•2 XY SEL: X, Y

XY SEL = X



XY SEL = Y

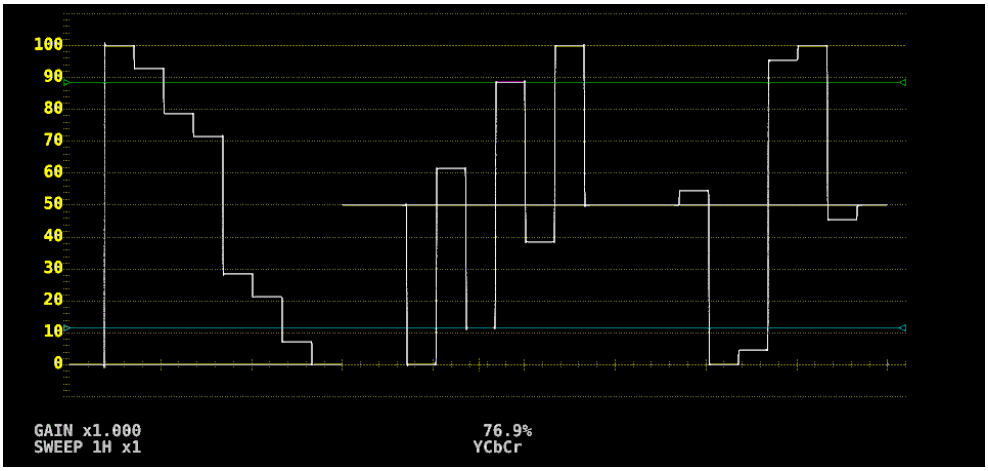


Figure 9-24 Selecting the cursor

9.7.3 Moving the Cursors

To move a cursor, follow the procedure shown below to select a cursor. Then, move the cursor by turning the function dial (F•D). Triangles appear on both ends of the selected cursor.

You can also select a cursor by pressing the function dial (F•D). Each time you press the function dial (F•D), the selected cursor switches from REF, to DELTA, to TRACK, and then back to REF.

Procedure

WFM → F•5 CURSOR → F•4 FD VAR: REF, DELTA, TRACK

9.7.4 Selecting the Y-Axis Measurement Unit

When F•2 XY SEL is set to Y, to select the Y-axis cursor measurement unit, follow the procedure below.

[See also] COLOR MATRIX → section 9.8.1, “Selecting the Color Matrix.”

Procedure

WFM → F•5 CURSOR → F•3 Y UNIT: mV, %, R%, DEC, HEX, HDR

Settings

mV:	The measurement unit is volts.
%:	The measurement unit is percentage. When the composite display format is NTSC, 714 mV is 100 %. When the composite display format is PAL, 700 mV is 100 %.
R%:	The amplitude will be measured as a percentage of the amplitude at the time when you pressed F•5 REFSET.
DEC:	Values are displayed in decimal with 0 to 100 % expressed as 64 to 940. This option cannot be selected when COLOR MATRIX is set to COMPOSITE. CBCR signal measurement is not supported.
HEX:	Values are displayed in hexadecimal with 0 to 100 % expressed as 040 to 3AC. This option cannot be selected when COLOR MATRIX is set to COMPOSITE. CBCR signal measurement is not supported.
HDR:	Values are displayed as a percentage or cd/m2. This option can be selected when HDR signals are being measured. For details, see section 16.1.2, “Cursor Display.”

9.7.5 Selecting the X-Axis Measurement Unit

When F•2 XY SEL is set to X, to select the X-axis cursor measurement unit, follow the procedure below.

Procedure

WFM → F•5 CURSOR → F•3 X UNIT: sec, Hz

Settings

sec:	The measurement unit is seconds.
Hz:	The measurement unit is frequency, with the length of one period set to the distance between the two cursors.

9.7.6 Turning the Cursor Value Display On and Off

To display cursor values, follow the procedure shown below (except when F•3 Y UNIT is set to R%).
The display unit is the unit specified with F•3 Y UNIT or F•3 X UNIT.

Procedure

WFM → F•5 CURSOR → F•5 CURSOR VALUE: ON, OFF

CURSOR VALUE = ON

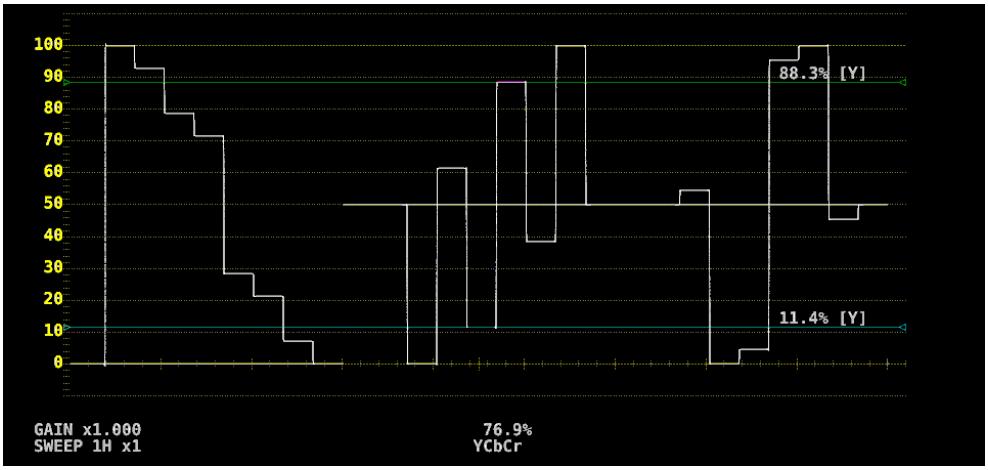


Figure 9-25 Turning the cursor value display on and off

9.8 Configuring the Color System Settings

To configure the color system settings, press F•7 COLOR SYSTEM on the WFM menu.

WFM → F•7 COLOR SYSTEM →

F1	F2	F3	F4	F5	F6	F7
COLOR MATRIX GBR	YGBR OFF		COMPOSITE FORMAT AUTO		SELECT CH A	up menu

Figure 9-26 COLOR SYSTEM menu

9.8.1 Selecting the Color Matrix

The LV 7390 performs a matrix conversion on a YC_BC_R signal to convert it into a GBR, RGB or pseudo-composite signal. To select the waveform display format, follow the procedure below. The selected display format is indicated at the bottom of the display.

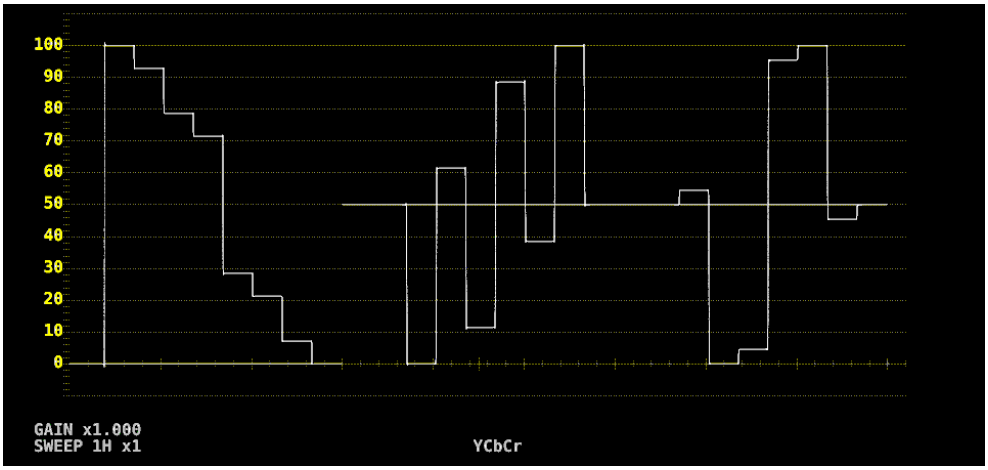
Procedure

WFM → F•7 COLOR SYSTEM → F•1 COLOR MATRIX: YCbCr, GBR, RGB, COMPOSITE

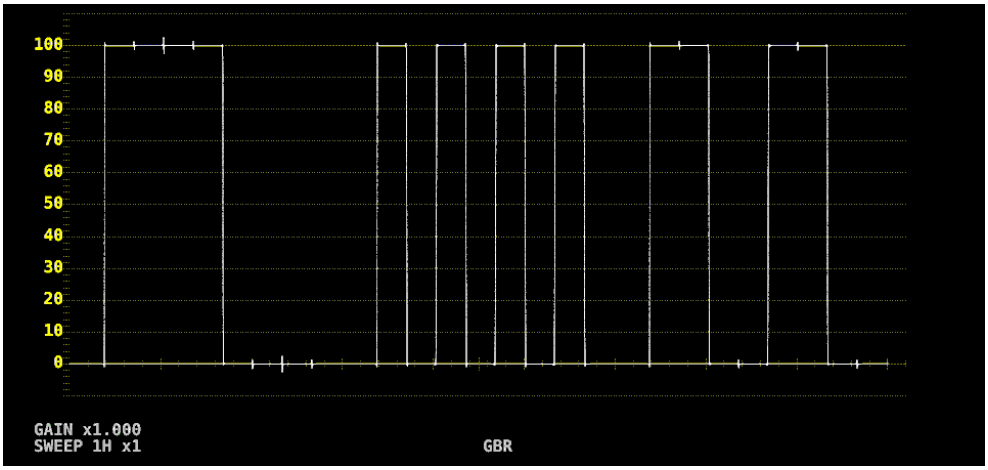
Settings

YCbCr:	The YC_BC_R signal is displayed without changes. This option cannot be selected when the input signal is RGB (4:4:4).
GBR:	The YC_BC_R signal is converted into a GBR signal and displayed.
RGB:	The YC_BC_R signal is converted into a RGB signal and displayed.
COMPOSITE:	The YC_BC_R signal is converted into a pseudo NTSC or PAL composite signal and displayed. • Color burst frequencies do not match those of PAL and NTSC. • Color burst and sync signal widths and locations are different from those of PAL and NTSC. • The signal bandwidth is that of the original signal.

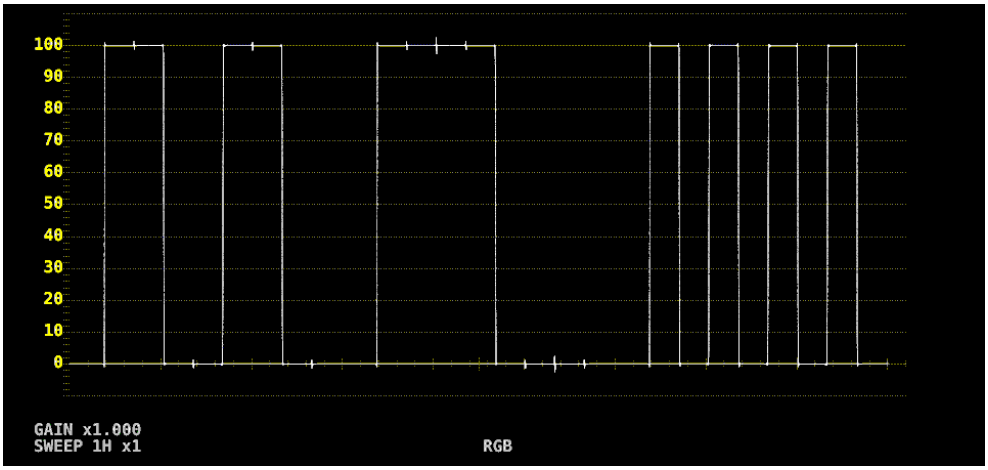
COLOR MATRIX = YCbCr



COLOR MATRIX = GBR



COLOR MATRIX = RGB



COLOR MATRIX = COMPOSITE

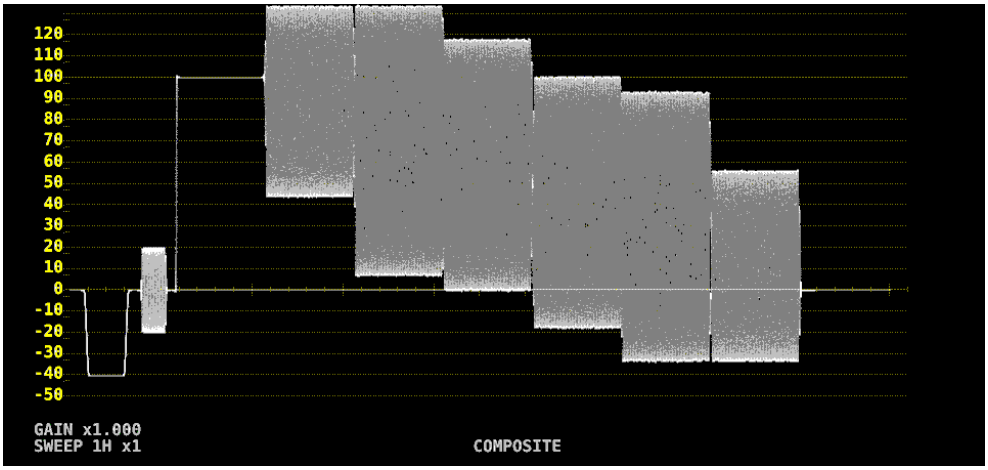


Figure 9-27 Selecting the color matrix

9.8.2 Turning the Luminance Signal On and Off

When F•1 COLOR MATRIX is set to GBR or RGB, to turn the luminance signal (Y) on and off, follow the procedure below.

Procedure

WFM → F•7 COLOR SYSTEM
→ F•2 YGBR: ON, OFF
→ F•2 YRGB: ON, OFF

YGBR = ON

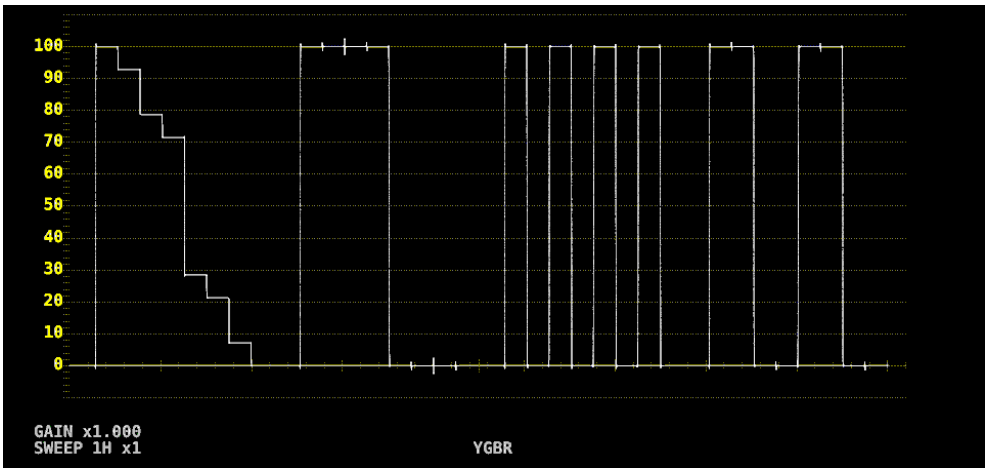


Figure 9-28 Turning the luminance signal on and off

9.8.3 Selecting the Composite Display Format

To select the composite display format, follow the procedure below.

Procedure

WFM → F•7 COLOR SYSTEM → F•4 COMPOSITE FORMAT: AUTO, NTSC, PAL

Settings

AUTO:	When the input signal frame rate is 25 Hz or 50 Hz, the format is PAL. Otherwise, the format is NTSC.
NTSC:	The format is NTSC. The scale is fixed to percentage.
PAL:	The format is PAL. The scale is fixed to V.

9.8.4 Selecting the Setup Level

When F•1 COLOR MATRIX is set to COMPOSITE, to select the setup level, follow the procedure below.
This menu does not appear if the composite display format is PAL.

Procedure

WFM → F•7 COLOR SYSTEM → F•5 SETUP: 0%, 7.5%

SETUP = 7.5%

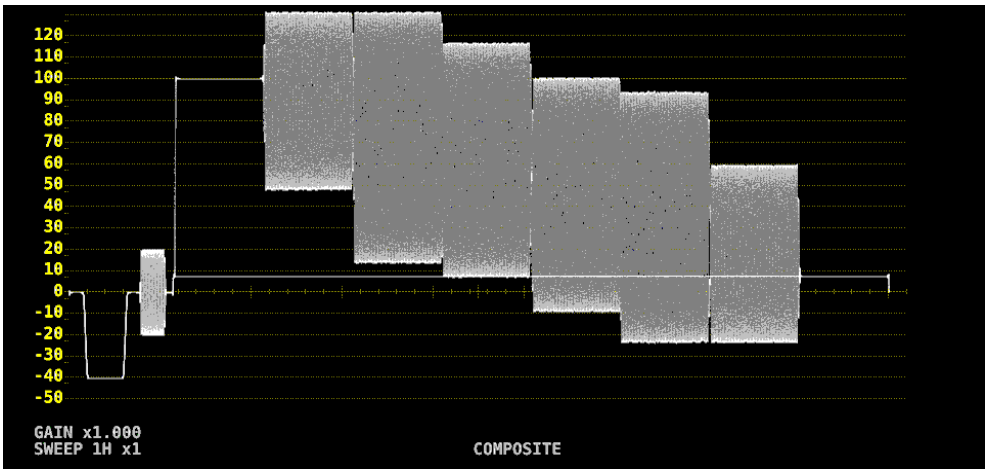


Figure 9-29 Selecting the setup level

10. VECTOR DISPLAY

To display vectors, press VECT.

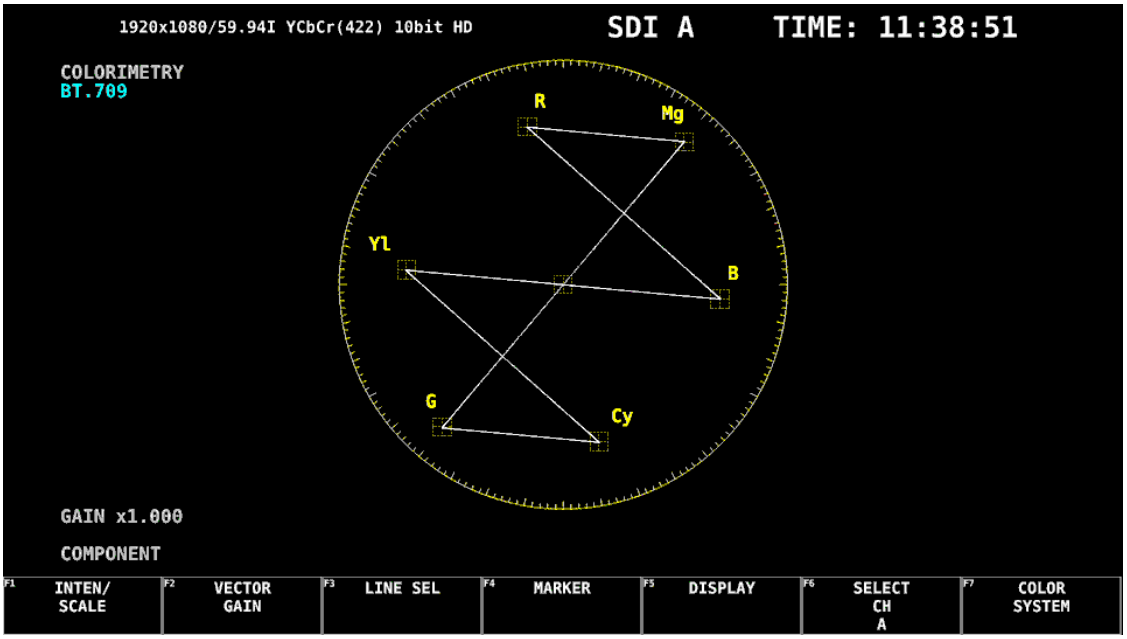


Figure 10-1 Vector display

● Vectors

Component signal vector displays are X-Y displays based on C_B (horizontal) and C_R (vertical). The vector display scale has the following qualities.

Frame: ±5 % of the full scale value of 0.7 V (component display)
±3 % of the full scale value of 0.7 V (pseudo-composite display)
Circle: +20 % with respect to green

● Blanking interval

Normally, blanking interval is not displayed with vectors, but if SWEEP MAG is set to BLANK on the WFM menu or BLANKING is set to REMOVE, it is displayed.

● Colorimetry

The colorimetry selected in the system settings is displayed in cyan in the upper left of the screen.
For 3G (DL) and 3G (QL), the current applied colorimetry is displayed in yellow if the colorimetry information of all links specified by the payload ID are not matched.
When the colorimetry alarm is set to on and a colorimetry different from the one specified is received, the alarm is indicated in red in the upper left of the screen.

[See also] COLORIMETRY ALARM→6.1.2, “Setting the Format Alarm”

10.1 Operation Key Description

On the vector display, you can press the operation keys to change the following settings. The key LEDs light when the underlined setting is selected.
Key assignments can be changed freely on the OPERATION SETUP tab.
[See also] OPERATION SETUP tab → 6.2.5, “Setting the Operation keys”

Table 10-1 Operation Key Actions

	Value
FORM	COMPONENT, COMPOSITE
OVLAY	Disabled
FILTER	Disabled
GAIN	CAL, VARIABLE
MAG (GAIN)	X1, X5, IQ-MAG
SWEEP	Disabled
MAG (SWEEP)	Disabled

10.2 Configuring the Intensity and Scale Settings

To configure the intensity and scale settings, press F•1 INTEN/SCALE on the VECT menu.

VECT → F•1 INTEN/SCALE →

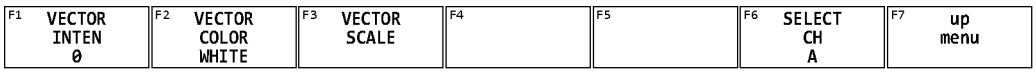


Figure 10-2 INTEN/SCALE menu

10.2.1 Adjusting the Waveform Intensity

To adjust the vector intensity, follow the procedure below.
Press the function dial (F•D) to return the setting to its default value (0).

Procedure

VECT → F•1 INTEN/SCALE → F•1 VECTOR INTEN: -128 - 0 - 127

10.2.2 Selecting the Waveform Color

To select the vector color, follow the procedure below.

Procedure

VECT → F•1 INTEN/SCALE → F•2 VECTOR COLOR: WHITE, YELLOW, CYAN, GREEN, MAGENTA, RED, BLUE

10.2.3 Adjusting the Scale Intensity

To configure the scale, press F•3 VECTOR SCALE on the INTEN/SCALE menu.

VECT → F•1 INTEN/SCALE → F•3 VECTOR SCALE →

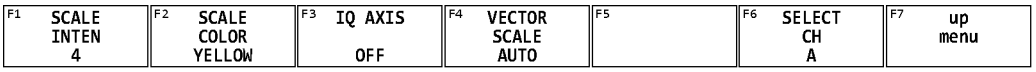


Figure 10-3 VECTOR SCALE menu

To adjust the scale intensity, follow the procedure below.
Press the function dial (F•D) to return the setting to its default value (4).

Procedure

VECT → F•1 INTEN/SCALE → F•1 SCALE INTEN: -8 - 4 - 7

10.2.4 Selecting the Scale Color

To select the scale color, follow the procedure below.

Procedure

VECT → F•1 INTEN/SCALE → F•2 SCALE COLOR: WHITE, YELLOW, CYAN, GREEN, MAGENTA, RED, BLUE

10.2.5 Turning the I and Q Axes On and Off

To turn the I and Q axes on and off, follow the procedure below.
This menu item does not appear when VECTOR SCALE is set to BT.2020.
When the full scale value of 0.7 V is 100 %, the I and Q axes are displayed at the following values.

Table 10-2 Displaying the I and Q axes

	I Axis	Q Axis
G	44.559%	37.056%
B	27.865%	84.085%
R	69.120%	62.417%

Procedure

VECT → F•1 INTEN/SCALE → F•3 IQ AXIS: ON, OFF

IQ AXIS = ON

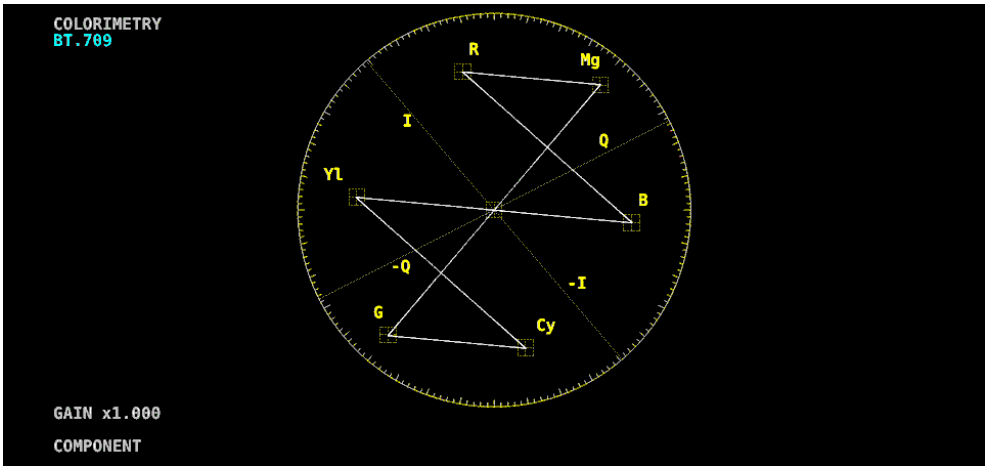


Figure 10-4 Turning the I and Q axes on and off

10.2.6 Selecting the Scale

When COLOR MATRIX is set to COMPONENT, follow the procedure below to select the scale type.

[See also] COLOR MATRIX → section 10.7.1, “Selecting the Color Matrix.”

Procedure

VECT → F•1 INTEN/SCALE → F•3 VECTOR SCALE → F•4 VECTOR SCALE: AUTO, BT.601, BT.709, BT.2020

Settings

AUTO:	A scale for the colorimetry selected in the system settings is displayed.
BT.601:	A scale defined in ITU-R BT.601 is displayed. When the input signal is SD and a 100 % color bar signal is being applied, the peak levels match the ends of the scale.
BT.709:	A scale defined in ITU-R BT.709 is displayed. When the input signal is HD and a 100 % color bar signal is being applied, the peak levels match the ends of the scale.
BT.2020:	A scale defined in ITU-R BT.2020 is displayed. When the input signal is 4K, the division transmission system is 2 sample interleave, and a 100% color bar signal is being applied, the peak levels match the ends of the scale.

10.3 Setting the Gain

To set the gain, press F•2 VECTOR GAIN on the VECT menu.

VECT → F•2 VECTOR GAIN →

F1	F2	F3	F4	F5	F6	F7
GAIN VARIABLE CAL	GAIN MAG X1				SELECT CH A	up menu

Figure 10-5 VECTOR GAIN menu

10.3.1 Selecting the Fixed Gain

To select the fixed vector gain, follow the procedure below.

Procedure

VECT → F•2 VECTOR GAIN → F•2 GAIN MAG: X1, X5, IQ-MAG

Settings

X1:	Vectors are displayed at ×1 magnification.
X5:	Vectors are displayed at ×5 magnification.
IQ-MAG:	Vectors are displayed using the following magnifications. ×3.12 (for signals other than SD during component display; magnification that causes the I signal of the multiformat colorbar to lie on the circumference of the scale) ×2.85 (for signals other than SD during pseudo-composite display; magnification that causes the I signal of the multiformat colorbar, which has gone through pseudo-composite conversion, to lie on the circumference of the scale) ×2.92 (for SD signals during component display; magnification that causes the amplitude to lie on the circumference of the scale when the burst signal of the composite vector display is converted into component signals) ×2.63 (for SD signals during pseudo-composite display; magnification that causes the -I and Q signals of the SMPTE colorbar, which has gone through pseudo-composite conversion, to lie on the circumference of the scale)

10.3.2 Setting the Variable Gain

To set the variable vector gain, follow the procedure below.

Procedure

VECT → F•2 VECTOR GAIN → F•1 GAIN VARIABLE: CAL, VARIABLE

Settings

CAL:	The waveform gain is fixed.
VARIABLE:	You can adjust the waveform gain by turning the function dial (F•D). Press the function dial (F•D) to return the setting to its default value. The adjusted gain value (the combination of F•1 GAIN VARIABLE and F•2 GAIN MAG) appears in the lower left of the screen. 0.200 - 1.000 - 2.000 (for X1) 1.000 - 5.000 - 10.000 (for X5) 0.620 - 3.120 - 6.240 (not IQ-MAG or SD, for component display) 0.570 - 2.850 - 5.700 (not IQ-MAG or SD, for pseudo-composite display) 0.580 - 2.920 - 5.840 (IQ-MAG or SD, for component display) 0.520 - 2.630 - 5.260 (IQ-MAG or SD, for pseudo-composite display)

10.4 Configuring the Line Selection Settings

To configure line selection settings, press F•3 LINE SEL on the VECT menu.

VECT → F•3 LINE SEL →

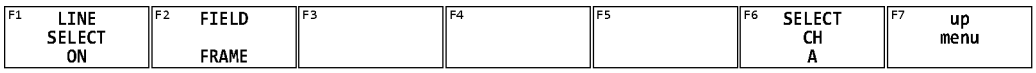


Figure 10-6 LINE SEL menu

10.4.1 Turning Line Selection On and Off

To display the vector of the selected line, follow the procedure below. You can use the function dial (F•D) to select a line. The number of the selected line appears in the lower left of the screen.
Changing this setting will also change the video-signal-waveform-display and picture-display line selection settings.
This menu item does not appear when SWEEP on the WFM menu is set to V.
[See also] SWEEP → Section 9.5.1, “Selecting the Sweep Method”

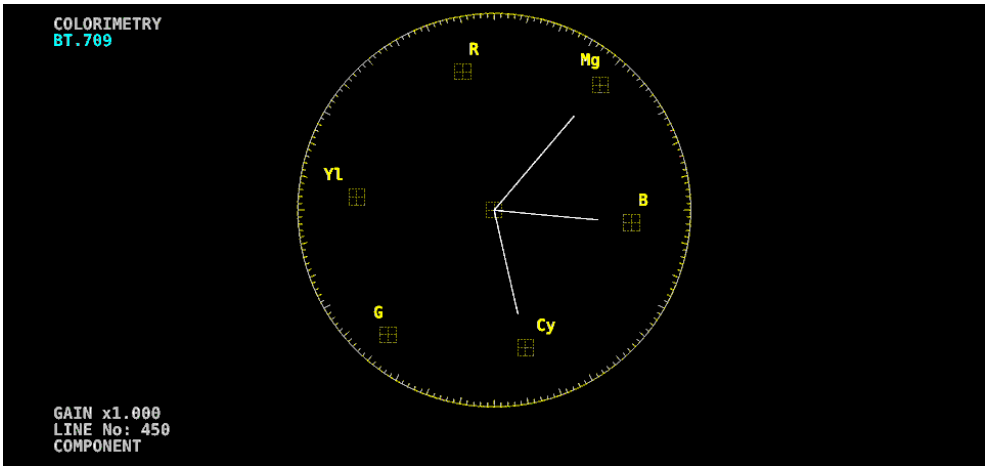
Procedure

VECT → F•3 LINE SEL → F•1 LINE SELECT: ON, OFF, CINELITE

Settings

ON:	Line select is turned on.
OFF:	Line select is turned off.
CINELITE:	The waveform of the line set on the picture display’s CINELITE is displayed. This can be selected when CINELITE ADVANCE is set to ON in multi-screen display.

LINE SELECT = ON



LINE SELECT = OFF

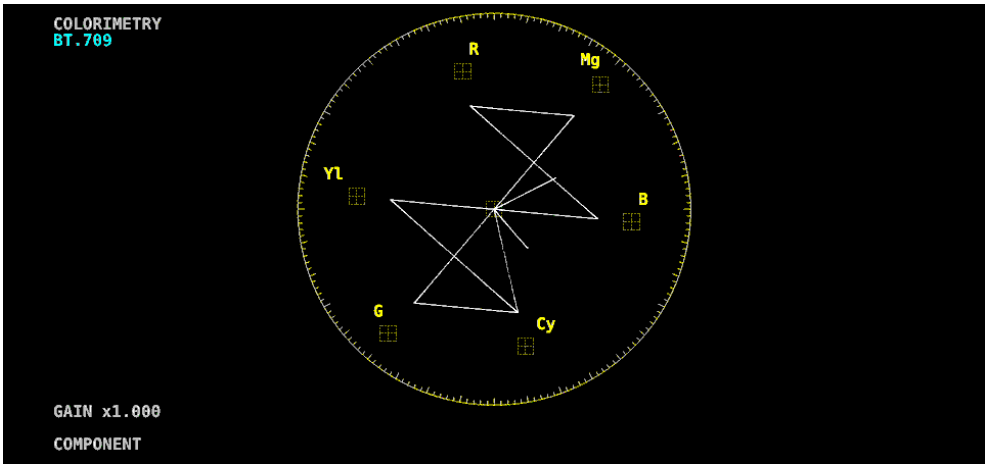


Figure 10-7 Turning line selection on and off

10.4.2 Setting the Line Selection Range

When F•1 LINE SELECT is set to ON and the input signal format is interlaced or segmented frame, to set the line selection range, follow the procedure below.
Changing this setting will also change the selected line on the video-signal-waveform, picture, and status (data dump) displays.

Procedure

VECT → F•3 LINE SEL → F•2 FIELD: FIELD1, FIELD2, FRAME

Settings

FIELD1:	A line from field 1 can be selected. (Example: 1 to 563)
FIELD2:	A line from field 2 can be selected. (Example: 564 to 1125)
FRAME:	All lines can be selected. (Example: 1 to 1125)

10.5 Configuring the Marker Settings

To configure the marker settings, press F•4 MARKER on the VECT menu.

VECT → F•4 MARKER →

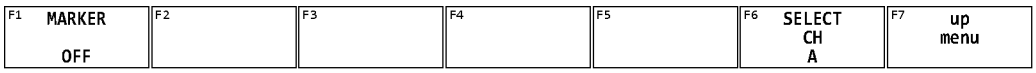


Figure 10-8 MARKER menu

10.5.1 Displaying the Vector Marker

To display a marker on the vector display, follow the procedure below.

You can move the marker horizontally using the H POS knob and vertically using the V POS knob. The measured values are displayed in the lower left of the display. Press the H POS knob to move the marker to the Cb = 0.0% position. Press the V POS knob to move the marker to the Cr = 0.0% position.

Measured values are displayed using the following references: Cb at position B = 100.0% and Cr at position R = 100.0%. The distance from the center is expressed as “d,” and hue is expressed as “deg.”
Normally, the marker is displayed in green. When if falls outside the display area, it turns red. If this occurs, "OVER" appears above the measured values.

Procedure

VECT → F•4 MARKER → F•1 MARKER: ON, OFF

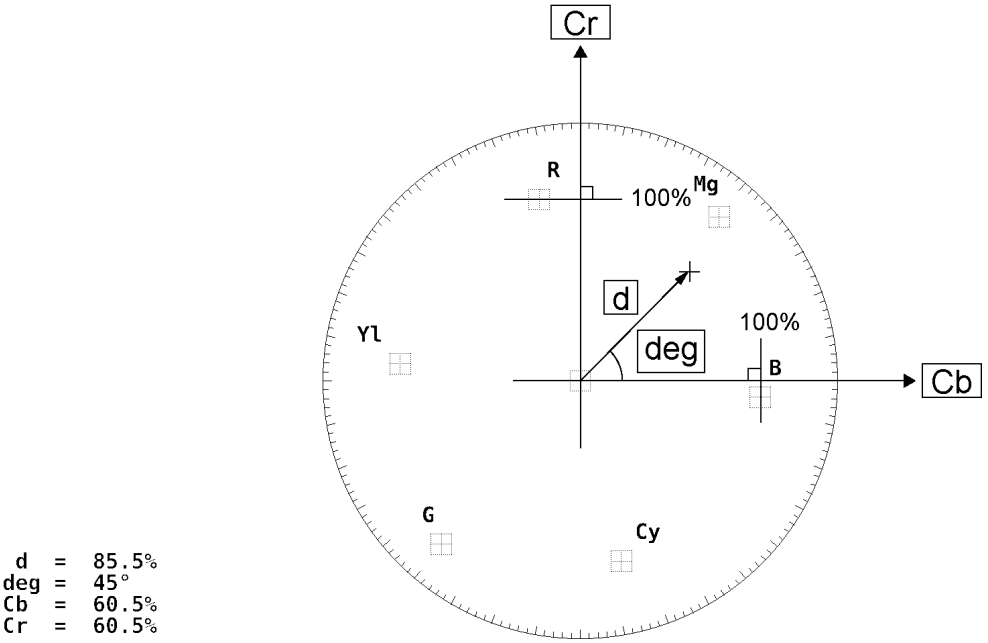


Figure 10-9 Displaying the vector marker

10.6 Configuring the Display Settings

To configure the display settings, press F•5 DISPLAY on the VECT menu.

VECT → F•5 DISPLAY →

F1	F2	F3	F4	F5	F6	F7
MODE VECTOR				3G-B-DS DISPLAY ALIGN	SELECT CH A	up menu

Figure 10-10 DISPLAY menu

10.6.1 Switching the Display Mode

To select the display mode, follow the procedure below. Currently this is fixed to vector.

Procedure

VECT → F•5 DISPLAY → F•1 MODE: VECTOR

Settings

VECTOR:	Shows vectors.

10.6.2 Configuring the 3G-B-DS Display

When measuring 3G-B-DS, to select the display mode, follow the procedure below.

Procedure

VECT → F•5 DISPLAY → F•5 3G-B-DS DISPLAY: STREAM1, STREAM2, ALIGN

Settings

STREAM1:	Stream 1 is displayed.
STREAM2:	Stream 2 is displayed.
ALIGN:	Streams 1 and 2 are displayed side by side.

3G-B-DS DISPLAY = ALIGN

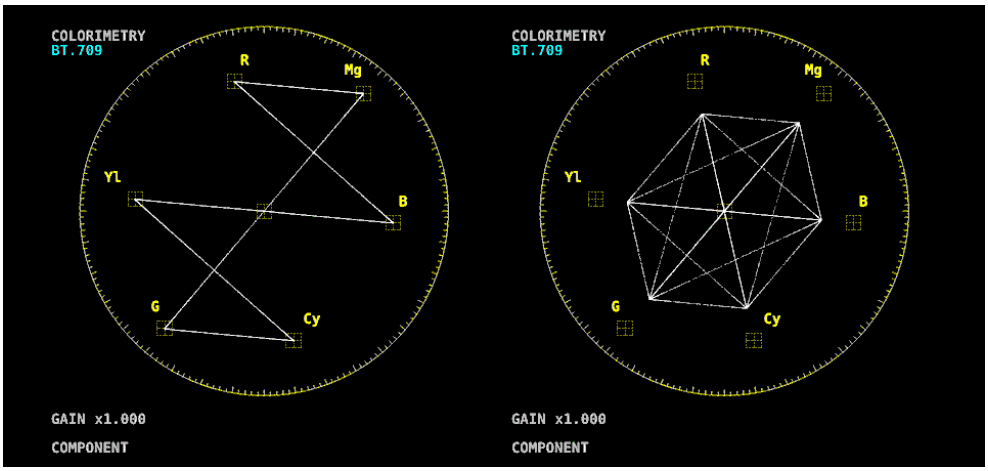


Figure 10-11 Configuring the 3G-B-DS Display

10.7 Configuring the Color System Settings

To configure the color system settings, press F•7 COLOR SYSTEM on the VECT menu.

VECT → F•7 COLOR SYSTEM →

F1	F2	F3	F4	F5	F6	F7
COLOR MATRIX COMPOSITE	COMPOSITE FORMAT AUTO	SETUP 0%	COLOR BAR 100%		SELECT CH A	up menu

Figure 10-12 COLOR SYSTEM menu

10.7.1 Selecting the Color Matrix

To select the vector display format, follow the procedure below. The selected display format is indicated in the lower left of the display.

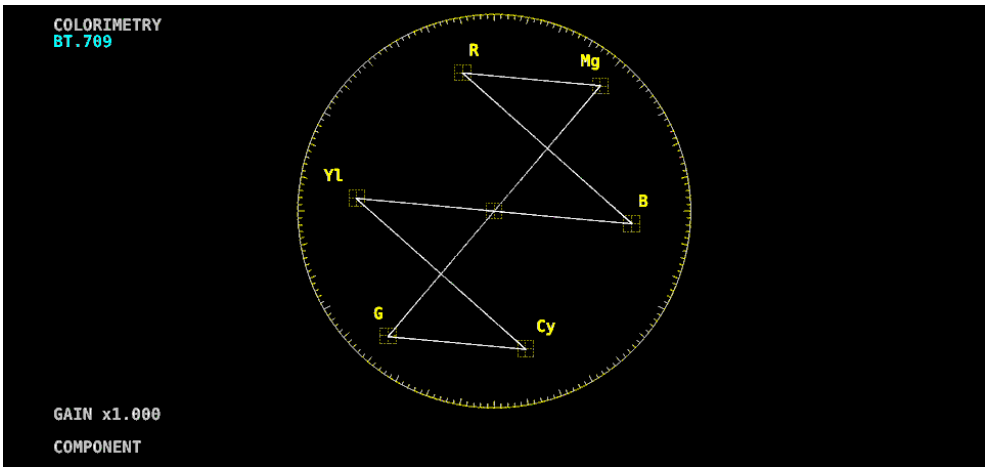
Procedure

VECT → F•7 COLOR SYSTEM → F•1 COLOR MATRIX: COMPONENT, COMPOSITE

Settings

COMPONENT:	The component chrominance signal is displayed on the X and Y axes.
COMPOSITE:	The component signal is converted into a pseudo-composite signal, and the pseudo-composite signal's chrominance signal is displayed on the X and Y axes.

COLOR MATRIX = COMPONENT



COLOR MATRIX = COMPOSITE

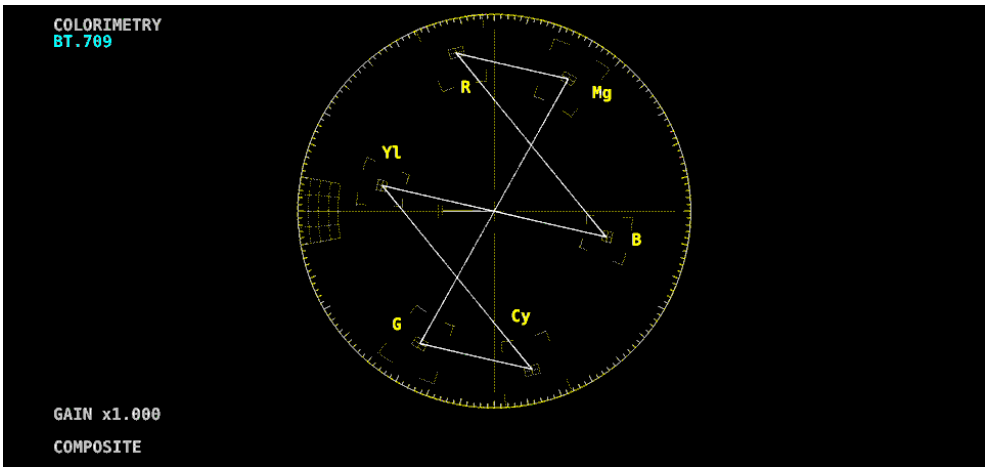


Figure 10-13 Selecting the color matrix

10.7.2 Selecting the Composite Display Format

To select the composite display format, follow the procedure below.

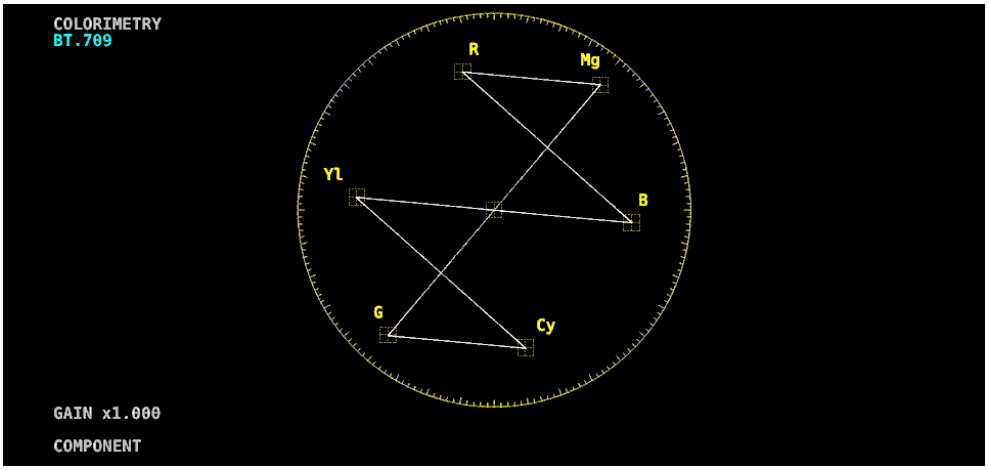
Procedure

VECT → F•7 COLOR SYSTEM → F•2 COMPOSITE FORMAT: AUTO, NTSC, PAL

Settings

AUTO:	When the input signal frame rate is 25 Hz or 50 Hz, the format is PAL. Otherwise, the format is NTSC.
NTSC:	The format is NTSC.
PAL:	The format is PAL.

COMPOSITE FORMAT = NTSC



COMPOSITE FORMAT = PAL

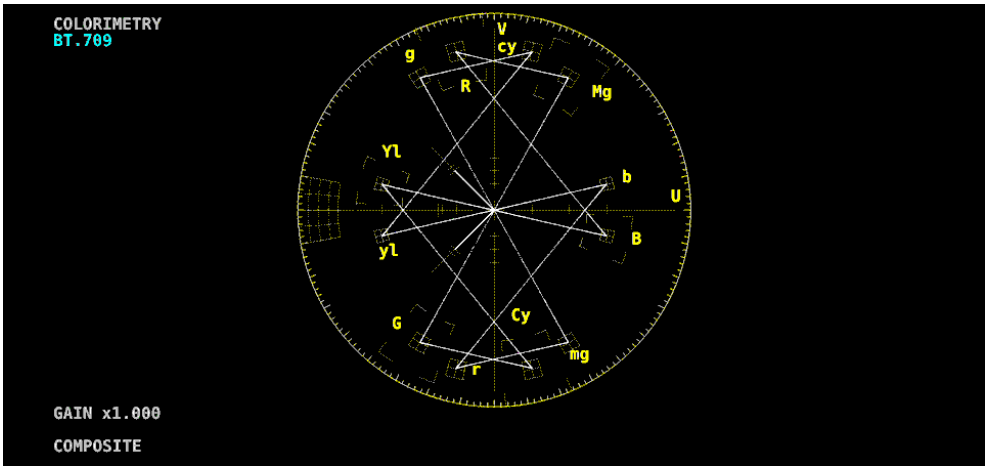


Figure 10-14 Selecting the composite display format

10.7.3 Selecting the Setup Level

When F•1 COLOR MATRIX is set to COMPOSITE, to select the setup level, follow the procedure below.
This menu does not appear if the composite display format is PAL.

Procedure

VECT → F•7 COLOR SYSTEM → F•3 SETUP: 0%, 7.5%

10.7.4 Displaying a Scale for 75% Color Bars

To display a scale for 75 % color bars, follow the procedure below.

Procedure

VECT → F•7 COLOR SYSTEM → F•4 COLOR BAR: 100%, 75%

Settings

100%:	A scale on which a 100% color bar signal input is mapped to the peak level is displayed.
75%:	A scale on which a 75 % color bar signal input is mapped to the peak level is displayed.

COLOR BAR = 75%

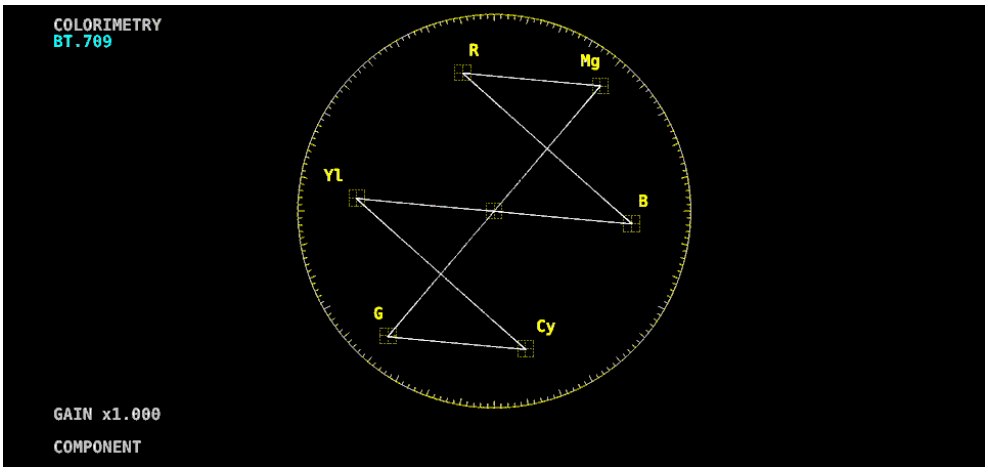


Figure 10-15 Displaying a scale for 75 % color bars
(when receiving a 75 % intensity color bar signal)

11. PICTURE DISPLAY

To display the picture, press PIC.

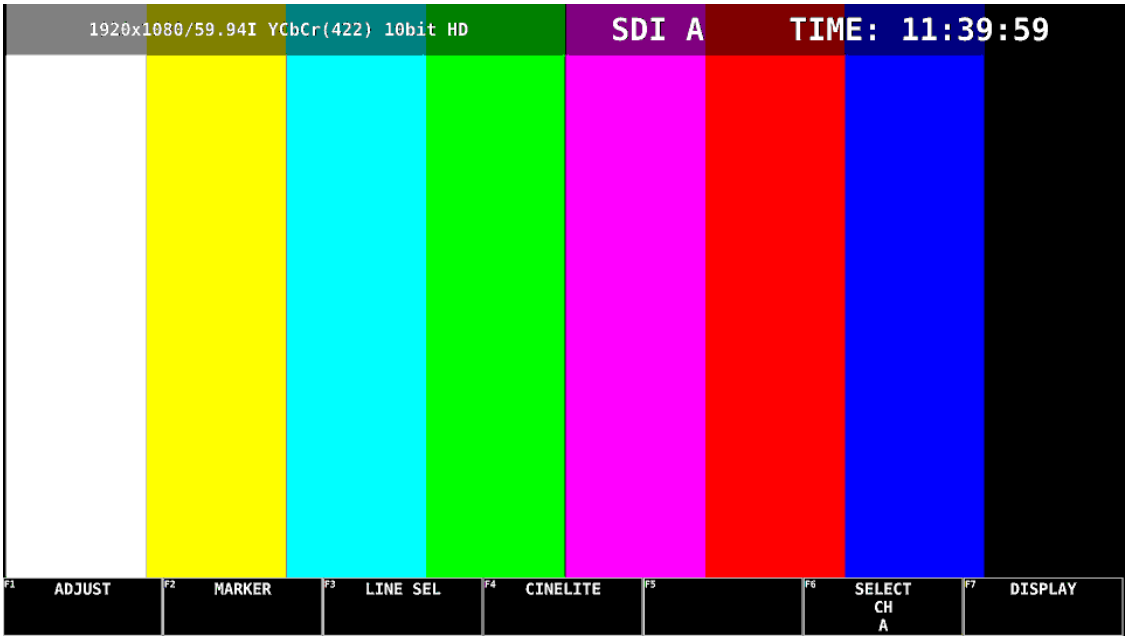


Figure 11-1 Picture display

11.1 Adjusting the Picture

To adjust the picture, press F•1 ADJUST in the PIC menu.

PIC → F•1 ADJUST →

F1	F2	F3	F4	F5	F6	F7
MONO/ COLOR COLOR	CHROMA UP NORMAL	BRIGHT- NESS[%] 0.0	CONTRAST [%] 100.0	GAIN/ BIAS	SELECT CH A	up menu

Figure 11-2 ADJUST menu

11.1.1 Switching between the Color and Monochrome Displays

To switch between the color and monochrome displays, follow the procedure below.

Procedure

PIC → F•1 ADJUST → F•1 MONO/COLOR: COLOR, MONO

11.1.2 Setting the Chroma Gain

To switch the chroma gain, follow the procedure below.

Procedure

PIC → F•1 ADJUST → F•2 CHROMA UP: NORMAL, UP

Settings

NORMAL:	The chroma gain is set to the value that you have set using F•5 GAIN/BIAS → F•1 GAIN.
UP:	The chroma gain is set to 2 (200.0 %).

11.1.3 Adjusting the Brightness

To adjust the brightness, follow the procedure below.
Press the function dial (F•D) to return the setting to its default value (0.0).

Procedure

PIC → F•1 ADJUST → F•3 BRIGHTNESS[%]: -50.0 - 0.0 - 50.0

11.1.4 Adjusting the Contrast

To adjust the contrast, follow the procedure below.
Press the function dial (F•D) to return the setting to its default value (100.0).

Procedure

PIC → F•1 ADJUST → F•4 CONTRAST[%]: 0.0 - 100.0 - 200.0

11.1.5 Adjusting the Gain

To adjust the gain, press F•1 GAIN on the GAIN/BIAS menu.

PIC → F•1 ADJUST → F•5 GAIN/BIAS → F•1 GAIN →

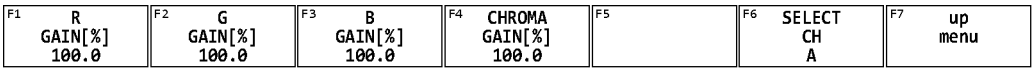


Figure 11-3 GAIN menu

To adjust the gain separately for the R, G, B, and chroma signals, follow the procedure below.
Press the function dial (F•D) to return the setting to its default value (100.0).
When F•2 CHROMA UP is set to UP, F•4 CHROMA GAIN does not appear. If is fixed at 200.0.

Procedure

PIC → F•1 ADJUST → F•5 GAIN/BIAS → F•1 GAIN
→ F•1 R GAIN[%]: 0.0 - 100.0 - 200.0
→ F•2 G GAIN[%]: 0.0 - 100.0 - 200.0
→ F•3 B GAIN[%]: 0.0 - 100.0 - 200.0
→ F•4 CHROMA GAIN[%]: 0.0 - 100.0 - 200.0

11.1.6 Adjusting the Bias

To adjust the bias, press F•2 BIAS on the GAIN/BIAS menu.

PIC → F•1 ADJUST → F•5 GAIN/BIAS → F•2 BIAS →

F1	F2	F3	F4	F5	F6	F7
R BIAS[%] 0.0	G BIAS[%] 0.0	B BIAS[%] 0.0			SELECT CH A	up menu

Figure 11-4 BIAS menu

To set the RGB signal bias separately for each color, follow the procedure below.
Press the function dial (F•D) to return the setting to its default value (0.0).

Procedure

PIC → F•1 ADJUST → F•5 GAIN/BIAS → F•2 BIAS
→ F•1 R BIAS[%]: -50.0 - 0.0 - 50.0
→ F•2 G BIAS[%]: -50.0 - 0.0 - 50.0
→ F•3 B BIAS[%]: -50.0 - 0.0 - 50.0

11.2 Configuring Marker Settings

To configure the marker settings, press F•2 MARKER on the PIC menu.
This menu item does not appear when SIZE is set to a value other than FIT.
[See also] SIZE → 11.5.1, “Selecting the Display Size”

PIC → F•2 MARKER →

F1	F2	F3	F4	F5	F6	F7
FRAME MARKER OFF	CENTER MARKER OFF	ASPECT MARKER 14:9	ASPECT SHADOW[%] 50	SAFETY ZONE	SELECT CH A	up menu

Figure 11-5 MARKER menu

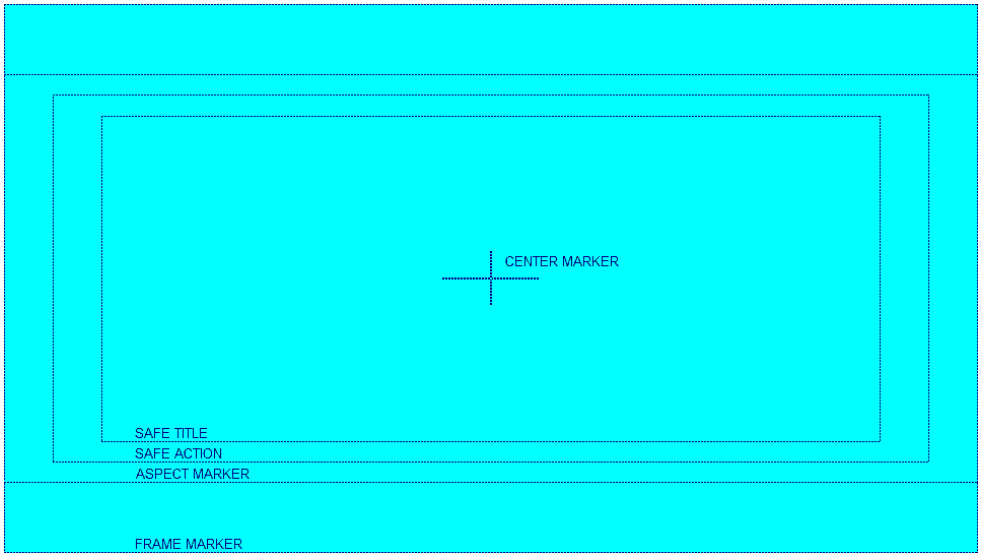


Figure 11-6 Horizontal marker display

11.2.1 Turning the Frame Marker On and Off

To turn the frame marker on and off, follow the procedure below.

Procedure

PIC → F•2 MARKER → F•1 FRAME MARKER: ON, OFF

11.2.2 Turning the Center Marker On and Off

To turn the center marker on and off, follow the procedure below.

Procedure

PIC → F•2 MARKER → F•2 CENTER MARKER: ON, OFF

11.2.3 Setting the Aspect Marker

To display the aspect marker, follow the procedure below.

Procedure

PIC → F•2 MARKER → F•3 ASPECT MARKER: OFF, 17:9, 16:9, 14:9, 13:9, 4:3, 2.39:1, AFD

Settings

OFF:	The aspect marker is not displayed.
17:9:	A 17:9 aspect marker is displayed. This option cannot be selected when the input signal is a 17:9 frame signal or an SD signal.
16:9:	A 16:9 aspect marker is displayed. This option cannot be selected when the input signal is a 16:9 frame signal.
14:9:	A 14:9 aspect marker is displayed.
13:9:	A 13:9 aspect marker is displayed.
4:3:	A 4:3 aspect marker is displayed. This option cannot be selected when the input signal is SD.
2.39:1:	A 2.39:1 aspect marker is displayed. This option cannot be selected when the input signal is SD.
AFD:	The aspect marker included in the AFD (Active Format Description) packets is displayed. Also, abbreviations for SMPTE ST 2016-1-2007 standard AFD codes are displayed in the upper left of the screen. This option can be selected when the input signal is SD or HD.

The AFD codes that are displayed in the upper left of the screen are displayed as shown below according to the coded frame and the AFD code. If there are no AFD packets embedded in the input signal, “---------” is displayed.

Table 11-1 AFD display

Displayed Abbreviation	Coded Frame	AFD Code	Description
0000- UNDEFINED	0 (4:3)	0000	Undefined
0001- RESERVED	0 (4:3)	0001	Reserved
0010- 16:9LBTop	0 (4:3)	0010	Letterbox 16:9 image, at top of the coded frame
0011- 14:9LBTop	0 (4:3)	0011	Letterbox 14:9 image, at top of the coded frame
0100- >16:9LBox	0 (4:3)	0100	Letterbox image with an aspect ratio greater than 16:9, vertically centered in the coded frame
0101- RESERVED	0 (4:3)	0101	Reserved
0110- RESERVED	0 (4:3)	0110	Reserved
0111- RESERVED	0 (4:3)	0111	Reserved
1000- FullFrame	0 (4:3)	1000	Full frame 4:3 image, the same as the coded frame
1001- Full Frame	0 (4:3)	1001	Full frame 4:3 image, the same as the coded frame
1010- 16:9LBox	0 (4:3)	1010	Letterbox 16:9 image, vertically centered in the coded frame with all image areas protected
1011- 14:9LBox	0 (4:3)	1011	Letterbox 14:9 image, vertically centered in the coded frame
1100- RESERVED	0 (4:3)	1100	Reserved
1101-4:3Full14:9	0 (4:3)	1101	Full frame 4:3 image, with alternative 14:9 center
1110-16:9LB14:9	0 (4:3)	1110	Letterbox 16:9 image, with alternative 14:9 center
1111-16:9LB4:3	0 (4:3)	1111	Letterbox 16:9 image, with alternative 4:3 center
0000w UNDEFINED	1 (16:9)	0000	Undefined
0001w RESERVED	1 (16:9)	0001	Reserved
0010w Full Frame	1 (16:9)	0010	Full frame 16:9 image, the same as the coded frame
0011w 14:9Pillbox	1 (16:9)	0011	Pillarbox 14:9 image, horizontally centered in the coded frame
0100w >16:9LBox	1 (16:9)	0100	Letterbox image with an aspect ratio greater than 16:9, vertically centered in the coded frame
0101w RESERVED	1 (16:9)	0101	Reserved
0110w RESERVED	1 (16:9)	0110	Reserved
0111w RESERVED	1 (16:9)	0111	Reserved
1000w FullFrame	1 (16:9)	1000	Full frame 16:9 image, the same as the coded frame
1001w 4:3Pillbox	1 (16:9)	1001	Pillarbox 4:3 image, horizontally centered in the coded frame
1010w FullNoCrop	1 (16:9)	1010	Full frame 16:9 image, with all image areas protected
1011w14:9Pillbox	1 (16:9)	1011	Pillarbox 14:9 image, horizontally centered in the coded frame
1100w RESERVED	1 (16:9)	1100	Reserved
1101w4:3PB14:9	1 (16:9)	1101	Pillarbox 4:3 image, with alternative 14:9 center
1110wFul14:9Safe	1 (16:9)	1110	Full frame 16:9 image, with alternative 14:9 center
1111wFull4:3Safe	1 (16:9)	1111	Full frame 16:9 image, with alternative 4:3 center

11.2.4 Setting the Aspect Shadow

When F•3 ASPECT MARKER is set to a value other than OFF, to adjust the darkness of the aspect marker shadow, follow the procedure below. The larger the number, the darker the shadow. If you specify 0, the aspect marker will be indicated with a line.
Press the function dial (F•D) to return the setting to its default value (50).

Procedure

PIC → F•2 MARKER → F•4 ASPECT SHADOW[%]: 0 - 50 - 100

ASPECT SHADOW[%] = 50

Figure 11-7 Setting the aspect shadow

11.2.5 Setting the Safe Action Marker

To configure safety marker settings, press F•5 SAFETY ZONE on the MARKER menu.
When F•3 ASPECT MARKER is set to AFD, this menu item is not available.

PIC → F•2 MARKER → F•5 SAFETY ZONE →

F1	F2	F3	F4	F5	F6	F7
SAFE ACTION USER1	SAFE TITLE USER2	USER1/2 SET			SELECT CH A	up menu

Figure 11-8 SAFETY ZONE menu

To display the safe action marker, follow the procedure below.
When an aspect marker is displayed, the safe action marker is displayed relative to the aspect marker.

Procedure

PIC → F•2 MARKER → F•5 SAFETY ZONE → F•1 SAFE ACTION: ARIB, SMPTE, USER1, OFF

Settings

ARIB:	An ARIB TR-B4 safe action marker is displayed. This cannot be selected when 4K is in use.
SMPTE:	An SMPTE RP-218 safe action marker is displayed. This cannot be selected when 4K is in use.
USER1:	A marker that has been set with F•1 USER1 WIDTH[%] and F•2 USER1 HEIGHT[%] for F•3 USER1/2 SET is displayed.
OFF:	A safe action marker is not displayed.

11.2.6 Setting the Safe Title Marker

To display the safe title marker, follow the procedure below.
When an aspect marker is displayed, the safe action marker is displayed relative to the aspect marker.

Procedure

PIC → F•2 MARKER → F•5 SAFETY ZONE → F•2 SAFE TITLE: ARIB, SMPTE, USER2, OFF

Settings

ARIB:	An ARIB TR-B4 safe title marker is displayed. This cannot be selected when 4K is in use.
SMPTE:	An SMPTE RP-218 safe title marker is displayed. This cannot be selected when 4K is in use.
USER2:	A marker that has been set with F•3 USER2 WIDTH[%] and F•2 USER2 HEIGHT[%] for F•3 USER1/4 SET is displayed.
OFF:	A safe title marker is not displayed.

11.2.7 Setting User Markers

By setting F•1 SAFE ACTION to USER1 and F•2 SAFE TITLE to USER2, you can display up to two user-defined markers.
To configure user-defined marker settings, press F•3 USER1/2 SET on the SAFETY ZONE menu.

PIC → F•2 MARKER → F•5 SAFETY ZONE → F•3 USER1/2 SET →

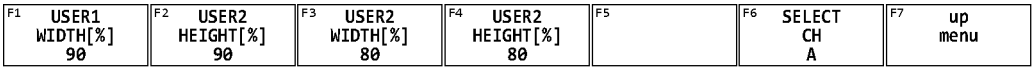


Figure 11-9 USER1/2 SET menu

To set the width and height of a user marker, follow one of the procedures below.
Press the function dial (F•D) to return the setting to its default value.

Procedure

PIC → F•2 MARKER → F•5 SAFETY ZONE → F•3 USER1/2 SET
→ F•1 USER1 WIDTH[%]: 0 - 90 - 100
→ F•2 USER1 HEIGHT[%]: 0 - 90 - 100
→ F•3 USER2 WIDTH[%]: 0 - 80 - 100
→ F•4 USER2 HEIGHT[%]: 0 - 80 - 100

11.3 Configuring Line Selection Settings

To configure line selection settings, press F•3 LINE SEL on the PIC menu.
This menu item does not appear when SIZE is set to a value other than FIT or if the VF option is in use.

[See also] SIZE → 11.5.1, “Selecting the Display Size”

PIC → F•3 LINE SEL →

F1	F2	F3	F4	F5	F6	F7
LINE SELECT ON	FIELD FRAME				SELECT CH A	up menu

Figure 11-10 LINE SEL menu

11.3.1 Turning Line Selection On and Off

To display a marker at the selected line, follow the procedure below. You can use the function dial (F•D) to select a line. The number of the selected line appears in the upper left of the screen.
Changing this setting will also change the video-signal-waveform-display and vector-display line selection settings.

Procedure

PIC → F•3 LINE SEL → F•1 LINE SELECT: ON, OFF, CINELITE

Settings

ON:	Line select is turned on.
OFF:	Line select is turned off.
CINELITE:	The selected line of the line select feature is set to the line that you specify with CINELITE. This can be selected when CINELITE ADVANCE is set to ON.

LINE SELECT = ON

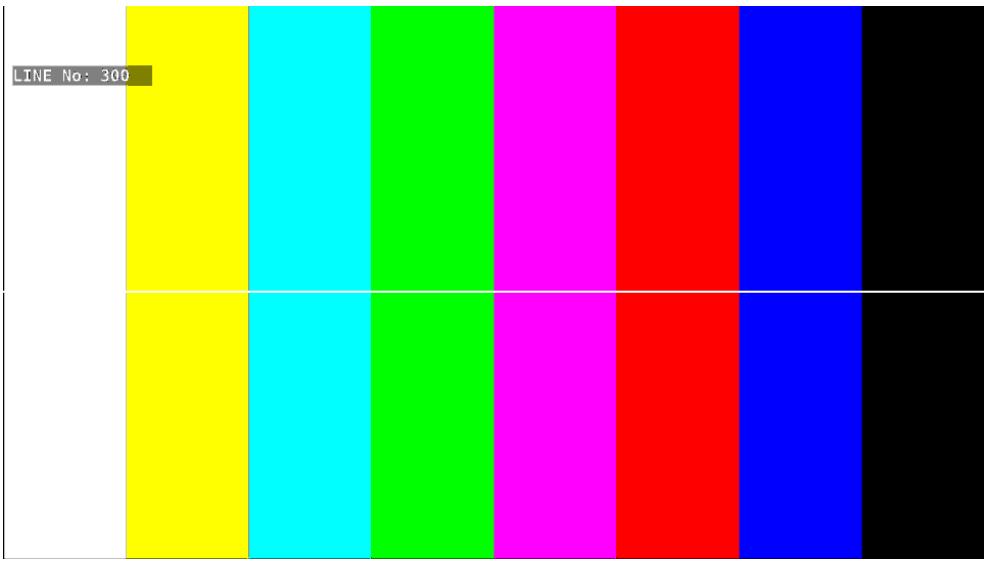


Figure 11-11 Turning line selection on and off

11.3.2 Setting the Line Selection Range

When F•1 LINE SELECT is set to ON and the input signal format is interlaced or segmented frame, to set the line selection range, follow the procedure below.
Changing this setting will also change the selected line on the video-signal-waveform, vector, and status (data dump) displays.

Procedure

PIC → F•3 LINE SEL → F•2 FIELD: FIELD1, FIELD2, FRAME

Settings

FIELD1:	A line from field 1 can be selected. (Example: 1 to 563)
FIELD2:	A line from field 2 can be selected. (Example: 564 to 1125)
FRAME:	All lines can be selected. (Example: 1 to 1125)

11.4 Configuring CINELITE Settings

CINELITE is a feature that displays luminance levels of video signals on the picture.
To show the CINELITE display, press F•4 CINELITE in the PIC menu.
This menu item does not appear when the VF option is in use.

PIC → F•4 CINELITE →

Figure 11-12 CINELITE menu

11.4.1 Selecting the Display Format

To select the CINELITE display format, follow the procedure below.

Procedure

PIC → F•4 CINELITE → F•1 CINELITE DISPLAY: OFF, f Stop, %DISPLAY, CINEZONE

Settings

OFF:	CINELITE is not displayed.
f Stop:	The f Stop screen is displayed. This option cannot be selected when the input signal is 3G-B-DS.
%DISPLAY:	The %DISPLAY screen is displayed This option cannot be selected when the input signal is 3G-B-DS.
CINEZONE:	The CINEZONE screen is displayed. This option cannot be selected when the input signal is 3G-B-DS.

11.4.2 f Stop Screen Description

On the f Stop screen, luminance levels are displayed using f-stop (exposure) values.
To display the f Stop screen, set F•1 CINELITE DISPLAY to f Stop on the CINELITE menu.

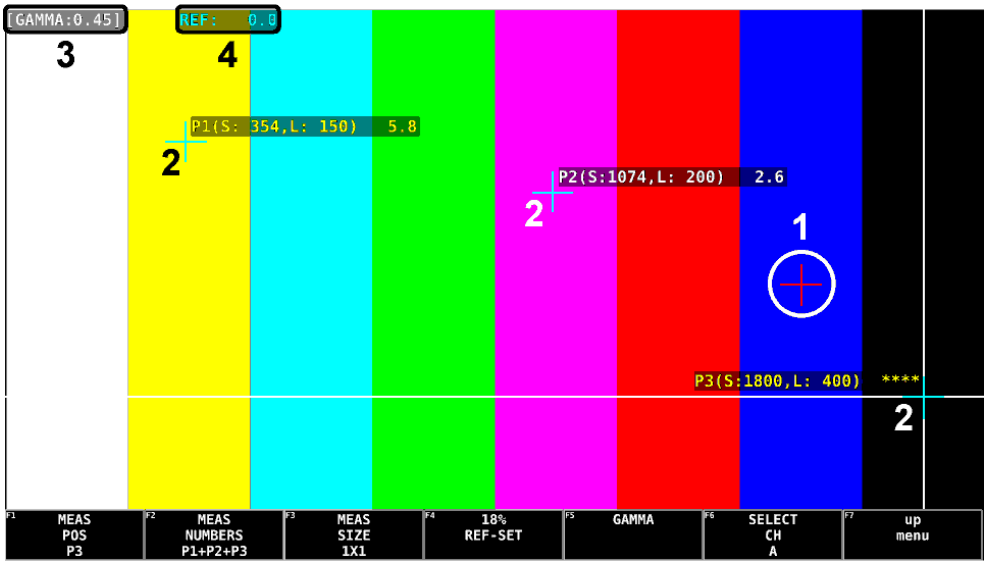


Figure 11-13 f Stop screen

1 Reference Position

The position where the cursors intersected when F•4 18% REF SET was pressed is displayed in red. This is the reference position for f-stop measurement.

2 Cursor

Up to three cursors can be set. The cursor coordinates are indicated using sample numbers and line numbers. The f Stop value relative to the reference point is displayed at each point.
Values are typically displayed in white, but they are displayed in yellow when the luminance level at a measurement point is 80 % or more. If the level is 0% or less, measurement is not possible, and “****” is displayed in yellow.

3 Gamma Correction Value

The gamma correction value that you selected using F•5 GAMMA → F•1 GAMMA SELECT is displayed.

4 Reference display

The f Stop value at the reference position is displayed. The value immediately after you have pressed F•4 18% REF-SET is zero, but it will change when the picture changes.
Values are typically displayed in light blue, but they are displayed in yellow when the luminance level at the reference position is 80 % or more. If the level is 0% or less, “****” is displayed in yellow.

11.4.3 f Stop Screen Measurement Example

The following example shows how to display luminance levels as f Stop numbers relative to the luminance level of 18 % gray chart. Include an 18 % gray chart with the objects that you are filming.

1. **Press PIC.**
2. **Press F•4 CINELITE.**
3. **Press F•1 CINELITE DISPLAY to select f Stop.**
4. **Press F•2 f Stop SETUP.**
5. **Press F•5 GAMMA.**
6. **Press F•1 GAMMA SELECT to select a gamma correction table.**

   The default gamma correction value is 0.45, but you can also use a user-defined gamma correction table that matches the gamma characteristics of the camera that you are using. For details, see section 11.4.7, “Configuring User-Defined Correction Tables.” The selected gamma correction value is indicated in the upper left of the display.
7. **Press F•7 up menu.**
8. **Align the cursor to the 18% gray chart, and press F•4 18% REF-SET.**

   The f Stop value for 18 % gray chart becomes 0.0 and is displayed in the upper part of the screen next to "REF:." The reference position is displayed with a red cursor.
9. **Use the cursors to set the measurement points.**

   The f Stop value relative to 18 % gray chart appears next to each cursor. You can set up to three measurement points.

11.4.4 Selecting the Points to Display

You can set three points to measure: P1 to P3. To select the measured points that you want to display, follow the procedure below.

Procedure

PIC → F•4 CINELITE
→ F•2 f Stop SETUP → F•2 MEAS NUMBERS: P1, P1+P2, P1+P2+P3
→ F•2 %DISPLAY SETUP → F•2 MEAS NUMBERS: P1, P1+P2, P1+P2+P3

Settings

P1:	P1 is displayed.
P1+P2:	P1 and P2 are displayed.
P1+P2+P3:	P1 to P3 are displayed.

11.4.5 Setting Measurement Points

You can set up to three measurement points. Follow the procedure below to select which measurement point to set with the cursors, and then move the X cursor by using the H POS knob and the Y cursor by using the V POS knob. Press the H POS and V POS knobs at the same time to move the cursors to the center of the picture.

Procedure

PIC → F•4 CINELITE
→ F•2 f Stop SETUP → F•1 MEAS POS: P1, P2, P3
→ F•2 %DISPLAY SETUP → F•1 MEAS POS: P1, P2, P3

11.4.6 Setting the Measurement Size

To select the measurement size, follow the procedure below. This setting is applied to P1 to P3 and REF.

Procedure

PIC → F•4 CINELITE
→ F•2 f Stop SETUP → F•3 MEAS SIZE: 1X1, 3X3, 9X9
→ F•2 %DISPLAY SETUP → F•3 MEAS SIZE: 1X1, 3X3, 9X9

Settings

1X1:	The single pixel at the intersection of the cursors is measured.
3X3:	The 3×3 area of pixels with its center at the intersection of the cursors is averaged and measured.
9X9:	The 9×9 area of pixels with its center at the intersection of the cursors is averaged and measured.

11.4.7 Configuring User-Defined Correction Tables

The default gamma correction value when measuring f Stop levels is 0.45, but you can also use a user-defined gamma correction table that matches the gamma characteristics of the camera that you are using.

There are two types of user-defined correction tables. The first type consists of tables that are created using the LV 7390 and is made up of the USER1 to USER3 tables. The second type consists of tables that have been created externally using a device such as a PC and is made up of the USER_A to USER_E tables. These tables are not deleted even if you initialize the LV 7390.

● Creating User-Defined Correction Tables Using the LV 7390 (USER1 to USER3)

You can create and store up to three user-defined correction tables.
As an example, the following procedure shows how to create a user-defined correction table that matches a camera's gamma characteristics.
Set the camera's f Stop value to F5.6 beforehand, and put an 18 % gray chart in the area that you will film.

1. **On the %DISPLAY screen, adjust the lighting so that the displayed luminance level of the 18 % gray chart is 45.0 % (for example).**

   For details, see section 11.4.8, “%DISPLAY Screen Description.”

2. **Press F•1 CINELITE DISPLAY to select f Stop.**
3. **Press F•2 f Stop SETUP.**
4. **Press F•5 GAMMA.**
5. **Press F•1 GAMMA SELECT, and select USER1.**

   In this example, explanation will be given for USER1, but USER2 and USER3 can also be created in the same way.

6. **Press F•2 GAMMA CAL.**

   When you press F•2 GAMMA CAL, a user-defined correction table appears in the lower left of the screen, and the luminance level appears as a 10-bit value (0 % is displayed as 64, and 100 % is displayed as 940) close to the cursor.
   This setting is available when F•1 GAMMA SELECT is set to an option from USER1 to USER3.

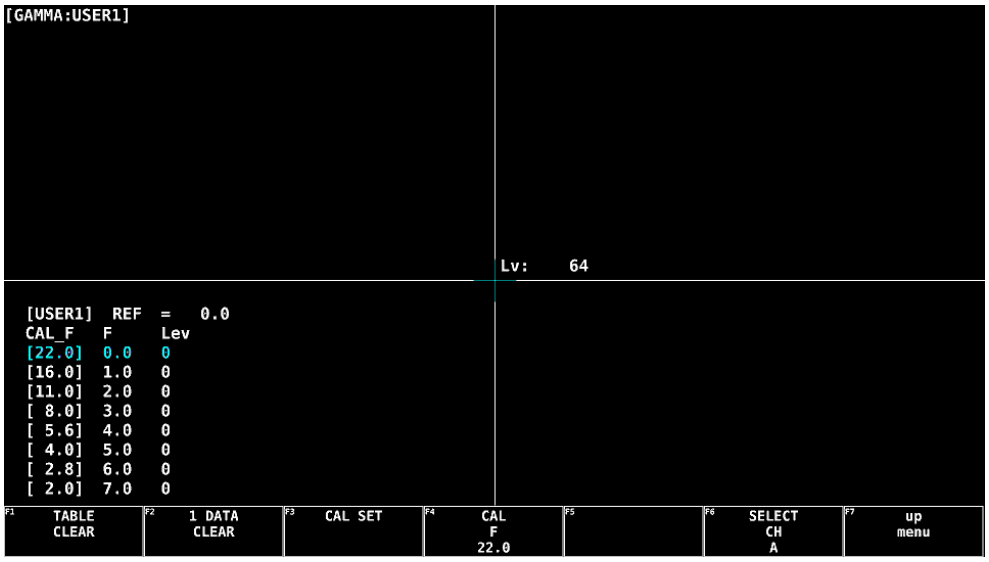


Figure 11-14 User-defined correction table creation screen

7. **Press F•1 TABLE CLEAR.**

   All the values in the user-defined correction table that is currently being edited are initialized. Be sure to initialize the values first when you create a new user-defined correction table.

8. **Press F•1 CLEAR YES.**

   To cancel the initialization of the user-defined correction table, F•3 CLEAR NO.

9. **Place the cursors over the 18 % gray chart.**

10. **Press F•4 CAL F, and select 5.6.**

11. **Press F•3 CAL SET.**

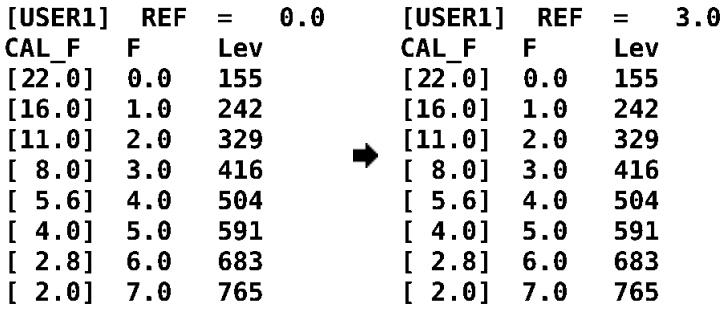
    The luminance level when the camera f Stop value is F5.6 is input into Lev in the user-defined correction table. To delete a line of data, press F•2 1 DATA CLEAR.

12. **Change F•4 CAL F and the camera f Stop value together in the following order: 4.0, 2.8, 2.0, 8.0, 11.0, 16.0, 22.0. F•3 CAL SET each time you change the value to input the luminance level for each value.**

    Do not change the lighting or the position of the 18 % gray chart.
    Also, make sure that the Lev value for f Stop values 22.0 to 2.0 increases linearly.

The REF value in the user-defined correction table is entered when you press F•4 18% REF-SET on the f Stop display.

For example, if you use the left-hand table shown below and press F•4 18% REF-SET when the luminance value at the intersection of the cursors is 416 (10-bit value), the f Stop value at that point (3.0) is displayed as the REF value.



[USER1] REF = 0.0		
CAL_F	F	Lev
[22.0]	0.0	155
[16.0]	1.0	242
[11.0]	2.0	329
[8.0]	3.0	416
[5.6]	4.0	504
[4.0]	5.0	591
[2.8]	6.0	683
[2.0]	7.0	765

[USER1] REF = 3.0		
CAL_F	F	Lev
[22.0]	0.0	155
[16.0]	1.0	242
[11.0]	2.0	329
[8.0]	3.0	416
[5.6]	4.0	504
[4.0]	5.0	591
[2.8]	6.0	683
[2.0]	7.0	765

Figure 11-15 User-defined correction tables

When the above user-defined correction tables are used, f Stop values are indicated as shown below. The values between specified values are interpolated linearly.

When Lv = 155 f Stop = -3.0
When Lv = 242 f Stop = -2.0
When Lv = 329 f Stop = -1.0
When Lv = 416 f Stop = 0.0
When Lv = 504 f Stop = 1.0
When Lv = 591 f Stop = 2.0
When Lv = 683 f Stop = 3.0
When Lv = 765 f Stop = 4.0

● Loading a User-Defined Correction Table into the LV 7390 (USER_A to USER_E)

You can load up to five user-defined correction tables into the LV 7390.
To load a user-defined correction table into the LV 7390, follow the procedure below.

1. Create a user-defined correction table.

Example (TEST.CLT):

```
##################################  ..... Comment
NAME:SAMPLE_1                       ..... Keyword
TYPE:0                              ..... Keyword
#Input   -7%      0                 ..... Comment
#        109%     4095              ..... Comment
#Output  0%       0                 ..... Comment
#        1000%    65535             ..... Comment
#Input   Output                     ..... Comment
##################################  ..... Comment
0        0                          ..... Data
1        16                         ..... Data
2        32                         ..... Data
(Omitted)
4093     65488                      ..... Data
4094     65504                      ..... Data
4095     65520                      ..... Data
# EOF                               ..... Comment
```

When you create a correction table, make sure that it conforms to the specifications listed below.

Overall File Specifications

Description:	ASCII text file
Extension:	.CLT
End-of-line character:	CR+LF
Number of lines:	5000 or less
Number of characters per line:	255 or less (including CR+LF)
File name length:	20 characters or less (excluding the extension)
Permitted file name characters:	Letters of the alphabet (A to Z; uppercase and lowercase), numerals (0 to 9), and underscores (_).

Comment

If you start a line with the number sign (#), the line is treated as a comment and does not affect operations.
You can put comments anywhere.

Keyword

Be sure to put the keyword lines before the data lines and to enter a keyword without anything preceding it at the beginning of each keyword line.

NAME:	The LV 7390 displays the eight characters that follow the separator (colon) as the name of the correction table. After the separator, enter the correction table name using letters of the alphabet (A to Z; uppercase and lowercase), numbers (0 to 9), and underscores (_). You can enter up to 10 characters.
TYPE:	This is a code for identifying the file type. Enter a zero after the separator (colon).

Data

From the start of a line, enter the input value, a separator, and then the output value, in that order.

Input value:	Enter values from 0 to 4095 (12 bits), increasing the value by one for each line. A luminance level of 100 % is defined as 940 (10 bits) × 4 = 3760 (12 bits). A luminance level of 0 % is defined as 64 (10 bits) × 4 = 256 (12 bits).
Separator:	Enter a single tab code.
Output value:	Enter a value from 0 to 65535 (16 bits).

2. **Save the user-defined correction table to USB memory, and connect the USB memory to the LV 7390.**

   Save the correction table in the following directory.

   USB memory device
   └ LV7390_USER
   　└ CLT
   　　└ TEST.CLT (example)

3. **Press F•1 CINELITE DISPLAY to select f Stop.**
4. **Press F•2 f Stop SETUP.**
5. **Press F•5 GAMMA.**
6. **Press F•1 GAMMA SELECT, and select USER_A.**

   In this example, a user-defined correction table is copied to USER_A, but user-defined correction tables can be copied to USER_B through USER_E in the same way.

7. **Press F•2 GAMMA FILE.**

   This setting is available when F•1 GAMMA SELECT is set to an option from USER_A to USER_E.

8. **Press F•1 FILE LIST.**

   The file list screen appears. This setting appears when USB memory is connected.
   To clear the table that has been copied to USER_A, press F•2 TABLE CLEAR.

9. **Turn the function dial (F • D) to select the copy source file from the USB memory device.**
10. **Press F • 3 FILE LOAD.**

    The user-defined correction table that you selected is copied from the USB memory to USER_A. The copy operation is complete when the file list screen disappears and the display returns to the measurement screen.
    If a file has already been stored to USER_A, an overwrite confirmation prompt appears. If you want to overwrite the current file, press F•1 OVER WR YES. Otherwise, press F•3 OVER WR NO.

After you have copied a user-defined correction table, you can select it by pressing F•1 GAMMA SELECT in the GAMMA menu. A loaded correction table is displayed using the name determined by its NAME keyword.

11.4.8 %DISPLAY Screen Description

On the %DISPLAY screen, you can display luminance levels using Y%, RGB%, RGB255, or CODE VALUE. The measured values are typically displayed in white, but they are displayed in yellow when the luminance level at a measurement point is 80 % or more or 0 % or less (excluding CODE VALUE).

To display the %DISPLAY screen, set F•1 CINELITE DISPLAY to %DISPLAY on the CINELITE menu. To select the display format, press F•4 UNIT SELECT on the %DISPLAY SETUP menu.

- **Y% Display**

  Luminance levels are indicated as percentages.

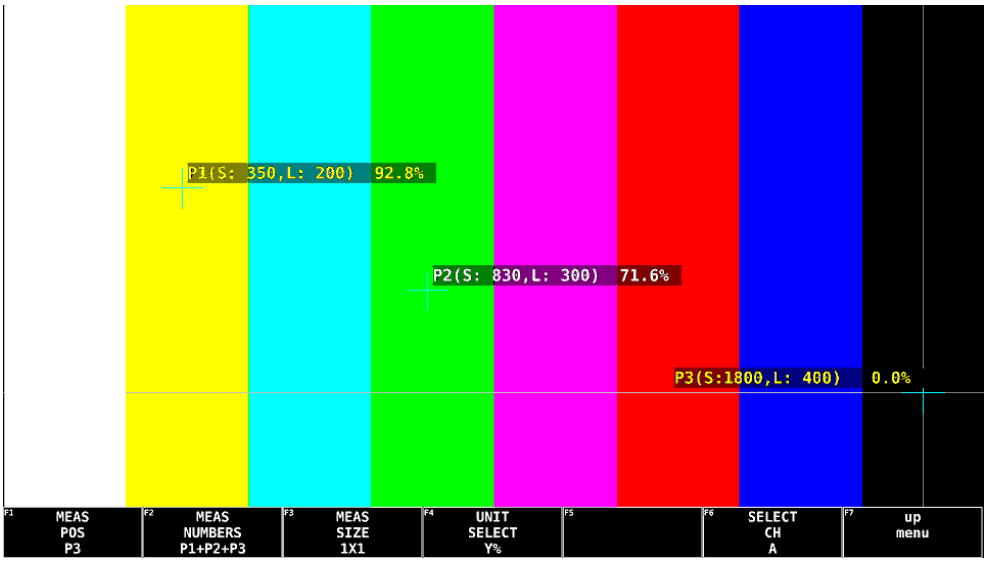


Figure 11-16 Y% display

- **RGB% Display**

  Each of the R, G, and B levels is indicated using a percentage. The levels are also indicated using bars on the left side of the display (the order is R, G, and then B).

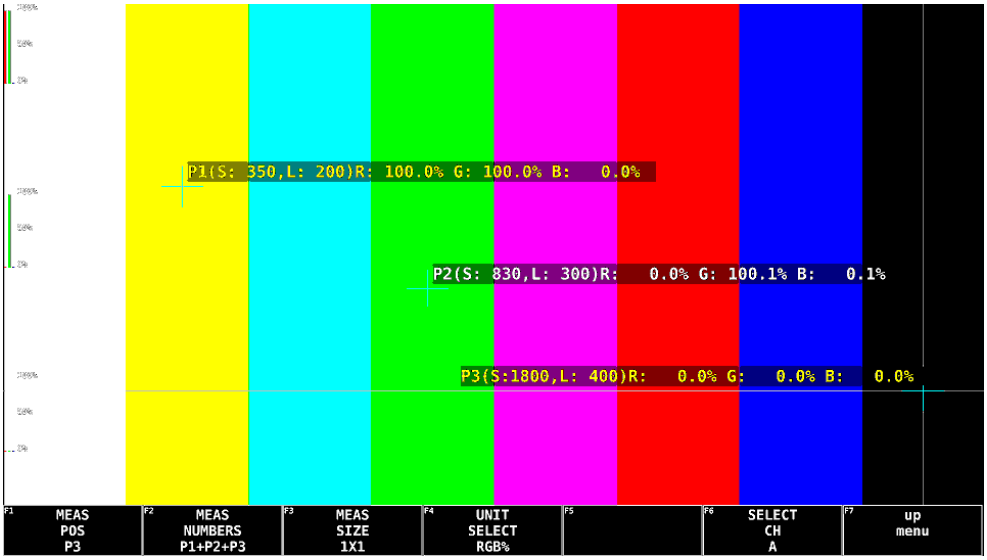


Figure 11-17 RGB% display

- **RGB255 Display**

  Each of the R, G, and B levels is indicated using 256 steps from 0 to 255. The levels are also indicated using bars on the left side of the display (the order is R, G, and then B). The value of an RGB level that is 100 % or greater is 255. The value of an RGB level that is 0 % or less is 0.

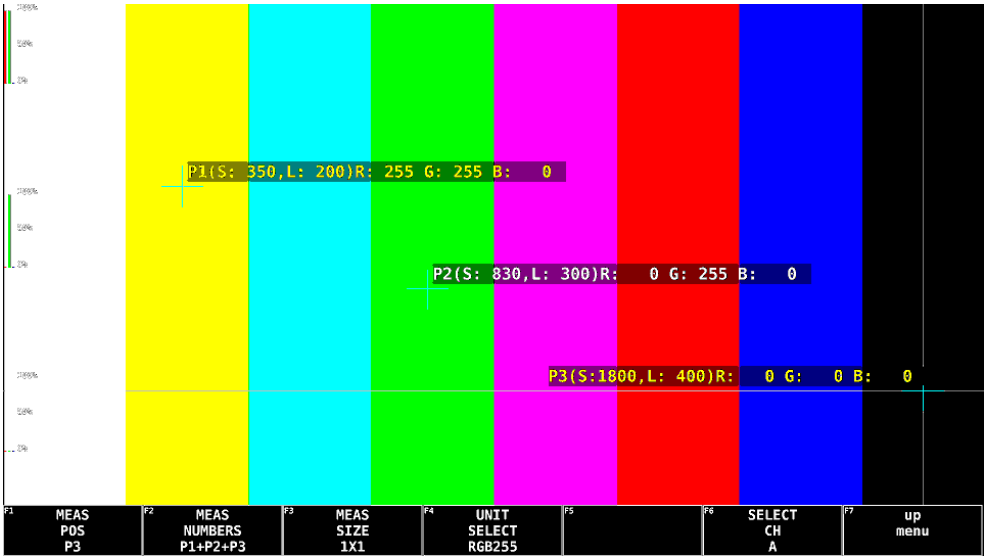


Figure 11-18 RGB255 display

● **CODE VALUE Display**

Video data is displayed in YCbCr or RGB.
You can select this when F•3 MEAS SIZE is 1×1.

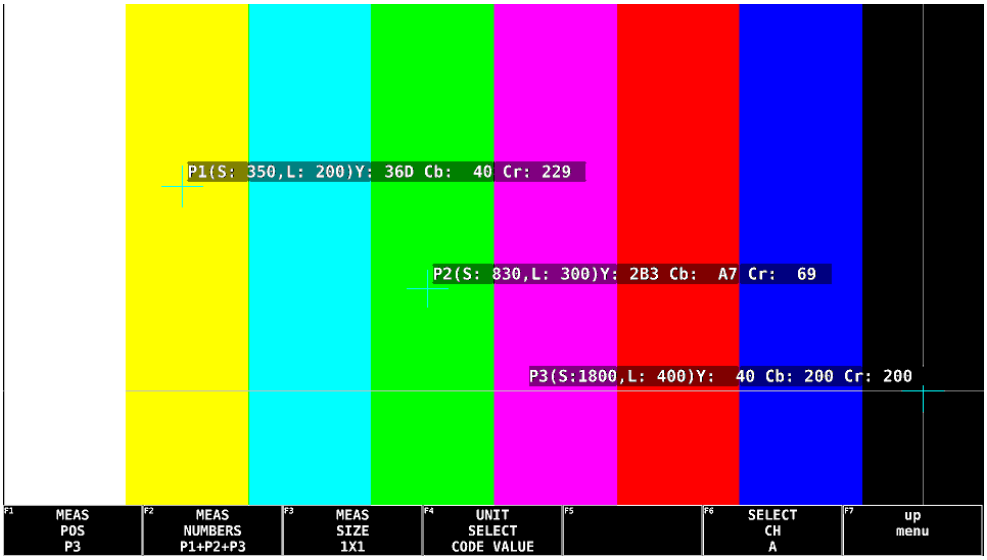


Figure 11-19 CODE VALUE display

11.4.9 CINEZONE Screen Description

The CINEZONE screen has a gradation display and step display, in which the picture luminance levels are converted into RGB colors and displayed and a search display, in which the specified luminance level is displayed in green.

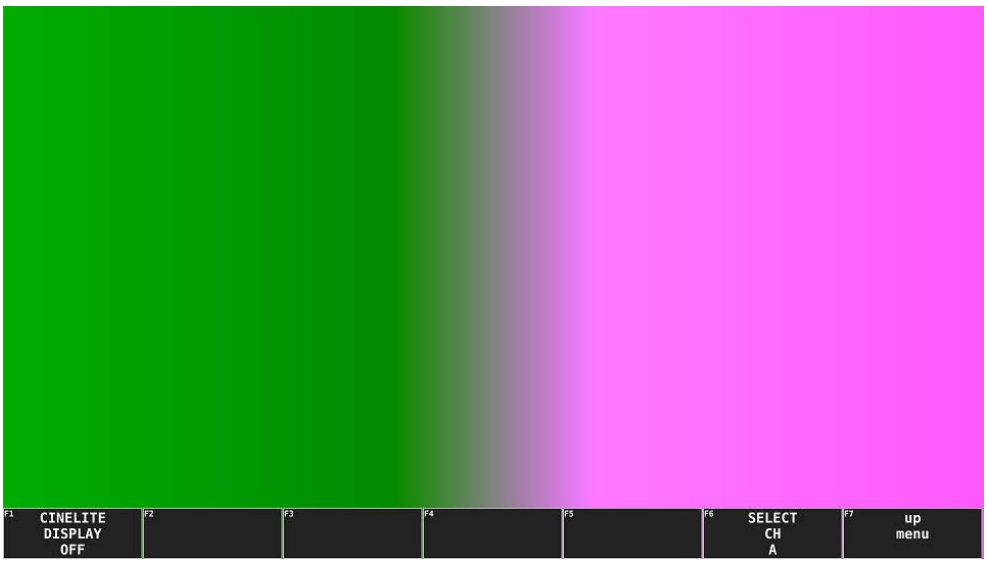
To display the CINEZONE screen, set F•1 CINELITE DISPLAY to CINEZONE on the CINELITE menu. To select the display format, press F•1 CINEZONE FORM on the CINEZONE SETUP menu.

● **Gradation Display**

Luminance levels are displayed using 1024 colors according to the following rules.
You can see what colors correspond to what luminance levels by looking at the scale on the right of the display.

0%:	Blue
50%:	Green
100%:	Red
F•2 UPPER[%] or higher:	White (UPPER[%]: -6.3 - 100.0 - 109.4)
F•3 LOWER[%] or less:	Black (LOWER[%]: -7.3 - 0.0 - 108.4)

CINELITE DISPLAY = OFF



CINELITE DISPLAY = OFF

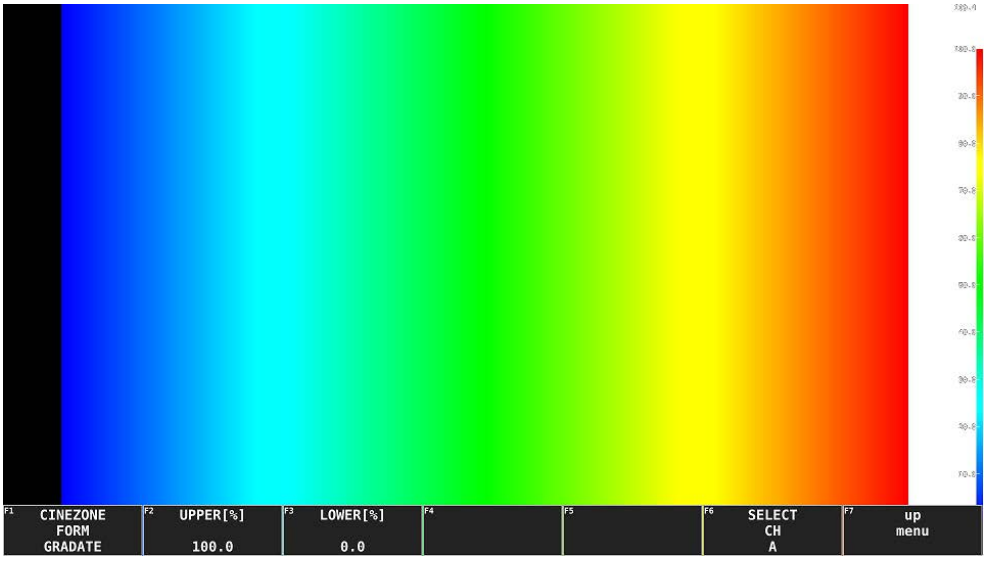


Figure 11-20 Gradation display

● **Step Display**

Luminance levels are displayed in 12 different colors at 10% steps according to the gradation display conversion. You can see what colors correspond to what luminance levels by looking at the scale on the right of the display.

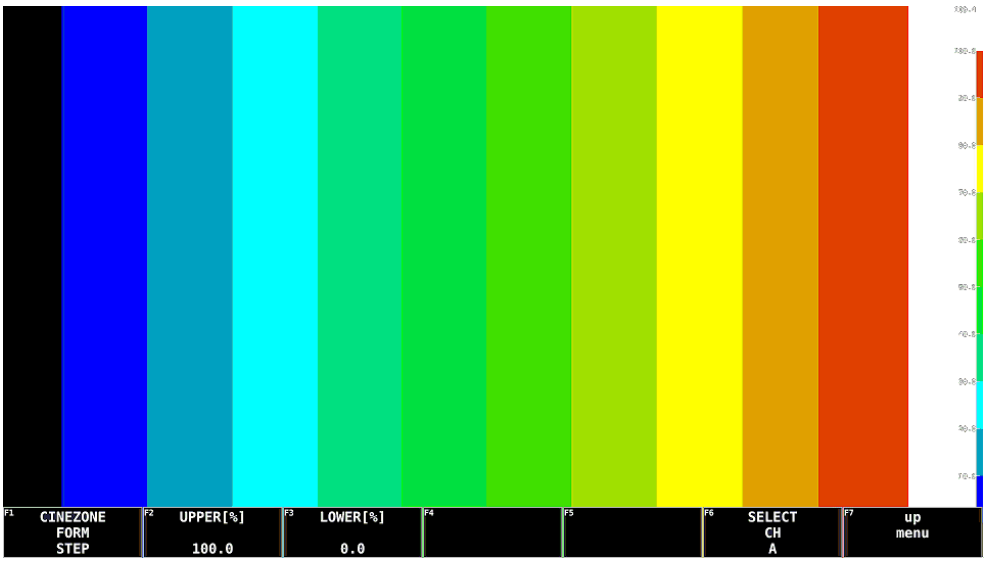


Figure 11-21 Step display

● **Search Display**

The luminance level that you specify (using F•2 LEVEL) ±0.5 % is displayed in green on an otherwise monochrome picture display. (LEVEL: -7.3 - 40.0 - 109.4)

Also, luminance levels above F•2 UPPER[%] are displayed in red, and levels below F•3 LOWER[%] are displayed in blue. F•2 UPPER[%] and F•3 LOWER[%] can be set when F•1 CINEZONE FORM is set to GRADATE or STEP.

You can see what colors correspond to what luminance levels by looking at the scale on the right of the display.

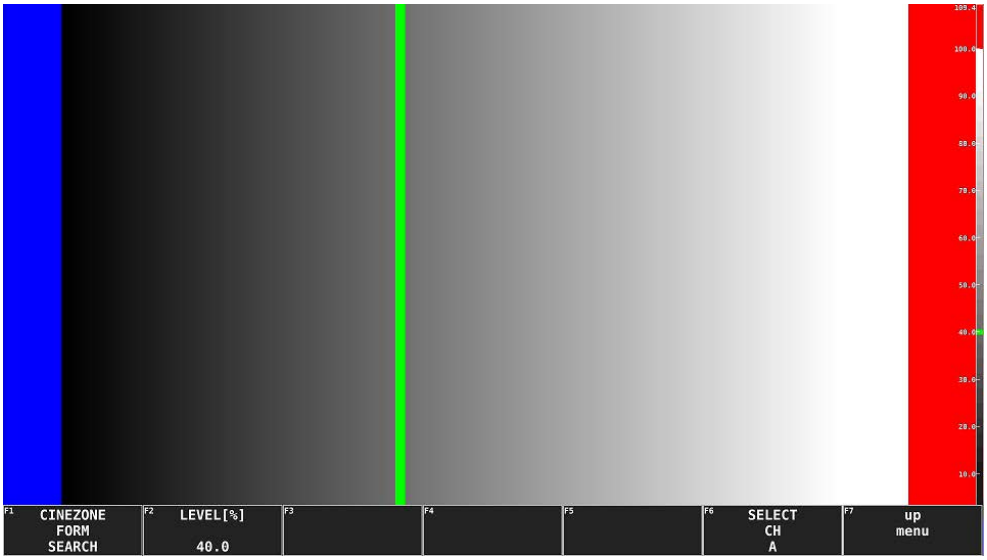


Figure 11-22 Search display

11.4.10 Displaying Link Markers

When CINELITE DISPLAY is set to f Stop or %DISPLAY, to synchronize the markers on the vector screen and video signal waveform screen to measurement points P1 to P3 and REF, follow the procedure below. In addition, the measured values of the selected measurement point are displayed in the lower right of the vector screen. For details on the measured values, see section 10.5.1, “Displaying Vector Markers.”

Synchronized markers can be displayed only when the picture is shown in the same screen. Markers cannot be displayed on the video signal waveform in the following situations.
• When SWEEP is set to V or H SWEEP is set to 2H in the video signal waveform menu
• When COLOR MATRIX in the video signal waveform menu is COMPOSITE
Marker display will not work properly when waveforms or video is being displayed using an external sync signal.

Procedure

PIC → F•4 CINELITE → F•4 CINELITE ADVANCE: OFF, ON

CINELITE ADVANCE = ON

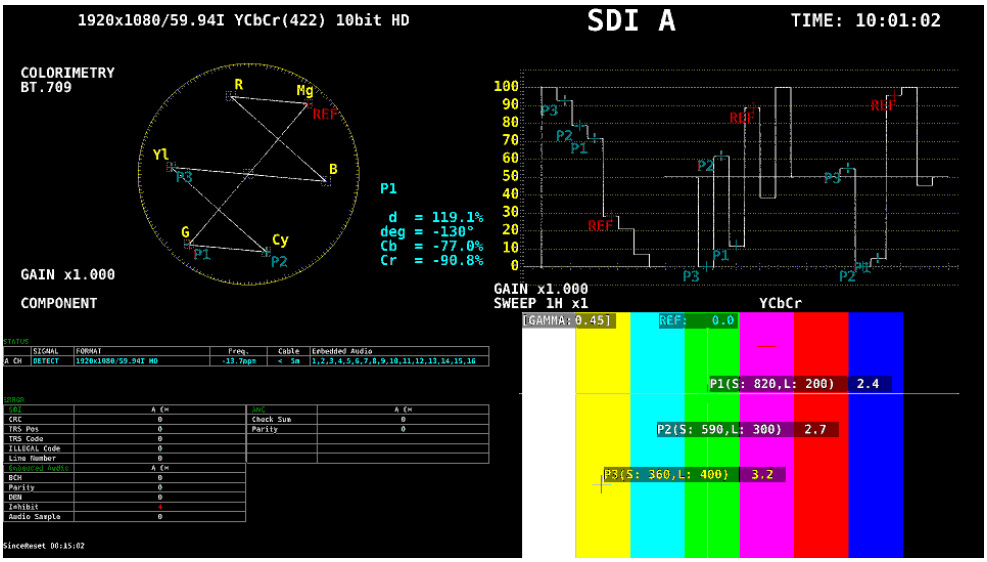


Figure 11-23 Displaying link markers

11.5 Configuring the Display Settings

To configure the display settings, press F•7 DISPLAY on the PIC menu.

PIC → F•7 DISPLAY →

F1	F2	F3	F4	F5	F6	F7
SIZE FIT		3G-B-DS DISPLAY ALIGN	STATUS INFO ON		SELECT CH A	up menu

Figure 11-24 DISPLAY menu

11.5.1 Selecting the Display Size

To select the picture display size, follow the procedure shown below.

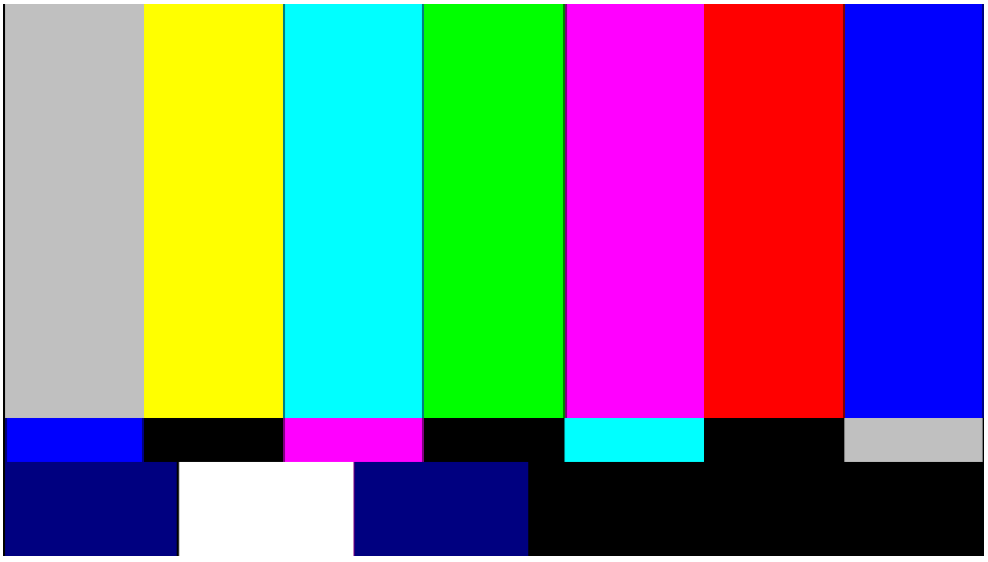
Procedure

PIC → F•7 DISPLAY → F•1 SIZE: FIT, REAL, X2, FULL FRM

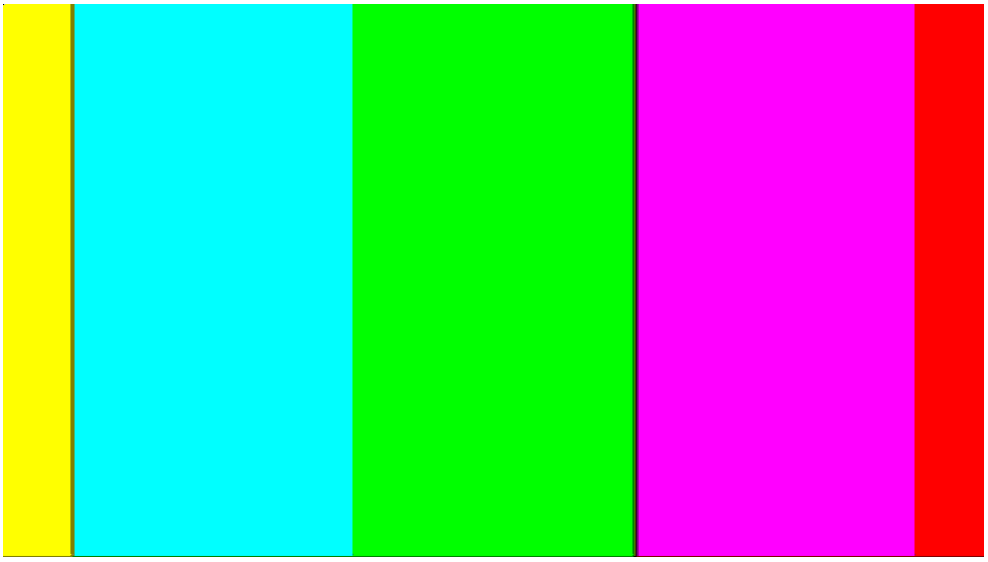
Settings

FIT:	The picture is displayed at the optimal size for the display area. Because the picture is enlarged or reduced, the display may become coarse or pixels may drop out. The LV 7390 uses simple filtering to enlarge and reduce the picture.
REAL:	A single sample of the video signal is displayed with a single pixel on the screen. If the picture is larger than the display area, use the V•POS and H•POS knobs to adjust the picture display position. Press a knob to return the picture to the corresponding default location.
X2:	A single sample of the video signal is displayed with 4 pixels (2 horizontal and 2 vertical pixels) on the screen. If the picture is larger than the display area, use the V•POS and H•POS knobs to adjust the picture display position. Press a knob to return the picture to the corresponding default location.
FULL FRM:	A single frame, including the blanking interval, is displayed.

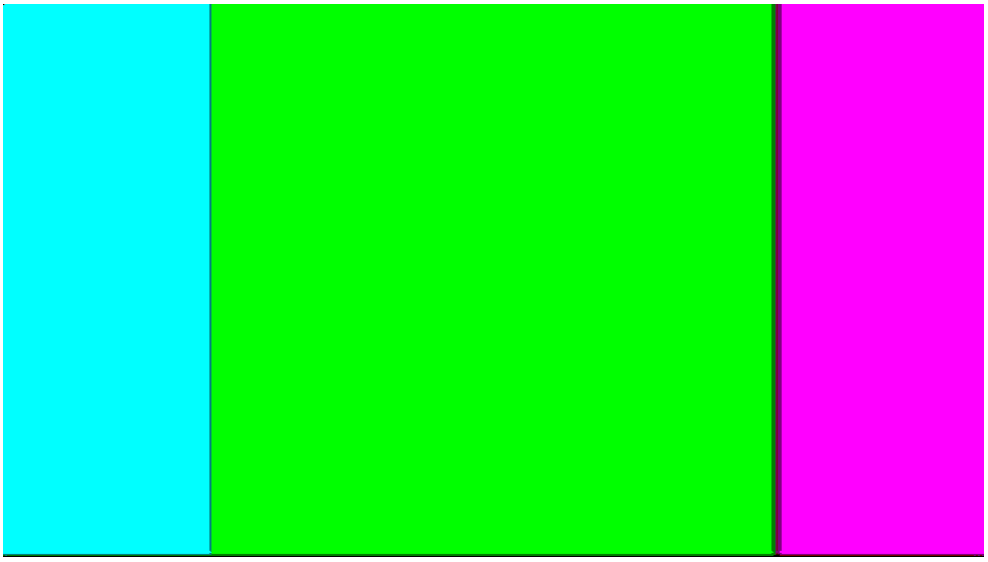
SIZE = FIT



SIZE = REAL



SIZE = X2



SIZE = FULL FRM

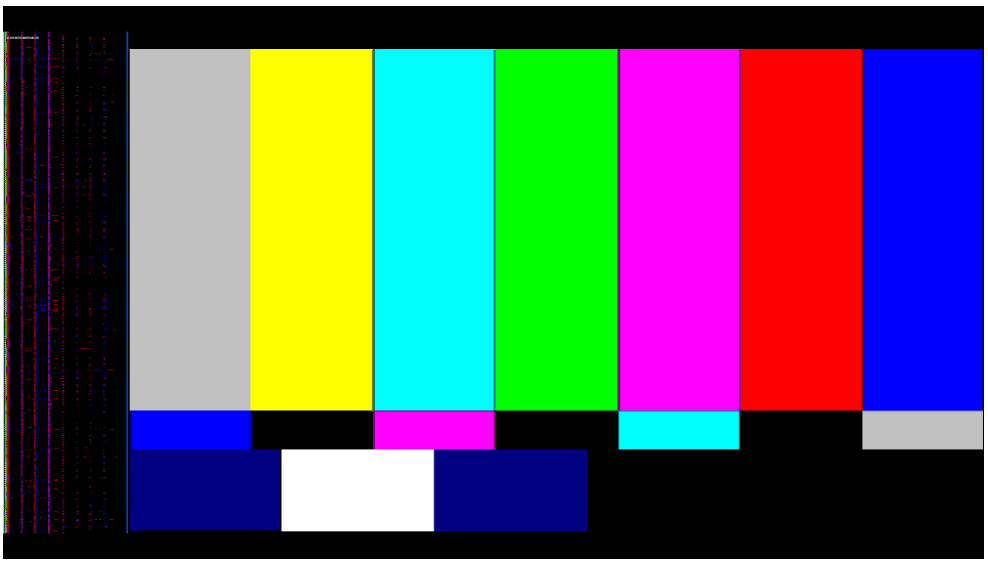


Figure 11-25 Selecting the display size

11.5.2 Configuring the 3G-B-DS Display

When measuring 3G-B-DS, to select the display mode, follow the procedure below.

Procedure

PIC → F•7 DISPLAY → F•3 3G-B-DS DISPLAY: STREAM1, STREAM2, ALIGN

Settings

STREAM1:	Stream 1 is displayed.
STREAM2:	Stream 2 is displayed.
ALIGN:	Streams 1 and 2 are displayed side by side.

3G-B-DS DISPLAY = ALIGN

Figure 11-26 Configuring the 3G-B-DS Display

11.5.3 Turning the Information On and Off

To turn on and off the Format, Input, and Time options that you arranged in the layout, follow the procedure below.

Procedure

PIC → F•7 DISPLAY → F•4 STATUS INFO: ON, OFF

STATUS INFO = ON

Figure 11-27 Turning the information on and off

12. AUDIO DISPLAY (SIMPLE LEVEL METER)

This chapter explains the audio display for when the SER03 is not installed.
For an explanation of the audio display for when the SER03 is installed, see chapter 13, “AUDIO DISPLAY (SER03).”

To display audio, press AUDIO.

On the audio display, you can select any two groups from the embedded audio signal applied to SDI INPUT and display them on a meter.

In addition, switching to simul mode enables SDI inputs A to D to be measured in combination with the audio. As the measurement signals are set using the AUDIO MAPPING tab on the AUDIO menu, F•1 A to F•4 D on the INPUT menu can be either ON or OFF.

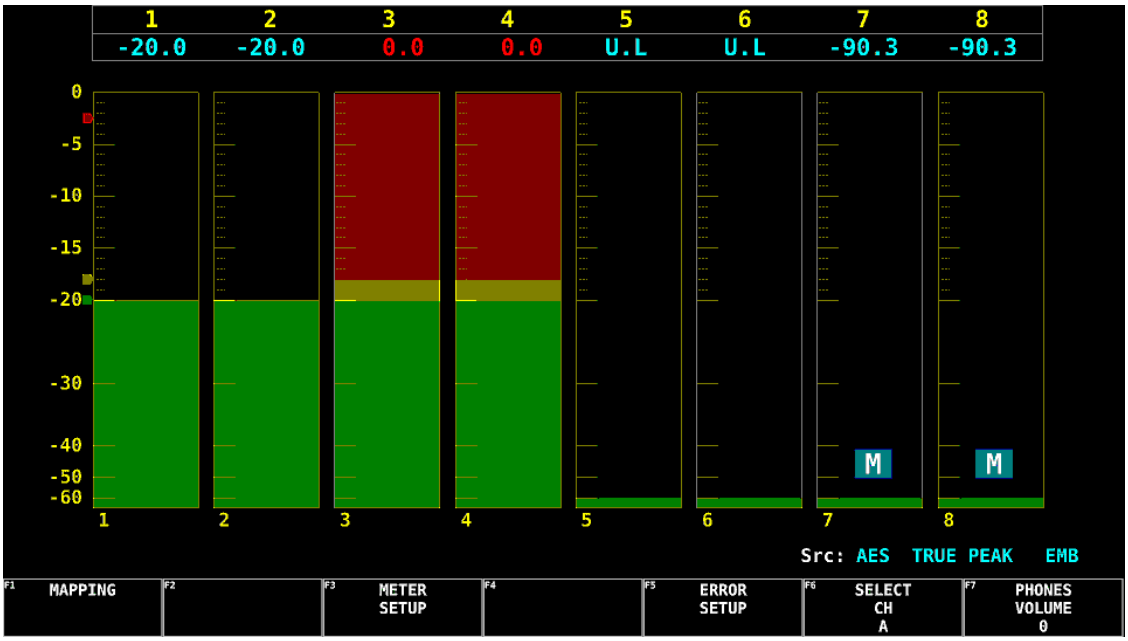


Figure 12-1 Audio display

12.1 Setting the Signals to Measure

To set the signal to measure, follow the procedure below.

Procedure

AUDIO → F•1 MAPPING

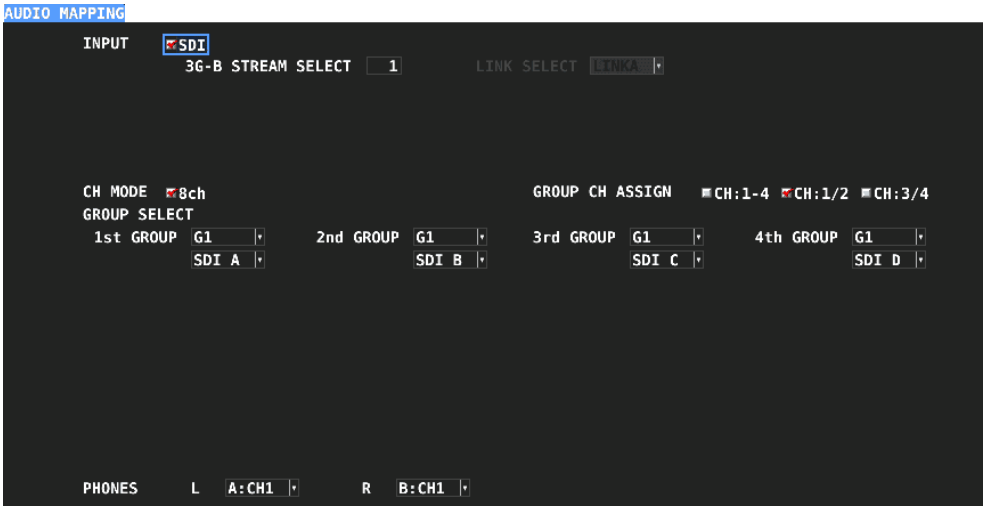


Figure 12-2 AUDIO MAPPING tab

- **INPUT**

  Select the input signal. This is fixed to SDI.

  SDI

- **3G-B STREAM SELECT**

  If INPUT is set to SDI, select the 3G-B stream. This is invalid when the input signal is not 3G-B.

  1, 2

- **LINK SELECT**

  If the input signal is 4K, select the link.

  LINK1, LINK2, LINK3, LINK4

- **CH MODE**

  Select the number of measurement channels. This is fixed to 8ch.

  8ch

● GROUP CH ASSIGN

In simul mode, select the measurement channel.

CH:1-4:	The two groups selected for 1st GROUP and 2nd GROUP are measured.
CH:1/2:	For the four groups selected for 1st GROUP to 4th GROUP, the first and second channels are measured.
CH:3/4:	For the four groups selected for 1st GROUP to 4th GROUP, the third and fourth channels are measured.

●GROUP SELECT

Select the audio group.
(G1: 1 to 4ch, G2: 5 to 8ch, G3: 9 to 12ch, G4: 13 to 16ch)

G1, G2, G3, G4

In simul mode, also select the input channel.

SDI A, SDI B, SDI C, SDI D

● PHONES

From the measurement groups selected with GROUP SELECT, select the headphone output channels.

CH1 - CH16, A:CH1 - A:CH16, B:CH1 - B:CH16, C:CH1 - C:CH16, D:CH1 - D:CH16

12.2 Configuring Error Detection Settings

To configure the error detection and meter display settings, follow the procedure below.

Procedure

AUDIO → F•5 ERROR SETUP

Figure 12-3 ERROR SETUP tab

- **Level Over**

  Select whether to detect level errors.
  If set to ON, the level is displayed in red when the level set with OVER dBFS is exceeded.
  [See also] OVER dBFS → 12.4.4, “Setting the Reference Level”

  OFF, ON

- **Mute**

  Select whether to detect mute errors.

  OFF, ON

  If set to ON, you can set the duration. An error is detected when a mute signal lasts longer than the duration set here.

  1 - 1000 - 5000

- **METER INDICATION (Mute)**

  If Mute is set to ON, turn on or off the “M” indication that appears when errors occur.

  OFF, ON

12.3 Configuring the Headphone Setting

To adjust the headphone volume, follow the procedure below.
Press the function dial (F•D) to return the setting to its default value (0).

Procedure

AUDIO → F•7 PHONES VOLUME: 0 - 63

12.4 Meter Display

On the meter display, 8-channel audio levels are displayed numerically and on a bar graph.

12.4.1 Meter Display Description

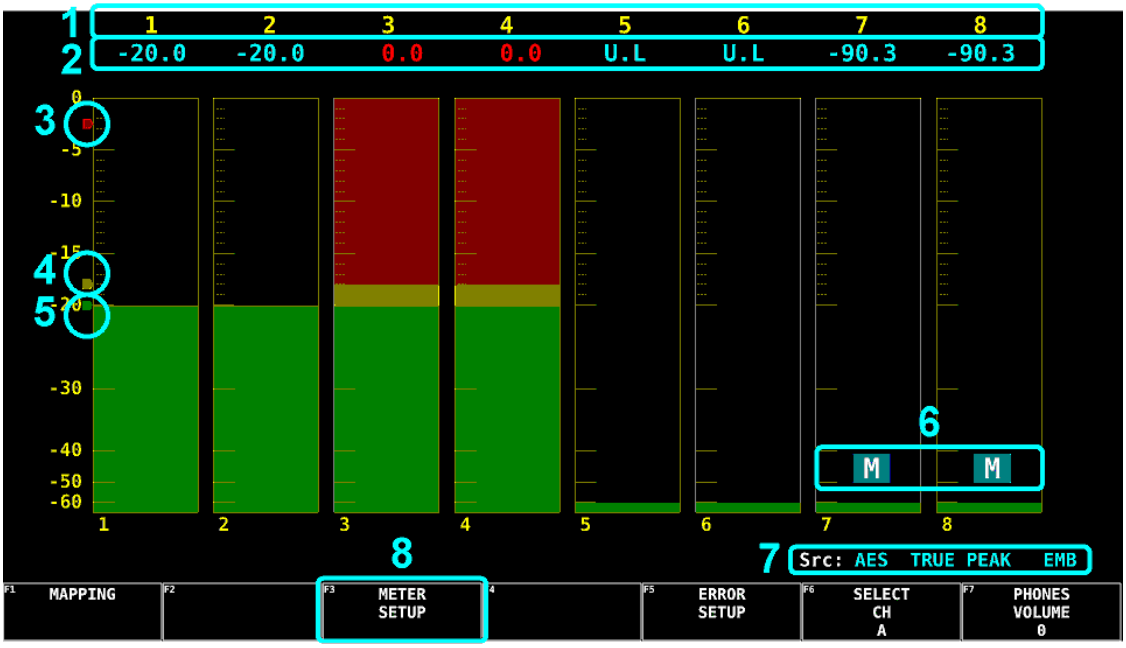


Figure 12-4 Meter display

1 Measurement channels

Channels selected with GROUP SELECT of F•1 MAPPING are measured.

2 Values

Audio levels are displayed numerically.
If an audio signal cannot be detected correctly, “U.L” is displayed.
Values are normally displayed in cyan, but they are displayed in red for channels on which level errors occur.

3 Red arrow

The red arrow displays the level set with OVER dBFS. A level error occurs when this level is exceeded.

[See also] OVER dBFS → 12.4.4, “Setting the Reference Level”

4 Yellow arrow

The yellow arrow displays the level set with WARNING dBFS. Levels that exceed the level specified here are displayed in red. Levels below this level are displayed in yellow.

[See also] WARNING dBFS → 12.4.4, “Setting the Reference Level”

5 Green arrow

The green arrow displays the level set with REF dBFS. Levels that exceed the level specified here are displayed in yellow. Levels below this level are displayed in green.

[See also] REF dBFS → 12.4.4, “Setting the Reference Level”

6 M

This appears when a mute error occurs. Use METER INDICATION of F•5 ERROR SETUP to turn this on or off.

7 Src

From the left, the input audio type, meter response model, EMB (embedded audio signal) or AES (external audio signal) are displayed.
This is fixed to “AES TRUE PEAK EMB.”

8 METER SETUP

Configure the meter display.

AUDIO → F•3 METER SETUP →

Figure 12-5 METER SETUP menu

12.4.2 Selecting the Scale

To select the meter's scale, follow the procedure below. This is fixed to 60DBFS.

Procedure

AUDIO → F•3 METER SETUP → F•1 DYNAMIC RANGE: 60DBFS

Settings

60DBFS:	The meter's scale is set to -60 to 0 (dBFS).

12.4.3 Selecting the Response Model

To select the meter's response model, follow the procedure below. This is fixed to TRUEPEAK.
The selected response model is indicated in the lower right of the screen.

Procedure

AUDIO → F•3 METER SETUP → F•2 RESPONSE: TRUEPEAK

12.4.4 Setting the Reference Level

To set the reference level, press F•5 LEVEL SETTING on the METER SETUP menu.

AUDIO → F•3 METER SETUP → F•5 LEVEL SETTING →

Figure 12-6 LEVEL SETTING menu

To set the meter reference level, follow the procedure below.

OVER dBFS: Set the threshold level for level errors.
WARNING dBFS: The portion of the meter that exceeds the level specified here is displayed in red. The portion of the meter below this level is displayed in yellow.
REF dBFS: The portion of the meter that exceeds the level specified here is displayed in yellow. The portion of the meter below this level is displayed in green.

Procedure

AUDIO → F•3 METER SETUP → F•5 LEVEL SETTING
→ F•1 OVER dBFS: -40.0 - 0.0
→ F•2 WARNING dBFS: -40.0 - -18.0 - 0.0
→ F•3 REF dBFS: -40.0 - -20.0 - 0.0

13. AUDIO DISPLAY (SER03)

This chapter explains the audio display for when the SER03 is installed.
For an explanation of the audio display for when the SER03 is not installed, see chapter 12, “AUDIO DISPLAY (SIMPLE LEVEL METER).”

To display audio, press AUDIO.

On the audio display, embedded audio signals applied to SDI INPUT or external audio signals applied to AUDIO INPUT/OUTPUT can be measured. AUDIO INPUT/OUTPUT can be used as output terminals by switching AUDIO IN/OUT in the system settings.

When measuring embedded audio, switching to simul mode enables SDI inputs A to D to be measured in combination with the audio. As the measurement signals are set using the AUDIO MAPPING tab on the AUDIO menu, F•1 A to F•4 D on the INPUT menu can be either ON or OFF.

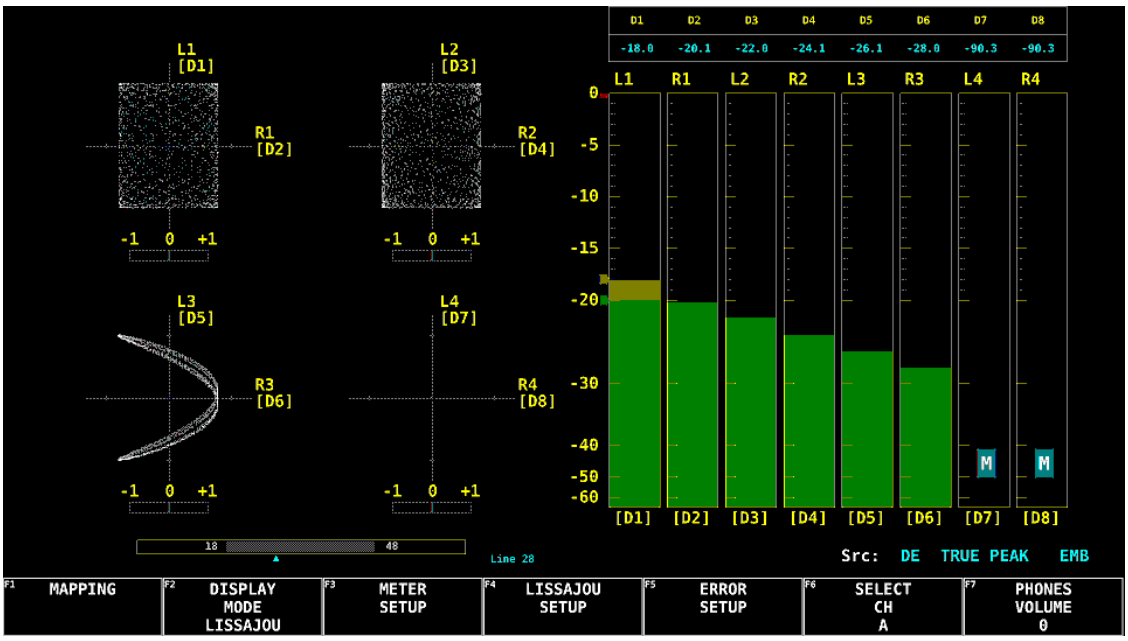


Figure 13-1 Audio display

- **Indicators (option)**

  During Dolby E measurement of embedded audio, set Dolby E LINE POSITION on the DOLBY SETTING tab to ON to display the frame location value with a line and ▲ below the Lissajous and surround displays. These are normally shown in cyan, but when the value exceeds the specified threshold, they turn red.

●Src

From the left, the input audio type, meter response model, EMB (embedded audio signal) or AES (external audio signal) are displayed.
For meter response model, the indication is not displayed on the loudness display.

	Display Indication	Description
Input audio type	AES	-
Meter response model	TRUE PEAK	When RESPONSE is TRUEPEAK
	PPM(I)	When PPM MODE is PPM(I)
	PPM(II)	When PPM MODE is PPM(II)
	VU+TRUE	When PEAK METER is TRUE
	VU+PPM(I)	When PEAK METER is PPM(I)
	VU+PPM(II)	When PEAK METER is PPM(II)
EMB or AES	EMB	When INPUT is SDI
	AES	When INPUT is EXT AUDIO

13.1 Setting the Signals to Measure

To set the signal to measure, follow the procedure below.

The items that you can set here vary depending on the display mode. Select the display mode with F•2 DISPLAY MODE first, and then use F•1 MAPPING.

Procedure

AUDIO → F•1 MAPPING

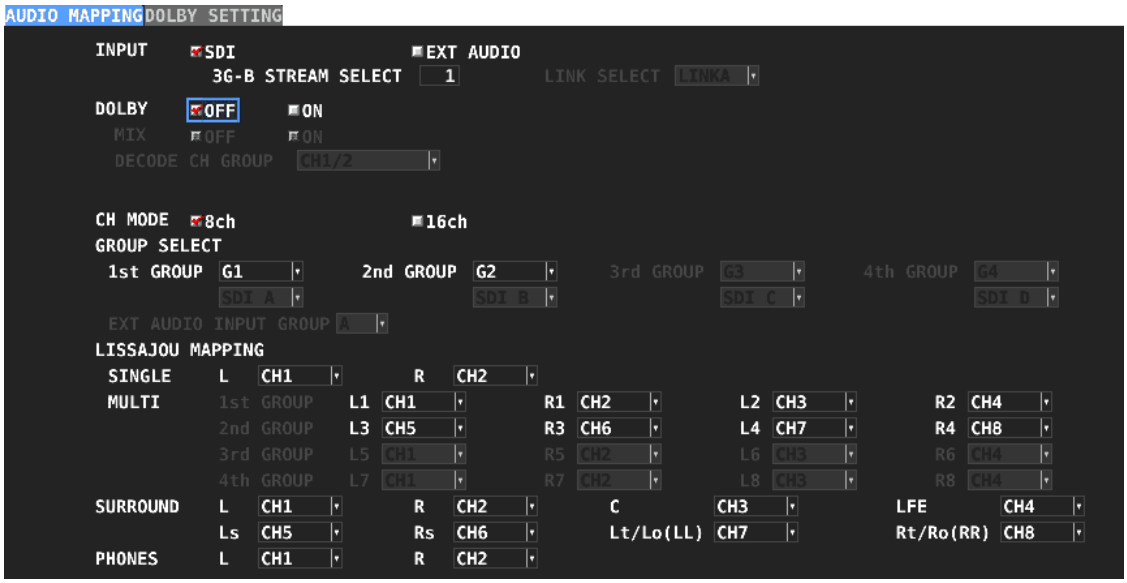


Figure 13-2 AUDIO MAPPING tab

● **INPUT**

Select the input signal.

SDI:	The embedded audio signal applied to SDI INPUT is measured.
EXT AUDIO:	The external audio signal applied to AUDIO INPUT/OUTPUT is measured. This is not available if both Audio BNC settings are set to Output on the AUDIO IN/OUT tab in the system settings.

● **3G-B STREAM SELECT**

If INPUT is set to SDI, select the 3G-B stream. This is invalid when the input signal is not 3G-B.

1, 2

● **LINK SELECT**

If the input signal is 4K, select the link.

LINK1, LINK2, LINK3, LINK4

● **DOLBY (option)**

During single input mode, select whether to turn the Dolby signal measurement on or off. The Dolby signal type (Dolby E, Dolby Digital, Dolby Digital Plus) is automatically detected.

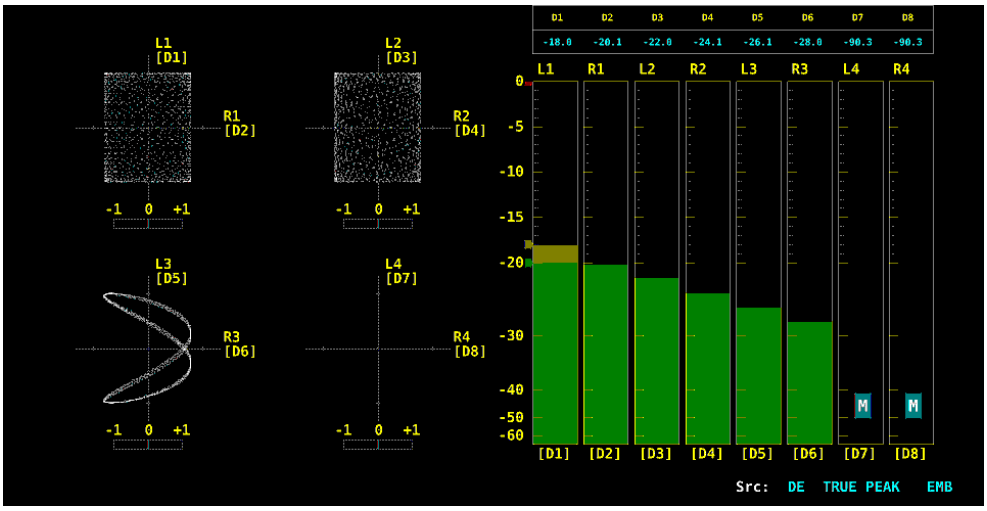
OFF, ON

●MIX (option)

When DOLBY is set to ON, turn mix mode on or off.

OFF:	Signals (channels D1 to D8) obtained by decoding the channels selected with DECODE CH GROUP are displayed. This is fixed to eight channels.
ON:	The left half of the screen shows the embedded audio signal selected with GROUP SELECT, and the right half shows the signals (channels D1 to D8) obtained by decoding the channels selected with DECODE CH GROUP. This is fixed to 16 channels. Set INPUT to SDI to use this option.

MIX = OFF



MIX = ON

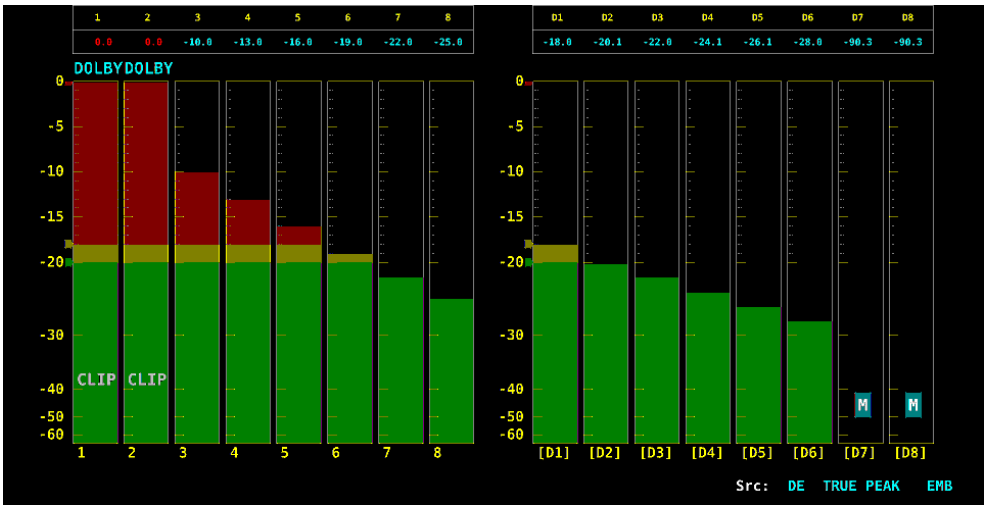


Figure 13-3 Turning mix mode on and off

● **DECODE CH GROUP (option)**

When DOLBY is set to ON, select the channels to decode.
CH 9/10 to CH15/16 can be selected when MIX is set to ON.

CH1/2 / CH3/4 / CH5/6 / CH7/8 / CH9/10 / CH11/12 / CH13/14 / CH15/16
(When INPUT is SDI)
A:CH1/2 / A:CH3/4 / A:CH5/6 / A:CH7/8 / B:CH1/2 / B:CH3/4 / B:CH5/6 / B:CH7/8
(When INPUT is EXT AUDIO)

● **CH MODE**

Select the number of measurement channels.
If INPUT is set to EXT AUDIO and if either Audio BNC setting is set to Output on the AUDIO IN/OUT tab in the system settings, you cannot select 16ch.
This setting is not possible when DOLBY is set to ON. It is fixed to eight channels when MIX is OFF and 16 channels when MIX is ON.

8ch, 16ch

● **1st GROUP**、**2nd GROUP**、**3rd GROUP**、**4th GROUP**

If INPUT is set to SDI, select the measurement group.
(G1: 1 to 4ch, G2: 5 to 8ch, G3: 9 to 12ch, G4: 13 to 16ch)

G1, G2, G3, G4

In simul mode, also select the input channel.

SDI A, SDI B, SDI C, SDI D

● EXT AUDIO INPUT GROUP

If INPUT is set to EXT AUDIO, select the measurement group.
Groups set to Output on the AUDIO IN/OUT tab in the system settings cannot be selected.
This setting is not possible when DOLBY is set to ON.

A, B

● LISSAJOU MAPPING

From the measurement groups selected with GROUP SELECT, select the channels to assign to Lissajous or meter.
The Lt and Rt channels that are selected for SINGLE are determined from the channels assigned to L, R, C, LFE, Ls, and Rs of SURROUND.

CH1 - CH16, A:CH1 - A:CH16, B:CH1 - B:CH16, C:CH1 - C:CH16, D:CH1 - D:CH16,
Lt, Rt, D1 - D8 (option)

● SURROUND

From the measurement groups selected with GROUP SELECT, select the channels to assign to surround or meter.

CH1 - CH16, A:CH1 - A:CH16, B:CH1 - B:CH16, C:CH1 - C:CH16, D:CH1 - D:CH16
, D1 - D8 (option)

● PHONES

From the measurement groups selected with GROUP SELECT, select the headphone output channels.
The Lt and Rt channels are determined from the channels assigned for SURROUND and are enabled on the single Lissajous display.

CH1 - CH16, A:CH1 - A:CH16, B:CH1 - B:CH16, C:CH1 - C:CH16, D:CH1 - D:CH16,
Lt, Rt, D1 - D8 (option), DAUX(option)

13.2 Configuring the Dolby Settings (Option)

During Dolby measurement, to set the Dolby signal, follow the procedure below.

Procedure

AUDIO → F•1 MAPPING → F•3 NEXT TAB

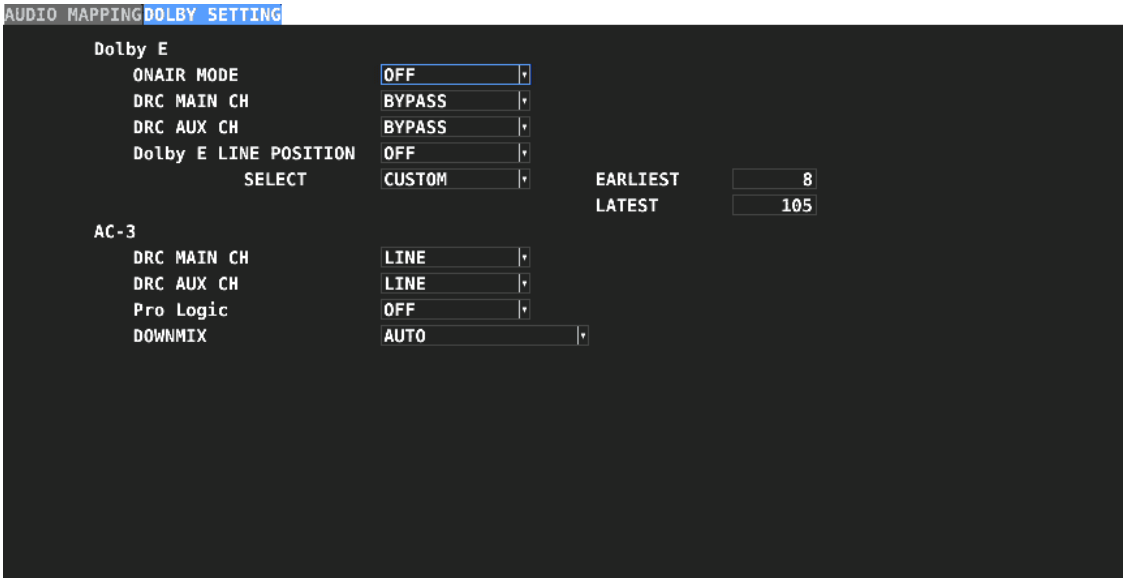


Figure 13-4 DOLBY SETTING tab

- **ONAIR MODE**

  Turns the Dolby E on-air mode on and off.

  OFF, ON

- **DRC MAIN CH**

  Select the Dolby E DRC (Dynamic Range Control).

  BYPASS, DIALNORM, LINE, RF

- **DRC AUX CH**

  Select the Dolby E auxiliary DRC.

  BYPASS, DIALNORM, LINE, RF

- **Dolby E LINE POSITION**

  Turns the Dolby E frame location indicator display on and off.
  When set to ON during embedded audio measurement, the frame location value is displayed with a line and ▲ below the Lissajous and surround displays. These are normally shown in cyan, but when the value exceeds the specified threshold, they turn red.

  OFF, ON

● **SELECT**

Select the type of frame location threshold value.
The lower limit (EARLIEST) and upper limit (LATEST) when VALID or IDEAL is selected automatically change depending on the format. If you select CUSTOM, you can specify a value between 8 and 105.

VALID, IDEAL, CUSTOM

● **DRC MAIN CH**

Select the Dolby Digital DRC.

DIALNORM, LINE, RF

● **DRC AUX CH**

Select the Dolby Digital auxiliary DRC.

DIALNORM, LINE, RF

● **Pro Logic**

Turns the Dolby Digital Pro Logic II on and off.

OFF, ON

● **DOWNMIX**

Select the Dolby Digital downmix mode.

AUTO, Lt/Rt. Lo/Ro, Pro Logic II, Pro Logic II(pro)

13.3 Selecting the Display Mode

To select the display mode, follow the procedure below.

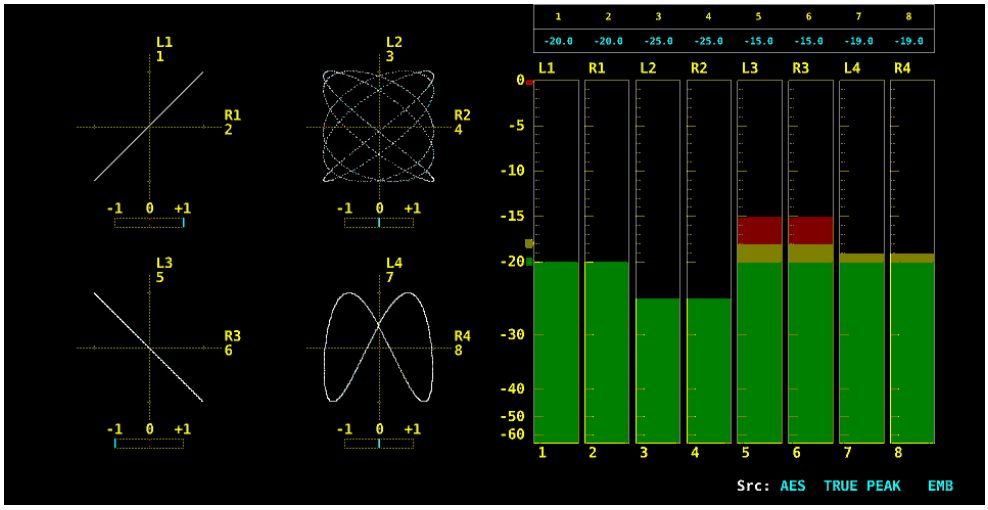
Procedure

AUDIO → F•2 DISPLAY MODE: LISSAJOU, METER, SURROUND, STATUS, LOUDNESS

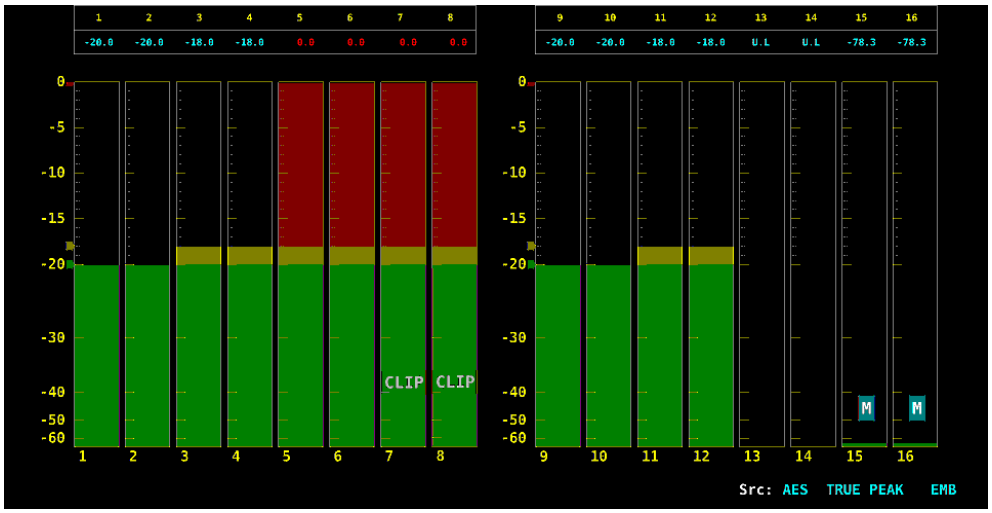
Settings

LISSAJOU:	The Lissajous curves are displayed. During 8-channel measurement, audio meters are also displayed.
METER:	The audio meters are displayed. This option cannot be selected during 8-channel measurement.
SURROUND:	Surround and meters are displayed. This option cannot be selected when during 16-channel measurement or in simul mode during embedded audio measurement.
STATUS:	The status is displayed. During 8-channel measurement, audio meters are also displayed.
LOUDNESS:	The loudness values are displayed on a chart, on a meter, and as values. This option cannot be selected when during 16-channel measurement or in simul mode during embedded audio measurement.

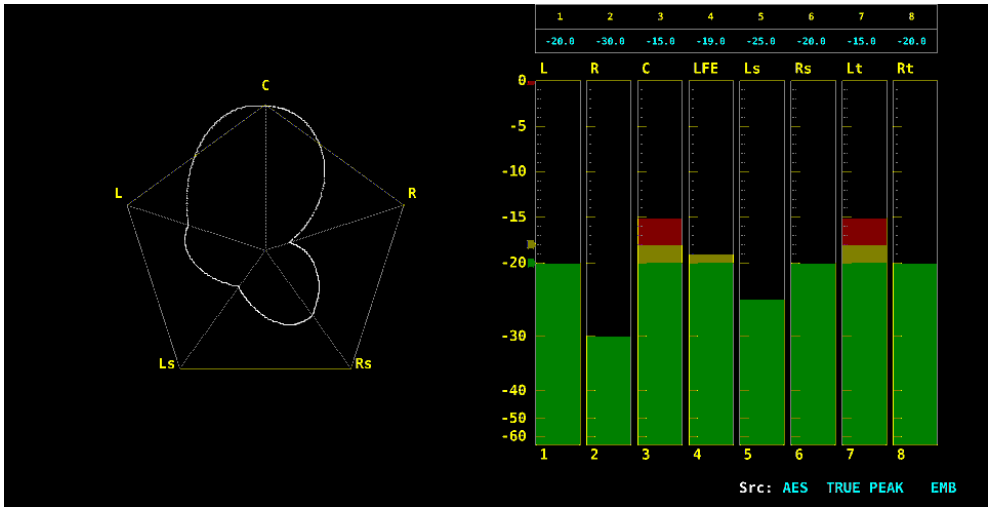
DISPLAY MODE = LISSAJOU



DISPLAY MODE = METER



DISPLAY MODE = SURROUND



DISPLAY MODE = LOUDNESS

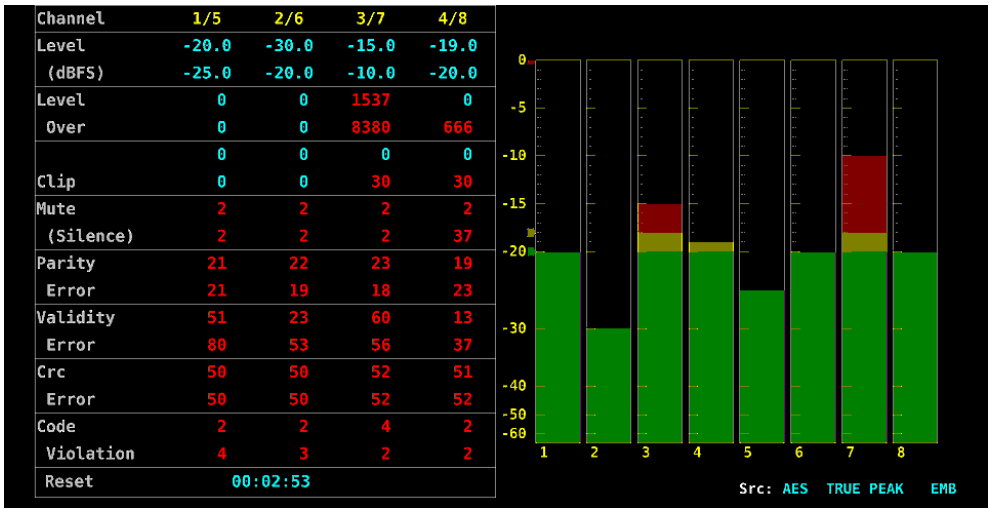


Figure 13-5 Selecting the display mode

13.4 Configuring Error Detection Settings

To configure the error detection and meter display settings, follow the procedure below.
When error detection is set to ON, the following actions are performed when an error occurs.

- Counts errors on the status display.
- Displays errors in the event log of the status display

Procedure

AUDIO → F•5 ERROR SETUP

Figure 13-6 ERROR SETUP tab

● Level Over

Select whether to detect level errors.
An error is detected when the level set with OVER dBFS is exceeded.
[See also] OVER dBFS → 13.6.5, “Setting the Reference Level”

OFF, ON

● Clip

Select whether to detect clip errors.

OFF, ON

If set to ON, you can set the duration. An error is detected when the maximum signal extends beyond the number of samples set here.

1 - 100

- **Mute**

  Select whether to detect mute errors.

  OFF, ON

  If set to ON, you can set the duration. An error is detected when a mute signal lasts longer than the duration set here.

  1 - 1000 - 5000

- **Parity Error**

  Select whether to detect parity errors.

  OFF, ON

- **Validity Error**

  Select whether to detect validity errors.

  OFF, ON

- **CRC Error**

  Select whether to detect CRC errors.

  OFF, ON

- **Code Violation**

  Select whether to detect code violation errors.

  OFF, ON

- **Clip (METER INDICATION)**

  If Clip is set to ON, turn on or off the “CLIP” indication that appears when errors occur.
  Even when set to ON, the indication is not displayed on the loudness display meter.

  OFF, ON

- **Mute (METER INDICATION)**

  If Mute is set to ON, turn on or off the “M” indication that appears when errors occur.

  OFF, ON

- **Dolby E Acmod (option)**

  During Dolby E measurement, turn on or off the NOT USE display on the meter that appears when LFEch is not used.
  Even when set to ON, the indication is not displayed on the loudness display meter.

  OFF, ON

13.5 Configuring the Headphone Setting

To adjust the headphone volume, follow the procedure below.
Press the function dial (F•D) to return the setting to its default value (0).

Procedure

AUDIO → F•7 PHONES VOLUME: 0 - 63

13.6 Meter Display

On the meter display, Audio levels of up to 16 channels are displayed numerically and on a bar graph.
When 8 channels are measured, the meter is always displayed. To display the meter when 16 channels are measured, set F•2 DISPLAY MODE to METER.

13.6.1 Meter Display Description

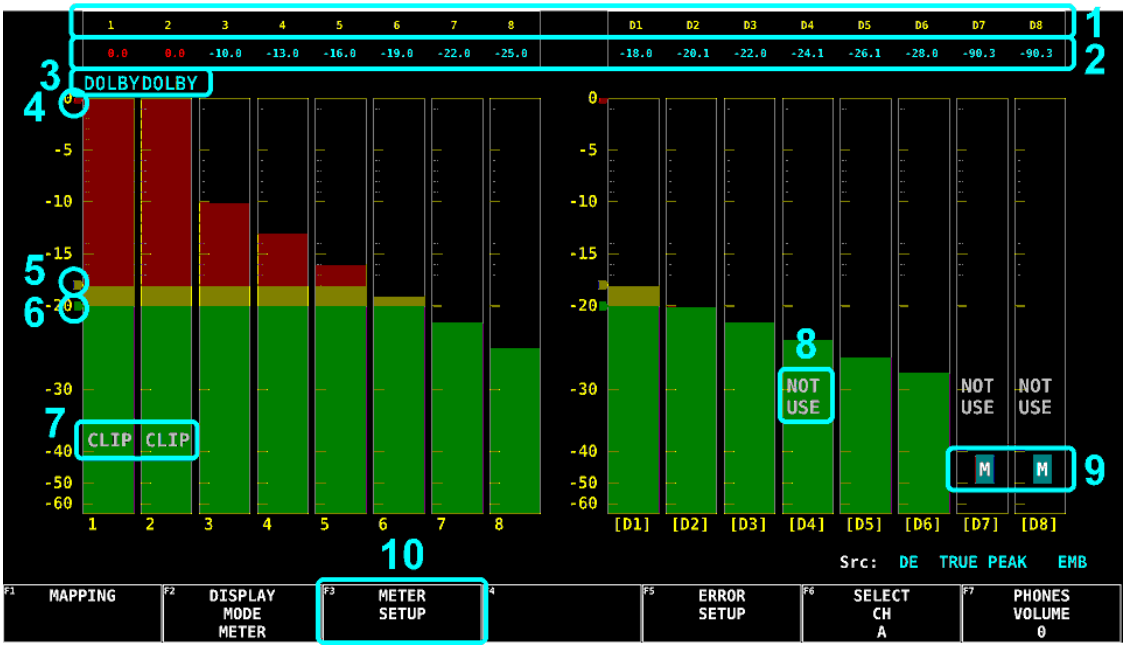


Figure 13-7 Meter display

1 Measurement channels

Channels assigned with F•1 MAPPING are measured.
The measurement channels vary depending on the display mode as follows.

CH MODE	DISPLAY MODE	INPUT	Measurement channels
8ch	LISSAJOU	-	Channels assigned with MULTI LISSAJOU MAPPING (for multi Lissajous)
		SDI	The channels selected with 1st GROUP + 2nd GROUP (for single Lissajous)
		EXT AUDIO	Channels A1 to A8 or B1 to B8 (for single Lissajous)
	SURROUND	-	Channels assigned with SURROUND MAPPING
	STATUS	SDI	The channels selected with 1st GROUP + 2nd GROUP
		EXT AUDIO	Channels A1 to A8 or B1 to B8
16ch	METER	-	Channels assigned with MULTI LISSAJOU MAPPING
Dolby mix mode (option)	METER	(SDI)	Channels assigned with MULTI LISSAJOU MAPPING

2 Values

Audio levels are displayed numerically.
If an audio signal cannot be detected correctly, “U.L” is displayed.
Values are normally displayed in cyan, but they are displayed in red for channels on which level errors occur.

3 DOLBY (option)

This is displayed on channels receiving Dolby signals during Dolby mix mode.

4 Red arrow

The red arrow displays the level set with OVER dBFS. A level error occurs when this level is exceeded.
[See also] OVER dBFS → 13.6.5,, “Setting the Reference Level”

5 Yellow arrow

The yellow arrow displays the level set with WARNING dBFS. Levels that exceed the level specified here are displayed in red. Levels below this level are displayed in yellow.
[See also] WARNING dBFS → 13.6.5, “Setting the Reference Level”

6 Green arrow

The green arrow displays the level set with REF dBFS. Levels that exceed the level specified here are displayed in yellow. Levels below this level are displayed in green.
[See also] REF dBFS → 13.6.5, “Setting the Reference Level”

7 CLIP

This appears when a clip error occurs. Use METER INDICATION of F•5 ERROR

SETUP to turn this on or off.

8 NOT USE (option)

This appears when LFEch is not used during Dolby E measurement. Use METER INDICATION of F•5 ERROR SETUP to turn this on or off.

9 M

This appears when a mute error occurs. Use METER INDICATION of F•5 ERROR SETUP to turn this on or off.

10 METER SETUP

Configure the meter display.

AUDIO → F•3 METER SETUP →

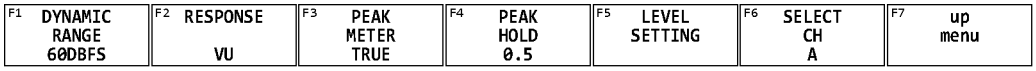


Figure 13-8 METER SETUP menu

13.6.2 Selecting the Scale

To select the meter's scale, follow the procedure below.

Procedure

AUDIO → F•3 METER SETUP → F•1 DYNAMIC RANGE: 60DBFS, 90DBFS, MAG

Settings

60DBFS:	The meter's scale is set to -60 to 0 (dBFS).
90DBFS:	The meter's scale is set to -90 to 0 (dBFS).
MAG:	The meter's scale is set to the level specified by F•5 LEVEL SETTING → F•3 REF dBFS ±3 dB.

13.6.3 Selecting the Response Model

To select the meter's response model, follow the procedure below. The selected response model is indicated in the lower right of the screen.

Procedure

AUDIO → F•3 METER SETUP
→ F•2 RESPONSE: TRUEPEAK, PPM, VU
→ F•3 PPM MODE: PPM(I), PPM(II) (When RESPONSE is PPM)
→ F•3 PEAK METER: TRUE, PPM(I), PPM(II) (When RESPONSE is VU)

The response model details are shown in the following table.

Table 13-1 Response model settings

F•2 RESPONSE	F•3 PPM MODE F•3 PEAK METER	Display	Delay time (*1)	Return time (*2)	Average time
TRUEPEAK	-	TRUE PEAK	0 msec	1.7 sec	-
PPM	PPM(I)	PPM(I)	10 msec	1.7 sec	-
	PPM(II)	PPM(II)	10 msec	2.8 sec	-
VU	TRUE	VU+TRUE	-	-	300 msec
	PPM(I)	VU+PPM(I)	-	-	300 msec
	PPM(II)	VU+PPM(II)	-	-	300 msec

*1 The amount of time it takes for the meter to show -20 dBFS when a -20 dBFS/1 kHz sine-wave signal is applied with no input preceding it.

*2 The amount of time it takes for the meter to show -40 dBFS when a -20 dBFS/1 kHz sine-wave signal is removed from the input.

13.6.4 Setting the Peak Hold

When F•2 RESPONSE is set to VU, to set the peak hold time, follow the procedure below. The unit is seconds. You can set the value in 0.5-second steps.
Press the function dial (F•D) to return the setting to its default value (0.5).

Procedure

AUDIO → F•3 METER SETUP → F•4 PEAK HOLD: 0.0 - 0.5 - 5.0, HOLD

13.6.5 Setting the Reference Level

To set the reference level, press F•5 LEVEL SETTING on the METER SETUP menu.

AUDIO → F•3 METER SETUP → F•5 LEVEL SETTING →

Figure 13-9 LEVEL SETTING menu

To set the meter reference level, follow the procedure below.

OVER dBFS: Set the threshold level for level errors.

WARNING dBFS: The portion of the meter that exceeds the level specified here is displayed in red. The portion of the meter below this level is displayed in yellow.

REF dBFS: The portion of the meter that exceeds the level specified here is displayed in yellow. The portion of the meter below this level is displayed in green. This is also used as the reference when F•1 DYNAMIC RANGE is set to MAG.

Procedure

AUDIO → F•3 METER SETUP → F•5 LEVEL SETTING
→ F•1 OVER dBFS: -40.0 - 0.0
→ F•2 WARNING dBFS: -40.0 - -18.0 - 0.0
→ F•3 REF dBFS: -40.0 - -20.0 - 0.0

13.7 Lissajous Display

On the Lissajous display, Lissajous curves and correction meter of up to 16 channels are displayed.
To display Lissajous curves, set F•2 DISPLAY MODE to LISSAJOU.

13.7.1 Lissajous Display Description

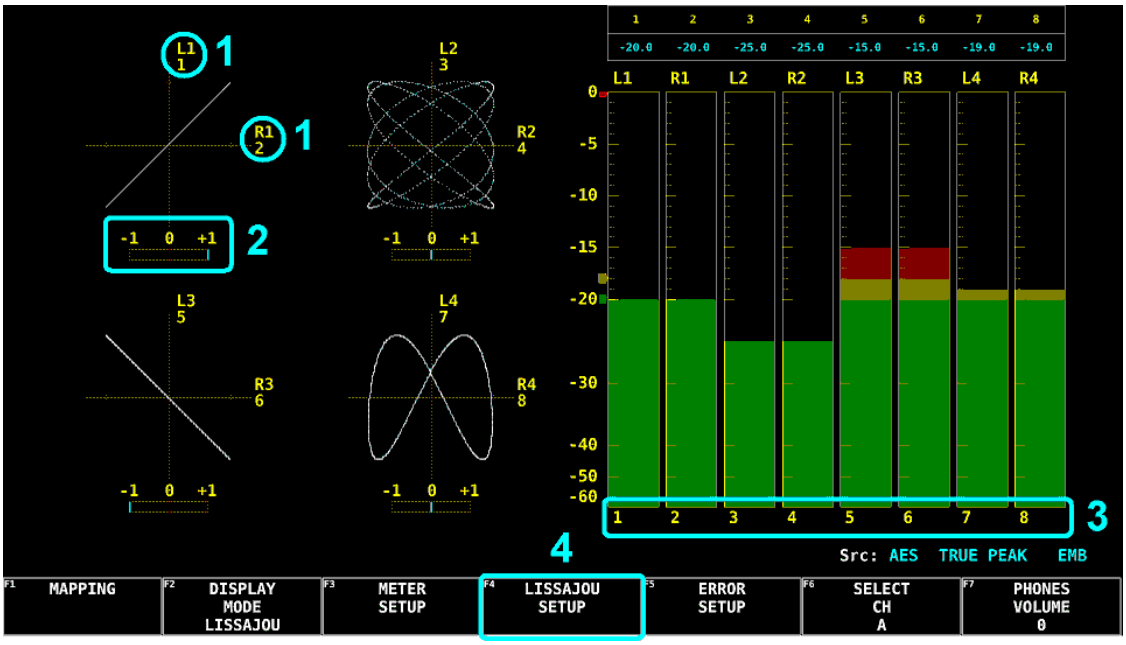


Figure 13-10 Lissajous display

1 Measurement channels (Lissajous)

Channels assigned with LISSAJOU MAPPING of F•1 MAPPING are measured.

2 Correlation meter

The phase difference between two signals is displayed. A reading of +1 indicates that the signals are in-phase, a reading of -1 indicates that the signals are 180° out of phase, and a reading of 0 indicates that the signals are not correlated.

3 Measurement channels (Meter)

For multi Lissajous, channels assigned with MULTI LISSAJOU MAPPING of F•1 MAPPING are measured.
For single Lissajous, channels selected with GROUP SELECT of F•1 MAPPING are measured.
When 16 channels are measured, meters are not displayed.

4 LISSAJOU SETUP

Configure the Lissajous display.
This setting is available when F•2 DISPLAY MODE is set to LISSAJOU.

AUDIO → F•4 LISSAJOU SETUP →

F1	F2	F3	F4	F5	F6	F7
LISSAJOU INTEN 0	SCALE INTEN 4	DISPLAY MULTI	FORM X-Y	AUTO GAIN ON	SELECT CH A	up menu

Figure 13-11 LISSAJOU SETUP menu

13.7.2 Adjusting the Lissajous Curve Intensity

To set the Lissajous curve intensity, follow the procedure below.
Press the function dial (F•D) to return the setting to its default value (0).

Procedure

AUDIO → F•4 LISSAJOU SETUP → F•1 LISSAJOU INTEN: -8 - 0 - 7

13.7.3 Adjusting the Scale Intensity

To adjust the intensity of the Lissajous and meter scales, follow the procedure below.
Press the function dial (F•D) to return the setting to its default value (4).

Procedure

AUDIO → F•4 LISSAJOU SETUP → F•2 SCALE INTEN: -8 - 4 - 7

13.7.4 Selecting the Lissajous Curve Display Format

To select the Lissajous curve display format, follow the procedure below.

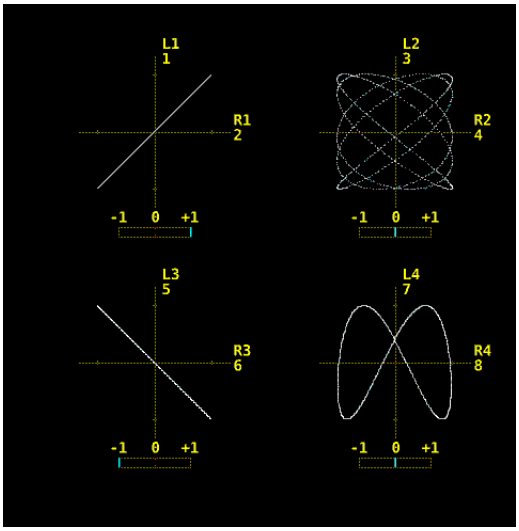
Procedure

AUDIO → F•4 LISSAJOU SETUP → F•3 DISPLAY: MULTI, SINGLE

Settings

MULTI:	Eight channels of Lissajous waveforms and eight channels of audio meters are displayed or 16 channels of Lissajous waveforms are displayed.
SINGLE:	Two channels of Lissajous waveforms and eight channels of audio meters are displayed. This option cannot be selected in simul mode or 16-channel measurement.

DISPLAY = MULTI



DISPLAY = SINGLE

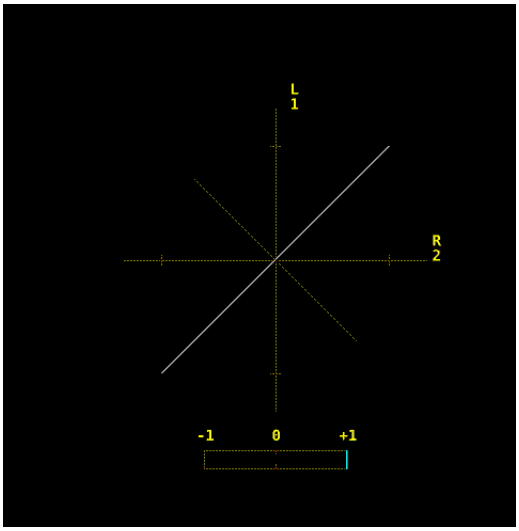


Figure 13-12 Selecting the Lissajous curve display format

13.7.5 Selecting the Scale Display Format

To select the scale display format, follow the procedure below.

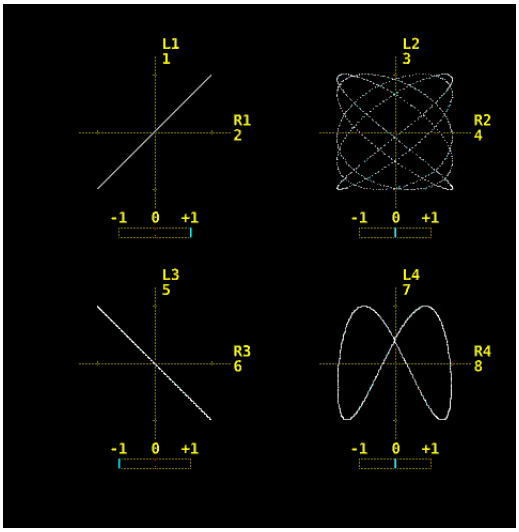
Procedure

AUDIO → F•4 LISSAJOU SETUP → F•4 FORM: X-Y, MATRIX

Settings

X-Y:	R is assigned to the X-axis (horizontal), and L is assigned to the Y-axis (vertical).
MATRIX:	The R and L axes are positioned at 45 ° angles to the X and Y axes.

FORM = X-Y



FORM = MATRIX

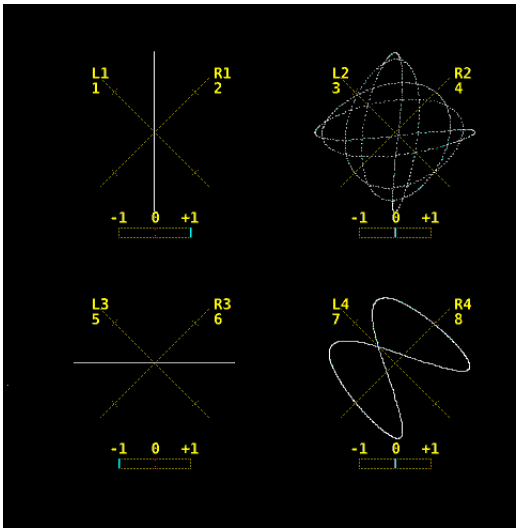


Figure 13-13 Selecting the scale display format

13.7.6 Selecting the Scale Display Format

To select the scale display format, follow the procedure below.

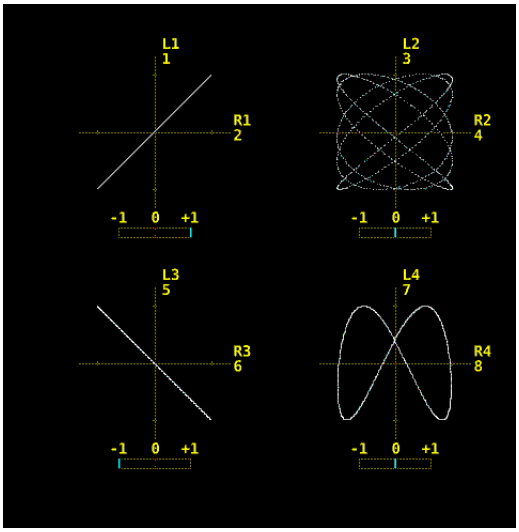
Procedure

AUDIO → F•4 LISSAJOU SETUP → F•5 AUTO GAIN: ON, OFF

Settings

ON:	R is assigned to the X-axis (horizontal), and L is assigned to the Y-axis (vertical).
OFF:	The R and L axes are positioned at 45 ° angles to the X and Y axes.

AUTO GAIN = ON



AUTO GAIN = OFF

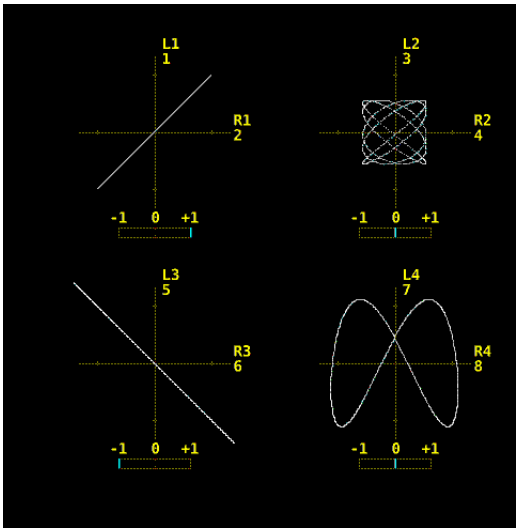


Figure 13-14 Selecting the scale display format

13.8 Surround Display

On the surround display, surround waveforms of channels assigned to Lch, Rch, Cch, Lsch, and Rsch are displayed.
To show the surround display, set F•2 DISPLAY MODE to SURROUND. Surround display is not possible in 16-channel measurement or in simul mode during embedded audio measurement.

13.8.1 Surround Display Description

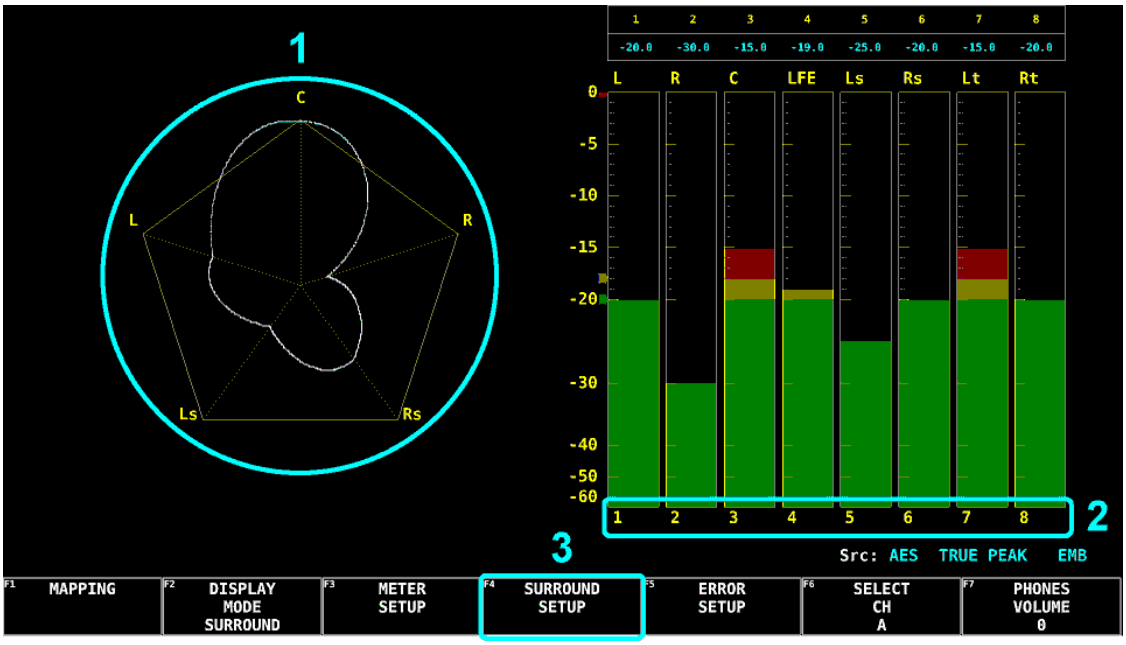


Figure 13-15 Surround display

1 Surround

Surround waveforms of channels assigned to Lch, Rch, Cch, Lsch, and Rsch are displayed.
If adjacent channels (including the L and R channels when SURROUND 5.1 is set to PHANTOM) are of opposite phases, the scale between the channels is displayed in red.

2 Measurement channels

Channels assigned with SURROUND of F•1 MAPPING are measured.

3 SURROUND SETUP

Configure the surround display.
This setting is available when F•2 DISPLAY MODE is set to SURROUND.

AUDIO → F•4 SURROUND SETUP →

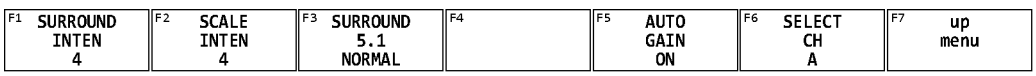


Figure 13-16 SURROUND SETUP menu

13.8.2 Adjusting the Surround Waveform Intensity

To adjust the surround waveform intensity, follow the procedure below.
Press the function dial (F•D) to return the setting to its default value (4).

Procedure

AUDIO → F•4 SURROUND SETUP → F•1 SURROUND INTEN: -8 - 4 - 7

13.8.3 Adjusting the Scale Intensity

To adjust the intensity of the surround and meter scales, follow the procedure below.
Press the function dial (F•D) to return the setting to its default value (4).

Procedure

AUDIO → F•4 SURROUND SETUP → F•2 SCALE INTEN: -8 - 4 - 7

13.8.4 Selecting the Surround Display Format

To select the surround display format, follow the procedure below.

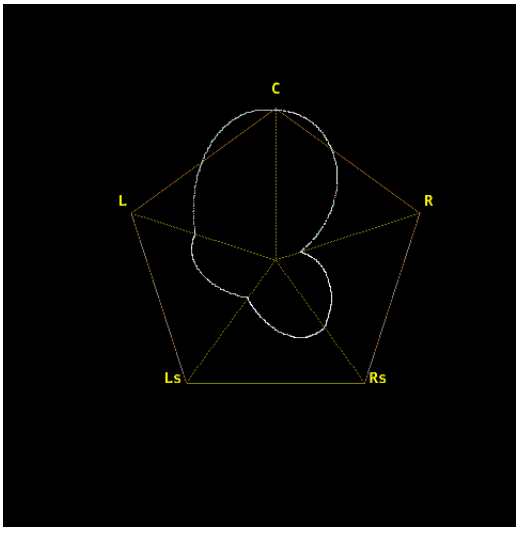
Procedure

AUDIO → F•4 SURROUND SETUP → F•3 SURROUND 5.1: NORMAL, PHANTOM

Settings

NORMAL:	A waveform that combines Lch, Rch, Lsch, Rsch, and Cch (hard center) is displayed.
PHANTOM:	A waveform that combines Lch, Rch, Lsch, Rsch, and phantom center and a Cch (hard center) waveform are displayed separately.

SURROUND 5.1 = NORMAL



SURROUND 5.1 = PHANTOM

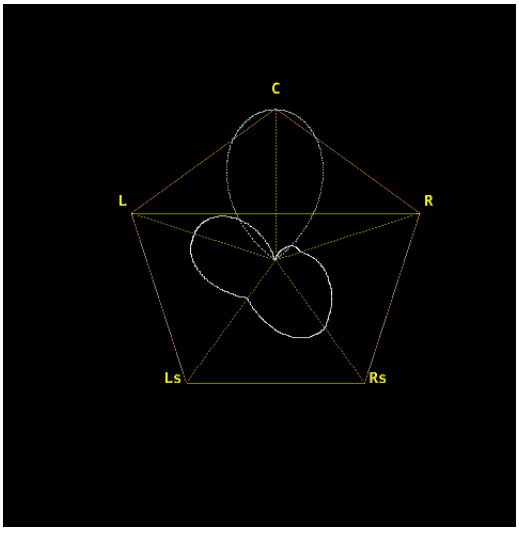


Figure 13-17 Selecting the surround display format

13.8.5 Setting the Surround Waveform Gain

To select the surround waveform gain, follow the procedure below.

Procedure

AUDIO → F•4 SURROUND SETUP → F•5 AUTO GAIN: ON, OFF

Settings

ON:	The gain is automatically adjusted so that the waveform fits the scale.
OFF:	The waveform is displayed with a fixed gain.

13.9 Status Display

On the status display, audio levels and error counts of up to 16 channels are displayed. Errors are counted up to 9999. Channels that are set to OFF according to section 13.4, “Configuring Error Detection Settings” are not displayed.
To show the status display, set F•2 DISPLAY MODE to STATUS.

13.9.1 Status Display Description

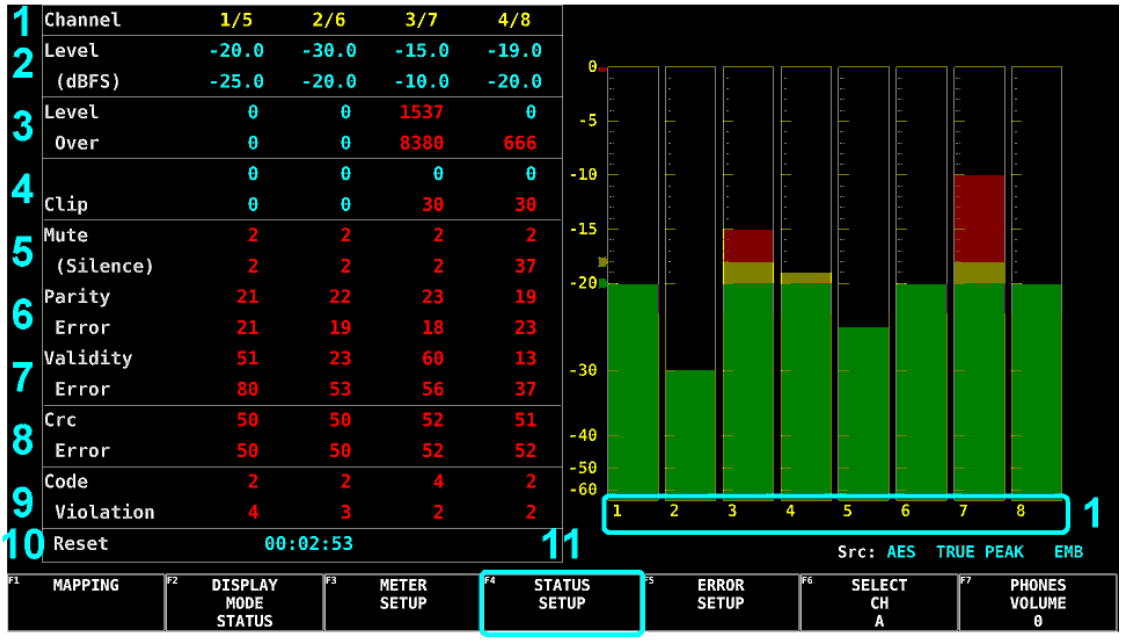


Figure 13-18 Status display

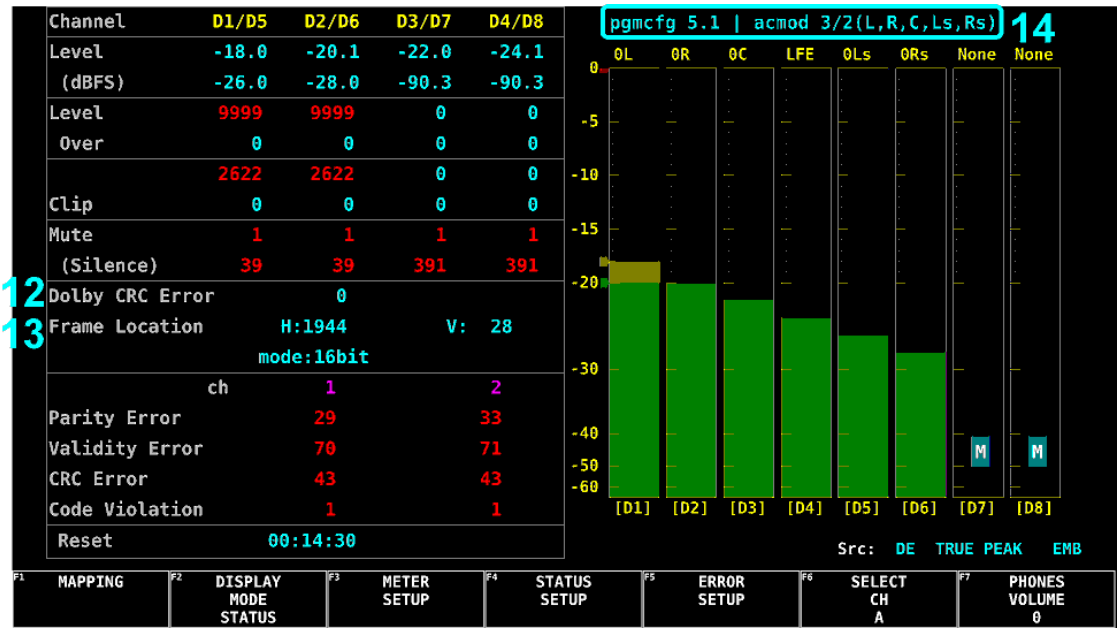


Figure 13-19 Status display (during Dolby measurement)

1 Channel

Channels selected with GROUP SELECT of F•1 MAPPING are displayed. The top line corresponds to the channel to the left of the slash, and the bottom line corresponds to the channel to the right of the slash.

2 Level (dBFS)

Display audio levels numerically.
If an audio signal cannot be detected correctly, “U.L” is displayed, and the following items are blank.

3 Level Over

Displays the number of times the audio level exceeds the OVER dBFS value set in section 13.6.5, “Setting the Reference Level.”

4 Clip

Displays the number of times that a received signal exceeds the maximum signal value for the number of consecutive samples specified in section 13.4, “Configuring Error Detection Settings.”

5 Mute (Silence)

Displays the number of times that a mute signal exceeding the duration specified in section 13.4, “Configuring Error Detection Settings” is received.

6 Parity Error

Counts the number of times that the input signal’s parity bit and the recalculated parity bit differ.

7 Validity Error

Counts the number of times that the input signal’s validity bit is 1.

8 Crc Error

Counts the number of times that the CRC of the channel status bits and the calculated CRC are different.

9 Code Violation

Counts the number of times that the state of the input signal’s biphase modulation is abnormal.

10 Reset

The time that has elapsed since F•4 STATUS SETUP and then F•5 ERROR RESET were pressed is displayed.

11 STATUS SETUP

Configure the status display.
This setting is available when F•2 DISPLAY MODE is set to STATUS.

AUDIO → F•4 STATUS SETUP →

F1 EVENT LOG	F2 METADATA	F3 CHANNEL STATUS	F4 USER BIT	F5 ERROR RESET	F6 SELECT CH A	F7 up menu

Figure 13-20 STATUS SETUP menu

12 Dolby CRC Error (option)

Displays CRC errors during Dolby measurement.

13 Frame Location (option)

Displays the header position and mode during Dolby E measurement.
H and mode are not displayed during external audio measurement.

14 pgmcfg, acmod (option)

Displays the program configuration and audio configuration mode during Dolby measurement.

13.9.2 Event Log Display

This screen is the same as the event log screen of the status display. For details, see section 14.4, “Configuring Event Log Settings.”

Procedure

AUDIO → F•4 STATUS SETUP → F•1 EVENT LOG

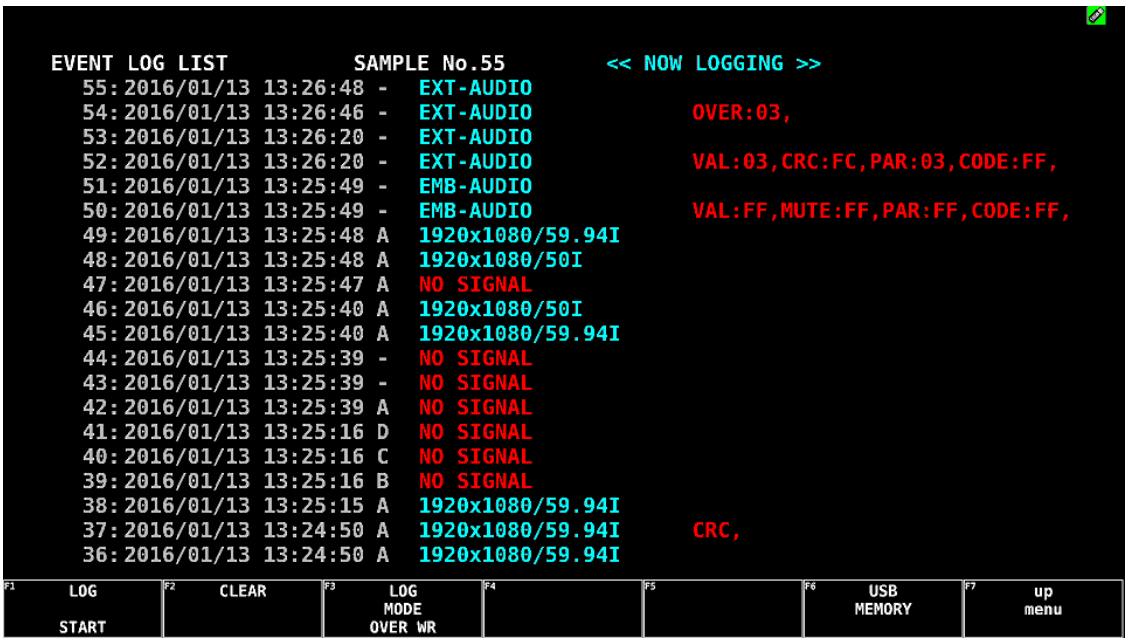


Figure 13-21 Event log display

13.9.3 Metadata Display (Option)

● **Dolby E Metadata Display**

During Dolby E measurement, to view the metadata of the selected program number, follow the procedure below.
To select the program number, press F•1 DOLBY PROGRAM.

Procedure

AUDIO → F•4 STATUS SETUP → F•2 METADATA → F•1 DOLBY E METADATA

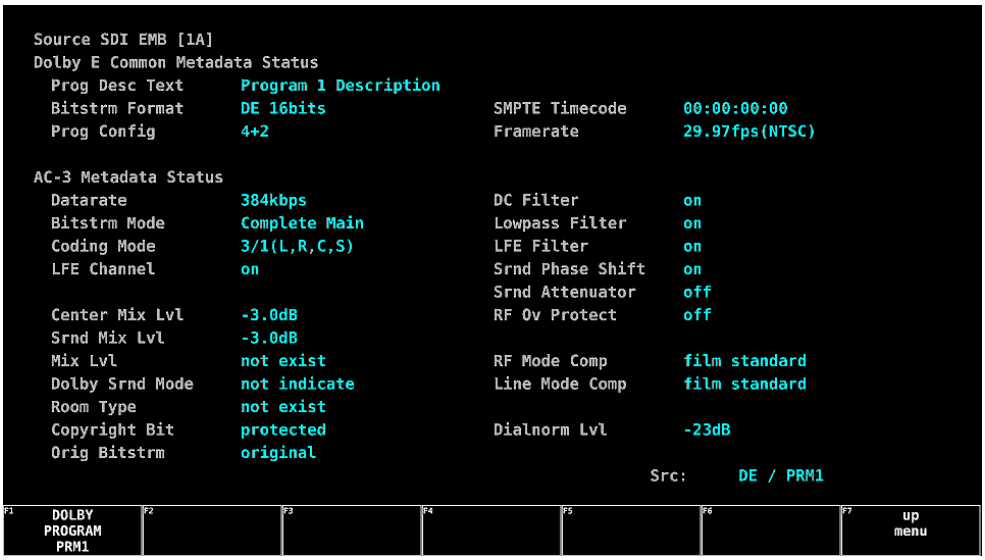


Figure 13-22 Dolby E Metadata display

● **Dolby E EBI Metadata Display**

During Dolby E measurement, to view the EBI (Extended Bitstream Info) metadata of the selected program number, follow the procedure below.
To select the program number, press F•1 DISPLAY PROGRAM.

Procedure

AUDIO →F•4 STATUS SETUP → F•2 METADATA → F•2 EBI METADATA

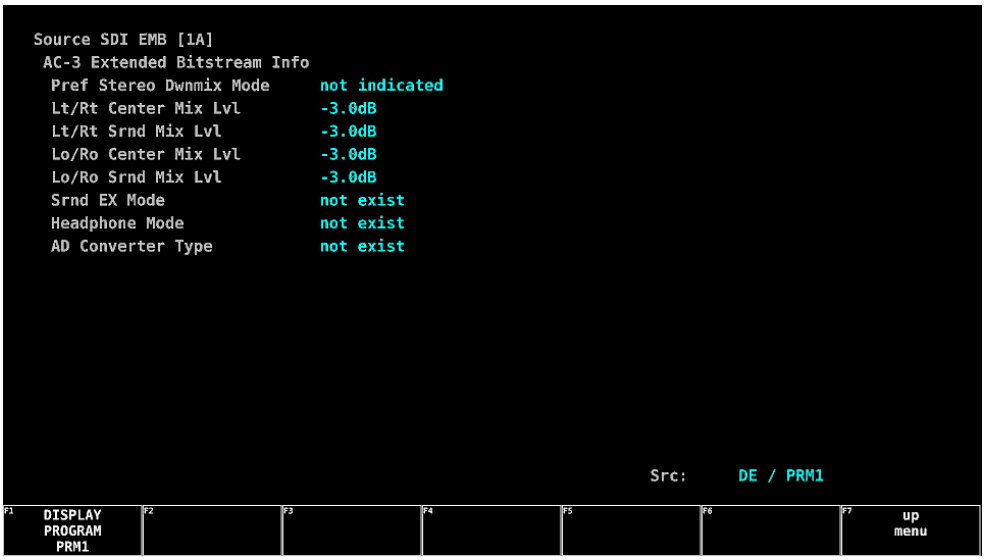


Figure 13-23 Dolby E EBI Metadata display

- **Dolby Digital Metadata Display**

During Dolby Digital measurement, to view the metadata, follow the procedure below.

Procedure

AUDIO → F•4 STATUS SETUP → F•2 METADATA → F•1 DOLBY D METADATA

Figure 13-24 Dolby Digital Metadata display

- **Dolby Digital EBI Metadata Display**

During Dolby Digital measurement, to view the EBI metadata, follow the procedure below.

Procedure

AUDIO → F•4 STATUS SETUP → F•2 METADATA → F•2 EBI METADATA

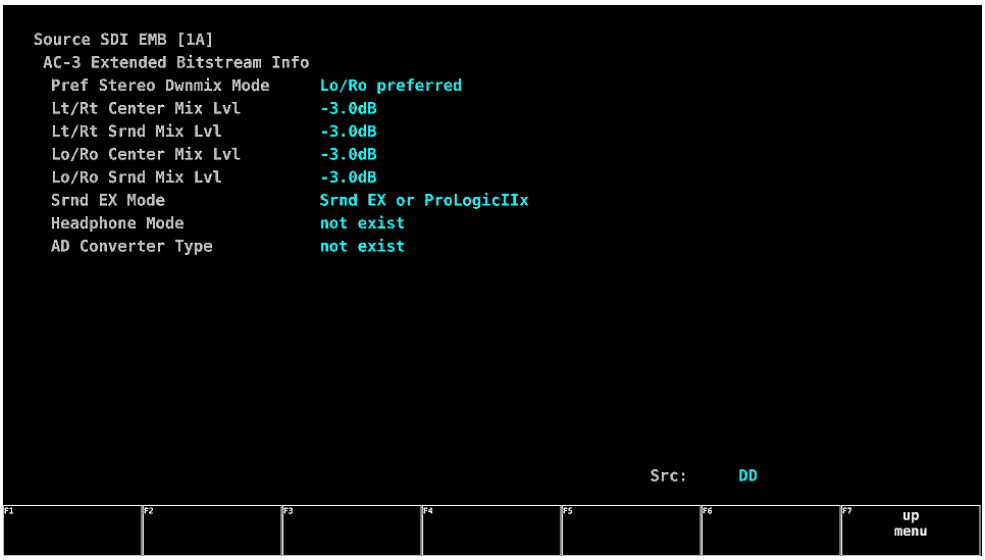


Figure 13-25 Dolby Digital EBI Metadata display

- **Dolby Digital Plus Metadata Display**

  During Dolby Digital Plus measurement, to view the metadata, follow the procedure below.

  Procedure

  AUDIO → F•4 STATUS SETUP → F•2 METADATA → F•1 DOLBY D+ METADATA

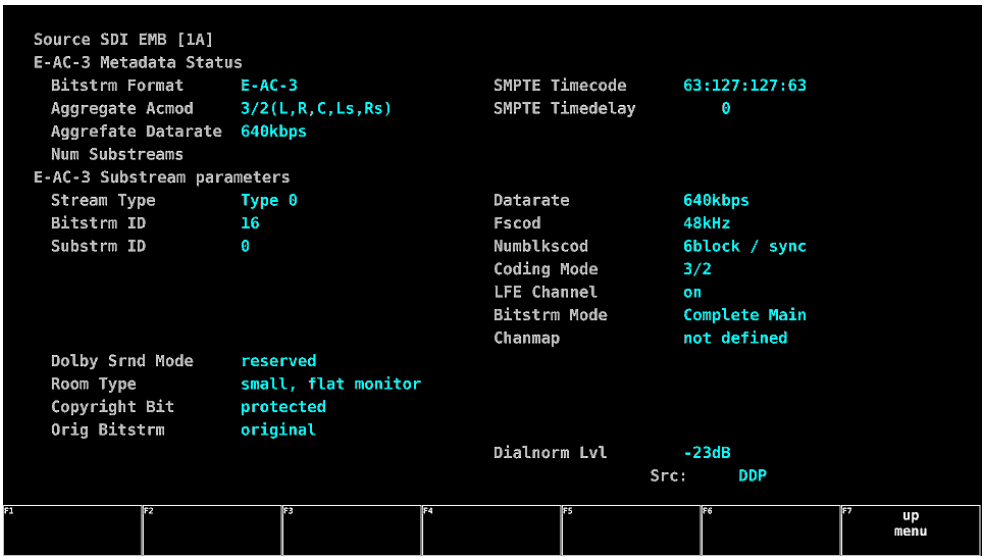


Figure 13-26 Dolby Digital Plus Metadata display

- **Dolby Digital Plus EBI Metadata Display**

  During Dolby Digital Plus measurement, to view the EBI metadata, follow the procedure below.

  Procedure

  AUDIO → F•4 STATUS SETUP → F•2 METADATA → F•2 EBI METADATA

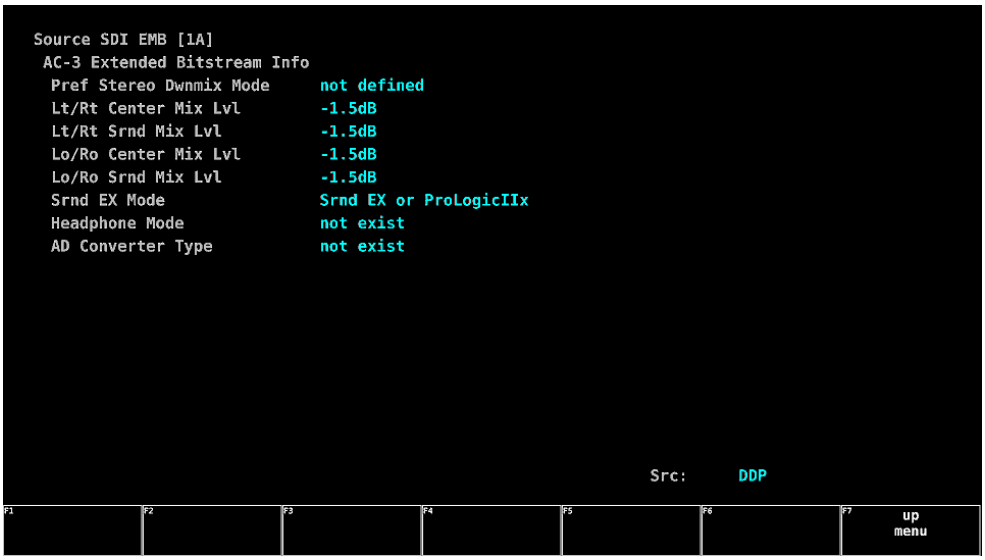


Figure 13-27 Dolby Digital Plus EBI Metadata display

13.9.4 Displaying the Channel Status

To display the status of the selected channel, follow the procedure below.
Use F•1 DISPLAY CHANNEL to select the channel. You can also use F•2 ALIGN to select the bit order.

Procedure

AUDIO → F•4 STATUS SETUP → F•3 CHANNEL STATUS

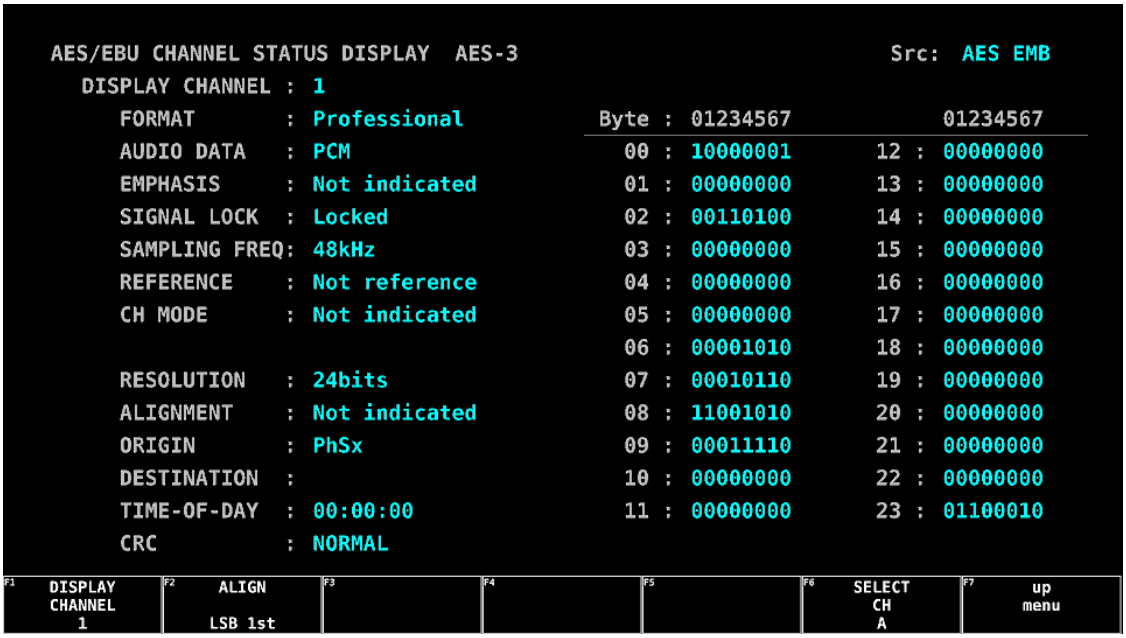


Figure 13-28 Channel status display

13.9.5 Displaying User Bits

To display the user bits of the selected channel, follow the procedure below.
Use F•1 DISPLAY CHANNEL to select the channel. You can also use F•2 ALIGN to select the bit order.

Procedure

AUDIO → F•4 STATUS SETUP → F•4 USER BIT

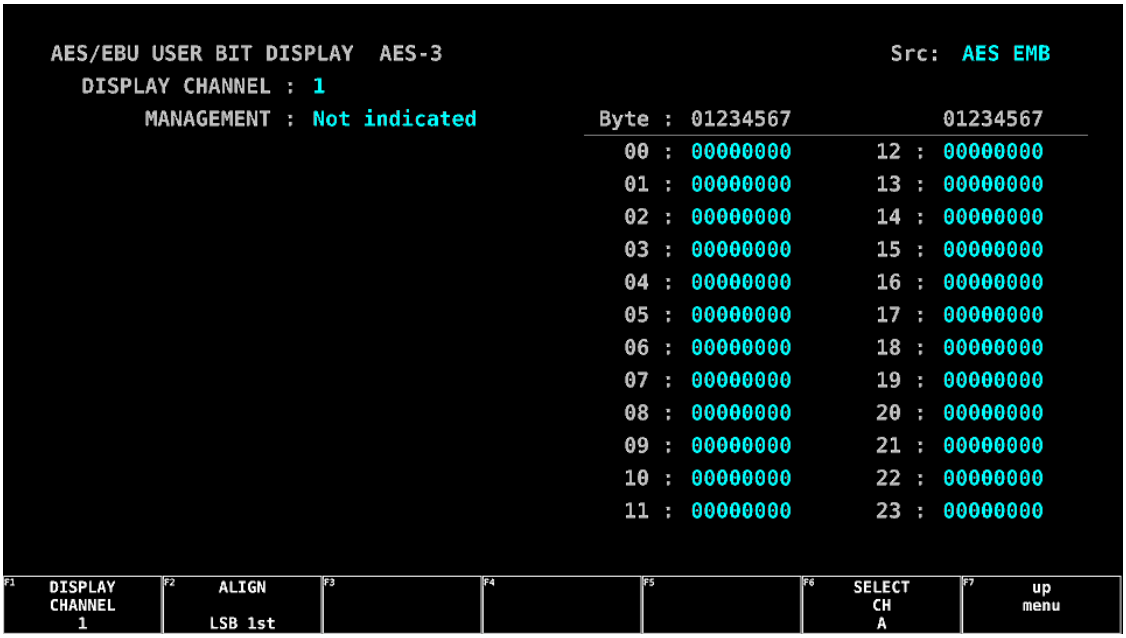


Figure 13-29 User bit display

13.9.6 Resetting Errors

To reset the error counts that appear on the audio status display to 0, follow the procedure below. Also, the Reset indication at the lower left of the screen will be reset to 00:00:00.

Procedure

AUDIO → F•4 STATUS SETUP → F•5 ERROR RESET

13.10 Loudness Display

On the loudness display, the loudness values are displayed on a chart, on a meter, and as values.
This setting is available when F•2 DISPLAY MODE is set to LOUDNESS. Loudness display is not possible in 16-channel measurement or in simul mode during embedded audio measurement.

13.10.1 Loudness Display Description

You can measure the loudness of one input or two inputs on the loudness display. To switch between one input and two inputs, press F•5 LOUDNESS SETTING, and use the CHANNEL SUB tab.

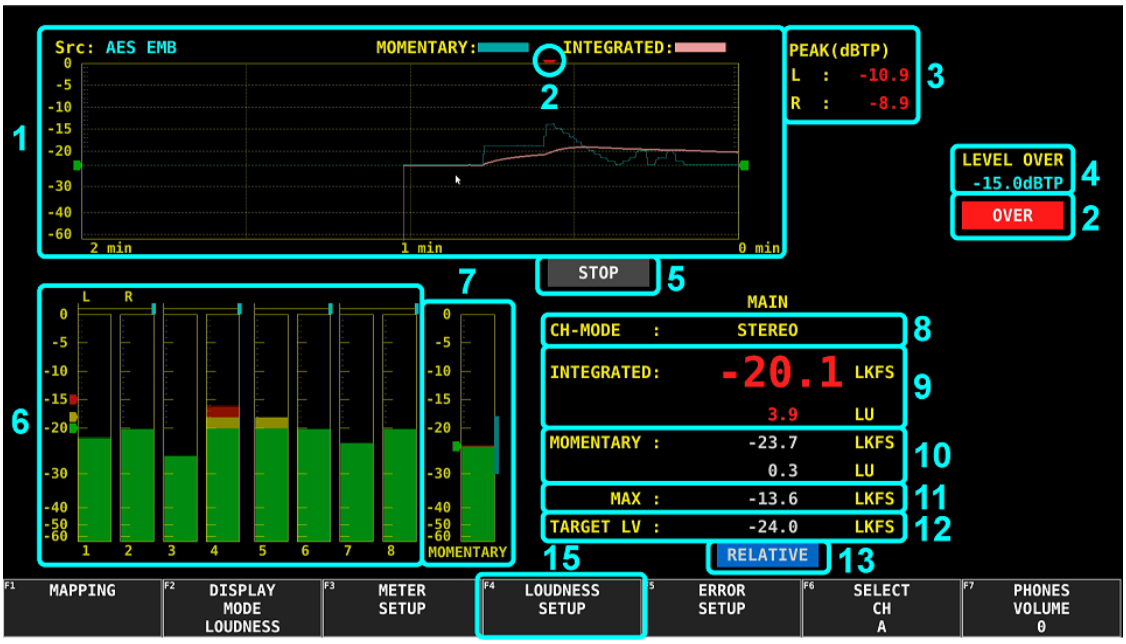


Figure 13-30 One input (MAIN) loudness display

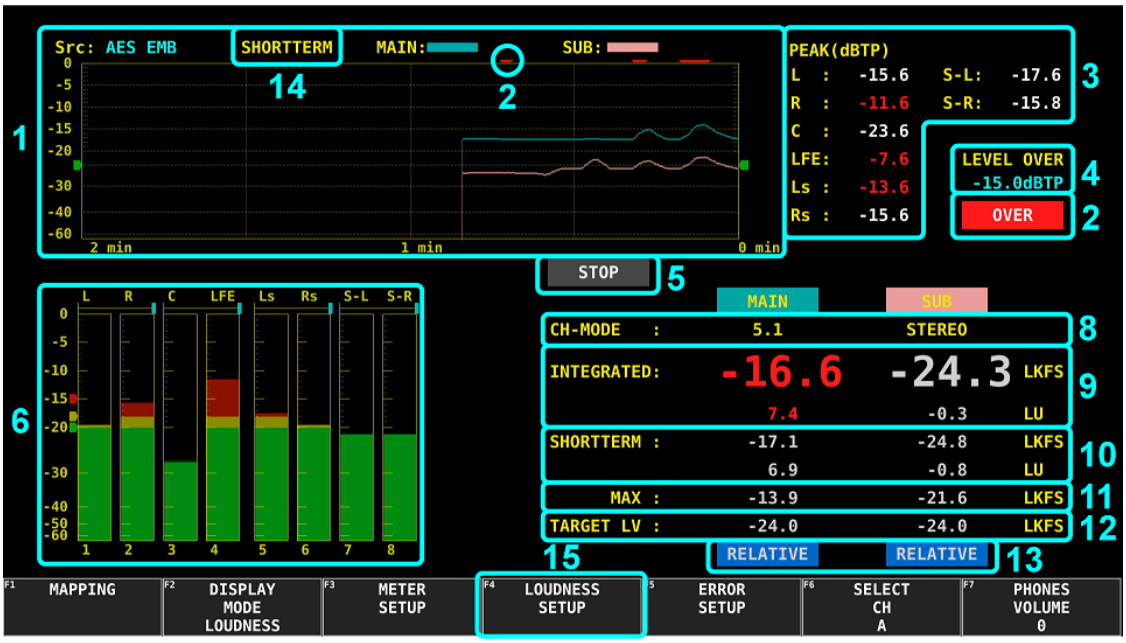


Figure 13-31 Two input (MAIN and SUB) loudness display

1 Loudness Chart Display

One of the following values that you specified with F•5 LOUDNESS SETTING isdisplayed on a time-based chart.

- Integrated loudness and momentary loudness of one input (MAIN)
- Integrated loudness and short-term loudness of one input (MAIN)
- Integrated loudness of two inputs (MAIN and SUB)
- Momentary loudness of two inputs (MAIN and SUB)
- Short-term loudness of two inputs (MAIN and SUB)

You can press F•1 PERIOD to change the measurement time. You can press F•4 MAG to expand the level scale. The green line indicates the target level.

To start measuring, set F•3 MEASURE to START. You can also use pin 9 (/P8) of the remote connector or a time code.
To clear the loudness chart, press F•2 CHART CLEAR. You can also use pin 8 (/P7) of the remote connector.

[See also] 13.10.6, “Configuring Loudness Settings,” and 18, “REMOTE”

2 OVER

If dBTP Over Mark is set to ON on the LOUDNESS SETTING tab that appears when the peak level of a channel is greater than or equal to the level specified by OVER dBFS, a red ▼ is displayed at the top of the chart. An OVER mark is also displayed. Neither mark is displayed when Level Over under ERROR SETUP is set to OFF.

[See also] OVER dBFS →13.6.5, “Setting the Reference Level.”
ERROR SETUP →13.4, “Configuring Error Detection Settings.”

3 PEAK (dBTP)

This displays the peak levels of the channels that have been assigned on the CHANNEL MAIN, CHANNEL SUB tab. You can press F•2 CHART CLEAR to clear the peak levels.
The values are normally displayed in white, but when a value is greater than or equal to the value specified by OVER dBFS, it is displayed in red.
[See also]OVER dBFS →13.6.5, “Setting the Reference Level.”

4 LEVEL OVER

The level specified by OVER dBFS is displayed when Level Over under ERROR SETUP is set to ON and dBTP Over Mark is set to ON on the LOUDNESS SETTING tab.
[See also] OVER dBFS →13.6.5, “Setting the Reference Level.”
ERROR SETUP →13.4, “Configuring Error Detection Settings.”

5 MEAS / STOP / READY

“MEAS” is displayed during loudness measurement, and “STOP” is displayed whenmeasurement is stopped, “READY” is displayed when the LV 7390 is standing by.

6 Meter Display

The levels of the channels that you selected in section 13.1, “Setting the Signals to Measure” are displayed on a meter. In addition, correlation meters of adjacent channelsare displayed at the top area of the meter. The correlation meter indicates the phase difference between the two signals. The right edge indicates in-phase, the left edge indicates 180 ° out of phase, and the center indicates no correlation.

7 Loudness Meter Display (only for one input measurement)

The short-term loudness or the momentary loudness selected using Loudness Response on the LOUDNESS SETTING Tab is displayed using meters. The level is normally displayed in green, but it is displayed in red if it exceeds the target level.

8 CH-MODE

This displays the channel mode that was selected on the CHANNEL MAIN, CHANNEL SUB tab.

9 INTEGRATED

The integrated loudness is displayed as values. The top value is an absolute value. The bottom value is a relative value with the target level as the reference. These values are normally displayed in white, but they are displayed in red when:

• The measurement mode is ARIB or EBU and the loudness level is outside the range defined by the target level ± 1 (LU).
• The measurement mode is ATSC and the loudness level is outside the range defined by the target level ± 2 (LK).

10 SHORTTERM / MOMENTARY

The short-term loudness or the momentary loudness selected using Loudness Response on the LOUDNESS SETTING Tab is displayed as values.
The top value is an absolute value. The bottom value is a relative value with the target level as the reference.

11 MAX

The maximum value of the short-term loudness or momentary loudness selected using Loudness Response on the LOUDNESS SETTING Tab is displayed as a value.

12 TARGET LV

This displays the target level. The target level varies according to the measurement mode as shown below.

- When the measurement mode is not EBU: -24.0 (LKFS)
- When the measurement mode is EBU: -23.0 (LUFS)

13 RELATIVE

This indication appears when the input signal is applicable for relative gating. This is displayed when Relative Gating Lamp is set to ON on the LOUDNESS SETTING tab.

14 INTEGRATED / SHORTTERM / MOMENTARY (only for two input measurement)

This displays the loudness type that was selected on the LOUDNESS SETTING tab Chart Setting.

15 LOUDNESS SETUP

To configure loudness display settings, press F•4 LOUDNESS SETUP on the audio menu.
This setting is available when F•2 DISPLAY MODE is set to LOUDNESS.

AUDIO → F•4 LOUDNESS SETUP →

F1 PERIOD 2MIN	F2 CHART CLEAR	F3 MEASURE STOP	F4 MAG OFF	F5 LOUDNESS SETTING	F6	F7 up menu

Figure 13-32 LOUDNESS SETUP menu

13.10.2 Selecting the Measurement Time

To select the measurement time, follow the procedure below.

Procedure

AUDIO → F•4 LOUDNESS SETUP → F•1 PERIOD: 2MIN, 10MIN, 30MIN, 1HOUR, 2HOUR, 6HOUR, 12HOUR, 24HOUR

13.10.3 Clearing the Loudness Measurement

To clear the loudness chart, peak level, and numeric displays, follow the procedure below.

Procedure

AUDIO → F•4 LOUDNESS SETUP → F•2 CHART CLEAR

13.10.4 Starting and Stopping Measurements

To start and stop measurements, follow the procedure below. When measurements are being performed, “MEAS” is displayed in the center of the screen. When measurements are stopped, “STOP” is displayed. “READY” is displayed when measurement is in standby. This menu item does not appear when Trigger on the LOUDNESS SETTING tab is set to REMOTE.

Procedure

AUDIO → F•4 LOUDNESS SETUP → F•3 MEASURE: STOP, START

13.10.5 Selecting the Scale

To select the loudness chart display scale, follow the procedure below.

Procedure

AUDIO → F•4 LOUDNESS SETUP → F•4 MAG: OFF, ON

Settings

OFF:	The target level is displayed on the scale that you selected with DYNAMIC RANGE on the METER SETUP menu.
ON:	The target level is displayed on a scale that has a full scale ranging from -18 to +9 (LK/LU).

13.10.6 Configuring Loudness Settings

To configure loudness settings, follow the procedure below.

Procedure

AUDIO → F•4 LOUDNESS SETUP → F•5 LOUDNESS SETTING

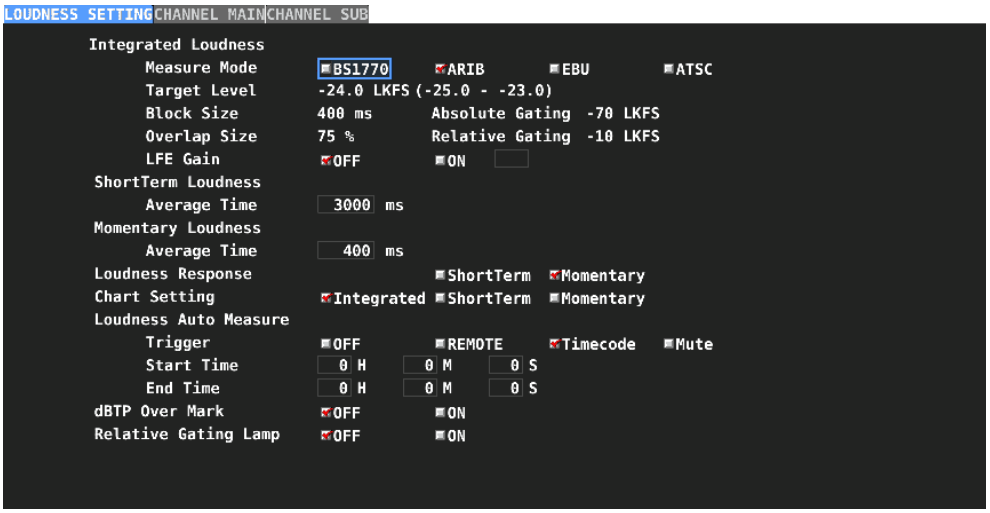


Figure 13-33 LOUDNESS SETTING tab

●Measure Mode

Select the measurement mode.

BS1770, ARIB, EBU, ATSC

Depending on the measurement mode, the parameters vary as shown below.

Table 13-2 Selecting the measurement mode

	Measure Mode			
	BS1770	ARIB	EBU	ATSC
Corresponding Standard	ITU-R BS.1770	ARIB TR-B32	EBU R128	ATSC A/85
Target Level	-24.0 [LKFS]	-24.0 [LKFS]	-23.0 [LUFS]	-24.0 [LKFS]
Block Size (ms)	400	400	400	400
Overlap Size (%)	75	75	75	0
Absolute Gating	-70 [LKFS]	-70 [LKFS]	-70 [LUFS]	-
Relative Gating	-10 [LKFS]	-10 [LKFS]	-10 [LUFS]	-

● LFE Gain

When MODE is set to 5.1 or CUSTOM on the CHANNEL MAIN tab, select whether to measure LFEch. When this is set to ON, you can set the LFEch gain to a value from 0 to 10.

OFF, ON

● **ShortTerm Loudness**

Set the time that is used to calculate the short-term loudness.

200 - 3000 - 10000

● **Momentary Loudness**

Set the time that is used to calculate the momentary loudness.

200 - 400 - 10000

● **Loudness Response**

Select the response model.
When MODE on the CHANNEL SUB tab is set to MONO (ARIB) or STEREO, setting Loudness Response to ShortTerm also sets Chart Setting to ShortTerm, and setting Loudness Response to Momentary also sets Chart Setting to Momentary.

ShortTerm, Momentary

● **Chart Setting**

When MODE on the CHANNEL SUB tab is set to MONO (ARIB) or STEREO, select the type of loudness to display on the loudness chart.
Setting Chart Setting to ShortTerm also sets Loudness Response to ShortTerm, and setting Chart Setting to Momentary also sets Loudness Response to Momentary.

Integrated, ShortTerm, Momentary

● **Loudness Auto Measure**

Select the automatic loudness measurement mode from the available settings below.

OFF:	Automatic measurement is disabled. You must set the loudness measurement on the LOUDNESS SETUP menu.
REMOTE:	Measurement start, stop, and clear are executed through the remote control connector. See chapter 18, “REMOTE.” You have to press SYS > F•2 SYSTEM SETUP, and then set Remote Select to Recall and Loudness on the REMOTE SETUP tab.
Timecode:	Measurement start and stop are executed on the basis of the time codes embedded in the SDI signals. Set Start Time and End Time first, and then set F•3 MEASURE on the LOUDNESS SETUP menu to START. “STOP” in the center of the screen changes to “READY.” When the time specified by Start Time arrives, measurement starts automatically. You need to select the time code using SYS → F•2 SYSTEM SETUP → GENERAL SETUP tab → Time.
Mute:	Measurement start, stop, and clear and storage to USB memory are executed through input signals.

If you select Mute, on the LOUDNESS SETUP menu, press F•3 MEASURE to select START, and then apply the material to measure. “READY” appears in the center of the display.

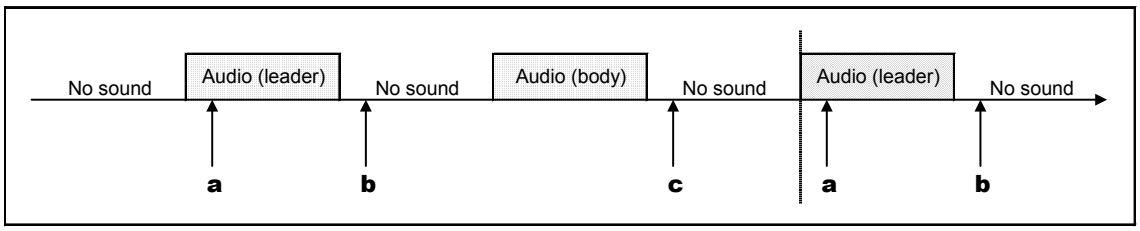


Figure 13-34 Mute explanation

a) When and audio (leader) is received, loudness measurement is cleared.

b) Loudness measurement starts 1 second after the detection of no sound. “MEAS” appears in the center of the display.

c) Loudness measurement stops 3 seconds after the detection of no sound. If a USB memory device is connected, the loudness data is automatically saved to the device. “READY” appears in the center of the display.

You can measure multiple materials in succession by applying subsequent materials.

- **dBTP Over Mark**

Select whether to display a ▼ mark and the “OVER” mark when the peak level of a channel is greater than or equal to the level specified by OVER dBFS.
Neither mark is displayed when Level Over under ERROR SETUP is set to OFF.
[See also] OVER dBFS →13.6.5, “Setting the Reference Level.”
ERROR SETUP →13.4, “Configuring Error Detection Settings.”

OFF, ON

- **Relative Gating Lamp**

Select whether to display “R” when the input signal is applicable for relative gating.

OFF, ON

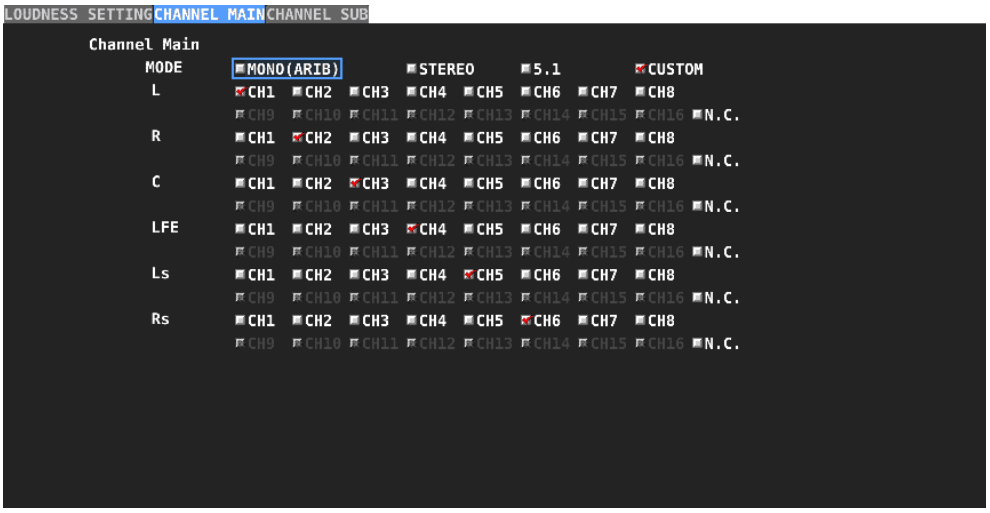


Figure 13-35 CHANNEL MAIN tab

● **MODE**

Select the main loudness measurement channel.

MONO(ARIB):	The channel that you select for L-Rch is measured.
STEREO:	The channels that you select for Lch and Rch are measured.
5.1:	The channels that you select for Lch, Rch, Cch, LFEch, Lsch, and Rsch are measured.
CUSTOM:	The channels that you select for Lch, Rch, Cch, LFEch, Lsch, and Rsch are measured. N.C. can be selected during embedded audio measurement. Channels set to N.C. are not measured.

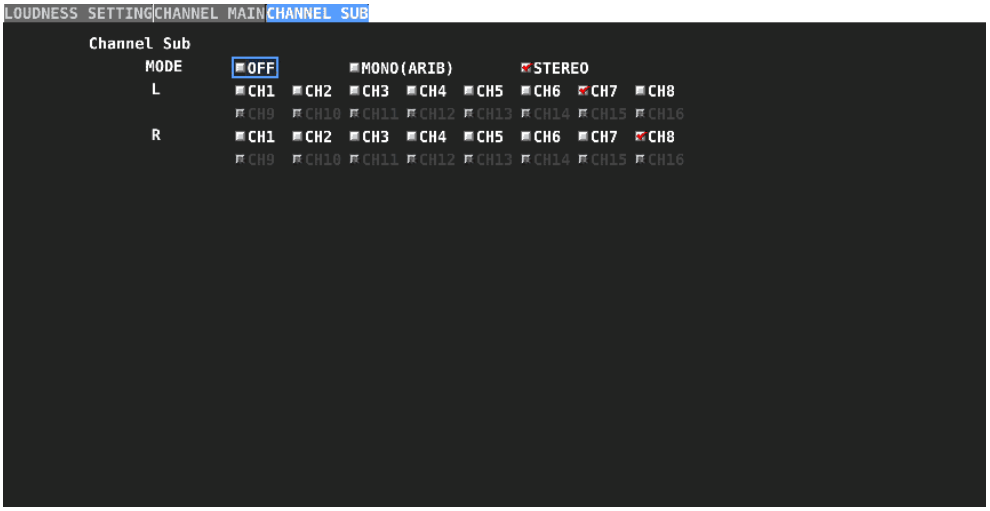


Figure 13-36 CHANNEL SUB tab

● **SUB**

Select the sub loudness measurement channel.

OFF:	Sub loudness is not measured.
MONO(ARIB):	The channel that you select for L-Rch is measured.
STEREO:	The channels that you select for Lch and Rch are measured.

13.10.7 Saving to a USB Memory Device

You can save the loudness data to a USB memory device as a .csv file and as a text file. To save a file with a name that you specify, follow the procedure below.

1. **Connect a USB memory device to the instrument.**
2. **Press F•6 USB MEMORY.**

   The file list display appears.
   This setting appears when a USB memory device is connected to the LV 7390.

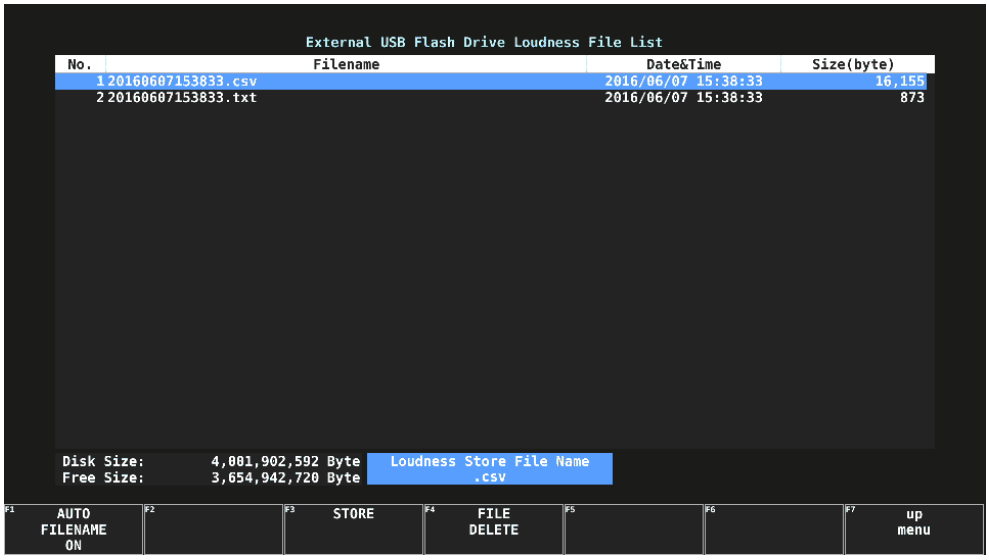


Figure 13-37 File list display

3. **Set F•1 AUTO FILENAME to OFF.**
4. **Press F•2 NAME INPUT.**

   The file name input display appears.

Figure 13-38 File name input display

5. Enter a file name using up to 14 characters.

The key operations that you can perform on the file name input display are as follows:

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.

You can copy the file name of an already saved file. To copy a file name, move the cursor to the file in the file list whose name you want to copy, and then press the function dial (F•D).

6. Press F • 7 up menu.

7. Press F • 3 STORE.

When the message “Saving file - Please wait.” disappears, the file has been successfully saved.
If a file with the same name already exists on the USB memory device, an overwrite confirmation menu appears. To overwrite the current file, press F•1 OVER WR YES. To cancel the save operation, press F•3 OVER WR NO.

● Deleting a Loudness Data

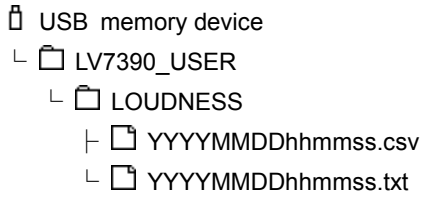
To delete a loudness data that has been saved to the USB memory device, select the log file on the file list display, and then press F•4 FILE DELETE. To delete the file, press F•1 DELETE YES. To cancel the delete operation, press F•3 DELETE NO.

● Automatic File Name Generation

If you set F•1 AUTO FILENAME to ON, the file name will be generated automatically in the format “YYYYMMDDHHMMSS” when you save the file. In this situation, F•2 NAME INPUT is not displayed.

● USB Memory Device Folder Structure

Loudness data is saved in the LOUDNESS folder.



● Loudness Data Explanation

In txt data, the contents set using F•5 LOUDNESS SETTING and integrated loudness values are stored. Judgment ([OK] or [NG]) on the basis of THRESHOLD is also stored.
In csv data, the current time, timecodes, main loudness values, and sub loudness values are stored. Data values of about 10 points are stored per second.

txt data example

```
2012/07/12 10:32:31
<< SETTING DATA and RESULT >>

 ------------------
  LOUDNESS SETTING
 ------------------

    MEASURE MODE    :  ARIB

    TARGET LEVEL    :  -24.0 LKFS
    THRESHOLD       :  -25.0 ~ -23.0 LKFS

    BLOCK    SIZE   :   400 msec
    OVERLAP SIZE    :     75 %
    ABS GATING LV   :  -70.0 LKFS
    REL GATING LV   :  -10.0 LKFS

    LFE   GAIN      :  OFF


 --------------------
  LOUDNESS RESPONSE
 --------------------

    RESPONSE        :  MOMENTARY
    AVERAGE TIME    :     400 (msec)
```

⋮

```
     SUB     MODE    :  STEREO

       SUB - L       :  CH   7
       SUB - R       :  CH   8


 --------------------
  PEAK HOLD ( dBTP )
 --------------------
           L          :     -16.9
           R          :     -16.9
           C          :     -16.9
         LFE          :     -16.9
           Ls         :     -16.9
           Rs         :     -16.9
        S - L         :    -16.9
        S - R         :     -16.9


 ---------
  RESULT
 ---------

    MAIN   LOUDNESS    :  -15.8 (LKFS)   /    8.2 (LU)   [NG]
    SUB    LOUDNESS    :  -20.4 (LKFS)   /    3.6 (LU)   [NG]
```

csv data example

```
2012/7/12 10:32
10:30:29    0:09:34    -22.6    -27.2
10:30:29    0:09:34    -18.9    -23.6
10:30:30    0:09:35    -17      -21.6
10:30:30    0:09:35    -15.6    -20.3
10:30:30    0:09:35    -15.4    -20
10:30:30    0:09:35    -15.4    -20
10:30:30    0:09:35    -15.4    -20
10:30:30    0:09:35    -15.4    -20
10:30:30    0:09:35    -15.4    -20
10:30:30    0:09:35    -14.9    -19.5
10:30:30    0:09:35    -14.4    -19
10:30:30    0:09:35    -13.9    -18.5
10:30:31    0:09:36    -13.5    -18.1
10:30:31    0:09:36    -13.4    -18
10:30:31    0:09:36    -13.6    -18.3
10:30:31    0:09:36    -15      -19.6
10:30:31    0:09:36    -16.9    -21.6
10:30:31    0:09:36    -20.6    -25.2
10:30:31    0:09:36    -100     -100
10:30:31    0:09:36    -100     -100
10:30:31    0:09:36    -22.6    -27.3
10:30:31    0:09:36    -18.9    -23.6
10:30:31    0:09:36    -17      -21.6
10:30:32    0:09:37    -15.5    -20.1
10:30:32    0:09:37    -14.6    -19.3
```

⋮

```
10:30:33    0:09:38    -20.6    -25.2
10:30:33    0:09:38    -100     -100
10:30:34    0:09:39    -22.6    -27.3
10:30:34    0:09:39    -19      -23.6
10:30:34    0:09:39    -17      -21.6
10:30:34    0:09:39    -15.6    -20.3
10:30:34    0:09:39    -14.9    -19.5
10:30:34    0:09:39    -14.4    -19
10:30:34    0:09:39    -13.9    -18.5
10:30:34    0:09:39    -13.7    -18.4
10:30:34    0:09:39    -15      -19.6
10:30:34    0:09:39    -16.9    -21.6
10:30:34    0:09:39    -20.6    -25.2
10:30:35    0:09:40    -22.6    -27.3
10:30:35    0:09:40    -19      -23.6
10:30:35    0:09:40    -17      -21.6
10:30:35    0:09:40    -15.2    -19.8
10:30:35    0:09:40    -14.4    -19
10:30:35    0:09:40    -14.2    -18.8
10:30:35    0:09:40    -15.1    -19.8
10:30:35    0:09:40    -16.9    -21.6
10:30:35    0:09:40    -19.8    -24.4
10:30:35    0:09:40    -20.4    -25
10:30:36    0:09:41    -17.9    -22.5
10:30:36    0:09:41    -16.1    -20.7
```

14. STATUS DISPLAY

To display the status, press STATUS.

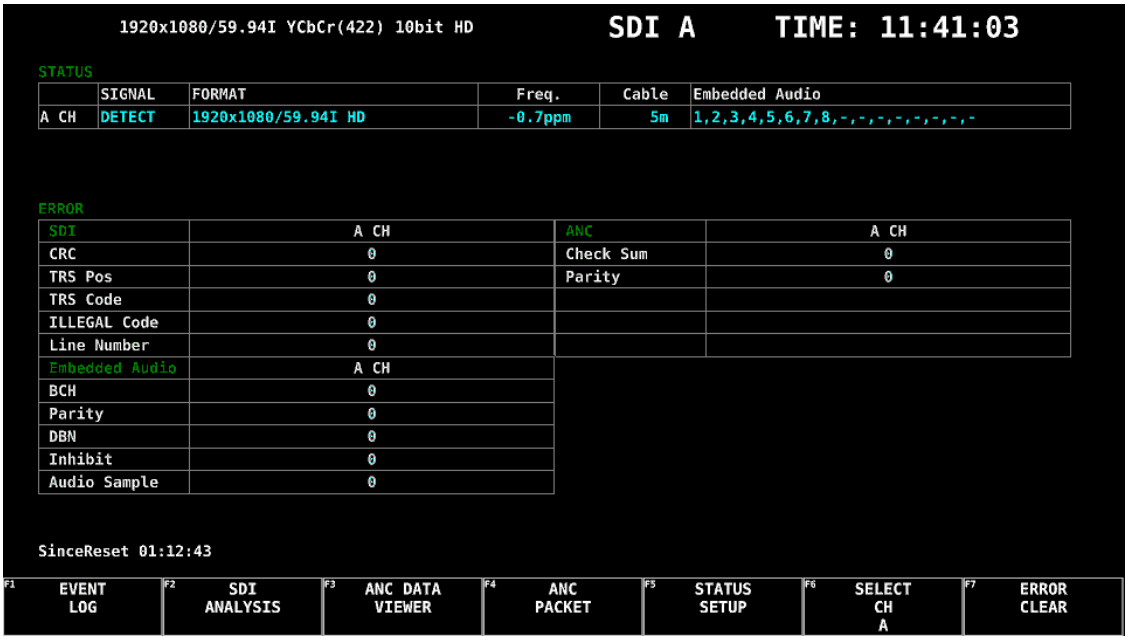


Figure 14-1 Status display

14.1 Status Screen Description

- **SIGNAL**

  If the LV 7390 is receiving an SDI signal, “DETECT” is displayed. Otherwise, “NO SIGNAL” is displayed.
  If "NO SIGNAL" is displayed, the following items are not displayed.

- **FORMAT**

  The input signal format is indicated. It is normally displayed in light blue, but if the input format is not appropriate, it turns red. If the specified format is not received, it turns yellow.

- **Freq.**

  The sampling frequency deviation is displayed.
  Normally, this is displayed in light blue. If Frequency Error on the ERROR SETUP1 tab is set to ON, the color changes to red when ±10 ppm is exceeded.
  The display range is “<-100 ppm, -100 to +100 ppm, >+100 ppm,” and the accuracy is ±2 ppm.
  [See also] ERROR SETUP1 tab → section 14.2.1, “Error Setup 1”

● Cable

The input signal attenuation is converted into a cable length that you selected and displayed.
Normally the value is displayed in light blue, but by setting Cable Error on the ERROR SETUP1 tab to ON, if the value exceeds the specified Warning value, it will change to yellow. If the value exceeds the Error value, it will change to red.
The display range is shown below. The accuracy is ±20 m.

3G: < 10 m, 10 to 105 m, > 105 m (5 m steps)
HD: < 5 m, 5 to 130 m, > 130 m (5 m steps)
SD: < 50 m, 50 to 300 m, > 300 m (5 m steps)

[See also] ERROR SETUP1 tab → section 14.2.1, “Error Setup 1”

● Embedded Audio

The channels of the audio packets embedded in the input signal are displayed.
If the input signal is 3G-B-DL, only stream 1 is displayed. (When measuring 3G-B-DS, stream 2 is also displayed.)

● ERROR

The counts of the errors for the items whose detection setting was set to ON with F•5 STATUS SETUP are displayed. Errors are counted once per second or once per field. The maximum number of errors that can be counted is 999999.
Switching video formats or input channels may cause disturbances in the signal that will cause errors to be detected.

• CRC (other than SD)

An error is counted when the CRC embedded in the input signal is different from the CRC that the LV 7390 calculates.

• EDH (SD only)

An error is counted when the EDH packet contains an ancillary data error flag, an active picture error flag, or a full-field error flag and when the CRC in the EDH packet is different from the CRC that the LV 7390 calculates from the video data.

• TRS Pos

Input signal TRS (Timing Reference Signal) errors are displayed.
An error is counted when the position of the header word (3FFh, 000h, 000h) of EAV (End of Active Video) and SAV (Start of Active Video) is not correct or when the F, V, or H TRS protection bit is outside the video specifications (such as when the blanking period is different).

• TRS Code

Input signal TRS (Timing Reference Signal) protection bit errors are displayed.
An error is counted when the correspondence between F, V, and H in the protection bits (XYZ) of EAV (End of Active Video) and SAV (Start of Active Video) and error correction flags P3, P2, P1, and P0 is outside the video specifications.

• ILLEGAL Code

An error is counted when the input signal data falls within the timing reference signal (TRS) range or 000h to 003h and 3FCh to 3FFh are detected in the data other than those specified by the ancillary data flag (ADF).
In SDI signals, 000h to 003h and 3FCh to 3FFh (expressed as 10 bit data) are designed to be used as timing reference signals and ancillary data flags, they cannot be used as video signal data or ancillary data. An error is counted when data other than timing reference signal or ancillary data flag is present in this area.

• Line Number (other than SD)

An error is counted when the line number that is embedded in the input signal does not match the line number that has been counted by the LV 7390.

• Check Sum

The LV 7390 uses the checksum in the input signal's ancillary data header to count errors.

• Parity

The LV 7390 uses the parity bit in the input signal's ancillary data header to count errors.

• BCH (other than SD)

The LV 7390 counts the errors in the BCH code in the input signal's embedded audio.

• Parity (other than SD)

The LV 7390 counts the parity errors in the input signal's embedded audio.

• DBN

The LV 7390 counts the continuity errors in the input signal's embedded audio.
Embedded audio packets contain data block number words (DBN), which indicate packet continuity. A serial number between 1 and 255 is assigned to each packet. An error is counted when this DBN is not continuous between packets.

• Inhibit

An error is counted when embedded audio packets are found in lines where they should not be embedded.
Embedding inhibit lines are indicated below. The transmission scanning mode is interlace for 3G-B-DL's 60P, 59.94P, 50P, 48P, and 47.95P.

Table 14-1 Embedding inhibit lines

Format		Transmission Scanning Mode	
		Progressive	Interlace
HD/3G	1280×720	Line 8	-
	1920×1080	Line 8	Lines 8, 570
SD	720×487	-	Lines 11, 274
	720×576	-	Lines 7, 320

• Audio Sample

An error is counted when audio that is asynchronous to the video is embedded. For the video and audio to be synchronized, there is a specific number of audio data samples that need to be embedded in a given number of video frames. If this rule is not met, it is considered an error.

● SinceReset

The time that has elapsed since F•7 ERROR CLEAR was pressed, the LV 7390 was initialized, or the LV 7390 was restarted is displayed.

14.2 Configuring Error Detection Settings

To configure the error detection settings, use F•5 STATUS SETUP.
When error detection is set to ON, the following actions are performed when an error occurs.

- Counts errors on the status display.
- Displays errors in the event log of the status display
- Displays “ERROR” in the upper right of the display.
- Transmits a signal from the alarm output remote terminal

14.2.1 Error Setup 1

Use the ERROR SETUP1 tab to configure error detection settings for SDI signals.

STATUS → F•5 STATUS SETUP →

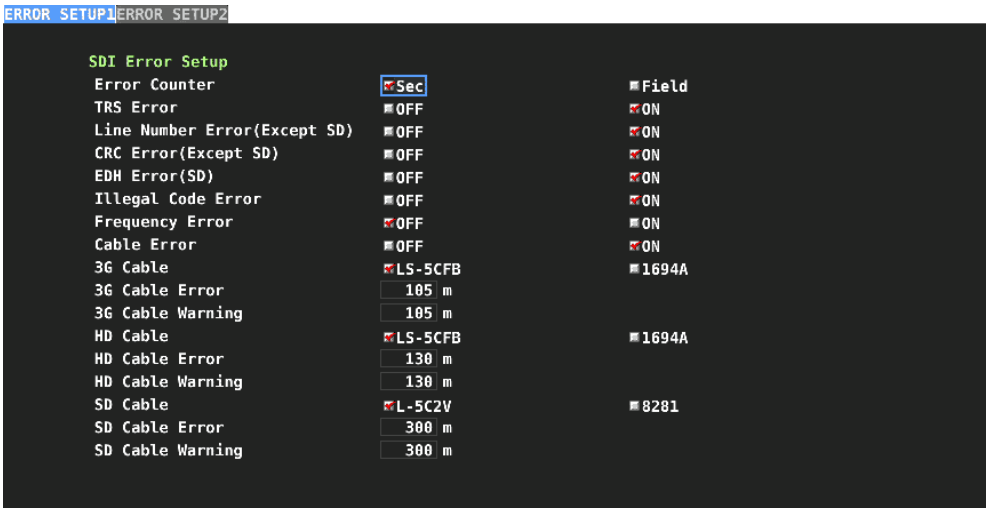


Figure 14-2 ERROR SETUP1 tab

● Error Counter

Sec:	Errors are counted in units of seconds. Even if multiple errors occur within the same second, only a single error is counted.
Field:	Errors are counted in units of fields (frames). Even if multiple errors occur within the same field (frame), only a single error is counted.

● TRS Error

Select whether to detect TRS Pos and TRS Code errors.

OFF, ON

● Line Number Error(Except SD)

Select whether to detect line number errors. This setting is valid when the input signal is not SD.

OFF, ON

● CRC Error(Except SD)

Select whether to detect CRC errors. This setting is valid when the input signal is not SD.

OFF, ON

● EDH Error(SD)

Select whether to detect EDH errors. This setting is valid when the input signal is SD.

OFF, ON

● Illegal Code Error

Select whether to detect illegal code errors.

OFF, ON

● Frequency Error

Select whether to detect frequency deviation errors.
Even when this is set to OFF, the frequency deviation is still shown in the status display.

OFF, ON

● Cable Error

Select whether to detect cable errors.
Even when this is set to OFF, the cable length is still shown in the status display.

OFF, ON

● 3G Cable

Select the cable to use for cable length measurements when the input signal is 3G.

LS-5CFB, 1694A

● **3G Cable Error**

Set the upper limit for the cable error when the input signal is 3G. If this value is exceeded, an error will occur, and the measured value on the status display will be displayed in red.

10 - 105 m

● **3G Cable Warning**

Set the upper limit for the cable warning when the input signal is 3G. If this value is exceeded, a warning will occur, and the measured value on the status display will be displayed in yellow.

10 - 105 m

● **HD Cable**

Select the cable to use for cable length measurements when the input signal is HD.

LS-5CFB, 1694A

● **HD Cable Error**

Set the upper limit for the cable error when the input signal is HD. If this value is exceeded, an error will occur, and the measured value on the status display will be displayed in red.

5 - 130 m

● **HD Cable Warning**

Set the upper limit for the cable warning when the input signal is HD. If this value is exceeded, a warning will occur, and the measured value on the status display will be displayed in yellow.

5 - 130 m

● **SD Cable**

Select the cable to use for cable length measurements when the input signal is SD.

L-5C2V, 8281

● **SD Cable Error**

Set the upper limit for the cable error when the input signal is SD. If this value is exceeded, an error will occur, and the measured value on the status display will be displayed in red.

50 - 300 m

● **SD Cable Warning**

Set the upper limit for the cable warning when the input signal is SD. If this value is exceeded, a warning will occur, and the measured value on the status display will be displayed in yellow.

50 - 300 m

14.2.2 Error Setup 2

Use the ERROR SETUP2 tab to configure ancillary data and embedded audio error detection settings.

STATUS → F•5 STATUS SETUP → F•3 NEXT TAB →

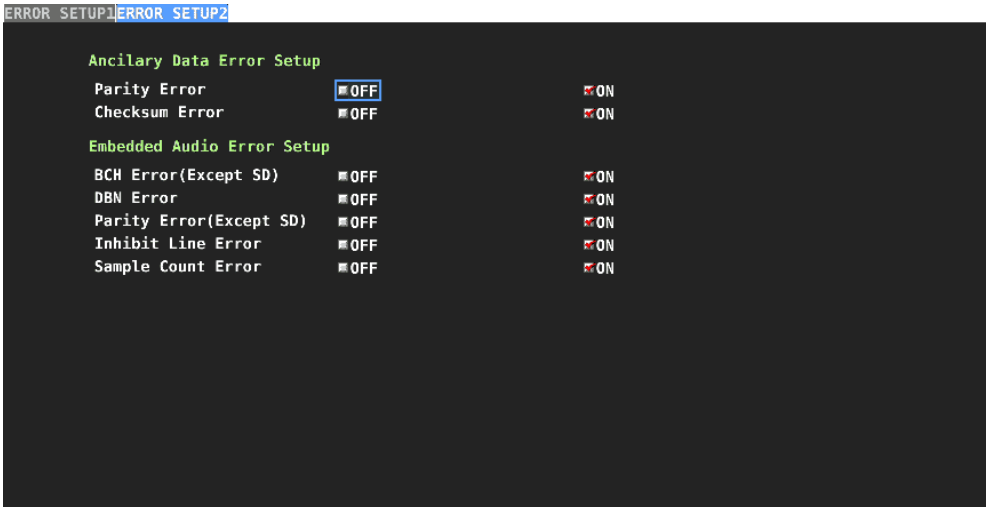


Figure 14-3 ERROR SETUP2 tab

● Parity Error

Select whether to detect parity errors in the ancillary data.

OFF, ON

● Checksum Error

Select whether to detect checksum errors in the ancillary data.

OFF, ON

● BCH Error(Except SD)

Select whether to detect BCH errors in the embedded audio. This setting is valid when the input signal is not SD.

OFF, ON

● DBN Error

Select whether to detect DBN errors in the embedded audio.

OFF, ON

● Parity Error(Except SD)

Select whether to detect parity errors in the embedded audio. This setting is valid when the input signal is not SD.

OFF, ON

● Inhibit Line Error

Select whether to detect embedding errors in the embedded audio.

OFF, ON

● Sample Count Error

Select whether to detect sample number errors in the embedded audio.
An error is counted when audio that is asynchronous to the video is embedded. If a certain number of audio data samples are not embedded in a certain number of video frames, it will be considered and error (as defined in SMPTE ST 299 and SMPTE ST 272).

OFF, ON

14.3 Clearing Error Counts

To clear the error counts and SinceReset, follow the procedure below.

Procedure

STATUS → F•7 ERROR CLEAR

14.4 Configuring Event Log Settings

To display the event log, follow the procedure below.
The event log displays a list of the events that have occurred.
The applicable event-detection channels are all channels. However, when measuring 3G-B-DS or 3G (DL), events are detected only for displayed channels.

Procedure

STATUS → F•1 EVENT LOG

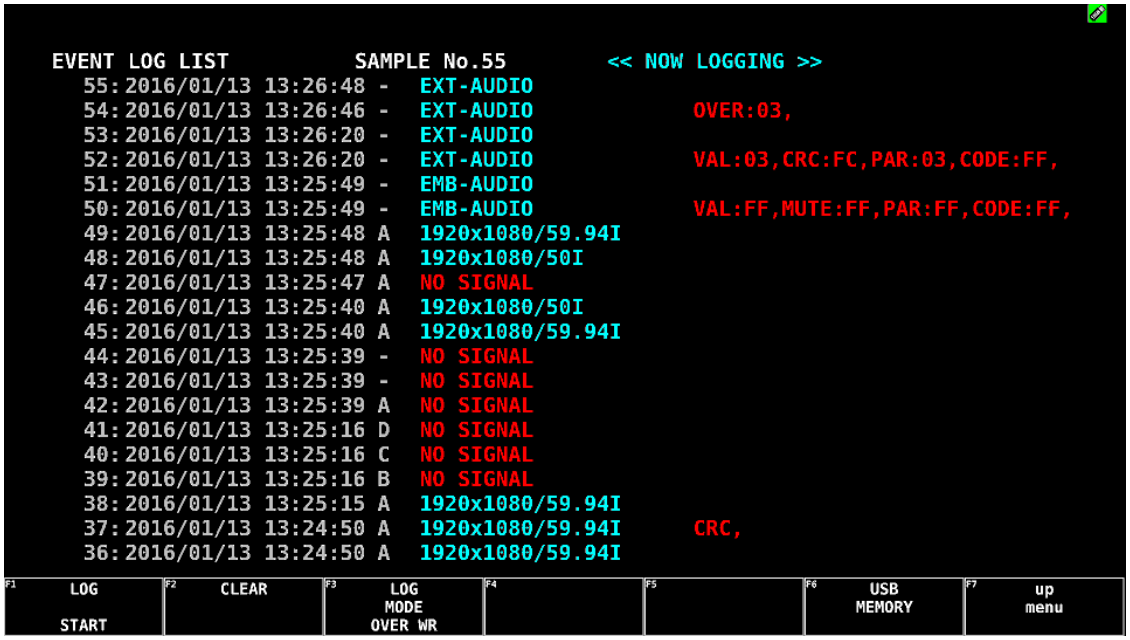


Figure 14-4 Event log display

14.4.1 Event Log Screen Description

Events are listed on the event log screen by the time of their occurrence.
Turn the function dial (F•D) to the right to scroll the screen and view older events in the log.
Press the function dial (F•D) to display the latest events.

● Note

- When the same event occurs successively and when multiple events occur at the same time, they are treated as a single event.
- When multiple events occur at the same time, you may not be able to check all the events on the screen. When this happens, you can view all the events by saving them to a USB memory device.
- The event display is cleared when you turn the power off.
- Switching video formats or input channels may cause disturbances in the signal that will cause errors to be displayed.

● Time Display

The time is displayed in the format specified by Time that you select by pressing SYS and then F•2 SYSTEM SETUP.

● **Channel display**

The input channel is displayed. A “-” is displayed for events detected by SER03.

● **Format Display**

The input format or one of the following messages is displayed.

NO SIGNAL: When there is no input signal
UNKNOWN: When the format cannot be detected
EMB-AUDIO: When embedded audio signals are being measured (SER03)
EXT-AUDIO: When external audio signals are being measured (SER03)

● **Event Display**

The events that are displayed in the event log are listed below.
Of the items listed below, only those whose detection settings have been set to ON on the FORMAT ALARM tab of the SYS menu, ERROR SETUP of the AUDIO menu (SER03 only), and STATUS SETUP of the STATUS menu are displayed.

Table 14-2 Events

Event Name	Description
FORMAT_ALARM	Format Alarm
OVER	Level Over
CLIP	Clip
MUTE	Mute
PAR	Parity Error
VAL	Validity Error
CRC	CRC Error
CODE	Code Violation
TRS_P	TRS Position Error
TRS_C	TRS Code Error
LINE	Line Number Error(Except SD)
CRC	CRC Error(Except SD)
EDH	EDH Error(SD)
ILLEGAL	Illegal Code Error
FREQ	Frequency Error
CABLE_ERR	Cable Error
CABLE_WAR	Cable Warning
PRTY	Ancillary Data Parity Error
CHK	Ancillary Data Checksum Error
A_BCH	Embedded Audio BCH Error(Except SD)
A_DBN	Embedded Audio DBN Error
A_PRTY	Embedded Audio Parity Error(Except SD)
A_INH	Embedded Audio Inhibit Line Error
A_SMP	Embedded Audio Sample Count Error

● **Event Generation Channel Display (SER03)**

For audio events detected by SER03, the channel on which the event occurred is displayed after the event name in hexadecimal notation.

• **8-Channel Measurement**

The relationship between the 8 bits indicated by the hexadecimal and measurement channels is as follows.

	8 bits							
	b8	b7	b6	b5	b4	b3	b2	b1
SDI	2nd GROUP				1st GROUP			
EXT AUDIO (for A measurement)	A8	A7	A6	A5	A4	A3	A2	A1
EXT AUDIO (for B measurement)	B8	B7	B6	B5	B4	B3	B2	B1

For example, if INPUT is set to SDI in simul mode, 1st GROUP is set to SDI B G3, and 2nd GROUP is set to SDI A G4, an event log output of “48” indicates that events have occurred on “B:CH12” and “A:CH15.”

Event log output example	4				8			
Binary display	0	1	0	0	1	0	0	0
Corresponding channel	A16	A15	A14	A13	B12	B11	B10	B9

• **16-Channel Measurement**

The relationship between the 16 bits indicated by the hexadecimal and measurement channels is as follows.

	16 bits															
	b16	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1
SDI (Single input mode)	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
SDI (Simul mode)	4th GROUP				3rd GROUP				2nd GROUP				1st GROUP			
EXT AUDIO	B8	B7	B6	B5	B4	B3	B2	B1	A8	A7	A6	A5	A4	A3	A2	A1

For example, if INPUT is set to EXT AUDIO, an event log output of “1248” indicates that events have occurred on “A:CH4,” “A:CH7,” “B:CH2,” and “B:CH5.”

Event log output example	1				2				4				8			
Binary display	0	0	0	1	0	0	1	0	0	1	0	0	1	0	0	0
Corresponding channel	B8	B7	B6	B5	B4	B3	B2	B1	A8	A7	A6	A5	A4	A3	A2	A1

14.4.2 Starting the Event Log

To start the event log, follow the procedure below.

Procedure

STATUS → F•1 EVENT LOG → F•1 LOG: START, STOP

Settings

START:	The event log is started. "NOW LOGGING" appears in the upper right of the event log.
STOP:	The event log is stopped. "LOGGING STOPPED" appears in the upper right of the event log.

14.4.3 Clearing the Event Log

To delete the event log, follow the procedure below.

Procedure

STATUS → F•1 EVENT LOG → F•2 CLEAR

14.4.4 Selecting the Overwrite Mode

Up to 1000 events can be displayed. To select the action to perform when more than 1000 events occur, follow the procedure below.

Procedure

STATUS → F•1 EVENT LOG → F•3 LOG MODE: OVER WR, STOP

Settings

OVER WR:	Oldest events are overwritten.
STOP:	Additional events are not recorded.

14.4.5 Saving to a USB Memory Device

You can save the event log to a USB memory device as a text file.
To save a file with a name that you specify, follow the procedure below.

1. **Used to connect USB memory.**
2. **Press F•6 USB MEMORY.**

   The file list screen appears.
   This setting appears when USB memory is connected.

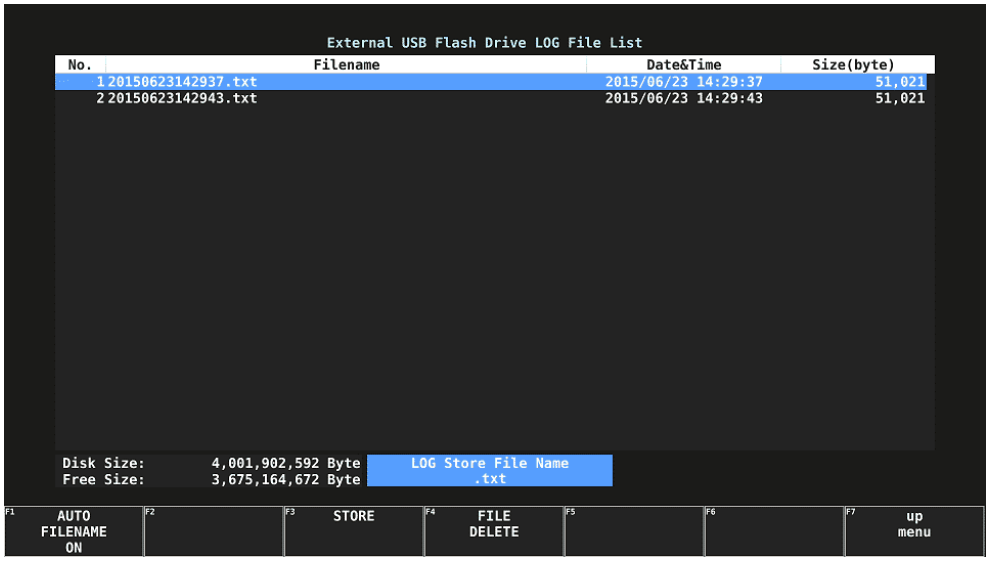


Figure 14-5 File list screen

3. **Set F•1 AUTO FILENAME to OFF.**
4. **Press F•2 NAME INPUT.**

   The file name input display appears.

Figure 14-6 File name input screen

5. Enter a file name using up to 14 characters.

The key operations that you can perform in the file name input display are as follows:

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.

You can also copy the file name of an already saved file. To copy a file name, move the cursor to the file in the file list whose name you want to copy, and then press the function dial (F•D).

6. Press F • 7 up menu.

7. Press F • 3 STORE.

If a file with the same name that you have specified already exists on the USB memory device, an overwrite confirmation menu appears. To overwrite the existing preset, press F•1 OVER WR YES. Otherwise, press F•3 OVER WR NO.

Deleting an Event Log

To delete an event log that has been saved to the USB memory device, select the log file on the file list display, and then press F•4 FILE DELETE. To delete the file, press F•1 DELETE YES. To cancel the delete operation, press F•3 DELETE NO.

Automatic File Name Generation

If you set F•1 AUTO FILENAME to ON, the file name will be generated automatically in the format "YYYYMMDDhhmmss" when you save the file. In this situation, F•2 NAME INPUT is not displayed.

● USB Memory Device Folder Structure

Event logs are saved in the LOG folder.

USB memory device
└ LV7390_USER
  └ LOG
    └ YYYYMMDDhhmmss.txt

14.5 Configuring the Data Dump Settings

To view the data dump, follow the procedure below.
In the data dump, the data of the selected line is listed. You can change the line number using the V POS knob and the sample number using the H POS knob. (You can also use the function dial (F•D).
Changing this setting will also change the selected line on the video-signal-waveform, vector, and picture displays. (excluding some of the 4K settings)

Procedure

STATUS → F•2 SDI ANALYSIS → F•1 DATA DUMP

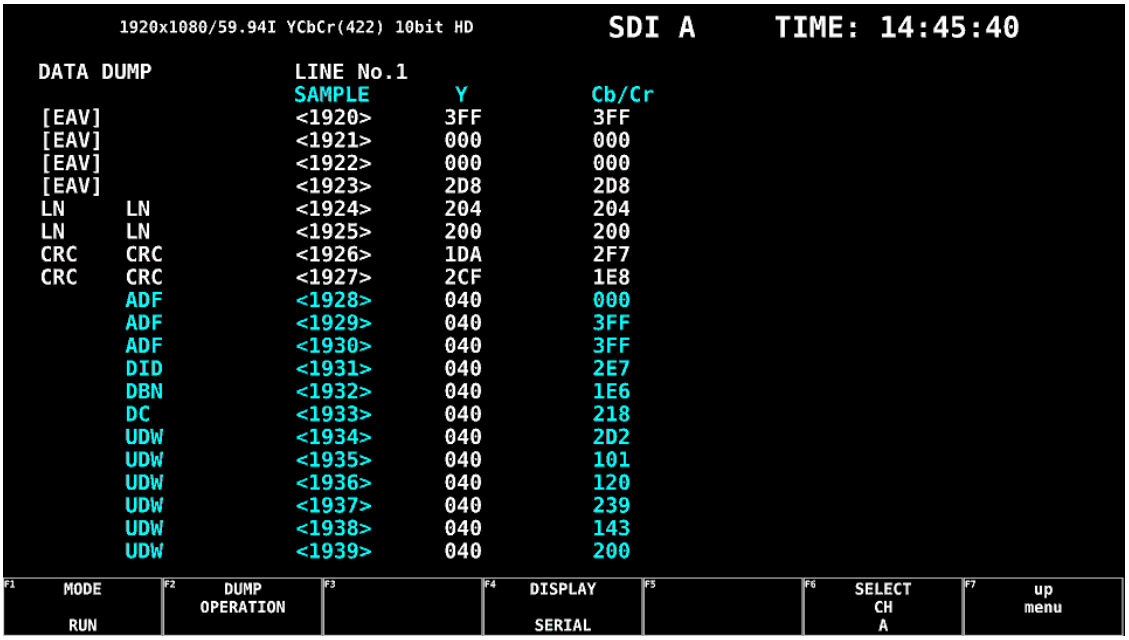


Figure 14-7 Data dump display

14.5.1 Data Dump Display Description

● Detection Code Display

The input signal's embedded ancillary data is detected, and the following detection codes are displayed.

Table 14-3 Detection code display

Detection Code	Color	Description
ADF	Cyan	Ancillary data flags (000h, 3FFh, and 3FFh)
DID	Cyan	Data identification (the data after ADF)
SDID	Cyan	SECONDARY DATA IDENTIFICATION (the secondary format data when the DID is smaller than 80h)
DBN	Cyan	DATA BLOCK NUMBERS (the primary data format when the DID is larger than 80h)
DC	Cyan	Data count (the data after the SDID/DBN)
UDW	Cyan	User data words (the user data words of the data count length after ADF)
CS	Magenta	Checksum (the data immediately after UDW)
AP	Yellow	ACTIVE PICTURE (From after the SAV to just before the EAV when the selected line is within the active video area)

● Line Number Display

Pictures sent in SDI signals are assigned line numbers as part of the transmission format. The line number is displayed in one of the following formats at the top of the screen.

Table 14-4 Line number display

Line number display	Description
LINE No.	The picture scan line numbers and the line numbers during transmission are matched.
I/F LINE No.	The picture scan line numbers and the line numbers during transmission are not matched. Line numbers during transmission are displayed.
PIC LINE No.	The picture scan line numbers and the line numbers during transmission are not matched. Picture scan line numbers are displayed.

Normally, the picture scan line numbers and the line numbers for storing those line numbers during transmission are matched. However, they do not match when the following format is received.
If this is the case, you can switch between the picture scan line number (PICTURE) and line numbers during transmission (STREAM1/2).

Table 14-5 Format

Format	Frame rate	Switching operation
3G-B-DL	60/59.94/50/48/47.95/P	F•4 DISPLAY (STREAM1/STREAM2/PICTURE)

As an example, the switching procedure for setting the picture scan line number to 42 when 3G-B-DL (1920×1080/59.94P) is applied is shown below.

1. Display the data dump.
2. Set F•4 DISPLAY to PICTURE.
3. Use the V POS knob to set PIC LINE No. to 42.
4. Set F•4 DISPLAY to STREAM1.

The line number display changes to I/F LINE No.21.
This indicates that the line number in which the picture scan line number 42 is stored for transmission is 21.

The relationship of other 3G-B-DL line numbers is shown below.

Table 14-6 3G-B-DL line number relationship

Picture scan line number (PIC LINE No.)	Line number during transmission (I/F LINE No.)	
PICTURE	STREAM1	STREAM2
1	563	1125
2	1	563
n (odd number)	(n+1)/2+562	(n-1)/2
m (even number)	m/2	m/2+562

14.5.2 Selecting the Display Mode

To select the data dump display mode, follow the procedure below.

Procedure

STATUS → F•2 SDI ANALYSIS → F•1 DATA DUMP → F•1 MODE: RUN, HOLD

Settings

RUN:	The input signal data is automatically updated and displayed.
HOLD:	The input signal data is displayed statically.

14.5.3 Selecting the Display Format

To select the data dump display format, follow the procedure below.
This menu does not appear when F•5 LINK is set to PICTURE.

Procedure

STATUS → F•2 SDI ANALYSIS → F•1 DATA DUMP → F•4 DISPLAY
: SERIAL / COMPO / BINARY (for HD, SD, 3G-A, HD (QL), 3G-A of 3G (QL))
: PICTURE / STREAM1 / STREAM2 (for 3G-B-DL, 3G-B-DL of 3G (QL))
: S1 SERIAL / S1 COMPO / S1 BINARY / S2 SERIAL / S2 COMPO / S2 BINARY (for 3G-B-DS, 3G (DL))

Settings

SERIAL:	The parallel converted data sequences are displayed.
COMPO:	The parallel converted data sequences are divided into YCbCr and RGB and displayed.
BINARY:	The parallel converted data sequences are displayed in binary.
PICTURE:	Each link or streams 1 and 2 are combined and displayed in a picture structure.
STREAM1:	Stream 1 is displayed.
STREAM2:	Stream 2 is displayed.
S1 SERIAL:	Stream 1 is displayed serially.
S1 COMPO:	Stream 1 is separated and displayed.
S1 BINARY:	Stream 1 is displayed in binary.
S2 SERIAL:	Stream 2 is displayed serially.
S2 COMPO:	Stream 2 is separated and displayed.
S2 BINARY:	Stream 2 is displayed in binary.

DISPLAY = SERIAL

```
DATA DUMP           LINE No.1
                    SAMPLE      Y         Cb/Cr
[EAV]               <1920>      3FF       3FF
[EAV]               <1921>      000       000
[EAV]               <1922>      000       000
[EAV]               <1923>      2D8       2D8
LN     LN           <1924>      204       204
LN     LN           <1925>      200       200
CRC    CRC          <1926>      1DA       2F7
CRC    CRC          <1927>      2CF       1E8
       ADF          <1928>      040       000
       ADF          <1929>      040       3FF
       ADF          <1930>      040       3FF
       DID          <1931>      040       2E7
       DBN          <1932>      040       129
       DC           <1933>      040       218
       UDW          <1934>      040       23C
       UDW          <1935>      040       104
       UDW          <1936>      040       180
       UDW          <1937>      040       209
       UDW          <1938>      040       183
       UDW          <1939>      040       200
```

DISPLAY = COMPO

```
DATA DUMP           LINE No.1
                    SAMPLE      Y         Cb        Cr
[EAV]               <1920>      3FF       3FF
[EAV]               <1921>      000                 000
[EAV]               <1922>      000       000
[EAV]               <1923>      2D8                 2D8
LN     LN           <1924>      204       204
LN     LN           <1925>      200                 200
CRC    CRC          <1926>      1DA       2F7
CRC    CRC          <1927>      2CF                 1E8
       ADF          <1928>      040       000
       ADF          <1929>      040                 3FF
       ADF          <1930>      040       3FF
       DID          <1931>      040                 2E7
       DBN          <1932>      040       157
       DC           <1933>      040                 218
       UDW          <1934>      040       23C
       UDW          <1935>      040                 104
       UDW          <1936>      040       180
       UDW          <1937>      040                 1E0
       UDW          <1938>      040       14A
       UDW          <1939>      040                 180
```

DISPLAY = BINARY

```
DATA DUMP           LINE No.39
                    SAMPLE      Y           Cb/Cr
[EAV]               <1920>      1111111111  1111111111
[EAV]               <1921>      0000000000  0000000000
[EAV]               <1922>      0000000000  0000000000
[EAV]               <1923>      1001110100  1001110100
LN     LN           <1924>      1010011100  1010011100
LN     LN           <1925>      1000000000  1000000000
CRC    CRC          <1926>      0110100100  0110001110
CRC    CRC          <1927>      0100010010  1001111001
       ADF          <1928>      0001000000  0000000000
       ADF          <1929>      0001000000  1111111111
       ADF          <1930>      0001000000  1111111111
       DID          <1931>      0001000000  1011100111
       DBN          <1932>      0001000000  0100000010
       DC           <1933>      0001000000  1000011000
       UDW          <1934>      0001000000  1000000101
       UDW          <1935>      0001000000  1000000000
       UDW          <1936>      0001000000  1000000000
       UDW          <1937>      0001000000  1011101000
       UDW          <1938>      0001000000  0111000010
       UDW          <1939>      0001000000  0110000000
```

Figure 14-8　Selecting the display format

14.5.4 Selecting the Display Link

When set to 4K, to select which link to display the data dump of, follow the procedure below. Links or streams 1 and 2 are combined and displayed in a picture structure.

Procedure

STATUS → F•2 SDI ANALYSIS → F•1 DATA DUMP → F•5 LINK
: PICTURE, 1[A], 2[B], 1[C], 2[D] (for 3G (DL))
: PICTURE, 1[A], 2[B], 3[C], 4[D] (for 3G (QL), HD (QL))

14.5.5 Moving the Display Position

To configure data dump operation settings, press F•2 DUMP OPERATION on the DATA DUMP menu.

STATUS → F•2 SDI ANALYSIS → F•1 DATA DUMP → F•2 DUMP OPERATION →

F1	F2	F3	F4	F5	F6	F7
JUMP EAV	FD 1CLICK 1	FD FUNCTION LINE	DISPLAY SERIAL		USB MEMORY	up menu

Figure 14-9 DUMP OPERATION menu

To move the data dump sample number to a specific location, follow the procedure below.

Procedure

STATUS → F•2 SDI ANALYSIS → F•1 DATA DUMP → F•2 DUMP OPERATION → F•1 JUMP
: EAV, SAV
: END, START (when F•5 LINK is set to PICTURE)

Settings

EAV:	The display starts with the EAV sample number.
SAV:	The display starts with the SAV sample number.
END:	The last sample number is displayed.
START:	The display starts with sample number 0.

14.5.6 Selecting the Adjustment Step Resolution

To select the line or sample number adjustment step resolution for when the function dial (F•D) is turned, follow the procedure below.

Procedure

STATUS → F•2 SDI ANALYSIS → F•1 DATA DUMP → F•2 DUMP OPERATION → F•2 FD 1CLICK: 1, 10, 50

14.5.7 Selecting What the Function Dial Controls

To select whether the line number or sample number is controlled with the function dial (F•D), follow the procedure below. You can also change the line number using the V POS knob and the sample number using the H POS knob.

Procedure

STATUS → F•2 SDI ANALYSIS → F•1 DATA DUMP → F•2 DUMP OPERATION → F•3 FD FUNCTION: LINE, SAMPLE

Settings

LINE:	Turning the function dial (F•D) changes the line number. If you press the function dial (F•D), the data of line number 1 is displayed.
SAMPLE:	Turning the function dial (F•D) changes the sample number. If you press the function dial (F•D), EAV is displayed.

14.5.8 Saving to a USB Memory Device

You can save the data dump to a USB memory device as a text file. The procedure to follow to save data is the same as the procedure that was given for the event log. See section 14.4.5, "Saving to a USB Memory Device."
Data dumps are saved in the DUMP folder.

USB memory device
└ LV7390_USER
  └ DUMP
    └ YYYYMMDDhhmmss.txt

14.6 Configuring Phase Difference Measurement Settings

To show the phase difference measurement display, follow the procedure below.
You can use the phase difference measurement display to measure the phase difference between an SDI signal and an external sync signal or the phase difference between a pair of SDI signals.

Procedure

STATUS → F•2 SDI ANALYSIS → F•2 EXT REF PHASE

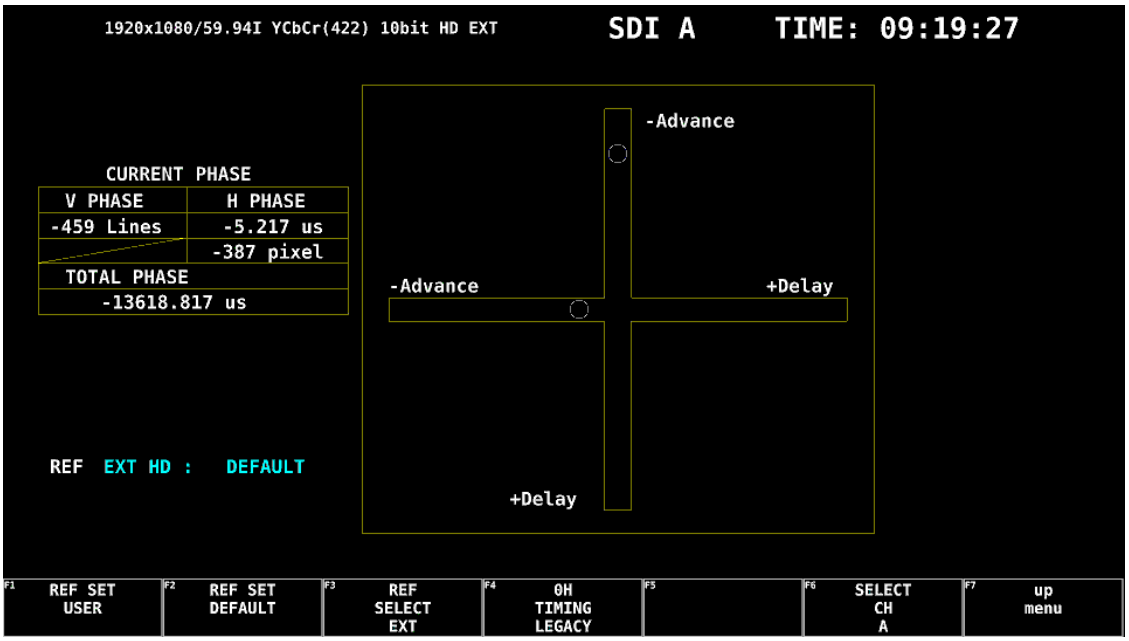


Figure 14-10 Phase difference measurement screen

● Measuring the Phase Difference between an SDI Signal and an External Sync Signal

You can measure the phase difference between an SDI signal and an external sync signal by setting F•3 REF SELECT to EXT. Apply the external sync signal.

Note that the following input formats are not supported.
• 3G 720/30P, 720/29.97P, 720/25P, 720/24P, 720/23.98P
• Frame frequency 48P, 47.95P

● Measuring the Phase Difference between SDI Signals

You can measure the phase difference between SDI signals with channel A or link 1 as the reference by setting F•3 REF SELECT to SDI.
This measurement is not possible when SDI System is set to 3G-B-DS on the SYS > F•1 SIGNAL IN OUT > SDI IN tab.

14.6.1 Phase Difference Measurement Screen Description

● CURRENT PHASE

V PHASE: The phase difference is displayed in units of lines.
H PHASE: The phase difference is displayed in units of time and in units of pixels or clocks. (*1)
TOTAL PHASE: The total of the V PHASE and H PHASE differences is displayed in units of time.

*1 When the input signal is SD, the unit is clocks. Pixels are in units of the video's sampling frequency. Clocks are in units of the parallel video's transmission clock frequency.

● REF

This displays the reference signal as shown below.

Table 14-7 REF indications

F•3 REF SELECT	Display	Description
EXT	EXT BB : DEFAULT	When the reference signal is BB and the phase difference is at the default value
	EXT BB : USER REF	When the reference signal is BB and the phase difference is at the user reference value
	EXT HD : DEFAULT	When the reference signal is HD3 and the phase difference is at the default value
	EXT HD : USER REF	When the reference signal is HD3 and the phase difference is at the user reference value
	NO SIGNAL	When no external sync signal is being applied
SDI	SDI A	When the input signal is SD, HD, or 3G, the reference signal is channel A
	LINK 1	When the input signal is SD, HD, or 3G, the reference signal is link 1
	NO SIGNAL	When an SDI signal is not being received through channel A

• Setting the User-Defined Phase Difference Reference

When F•3 REF SELECT is set to EXT, you can set the current phase difference to zero by pressing F•1 REF SET USER. You can change the reference to match the system that you are using. (for 4K, the phase difference of link 1 is set to zero)
To reset the phase difference to its default value (see below), press F•2 REF SET DEFAULT.

- **Default Phase Difference Setting**

  If the input signal is HD or SD and F•3 REF SELECT is set to EXT, you can use F•4 0H TIMING to select the reference where the phase difference is assumed to be zero. When using a LEADER signal generator that allows you to select LEGACY or SERIAL, this setting must be matched to the setting selected on the LV 7390. In addition, depending on the output accuracy of the signal generator and measurement accuracy of the LV 7390, there may be an offset of around 0 ± 4 clocks in the display.

  LEGACY: The phase difference is assumed to be zero when an external sync signal without a timing offset transmitted from a LEADER signal generator and an SDI signal are received.
  SERIAL: The phase difference is zero when the external sync signal and the SDI signal are received at the times defined in the signal standard.

- **Graphical Display**

  The vertical axis represents the V phase difference in lines. The horizontal axis represents the H phase time difference. When the circles that represent V and H overlap with each other in the center, there is no phase difference.

  The circles are normally displayed in white, but they will be displayed in green under the following circumstances.
  Horizontal: When the circle is within ±3 clocks of the center.
  Vertical: When the circle is within ±0 clocks of the center.

  When the signal is behind the reference signal, the circle is displayed on the Delay (+) side. When the signal is ahead of the reference signal, the circle is displayed on the Advance (-) side. For both the V and H axes, differences of up to approximately +1/2 frames from the center are displayed on the Delay axis and differences of up to approximately -1/2 frames from the center are displayed on the Advance axis. See the following table for details.

  When the phase difference between an SDI signal and an external sync signal is being measured, the H axis phase difference may vary within a range of ±1 clock in cases such as when the signal is switched. When the phase difference between SDI signals is being measured, the H difference may vary within a range of ±2 clock in cases such as when the signal is switched.

Table 14-8 Delay and Advance axis display ranges

Format		Displayed on the Advance Axis			Displayed on the Delay Axis				
		V PHASE [Lines]	H PHASE [us]		V PHASE [Lines]	H PHASE [us]		V PHASE [Lines]	H PHASE [us]
3G-A	1080/59.94P	-562	-14.822	to	0	0	to	562	0
	1080/60P	-562	-14.808	to	0	0	to	562	0
	1080/50P	-532	-17.771	to	0	0	to	562	0
3G-B	1080/59.94P	-1124	-14.822	to	0	0	to	1125	0
	1080/60P	-1124	-14.808	to	0	0	to	1125	0
	1080/50P	-1124	-17.771	to	0	0	to	1125	0
3G-A 3G-B HD	1080/59.94I, 1080/29.97P, 1080/29.97PsF	-562	-29.645	to	0	0	to	562	0
	1080/60I, 1080/30P, 1080/30PsF	-562	-29.616	to	0	0	to	562	0
	1080/50I, 1080/25P, 1080/25PsF	-562	-35.542	to	0	0	to	562	0
	1080/23.98P, 1080/23.98PsF	-562	-37.060	to	0	0	to	562	0
	1080/24P, 1080/24PsF	-562	-37.023	to	0	0	to	562	0
	720/59.94P	-375	0	to	0	0	to	374	22.230
	720/60P	-375	0	to	0	0	to	374	22.208
	720/50P	-375	0	to	0	0	to	374	26.653
	720/29.97P	-375	0	to	0	0	to	374	44.475
	720/30P	-375	0	to	0	0	to	374	44.430
	720/25P	-375	0	to	0	0	to	374	53.319
	720/23.98P	-375	0	to	0	0	to	374	55.597
	720/24P	-375	0	to	0	0	to	374	55.542
SD	525/59.94I	-262	-63.518	to	0	0	to	262	0
	625/50I	-312	-63.962	to	0	0	to	312	0

14.7 Displaying a List of Ancillary Data

To display a list of ancillary data, follow the procedure below.

Procedure

STATUS → F•3 ANC DATA VIEWER

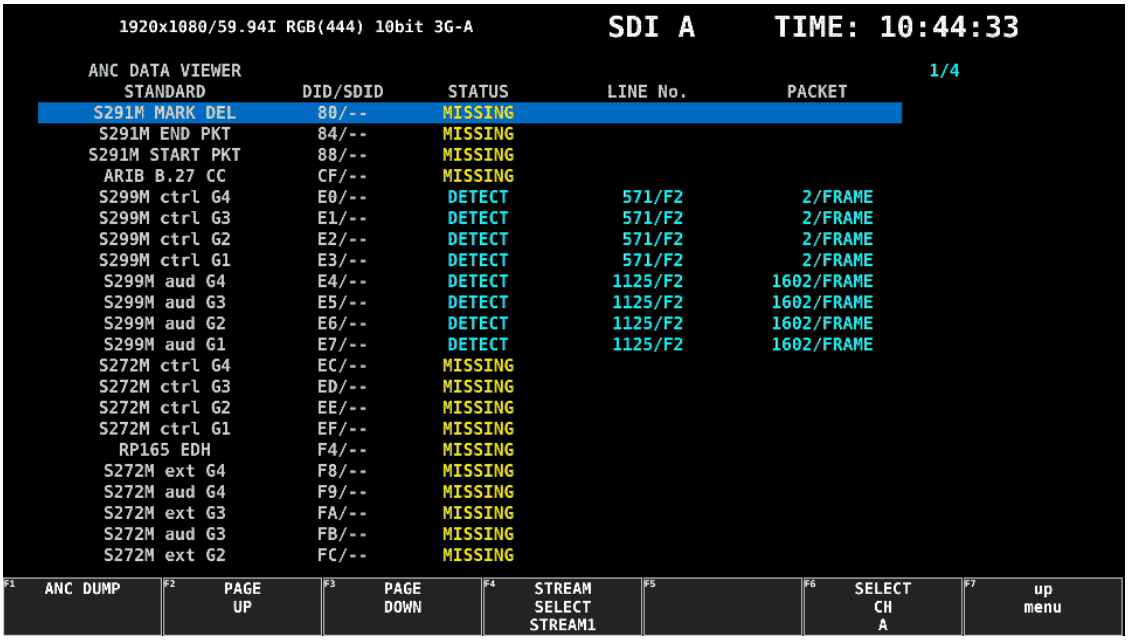


Figure 14-11 Ancillary data list display

14.7.1 Ancillary Data Display Description

On the ancillary data screen, data is displayed as a list for each standard. If data is detected, "DETECT" is displayed in the STATUS column. If data is not detected, "MISSING" is displayed in the STATUS column.

By turning the function dial (F•D) to the right, you can scroll the screen to view all the data. You can also press F•2 PAGE UP and F•3 PAGE DOWN to move between pages. In the upper right of the screen, the "page number/total number of pages" is displayed.
If you press the function dial (F•D), the cursor returns to the first data entry.

When the input signal is 3G, to set the display stream to STREAM1 or STREAM2, press F•4 STREAM SELECT.

When the input signal is 4K, you can use F•5 LINK to select the displayed link.

14.7.2 Displaying a Dump of Ancillary Data

To display a dump of the data that you have selected on the ancillary data display, follow the procedure below.
By turning the function dial (F•D) to the right, you can scroll the screen to view all the data.
If you press the function dial (F•D), the cursor returns to the first data entry.

Procedure

STATUS → F•3 ANC DATA VIEWER → F•1 ANC DUMP

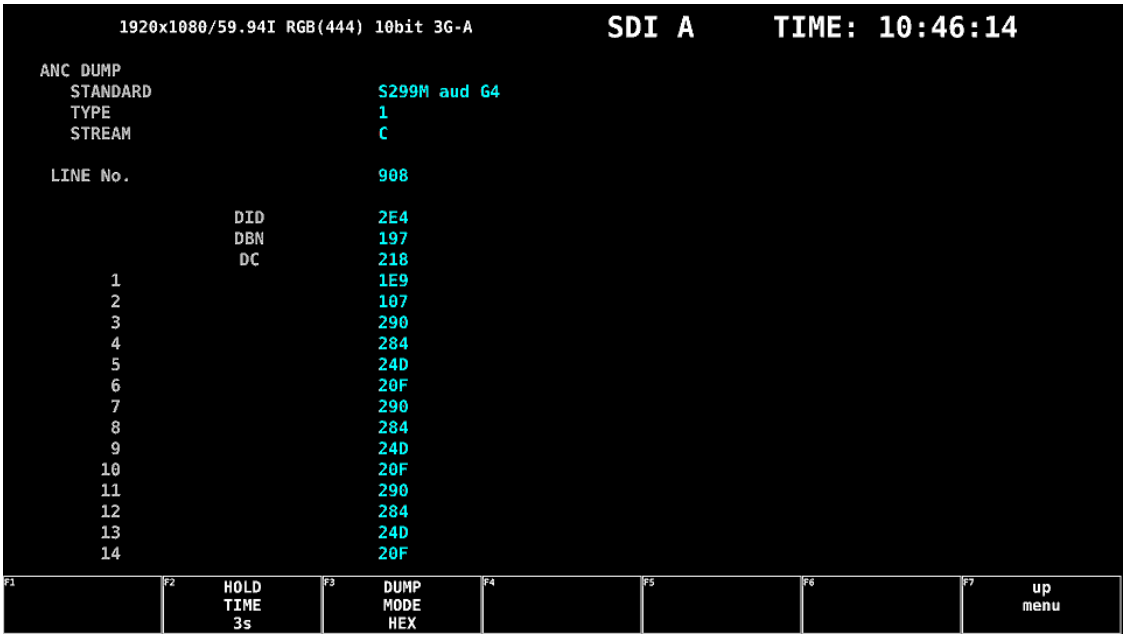


Figure 14-12 Ancillary dump screen

14.7.3 Updating the Dump Display

When the selected data is embedded in multiple lines, the line number that is displayed on the ANC dump screen is switched at a regular interval. (However, the order in which the line numbers are switched is irregular.)
To select the dump display update time, follow the procedure below.

Procedure

STATUS → F•3 ANC DATA VIEWER → F•1 ANC DUMP → F•2 HOLD TIME: HOLD, 1s, 3s

Settings

HOLD:	The screen is not updated.
1s:	The screen is updated once per second.
3s:	The screen is updated once every 3 seconds.

14.7.4 Selecting the Dump Mode

To select the dump mode, follow the procedure below.

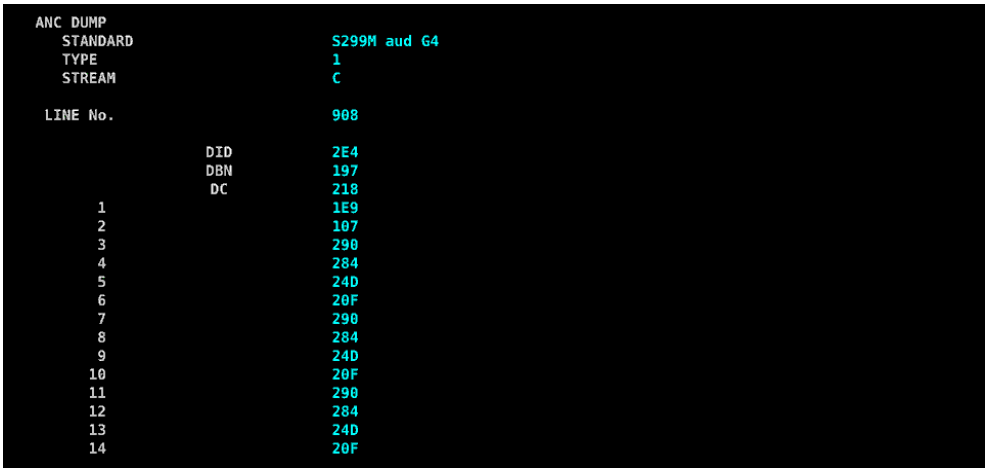
Procedure

STATUS → F•3 ANC DATA VIEWER → F•1 ANC DUMP → F•3 DUMP MODE: HEX, BINARY

Settings

HEX:	Data is displayed in hexadecimal format.
BINARY:	Data is displayed in binary format.

DUMP MODE = HEX



DUMP MODE = BINARY

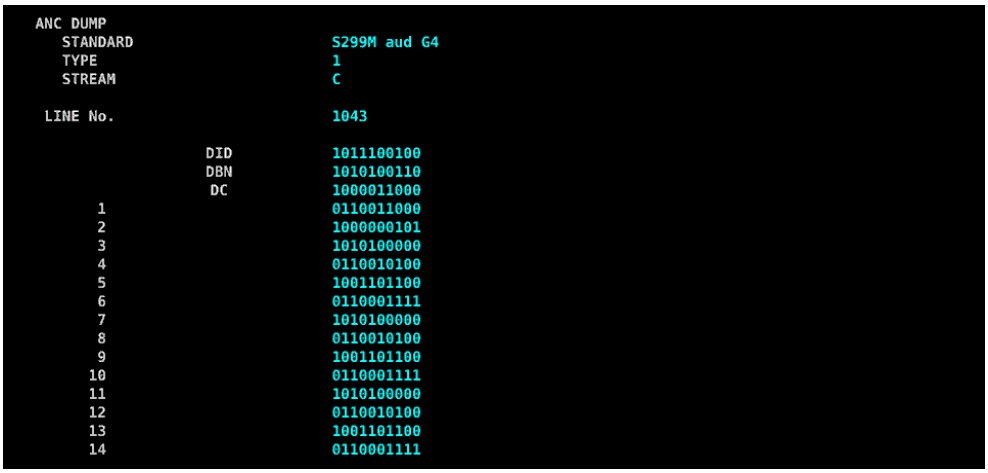


Figure 14-13 Selecting the dump mode

14.8 Detecting Ancillary Packets

To display the ancillary packet display, follow the procedure below.
If an ancillary packet is detected, “DETECT” appears. If not, “MISSING” appears. If a dummy packet is detected, “DUMMY” appears.

Procedure

STATUS → F•4 ANC PACKET

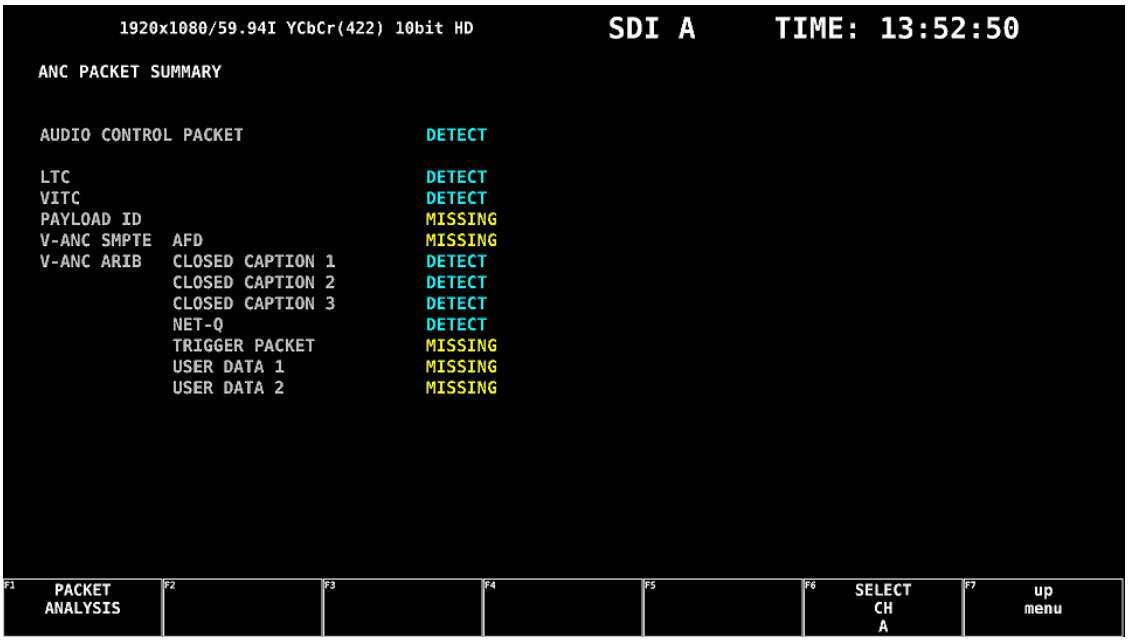


Figure 14-14 Ancillary packet screen

14.8.1 Ancillary Packet Screen Description

- **AUDIO CONTROL PACKET**

  The embedded audio consists of 4 groups that each contain 4 channels. This makes for a total of 16 channels. A single audio control packet is embedded in each group.

  [See also] 14.8.4, “Displaying Audio Control Packets”

- **EDH (Error detection and handling; when the input signal is SD)**

  This packet is used for detecting transmission errors. When multiple devices are connected, this packet can be used to determine which device caused an error. Both full-field and active picture errors are detected.

  [See also] 14.8.2, “Displaying EDH Packets”

- **LTC (Linear/Longitudinal Time Code)**

  This is a type of timecode. One packet is embedded per frame.

- **VITC (Vertical Interval Time Code)**

  This is a type of timecode. One packet is embedded per field.

- **PAYLOAD ID**

  This is a packet that is used to identify the video format. It conforms to SMPTE ST 352.

  [See also] 14.8.3, “Displaying Payload IDs”

- **AFD**

  It is embedded in the V-ANC area.

  [See also] 14.8.11, “Displaying AFD Packets”

- **CLOSED CAPTION 1 to 3 (When the input signal is HD or SD)**

  This is a closed caption information packet that is embedded in the V-ANC area. Up to three closed caption data entries can be embedded.

  [See also] 14.8.6, “Displaying Closed Caption Packets”

- **NET-Q (When the input signal is HD or SD)**

  This is an inter-stationary control signal.

  [See also] 14.8.7, “Displaying the Inter-Stationary Control Signal”

- **TRIGGER PACKET (When the input signal is HD or SD)**

  This is the data transmission trigger signal.

  [See also] 14.8.8, “Displaying the Data Broadcast Trigger Signal”

- **USER DATA 1 and 2 (When the input signal is HD or SD)**

  Up to two packets of user-defined data.

  [See also] 14.8.9, “Displaying User Data”

- **F•5 LINK**

  When the input signal is 4K, you can use F•5 LINK to select the displayed link.

14.8.2 Displaying EDH Packets

When the input signal is SD, to display the EDH packet screen, follow the procedure below.

Procedure

STATUS → F•4 ANC PACKET → F•1 PACKET ANALYSIS → F•1 EDH

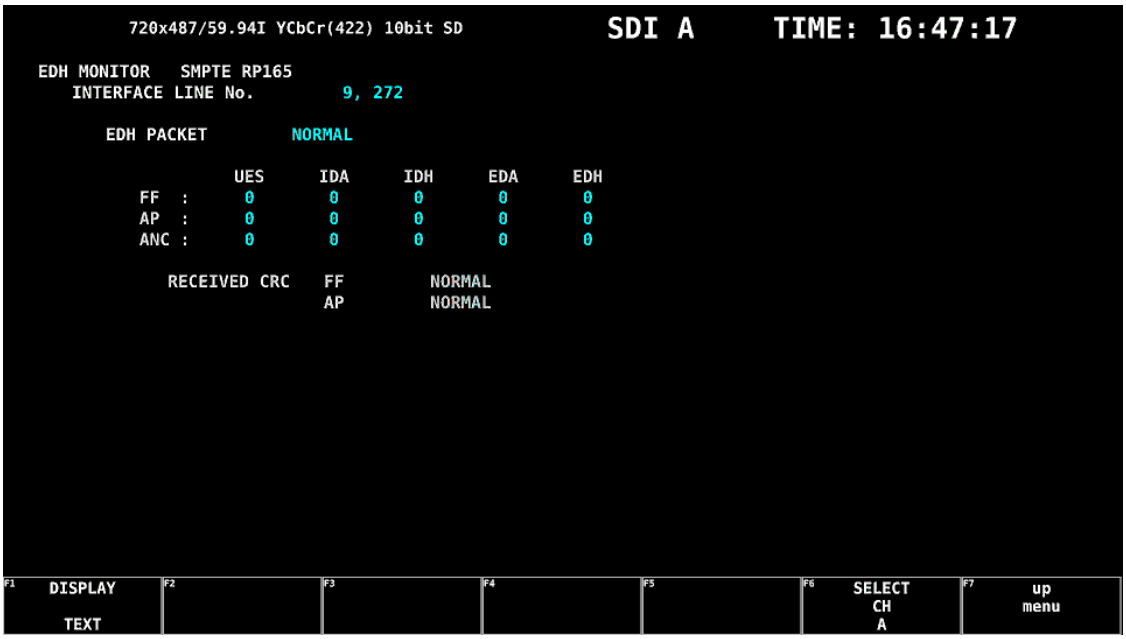


Figure 14-15 EDH packet screen

- **Selecting the Display Format**

  You can use F•1 DISPLAY to set the display format to TEXT (text display) or DUMP (dump display).
  If you select DUMP, the dump display appears, and you can use the function dial (F•D) to view the entire data. If you press the function dial (F•D), the first data entry is displayed.

- **Selecting the Dump Mode**

  When F•1 DISPLAY is set to DUMP, you can use F•2 DUMP MODE to set the dump mode to HEX (hexadecimal display) or BINARY (binary display).

14.8.3 Displaying Payload IDs

To show the payload ID display, follow the procedure below.

Procedure

STATUS → F•4 ANC PACKET → F•1 PACKET ANALYSIS → F•2 PAYLOAD ID

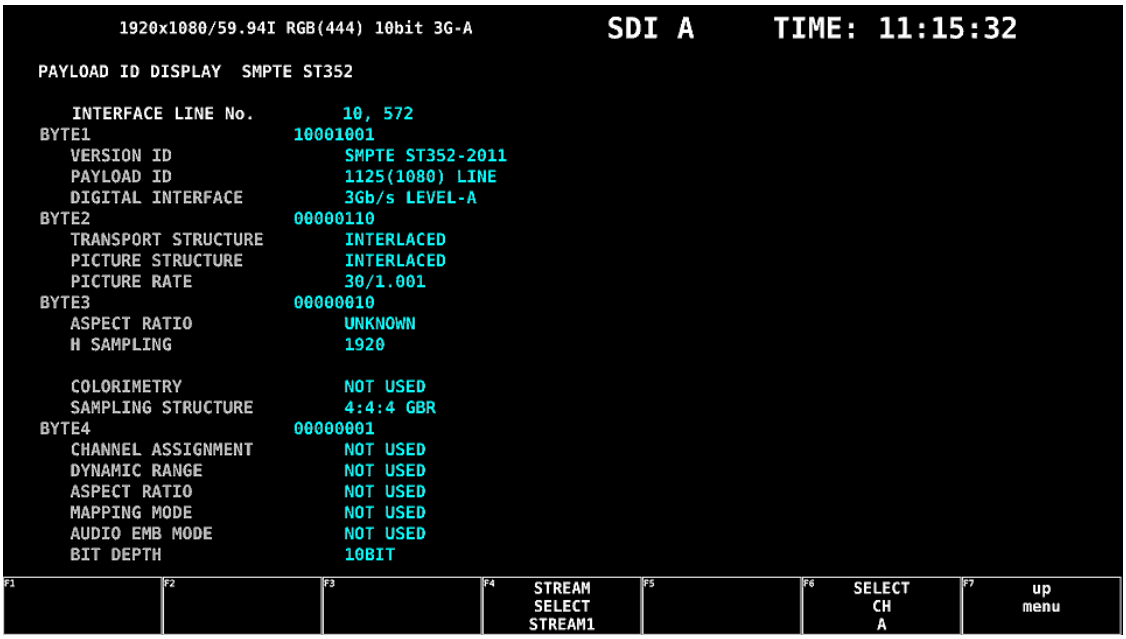


Figure 14-16 Payload ID display

- **Selecting the Displayed Stream**

  When the input signal is 3G, to set the display stream to STREAM1 or STREAM2, press F•4 STREAM SELECT.

- **Selecting the Display Link**

  When the input signal is 4K, you can use F•5 LINK to select the displayed link.

14.8.4 Displaying Audio Control Packets

To display audio control packets, follow the procedure below.

Procedure

STATUS → F•4 ANC PACKET → F•1 PACKET ANALYSIS → F•3 CONTROL PACKET

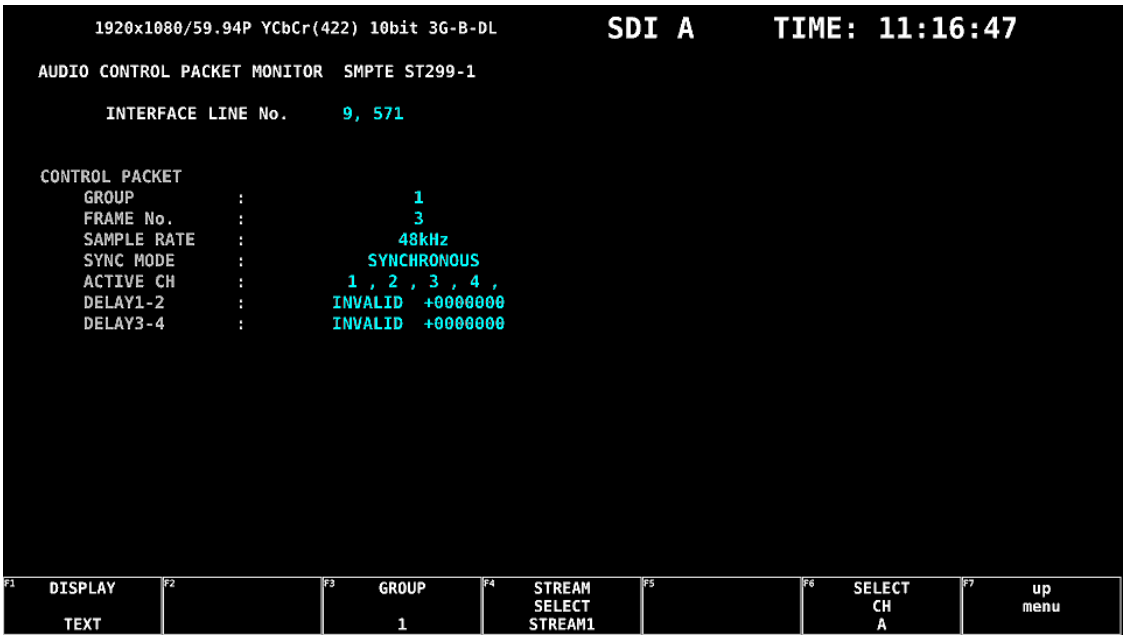


Figure 14-17 Audio control packet screen

- **Selecting the Display Format**

  You can use F•1 DISPLAY to set the display format to TEXT (text display) or DUMP (dump display).
  If you select DUMP, the dump display appears, and you can use the function dial (F•D) to view the entire data. If you press the function dial (F•D), the first data entry is displayed.

- **Selecting the Dump Mode**

  When F•1 DISPLAY is set to DUMP, you can use F•2 DUMP MODE to set the dump mode to HEX (hexadecimal display) or BINARY (binary display).

- **Selecting the Group to Display**

  You can use F•3 GROUP to set the group to display to a group from groups 1 to 4. A single group in the audio signal consists of four channels.

- **Selecting the Displayed Stream**

  When the input signal is 3G-B, to set the display stream to STREAM1 or STREAM2, press F•4 STREAM SELECT.

- **Selecting the Display Link**

  When the input signal is 4K, you can use F•5 LINK to select the displayed link.

14.8.5 V-ANC ARIB Display

To display the V blanking ancillary packets defined in the ARIB standard, use the ARIB menu. When the input signal is 3G, this menu item is not displayed.

STATUS → F•4 ANC PACKET → F•1 PACKET ANALYSIS → F•4 V-ANC → F•1 ARIB →

F1	F2	F3	F4	F5	F6	F7
CLOSED CAPTION	NET-Q	DATA TRIGGER	USER DATA 1	USER DATA 2	SELECT CH A	up menu

Figure 14-18 V-ANC ARIB menu

14.8.6 Displaying Closed Caption Packets

To display closed caption packets, follow the procedure below.

Procedure

STATUS → F•4 ANC PACKET → F•1 PACKET ANALYSIS → F•4 V-ANC → F•1 ARIB → F•1 CLOSED CAPTION

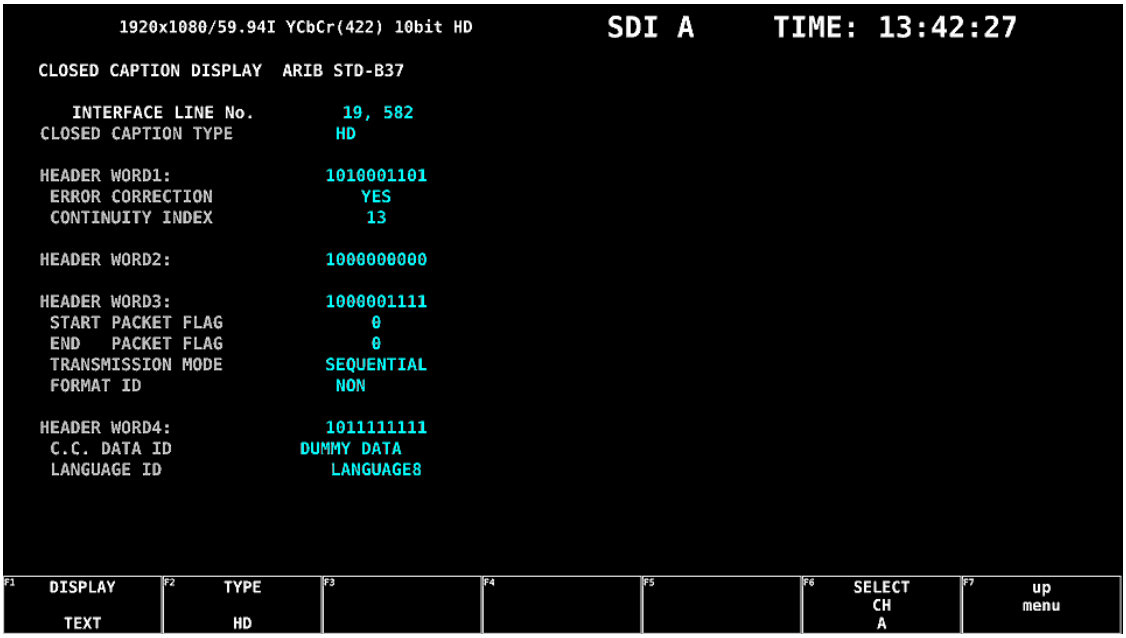


Figure 14-19 Closed caption packet screen

- **Selecting the Closed Caption Type**

  You can use F•2 TYPE to set the closed caption type to HD, SD, ANALOG, or CELLULAR.

- **Selecting the Display Format**

  You can use F•1 DISPLAY to set the display format to TEXT (text display) or DUMP (dump display).
  If you select DUMP, the dump display appears, and you can use the function dial (F•D) to view the entire data. If you press the function dial (F•D), the first data entry is displayed.

- **Selecting the Dump Mode**

  When F•1 DISPLAY is set to DUMP, you can use F•3 DUMP MODE to set the dump mode to HEX (hexadecimal display) or BINARY (binary display).

● **Selecting the Display Link**

When the input signal is HD (QL), you can use F•5 LINK to select the displayed link.

14.8.7 Displaying the Inter-Stationary Control Signal

To display the inter-stationary control signal, follow the procedure below.

Procedure

STATUS → F•4 ANC PACKET → F•1 PACKET ANALYSIS → F•4 V-ANC → F•1 ARIB → F•2 NET-Q

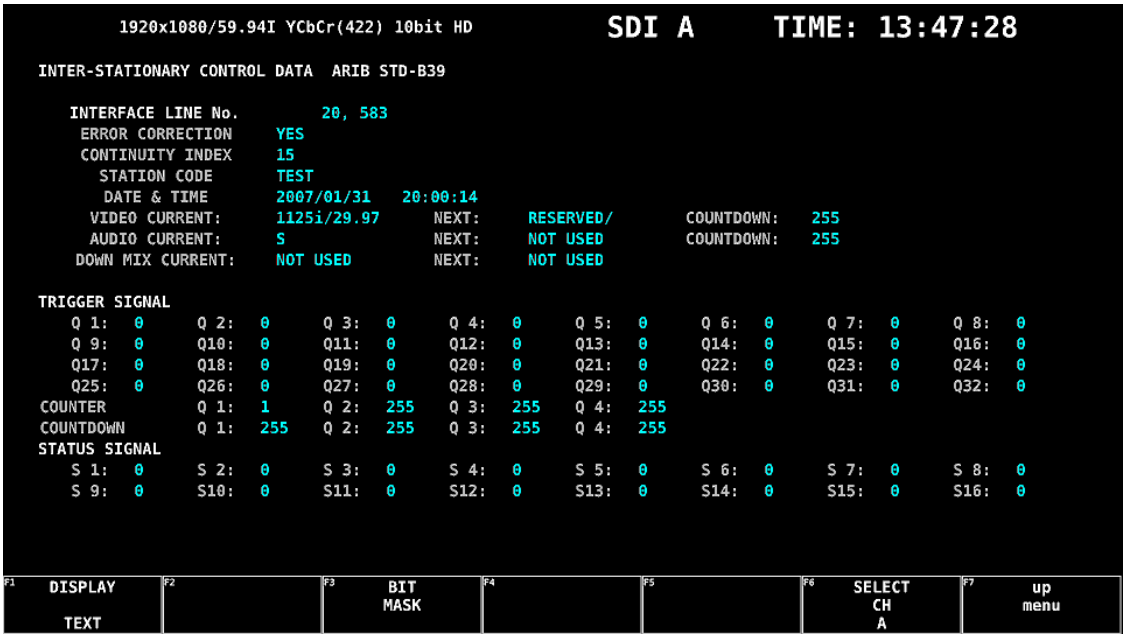
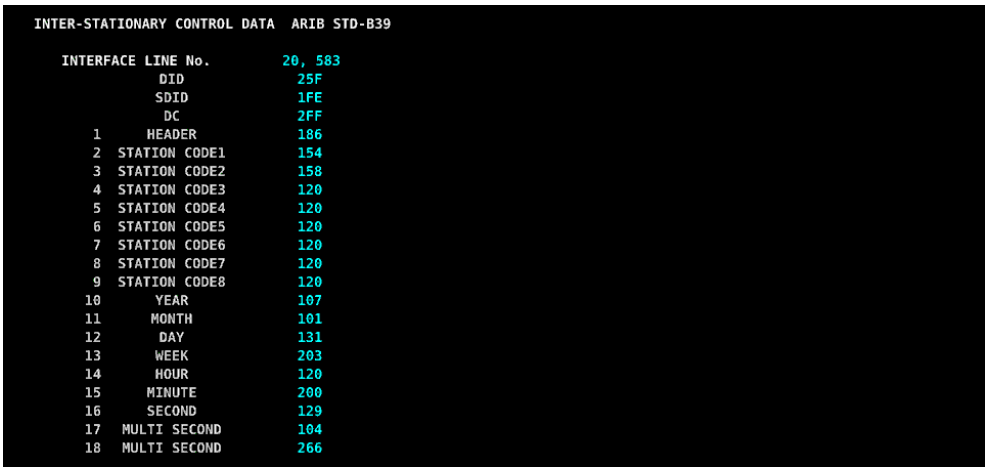


Figure 14-20 Inter-stationary control signal screen

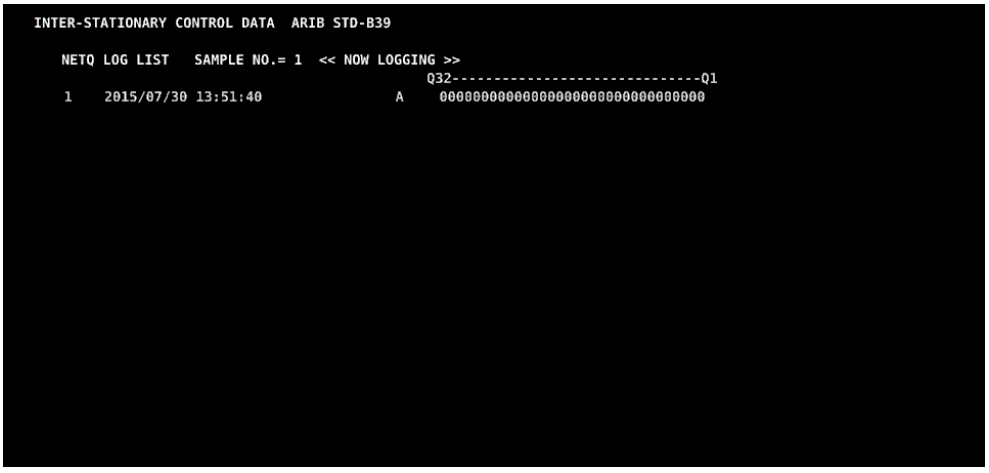
● **Selecting the Display Format**

You can use F•1 DISPLAY to set the display format to TEXT (text display), DUMP (dump display), Q LOG (Q-signal log display), or FORMAT (format ID display).
If you select DUMP, the dump display appears. If you select Q LOG, the log display appears. In either case, you can use the function dial (F•D) to view the entire data. If you press the function dial (F•D), the first data entry is displayed.

DISPLAY = DUMP



DISPLAY = QLOG



DISPLAY = FORMAT

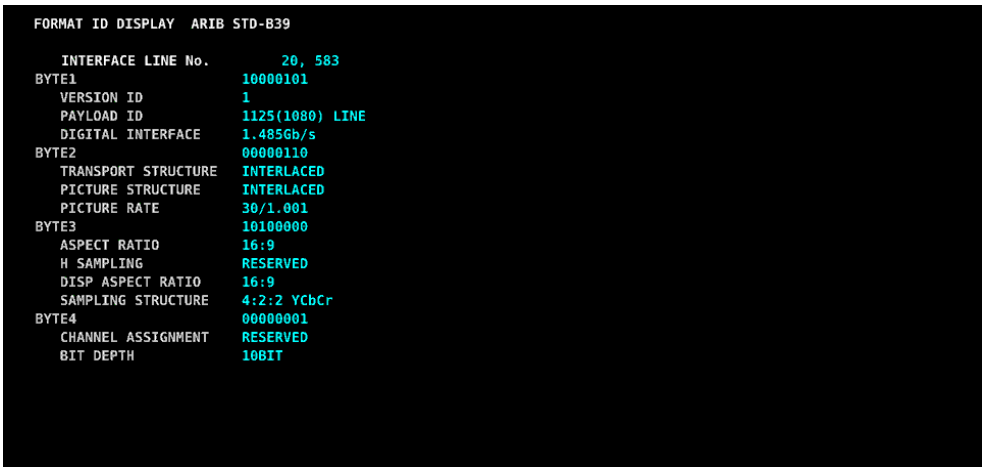


Figure 14-21 Selecting the display format

- **Selecting the Dump Mode**

  When F•1 DISPLAY is set to DUMP, you can use F•2 DUMP MODE to set the dump mode to HEX (hexadecimal display) or BINARY (binary display).

- **Clearing the Q-Signal Log**

  When F•1 DISPLAY is set to Q LOG, press F•2 Q LOG CLEAR to clear the Q-signal log.

- **Setting the Bit Mask**

  When F•1 DISPLAY is set to TEXT, you can use F•3 BIT MASK to mask the Q and status signals independently.
  Press F•4 ALL ON to select all the check boxes. Press F•5 ALL OFF to clear all the check boxes.

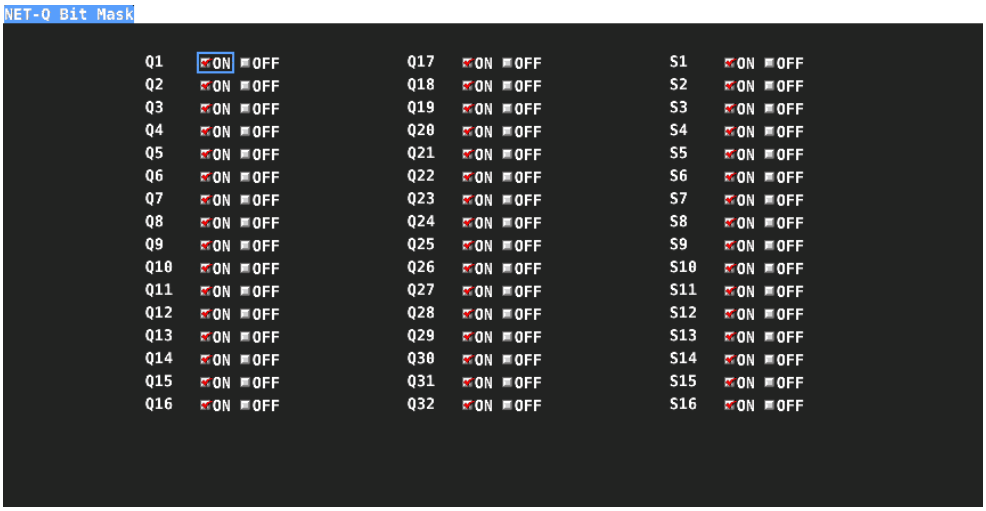


Figure 14-22　NET-Q Bit Mask tab

- **Selecting the Display Link**

  When the input signal is HD (QL), you can use F•5 LINK to select the displayed link.

14.8.8 Displaying the Data Broadcast Trigger Signal

To display the data broadcast trigger signal, follow the procedure below.

Procedure

STATUS → F•4 ANC PACKET → F•1 PACKET ANALYSIS → F•4 V-ANC → F•1 ARIB → F•3 DATA TRIGGER

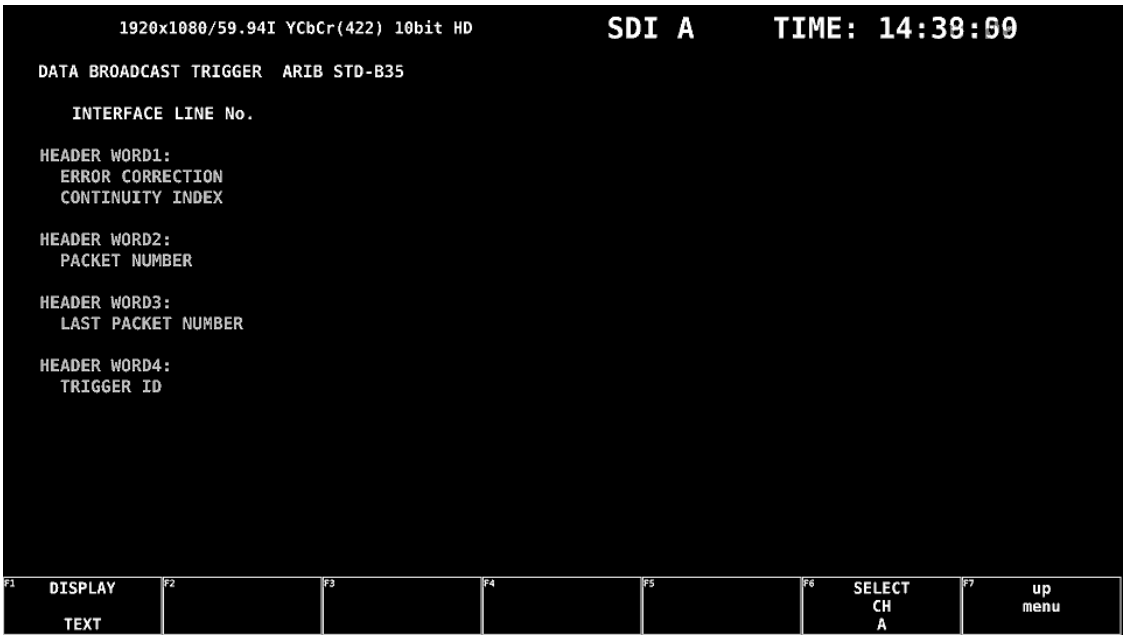


Figure 14-23 Data broadcast trigger signal screen

● Selecting the Display Format

You can use F•1 DISPLAY to set the display format to TEXT (text display) or DUMP (dump display).
If you select DUMP, the dump display appears, and you can use the function dial (F•D) to view the entire data. If you press the function dial (F•D), the first data entry is displayed.

● Selecting the Dump Mode

When F•1 DISPLAY is set to DUMP, you can use F•2 DUMP MODE to set the dump mode to HEX (hexadecimal display) or BINARY (binary display).

● Selecting the Display Link

When the input signal is HD (QL), you can use F•5 LINK to select the displayed link.

14.8.9 Displaying User Data

To display user data 1 or 2, follow the procedure below.
You can use the function dial (F•D) to view all the data. If you press the function dial (F•D), the first data entry is displayed.

Procedure

STATUS → F•4 ANC PACKET → F•1 PACKET ANALYSIS → F•4 V-ANC → F•1 ARIB
→ F•4 USER DATA 1
→ F•5 USER DATA 2

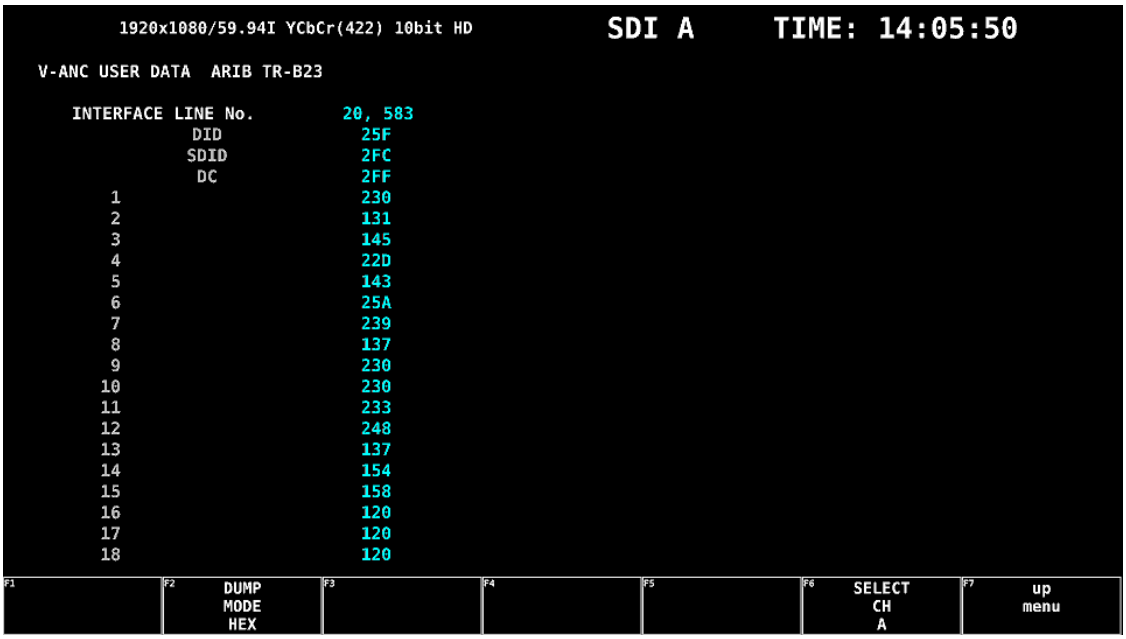


Figure 14-24 User data display

● **Selecting the Dump Mode**

You can use F•2 DUMP MODE to set the dump mode to HEX (hexadecimal display) or BINARY (binary display).

● **Selecting the Display Link**

When the input signal is HD (QL), you can use F•5 LINK to select the displayed link.

14.8.10 V-ANC SMPTE Display

To display the V blanking ancillary packets defined in the SMPTE standard, use the SMPTE menu.

STATUS → F•4 ANC PACKET → F•1 PACKET ANALYSIS → F•4 V-ANC → F•2 SMPTE →

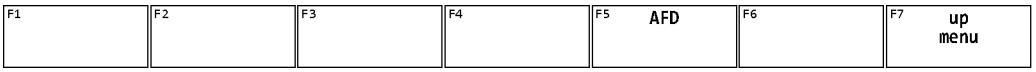


Figure 14-25 SMPTE menu

14.8.11 Displaying AFD Packets

To display AFD packets, follow the procedure below.

Procedure

STATUS → F•4 ANC PACKET → F•1 PACKET ANALYSIS → F•4 V-ANC → F•2 SMPTE →
F•5 AFD

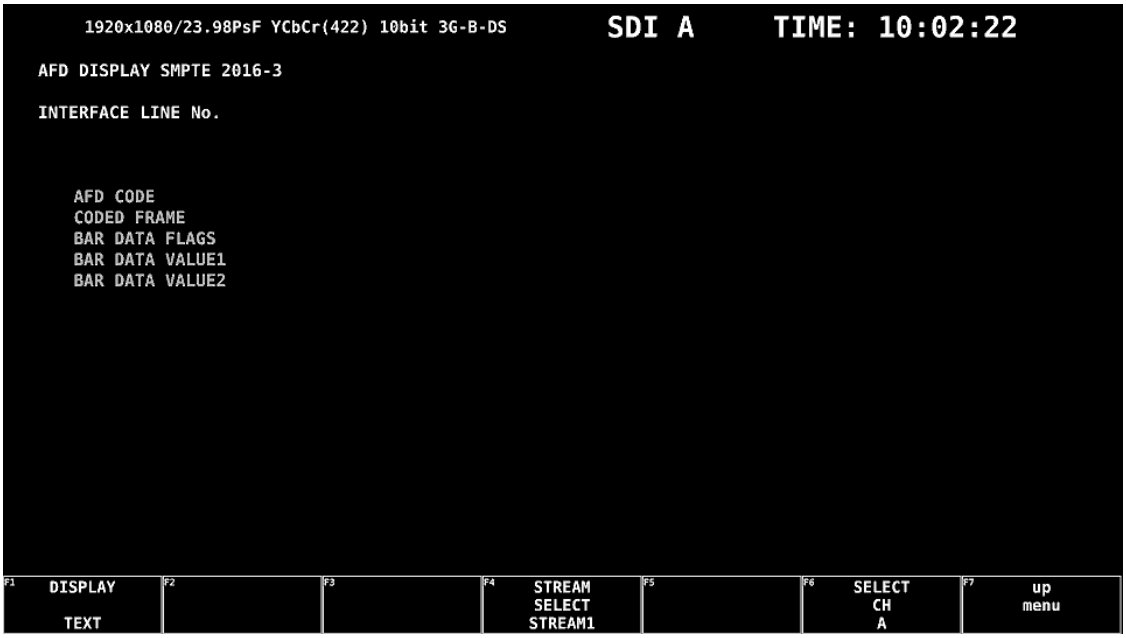


Figure 14-26 AFD packet screen

- **Selecting the Display Format**

  You can use F•1 DISPLAY to set the display format to TEXT (text display) or DUMP (dump display).
  If you select DUMP, the dump display appears, and you can use the function dial (F•D) to view the entire data. If you press the function dial (F•D), the first data entry is displayed.

- **Selecting the Dump Mode**

  When F•1 DISPLAY is set to DUMP, you can use F•2 DUMP MODE to set the dump mode to HEX (hexadecimal display) or BINARY (binary display).

- **Selecting the Displayed Stream**

  When the input signal is 3G-B, to set the display stream to STREAM1 or STREAM2, press F•4 STREAM SELECT.

- **Selecting the Display Link**

  When the input signal is 4K, you can use F•5 LINK to select the displayed link.

14.8.12 Performing Custom Searches

To show the custom search screen, follow the procedure below.
You can use the function dial (F•D) to view all the data. If you press the function dial (F•D), the first data entry is displayed.

Procedure

STATUS → F•4 ANC PACKET → F•1 PACKET ANALYSIS → F•5 CUSTOM SEARCH

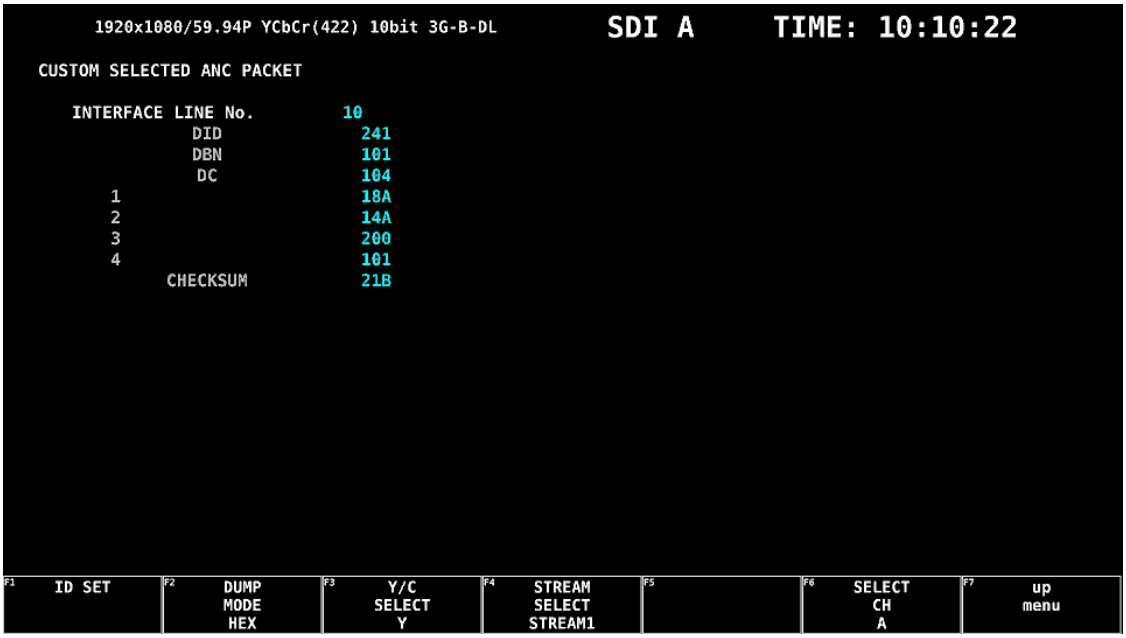


Figure 14-27 Custom search screen

● **Detecting Ancillary Packets**

You can search ancillary packets by using F•1 ID SET in the CUSTOM SEARCH menu.

STATUS → F•4 ANC PACKET → F•1 PACKET ANALYSIS → F•5 CUSTOM SEARCH → F•1 ID SET →

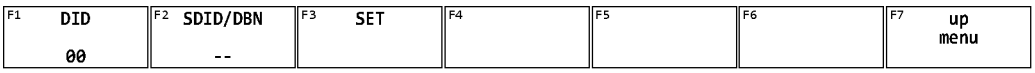


Figure 14-28 ID SET menu

Set F•1 DID and F•2 SDID/DBN to display ancillary packets on the basis of the combination of the DID and SDID/DBN.
You can set F•1 DID in the range of 00 to FF. Press the function dial (F•D) to return the setting to its default value (00).
You can set F•2 SDID/DBN in the range of 00 to FF or select “--” to not specify a value. Press the function dial (F•D) to return the setting to its default value (--).
Press F•3 SET to clear the blue cursor assigned to F•1 DID or F•2 SDID/DBN. Use this key when you want to view all the data using the function dial (F•D).

- **Selecting the Dump Mode**

  You can use F•2 DUMP MODE to set the dump mode to HEX (hexadecimal display) or BINARY (binary display).

- **Selecting Which Signal to Display**

  When the input signal is not SD, you can use F•3 Y/C SELECT to set the signal to display to Y signal or C signal.

- **Selecting the Displayed Stream**

  When the input signal is 3G-B, to set the display stream to STREAM1 or STREAM2, press F•4 STREAM SELECT.

- **Selecting the Display Link**

  When the input signal is 4K, you can use F•5 LINK to select the displayed link.

15. EYE PATTERN DISPLAY

The EYE key is invalid.

16. HDR DISPLAY (SER20)

HDR signals can be measured by installing SER07. HDR signal measurement supports all formats except for SD.

To measure HDR signals, on the SYS → F•1 SIGNAL IN OUT → HDR tab, set HDR MODE to ON. If necessary, set the STANDARD parameters.

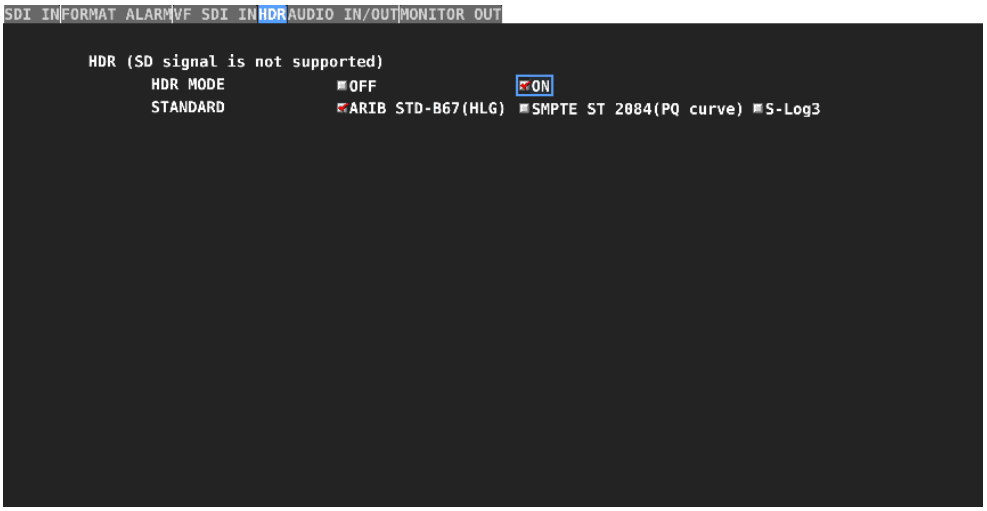


Figure 16-1 HDR tab

16.1 Video Signal Waveform Display

On the video signal waveform display, scales and cursors for HDR signals can be displayed.

16.1.1 Scale Display

During HDR measurement, a scale corresponding to the HDR signal is displayed on the right side of the video signal waveform.
The scale on the right side varies as follows depending on the STANDARD parameter of the HDR tab.

- ARIB: 0 to 100 % is displayed as 0 to 1200%.
- SMPTE: 0 to 100% is displayed as 0 to 10000cd/m2.
  (If the scale unit is 1023,255 and 0 to 100% is set to 64 to 940, 4 to 1019 is displayed as 0 to 10000 cd/m2.)
- S-Log3: If 0 to 100% is set to 64 to 940, 95 to 940 is displayed as 0 to 2043%.

The scale on the right side is not displayed when GAIN VARIABLE is set to VARIABLE or when COLOR MATRIX is set to COMPOSITE.

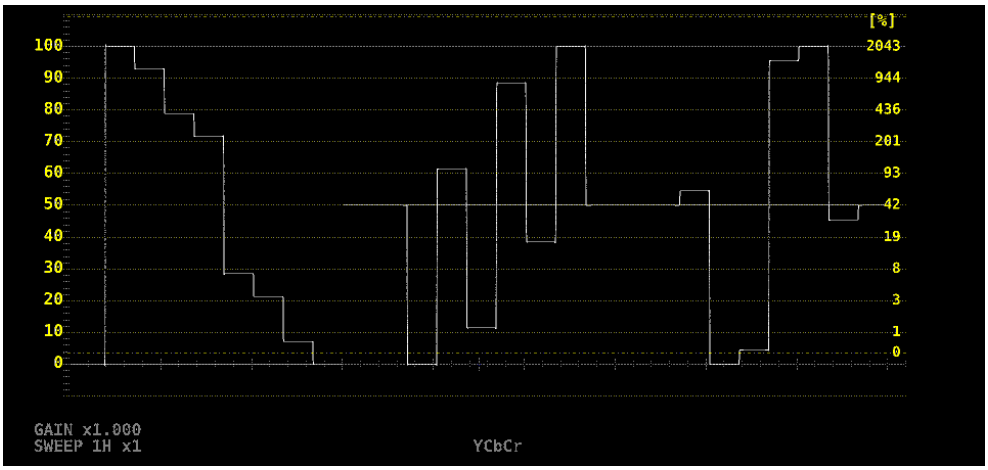


Figure 16-2 Scale display (S-Log3)

16.1.2 Cursor Display

During cursor measurement, to display measured values for HDR signals, follow the procedure below.
The measurement unit is percentage when STANDARD on the HDR tab is set to ARIB or S-Log3 and cd/m2 when it is set to SMPTE.
If GAIN VARIABLE is set to VARIABLE, measured values for HDR signals will not be displayed even when HDR is selected. The display will be the same as when Y UNIT is set to mV.

Procedure

WFM → F•5 CURSOR → F•3 Y UNIT: HDR

Y UNIT = HDR

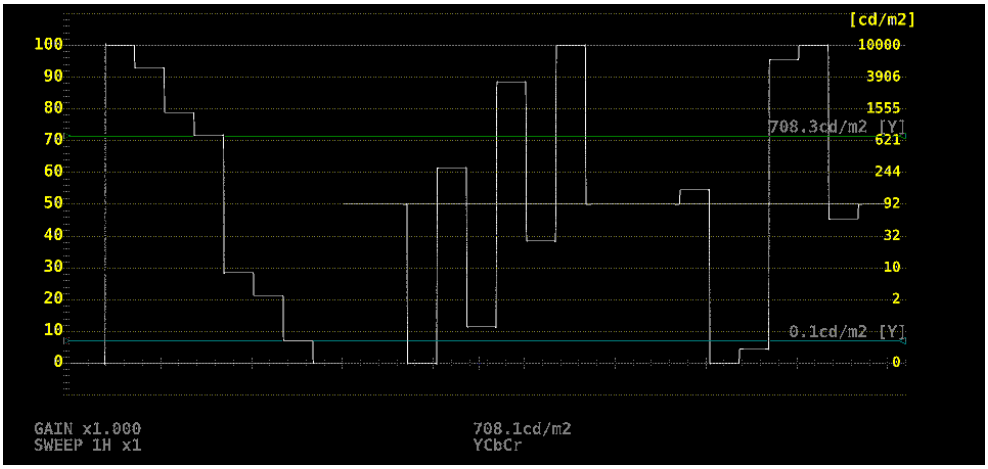


Figure 16-3 Cursor display (SMPTE)

16.2 Picture Screen

On the picture display, CINEZONE for HDR signals can be displayed.
During HDR measurement, F•4 CINELITE on the PIC menu changes to F•4 CINELITE/HDR.
To display CINEZONE, set F•1 CINELITE DISPLAY to CINEZONE.
Note that during HDR measurement F•1 CINELITE DISPLAY cannot be set to f Stop.

PIC → F•4 CINELITE/HDR →

F1	F2	F3	F4	F5	F6	F7
CINELITE DISPLAY CINEZONE	CINEZONE SETUP			HDR ZONE ON	SELECT CH A - D	up menu

Figure 16-4 CINELITE/HDR menu

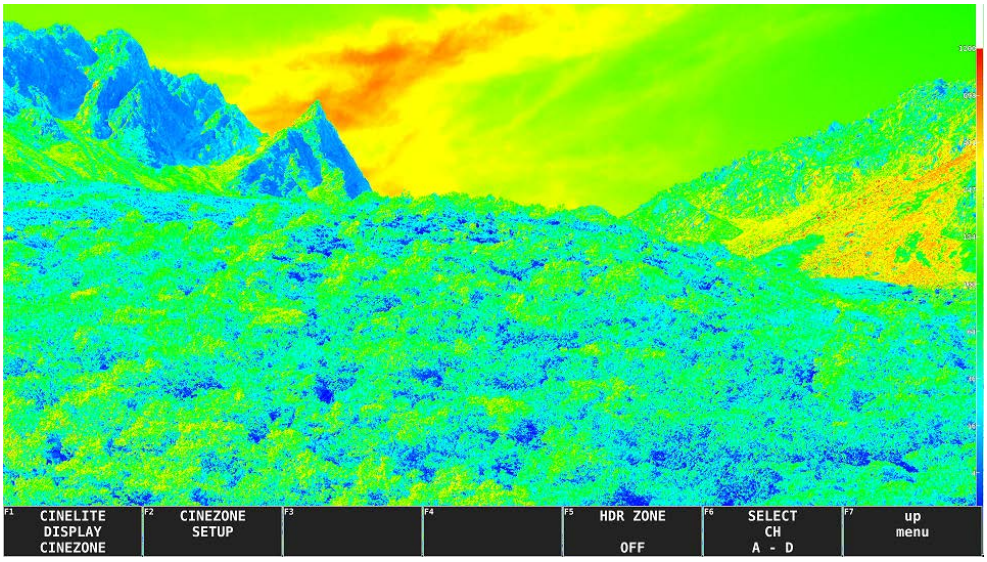
16.2.1 CINEZONE Display

On the CINEZONE display of HDR signals, to display the SDR area in monochrome and HDR area in color, follow the procedure below to select ON.
Note that if F•5 HDR ZONE is set to ON, STEP and SEARCH cannot be selected for F•1 CINEZONE FORM.

Procedure

PIC → F•4 CINELITE/HDR → F•5 HDR ZONE: ON / OFF

HDR ZONE = OFF



HDR ZONE = ON

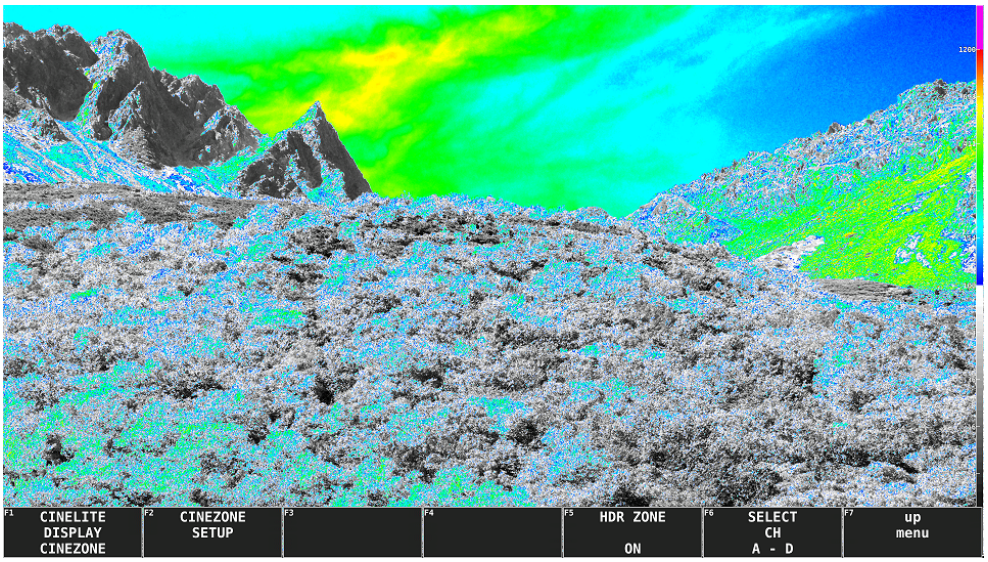


Figure 16-5 CINEZONE display

To set the display colors, follow the procedure below. If you set REF at boundary of the SDR area and HDR area, the SDR area can be displayed in monochrome and HDR area in color.

UPPER or higher: Magenta
REF or higher, UPPER or lower: Gradation from blue to red
LOWER or higher, REF or lower: Monochrome
LOWER or lower: Black

Procedure

PIC → F•4 CINELITE/HDR → F•2 CINEZONE SETUP
→ F•2 UPPER[%]
→ F•3 LOWER[%]
→ F•4 REF[%]

The values vary depending on the HDR tab settings as follows.
Set the values as percentages (0.0 to 100.0%) of the input video level. If F•5 BRIGHTNESS INFO is set to ON, HDR equivalent values are displayed in the upper left corner of the screen.

Figure 16-1 Display color values

		Setting range	UPPER[%] default value	LOWER[%] default value	REF[%] default value
HDR tab	ARIB	0.0 to 100.0	100.0	0.0	50.0
	SMPTE	0.0 to 100.0	100.0	0.0	50.8
	S-Log3	3.5 to 109.4	100.0	3.5	61.0

17. ETHERNET

The LV 7390 can be remotely controlled through its Ethernet port on the rear panel. Controlling an LV 7390 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.

17.1 SNTP

The LV 7390 can display time that is synchronized to an NTP server on the network.

17.1.1 Procedure

1. On the GENERAL SETUP tab, set Time to Real Time.

[See also] 6.2.1, “General Settings”

SYS → F•2 SYSTEM SETUP →

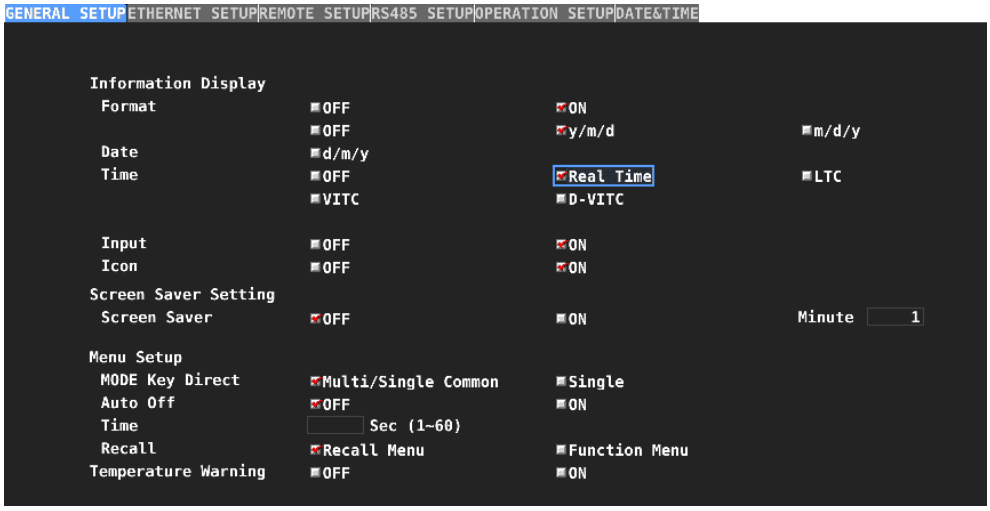


Figure 17-1 GENERAL SETUP tab

2. Configure the Ethernet settings on the LV 7390's ETHERNET SETUP tab.

Set SNTP Client Select to ON, and set the IP address, server IP address, and time zone adjustment.

[See also] 6.2.2, “Configuring Ethernet Settings”

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

Figure 17-2 ETHERNET SETUP tab

3. Press F•1 COMPLETE.

4. Connect the LV 7390's Ethernet port to the network.

The LV 7390 connects to the NTP server at the following times.

- When you press F•1 COMPLETE in SYSTEM SETUP
- Once every approximately 10 minutes

When a connection is established with an NTP server, time is displayed in the TIME item and Time option placed in the layout. If a connection cannot be established, “NTP ERROR” is displayed in red.

17.2 TELNET

From a PC connected to the same network as the LV 7390, most of the operations that you can perform from the front panel can be controlled remotely.

17.2.1 Procedure

1. **Configure the Ethernet settings on the LV 7390's ETHERNET SETUP tab.**

   Set the IP Address, and set TELNET Server to ON.
   You cannot use the LV 7290 (REMOTE CONTROLLER) while using TELNET.
   Conversely, if you set LV 7290 to ON, you cannot use TELNET.
   [See also] 6.2.2, “Configuring Ethernet Settings”

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

Figure 17-3 ETHERNET SETUP tab

2. **Press F • 1 COMPLETE.**
3. **Connect the LV 7390'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 "LV7390". Use uppercase for all characters.
   When the login name and password are entered correctly, "LV7390@LV7390:~$" appears.

```
LV7390 login: LV7390
Password: ******
LV7390@LV7390:~$
```

6. Enter TELNET commands.

Enter commands while referring to sections 17.2.2, "How to Enter Commands," and 17.2.3, "TELNET Commands."
To end a TELNET session, type “exit” in lowercase letters.

```
LV7390@LV7390:~$ exit
```

17.2.2 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.

```
LV7390@LV7390:~$ [Command] + [Space] + [Parameter]
```

Examples of how to enter commands are shown below.

● Showing the Status Display

```
LV7390@LV7390:~$ STATUS
```

● Displaying the Center Marker in the Picture Display

```
LV7390@LV7390:~$ PIC:MARKER:CENTER ON
```

● Querying the Vector Intensity

```
LV7390@LV7390:~$ VECTOR:INTEN ?
```

* You can enter commands using uppercase or lowercase letters.
* To query a value, the measurement screen of the appropriate channel must be displayed.

17.2.3 TELNET Commands

TELNET commands follow the LV 7390 menu structure. For explanations of each item, see the relevant sections in this manual.
Depending on the current settings, some of the items that are described in this manual may be invalid.

● ACCESS

ACCESS	Description
R/W	Read and write
R/O	Read only
W/O	Write only

● Parameter

Parameter	Description
[]	Response parameter for queries
()	Comment

● **Commands related to the CAP key**

Command	ACCESS	Parameter
CAP:REFRESH	W/O	-
CAP:DISPLAY	R/W	REAL / HOLD / BOTH / ?
CAP:FILE:BMP	R/W	OFF / ON / ?
CAP:FILE:BSG	R/W	OFF / ON / ?
CAP:FILE:STORE	W/O	-
MAKE (*1)	W/O	CAP_BMP / CAP_BSG

*1 A command for creating files. Files created with this command can be retrieved through FTP.

● **Commands related to the INPUT key**

Command	ACCESS	Parameter
INP:SIMUL	R/W	SINGLE / SIMUL / ?
INP_SINGLE:A	R/W	ON / ? / [OFF]
INP_SINGLE:B	R/W	ON / ? / [OFF]
INP_SINGLE:C	R/W	ON / ? / [OFF]
INP_SINGLE:D	R/W	ON / ? / [OFF]
INP:SIMUL:A	R/W	OFF / ON / ?
INP:SIMUL:B	R/W	OFF / ON / ?
INP:SIMUL:C	R/W	OFF / ON / ?
INP:SIMUL:D	R/W	OFF / ON / ?
INP_OPERATE	R/W	COM / INDIVIDUAL / ?

● **Commands related to the PSET key**

Command	ACCESS	Parameter
PSET	W/O	1 to 60

● **Commands related to the SYS key**

Command	ACCESS	Parameter
SYS:SIGNAL_IN_OUT:COMPLETE (*1)	W/O	-
SYS:SDI:SYSTEM (*1)	R/W	4K_3G_QLINK / 4K_3G_DLINK / 4K_HD_QLINK / SINGLE_LINK / 3GB_DSTREAM / ?
SYS:COLORIMETRY (*1)	R/W	PID / BT709 / BT2020 / ?
SYS:FMT:X2_FIELD (*1)	R/W	OFF / SR_R / ?
SYS:FMT:PID (*1)	R/W	USE / NOTUSE / ?
SYS:FMT:IPSF (*1)	R/W	INTERLACE / SEGMENTFRAME / ?
SYS:FMT:DIVISION (*1)	R/W	SQUARE / 2SAMPLE / ?
SYS:FMT:COLORSYS (*1)	R/W	YCBCR422 / RGB444 / ?
SYS:FMT:PIXDEPTH (*1)	R/W	10BIT / 12BIT / ?
SYS:FMT_ALM (*1)	R/W	OFF / ON / ?

Command	ACCESS	Parameter
SYS:FMT_ALM:SYSTEM (*1)	R/W	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 / 1280_720_3GBDS / 1920_1080_3GBDS / ?
SYS:FMT_ALM:STRUCT (*1)	R/W	YCBCR422_10BIT / RGB444_10BIT / RGB444_12BIT / ?
SYS:FMT_ALM:FRAME_FIELD (*1)	R/W	60P / 5994P / 50P / 48P / 4795P / 30P / 2997P / 25P / 24P / 2398P / 60I / 5994I / 50I / 30PSF / 2997PSF / 25PSF / 24PSF / 2398PSF / ?
SYS:FMT_ALM:DIVI (*1)	R/W	SQUARE / 2SAMPLE / ?
SYS:FMT:SDIIN:A	R/O	? / [Example: 1920x1080/59.94I YCbCr(422) 10bit HD]
SYS:FMT:SDIIN:B	R/O	? / [Example: 1920x1080/59.94I YCbCr(422) 10bit HD]
SYS:FMT:SDIIN:C	R/O	? / [Example: 1920x1080/59.94I YCbCr(422) 10bit HD]
SYS:FMT:SDIIN:D	R/O	? / [Example: 1920x1080/59.94I YCbCr(422) 10bit HD]
SYS:VF:INPUT_SEL (*1)(*2)	R/W	SDI_INPUT / VF_SDI_INPUT / ?
SYS:VF:SDI:SYSTEM (*1)(*2)	R/W	4K_3G_QLINK / 4K_3G_DLINK / 4K_HD_QLINK / SINGLE_LINK / 3GB_DSTREAM / ?
SYS:VF:COLORIMETRY (*1) (*2)	R/W	PID / BT709 / BT2020 / ?
SYS:VF:FMT:PID (*1)(*2)	R/W	USE / NOTUSE / ?
SYS:VF:FMT:IPSF (*1)(*2)	R/W	INTERLACE / SEGMENTFRAME / ?
SYS:VF:FMT:DIVISION (*1) (*2)	R/W	SQUARE / 2SAMPLE / ?
SYS:VF:FMT:COLORSYS (*1)(*2)	R/W	YCBCR422 / RGB444 / ?
SYS:VF:FMT:PIXDEPTH (*1)(*2)	R/W	10BIT / 12BIT / ?
SYS:HDR:ENABLE (*1)(*3)	R/W	OFF / ON / ?
SYS:HDR:HDR_CURVE (*1)(*3)	R/W	ARIB / SMPTE / SLOG3 / ?
SYS:AUD:BNC:A (*1)(*4)	R/W	INPUT / OUTPUT / ?
SYS:AUD:BNC:B (*1)(*4)	R/W	INPUT / OUTPUT / ?
SYS:RASTER:SYNC (*1)	R/W	INT / EXTSIG / ?
SYS:RASTER:FORMAT (*1)	R/W	1080_60P / 1080_5994P / 1080_50P / ?

Command	ACCESS	Parameter
SYS:RASTER:SDIOUT:FMT (*1)	R/W	HD_SDI / 3G_SDI-A / 3G_SDI-B / ?
SYS:SYSTEM_SETUP:COMPLETE (*5)	W/O	-
SYS:INFODISP:FORMAT (*5)	R/W	OFF / ON / ?
SYS:INFODISP:DATE (*5)	R/W	OFF / YMD / MDY / DMY / ?
SYS:INFODISP:TIME (*5)	R/W	Off / REALTIME / LTC / VITC / DVITC / ?
SYS:INFODISP:INPUT (*5)	R/W	OFF / ON / ?
SYS:INFODISP:ICON (*5)	R/W	OFF / ON / ?
SYS:MENU:MODEKEY (*5)	R/W	COMMON / SINGLE / ?
SYS:MENU:AUTOOFF (*5)	R/W	OFF / ON / ?
SYS:MENU:OFFTIME (*5)	R/W	1 to 60 / ?
SYS:MENU:RECALL_MENU (*5)	R/W	RECALL / FUNCTION / ?
SYS:ETHERNET:UPDATE (*6)	W/O	-
SYS:ETHERNET:SELECT (*6)	R/W	DHCP / IP / ?
SYS:IP:IPADR:SEG1 (*6)	R/W	0 to 255 / ?
SYS:IP:IPADR:SEG2 (*6)	R/W	0 to 255 / ?
SYS:IP:IPADR:SEG3 (*6)	R/W	0 to 255 / ?
SYS:IP:IPADR:SEG4 (*6)	R/W	0 to 255 / ?
SYS:IP:MASK:SEG1 (*6)	R/W	0 to 255 / ?
SYS:IP:MASK:SEG2 (*6)	R/W	0 to 255 / ?
SYS:IP:MASK:SEG3 (*6)	R/W	0 to 255 / ?
SYS:IP:MASK:SEG4 (*6)	R/W	0 to 255 / ?
SYS:IP:GATE:SEG1 (*6)	R/W	0 to 255 / ?
SYS:IP:GATE:SEG2 (*6)	R/W	0 to 255 / ?
SYS:IP:GATE:SEG3 (*6)	R/W	0 to 255 / ?
SYS:IP:GATE:SEG4 (*6)	R/W	0 to 255 / ?
SYS:SNTP:SELECT (*6)	R/W	OFF / ON / ?
SYS:SNTP:IPADR:SEG1 (*6)	R/W	0 to 255 / ?
SYS:SNTP:IPADR:SEG2 (*6)	R/W	0 to 255 / ?
SYS:SNTP:IPADR:SEG3 (*6)	R/W	0 to 255 / ?
SYS:SNTP:IPADR:SEG4 (*6)	R/W	0 to 255 / ?
SYS:SNTP:TZ:ADJ (*6)	R/W	0 (-12:00) to 24 (+12:00) / ?
SYS:TELNET:SELECT (*6)	R/W	OFF / ON / LV7290 / ?
SYS:FTP:SELECT (*6)	R/W	OFF / ON / ?
SYS:HTP:SELECT (*6)	R/W	OFF / ON / ?
SYS:SNMP:READ (*6)	R/W	OFF / ONLY / WRITE / ?
SYS:SNMP:TRAP (*6)	R/W	OFF / ON / ?
SYS:IP:MAC	R/O	? / [Example: 00.00.00.00.00.00]
SYS:REMOTE:MODE (*5)	R/W	BIT / BINARY / COMMAND / TALLY / ?
SYS:REMOTE:ALM:POLARITY (*5)	R/W	POSITIVE / NEGATIVE / ?
SYS:REMOTE:ALM:A (*5)	R/W	OFF / ON / ?
SYS:REMOTE:ALM:B (*5)	R/W	OFF / ON / ?
SYS:REMOTE:ALM:C (*5)	R/W	OFF / ON / ?
SYS:REMOTE:ALM:D (*5)	R/W	OFF / ON / ?
SYS:REMOTE:TALLY_CTRL:SEL1 (*5)	R/W	REMOTE / RS485 / ?
SYS:REMOTE:TALLY_CTRL:SEL2 (*5)	R/W	REMOTE / RS485 / ?

Command	ACCESS	Parameter
SYS:REMOTE:TALLY_CTRL:SELEXT (*5)	R/W	REMOTE / RS485 / ?
SYS:REMOTE:TALLY:COLOR_1 (*5)	R/W	RED / GREEN / BLUE / CYAN / MAGENTA / YELLOW / ORANGE / ?
SYS:REMOTE:TALLY:COLOR_2 (*5)	R/W	RED / GREEN / BLUE / CYAN / MAGENTA / YELLOW / ORANGE / ?
SYS:REMOTE:TALLY:COLOR_3 (*5)	R/W	RED / GREEN / BLUE / CYAN / MAGENTA / YELLOW / ORANGE / ?
SYS:REMOTE:TALLY:FRAME (*5)	R/W	OFF / ON / ?
SYS:REMOTE:TALLY_EXT:LAYOUT (*5)	R/W	LEFT / RIGHT / ?
SYS:RS485:BAUDRATE (*5)	R/W	B9600 / B19200 / B38400 / B57600 / B115200 / ?
SYS:RS485:DEVADDR (*5)	R/W	0 to 99 / ?
SYS:OPKEY:FORM:WFM1 (*5)	R/W	Y / YCBCR / YGBR / GBR / YRGB / RGB / COMPOSIT / SKIP / ?
SYS:OPKEY:FORM:WFM2 (*5)	R/W	Y / YCBCR / YGBR / GBR / YRGB / RGB / COMPOSIT / SKIP / ?
SYS:OPKEY:FORM:WFM3 (*5)	R/W	Y / YCBCR / YGBR / GBR / YRGB / RGB / COMPOSIT / SKIP / ?
SYS:OPKEY:FORM:WFM4 (*5)	R/W	Y / YCBCR / YGBR / GBR / YRGB / RGB / COMPOSIT / SKIP / ?
SYS:OPKEY:FORM:WFM5 (*5)	R/W	Y / YCBCR / YGBR / GBR / YRGB / RGB / COMPOSIT / SKIP / ?
SYS:OPKEY:FORM:WFM6 (*5)	R/W	Y / YCBCR / YGBR / GBR / YRGB / RGB / COMPOSIT / SKIP / ?
SYS:OPKEY:FORM:WFM7 (*5)	R/W	Y / YCBCR / YGBR / GBR / YRGB / RGB / COMPOSIT / SKIP / ?
SYS:OPKEY:FORM:VEC1 (*5)	R/W	COMPONENT / COMPOSIT / SKIP / ?
SYS:OPKEY:FORM:VEC2 (*5)	R/W	COMPONENT / COMPOSIT / SKIP / ?
SYS:OPKEY:SHORTCUT (*5)	R/W	DIRECT / CAP_WRITE / INTEN / CURSOR / ?
SYS:OPKEY:FILTER:WFM:CMPST1 (*5)	R/W	FLAT / LUM / FLAT_LUM / LUM_CRMA / SKIP / ?
SYS:OPKEY:FILTER:WFM:CMPST2 (*5)	R/W	FLAT / LUM / FLAT_LUM / LUM_CRMA / SKIP / ?
SYS:OPKEY:FILTER:WFM:CMPST3 (*5)	R/W	FLAT / LUM / FLAT_LUM / LUM_CRMA / SKIP / ?
SYS:OPKEY:FILTER:WFM:CMPST4 (*5)	R/W	FLAT / LUM / FLAT_LUM / LUM_CRMA / SKIP / ?
SYS:OPKEY:GMAG:VEC1 (*5)	R/W	X1 / X5 / IQ / SKIP / ?
SYS:OPKEY:GMAG:VEC2 (*5)	R/W	X1 / X5 / IQ / SKIP / ?
SYS:OPKEY:GMAG:VEC3 (*5)	R/W	X1 / X5 / IQ / SKIP / ?
SYS:OPKEY:SWEEP:WFM1 (*5)	R/W	1H / 2H / 1V / 2V / SKIP / ?
SYS:OPKEY:SWEEP:WFM2 (*5)	R/W	1H / 2H / 1V / 2V / SKIP / ?
SYS:OPKEY:SWEEP:WFM3 (*5)	R/W	1H / 2H / 1V / 2V / SKIP / ?
SYS:OPKEY:SWEEP:WFM4 (*5)	R/W	1H / 2H / 1V / 2V / SKIP / ?

Command	ACCESS	Parameter
SYS:OPKEY:SMAG:WFM1 (*5)	R/W	X1 / X10 / X20 / X40 / ACTIVE / BLANK / SKIP / ?
SYS:OPKEY:SMAG:WFM2 (*5)	R/W	X1 / X10 / X20 / X40 / ACTIVE / BLANK / SKIP / ?
SYS:OPKEY:SMAG:WFM3 (*5)	R/W	X1 / X10 / X20 / X40 / ACTIVE / BLANK / SKIP / ?
SYS:OPKEY:SMAG:WFM4 (*5)	R/W	X1 / X10 / X20 / X40 / ACTIVE / BLANK / SKIP / ?
SYS:OPKEY:SMAG:WFM5 (*5)	R/W	X1 / X10 / X20 / X40 / ACTIVE / BLANK / SKIP / ?
SYS:OPKEY:SMAG:WFM6 (*5)	R/W	X1 / X10 / X20 / X40 / ACTIVE / BLANK / SKIP / ?
SYS:SET:DATE_TIME (*7)	W/O	-
SYS:DATE:DAY (*7)	R/W	1 to 31 / ?
SYS:DATE:MONTH (*7)	R/W	1 to 12 / ?
SYS:DATE:YEAR (*7)	R/W	2000 to 2099 / ?
SYS:TIME:HOUR (*7)	R/W	0 to 23 / ?
SYS:TIME:MIN (*7)	R/W	0 to 59 / ?
SYS:TIME:SEC (*7)	R/W	0 to 59 / ?
SYS:INFO:FIRMWARE	R/O	? / [Example: 1.0]
SYS:INFO:BOARD:SDIIN	R/O	? / [0] (not installed) / [1] (installed)
SYS:INFO:BOARD:AUDIO	R/O	? / [0] (not installed) / [1] (installed)
SYS:INITIALIZE	W/O	-
SYS:LAYOUT:INIT	W/O	-
SYS:OPERATE:INIT	W/O	-
SYS:ALL:INIT	W/O	-

*1 After changing the settings, you need to execute the SYS:SIGNAL_IN_OUT:COMPLETE command.
*2 This is valid when the VF option is installed.
*3 This is valid when the SER20 is installed.
*4 This is valid when the SER03 is installed.
*5 After changing the settings, you need to execute the SYS:SYSTEM_SETUP:COMPLETE command.
*6 After changing the settings, you need to execute the SYS:ETHERNET:UPDATE command.
*7 You must specify DAY, MONTH, YEAR, HOUR, MIN, and SEC and then execute the SYS:SET:DATE_TIME command.

- **Commands related to the EXT key**

Command	ACCESS	Parameter
EXT	R/W	INT / EXT / ?

- **Commands related to the MULTI key**

Command	ACCESS	Parameter
MULTI	R/W	OFF / ON / ?
USER:LYT	R/W	USER1 / USER2 / USER3 / USER4 / USER5 / USER6 / ?

● **Commands related to the operation key**

Command	ACCESS	Parameter
FORM	W/O	-
SHORT	W/O	- (This is valid only when SYS:OPKEY:SHORTCUT is set to DIRECT or CAP_WRITE.)
OVLAY	W/O	-
FILTER	W/O	-
GAIN	W/O	-
GMAG	W/O	-
SWEEP	W/O	-
SMAG	W/O	-

● **Commands related to the WFM key**

Command	ACCESS	Parameter
WFM	W/O	-
WFM:POS:MOVE:H	W/O	-32768 to 32767
WFM:POS:MOVE:V	W/O	-32768 to 32767
WFM:INTEN	R/W	-128 to 127 / ?
WFM:COLOR	R/W	WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE / MULTI / ?
WFM:SCALE:INTEN	R/W	-8 to 7 / ?
WFM:SCALE:COLOR	R/W	WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE / ?
WFM:SCALE:UNIT	R/W	HDV_SDP / HDV_SDV / HDP_SDP / 150P / 1023_NRM / 1023_255 / 3FF / ?
WFM:SCALE:UNIT:NTSC	R/W	HDP_SDP / ?
WFM:SCALE:UNIT:PAL	R/W	HDV_SDV / ?
WFM:SCALE:75_COLOR	R/W	OFF / ON / ?
WFM:DISP:OVLAY	R/W	PARADE / OVERLAY / ?
WFM:DISP:YCBCR:CH1	R/W	OFF / ON / ?
WFM:DISP:YCBCR:CH2	R/W	OFF / ON / ?
WFM:DISP:YCBCR:CH3	R/W	OFF / ON / ?
WFM:DISP:GBR:CH1	R/W	OFF / ON / ?
WFM:DISP:GBR:CH2	R/W	OFF / ON / ?
WFM:DISP:GBR:CH3	R/W	OFF / ON / ?
WFM:DISP:RGB:CH1	R/W	OFF / ON / ?
WFM:DISP:RGB:CH2	R/W	OFF / ON / ?
WFM:DISP:RGB:CH3	R/W	OFF / ON / ?
WFM:DISP:3G-B-DS	R/W	STREAM1 / STREAM2 / ALIGN / ?
WFM:DISP:4Y_PARADE	R/W	OFF / ON / ?
WFM:GAIN:VAR	R/W	CAL / VAR / ?
WFM:GAIN:MAG	R/W	X1 / X5 / ?
WFM:GAIN:VAL	R/W	20 (x0.200) to 200 (x2.000) / ?

Command	ACCESS	Parameter
WFM:GAIN:SCALEJUMP	R/W	X5-0 / X5-10 / X5-20 / X5-30 / X5-40 / X5-50 / X5-60 / X5-70 / X5-80 / X5-90 / CURSOR / ?
WFM:FILTER:NORMAL	R/W	LOWPASS / FLAT / ?
WFM:FILTER:CMPST	R/W	FLAT / LUM / FLAT_LUM / LUM_CRMA / ?
WFM:SWEEP:SWEEP	R/W	H / V / ?
WFM:SWEEP:H_SWEEP	R/W	1H / 2H / ?
WFM:SWEEP:V_SWEEP	R/W	1V / 2V / ?
WFM:SWEEP:H_MAG	R/W	X1 / X10 / X20 / BLANK / ACTIVE / ?
WFM:SWEEP:V_MAG	R/W	X1 / X20 / X40 / ?
WFM:SWEEP:FIELD	R/W	FIELD1 / FIELD2 / ?
WFM:BLANKING:NORMAL	R/W	REMOVE / V_VIEW / H_VIEW / ALL_VIEW / ?
WFM:BLANKING:CMPST	R/W	REMOVE / V_VIEW / ?
WFM:LINE_SELECT	R/W	OFF / ON / ?
WFM:LINE_NUMBER	R/W	-32768 to 32767 / ?
WFM:LINE_FIELD	R/W	FRAME / FIELD1 / FIELD2 / ?
WFM:CURSOR	R/W	OFF / ON / ?
WFM:CURSOR:SEL	R/W	X / Y / ?
WFM:CURSOR:FD	R/W	REF / DELTA / TRACK / ?
WFM:CURSOR:UNIT	R/W	sec / HZ / MV / % / R% / DEC / HEX / HDR / ?
WFM:CURSOR:REF	R/W	0 to 927 / ?
WFM:CURSOR:DELTA	R/W	0 to 927 / ?
WFM:CURSOR:TRACK	W/O	0 to 927
WFM:CURSOR:REFSET	W/O	-
WFM:MATRIX:YCBCR	R/W	YCBCR / GBR / RGB / COMPOSIT / ?
WFM:MATRIX:RGB	R/W	GBR / RGB / COMPOSIT / ?
WFM:MATRIX:YGBR	R/W	OFF / ON / ?
WFM:MATRIX:YRGB	R/W	OFF / ON / ?
WFM:MATRIX:CMPST:FORMAT	R/W	AUTO / NTSC / PAL / ?
WFM:MATRIX:CMPST:SETUP	R/W	0P / 7.5P / ?

- **Commands related to the VECT key**

Command	ACCESS	Parameter
VECTOR	W/O	-
VECTOR:INTEN	R/W	-128 to 127 / ?
VECTOR:COLOR	R/W	WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE / ?
VECTOR:SCALE:INTEN	R/W	-8 to 7 / ?
VECTOR:SCALE:COLOR	R/W	WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE / ?
VECTOR:SCALE:IQ	R/W	OFF / ON / ?
VECTOR:SCALE:VEC	R/W	AUTO / BT_601 / BT_709 / ?
VECTOR:GAIN:VARIABLE	R/W	CAL / VAR / ?

Command	ACCESS	Parameter
VECTOR:GAIN:MAG	R/W	X1 / X5 / IQ / ?
VECTOR:GAIN:VAR	R/W	200 (x0.200) to 10000 (x10.000) / ?
VEC:LINE_SELECT	R/W	OFF / ON / ?
VEC:LINE_NUMBER	R/W	-32768 to 32767 / ?
VEC:LINE_FIELD	R/W	FRAME / FIELD1 / FIELD2 / ?
VECTOR:MARKER	R/W	OFF / ON / ?
VECTOR:MARKER:POS_H	R/W	-32768 to 32767 / ?
VECTOR:MARKER:POS_V	R/W	-32768 to 32767 / ?
VECTOR:DISP:3G-B-DS	R/W	STREAM1 / STREAM2 / ALIGN / ?
VECTOR:MATRIX	R/W	COMPONENT / COMPOSITE / ?
VECTOR:MATRIX:CMPST:FORMAT	R/W	AUTO / NTSC / PAL / ?
VECTOR:MATRIX:CMPST:SETUP	R/W	0P / 7.5P / ?
VECTOR:MATRIX:COLORBAR	R/W	100P / 75P / ?

- **Commands related to the PIC key**

Command	ACCESS	Parameter
PICTURE	W/O	-
PIC:COLOR	R/W	COLOR / MONO / ?
PIC:CHROMA	R/W	NORMAL / UP / ?
PIC:BRIGHTNESS	R/W	-500 (-50.0) to 500 (50.0) / ?
PIC:CONTRAST	R/W	0 (0.0) to 2000 (200.0) / ?
PIC:GAIN:R	R/W	0 (0.0) to 2000 (200.0) / ?
PIC:GAIN:G	R/W	0 (0.0) to 2000 (200.0) / ?
PIC:GAIN:B	R/W	0 (0.0) to 2000 (200.0) / ?
PIC:GAIN:CHROMA	R/W	0 (0.0) to 2000 (200.0) / ?
PIC:BIAS:R	R/W	-500 (-50.0) to 500 (50.0) / ?
PIC:BIAS:G	R/W	-500 (-50.0) to 500 (50.0) / ?
PIC:BIAS:B	R/W	-500 (-50.0) to 500 (50.0) / ?
PIC:MARKER:FRAME	R/W	OFF / ON / ?
PIC:MARKER:CENTER	R/W	OFF / ON / ?
PIC:MARKER:ASPECT	R/W	OFF / 17_9 / 16_9 / 14_9 / 13_9 / 4_3 / 2.39_1 / AFD / ?
PIC:MARKER:ASPECT:SHADOW	R/W	0 to 100 / ?
PIC:MARKER:SAFETY:ACTION	R/W	OFF / ARIB / SMPTE / USER1 / ?
PIC:MARKER:SAFETY:TITLE	R/W	OFF / ARIB / SMPTE / USER2 / ?
PIC:MARKER:SAFETY:USER1_W	R/W	0 to 100 / ?
PIC:MARKER:SAFETY:USER1_H	R/W	0 to 100 / ?
PIC:MARKER:SAFETY:USER2_W	R/W	0 to 100 / ?
PIC:MARKER:SAFETY:USER2_H	R/W	0 to 100 / ?
PIC:LINE_SELECT	R/W	OFF / ON / ?
PIC:LINE_NUMBER	R/W	-32768 to 32767 / ?
PIC:LINE_FIELD	R/W	FRAME / FIELD1 / FIELD2 / ?
PIC:CINELITE:DISPLAY	R/W	OFF / f_Stop / P_DISPLAY / CINEZONE / ?
PIC:CINELITE:SAMPLE	R/W	-32767 to 32767 / ?
PIC:CINELITE:LINE	R/W	-32767 to 32767 / ?

Command	ACCESS	Parameter
PIC:CINELITE:DATA:P1	R/O	? / [Example: R: 0 G:255 B: 0]
PIC:CINELITE:DATA:P2	R/O	? / [Example: R: 0 G:255 B: 0]
PIC:CINELITE:DATA:P3	R/O	? / [Example: R: 0 G:255 B: 0]
PIC:CINELITE:MEAS_POS	R/W	P1 / P2 / P3 / ?
PIC:CINELITE:MEAS_NUMS	R/W	P1 / P1+P2 / P1+P2+P3 / ?
PIC:CINELITE:MEAS_SIZE	R/W	1X1 / 3X3 / 9X9 / ?
PIC:CINELITE:FSTOP:18P_REFSET	W/O	-
PIC:CINELITE:FSTOP:GAMMA_SEL	R/W	0.45 / USER1 / USER2 / USER3 / USER_A / USER_B / USER_C / USER_D / USER_E / ?
PIC:CINELITE:FSTOP:GAMMA:CAL:TABLECLEAR	W/O	-
PIC:CINELITE:FSTOP:GAMMA:CAL:1DATACLEAR	W/O	-
PIC:CINELITE:FSTOP:GAMMA:CAL:SET	W/O	-
PIC:CINELITE:FSTOP:GAMMA:CAL:F	R/W	22_0 / 16_0 / 11_0 / 8_0 / 5_6 / 4_0 / 2_8 / 2_0 / ?
PIC:CINELITE:FSTOP:GAMMA:FILE:TABLECLEAR	W/O	-
PIC:CINELITE:RGB:UNIT	R/W	Y_P / RGB_P / RGB_255 / CODE_VALUE / ?
PIC:CINELITE:CINEZONE:FORM	R/W	GRADATE / STEP / SEARCH / ?
PIC:CINELITE:CINEZONE:UPPER	R/W	-63 (-6.3) to 1094 (109.4) / ?
PIC:CINELITE:CINEZONE:LOWER	R/W	-73 (-7.3) to 1084 (108.4) / ?
PIC:CINELITE:CINEZONE:LEVEL	R/W	-73 (-7.3) to 1094 (109.4) / ?
PIC:CINELITE:ADVANCE	R/W	OFF / ON / ?
PIC:HDR:UPPER:HLG (*1)	R/W	0(0.0) to 1000(100.0) / ?
PIC:HDR:LOWER:HLG (*1)	R/W	0(0.0) to 1000(100.0) / ?
PIC:HDR:REF:HLG (*1)	R/W	0(0.0) to 1000(100.0) / ?
PIC:HDR:UPPER:PQ_10000 (*1)	R/W	0(0.0) to 1000(100.0) / ?
PIC:HDR:LOWER:PQ_10000 (*1)	R/W	0(0.0) to 1000(100.0) / ?
PIC:HDR:REF:PQ_10000 (*1)	R/W	0(0.0) to 1000(100.0) / ?
PIC:HDR:UPPER:SLOG (*1)	R/W	35(3.5) to 1094(109.4) / ?
PIC:HDR:LOWER:SLOG (*1)	R/W	35(3.5) to 1094(109.4) / ?
PIC:HDR:REF:SLOG (*1)	R/W	35(3.5) to 1094(109.4) / ?
PIC:HDR:MODE (*1)	R/W	OFF / ON / ?
PIC:HDR:BRIGHTNESS (*1)	R/W	OFF / ON / ?
PIC:DISPLAY:SIZE	R/W	FIT / REAL / X2 / FULL_FRM / ?
PIC:POS:H	R/W	-32768 to 32767 / ?
PIC:POS:V	R/W	-32768 to 32767 / ?
PIC:STATUS_INFO	R/W	OFF / ON / ?
PIC:DISPLAY:3G-B-DS	R/W	STREAM1 / STREAM2 / ALIGN / ?

*1 This is valid when the SER20 is installed.

● **Commands related to the AUDIO key (when the SER03 is not installed)**

Command	ACCESS	Parameter
AUDIO	W/O	-
AUDIO:DATA:STATUS:LEVEL:CH1	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH2	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH3	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH4	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH5	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH6	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH7	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH8	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH9	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH10	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH11	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH12	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH13	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH14	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH15	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH16	R/O	? / [Example: -20.0]
AUDIO:MAPPING:MAPPING_COMPLETE (*1)	W/O	-
AUDIO:MAPPING:INPUT (*1)	R/W	SDI / ?
AUDIO:MAPPING:STREAM:SELECT (*1)	R/W	STREAM1 / STREAM2 / ?
AUDIO:MAPPING:CH_MODE (*1)	R/W	8ch / ?
AUDIO:MAPPING:SOURCE:SDI:1ST_GRP (*1)	R/W	G1 / G2 / G3 / G4 / ?
AUDIO:MAPPING:SOURCE:SDI:2ND_GRP (*1)	R/W	G1 / G2 / G3 / G4 / ?
AUDIO:MAPPING:SOURCE:SIM:SDI:1ST_GRP (*1)	R/W	G1 / G2 / G3 / G4 / ?
AUDIO:MAPPING:SOURCE:SIM:SDI:2ND_GRP (*1)	R/W	G1 / G2 / G3 / G4 / ?
AUDIO:MAPPING:SOURCE:SIM:SDI:1ST_GRP_CH (*1)	R/W	SDI_A / SDI_B / SDI_C / SDI_D / ?
AUDIO:MAPPING:SOURCE:SIM:SDI:2ND_GRP_CH (*1)	R/W	SDI_A / SDI_B / SDI_C / SDI_D / ?
AUDIO:MAPPING:PHONES:L (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:PHONES:R (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:SIM:PHONES:L (*1)	R/W	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 (*1)	R/W	A:CH1 to A:CH16 / B:CH1 to B:CH16 / C:CH1 to C:CH16 / D:CH1 to D:CH16 / ?
AUDIO:METER:RANGE	R/W	60DBFS / ?
AUDIO:METER:RESPONSE	R/W	TRUEPEAK / ?
AUDIO:METER:LEVEL_SET:OVER_LEVEL_DB	R/W	-400 (-40.0) to 0 (0.0) / ?
AUDIO:METER:LEVEL_SET:WARNING_LEVEL_DB	R/W	-400 (-40.0) to 0 (0.0) / ?
AUDIO:METER:LEVEL_SET:REF_LEVEL_DB	R/W	-400 (-40.0) to 0 (0.0) / ?
AUDIO:ERROR_SETUP:COMPLETE (*2)	W/O	-
AUDIO:ERROR_SETUP:LEVEL_OVER (*2)	R/W	OFF / ON / ?
AUDIO:ERROR_SETUP:MUTE (*2)	R/W	OFF / ON / ?
AUDIO:ERROR_SETUP:MUTE:DURATION (*2)	R/W	1 to 5000 / ?
AUDIO:ERROR_SETUP:METER:MUTE (*2)	R/W	OFF / ON / ?
AUDIO:PHONES:VOLUME	R/W	0 to 63 / ?

*1 After changing the settings, you need to execute the AUDIO:MAPPING:MAPPING_COMPLETE command.
*2 After changing the settings, you need to execute the AUDIO:ERROR_SETUP:COMPLETE command.

● Commands related to the AUDIO key (When the SER03 is installed)

Command	ACCESS	Parameter
AUDIO	W/O	-
AUDIO:DATA:STATUS:LEVEL:CH1	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH2	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH3	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH4	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH5	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH6	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH7	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH8	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH9	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH10	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH11	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH12	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH13	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH14	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH15	R/O	? / [Example: -20.0]
AUDIO:DATA:STATUS:LEVEL:CH16	R/O	? / [Example: -20.0]
AUDIO:MAPPING:MAPPING_COMPLETE (*1)	W/O	-
AUDIO:MAPPING:INPUT (*1)	R/W	SDI / EXT_DIGI / ?
AUDIO:MAPPING:STREAM:SELECT (*1)	R/W	STREAM1 / STREAM2 / ?
AUDIO:MAPPING:LINK_SELECT (*1)	R/W	LINK1 / LINK2 / LINK3 / LINK4 / ?
AUDIO:MAPPING:CH_MODE (*1)	R/W	8ch / 16ch / ?
AUDIO:MAPPING:SOURCE:SDI:1ST_GRP (*1)	R/W	G1 / G2 / G3 / G4 / ?
AUDIO:MAPPING:SOURCE:SDI:2ND_GRP (*1)	R/W	G1 / G2 / G3 / G4 / ?
AUDIO:MAPPING:SOURCE:SDI:3RD_GRP (*1)	R/W	G1 / G2 / G3 / G4 / ?
AUDIO:MAPPING:SOURCE:SDI:4TH_GRP (*1)	R/W	G1 / G2 / G3 / G4 / ?
AUDIO:MAPPING:SOURCE:SIM:SDI:1ST_GRP (*1)	R/W	G1 / G2 / G3 / G4 / ?
AUDIO:MAPPING:SOURCE:SIM:SDI:2ND_GRP (*1)	R/W	G1 / G2 / G3 / G4 / ?
AUDIO:MAPPING:SOURCE:SIM:SDI:3RD_GRP (*1)	R/W	G1 / G2 / G3 / G4 / ?
AUDIO:MAPPING:SOURCE:SIM:SDI:4TH_GRP (*1)	R/W	G1 / G2 / G3 / G4 / ?
AUDIO:MAPPING:SOURCE:SIM:SDI:1ST_GRP_CH (*1)	R/W	SDI_A / SDI_B / SDI_C / SDI_D / ?
AUDIO:MAPPING:SOURCE:SIM:SDI:2ND_GRP_CH (*1)	R/W	SDI_A / SDI_B / SDI_C / SDI_D / ?
AUDIO:MAPPING:SOURCE:SIM:SDI:3RD_GRP_CH (*1)	R/W	SDI_A / SDI_B / SDI_C / SDI_D / ?
AUDIO:MAPPING:SOURCE:SIM:SDI:4TH_GRP_CH (*1)	R/W	SDI_A / SDI_B / SDI_C / SDI_D / ?
AUDIO:MAPPING:SOURCE:EXT:GRP (*1)	R/W	A / B / ?
AUDIO:MAPPING:LISSAJOU:SINGLE_L (*1)	R/W	CH1 to CH16 / LT / ?
AUDIO:MAPPING:LISSAJOU:SINGLE_R (*1)	R/W	CH1 to CH16 / RT / ?
AUDIO:MAPPING:EXT:LISSAJOU:SINGLE_L (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / LT / ?
AUDIO:MAPPING:EXT:LISSAJOU:SINGLE_R (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / RT / ?
AUDIO:MAPPING:LISSAJOU:MULTI_L1 (*1)	R/W	CH1 to CH16 / ?

Command	ACCESS	Parameter
AUDIO:MAPPING:LISSAJOU:MULTI_R1 (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:LISSAJOU:MULTI_L2 (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:LISSAJOU:MULTI_R2 (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:LISSAJOU:MULTI_L3 (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:LISSAJOU:MULTI_R3 (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:LISSAJOU:MULTI_L4 (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:LISSAJOU:MULTI_R4 (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:LISSAJOU:MULTI_L5 (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:LISSAJOU:MULTI_R5 (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:LISSAJOU:MULTI_L6 (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:LISSAJOU:MULTI_R6 (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:LISSAJOU:MULTI_L7 (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:LISSAJOU:MULTI_R7 (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:LISSAJOU:MULTI_L8 (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:LISSAJOU:MULTI_R8 (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:LISSAJOU:SIM:MULTI_L1 (*1)	R/W	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 (*1)	R/W	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 (*1)	R/W	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 (*1)	R/W	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 (*1)	R/W	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 (*1)	R/W	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_L4 (*1)	R/W	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 (*1)	R/W	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 (*1)	R/W	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 (*1)	R/W	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 (*1)	R/W	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 (*1)	R/W	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 (*1)	R/W	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 (*1)	R/W	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 (*1)	R/W	A:CH1 to A:CH16 / B:CH1 to B:CH16 / C:CH1 to C:CH16 / D:CH1 to D:CH16 / ?

Command	ACCESS	Parameter
AUDIO:MAPPING:LISSAJOU:SIM:MULTI_R8 (*1)	R/W	A:CH1 to A:CH16 / B:CH1 to B:CH16 / C:CH1 to C:CH16 / D:CH1 to D:CH16 / ?
AUDIO:MAPPING:EXT:LISSAJOU:MULTI_L1 (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:EXT:LISSAJOU:MULTI_R1 (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:EXT:LISSAJOU:MULTI_L2 (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:EXT:LISSAJOU:MULTI_R2 (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:EXT:LISSAJOU:MULTI_L3 (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:EXT:LISSAJOU:MULTI_R3 (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:EXT:LISSAJOU:MULTI_L4 (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:EXT:LISSAJOU:MULTI_R4 (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:EXT:LISSAJOU:MULTI_L5 (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:EXT:LISSAJOU:MULTI_R5 (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:EXT:LISSAJOU:MULTI_L6 (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:EXT:LISSAJOU:MULTI_R6 (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:EXT:LISSAJOU:MULTI_L7 (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:EXT:LISSAJOU:MULTI_R7 (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:EXT:LISSAJOU:MULTI_L8 (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:EXT:LISSAJOU:MULTI_R8 (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:SURROUND:CH:L (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:SURROUND:CH:R (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:SURROUND:CH:C (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:SURROUND:CH: LFE (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:SURROUND:CH:LS (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:SURROUND:CH:RS (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:SURROUND:CH:LL (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:SURROUND:CH:RR (*1)	R/W	CH1 to CH16 / ?
AUDIO:MAPPING:EXT:SURROUND:CH:L (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:EXT:SURROUND:CH:R (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:EXT:SURROUND:CH:C (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:EXT:SURROUND:CH: LFE (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:EXT:SURROUND:CH:LS (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:EXT:SURROUND:CH:RS (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:EXT:SURROUND:CH:LL (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:EXT:SURROUND:CH:RR (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / ?
AUDIO:MAPPING:PHONES:L (*1)	R/W	CH1 to CH16 / LT / ?
AUDIO:MAPPING:PHONES:R (*1)	R/W	CH1 to CH16 / RT / ?
AUDIO:MAPPING:SIM:PHONES:L (*1)	R/W	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 (*1)	R/W	A:CH1 to A:CH16 / B:CH1 to B:CH16 / C:CH1 to C:CH16 / D:CH1 to D:CH16 / ?
AUDIO:MAPPING:EXT:PHONES:L (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / LT / ?
AUDIO:MAPPING:EXT:PHONES:R (*1)	R/W	A:CH1 to A:CH8 / B:CH1 to B:CH8 / RT / ?
AUDIO:DISPLAY_MODE	R/W	LISSAJOU / SURROUND / METER / STATUS / ?
AUDIO:METER:RANGE	R/W	60DBFS / 90DBFS / MAG / ?

Command	ACCESS	Parameter
AUDIO:METER:RESPONSE	R/W	TRUEPEAK / PPM / VU / ?
AUDIO:METER:RESPONSE:PPM	R/W	PPM_I / PPM_II / ?
AUDIO:METER:RESPONSE:VU	R/W	TRUE / PPM_I / PPM_II / ?
AUDIO:METER:PEAK_HOLD	R/W	0 (0.0) to 50 (5.0) / 55 (HOLD) / ?
AUDIO:METER:LEVEL_SET:OVER_LEVEL_DB	R/W	-400 (-40.0) to 0 (0.0) / ?
AUDIO:METER:LEVEL_SET:WARNING_LEVEL_DB	R/W	-400 (-40.0) to 0 (0.0) / ?
AUDIO:METER:LEVEL_SET:REF_LEVEL_DB	R/W	-400 (-40.0) to 0 (0.0) / ?
AUDIO:LISSAJOU:LISSAJOU:INTEN	R/W	-8 to 7 / ?
AUDIO:LISSAJOU:SCALE:INTEN	R/W	-8 to 7 / ?
AUDIO:LISSAJOU:DISPLAY	R/W	MULTI / SINGLE / ?
AUDIO:LISSAJOU:FORM	R/W	X_Y / MATRIX / ?
AUDIO:LISSAJOU:AUTO_GAIN	R/W	OFF / ON / ?
AUDIO:SURROUND:SURROUND:INTEN	R/W	-8 to 7 / ?
AUDIO:SURROUND:SCALE:INTEN	R/W	-8 to 7 / ?
AUDIO:SURROUND:5.1	R/W	NORMAL / PHANTOM / ?
AUDIO:SURROUND:AUTO_GAIN	R/W	OFF / ON / ?
AUDIO:STATUS:CH_STATUS	R/W	CH1 to CH16 / ?
AUDIO:STATUS:CH_STATUS_SIMUL	R/W	A1 to A16 / B1 to B16 / C1 to C16 / D1 to D16 / ?
AUDIO:STATUS:CH_STATUS_EXT	R/W	A1 to A8 / B1 to B8 / ?
AUDIO:STATUS:CH_STATUS:ALIGN	R/W	LSB / MSB / ?
AUDIO:STATUS:USER_BIT	R/W	CH1 to CH16 / ?
AUDIO:STATUS:USER_BIT_SIMUL	R/W	A1 to A16 / B1 to B16 / C1 to C16 / D1 to D16 / ?
AUDIO:STATUS:USER_BIT_EXT	R/W	A1 to A8 / B1 to B8 / ?
AUDIO:STATUS:USER_BIT:ALIGN	R/W	LSB / MSB / ?
AUDIO:STATUS:ERROR_RESET	W/O	-
AUDIO:ERROR_SETUP:COMPLETE (*2)	W/O	-
AUDIO:ERROR_SETUP:LEVEL_OVER (*2)	R/W	OFF / ON / ?
AUDIO:ERROR_SETUP:CLIP (*2)	R/W	OFF / ON / ?
AUDIO:ERROR_SETUP:CLIP:DURATION (*2)	R/W	1 to 100 / ?
AUDIO:ERROR_SETUP:MUTE (*2)	R/W	OFF / ON / ?
AUDIO:ERROR_SETUP:MUTE:DURATION (*2)	R/W	1 to 5000 / ?
AUDIO:ERROR_SETUP:PARITY (*2)	R/W	OFF / ON / ?
AUDIO:ERROR_SETUP:VALIDITY (*2)	R/W	OFF / ON / ?
AUDIO:ERROR_SETUP:CRC (*2)	R/W	OFF / ON / ?
AUDIO:ERROR_SETUP:CODE_VIOLATION (*2)	R/W	OFF / ON / ?
AUDIO:ERROR_SETUP:METER:CLIP (*2)	R/W	OFF / ON / ?
AUDIO:ERROR_SETUP:METER:MUTE (*2)	R/W	OFF / ON / ?
AUDIO:LOUD:PERIOD	R/W	2MIN / 10MIN / 30MIN / 1HOUR / 2HOUR / 6HOUR / 12HOUR / 24HOUR / ?
AUDIO:LOUD:CHART_CLEAR	W/O	-
AUDIO:LOUD:MEASURE	R/W	STOP / START / ?
AUDIO:LOUD:MAG	R/W	OFF / ON / ?
AUDIO:LOUD:LONG:MODE	R/W	BS1770 / ARIB / EBU / ATSC / ?

Command	ACCESS	Parameter
AUDIO:LOUD:LONG:LEVEL	R/O	?
AUDIO:LOUD:THOLD	R/O	?
AUDIO:LOUD:LONG:BLK_SIZE	R/O	?
AUDIO:LOUD:LONG:OVLP_SIZE	R/O	?
AUDIO:LOUD:LONG:ABS_GATE	R/O	?
AUDIO:LOUD:LONG:REL_GATE	R/O	?
AUDIO:LOUD:LONG:LFE_MODE	R/W	OFF / ON / ?
AUDIO:LOUD:LONG:LFE_GAIN:VALUE	R/W	0 to 10 / ?
AUDIO:LOUD:SHORT:AVRG_TIME	R/W	2(200) to 100(10000) / ?
AUDIO:LOUD:MOMENT:AVRG_TIME	R/W	2(200) to 100(10000) / ?
AUDIO:LOUD:RESPONSE	R/W	MOMENTARY / SHORTTERM / ?
AUDIO:LOUD:CHART	R/W	I / S / M / ?
AUDIO:LOUD:AUTO:TRIGGER	R/W	OFF / REMOTE / TIMECODE / MUTE / ?
AUDIO:LOUD:AUTO_START:H	R/W	0 to 23 / ?
AUDIO:LOUD:AUTO_START:M	R/W	0 to 59 / ?
AUDIO:LOUD:AUTO_START:S	R/W	0 to 59 / ?
AUDIO:LOUD:AUTO_END:H	R/W	0 to 23 / ?
AUDIO:LOUD:AUTO_END:M	R/W	0 to 59 / ?
AUDIO:LOUD:AUTO_END:S	R/W	0 to 59 / ?
AUDIO:LOUD:OVER	R/W	ON / OFF / ?
AUDIO:LOUD:RELATIVE	R/W	ON / OFF / ?
AUDIO:LOUD:MAIN:MODE	R/W	MONO / STEREO / 5_1 / CUSTOM / ?
AUDIO:LOUD:MAIN:CH:L	R/W	CH1 to CH16 / NC / ?
AUDIO:LOUD:MAIN:CH:R	R/W	CH1 to CH16 / NC / ?
AUDIO:LOUD:MAIN:CH:C	R/W	CH1 to CH16 / NC / ?
AUDIO:LOUD:MAIN:CH:LFE	R/W	CH1 to CH16 / NC / ?
AUDIO:LOUD:MAIN:CH:LS	R/W	CH1 to CH16 / NC / ?
AUDIO:LOUD:MAIN:CH:RS	R/W	CH1 to CH16 / NC / ?
AUDIO:LOUD:EXT:MAIN:CH:L	R/W	CH1 to CH8 / ?
AUDIO:LOUD:EXT:MAIN:CH:R	R/W	CH1 to CH8 / ?
AUDIO:LOUD:EXT:MAIN:CH:C	R/W	CH1 to CH8 / ?
AUDIO:LOUD:EXT:MAIN:CH:LFE	R/W	CH1 to CH8 / ?
AUDIO:LOUD:EXT:MAIN:CH:LS	R/W	CH1 to CH8 / ?
AUDIO:LOUD:EXT:MAIN:CH:RS	R/W	CH1 to CH8 / ?
AUDIO:LOUD:SUB:MODE	R/W	OFF / MONO / STEREO / ?
AUDIO:LOUD:SUB:CH:L	R/W	CH1 to CH16 / ?
AUDIO:LOUD:SUB:CH:R	R/W	CH1 to CH16 / ?
AUDIO:LOUD:EXT:SUB:CH:L	R/W	CH1 to CH8 / ?
AUDIO:LOUD:EXT:SUB:CH:R	R/W	CH1 to CH8 / ?
AUDIO:PHONES:VOLUME	R/W	0 to 63 / ?

*1 After changing the settings, you need to execute the AUDIO:MAPPING:MAPPING_COMPLETE command.

*2 After changing the settings, you need to execute the AUDIO:ERROR_SETUP:COMPLETE command.

- **Commands related to the STATUSkey**

Command	ACCESS	Parameter
STATUS	W/O	-
STS:DATA:SIGNAL_A	R/O	? / [DETECT] / [NO_SIGNAL]
STS:DATA:SIGNAL_B	R/O	? / [DETECT] / [NO_SIGNAL]
STS:DATA:SIGNAL_C	R/O	? / [DETECT] / [NO_SIGNAL]
STS:DATA:SIGNAL_D	R/O	? / [DETECT] / [NO_SIGNAL]
STS:DATA:FORMAT_A	R/O	? / [Example: 1920x1080/59.94I]
STS:DATA:FORMAT_B	R/O	? / [Example: 1920x1080/59.94I]
STS:DATA:FORMAT_C	R/O	? / [Example: 1920x1080/59.94I]
STS:DATA:FORMAT_D	R/O	? / [Example: 1920x1080/59.94I]
STS:DATA:LINK_A	R/O	? / [SD] / [HD] / [3G-B-DL] / [3G-A] / [3G-B-DS]
STS:DATA:LINK_B	R/O	? / [SD] / [HD] / [3G-B-DL] / [3G-A] / [3G-B-DS]
STS:DATA:LINK_C	R/O	? / [SD] / [HD] / [3G-B-DL] / [3G-A] / [3G-B-DS]
STS:DATA:LINK_D	R/O	? / [SD] / [HD] / [3G-B-DL] / [3G-A] / [3G-B-DS]
STS:DATA:AUDIO_A	R/O	? / [1,2,・・・,16]
STS:DATA:AUDIO_B	R/O	? / [1,2,・・・,16]
STS:DATA:AUDIO_C	R/O	? / [1,2,・・・,16]
STS:DATA:AUDIO_D	R/O	? / [1,2,・・・,16]
STS:LOG	W/O	-
STS:LOG:LOG	R/W	STOP / START / ?
STS:LOG:CLEAR	W/O	-
STS:LOG:MODE	R/W	OVER_WR / STOP / ?
STS:LOG:USB:AUTO_NAME	R/W	OFF / ON / ?
STS:LOG:USB:FILE:STORE	W/O	- (This is valid only when STS:LOG:USB:AUTO_NAME is set to ON.)
MAKE (*1)	W/O	LOG
STS:SDI_ANLYS:DUMP	W/O	-
STS:SDI_ANLYS:DUMP:OPE:SAMPLE	R/W	0 to 32767 / ?
STS:SDI_ANLYS:DUMP:OPE:LINE	R/W	0 to 32767 / ?
STS:SDI_ANLYS:DUMP:MODE	R/W	RUN / HOLD / ?
STS:SDI_ANLYS:DUMP:OPE:JUMP	R/W	EAV / SAV / ?
STS:SDI_ANLYS:DUMP:DISPLAY	R/W	SERIAL / COMPO / BINARY / STREAM1 / STREAM2 / PICTURE / S1_SERIAL / S1_COMPO / S1_BINARY / S2_SERIAL / S2_COMPO / S2_BINARY / ?
STS:SDI_ANLYS:DUMP:OPE:USB:AUTO_NAME	R/W	OFF / ON / ?
STS:SDI_ANLYS:DUMP:OPE:USB:FILE:STORE	W/O	- (This is valid only when STS:SDI_ANLYS:DUMP:OPE:USB:AUTO_NAME is set to ON.)

Command	ACCESS	Parameter
MAKE (*1)	W/O	DUMP
STS:SDI_ANLYS:EXT_REF	W/O	-
STS:DATA:EXTREF_A	R/O	? / [USER_REF] / [DEFAULT]
STS:DATA:EXTREF_STAT_A	R/O	? / [1A] / [EXTHD] / [EXTBB] / [NOSIGNAL]
STS:DATA:EXTREF_HTIME_A	R/O	? / [Example: 0.000 us]
STS:DATA:EXTREF_HPIX_A	R/O	? / [Example: 0 pixel]
STS:DATA:EXTREF_VLINE_A	R/O	? / [Example: 0 Lines]
STS:DATA:EXTREF_TOTAL_A	R/O	? / [Example: 0.000 us]
STS:DATA:EXTREF_B	R/O	? / [USER_REF] / [DEFAULT]
STS:DATA:EXTREF_STAT_B	R/O	? / [1A] / [EXTHD] / [EXTBB] / [NOSIGNAL]
STS:DATA:EXTREF_HTIME_B	R/O	? / [Example: 0.000 us]
STS:DATA:EXTREF_HPIX_B	R/O	? / [Example: 0 pixel]
STS:DATA:EXTREF_VLINE_B	R/O	? / [Example: 0 Lines]
STS:DATA:EXTREF_TOTAL_B	R/O	? / [Example: 0.000 us]
STS:DATA:EXTREF_C	R/O	? / [USER_REF] / [DEFAULT]
STS:DATA:EXTREF_STAT_C	R/O	? / [1A] / [EXTHD] / [EXTBB] / [NOSIGNAL]
STS:DATA:EXTREF_HTIME_C	R/O	? / [Example: 0.000 us]
STS:DATA:EXTREF_HPIX_C	R/O	? / [Example: 0 pixel]
STS:DATA:EXTREF_VLINE_C	R/O	? / [Example: 0 Lines]
STS:DATA:EXTREF_TOTAL_C	R/O	? / [Example: 0.000 us]
STS:DATA:EXTREF_D	R/O	? / [USER_REF] / [DEFAULT]
STS:DATA:EXTREF_STAT_D	R/O	? / [1A] / [EXTHD] / [EXTBB] / [NOSIGNAL]
STS:DATA:EXTREF_HTIME_D	R/O	? / [Example: 0.000 us]
STS:DATA:EXTREF_HPIX_D	R/O	? / [Example: 0 pixel]
STS:DATA:EXTREF_VLINE_D	R/O	? / [Example: 0 Lines]
STS:DATA:EXTREF_TOTAL_D	R/O	? / [Example: 0.000 us]
STS:SDI_ANLYS:EXT_REF:USER_REF	W/O	-
STS:SDI_ANLYS:EXT_REF:DEFAULT	W/O	-
STS:SDI_ANLYS:EXT_REF:SELECT	R/W	EXT / SDI / ?
STS:SDI_ANLYS:EXT_REF:TIMING	R/W	LEGACY / SERIAL / ?
STS:ANCVIEW	W/O	-
STS:ANCVIEW:CURSOR	R/W	0 (S291M MARK DEL) to 73 (RP196 VITC) / ?
STS:ANCVIEW:DUMP	W/O	-
STS:ANCVIEW:DUMP:HOLD	R/W	HOLD / 1S / 3S / ?
STS:ANCVIEW:DUMP:MODE	R/W	HEX / BINARY / ?
STS:ANCVIEW:DUMP:SAMPLE	R/W	0 to 258 / ?
STS:ANCVIEW:PAGE:UP	W/O	-
STS:ANCVIEW:PAGE:DOWN	W/O	-
STS:ANCVIEW:STREAM	R/W	STREAM1 / STREAM2 / ?
STS:ANCPKT	W/O	-
STS:DATA:ANC:AUDIO_CTRL1	R/O	? / [DETECT] / [MISSING]
STS:DATA:ANC:AUDIO_CTRL2	R/O	? / [DETECT] / [MISSING]
STS:DATA:ANC:EDH	R/O	? / [DETECT] / [MISSING]
STS:DATA:ANC:LTC1	R/O	? / [DETECT] / [MISSING]

Command	ACCESS	Parameter
STS:DATA:ANC:LTC2	R/O	? / [DETECT] / [MISSING]
STS:DATA:ANC:VLTC1	R/O	? / [DETECT] / [MISSING]
STS:DATA:ANC:VLTC2	R/O	? / [DETECT] / [MISSING]
STS:DATA:ANC:PAYLOAD1	R/O	? / [DETECT] / [MISSING]
STS:DATA:ANC:PAYLOAD2	R/O	? / [DETECT] / [MISSING]
STS:DATA:ANC:AFD1	R/O	? / [DETECT] / [MISSING]
STS:DATA:ANC:AFD2	R/O	? / [DETECT] / [MISSING]
STS:DATA:ANC:JPN_CC1	R/O	? / [DETECT] / [MISSING]
STS:DATA:ANC:JPN_CC2	R/O	? / [DETECT] / [MISSING]
STS:DATA:ANC:JPN_CC3	R/O	? / [DETECT] / [MISSING]
STS:DATA:ANC:NETQ1	R/O	? / [DETECT] / [MISSING]
STS:DATA:ANC:TRIGGER	R/O	? / [DETECT] / [MISSING]
STS:DATA:ANC:USER1	R/O	? / [DETECT] / [MISSING]
STS:DATA:ANC:USER2	R/O	? / [DETECT] / [MISSING]
STS:ANCPKT:PKT_ANLYS:EDH	W/O	-
STS:ANCPKT:PKT_ANLYS:EDH:DISP	R/W	TEXT / DUMP / ?
STS:ANCPKT:PKT_ANLYS:EDH:MODE	R/W	HEX / BINARY / ?
STS:ANCPKT:PKT_ANLYS:PAYLOAD	W/O	-
STS:DATA:ANC:PKT:PAYLOAD	R/O	? / [Example: 00,00,00,00]
STS:ANCPKT:PKT_ANLYS:PAYLOAD_ID:STREAM	R/W	STREAM1 / STREAM2 / ?
STS:ANCPKT:PKT_ANLYS:CTRL_PKT	W/O	-
STS:ANCPKT:PKT_ANLYS:CTRL_PKT:DISPLAY	R/W	TEXT / DUMP / ?
STS:ANCPKT:PKT_ANLYS:CTRL_PKT:MODE	R/W	HEX / BINARY / ?
STS:ANCPKT:PKT_ANLYS:CTRL_PKT:GROUP	R/W	GROUP1 / GROUP2 / GROUP3 / GROUP4 / ?
STS:ANCPKT:PKT_ANLYS:CTRL_PKT:STREAM	R/W	STREAM1 / STREAM2 / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:CC	W/O	-
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:CC:SMPL	R/W	0 to 258 / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:CC:DISP	R/W	TEXT / DUMP / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:CC:TYPE	R/W	HD / SD / ANALOG / CELLULAR / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:CC:MODE	R/W	HEX / BINARY / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ	W/O	-
STS:DATA:ANC:PKT:ARIB:NETQ:STATION	R/O	? / [(STATION CODE)]
STS:DATA:ANC:PKT:ARIB:NETQ:VCURR	R/O	? / [(VIDEO CURRENT)]
STS:DATA:ANC:PKT:ARIB:NETQ:VNEXT	R/O	? / [(VIDEO NEXT)]
STS:DATA:ANC:PKT:ARIB:NETQ:ACURR	R/O	? / [(AUDIO CURRENT)]
STS:DATA:ANC:PKT:ARIB:NETQ:ANEXT	R/O	? / [(AUDIO NEXT)]
STS:DATA:ANC:PKT:ARIB:NETQ:DCURR	R/O	? / [(DOWN MIX DURRENT)]
STS:DATA:ANC:PKT:ARIB:NETQ:DNEXT	R/O	? / [(DOWN MIX NEXT)]
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:DUMP	R/W	0 to 258 / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:LOG	R/W	-50 to 50 / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:DISP	R/W	TEXT / DUMP / Q_LOG / FORMAT / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:MODE	R/W	HEX / BINARY / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:CLEAR	W/O	-
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q1	R/W	OFF / ON / ?

Command	ACCESS	Parameter
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q2	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q3	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q4	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q5	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q6	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q7	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q8	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q9	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q10	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q11	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q12	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q13	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q14	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q15	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q16	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q17	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q18	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q19	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q20	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q21	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q22	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q23	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q24	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q25	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q26	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q27	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q28	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q29	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q30	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q31	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:Q32	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S1	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S2	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S3	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S4	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S5	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S6	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S7	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S8	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S9	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S10	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S11	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S12	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S13	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S14	R/W	OFF / ON / ?

Command	ACCESS	Parameter
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S15	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:NETQ:BIT:S16	R/W	OFF / ON / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:TRIG	W/O	-
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:TRIG:SMPL	R/W	0 to 258 / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:TRIG:DISP	R/W	TEXT / DUMP / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:TRIG:MODE	R/W	HEX / BINARY / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:USER1	W/O	-
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:USER1:DUMP	R/W	0 to 238 / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:USER1:MODE	R/W	HEX / BINARY / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:USER2	W/O	-
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:USER2:DUMP	R/W	0 to 238 / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:ARIB:USER2:MODE	R/W	HEX / BINARY / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:SMPTE:AFD	W/O	-
STS:DATA:ANC:PKT:SMPTE:AFD:CODE	R/O	? / [(AFD CODE)]
STS:DATA:ANC:PKT:SMPTE:AFD:FRAME	R/O	? / [(CODED FRAME)]
STS:DATA:ANC:PKT:SMPTE:AFD:BAR:FLG	R/O	? / [(BAR DATA FLAGS)]
STS:DATA:ANC:PKT:SMPTE:AFD:BAR:VAL1	R/O	? / [(BAR DATA VALUE1)]
STS:DATA:ANC:PKT:SMPTE:AFD:BAR:VAL2	R/O	? / [(BAR DATA VALUE2)]
STS:ANCPKT:PKT_ANLYS:V_ANC:SMPTE:AFD:DISP	R/W	TEXT / DUMP / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:SMPTE:AFD:MODE	R/W	HEX / BINARY / ?
STS:ANCPKT:PKT_ANLYS:V_ANC:SMPTE:AFD:STREAM	R/W	STREAM1 / STREAM2 / ?
STS:ANCPKT:PKT_ANLYS:SEARCH	W/O	-
STS:ANCPKT:PKT_ANLYS:CSTM:SMPL	R/W	0 to 238 / ?
STS:ANCPKT:PKT_ANLYS:CSTM:ID_SET:DID	R/W	0 (00) to 255 (FF) / ?
STS:ANCPKT:PKT_ANLYS:CSTM:ID_SET:SDID	R/W	-1 (--) / 0 (00) to 255 (FF) / ?
STS:ANCPKT:PKT_ANLYS:CSTM:ID_SET:SET	W/O	-
STS:ANCPKT:PKT_ANLYS:CSTM:MODE	R/W	HEX / BINARY / ?
STS:ANCPKT:PKT_ANLYS:CSTM:YC	R/W	Y / C / ?
STS:ANCPKT:PKT_ANLYS:CSTM:STREAM	R/W	STREAM1 / STREAM2 / ?
STS:SETUP:COMPLETE (*2)	W/O	-
STS:ERROR:SDI:COUNTER (*2)	R/W	SEC / FIELD / ?
STS:ERROR:SDI:TRS (*2)	R/W	OFF / ON / ?
STS:ERROR:SDI:HD_LINE (*2)	R/W	OFF / ON / ?
STS:ERROR:SDI:HD_CRC (*2)	R/W	OFF / ON / ?
STS:ERROR:SDI:SD_EDH (*2)	R/W	OFF / ON / ?
STS:ERROR:SDI:ILLEGAL_CODE (*2)	R/W	OFF / ON / ?
STS:ERROR:SDI:FREQ (*2)	R/W	OFF / ON / ?
STS:ERROR:SDI:CABLE (*2)	R/W	OFF / ON / ?
STS:ERROR:SDI:CABLE_3G (*2)	R/W	LS_5CFB / 1694A / ?
STS:ERROR:SDI:CABLE_HD (*2)	R/W	LS_5CFB / 1694A / ?
STS:ERROR:SDI:CABLE_SD (*2)	R/W	L_5C2V / 8281SD / ?
STS:ERROR:SDI:CABLE_ERR_3G (*2)	R/W	10 to 105 / ?
STS:ERROR:SDI:CABLE_WAR_3G (*2)	R/W	10 to 105 / ?
STS:ERROR:SDI:CABLE_ERR_HD (*2)	R/W	5 to 130 / ?
STS:ERROR:SDI:CABLE_WAR_HD (*2)	R/W	5 to 130 / ?

Command	ACCESS	Parameter
STS:ERROR:SDI:CABLE_ERR_SD (*2)	R/W	50 to 300 / ?
STS:ERROR:SDI:CABLE_WAR_SD (*2)	R/W	50 to 300 / ?
STS:ERROR:ANC:PARITY (*2)	R/W	OFF / ON / ?
STS:ERROR:ANC:CHECKSUM (*2)	R/W	OFF / ON / ?
STS:ERROR:AUDIO:BCH (*2)	R/W	OFF / ON / ?
STS:ERROR:AUDIO:DBN (*2)	R/W	OFF / ON / ?
STS:ERROR:AUDIO:PARITY (*2)	R/W	OFF / ON / ?
STS:ERROR:AUDIO:INHIBIT (*2)	R/W	OFF / ON / ?
STS:ERROR:AUDIO:SAMPLE (*2)	R/W	OFF / ON / ?
STS:ERROR:CLEAR (*2)	W/O	-

*1 A command for creating files. Files created with this command can be retrieved through FTP.

*2 After changing the settings, you need to execute the STS:SETUP:COMPLETE command.

17.3 FTP

The files that are generated by the LV 7390 can be transferred to a PC connected to the same network.

17.3.1 Procedure

1. **Configure the Ethernet settings on the LV 7390's ETHERNET SETUP tab.**

   Set the IP Address, and set FTP Server Select to ON.

   [See also] 6.2.2, “Configuring Ethernet Settings”

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

Figure 17-4 ETHERNET SETUP tab

2. **Press F • 1 COMPLETE.**
3. **Connect the LV 7390'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 "LV7390". Use uppercase for all characters.
   When the user name and password are entered correctly, "ftp>" appears.

```
Connected to ***.***.***.***.
220 Walcome to LV7390 FTP service.
User (***.***.***.***:(none)): LV7390 .....user name
331 Please specify the password.
Password: LV7390 .....password (The password is not actually displayed.)
230 Login successful
ftp>
```

6. Enter FTP commands.

Enter commands while referring to sections 17.3.2, "How to Enter Commands," and 17.3.3, "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
```

17.3.2 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>
```

17.3.3 FTP Commands

Table 17-1 FTP Commands

Command	Parameter 1	Parameter 2
get	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)
	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)

17.4 HTTP

You can use this feature to control the LV 7390 from a web browser on a PC in the same manner as you would control the LV 7390 from the panel.
Here the explanation is given using the screens that appear when Internet Explorer is used for the Web browser. If you use another browser, the screens and operations may be different.

17.4.1 Operating Environment

The following web browsers have been confirmed to work.

- Internet Explorer Ver. 11
- Google Chrome Ver. 46

17.4.2 Precautions

- Enable JavaScript and pop-up on the WEB browser in advance.
- The LV 7390 cannot be controlled from the panel while this feature is in use.
- Simultaneous connections from multiple PCs are not allowed. Use a one-to-one connection.
- The free layout function cannot be used.

17.4.3 Procedure

1. **Configure the Ethernet settings on the LV 7390's ETHERNET SETUP tab.**

   Set the IP Address, and set HTTP Server Select to ON.
   [See also] 6.2.2, “Configuring Ethernet Settings”

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

Figure 17-5 ETHERNET SETUP tab

2. **Press F • 1 COMPLETE.**
3. **Connect the LV 7390's Ethernet port to the network.**
4. **Start the web browser on your PC.**

5. In the address box, enter “http://” and the IP address that you set in step 1.

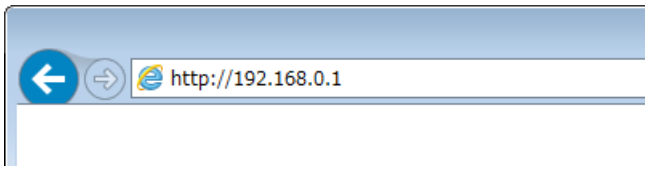


Figure 17-6 IP address input

6. From the HTTP server menu, select the display mode.

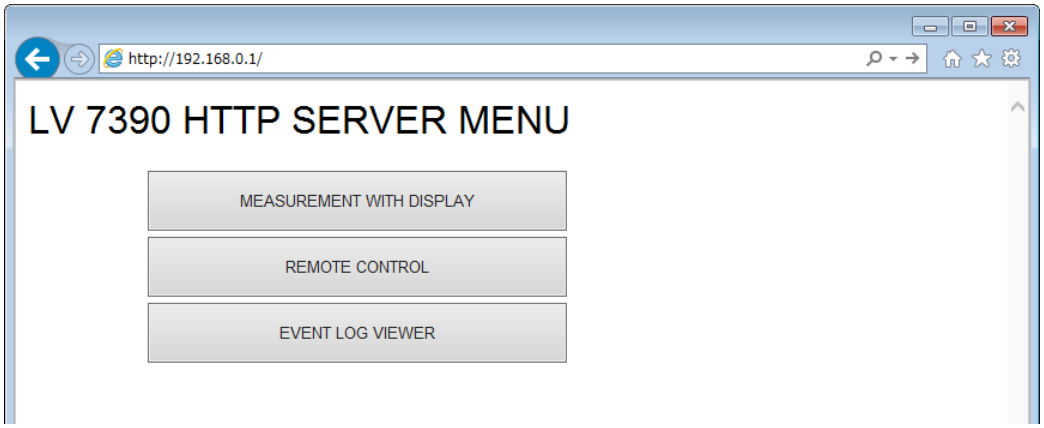


Figure 17-7 HTTP SERVER MENU

Table 17-2 HTTP SERVER MENU description

Name	Description
MEASUREMENT WITH DISPLAY	A measurement screen and control buttons are displayed.
REMOTE CONTROL	Only control buttons are displayed. Select this mode when you want to control the LV 7390 while looking at the LV 7390 screen.
EVENT LOG VIEWER	The event log is displayed. The log can also be saved in text format.

17.4.4 MEASUREMENT WITH DISPLAY

On the MEASUREMENT WITH DISPLAY tab, the LV 7390 is controlled by clicking the control buttons.
The measurement screen is updated automatically at a given interval. It may take some time for the screen to be updated after you click a control button depending on the operating environment.

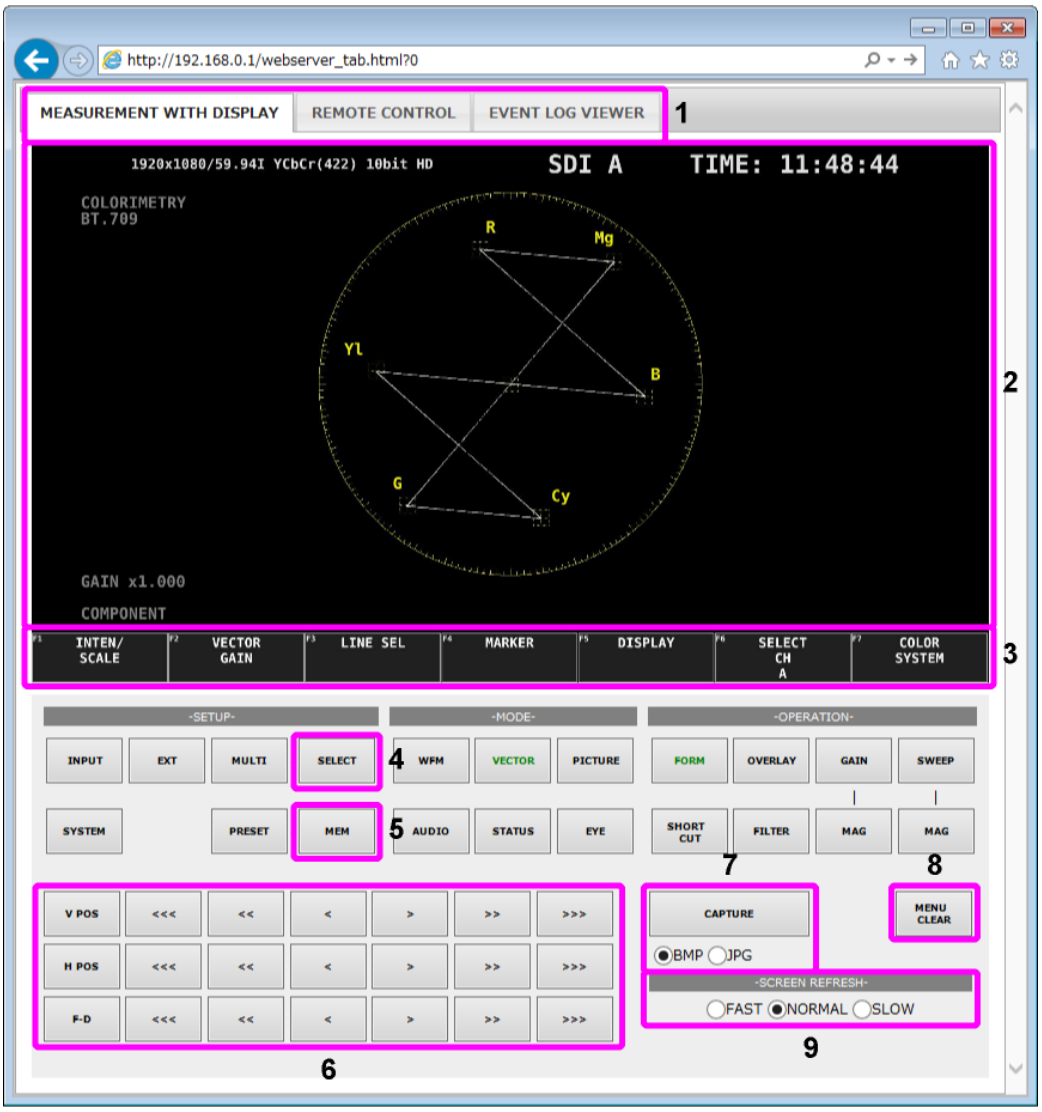


Figure 17-8 MEASUREMENT WITH DISPLAY

Table 17-3 MEASUREMENT WITH DISPLAY description

No.	Name	Description
1	Tab	Switches the display mode.
2	Measurement screen	This is the measurement screen. You cannot click this area. Set the tab menu using the F•D button.
3	Function menu	Click to control the menu. Double-click slowly to change to the next item. Use the F•D button to change values.
4	SELECT	This button corresponds to holding down the MULTI key (layout selection).
5	MEM	This button corresponds to holding down the PRESET key (preset registration).
6	V POS H POS F•D	“>” and “<” correspond to turning the knob to the right and left respectively. The number of “<” or “>” corresponds to the amount of change. The V POS, H POS, and F•D buttons correspond to the behavior performed when the corresponding button is pressed.
7	CAPTURE	Click this button after selecting the file format (BMP or JPG) to display a measurement screen in a separate window. Right-click the screen and click “Save picture as” to save the image in the specified file format. If this method does not work, use “DOWNLOAD” in the upper left of the screen to save it.
8	MENU CLEAR	Hides the menu. To show it again, click the function menu area.
9	SCREEN REFRESH	Set the screen’s auto update interval to FAST, NORMAL, or SLOW.

17.4.5 REMOTE CONTROL

On the REMOTE CONTROL tab, the LV 7390 is controlled by clicking the control buttons. As this mode does not display a measurement screen, select this mode when you want to control the LV 7390 while looking at the LV 7390 screen.
The descriptions of the control buttons are the same as in section 17.4.4, “MEASUREMENT WITH DISPLAY.”

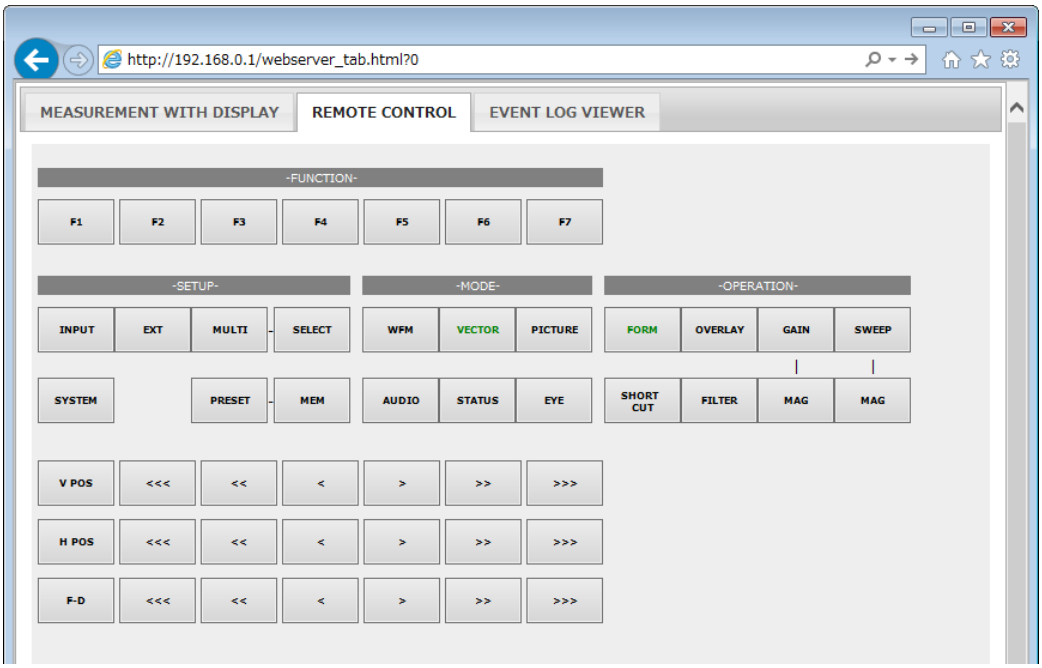


Figure 17-9 REMOTE CONTROL

17.4.6 EVENT LOG VIEWER

The EVENT LOG VIEWER tab displays the event log of the status display.
Nothing is displayed at first. You can display the log entries by setting LOG VIEWER to UPDATE. The screen is updated automatically at a given interval.
Set LOG to START on the EVENT LOG menu in advance.

[See also] 14.4, “Configuring Event Log Settings”

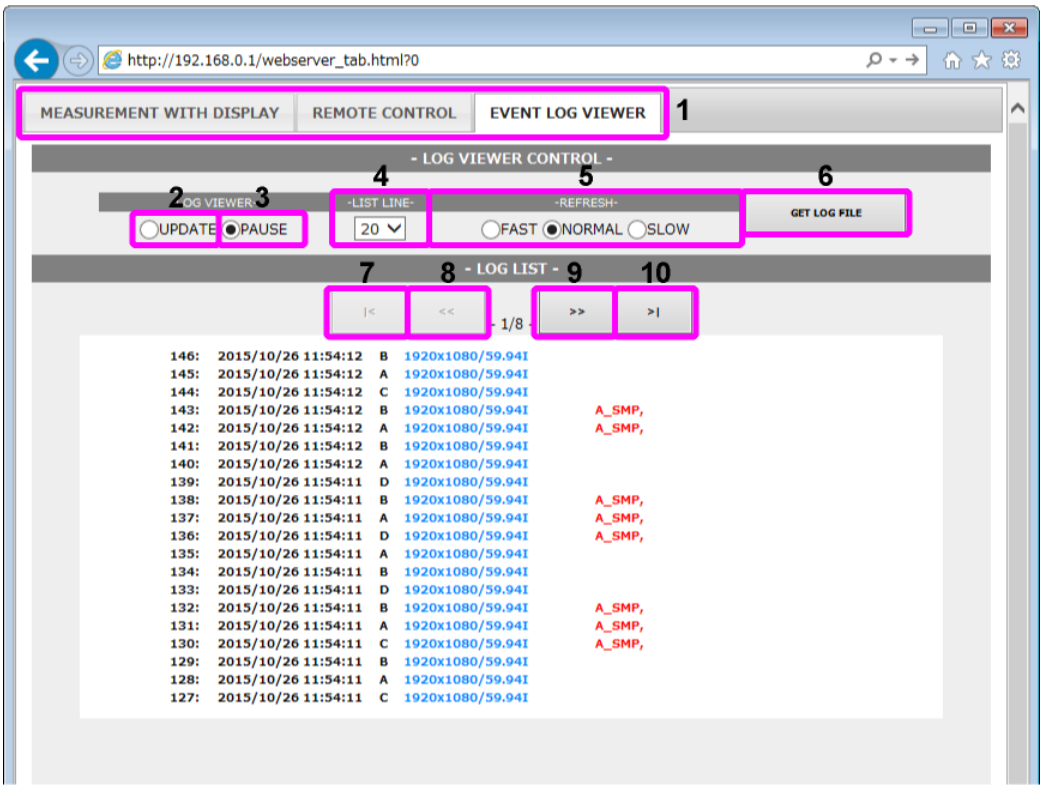


Figure 17-10 EVENT LOG VIEWER

Table 17-4 EVENT LOG VIEWER description

No.	Name	Description
1	Tab	Switches the display mode.
2	UPDATE	The screen is updated automatically. LOG LIST shows the latest log.
3	PAUSE	The screen is not automatically updated. Past log entries can be displayed in LOG LIST.
4	LIST LINE	Select the number of entries to display on a screen from 10 to 50 (in 5 steps).
5	REFRESH	Set the screen’s auto update interval to FAST, NORMAL, or SLOW.
6	GET LOG FILE	The event log is displayed in a separate window. From the File menu, choose Save As to save the log in text format.
7	|<	The latest log entries are displayed when LOG VIEWER is set to PAUSE.
8	<<	The next newer log page appears when LOG VIEWER is set to PAUSE.
9	>>	The next older log page appears when LOG VIEWER is set to PAUSE.
10	>|	The oldest log entries are displayed when LOG VIEWER is set to PAUSE.

17.5 SNMP

By using SNMP (Simple Network Management Protocol), you can control an LV 7390 from SNMP managers. Additionally, you can notify the SNMP managers of errors that the LV 7390 generates.
The LV 7390 supports SNMPv2.

17.5.1 SMI Definitions

```
IMPORTS
MODULE-IDENTITY      FROM SNMPv2-SMI
OBJECT-TYPE          FROM SNMPv2-SMI
NOTIFICATION-TYPE    FROM SNMPv2-SMI
IpAddress            FROM SNMPv2-SMI
Counter32            FROM SNMPv2-SMI
enterprises          FROM SNMPv2-SMI
OBJECT-GROUP         FROM SNMPv2-CONF
MODULE-COMPLIANCE    FROM SNMPv2-CONF
DisplayString        FROM SNMPv2-TC;
```

17.5.2 Procedure

1. **Configure the Ethernet settings on the LV 7390's ETHERNET SETUP tab.**

   Set the IP address, and set SNMP Read to Write. To use the TRAP function, set SNMP Trap to ON.

   [See also] 6.2.2, “Configuring Ethernet Settings”

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

Figure 17-11 ETHERNET SETUP tab

2. **Press F • 1 COMPLETE.**
3. **Connect the LV 7390'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. **To use the TRAP function, set the SNMP manager's IP address and enable/disable.**

   Up to four locations can be set. To alleviate communication load, disable the transmission destinations that you are not using. The factory default setting is disabled. When you restart the LV 7390 after configuring the settings, you can confirm the reception of the standard TRAP "coldStart."

   [TRAP transmission destination 1]
   • IP address
   1.3.6.1.4.1.leader(20111).lv7390(35).lv7390ST1(1).l35trapTBL(9).l35trapIpTBL(1).l35trapIp1TBL(1).l35trapManagerIp1(1).0

   • Enable (1) or disable (2)
   1.3.6.1.4.1.leader(20111).lv7390(35).lv7390ST1(1).l35trapTBL(9).l35trapIpTBL(1).l35trapIp1TBL(1).l35trapManagerIp1Act(2).0

   [TRAP transmission destination 2]
   • IP address
   1.3.6.1.4.1.leader(20111).lv7390(35).lv7390ST1(1).l35trapTBL(9).l35trapIpTBL(1).l35trapIp2TBL(2).l35trapManagerIp2(1).0

   • Enable (1) or disable (2)
   1.3.6.1.4.1.leader(20111).lv7390(35).lv7390ST1(1).l35trapTBL(9).l35trapIpTBL(1).l35trapIp2TBL(2).l35trapManagerIp2Act(2).0

   [TRAP transmission destination 3]
   • IP address
   1.3.6.1.4.1.leader(20111).lv7390(35).lv7390ST1(1).l35trapTBL(9).l35trapIpTBL(1).l35trapIp3TBL(3).l35trapManagerIp3(1).0

   • Enable (1) or disable (2)
   1.3.6.1.4.1.leader(20111).lv7390(35).lv7390ST1(1).l35trapTBL(9).l35trapIpTBL(1).l35trapIp3TBL(3).l35trapManagerIp3Act(2).0

   [TRAP transmission destination 4]
   • IP address
   1.3.6.1.4.1.leader(20111).lv7390(35).lv7390ST1(1).l35trapTBL(9).l35trapIpTBL(1).l35trapIp4TBL(4).l35trapManagerIp4(1).0

   • Enable (1) or disable (2)
   1.3.6.1.4.1.leader(20111).lv7390(35).lv7390ST1(1).l35trapTBL(9).l35trapIpTBL(1).l35trapIp4TBL(4).l35trapManagerIp4Act(2).0

17.5.3 Standard MIB

The LV 7390 uses the following standard MIBs:
• RFC1213 (MIB-Ⅱ)
• RFC1354 (IP Forwarding Table MIB)

● ACCESS

ACCESS	Description
R/W	Read and write
R/O	Read only

● SUPPORT

SUPPORT	Description
Y	Supported
R	Reading and writing are possible according to the standard, but the LV 7390 only supports reading.
N	Not supported.

● iso(1).org(3).dod(6).internet(1).mgmt(2).mib-2(1).system(1)

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
sysLocation	system.6	DisplayString	R/W	Y
sysServices	system.7	INTEGER	R/O	Y

● iso(1).org(3).dod(6).internet(1).mgmt(2).mib-2(1).interface(2)

MIB	OID	SYNTAX	ACCESS	SUPPORT
ifNumber	interfaces.1	INTEGER	R/O	Y
ifTable	interfaces.2	Aggregate	-	-
ifEntry	ifTable.1	Aggregate	-	-
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
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

MIB	OID	SYNTAX	ACCESS	SUPPORT
ifInErrors	ifEntry.14	Counter	R/O	Y
ifInUnknownProtos	ifEntry.15	Counter	R/O	Y
ifOutOctets	ifEntry.16	Counter	R/O	Y
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

- **iso(1).org(3).dod(6).internet(1).mgmt(2).mib-2(1).ip(4)**

MIB	OID	SYNTAX	ACCESS	SUPPORT
ipForwarding	ip.1	INTEGER	R/O	Y
ipDefaultTTL	ip.2	INTEGER	R/O	R
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	Aggregate	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
ipRouteIfIndex	ipRouteEntry.2	INTEGER	R/O	R
ipRouteMetric1	ipRouteEntry.3	INTEGER	R/O	R
ipRouteMetric2	ipRouteEntry.4	INTEGER	R/O	R
ipRouteMetric3	ipRouteEntry.5	INTEGER	R/O	R

MIB	OID	SYNTAX	ACCESS	SUPPORT
ipRouteMetric4	ipRouteEntry.6	INTEGER	R/O	R
ipRouteNextHop	ipRouteEntry.7	IpAddress	R/O	R
ipRouteType	ipRouteEntry.8	INTEGER	R/O	R
ipRouteProto	ipRouteEntry.9	INTEGER	R/O	Y
ipRouteAge	ipRouteEntry.10	INTEGER	-	N
ipRouteMask	ipRouteEntry.11	IpAddress	R/O	R
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
ipNetToMediaPhysAddress	ipNetToMediaEntry.2	OctetString	R/O	R
ipNetToMediaNetAddress	ipNetToMediaEntry.3	IpAddress	R/O	R
ipNetToMediaType	ipNetToMediaEntry.4	INTEGER	R/O	R
ipRoutingDiscards	ip.23	Counter	R/O	Y

- **iso(1).org(3).dod(6).internet(1).mgmt(2).mib-2(1).icmp(5)**

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

- **iso(1).org(3).dod(6).internet(1).mgmt(2).mib-2(1).tcp(6)**

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
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

- **iso(1).org(3).dod(6).internet(1).mgmt(2).mib-2(1).udp(7)**

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

- **iso(1).org(3).dod(6).internet(1).mgmt(2).mib-2(1).snmp(11)**

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

MIB	OID	SYNTAX	ACCESS	SUPPORT
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	INTEGER	R/W	Y

17.5.4 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 "lv7390.my." (Example: get lv7390.my D:\lv7390.my)

- **Enterprise MIB Structure**

```
lv7390              OBJECT IDENTIFIER ::= { leader 35 }
lv7390ST1           OBJECT IDENTIFIER ::= { lv7390 1 }
l35notificationTBL  OBJECT IDENTIFIER ::= { lv7390ST1 0 }
l35basicTBL         OBJECT IDENTIFIER ::= { lv7390ST1 1 }
l35systemTBL        OBJECT IDENTIFIER ::= { lv7390ST1 2 }
l35wfmTBL           OBJECT IDENTIFIER ::= { lv7390ST1 3 }
l35vectorTBL        OBJECT IDENTIFIER ::= { lv7390ST1 4 }
l35pictureTBL       OBJECT IDENTIFIER ::= { lv7390ST1 5 }
l35statusTBL        OBJECT IDENTIFIER ::= { lv7390ST1 6 }
l35audioTBL         OBJECT IDENTIFIER ::= { lv7390ST1 8 }
l35trapTBL          OBJECT IDENTIFIER ::= { lv7390ST1 9 }
```

- **ACCESS**

ACCESS	Description
R/W	Read and write
R/O	Read only
R/WO	Read and write (However, the read data consists of meaningless fixed values.)

- **l35notificationTBL**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35trapContentTBL	l35notificationTBL.1	Aggregate	-	-
l35trapErrorTBL	l35trapContentTBL.1	Aggregate	-	-
l35trapErrorFan	l35TrapErrorTBL.1	-	-	FAN_STOP
l35trapErrorNoSignal	l35TrapErrorTBL.2	-	-	NO_SIGNAL
l35trapErrorUnknown	l35TrapErrorTBL.3	-	-	FORMAT_UNKNOWN
l35trapErrorCable	l35TrapErrorTBL.4	-	-	CABLE_ERR
l35trapErrorCableWarn	l35TrapErrorTBL.5	-	-	CABLE_WAR
l35trapErrorAudioSample	l35TrapErrorTBL.6	-	-	A_SMPL_ERR
l35trapErrorAudioInhibit	l35TrapErrorTBL.7	-	-	A_INH_ERR
l35trapErrorAudioDbn	l35TrapErrorTBL.8	-	-	A_DBN_ERR
l35trapErrorAudioParity	l35TrapErrorTBL.9	-	-	A_PRTY_ERR
l35trapErrorAudioBch	l35TrapErrorTBL.10	-	-	A_BCH_ERR
l35trapErrorSdiAncParity	l35TrapErrorTBL.17	-	-	PRTY_ERR
l35trapErrorSdiAncChecksum	l35TrapErrorTBL.18	-	-	CHK_ERR
l35trapErrorSdiLineNumber	l35TrapErrorTBL.19	-	-	LINE_ERR
l35trapErrorSdiIllegalCode	l35TrapErrorTBL.20	-	-	ILLEGAL_ERR
l35trapErrorSdiTrsCode	l35TrapErrorTBL.21	-	-	TRS_C_ERR
l35trapErrorSdiTrsPos	l35TrapErrorTBL.22	-	-	TRS_P_ERR
l35trapErrorSdiEdh	l35TrapErrorTBL.23	-	-	EDH_ERR
l35trapErrorSdiCrc	l35TrapErrorTBL.24	-	-	CRC_ERR
l35trapErrorSdiFrequency	l35TrapErrorTBL.26	-	-	FREQ_ERR
l35trapErrorAudioValidity (*1)	l35TrapErrorTBL.51	-	-	VAL:XX (*2)
l35trapErrorAudioCrc (*1)	l35TrapErrorTBL.52	-	-	CRC:XX (*2)
l35trapErrorAudioClip (*1)	l35TrapErrorTBL.53	-	-	CLIP:XX (*2)
l35trapErrorAudioMute (*1)	l35TrapErrorTBL.54	-	-	MUTE:XX (*2)
l35trapErrorAudioLevel (*1)	l35TrapErrorTBL.55	-	-	OVER:XX (*2)
l35trapErrorAudioParity (*1)	l35TrapErrorTBL.56	-	-	PAR:XX (*2)
l35trapErrorAudioCode (*1)	l35TrapErrorTBL.57	-	-	CODE:XX (*2)
l35trapNormalTBL	l35trapContentTBL.2	Aggregate	-	-
l35trapNormalFan	l35TrapNormalTBL.1	-	-	FAN_STOP
l35trapNormalNoSignal	l35TrapNormalTBL.2	-	-	NO_SIGNAL
l35trapNormalUnknown	l35TrapNormalTBL.3	-	-	FORMAT_UNKNOWN
l35trapNormalCable	l35TrapNormalTBL.4	-	-	CABLE_ERR
l35trapNormalCableWarn	l35TrapNormalTBL.5	-	-	CABLE_WAR
l35trapNormalAudioSample	l35TrapNormalTBL.6	-	-	A_SMPL_ERR
l35trapNormalAudioInhibit	l35TrapNormalTBL.7	-	-	A_INH_ERR
l35trapNormalAudioDbn	l35TrapNormalTBL.8	-	-	A_DBN_ERR
l35trapNormalAudioParity	l35TrapNormalTBL.9	-	-	A_PRTY_ERR
l35trapNormalAudioBch	l35TrapNormalTBL.10	-	-	A_BCH_ERR
l35trapNormalSdiAncParity	l35TrapNormalTBL.17	-	-	PRTY_ERR
l35trapNormalSdiAncChecksum	l35TrapNormalTBL.18	-	-	CHK_ERR
l35trapNormalSdiLineNumber	l35TrapNormalTBL.19	-	-	LINE_ERR

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
I35trapNormalSdiIllegalCode	I35TrapNormalTBL.20	-	-	ILLEGAL_ERR
I35trapNormalSdiTrsCode	I35TrapNormalTBL.21	-	-	TRS_C_ERR
I35trapNormalSdiTrsPos	I35TrapNormalTBL.22	-	-	TRS_P_ERR
I35trapNormalSdiEdh	I35TrapNormalTBL.23	-	-	EDH_ERR
I35trapNormalSdiCrc	I35TrapNormalTBL.24	-	-	CRC_ERR
I35trapNormalSdiFrequency	I35TrapNormalTBL.26	-	-	FREQ_ERR
I35trapNormalAudioValidity (*1)	I35TrapNormalTBL.51	-	-	VAL
I35trapNormalAudioCrc (*1)	I35TrapNormalTBL.52	-	-	CRC
I35trapNormalAudioClip (*1)	I35TrapNormalTBL.53	-	-	CLIP
I35trapNormalAudioMute (*1)	I35TrapNormalTBL.54	-	-	MUTE
I35trapNormalAudioLevel (*1)	I35TrapNormalTBL.55	-	-	OVER
I35trapNormalAudioParity (*1)	I35TrapNormalTBL.56	-	-	PAR
I35trapNormalAudioCode (*1)	I35TrapNormalTBL.57	-	-	CODE
I35trapNormalNoError	I35TrapNormalTBL.60	-	-	NO_ERROR
I35trapStrTBL	I35notificationTBL.2	Aggregate	-	-
I35trapCounter	I35trapStrTBL.1	INTEGER	R/O	1 to 4294967295
I35trapInternalTimestamp	I35trapStrTBL.2	DisplayString	R/O	Date and time
I35trapInputCh	I35trapStrTBL.3	INTEGER	R/O	1 = a 2 = b 3 = c 4 = d
I35trapInputSignal	I35trapStrTBL.4	DisplayString	R/O	Signal format
I35trapCableLen	I35trapStrTBL.5	INTEGER	R/O	0 to 32767

*1 This is valid when the SER03 is installed.

*2 XX contains the error occurrence channel in hexadecimal notation.

● I35basicTBL

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
I35basInputTBL	I35basicTBL.1	Aggregate	-	-
I35basInputCh	I35basInputTBL.1	INTEGER	R/W	1 = a 2 = b 3 = c 4 = d
I35basInputSimul	I35basInputTBL.2	INTEGER	R/W	1 = off 2 = on
I35basInputOperate	I35basInputTBL.3	INTEGER	R/W	1 = com 2 = individual
I35basInputExtref	I35basInputTBL.4	INTEGER	R/W	1 = int 2 = ext
I35basDispTBL	I35basicTBL.3	Aggregate	-	-
I35basDispMulti	I35basDispTBL.1	INTEGER	R/WO	1
I35basDispAssignWfm	I35basDispTBL.2	INTEGER	R/WO	1
I35basDispAssignVec	I35basDispTBL.3	INTEGER	R/WO	1
I35basDispAssignPic	I35basDispTBL.4	INTEGER	R/WO	1
I35basDispAssignSts	I35basDispTBL.5	INTEGER	R/WO	1

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
I35basDispAssignAud	I35basDispTBL.7	INTEGER	R/WO	1
I35basPresetTBL	I35basicTBL.4	Aggregate	-	-
I35basPresetStore	I35basPresetTBL.1	INTEGER	R/W	1 to 60
I35basPresetDelete	I35basPresetTBL.2	INTEGER	R/W	1 to 60
I35basPresetCopyUsbInt	I35basPresetTBL.3	INTEGER	R/WO	1
I35basPresetCopyIntUsb	I35basPresetTBL.4	INTEGER	R/WO	1
I35basPresetRecall	I35basPresetTBL.5	INTEGER	R/W	1 to 60
I35basCaptureTBL	I35basicTBL.5	Aggregate	-	-
I35basCaptureRefresh	I35basCaptureTBL.3	INTEGER	R/WO	1
I35basCaptureDisplay	I35basCaptureTBL.4	INTEGER	R/W	1 = real 2 = hold 3 = both
I35basCaptureFileBmp	I35basCaptureTBL.5	INTEGER	R/W	1 = off 2 = on
I35basCaptureFileBsg	I35basCaptureTBL.6	INTEGER	R/W	1 = off 2 = on
I35basCaptureFileStore	I35basCaptureTBL10	INTEGER	R/WO	1
I35basMakeTBL	I35basicTBL.6	Aggregate	-	-
I35basMakeFile	I35basMakeTBL.1	INTEGER	R/WO	1 = cap-bmp 2 = cap-bsg 6 = log 7 = dump
I35basOpKeyTBL	I35basicTBL.7	Aggregate	-	-
I35basOpKeyForm	I35basOpKeyTBL.1	INTEGER	R/WO	1
I35basOpKeyShort	I35basOpKeyTBL.2	INTEGER	R/WO	1
I35basOpKeyOverlay	I35basOpKeyTBL.3	INTEGER	R/WO	1
I35basOpKeyFilter	I35basOpKeyTBL.4	INTEGER	R/WO	1
I35basOpKeyGain	I35basOpKeyTBL.5	INTEGER	R/WO	1
I35basOpKeyGainMag	I35basOpKeyTBL.6	INTEGER	R/WO	1
I35basOpKeySweep	I35basOpKeyTBL.7	INTEGER	R/WO	1
I35basOpKeySweepMag	I35basOpKeyTBL.8	INTEGER	R/WO	1

- **I35systemTBL**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
I35sysInitTBL	I35systemTBL.1	Aggregate	-	-
I35sysSystemInit	I35sysInitTBL.1	INTEGER	R/WO	1
I35sysLayoutInit	I35sysInitTBL.4	INTEGER	R/WO	1
I35sysSystemLayoutInit	I35sysInitTBL.5	INTEGER	R/WO	1
I35sysOperateInit	I35sysInitTBL.6	INTEGER	R/WO	1
I35sysSdiInTBL	I35systemTBL.3	Aggregate	-	-

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35sysSdiInSystem	l35sysSdiInTBL.1	INTEGER	R/W	1 = sys-4k-3g-qlink 2 = sys-4k-3g-dlink 3 = sys-4k-hd-qlink 4 = sys-single-link 7 = sys-3gb-dstream
l35sysSdiInColorimetry	l35sysSdiInTBL.2	INTEGER	R/W	1 = pid 2 = bt709 3 = bt2020
l35sysSdiInSettingPid	l35sysSdiInTBL.3	INTEGER	R/W	1 = use 2 = notuse
l35sysSdiInSettingIpsf	l35sysSdiInTBL.4	INTEGER	R/W	1 = interlace 2 = psf
l35sysSdiInSettingDivision	l35sysSdiInTBL.5	INTEGER	R/W	1 = div-square 2 = div-2sampleinterleave
l35sysSdiInSettingColorsys	l35sysSdiInTBL.6	INTEGER	R/W	1 = ycbcr422 3 = rgb444
l35sysSdiInSettingPixDepth	l35sysSdiInTBL.7	INTEGER	R/W	1 = dep-10bit 2 = dep-12bit
l35sysSdiInFormatA	l35sysSdiInTBL.10	DisplayString	R/O	Input A Format
l35sysSdiInFormatB	l35sysSdiInTBL.11	DisplayString	R/O	Input B Format
l35sysSdiInFormatC	l35sysSdiInTBL.12	DisplayString	R/O	Input C Format
l35sysSdiInFormatD	l35sysSdiInTBL.13	DisplayString	R/O	Input D Format
l35sysAudioInOutTBL (*1)	l35systemTBL.5	Aggregate	-	-
l35sysAudBncGrpA (*1)	l35sysAudioInOutTBL.1	INTEGER	R/W	1 = input 2 = output
l35sysAudBncGrpB (*1)	l35sysAudioInOutTBL.2	INTEGER	R/W	1 = input 2 = output
l35sysMonitorOutTBL	l35systemTBL.6	Aggregate	-	-
l35sysRasterSync	l35sysMonitorOutTBL.1	INTEGER	R/W	1 = int 2 = external
l35sysRasterFmt	l35sysMonitorOutTBL.2	INTEGER	R/W	1 = fmt-1080-60p 2 = fmt-1080-59p 3 = fmt-1080-50p
l35sysRasterSdiOutFmt	l35sysMonitorOutTBL.4	INTEGER	R/W	1 = fmt-hd 2 = fmt-3ga 3 = fmt-3gb
l35sysGeneralTBL	l35systemTBL.7	Aggregate	-	-
l35sysGeneralInfoDispFmt	l35sysGeneralTBL.2	INTEGER	R/W	1 = off 2 = on

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35sysGeneralInfoDispDate	l35sysGeneralTBL.3	INTEGER	R/W	1 = off 2 = ymd 3 = mdy 4 = dmy
l35sysGeneralInfoDispTime	l35sysGeneralTBL.4	INTEGER	R/W	1 = off 2 = real 3 = ltc 4 = vitc 5 = d-vitc
l35sysGeneralInfoDispInput	l35sysGeneralTBL.6	INTEGER	R/W	1 = off 2 = on
l35sysGeneralInfoDispIcon	l35sysGeneralTBL.7	INTEGER	R/W	1 = off 2 = on
l35sysGeneralMenuAutoOff	l35sysGeneralTBL.8	INTEGER	R/W	1 = off 2 = on
l35sysGeneralMenuAutoOffTime	l35sysGeneralTBL.9	INTEGER	R/W	1 to 60
l35sysGeneralFanWarning	l35sysGeneralTBL.12	INTEGER	R/W	1 = off 2 = on
l35sysGeneralMenuModeKey	l35sysGeneralTBL.13	INTEGER	R/W	1 = common 2 = single
l35sysGeneralMenuRecall	l35sysGeneralTBL.14	INTEGER	R/W	1 = recall 2 = function
l35sysEthernetTBL	l35systemTBL.8	Aggregate	-	-
l35sysEthernetSel	l35sysEthernetTBL.1	INTEGER	R/O	1 = dhcp 2 = ip
l35sysEthernetAddress	l35sysEthernetTBL.2	IpAddress	R/O	IP Address
l35sysEthernetSubnet	l35sysEthernetTBL.3	IpAddress	R/O	Subnet Mask
l35sysEthernetGateway	l35sysEthernetTBL.4	IpAddress	R/O	Default Gateway
l35sysEthernetSntp	l35sysEthernetTBL.5	INTEGER	R/W	1 = off 2 = on
l35sysEthernetSntpAddress	l35sysEthernetTBL.6	IpAddress	R/W	IP Address
l35sysEthernetSntpTz	l35sysEthernetTBL.7	INTEGER	R/W	1 = m12 (omitted) 12 = m1 13 = p0 14 = p1 (omitted) 25 = p12
l35sysEthernetTelnet	l35sysEthernetTBL.8	INTEGER	R/W	1 = off 2 = on 3 = LV7290
l35sysEthernetFtp	l35sysEthernetTBL.9	INTEGER	R/W	1 = off 2 = on
l35sysEthernetSnmpTrap	l35sysEthernetTBL.11	INTEGER	R/W	1 = off 2 = on
l35sysEthernetMacAddr	l35sysEthernetTBL.12	DisplayString	R/O	MAC Address

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35sysRemoteTBL	l35systemTBL.9	Aggregate	-	-
l35sysRemoteMode	l35sysRemoteTBL.1	INTEGER	R/W	1 = bit 2 = binary 3 = command 4 = tally
l35sysRemotePole	l35sysRemoteTBL.2	INTEGER	R/W	1 = positive 2 = negative
l35sysRemoteAlarmAch	l35sysRemoteTBL.3	INTEGER	R/W	1 = off 2 = on
l35sysRemoteAlarmBch	l35sysRemoteTBL.4	INTEGER	R/W	1 = off 2 = on
l35sysRemoteAlarmCch	l35sysRemoteTBL.5	INTEGER	R/W	1 = off 2 = on
l35sysRemoteAlarmDch	l35sysRemoteTBL.6	INTEGER	R/W	1 = off 2 = on
l35sysRemoteTallyColor1	l35sysRemoteTBL.8	INTEGER	R/W	1 = red 2 = green 3 = blue 4 = cyan 5 = magenta 6 = yellow 7 = orange
l35sysRemoteTallyColor2	l35sysRemoteTBL.9	INTEGER	R/W	1 = red 2 = green 3 = blue 4 = cyan 5 = magenta 6 = yellow 7 = orange
l35sysRemoteTallyColor3	l35sysRemoteTBL.10	INTEGER	R/W	1 = red 2 = green 3 = blue 4 = cyan 5 = magenta 6 = yellow 7 = orange
l35sysRemoteTallyFrame	l35sysRemoteTBL.11	INTEGER	R/W	1 = off 2 = on
l35sysRemoteTallyLayout	l35sysRemoteTBL.12	INTEGER	R/W	1 = left 2 = right
l35sysRemoteTallyControl1	l35sysRemoteTBL.13	INTEGER	R/W	1 = remote 2 = rs485
l35sysRemoteTallyControl2	l35sysRemoteTBL.14	INTEGER	R/W	1 = remote 2 = rs485
l35sysRemoteTallyControlExt	l35sysRemoteTBL.15	INTEGER	R/W	1 = remote 2 = rs485

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35sysDateTBL	l35systemTBL.10	Aggregate	-	-
l35sysDateTime	l35sysDateTBL.3	DisplayString	R/O	Date and Time
l35sysFormatAlarmTBL	l35systemTBL.11	Aggregate	-	-
l35sysFormatAlarm	l35sysFormatAlarmTBL.1	INTEGER	R/W	1 = off 2 = on
l35sysFormatAlarmSystem	l35sysFormatAlarmTBL.2	INTEGER	R/W	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 20 = fmt-1280-3gbds 21 = fmt-1920-3gbds
l35sysFormatAlarmStruct	l35sysFormatAlarmTBL.3	INTEGER	R/W	1 = ycbcr422-10bit 5 = rgb444-10bit 6 = rgb444-12bit
l35sysFormatAlarmFramerate	l35sysFormatAlarmTBL.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 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
l35sysFormatAlarmDiv	l35sysFormatAlarmTBL.5	INTEGER	R/W	1 = div-square 2 = div-2sampleinterleave

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35sysFormatAlarmColor	l35sysFormatAlarmTBL.6	INTEGER	R/W	1 = bt709 2 = bt2020
l35sysFormatAlarmFlagColor	l35sysFormatAlarmTBL.7	INTEGER	R/W	1 = off 2 = on
l35sysCompleteTBL	l35systemTBL.12	Aggregate	-	-
l35sysSignalInOutComplete	l35sysCompleteTBL.1	INTEGER	R/WO	1
l35sysSystemSetupComplete	l35sysCompleteTBL.2	INTEGER	R/WO	1
l35sysEthernetSettingUpdate	l35sysCompleteTBL.3	INTEGER	R/WO	1
l35sysInfoTBL	l35systemTBL.13	Aggregate	-	-
l35sysInfoFirmware	l35sysInfoTBL.1	DisplayString	R/O	Firmware Version
l35sysInfoBoardSdiIn	l35sysInfoTBL.2	INTEGER	R/O	1 = notavailable 2 = available
l35sysInfoBoardAudio	l35sysInfoTBL.4	INTEGER	R/O	1 = notavailable 2 = available
l35sysOperationTBL	l35systemTBL.14	Aggregate	-	-
l35sysOperationFormWfm1	l35sysOperationTBL.1	INTEGER	R/W	1 = y 2 = ycbcr 3 = ygbr 4 = gbr 5 = yrgb 6 = rgb 7 = composit 8 = skip
l35sysOperationFormWfm2	l35sysOperationTBL.2	INTEGER	R/W	1 = y 2 = ycbcr 3 = ygbr 4 = gbr 5 = yrgb 6 = rgb 7 = composit 8 = skip
l35sysOperationFormWfm3	l35sysOperationTBL.3	INTEGER	R/W	1 = y 2 = ycbcr 3 = ygbr 4 = gbr 5 = yrgb 6 = rgb 7 = composit 8 = skip

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35sysOperationFormWfm4	l35sysOperationTBL.4	INTEGER	R/W	1 = y 2 = ycbcr 3 = ygbr 4 = gbr 5 = yrgb 6 = rgb 7 = composit 8 = skip
l35sysOperationFormWfm5	l35sysOperationTBL.5	INTEGER	R/W	1 = y 2 = ycbcr 3 = ygbr 4 = gbr 5 = yrgb 6 = rgb 7 = composit 8 = skip
l35sysOperationFormWfm6	l35sysOperationTBL.6	INTEGER	R/W	1 = y 2 = ycbcr 3 = ygbr 4 = gbr 5 = yrgb 6 = rgb 7 = composit 8 = skip
l35sysOperationFormWfm7	l35sysOperationTBL.7	INTEGER	R/W	1 = y 2 = ycbcr 3 = ygbr 4 = gbr 5 = yrgb 6 = rgb 7 = composit 8 = skip
l35sysOperationFormVec1	l35sysOperationTBL.8	INTEGER	R/W	1 = component 2 = composit 3 = skip
l35sysOperationFormVec2	l35sysOperationTBL.9	INTEGER	R/W	1 = component 2 = composit 3 = skip
l35sysOperationShortcut	l35sysOperationTBL.10	INTEGER	R/W	1 = direct 3 = cap-write 4 = inten 5 = cursor

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35sysOperationFilterWfmComposit1	l35sysOperationTBL.11	INTEGER	R/W	1 = flat 2 = lum 3 = flat-lum 4 = lum-crma 5 = skip
l35sysOperationFilterWfmComposit2	l35sysOperationTBL.12	INTEGER	R/W	1 = flat 2 = lum 3 = flat-lum 4 = lum-crma 5 = skip
l35sysOperationFilterWfmComposit3	l35sysOperationTBL.13	INTEGER	R/W	1 = flat 2 = lum 3 = flat-lum 4 = lum-crma 5 = skip
l35sysOperationFilterWfmComposit4	l35sysOperationTBL.14	INTEGER	R/W	1 = flat 2 = lum 3 = flat-lum 4 = lum-crma 5 = skip
l35sysOperationMagGainVec1	l35sysOperationTBL.15	INTEGER	R/W	1 = x1 2 = x5 3 = iq 4 = skip
l35sysOperationMagGainVec2	l35sysOperationTBL.16	INTEGER	R/W	1 = x1 2 = x5 3 = iq 4 = skip
l35sysOperationMagGainVec3	l35sysOperationTBL.17	INTEGER	R/W	1 = x1 2 = x5 3 = iq 4 = skip
l35sysOperationSweepWfm1	l35sysOperationTBL.18	INTEGER	R/W	1 = sweep-1h 2 = sweep-2h 3 = sweep-1v 4 = sweep-2v 5 = skip
l35sysOperationSweepWfm2	l35sysOperationTBL.19	INTEGER	R/W	1 = sweep-1h 2 = sweep-2h 3 = sweep-1v 4 = sweep-2v 5 = skip

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35sysOperationSweepWfm3	l35sysOperationTBL.20	INTEGER	R/W	1 = sweep-1h 2 = sweep-2h 3 = sweep-1v 4 = sweep-2v 5 = skip
l35sysOperationSweepWfm4	l35sysOperationTBL.21	INTEGER	R/W	1 = sweep-1h 2 = sweep-2h 3 = sweep-1v 4 = sweep-2v 5 = skip
l35sysOperationMagSweepWfm1	l35sysOperationTBL.22	INTEGER	R/W	1 = x1 2 = x10 3 = x20 4 = x40 5 = active 6 = blank 7 = skip
l35sysOperationMagSweepWfm2	l35sysOperationTBL.23	INTEGER	R/W	1 = x1 2 = x10 3 = x20 4 = x40 5 = active 6 = blank 7 = skip
l35sysOperationMagSweepWfm3	l35sysOperationTBL.24	INTEGER	R/W	1 = x1 2 = x10 3 = x20 4 = x40 5 = active 6 = blank 7 = skip
l35sysOperationMagSweepWfm4	l35sysOperationTBL.25	INTEGER	R/W	1 = x1 2 = x10 3 = x20 4 = x40 5 = active 6 = blank 7 = skip
l35sysOperationMagSweepWfm5	l35sysOperationTBL.26	INTEGER	R/W	1 = x1 2 = x10 3 = x20 4 = x40 5 = active 6 = blank 7 = skip

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35sysOperationMagSweepWfm6	l35sysOperationTBL.27	INTEGER	R/W	1 = x1 2 = x10 3 = x20 4 = x40 5 = active 6 = blank 7 = skip
l35sysVfTBL (*2)	l35systemTBL.15	Aggregate	-	-
l35sysVfPicInputSelect (*2)	l35SysVfTBL.1	INTEGER	R/W	1 = sdi, 2 = vf-sdi
l35sysVfSdiSystem (*2)	l35SysVfTBL.2	INTEGER	R/W	1 = sys-4k-3g-qlink 2 = sys-4k-3g-dlink 3 = sys-4k-hd-qlink 4 = sys-single-link 7 = sys-3gb-dstream
l35sysVfColorimetry (*2)	l35SysVfTBL.3	INTEGER	R/W	1 = pid 2 = bt709 3 = bt2020
l35sysVfFmtSettingPid (*2)	l35SysVfTBL.4	INTEGER	R/W	1 = use 2 = notuse
l35sysVfFmtSettingIpsf (*2)	l35SysVfTBL.5	INTEGER	R/W	1 = interlace 2 = psf
l35sysVfFmtSettingDivision (*2)	l35SysVfTBL.6	INTEGER	R/W	1 = div-square 2 = div-2sampleinterleave
l35sysVfFmtSettingColorSys (*2)	l35SysVfTBL.7	INTEGER	R/W	1 = ycbcr422 3 = rgb444
l35sysVfFmtSettingPixDepth (*2)	l35SysVfTBL.8	INTEGER	R/W	1 = dep-10bit 2 = dep-12bit
l35sysHdrTBL (*3)	l35systemTBL.16	Aggregate	-	-
l35sysHdrEnable (*3)	l35SysHdrTBL.1	INTEGER	R/W	1:off 2:on
l35sysHdrHdrCurve (*3)	l35SysHdrTBL.2	INTEGER	R/W	2 = arib 3 = smpte 4 = slog

*1 This is valid when the SER03 is installed.
*2 This is valid when the VF option is installed.
*3 This is valid when the SER20 is installed.

- **l35wfmTBL**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35wfmIntenTBL	l35wfmTBL.1	Aggregate	-	-
l35wfmInten	l35wfmIntenTBL.1	INTEGER	R/W	-128 to 127
l35wfmColor	l35wfmIntenTBL.2	INTEGER	R/W	1 = white 2 = yellow 3 = cyan 4 = green 5 = magenta 6 = red 7 = blue 8 = multi
l35wfmScaleTBL	l35wfmTBL.2	Aggregate	-	-
l35wfmScaleInten	l35wfmScaleTBL.1	INTEGER	R/W	-8 to 7
l35wfmScaleColor	l35wfmScaleTBL.2	INTEGER	R/W	1 = white 2 = yellow 3 = cyan 4 = green 5 = magenta 6 = red 7 = blue
l35wfmScaleUnit	l35wfmScaleTBL.3	INTEGER	R/W	1 = unit-hdv-sdp 2 = unit-hdv-sdv 3 = unit-hdp-sdp 4 = unit-150p 5 = unit-1023 6 = unit-3ff
l35wfmScaleUnitNtsc	l35wfmScaleTBL.4	INTEGER	R/W	3 = unit-hdp-sdp
l35wfmScaleUnitPal	l35wfmScaleTBL.5	INTEGER	R/W	2 = unit-hdv-sdv
l35wfmScale75perCol	l35wfmScaleTBL.6	INTEGER	R/W	1 = off 2 = on
l35wfmGainTBL	l35wfmTBL.3	Aggregate	-	-
l35wfmGainVar	l35wfmGainTBL.1	INTEGER	R/W	1 = cal 2 = variable
l35wfmGainMag	l35wfmGainTBL.2	INTEGER	R/W	1 = x1 2 = x5
l35wfmGainValue	l35wfmGainTBL.3	DisplayString	R/W	0.2 to 2.000
l35wfmGainFilter	l35wfmGainTBL.4	INTEGER	R/W	1 = lowpass 2 = flat
l35wfmGainFilterCmp	l35wfmGainTBL.5	INTEGER	R/W	2 = flat 3 = lum 4 = flatlum 5 = lumchroma

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35wfmGainScaleJump	l35wfmGainTBL.6	INTEGER	R/W	1 = x5-0 2 = x5-10 3 = x5-20 4 = x5-30 5 = x5-40 6 = x5-50 7 = x5-60 8 = x5-70 9 = x5-80 10 = x5-90 11 = cursor
l35wfmSweepTBL	l35wfmTBL.4	Aggregate	-	-
l35wfmSweep	l35wfmSweepTBL.1	INTEGER	R/W	1 = h 2 = v
l35wfmSweepMagH	l35wfmSweepTBL.2	INTEGER	R/W	1 = x1 2 = x10 3 = x20 4 = blank 5 = active
l35wfmSweepMagV	l35wfmSweepTBL.3	INTEGER	R/W	1 = x1 2 = x20 3 = x40
l35wfmSweepH	l35wfmSweepTBL.4	INTEGER	R/W	1 = sweep-1h 2 = sweep-2h
l35wfmSweepV	l35wfmSweepTBL.5	INTEGER	R/W	1 = sweep-1v 2 = sweep-2v
l35wfmSweepField	l35wfmSweepTBL.6	INTEGER	R/W	1 = field1 2 = field2
l35wfmBlanking	l35wfmSweepTBL.7	INTEGER	R/W	1 = remove 2 = v 3 = h 4 = all
l35wfmBlankingCmp	l35wfmSweepTBL.8	INTEGER	R/W	1 = remove 2 = v
l35wfmMatrixTBL	l35wfmTBL.5	Aggregate	-	-
l35wfmMatrix	l35wfmMatrixTBL.1	INTEGER	R/W	1 = ycbcr 2 = gbr 3 = rgb 4 = composite
l35wfmMatrixRgb	l35wfmMatrixTBL.2	INTEGER	R/W	2 = gbr 3 = rgb 4 = composite
l35wfmMatrixYgbr	l35wfmMatrixTBL.3	INTEGER	R/W	1 = off 2 = on
l35wfmMatrixYrgb	l35wfmMatrixTBL.4	INTEGER	R/W	1 = off 2 = on

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35wfmCmpFormat	l35wfmMatrixTBL.5	INTEGER	R/W	1 = auto 2 = ntsc 3 = pal
l35wfmCmpSetup	l35wfmMatrixTBL.6	INTEGER	R/W	1 = setup-0p 2 = setup-75p
l35wfmDisplayTBL	l35wfmTBL.6	Aggregate	-	-
l35wfmDisplayMode	l35wfmDisplayTBL.1	INTEGER	R/W	1 = parade 2 = overlay
l35wfmDisplayCh1Y	l35wfmDisplayTBL.2	INTEGER	R/W	1 = off 2 = on
l35wfmDisplayCh2Cb	l35wfmDisplayTBL.3	INTEGER	R/W	1 = off 2 = on
l35wfmDisplayCh3Cr	l35wfmDisplayTBL.4	INTEGER	R/W	1 = off 2 = on
l35wfmDisplayCh1G	l35wfmDisplayTBL.5	INTEGER	R/W	1 = off 2 = on
l35wfmDisplayCh2B	l35wfmDisplayTBL.6	INTEGER	R/W	1 = off 2 = on
l35wfmDisplayCh3R	l35wfmDisplayTBL.7	INTEGER	R/W	1 = off 2 = on
l35wfmDisplayCh1R	l35wfmDisplayTBL.8	INTEGER	R/W	1 = off 2 = on
l35wfmDisplayCh2G	l35wfmDisplayTBL.9	INTEGER	R/W	1 = off 2 = on
l35wfmDisplayCh3B	l35wfmDisplayTBL.10	INTEGER	R/W	1 = off 2 = on
l35wfmDisplay3gbds	l35wfmDisplayTBL.11	INTEGER	R/W	1 = stream1 2 = stream2 4 = align
l35wfmDisplayYParade	l35wfmDisplayTBL.12	INTEGER	R/W	1 = off 2 = on
l35wfmLineselTBL	l35wfmTBL.7	Aggregate	-	-
l35wfmLinesel	l35wfmLineselTBL.1	INTEGER	R/W	1 = off 2 = on
l35wfmLineselNo	l35wfmLineselTBL.2	INTEGER	R/W	0 to 32767
l35wfmLineselField	l35wfmLineselTBL.3	INTEGER	R/W	1 = frame 2 = field1 3 = field2

- **l35vectorTBL**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35vectorIntenTBL	l35vectorTBL.1	Aggregate	-	-
l35vctorInten	l35vectorIntenTBL.1	INTEGER	R/W	-128 to 127

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35vctorColor	l35vectorIntenTBL.2	INTEGER	R/W	1 = white 2 = yellow 3 = cyan 4 = green 5 = magenta 6 = red 7 = blue
l35vctorScaleTBL	l35vectorTBL.2	Aggregate	-	-
l35vectorScaleInten	l35vctorScaleTBL.1	INTEGER	R/W	-8 to 7
l35vectorScaleColor	l35vctorScaleTBL.2	INTEGER	R/W	1 = white 2 = yellow 3 = cyan 4 = green 5 = magenta 6 = red 7 = blue
l35vectorScaleIq	l35vctorScaleTBL.3	INTEGER	R/W	1 = off 2 = on
l35vectorScaleVec	l35vctorScaleTBL.4	INTEGER	R/W	1 = auto 2 = bt601 3 = bt709
l35vectorGainTBL	l35vectorTBL.3	Aggregate	-	-
l35vectorGainVariable	l35vectorGainTBL.1	INTEGER	R/W	1 = cal 2 = variable
l35vectorGainMag	l35vectorGainTBL.2	INTEGER	R/W	1 = x1 2 = x5 3 = iq
l35vectorGainVar	l35vectorGainTBL.3	DisplayString	R/W	0.200 to 10.000
l35vectorDispTBL	l35vectorTBL.4	Aggregate	-	-
l35vectorDisp3gbds	l35vectorDispTBL.2	INTEGER	R/W	1 = stream1 2 = stream2 4 = align
l35vectorMatrixTBL	l35vectorTBL.5	Aggregate	-	-
l35vectorMatrixColor	l35vectorMatrixTBL.1	INTEGER	R/W	1 = component 2 = composit
l35vectorMatrixColorBar	l35vectorMatrixTBL.2	INTEGER	R/W	1 = bar-100p 2 = bar-75p
l35vectorMatrixCompositFmt	l35vectorMatrixTBL.3	INTEGER	R/W	1 = auto 2 = ntsc 3 = pal
l35vectorMatrixCompositSetup	l35vectorMatrixTBL.4	INTEGER	R/W	1 = setup-0p 2 = setup-75p
l35vectorMarkerTBL	l35vectorTBL.7	Aggregate	-	-
l35vectorMarker	l35vectorMarkerTBL.1	INTEGER	R/W	1 = off 2 = on
l35vectorLineselTBL	l35vectorTBL.9	Aggregate	-	-

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35vectorLinesel	l35vectorLineselTBL.1	INTEGER	R/W	1 = off 2 = on
l35vectorLineselNo	l35vectorLineselTBL.2	INTEGER	R/W	0 to 32767
l35vectorLineselField	l35vectorLineselTBL.7	INTEGER	R/W	1 = frame 2 = field1 3 = fiedl2

- **l35pictureTBL**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35pictureAdjustTBL	l35pictureTBL.1	Aggregate	-	-
l35pictureAdjustColor	l35pictureAdjustTBL.1	INTEGER	R/W	1 = color 2 = mono
l35pictureChroma	l35pictureAdjustTBL.2	INTEGER	R/W	1 = normal 2 = up
l35pictureBrightness	l35pictureAdjustTBL.3	DisplayString	R/W	-50.0 to 50.0
l35pictureContrast	l35pictureAdjustTBL.4	DisplayString	R/W	0 to 200.0
l35pictureGainR	l35pictureAdjustTBL.5	DisplayString	R/W	0 to 200.0
l35pictureGainG	l35pictureAdjustTBL.6	DisplayString	R/W	0 to 200.0
l35pictureGainB	l35pictureAdjustTBL.7	DisplayString	R/W	0 to 200.0
l35pictureBiasR	l35pictureAdjustTBL.8	DisplayString	R/W	-50.0 to 50.0
l35pictureBiasG	l35pictureAdjustTBL.9	DisplayString	R/W	-50.0 to 50.0
l35pictureBiasB	l35pictureAdjustTBL.10	DisplayString	R/W	-50.0 to 50.0
l35pictureGainChroma	l35pictureAdjustTBL.11	DisplayString	R/W	0 to 200.0
l35pictureMarkerTBL	l35pictureTBL.2	Aggregate	-	-
l35pictureMarkerFrame	l35pictureMarkerTBL.1	INTEGER	R/W	1 = off 2 = on
l35pictureMarkerCenter	l35pictureMarkerTBL.2	INTEGER	R/W	1 = off 2 = on
l35pictureMarkerAspect	l35pictureMarkerTBL.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
l35pictureAspectShadow	l35pictureMarkerTBL.4	INTEGER	R/W	0 to 100
l35pictureSafeAction	l35pictureMarkerTBL.5	INTEGER	R/W	1 = off 2 = arib 3 = smpte 4 = user
l35pictureSafeTitle	l35pictureMarkerTBL.6	INTEGER	R/W	1 = off 2 = arib 3 = smpte 4 = user

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
I35pictureUserZone1W	I35pictureMarkerTBL.7	INTEGER	R/W	0 to 100
I35pictureUserZone1H	I35pictureMarkerTBL.8	INTEGER	R/W	0 to 100
I35pictureUserZone2W	I35pictureMarkerTBL.9	INTEGER	R/W	0 to 100
I35pictureUserZone2H	I35pictureMarkerTBL.10	INTEGER	R/W	0 to 100
I35pictureDispTBL	I35pictureTBL.4	Aggregate	-	-
I35pictureDispSize	I35pictureDispTBL.1	INTEGER	R/W	1 = fit 2 = real 3 = x2 4 = full
I35pictureDisp3gbds	I35pictureDispTBL.3	INTEGER	R/W	1 = stream1 2 = stream2 4 = align
I35pictureDispPosH	I35pictureDispTBL.4	INTEGER	R/W	-32768 to 32767
I35pictureDispPosV	I35pictureDispTBL.5	INTEGER	R/W	-32768 to 32767
I35pictureDispStatusInfo	I35pictureDispTBL.6	INTEGER	R/W	1 = off 2 = on
I35pictureClTBL	I35pictureTBL.7	Aggregate	-	-
I35pictureClDisplay	I35pictureClTBL.1	INTEGER	R/W	1 = off 2 = fstop 3 = perdisplay 4 = cinezone
I35pictureClAdvance	I35pictureClTBL.2	INTEGER	R/W	1 = off 2 = on
I35pictureClMeasurePos	I35pictureClTBL.3	INTEGER	R/W	1 = p1 2 = p2 3 = p3
I35pictureClMeasureNums	I35pictureClTBL.4	INTEGER	R/W	1 = p1 2 = p1p2 3 = p1p2p3
I35pictureClMeasureSize	I35pictureClTBL.5	INTEGER	R/W	1 = size-1x1 2 = size-3x3 3 = size-9x9
I35pictureClRgbUnit	I35pictureClTBL.6	INTEGER	R/W	1 = yper 2 = rgbper 3 = rgb255 4 = codevalue
I35pictureClFstopRefSet	I35pictureClTBL.7	INTEGER	R/WO	1
I35pictureClFstopGammaSel	I35pictureClTBL.8	INTEGER	R/W	2 = user1 3 = user2 4 = user3 5 = usera 6 = userb 7 = userc 8 = userd 9 = usere

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35pictureClFstopGammaCalF	l35pictureClTBL.9	INTEGER	R/W	1 = gamma220 2 = gamma160 3 = gamma110 4 = gamma080 5 = gamma056 6 = gamma040 7 = gamma028 8 = gamma020
l35pictureClFstopGammaCalSet	l35pictureClTBL.10	INTEGER	R/WO	1
l35pictureClFstopGammaCalDataClear	l35pictureClTBL.11	INTEGER	R/WO	1
l35pictureClFstopGammaCalTableClear	l35pictureClTBL.12	INTEGER	R/WO	1
l35pictureClSample	l35pictureClTBL.13	INTEGER	R/W	0 to 32767
l35pictureClLine	l35pictureClTBL.14	INTEGER	R/W	0 to 32767
l35pictureClCzDisplay	l35pictureClTBL.15	INTEGER	R/W	1 = gradate 2 = step 3 = search
l35pictureClCzUpper	l35pictureClTBL.16	DisplayString	R/W	-6.3 to 109.4
l35pictureClCzLower	l35pictureClTBL.17	DisplayString	R/W	-7.3 to 108.4
l35pictureClCzLevel	l35pictureClTBL.18	DisplayString	R/W	-7.3 to 109.4
l35pictureLineselTBL	l35pictureTBL.8	Aggregate	-	-
l35pictureLinesel	l35pictureLineselTBL.1	INTEGER	R/W	1 = off 2 = on
l35pictureLineselNo	l35pictureLineselTBL.2	INTEGER	R/W	0 to 32767
l35pictureLineselField	l35pictureLineselTBL.3	INTEGER	R/W	1 = frame 2 = field1 3 = field2
l35pictureDataTBL	l35pictureTBL.9	Aggregate	-	-
l35pictureDataCineliteP1	l35pictureDataTBL.1	DisplayString	R/O	Cinelite Data
l35pictureDataCineliteP2	l35pictureDataTBL.2	DisplayString	R/O	Cinelite Data
l35pictureDataCineliteP3	l35pictureDataTBL.3	DisplayString	R/O	Cinelite Data
l35pictureHdrTBL (*1)	l35pictureTBL.10	Aggregate	-	-
l35pictureHdrUpperPq10000 (*1)	l35pictureHdrTBL.1	DisplayString	R/W	0.0 to 100.0
l35pictureHdrUpperHlg (*1)	l35pictureHdrTBL.4	DisplayString	R/W	0.0 to 100.0
l35pictureHdrUpperSlog (*1)	l35pictureHdrTBL.5	DisplayString	R/W	3.5 to 109.4
l35pictureHdrRefPq10000 (*1)	l35pictureHdrTBL.6	DisplayString	R/W	0.0 to 100.0
l35pictureHdrRefHlg (*1)	l35pictureHdrTBL.9	DisplayString	R/W	0.0 to 100.0
l35pictureHdrRefSlog (*1)	l35pictureHdrTBL.10	DisplayString	R/W	3.5 to 109.4
l35pictureHdrLowerPq10000 (*1)	l35pictureHdrTBL.11	DisplayString	R/W	0.0 to 100.0
l35pictureHdrLowerHlg (*1)	l35pictureHdrTBL.14	DisplayString	R/W	0.0 to 100.0
l35pictureHdrLowerSlog (*1)	l35pictureHdrTBL.15	DisplayString	R/W	3.5 to 109.4
l35pictureHdrMode (*1)	l35pictureHdrTBL.17	INTEGER	R/W	1:off 2:on
l35pictureHdrBrightness (*1)	l35pictureHdrTBL.18	INTEGER	R/W	1:off 2:on

*1 This is valid when the SER20 is installed.

● **I35statusTBL**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
I35statusModeTBL	I35statusTBL.1	Aggregate	-	-
I35statusModeTop	I35statusModeTBL.1	INTEGER	R/WO	1
I35statusModeDump	I35statusModeTBL.2	INTEGER	R/WO	1
I35statusModeExtref	I35statusModeTBL.3	INTEGER	R/WO	1
I35statusModeAncView	I35statusModeTBL.5	INTEGER	R/WO	1
I35statusModeAncViewDump	I35statusModeTBL.6	INTEGER	R/WO	1
I35statusModeLog	I35statusModeTBL.7	INTEGER	R/WO	1
I35statusModeAncPkt	I35statusModeTBL.8	INTEGER	R/WO	1
I35statusModeEdh	I35statusModeTBL.9	INTEGER	R/WO	1
I35statusModePayload	I35statusModeTBL.10	INTEGER	R/WO	1
I35statusCtrlPkt	I35statusModeTBL.11	INTEGER	R/WO	1
I35statusModeAribCc	I35statusModeTBL.12	INTEGER	R/WO	1
I35statusAribNetq	I35statusModeTBL.13	INTEGER	R/WO	1
I35statusModeAribTrig	I35statusModeTBL.14	INTEGER	R/WO	1
I35statusModeAribUser1	I35statusModeTBL.15	INTEGER	R/WO	1
I35statusModeAribUser2	I35statusModeTBL.16	INTEGER	R/WO	1
I35statusModeSmpteAfd	I35statusModeTBL.19	INTEGER	R/WO	1
I35statusModeSearch	I35statusModeTBL.22	INTEGER	R/WO	1
I35statusErrClear	I35statusModeTBL.23	INTEGER	R/WO	1
I35statusLogTBL	I35statusTBL.2	Aggregate	-	-
I35statusLogging	I35statusLogTBL.1	INTEGER	R/W	1 = stop 2 = start
I35statusLogMode	I35statusLogTBL.2	INTEGER	R/W	1 = overwr 2 = stop
I35statusLogAutoFilename	I35statusLogTBL.3	INTEGER	R/W	1 = off 2 = on
I35statusLogClear	I35statusLogTBL.4	INTEGER	R/WO	1
I35statusLogUsbFileStore	I35statusLogTBL.5	INTEGER	R/WO	1
I35statusDumpTBL	I35statusTBL.3	Aggregate	-	-
I35statusDumpMode	I35statusDumpTBL.1	INTEGER	R/W	1 = run 2 = hold
I35statusDumpDisp	I35statusDumpTBL.3	INTEGER	R/W	1 = serial 2 = compo 3 = binary 7 = stream1 8 = stream2 10 = s1serial 11 = s1compo 12 = s1binary 13 = s2serial 14 = s2compo 15 = s2binary

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35statusDumpJump	l35statusDumpTBL.4	INTEGER	R/W	1 = eav 2 = sav
l35statusDumpAutoFilename	l35statusDumpTBL.6	INTEGER	R/W	1 = off 2 = on
l35statusDumpUsbFileStore	l35statusDumpTBL.7	INTEGER	R/W	1
l35statusDumpSample	l35statusDumpTBL.8	INTEGER	R/W	0 to 32767
l35statusDumpLine	l35statusDumpTBL.9	INTEGER	R/W	0 to 32767
l35statusExtrefTBL	l35statusTBL.4	Aggregate	-	-
l35statusExtrefUserRef	l35statusExtrefTBL.1	INTEGER	R/WO	1
l35statusExtrefDefaultRef	l35statusExtrefTBL.2	INTEGER	R/WO	1
l35statusExtrefSel	l35statusExtrefTBL.3	INTEGER	R/W	1 = ext 2 = sdi
l35statusExtrefTiming	l35statusExtrefTBL.4	INTEGER	R/W	1 = legacy 2 = exact
l35statusAncTBL	l35statusTBL.6	Aggregate	-	-
l35statusAncDumpHold	l35statusAncTBL.1	INTEGER	R/W	1 = hold-hold 2 = hold-1s 3 = hold-3s
l35statusAncDumpMode	l35statusAncTBL.2	INTEGER	R/W	1 = hex 2 = binary
l35statusAncDumpSample	l35statusAncTBL.3	INTEGER	R/W	0 to 258
l35statusAncEdhDisp	l35statusAncTBL.4	INTEGER	R/W	1 = text 2 = dump
l35statusAncEdhMode	l35statusAncTBL.5	INTEGER	R/W	1 = hex 2 = binary
l35statusAncEdhSample	l35statusAncTBL.6	INTEGER	R/W	0 to 19
l35statusAncViewStream	l35statusAncTBL.7	INTEGER	R/W	1 = stream1 2 = stream2
l35statusAncPayloadStream	l35statusAncTBL.8	INTEGER	R/W	1 = stream1 2 = stream2
l35statusAncCtrlDisp	l35statusAncTBL.9	INTEGER	R/W	1 = text 2 = dump
l35statusAncCtrlMode	l35statusAncTBL.10	INTEGER	R/W	1 = hex 2 = binary
l35statusAncCtrlGroup	l35statusAncTBL.11	INTEGER	R/W	1 = group1 2 = group2 3 = group3 4 = group4
l35statusAncCtrlStream	l35statusAncTBL.12	INTEGER	R/W	1 = stream1 2 = stream2
l35statusAribTBL	l35statusTBL.7	Aggregate	-	-
l35statusAribCcDisp	l35statusAribTBL.1	INTEGER	R/W	1 = text 2 = dump

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35statusAribCcType	l35statusAribTBL.2	INTEGER	R/W	1 = hd 2 = sd 3 = analog 4 = cellular
l35statusAribCcMode	l35statusAribTBL.3	INTEGER	R/W	1 = hex 2 = binary
l35statusAribCcSample	l35statusAribTBL.4	INTEGER	R/W	0 to 258
l35statusAribNetqDisp	l35statusAribTBL.6	INTEGER	R/W	1 = text 2 = dump 3 = qlog 4 = format
l35statusAribNetqMode	l35statusAribTBL.7	INTEGER	R/W	1 = hex 2 = binary
l35statusAribNetqSample	l35statusAribTBL.9	INTEGER	R/W	0 to 258
l35statusAribNetqLogPos	l35statusAribTBL.10	INTEGER	R/W	-50 to 50
l35statusAribNetqClear	l35statusAribTBL.12	INTEGER	R/WO	1
l35statusAribNetqMaskNetQ1	l35statusAribTBL.13	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ2	l35statusAribTBL.14	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ3	l35statusAribTBL.15	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ4	l35statusAribTBL.16	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ5	l35statusAribTBL.17	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ6	l35statusAribTBL.18	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ7	l35statusAribTBL.19	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ8	l35statusAribTBL.20	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ9	l35statusAribTBL.21	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ10	l35statusAribTBL.22	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ11	l35statusAribTBL.23	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ12	l35statusAribTBL.24	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ13	l35statusAribTBL.25	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ14	l35statusAribTBL.26	INTEGER	R/W	1 = off 2 = on

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35statusAribNetqMaskNetQ15	l35statusAribTBL.27	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ16	l35statusAribTBL.28	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ17	l35statusAribTBL.29	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ18	l35statusAribTBL.30	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ19	l35statusAribTBL.31	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ20	l35statusAribTBL.32	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ21	l35statusAribTBL.33	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ22	l35statusAribTBL.34	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ23	l35statusAribTBL.35	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ24	l35statusAribTBL.36	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ25	l35statusAribTBL.37	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ26	l35statusAribTBL.38	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ27	l35statusAribTBL.39	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ28	l35statusAribTBL.40	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ29	l35statusAribTBL.41	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ30	l35statusAribTBL.42	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ31	l35statusAribTBL.43	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetQ32	l35statusAribTBL.44	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetS1	l35statusAribTBL.45	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetS2	l35statusAribTBL.46	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetS3	l35statusAribTBL.47	INTEGER	R/W	1 = off 2 = on
l35statusAribNetqMaskNetS4	l35statusAribTBL.48	INTEGER	R/W	1 = off 2 = on

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
I35statusAribNetqMaskNetS5	I35statusAribTBL.49	INTEGER	R/W	1 = off 2 = on
I35statusAribNetqMaskNetS6	I35statusAribTBL.50	INTEGER	R/W	1 = off 2 = on
I35statusAribNetqMaskNetS7	I35statusAribTBL.51	INTEGER	R/W	1 = off 2 = on
I35statusAribNetqMaskNetS8	I35statusAribTBL.52	INTEGER	R/W	1 = off 2 = on
I35statusAribNetqMaskNetS9	I35statusAribTBL.53	INTEGER	R/W	1 = off 2 = on
I35statusAribNetqMaskNetS10	I35statusAribTBL.54	INTEGER	R/W	1 = off 2 = on
I35statusAribNetqMaskNetS11	I35statusAribTBL.55	INTEGER	R/W	1 = off 2 = on
I35statusAribNetqMaskNetS12	I35statusAribTBL.56	INTEGER	R/W	1 = off 2 = on
I35statusAribNetqMaskNetS13	I35statusAribTBL.57	INTEGER	R/W	1 = off 2 = on
I35statusAribNetqMaskNetS14	I35statusAribTBL.58	INTEGER	R/W	1 = off 2 = on
I35statusAribNetqMaskNetS15	I35statusAribTBL.59	INTEGER	R/W	1 = off 2 = on
I35statusAribNetqMaskNetS16	I35statusAribTBL.60	INTEGER	R/W	1 = off 2 = on
I35statusAribTriggerDisp	I35statusAribTBL.61	INTEGER	R/W	1 = text 2 = dump
I35statusAribTriggerMode	I35statusAribTBL.62	INTEGER	R/W	1 = hex 2 = binary
I35statusAribTriggerSample	I35statusAribTBL.63	INTEGER	R/W	0 to 258
I35statusAribTriggerUser1Mode	I35statusAribTBL.65	INTEGER	R/W	1 = hex 2 = binary
I35statusAribTriggerUser1Sample	I35statusAribTBL.66	INTEGER	R/W	0 to 258
I35statusAribTriggerUser2Mode	I35statusAribTBL.68	INTEGER	R/W	1 = hex 2 = binary
I35statusAribTriggerUser2Sample	I35statusAribTBL.69	INTEGER	R/W	0 to 258
I35statusSmpteTBL	I35statusTBL.8	Aggregate	-	-
I35statusSmpteAfdDisp	I35statusSmpteTBL.11	INTEGER	R/W	1 = text 2 = dump
I35statusSmpteAfdMode	I35statusSmpteTBL.12	INTEGER	R/W	1 = hex 2 = binary
I35statusSmpteAfdStream	I35statusSmpteTBL.13	INTEGER	R/W	1 = stream1 2 = stream2
I35statusCustomTBL	I35statusTBL.9	Aggregate	-	-
I35statusCustomSearchDid	I35statusCustomTBL.1	DisplayString	R/W	0 to FF
I35statusCustomSearchSdid	I35statusCustomTBL.2	DisplayString	R/W	-1 to FF

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35statusCustomSearchMode	l35statusCustomTBL.3	INTEGER	R/W	1 = hex 2 = binary
l35statusCustomSearchYc	l35statusCustomTBL.4	INTEGER	R/W	1 = y 2 = c
l35statusCustomSearchStream	l35statusCustomTBL.5	INTEGER	R/W	1 = stream1 2 = stream2
l35statusCustomSearchSet	l35statusCustomTBL.6	INTEGER	R/WO	1
l35statusCustomSearchSample	l35statusCustomTBL.7	INTEGER	R/W	0 to 258
l35statusSetupTBL	l35statusTBL.11	Aggregate	-	-
l35statusSetupErrCounter	l35statusSetupTBL.1	INTEGER	R/W	1 = sec 2 = field
l35statusSetupTrsErr	l35statusSetupTBL.2	INTEGER	R/W	1 = off 2 = on
l35statusSetupLineErr	l35statusSetupTBL.3	INTEGER	R/W	1 = off 2 = on
l35statusSetupCrcErr	l35statusSetupTBL.4	INTEGER	R/W	1 = off 2 = on
l35statusSetupEdhErr	l35statusSetupTBL.5	INTEGER	R/W	1 = off 2 = on
l35statusSetupIllegalErr	l35statusSetupTBL.6	INTEGER	R/W	1 = off 2 = on
l35statusSetupFreqErr	l35statusSetupTBL.7	INTEGER	R/W	1 = off 2 = on
l35statusSetupCableErr	l35statusSetupTBL.8	INTEGER	R/W	1 = off 2 = on
l35statusSetupCable3g	l35statusSetupTBL.9	INTEGER	R/W	1 = cable-ls5cfb 2 = cable-1694a
l35statusSetupCableHd	l35statusSetupTBL.10	INTEGER	R/W	1 = cable-ls5cfb 2 = cable-1694a
l35statusSetupCableSd	l35statusSetupTBL.11	INTEGER	R/W	1 = cable-l5c2v 2 = cable-8281
l35statusSetupCable3gErr	l35statusSetupTBL.12	INTEGER	R/W	10 to 105
l35statusSetupCable3gWarn	l35statusSetupTBL.13	INTEGER	R/W	10 to 105
l35statusSetupCableHdErr	l35statusSetupTBL.14	INTEGER	R/W	5 to 130
l35statusSetupCableHdWarn	l35statusSetupTBL.15	INTEGER	R/W	5 to 130
l35statusSetupCableSdErr	l35statusSetupTBL.16	INTEGER	R/W	50 to 300
l35statusSetupCableSdWarn	l35statusSetupTBL.17	INTEGER	R/W	50 to 300
l35statusSetupParityErr	l35statusSetupTBL.18	INTEGER	R/W	1 = off 2 = on
l35statusSetupChecksumErr	l35statusSetupTBL.19	INTEGER	R/W	1 = off 2 = on
l35statusSetupAudioBch	l35statusSetupTBL.20	INTEGER	R/W	1 = off 2 = on
l35statusSetupAudioDbnErr	l35statusSetupTBL.21	INTEGER	R/W	1 = off 2 = on

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
I35statusSetupAudioPrityErr	I35statusSetupTBL.22	INTEGER	R/W	1 = off 2 = on
I35statusSetupAudioInhibitErr	I35statusSetupTBL.23	INTEGER	R/W	1 = off 2 = on
I35statusSetupAudioSampleErr	I35statusSetupTBL.24	INTEGER	R/W	1 = off 2 = on
I35statusDataTBL	I35statusTBL.12	Aggregate	-	-
I35statusDataSignalA	I35statusDataTBL.1	DisplayString	R/O	Signal Data
I35statusDataSignalB	I35statusDataTBL.2	DisplayString	R/O	Signal Data
I35statusDataSignalC	I35statusDataTBL.3	DisplayString	R/O	Signal Data
I35statusDataSignalD	I35statusDataTBL.4	DisplayString	R/O	Signal Data
I35statusDataLinkA	I35statusDataTBL.5	DisplayString	R/O	Link Data
I35statusDataLinkB	I35statusDataTBL.6	DisplayString	R/O	Link Data
I35statusDataLinkC	I35statusDataTBL.7	DisplayString	R/O	Link Data
I35statusDataLinkD	I35statusDataTBL.8	DisplayString	R/O	Link Data
I35statusDataFormatA	I35statusDataTBL.9	DisplayString	R/O	Format Data
I35statusDataFormatB	I35statusDataTBL.10	DisplayString	R/O	Format Data
I35statusDataFormatC	I35statusDataTBL.11	DisplayString	R/O	Format Data
I35statusDataFormatD	I35statusDataTBL.12	DisplayString	R/O	Format Data
I35statusDataAudioA	I35statusDataTBL.13	DisplayString	R/O	Audio Data
I35statusDataAudioB	I35statusDataTBL.14	DisplayString	R/O	Audio Data
I35statusDataAudioC	I35statusDataTBL.15	DisplayString	R/O	Audio Data
I35statusDataAudioD	I35statusDataTBL.16	DisplayString	R/O	Audio Data
I35statusDataExtrefA	I35statusDataTBL.17	INTEGER	R/O	1 = userref 2 = default
I35statusDataExtrefStatA	I35statusDataTBL.18	INTEGER	R/O	2 = sdi1a 8 = exthd 9 = extbb 10 = nosignal
I35statusDataExtrefHtimeA	I35statusDataTBL.19	DisplayString	R/O	H Phase [us]
I35statusDataExtrefHpixA	I35statusDataTBL.20	DisplayString	R/O	H Phase [pix/dot]
I35statusDataExtrefVlineA	I35statusDataTBL.21	DisplayString	R/O	V Phase
I35statusDataExtrefTotalA	I35statusDataTBL.22	DisplayString	R/O	Total Pahse
I35statusDataExtrefB	I35statusDataTBL.23	INTEGER	R/O	1 = userref 2 = default
I35statusDataExtrefStatB	I35statusDataTBL.24	INTEGER	R/O	2 = sdi1a 8 = exthd 9 = extbb 10 = nosignal
I35statusDataExtrefHtimeB	I35statusDataTBL.25	DisplayString	R/O	H Phase [us]
I35statusDataExtrefHpixB	I35statusDataTBL.26	DisplayString	R/O	H Phase [pix/dot]
I35statusDataExtrefVlineB	I35statusDataTBL.27	DisplayString	R/O	V Phase
I35statusDataExtrefTotalB	I35statusDataTBL.28	DisplayString	R/O	Total Pahse
I35statusDataExtrefC	I35statusDataTBL.29	INTEGER	R/O	1 = userref 2 = default

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
I35statusDataExtrefStatC	I35statusDataTBL.30	INTEGER	R/O	2 = sdi1a 8 = exthd 9 = extbb 10 = nosignal
I35statusDataExtrefHtimeC	I35statusDataTBL.31	DisplayString	R/O	H Phase [us]
I35statusDataExtrefHpixC	I35statusDataTBL.32	DisplayString	R/O	H Phase [pix/dot]
I35statusDataExtrefVlineC	I35statusDataTBL.33	DisplayString	R/O	V Phase
I35statusDataExtrefTotalC	I35statusDataTBL.34	DisplayString	R/O	Total Pahse
I35statusDataExtrefD	I35statusDataTBL.35	INTEGER	R/O	1 = userref 2 = default
I35statusDataExtrefStatD	I35statusDataTBL.36	INTEGER	R/O	2 = sdi1a 8 = exthd 9 = extbb 10 = nosignal
I35statusDataExtrefHtimeD	I35statusDataTBL.37	DisplayString	R/O	H Phase [us]
I35statusDataExtrefHpixD	I35statusDataTBL.38	DisplayString	R/O	H Phase [pix/dot]
I35statusDataExtrefVlineD	I35statusDataTBL.39	DisplayString	R/O	V Phase
I35statusDataExtrefTotalD	I35statusDataTBL.40	DisplayString	R/O	Total Pahse
I35statusDataAncAudioCtrl1	I35statusDataTBL.49	INTEGER	R/O	1 = detect 2 = missing 3 = unknown
I35statusDataAncAudioCtrl2	I35statusDataTBL.50	INTEGER	R/O	1 = detect 2 = missing 3 = unknown
I35statusDataAncEdh	I35statusDataTBL.51	INTEGER	R/O	1 = detect 2 = missing 3 = unknown
I35statusDataAncLtc1	I35statusDataTBL.52	INTEGER	R/O	1 = detect 2 = missing 3 = unknown
I35statusDataAncLtc2	I35statusDataTBL.53	INTEGER	R/O	1 = detect 2 = missing 3 = unknown
I35statusDataAncVitc1	I35statusDataTBL.54	INTEGER	R/O	1 = detect 2 = missing 3 = unknown
I35statusDataAncVitc2	I35statusDataTBL.55	INTEGER	R/O	1 = detect 2 = missing 3 = unknown
I35statusDataAncPayload1	I35statusDataTBL.56	INTEGER	R/O	1 = detect 2 = missing 3 = unknown
I35statusDataAncPayload2	I35statusDataTBL.57	INTEGER	R/O	1 = detect 2 = missing 3 = unknown

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
I35statusDataAncAfd1	I35statusDataTBL.64	INTEGER	R/O	1 = detect 2 = missing 3 = unknown
I35statusDataAncAfd2	I35statusDataTBL.65	INTEGER	R/O	1 = detect 2 = missing 3 = unknown
I35statusDataAncJpnCc1	I35statusDataTBL.66	INTEGER	R/O	1 = detect 2 = missing 3 = unknown
I35statusDataAncJpnCc2	I35statusDataTBL.67	INTEGER	R/O	1 = detect 2 = missing 3 = unknown
I35statusDataAncJpnCc3	I35statusDataTBL.68	INTEGER	R/O	1 = detect 2 = missing 3 = unknown
I35statusDataAncNetq1	I35statusDataTBL.69	INTEGER	R/O	1 = detect 2 = missing 3 = unknown
I35statusDataAncTrigger	I35statusDataTBL.71	INTEGER	R/O	1 = detect 2 = missing 3 = unknown
I35statusDataAncUser1	I35statusDataTBL.72	INTEGER	R/O	1 = detect 2 = missing 3 = unknown
I35statusDataAncUser2	I35statusDataTBL.73	INTEGER	R/O	1 = detect 2 = missing 3 = unknown
I35statusDataAncPktPayload	I35statusDataTBL.74	DisplayString	R/O	Payload ID
I35statusDataAncPktAribNetqStation	I35statusDataTBL.75	DisplayString	R/O	Station Code
I35statusDataAncPktAribNetqVcurr	I35statusDataTBL.76	DisplayString	R/O	Video Current
I35statusDataAncPktAribNetqVNext	I35statusDataTBL.77	DisplayString	R/O	Video Next
I35statusDataAncPktAribNetqACurr	I35statusDataTBL.78	DisplayString	R/O	Audio Current
I35statusDataAncPktAribNetqANext	I35statusDataTBL.79	DisplayString	R/O	Audio Next
I35statusDataAncPktAribNetqDCurr	I35statusDataTBL.80	DisplayString	R/O	Downmix Current
I35statusDataAncPktAribNetqDNext	I35statusDataTBL.81	DisplayString	R/O	Downmix Next
I35statusDataAncPktSmpteAfdCode	I35statusDataTBL.82	DisplayString	R/O	AFD Code
I35statusDataAncPktSmpteAfdFrame	I35statusDataTBL.83	DisplayString	R/O	Coded Frame
I35statusDataAncPktSmpteAfdBarFlg	I35statusDataTBL.84	DisplayString	R/O	Bar Data Flags
I35statusDataAncPktSmpteAfdBarVal1	I35statusDataTBL.85	DisplayString	R/O	Bar Data Value1
I35statusDataAncPktSmpteAfdBarVal2	I35statusDataTBL.86	DisplayString	R/O	Bar Data Value2

- **I35audioTBL (when the SER03 is not installed)**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
I35audioMapTBL	I35audioTBL.1	Aggregate	-	-
I35audioMapInputSrc	I35audioMapTBL.1	INTEGER	R/W	1 = sdi

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35audioMapStreamSelect	l35audioMapTBL.3	INTEGER	R/W	1 = stream1 2 = stream2
l35audioMapChMode	l35audioMapTBL.4	INTEGER	R/W	1 = mode-8ch
l35audioMapSdiGroup1	l35audioMapTBL.5	INTEGER	R/W	1 = g1 2 = g2 3 = g3 4 = g4
l35audioMapSdiGroup2	l35audioMapTBL.6	INTEGER	R/W	1 = g1 2 = g2 3 = g3 4 = g4
l35audioMapPhonesL	l35audioMapTBL.9	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapPhonesR	l35audioMapTBL.10	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapSimSdiGroup1	l35audioMapTBL.78	INTEGER	R/W	1 = group1 2 = group2 3 = group3 4 = group4
l35audioMapSimSdiGroup2	l35audioMapTBL.79	INTEGER	R/W	1 = group1 2 = group2 3 = group3 4 = group4
l35audioMapSimSdiGroup1Ch	l35audioMapTBL.82	INTEGER	R/W	1 = a 2 = b 3 = c 4 = d
l35audioMapSimSdiGroup2Ch	l35audioMapTBL.83	INTEGER	R/W	1 = a 2 = b 3 = c 4 = d
l35audioMapSimPhonesL	l35audioMapTBL.104	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapSimPhonesR	l35audioMapTBL.105	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapComplete	l35audioMapTBL.160	INTEGER	R/WO	1
l35audioMeterTBL	l35audioTBL.3	Aggregate	-	-
l35audioMeterRange	l35audioMeterTBL.1	INTEGER	R/W	1 = range-60dbfs
l35audioMeterResponse	l35audioMeterTBL.2	INTEGER	R/W	1 = truepeak
l35audioMeterOverDbfs	l35audioMeterTBL.6	DisplayString	R/W	-40.0 to 0
l35audioMeterWarnDbfs	l35audioMeterTBL.8	DisplayString	R/W	-40.0 to 0
l35audioMeterRefDbfs	l35audioMeterTBL.10	DisplayString	R/W	-40.0 to 0

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35audioPhonesTBL	l35audioTBL.8	Aggregate	-	-
l35audioPhonesVolume	l35audioPhonesTBL.1	INTEGER	R/W	0 to 63
l35audioErrorTBL	l35audioTBL.9	Aggregate	-	-
l35audioErrorLevel	l35audioErrorTBL.1	INTEGER	R/W	1 = off 2 = on
l35audioErrorMute	l35audioErrorTBL.3	INTEGER	R/W	1 = off 2 = on
l35audioErrorMuteDuration	l35audioErrorTBL.9	INTEGER	R/W	1 to 5000
l35audioErrorReset	l35audioErrorTBL.10	INTEGER	R/WO	1
l35audDataTBL	l35audioTBL.11	Aggregate	-	-
l35audDataStatusLevelCh1	l35audDataTBL.1	DisplayString	R/O	Ch1 Level
l35audDataStatusLevelCh2	l35audDataTBL.2	DisplayString	R/O	Ch2 Level
l35audDataStatusLevelCh3	l35audDataTBL.3	DisplayString	R/O	Ch3 Level
l35audDataStatusLevelCh4	l35audDataTBL.4	DisplayString	R/O	Ch4 Level
l35audDataStatusLevelCh5	l35audDataTBL.5	DisplayString	R/O	Ch5 Level
l35audDataStatusLevelCh6	l35audDataTBL.6	DisplayString	R/O	Ch6 Level
l35audDataStatusLevelCh7	l35audDataTBL.7	DisplayString	R/O	Ch7 Level
l35audDataStatusLevelCh8	l35audDataTBL.8	DisplayString	R/O	Ch8 Level
l35audDataStatusLevelCh9	l35audDataTBL.9	DisplayString	R/O	Ch9 Level
l35audDataStatusLevelCh10	l35audDataTBL.10	DisplayString	R/O	Ch10 Level
l35audDataStatusLevelCh11	l35audDataTBL.11	DisplayString	R/O	Ch11 Level
l35audDataStatusLevelCh12	l35audDataTBL.12	DisplayString	R/O	Ch12 Level
l35audDataStatusLevelCh13	l35audDataTBL.13	DisplayString	R/O	Ch13 Level
l35audDataStatusLevelCh14	l35audDataTBL.14	DisplayString	R/O	Ch14 Level
l35audDataStatusLevelCh15	l35audDataTBL.15	DisplayString	R/O	Ch15 Level
l35audDataStatusLevelCh16	l35audDataTBL.16	DisplayString	R/O	Ch16 Level

- **l35audioTBL (When the SER03 is installed)**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35audioMapTBL	l35audioTBL.1	Aggregate	-	-
l35audioMapInputSrc	l35audioMapTBL.1	INTEGER	R/W	1 = sdi 2 = ext-digi
l35audioMapStreamSelect	l35audioMapTBL.3	INTEGER	R/W	1 = stream1 2 = stream2
l35audioMapChMode	l35audioMapTBL.4	INTEGER	R/W	1 = mode-8ch 2 = mode-16ch
l35audioMapSdiGroup1	l35audioMapTBL.5	INTEGER	R/W	1 = g1 2 = g2 3 = g3 4 = g4
l35audioMapSdiGroup2	l35audioMapTBL.6	INTEGER	R/W	1 = g1 2 = g2 3 = g3 4 = g4

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35audioMapSdiGroup3	l35audioMapTBL.7	INTEGER	R/W	1 = g1 2 = g2 3 = g3 4 = g4
l35audioMapSdiGroup4	l35audioMapTBL.8	INTEGER	R/W	1 = g1 2 = g2 3 = g3 4 = g4
l35audioMapPhonesL	l35audioMapTBL.9	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16 17 = chIt
l35audioMapPhonesR	l35audioMapTBL.10	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16 18 = chrt
l35audioMapLissajouSL	l35audioMapTBL.32	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16 17 = chIt
l35audioMapLissajouSR	l35audioMapTBL.33	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16 18 = chrt
l35audioMapLissajouML1	l35audioMapTBL.34	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapLissajouMR1	l35audioMapTBL.35	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapLissajouML2	l35audioMapTBL.36	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapLissajouMR2	l35audioMapTBL.37	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapLissajouML3	l35audioMapTBL.38	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapLissajouMR3	l35audioMapTBL.39	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapLissajouML4	l35audioMapTBL.40	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
I35audioMapLissajouMR4	I35audioMapTBL.41	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
I35audioMapLissajouML5	I35audioMapTBL.42	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
I35audioMapLissajouMR5	I35audioMapTBL.43	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
I35audioMapLissajouML6	I35audioMapTBL.44	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
I35audioMapLissajouMR6	I35audioMapTBL.45	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
I35audioMapLissajouML7	I35audioMapTBL.46	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
I35audioMapLissajouMR7	I35audioMapTBL.47	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
I35audioMapLissajouML8	I35audioMapTBL.48	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
I35audioMapLissajouMR8	I35audioMapTBL.49	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
I35audioMapSurroundL	I35audioMapTBL.50	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
I35audioMapSurroundR	I35audioMapTBL.51	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
I35audioMapSurroundC	I35audioMapTBL.52	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
I35audioMapSurroundLfe	I35audioMapTBL.53	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
I35audioMapSurroundLs	I35audioMapTBL.54	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
I35audioMapSurroundRs	I35audioMapTBL.55	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35audioMapSurroundLl	l35audioMapTBL.56	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapSurroundRr	l35audioMapTBL.57	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapSimSdiGroup1	l35audioMapTBL.78	INTEGER	R/W	1 = group1 2 = group2 3 = group3 4 = group4
l35audioMapSimSdiGroup2	l35audioMapTBL.79	INTEGER	R/W	1 = group1 2 = group2 3 = group3 4 = group4
l35audioMapSimSdiGroup3	l35audioMapTBL.80	INTEGER	R/W	1 = group1 2 = group2 3 = group3 4 = group4
l35audioMapSimSdiGroup4	l35audioMapTBL.81	INTEGER	R/W	1 = group1 2 = group2 3 = group3 4 = group4
l35audioMapSimSdiGroup1Ch	l35audioMapTBL.82	INTEGER	R/W	1 = a 2 = b 3 = c 4 = d
l35audioMapSimSdiGroup2Ch	l35audioMapTBL.83	INTEGER	R/W	1 = a 2 = b 3 = c 4 = d
l35audioMapSimSdiGroup3Ch	l35audioMapTBL.84	INTEGER	R/W	1 = a 2 = b 3 = c 4 = d
l35audioMapSimSdiGroup4Ch	l35audioMapTBL.85	INTEGER	R/W	1 = a 2 = b 3 = c 4 = d
l35audioMapSimLissajouML1	l35audioMapTBL.88	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapSimLissajouMR1	l35audioMapTBL.89	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35audioMapSimLissajouML2	l35audioMapTBL.90	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapSimLissajouMR2	l35audioMapTBL.91	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapSimLissajouML3	l35audioMapTBL.92	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapSimLissajouMR3	l35audioMapTBL.93	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapSimLissajouML4	l35audioMapTBL.94	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapSimLissajouMR4	l35audioMapTBL.95	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapSimLissajouML5	l35audioMapTBL.96	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapSimLissajouMR5	l35audioMapTBL.97	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapSimLissajouML6	l35audioMapTBL.98	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapSimLissajouMR6	l35audioMapTBL.99	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapSimLissajouML7	l35audioMapTBL.100	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapSimLissajouMR7	l35audioMapTBL.101	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapSimLissajouML8	l35audioMapTBL.102	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapSimLissajouMR8	l35audioMapTBL.103	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapSimPhonesL	l35audioMapTBL.104	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35audioMapSimPhonesR	l35audioMapTBL.105	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtInputGroup	l35audioMapTBL.108	INTEGER	R/W	1 = group1 2 = group2
l35audioMapExtLissajouSL	l35audioMapTBL.109	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16 17 = chlt
l35audioMapExtLissajouSR	l35audioMapTBL.110	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16 18 = chrt
l35audioMapExtLissajouML1	l35audioMapTBL.111	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtLissajouMR1	l35audioMapTBL.112	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtLissajouML2	l35audioMapTBL.113	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtLissajouMR2	l35audioMapTBL.114	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtLissajouML3	l35audioMapTBL.115	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtLissajouMR3	l35audioMapTBL.116	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtLissajouML4	l35audioMapTBL.117	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtLissajouMR4	l35audioMapTBL.118	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtLissajouML5	l35audioMapTBL.119	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtLissajouMR5	l35audioMapTBL.120	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtLissajouML6	l35audioMapTBL.121	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35audioMapExtLissajouMR6	l35audioMapTBL.122	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtLissajouML7	l35audioMapTBL.123	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtLissajouMR7	l35audioMapTBL.124	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtLissajouML8	l35audioMapTBL.125	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtLissajouMR8	l35audioMapTBL.126	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtSurroundL	l35audioMapTBL.127	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtSurroundR	l35audioMapTBL.128	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtSurroundC	l35audioMapTBL.129	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtSurroundLfe	l35audioMapTBL.130	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtSurroundLs	l35audioMapTBL.131	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtSurroundRs	l35audioMapTBL.132	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtSurroundLl	l35audioMapTBL.133	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtSurroundRr	l35audioMapTBL.134	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioMapExtPhonesL	l35audioMapTBL.135	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16 17 = chIt

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35audioMapExtPhonesR	l35audioMapTBL.136	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16 18 = chrt
l35audioMapComplete	l35audioMapTBL.160	INTEGER	R/WO	1
l35audioDispTBL	l35audioTBL.2	Aggregate	-	-
l35audioDispMode	l35audioDispTBL.1	INTEGER	R/W	1 = lissajou 2 = surround 3 = meter 4 = error 5 = chstatus 6 = userbit 7 = status 8:loudness 18 = log
l35audioMeterTBL	l35audioTBL.3	Aggregate	-	-
l35audioMeterRange	l35audioMeterTBL.1	INTEGER	R/W	1 = range-60dbfs 2 = range-90dbfs 3 = range-mag
l35audioMeterResponse	l35audioMeterTBL.2	INTEGER	R/W	1 = truepeak 2 = ppm 3 = vu
l35audioMeterPpmMode	l35audioMeterTBL.3	INTEGER	R/W	1 = mode1 2 = mode2
l35audioMeterPeakMeter	l35audioMeterTBL.4	INTEGER	R/W	1 = true 2 = ppm1 3 = ppm2
l35audioMeterPeakHold	l35audioMeterTBL.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
l35audioMeterOverDbfs	l35audioMeterTBL.6	DisplayString	R/W	-40.0 to 0
l35audioMeterWarnDbfs	l35audioMeterTBL.8	DisplayString	R/W	-40.0 to 0
l35audioMeterRefDbfs	l35audioMeterTBL.10	DisplayString	R/W	-40.0 to 0
l35audioLissajouIntenTBL	l35audioTBL.4	Aggregate	-	-
l35audioLissajouInten	l35audioLissajouIntenTBL.1	INTEGER	R/W	-8 to 7

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35audioLissajouScaleInten	l35audioLissajouIntenTBL.2	INTEGER	R/W	-8 to 7
l35audioLissajouMode	l35audioLissajouIntenTBL.3	INTEGER	R/W	1 = multi 2 = single
l35audioLissajouForm	l35audioLissajouIntenTBL.4	INTEGER	R/W	1 = xy 2 = matrix
l35audioLissajouAutoGain	l35audioLissajouIntenTBL.5	INTEGER	R/W	1 = off 2 = on
l35audioSurroundTBL	l35audioTBL.5	Aggregate	-	-
l35audioSurroundInten	l35audioSurroundTBL.1	INTEGER	R/W	-8 to 7
l35audioSurroundScaleInten	l35audioSurroundTBL.2	INTEGER	R/W	-8 to 7
l35audioSurroundMode	l35audioSurroundTBL.3	INTEGER	R/W	1 = normal 2 = phantom
l35audioSurroundAutoGain	l35audioSurroundTBL.4	INTEGER	R/W	1 = off 2 = on
l35audioStatusTBL	l35audioTBL.6	Aggregate	-	-
l35audioStatusCh	l35audioStatusTBL.3	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioStatusChSimul	l35audioStatusTBL.4	INTEGER	R/W	19 = cha1 (omitted) 34 = cha16 35 = chb1 (omitted) 50 = chb16 51 = chc1 (omitted) 66 = chc16 67 = chd1 (omitted) 82 = chd16
l35audioStatusChExt	l35audioStatusTBL.6	INTEGER	R/W	19 = cha1 (omitted) 26 = cha8 35 = chb1 (omitted) 42 = chb8
l35audioStatusChAlign	l35audioStatusTBL.7	INTEGER	R/W	1 = lsb 2 = msb
l35audioStatusBitDisp	l35audioStatusTBL.8	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35audioStatusBitDispSimul	l35audioStatusTBL.9	INTEGER	R/W	19 = cha1 (omitted) 34 = cha16 35 = chb1 (omitted) 50 = chb16 51 = chc1 (omitted) 66 = chc16 67 = chd1 (omitted) 82 = chd16
l35audioStatusBitDispExt	l35audioStatusTBL.11	INTEGER	R/W	19 = cha1 (omitted) 26 = cha8 35 = chb1 (omitted) 42 = chb8
l35audioStatusBitDispAlign	l35audioStatusTBL.12	INTEGER	R/W	1 = lsb 2 = msb
l35audioLoudnessTBL	l35audioTBL.7	Aggregate	-	-
l35audioLoudnessPeriod	l35audioLoudnessTBL.1	INTEGER	R/W	1 = 2min 2 = 10min 3 = 30min 4 = 1h 5 = 2h 6 = 6h 7 = 12h 8 = 24h
l35audioLoudnessMag	l35audioLoudnessTBL.2	INTEGER	R/W	1 = off 2 = on
l35audioLoudnessResponse	l35audioLoudnessTBL.3	INTEGER	R/W	1 = momentary 2 = shortterm
l35audioLoudnessClear	l35audioLoudnessTBL.4	INTEGER	R/WO	1
l35audioLoudnessMeasure	l35audioLoudnessTBL.5	INTEGER	R/W	1 = stop 2 = start
l35audioLoudnessMeasMode	l35audioLoudnessTBL.6	INTEGER	R/W	1 = bs 2 = arib 3 = ebu 4 = atsc
l35audioLoudnessTargetLv	l35audioLoudnessTBL.7	INTEGER	R/O	-240 to -230
l35audioLoudnessThold	l35audioLoudnessTBL.8	INTEGER	R/O	0 to 20
l35audioLoudnessBlockSize	l35audioLoudnessTBL.9	INTEGER	R/O	400
l35audioLoudnessOverlapSize	l35audioLoudnessTBL.10	INTEGER	R/0	0 to 75

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35audioLoudnessAbsGating	l35audioLoudnessTBL.11	INTEGER	R/O	-100 to -70
l35audioLoudnessRelGating	l35audioLoudnessTBL.12	INTEGER	R/W	-100 to -10
l35audioLoudnessLfeMode	l35audioLoudnessTBL.13	INTEGER	R/W	1 = off 2 = on
l35audioLoudnessLfeGain	l35audioLoudnessTBL.14	INTEGER	R/W	0 to 10
l35audioLoudnessShortAve	l35audioLoudnessTBL.15	INTEGER	R/W	2 to 100
l35audioLoudnessMomentAve	l35audioLoudnessTBL.16	INTEGER	R/W	2 to 100
l35audioLoudnessTrigger	l35audioLoudnessTBL.17	INTEGER	R/W	1 = manual 2 = remote 3 = tc 4 = mute
l35audioLoudnessMain	l35audioLoudnessTBL.20	INTEGER	R/W	1 = mono 2 = stereo 3 = surr51 4 = custom
l35audioLoudnessChL	l35audioLoudnessTBL.21	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16 17 = nc
l35audioLoudnessChR	l35audioLoudnessTBL.22	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16 17 = nc
l35audioLoudnessChC	l35audioLoudnessTBL.23	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16 17 = nc
l35audioLoudnessChLfe	l35audioLoudnessTBL.24	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16 17 = nc
l35audioLoudnessChLs	l35audioLoudnessTBL.25	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16 17 = nc
l35audioLoudnessChRs	l35audioLoudnessTBL.26	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16 17 = nc

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35audioLoudnessChSub	l35audioLoudnessTBL.27	INTEGER	R/W	1 = off 2 = mono 3 = stereo
l35audioLoudnessSubChL	l35audioLoudnessTBL.28	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioLoudnessSubChR	l35audioLoudnessTBL.29	INTEGER	R/W	1 = ch1 (omitted) 16 = ch16
l35audioLoudnessChartSetting	l35audioLoudnessTBL.46	INTEGER	R/W	1 = integrated 2 = shortterm 3 = momentary
l35audioLoudnessOverMark	l35audioLoudnessTBL.47	INTEGER	R/W	1 = off 2 = on
l35audioLoudnessRelative	l35audioLoudnessTBL.48	INTEGER	R/W	1 = off 2 = on
l35audioPhonesTBL	l35audioTBL.8	Aggregate	-	-
l35audioPhonesVolume	l35audioPhonesTBL.1	INTEGER	R/W	0 to 63
l35audioErrorTBL	l35audioTBL.9	Aggregate	-	-
l35audioErrorLevel	l35audioErrorTBL.1	INTEGER	R/W	1 = off 2 = on
l35audioErrorClip	l35audioErrorTBL.2	INTEGER	R/W	1 = off 2 = on
l35audioErrorMute	l35audioErrorTBL.3	INTEGER	R/W	1 = off 2 = on
l35audioErrorParity	l35audioErrorTBL.4	INTEGER	R/W	1 = off 2 = on
l35audioErrorValidity	l35audioErrorTBL.5	INTEGER	R/W	1 = off 2 = on
l35audioErrorCrc	l35audioErrorTBL.6	INTEGER	R/W	1 = off 2 = on
l35audioErrorCode	l35audioErrorTBL.7	INTEGER	R/W	1 = off 2 = on
l35audioErrorClipDuration	l35audioErrorTBL.8	INTEGER	R/W	1 to 100
l35audioErrorMuteDuration	l35audioErrorTBL.9	INTEGER	R/W	1 to 5000
l35audioErrorReset	l35audioErrorTBL.10	INTEGER	R/WO	1
l35audDataTBL	l35audioTBL.11	Aggregate	-	-
l35audDataStatusLevelCh1	l35audDataTBL.1	DisplayString	R/O	Ch1 Level
l35audDataStatusLevelCh2	l35audDataTBL.2	DisplayString	R/O	Ch2 Level
l35audDataStatusLevelCh3	l35audDataTBL.3	DisplayString	R/O	Ch3 Level
l35audDataStatusLevelCh4	l35audDataTBL.4	DisplayString	R/O	Ch4 Level
l35audDataStatusLevelCh5	l35audDataTBL.5	DisplayString	R/O	Ch5 Level
l35audDataStatusLevelCh6	l35audDataTBL.6	DisplayString	R/O	Ch6 Level
l35audDataStatusLevelCh7	l35audDataTBL.7	DisplayString	R/O	Ch7 Level
l35audDataStatusLevelCh8	l35audDataTBL.8	DisplayString	R/O	Ch8 Level

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35audDataStatusLevelCh9	l35audDataTBL.9	DisplayString	R/O	Ch9 Level
l35audDataStatusLevelCh10	l35audDataTBL.10	DisplayString	R/O	Ch10 Level
l35audDataStatusLevelCh11	l35audDataTBL.11	DisplayString	R/O	Ch11 Level
l35audDataStatusLevelCh12	l35audDataTBL.12	DisplayString	R/O	Ch12 Level
l35audDataStatusLevelCh13	l35audDataTBL.13	DisplayString	R/O	Ch13 Level
l35audDataStatusLevelCh14	l35audDataTBL.14	DisplayString	R/O	Ch14 Level
l35audDataStatusLevelCh15	l35audDataTBL.15	DisplayString	R/O	Ch15 Level
l35audDataStatusLevelCh16	l35audDataTBL.16	DisplayString	R/O	Ch16 Level

- **l35trapTBL**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l35trapIpTBL	l35trapTBL.1	Aggregate	-	-
l35trapIp1TBL	l35trapIpTBL.1	Aggregate	-	-
l35trapManagerIp1	l35trapIp1TBL.1	IpAddress	R/W	IP Address
l35trapManagerIp1Act	l35trapIp1TBL.2	INTEGER	R/W	1 = enable 2 = disable
l35trapIp2TBL	l35trapIpTBL.2	Aggregate	-	-
l35trapManagerIp2	l35trapIp2TBL.1	IpAddress	R/W	IP Address
l35trapManagerIp2Act	l35trapIp2TBL.2	INTEGER	R/W	1 = enable 2 = disable
l35trapIp3TBL	l35trapIpTBL.3	Aggregate	-	-
l35trapManagerIp3	l35trapIp3TBL.1	IpAddress	R/W	IP Address
l35trapManagerIp3Act	l35trapIp3TBL.2	INTEGER	R/W	1 = enable 2 = disable
l35trapIp4TBL	l35trapIpTBL.4	Aggregate	-	-
l35trapManagerIp4	l35trapIp4TBL.1	IpAddress	R/W	IP Address
l35trapManagerIp4Act	l35trapIp4TBL.2	INTEGER	R/W	1 = enable 2 = disable

17.5.5 TRAP

- **index 1**

  OID: iso(1).org(3).dod(6).internet(1).mgmt(2).mib-2(1).system(1).sysUpTime(3).0
  SYNTAX: TimeTicks
  VALUE/RANGE: 1 to 4294967295
  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
  VALUE/RANGE: ---
  Description: Trap OID

- **index 3**

  OID: leader(20111).lv7390(35).lv7390ST1(1).l35notificationTBL(0).l35trapStrTBL(2).l35trapCounter(1)
  SYNTAX: Counter32
  VALUE/RANGE: 1 to 4294967295
  Description: The total number of enterprise traps sent after starting up

- **index 4**

  OID: leader(20111).lv7390(35).lv7390ST1(1).l35notificationTBL(0).l35trapStrTBL(2).l35trapInternalTimestamp(2)
  SYNTAX: DisplayString
  VALUE/RANGE: Up to 20 characters
  Description: Date and time of error occurrence

- **index 5**

  OID: leader(20111).lv7390(35).lv7390ST1(1).l35notificationTBL(0).l35trapStrTBL(2).l35trapInputCh(3)
  SYNTAX: INTEGER
  VALUE/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).lv7390(35).lv7390ST1(1).l35notificationTBL(0).l35trapStrTBL(2).l35trapInputSignal(4)
  SYNTAX: DisplayString
  VALUE/RANGE: Up to 20 characters
  Description: Format information

- **index 7**

  OID: leader(20111).lv7390(35).lv7390ST1(1).l35notificationTBL(0).l35trapContentTBL(1).l35trapErrorTBL(1).X
  Or
  leader(20111).lv7390(35).lv7390ST1(1).l35notificationTBL(0).l35trapContentTBL(1).l35trapNormalTBL(2).X
  SYNTAX: DisplayString
  VALUE/RANGE: Up to 16 characters
  Description: OID indicating the error and error information character string (See l35notificationTBL.)

  * The OID of l35notificationTBL(0).l35trapContentTBL(1).l35trapErrorTBL(1).X when an error occurs or l35notificationTBL(0).l35trapContentTBL(1).l35trapNormalTBL(2).X when the error recovers and error information are sent in a character string.

- **index 8**

  OID: leader(20111).lv7390(35).lv7390ST1(1).l35notificationTBL(0).l35trapStrTBL(2).l35trapCableLen(5)
  SYNTAX: INTEGER
  VALUE/RANGE: 1 to 32767
  Description: Cable length

  * Output only when index 7 is l35trapContentTBL(1).l35TrapErrorTBL(1).l35trapErrorCableWarn(5).

18. REMOTE

You can use the remote 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 7390.

● Remote Connector Diagram

The remote connector diagram as viewed from the rear panel is shown below.

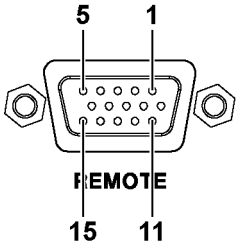


Figure 18-1 Remote connector (female, inch screws)

● Configuring the LV 7390

To set the remote connector, use the system settings. See section 6.2.3, “Setting the Remote Connector.”

To display tallies through the remote connector, Tally Control Select must be set to Remote.

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

Figure 18-2 REMOTE SETUP tab

Each remote mode is described below. Depending on the selected mode, the items that can be controlled vary as follows.

Table 18-1 Remote mode

	Bit	Binary	Command	Tally
Load presets	P	Y	Y	N
Switch input channels	Y	Y	Y	N
Alarm output	Y	Y	Y	Y
Tally display	N	N	P	Y
Loudness control (SER03)	Y	Y	N	N

(Y: supported; P: partially supported N: not supported)

18.1 Bit Mode

This section describes the control method when Remote Mode in system settings is set to Bit.

● **Pinout**

Table 18-2 Pinout

Pin No.	I/O	Name	Description
1	-	OPEN	Open (*1)
2	I	/P1	Loads preset 1
3	I	/P2	Loads preset 2
4	I	/P3	Loads preset 3
5	I	/P4	Loads preset 4
6	I	/P5	Loads preset 5
7	I	/P6	Loads preset 6
8	I	/P7	Loads preset 7 / clears loudness measurement (SER03) (*2)
9	I	/P8	Loads preset 8 / starts/stops the loudness measurement (SER03) (*2)
10	I	/ACH	Selects channel A
11	I	/BCH	Selects channel B
12	I	/CCH	Selects channel C
13	I	/DCH	Selects channel D
14	O	ALARM	Alarm output
15	-	GND	Ground

*1 Do not connect anything.

*2 When Remote Select is set to Recall, preset recalling is enabled. When it is set to Recall and Loudness, loudness measurement control is enabled.

● **Control**

The input connectors respond to active-low signals. Do not apply negative voltages or voltages that exceed +5 V. The active-low signal must be stable for at least 350 ms. After that, wait at least 1 second before applying the next signal.

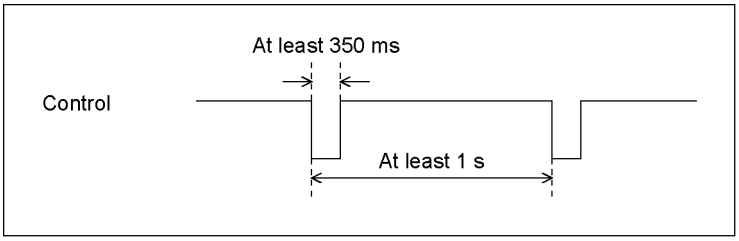


Figure 18-3 Control timing 1

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, control 2 will be discarded.)

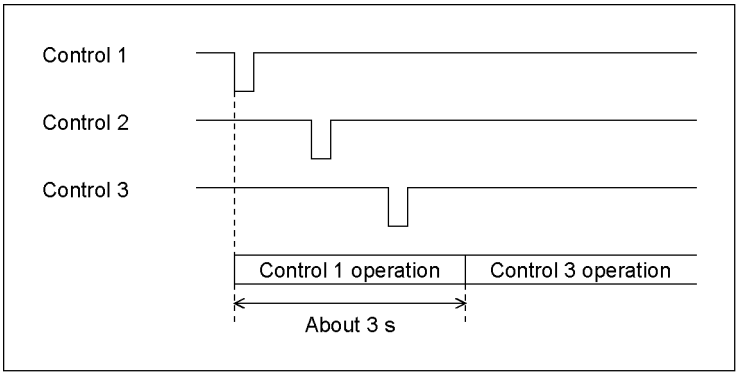


Figure 18-4 Control timing 2

● **Recalling a Preset**

You can use pins 2 to 9 of the remote connector to load presets.
In Bit mode, presets 1 to 8 can be recalled out of presets 1 to 60. Set the number to recall to low level.

Note that when Remote Select is Recall and Loudness, pins 2 to 7 of the remote connector can be used to recall presets No. 1 to 6. (SER03)

● **Switching Input Channels**

You can use pins 10 to 13 of the remote connector to switch the input channel.
Channels that you set to low will be turned on, and channels that you set to high will be turned off. However, in single input mode, you cannot turn multiple channels on.

● **Alarm output**

An alarm is transmitted from pin 14 of the remote connector in the following situations.

• When a format other than that specified 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 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 yellow)

● **Loudness control measurement (SER03)**

To control loudness measurement, set Remote Select to Recall and Loudness, and use pins 8 and 9 of the remote connector. See section 13.10.6, “Configuring Loudness Settings”

Table 18-3 Loudness control

	9p (/P8)	8p (/P7)
Clears loudness measurement	-	L
Starts loudness measurement	L	-
Stops loudness measurement	H	-

18.2 Binary Mode

This section describes the control method when Remote Mode in system settings is set to Binary.

- **Pinout**
- **Control**
- **Switching Input Channels**
- **Alarm output**
- **Loudness control measurement (SER03)**

  This is the same as Bit mode. See section 18.1, “Bit Mode.”

- **Recalling a Preset**

  You can use pins 2 to 7 of the remote connector to load presets.

Table 18-4 Loading presets

Presets 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

Presets No.	7p /P6	6p /P5	5p /P4	4p /P3	3p /P2	2p /P1
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
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

18.3 Command Mode

This section describes the control method when Remote Mode in system settings is set to Command.

● **Pinout**

Table 18-5 Pinout

Pin No.	I/O	Name	Description
1	-	OPEN	Open (*1)
2	I	/F1	Function 1
3	I	/F2	Function 2
4	I	/F3	Function 3
5	I	/F4	Function 4
6	I	/F5	Function 5
7	I	/F6	Function 6
8	I	/F7	Function 7
9	I	/F8	Function 8
10	I	CMD1	Command 1
11	I	CMD2	Command 2
12	I	CMD3	Command 3
13	I	/STR	Strobe
14	O	ALARM	Alarm output
15	-	GND	Ground

*1 Do not connect anything.

The functions that can be assigned to pins 2 to 9 of the remote connector vary depending on the setting specified by pins 10 to 12 as follows.

Table 18-6 Command mode functions

Pin No.	Function			
	Preset recall (Bit)	Preset recall (Binary)	Input channel switching	Tally display
10	H	L	L	H
11	H	H	L	H
12	H	H	H	L
2	Recall 1	Recall 1 (LSB)	Selects channel A	Channel A tally 1 display
3	Recall 2	Recall 2	Selects channel B	Channel A tally 2 display
4	Recall 3	Recall 3	Selects channel C	Channel B tally 1 display
5	Recall 4	Recall 4	Selects channel D	Channel B tally 2 display
6	Recall 5	Recall 5	-	Channel C tally 1 display
7	Recall 6	Recall 6 (MSB)	-	Channel C tally 2 display
8	Recall 7	-	-	Channel D tally 1 display
9	Recall 8	-	-	Channel D tally 2 display

● **Control**

Strobe signals are used for Command mode control. Data is retrieved when the strobe signal is at low level. Strobe signals should maintain a stable state for at least 350 ms.
Be careful because changing a command or function setting while the strobe signal is at low level can result in unexpected settings. (The correct setting will return after some time.)

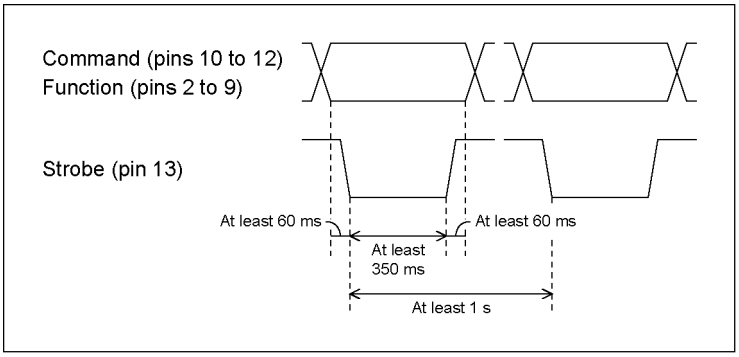


Figure 18-5 Control timing

● **Loading presets (Bit)**

● **Switching Input Channels**

● **Alarm output**

These are the same as Bit mode. See section 18.1, “Bit Mode.”

● **Loading presets (Binary)**

This is the same as Binary mode. See section 18.2, “Binary Mode.”

● **Tally Display**

You can use pins 2 to 9 of the remote connector to display tallies.
Tallies that you set to low will be turned on, and those that you set to high will be turned off.
To display tallies, you must place TALLY items in the layout, or set Tally Frame to ON.

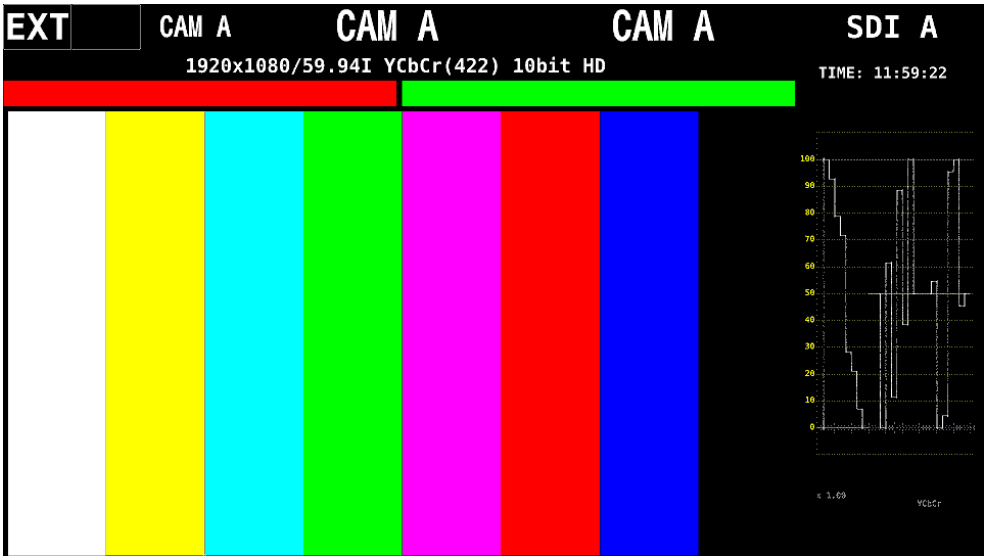


Figure 18-6 Tally display

18.4 Tally Mode

This section describes the control method when Remote Mode in system settings is set to Tally.

● **Pinout**

Table 18-7 Pinout

Pin No.	I/O	Name	Description
1	-	OPEN	Open (*1)
2	I	/AT1	Channel A tally 1 display
3	I	/AT2	Channel A tally 2 display
4	I	/ATE	Channel A tally EX display
5	I	/BT1	Channel B tally 1 display
6	I	/BT2	Channel B tally 2 display
7	I	/BTE	Channel B tally EX display
8	I	/CT1	Channel C tally 1 display
9	I	/CT2	Channel C tally 2 display
10	I	/CTE	Channel C tally EX display
11	I	/DT1	Channel D tally 1 display
12	I	/DT2	Channel D tally 2 display
13	I	/DTE	Channel D tally EX display
14	O	ALARM	Alarm output
15	-	GND	Ground

*1 Do not connect anything.

● **Control**

The input connectors respond to active-low signals. Tallies light at low level and turns off at high level.
Set the low level period to at least 32 ms.

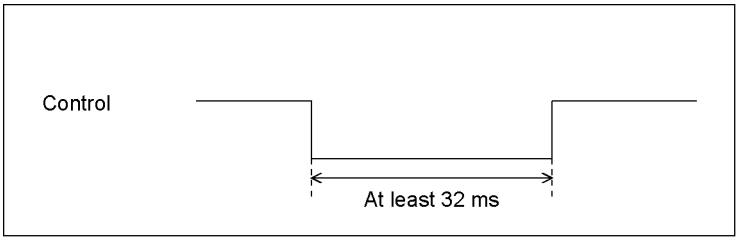


Figure 18-7　Control timing

● **Alarm output**

These are the same as Bit mode. See section 18.1, “Bit Mode.”

● **Tally Display**

You can use pins 2 to 13 of the remote connector to display tallies.
Tallies that you set to low will be turned on, and those that you set to high will be turned off.
To display tallies, you must place TALLY items in the layout, or set Tally Frame to ON.

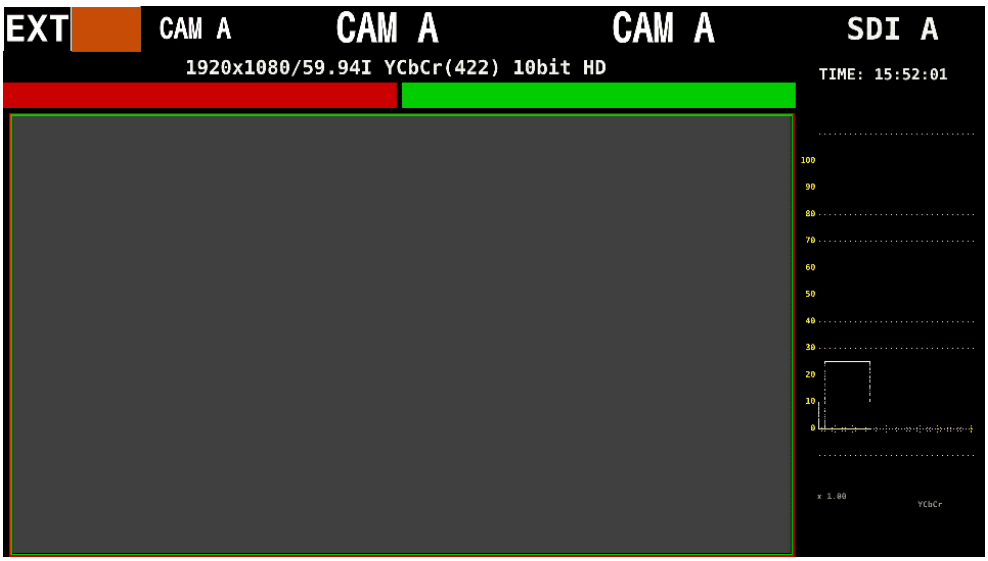


Figure 18-8　Tally display

19. RS-422/485

You can recall presets, switch input channels, display tallies, and display camera IDs through the RS-422/485 connector on the rear panel.

● Interface System

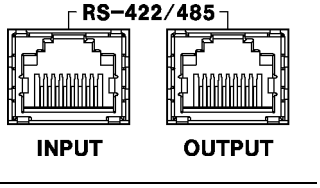
Table 19-1 Interface system

Synchronization mode	Asynchronous start-stop
Data transfer time	9600 to 115200 bps
Data length	8bit
Parity	None
Stop bits	1bit
Transmission order	LSB First
Error detection	Detection through checksum only
Output method	RS485 4-wire
Output connector	RJ-45

● Pinout

Table 19-2 Pinout

Pin No.	Name	Pin No.	Name
1	TX+	5	OPEN
2	TX-	6	RX-
3	RX+	7	GND
4	OPEN	8	GND



● Connection Example

An example is shown below of a connection for controlling two LV 7390s from a PC.

PC			First LV 7390 (*1)						Second LV 7390 (*2)					
			INPUT			OUTPUT			INPUT			OUTPUT		
Pin No.	Name		Pin No.	Name		Pin No.	Name		Pin No.	Name		Pin No.	Name	
1	TX+	→	3	RX+	(→)	3	RX+	→	3	RX+	(→)	3	RX+	
2	TX-	→	6	RX-	(→)	6	RX-	→	6	RX-	(→)	6	RX-	
3	RX+	←	1	TX+	(←)	1	TX+	←	1	TX+	(←)	1	TX+	
4	OPEN		4	OPEN		4	OPEN		4	OPEN		4	OPEN	
5	OPEN		5	OPEN		5	OPEN		5	OPEN		5	OPEN	
6	RX-	←	2	TX-	(←)	2	TX-	←	2	TX-	(←)	2	TX-	
7	GND		7	GND		7	GND		7	GND		7	GND	
8	GND		8	GND		8	GND		8	GND		8	GND	

*1 Set Termination Setting in system settings to OFF.

*2 Set Termination Setting in system settings to ON.

● **Configuring the LV 7390**

To configure RS-422/485 settings, use the system settings. See section 6.2.4, “Configuring the RS-422/485 Settings.”
To set the camera ID through the RS-422/485 connector, ID Control Select must be set to RS485.

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

Figure 19-1　RS485 SETUP tab

For setting the tally display, see section 6.2.3, “Setting the Remote Connector.”
To display tallies through the RS-422/485 connector, Tally Control Select must be set to RS485.

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

Figure 19-2　REMOTE SETUP tab

19.1 Transmission Commands

The transmission command format is shown below.

Table 19-3 Transmission commands

byte	Transmission Commands	Description	Reference
0	02h	STX	-
1	37h	Header 1	-
2	33h	Header 2	-
3	39h	Header 3	-
4	30h	Header 4	-
5	30h to 39h	Sender IP address 1	19.1.1, “Setting the IP Address”
6	30h to 39h	Sender IP address 2	
7	30h to 39h	LV 7390 address 1	
8	30h to 39h	LV 7390 address 2	
9	30h	RESERVED	-
10	30h	RESERVED	-
11	30h/31h	Keyword 1	19.1.2, “Setting Keywords and Parameters.”
12	30h to 32h	Keyword 2	
13 and above	-	Parameter	
-	30h to 39h/41h to 46h	Checksum 1	19.1.3, “Setting the Checksum”
-	30h to 39h/41h to 46h	Checksum 2	
-	03h	ETX	-

● **Note**

• If there is a gap of 100 ms or longer in the middle of a command, the command up to that point will be discarded.
• If an incorrect address or format is sent, the command will be ignored.
• After sending a command, verify that it has been acknowledged before sending the next command.

19.1.1 Setting the Address

Set the address in the range of 00 to 99 using a 4 byte ASCII code.
To set the LV 7390 address, use Device Address in the system settings.

byte	Transmission Commands	Description
5	30h to 39h	Sender IP address 1
6	30h to 39h	Sender IP address 2
7	30h to 39h	LV 7390 address 1
8	30h to 39h	LV 7390 address 2

Example: To specify “sender address: 28, LV 7390 address: 35,” set “32h 38h 33h 35h.”

19.1.2 Setting Keywords and Parameters

Keyword and parameter settings vary depending on the function to be controlled.
The command for each function is described below.

● Recalling a Preset

Set the preset in the range of 1 to 60 using a 2 byte ASCII code.

byte	Transmission Commands	Description
11	30h	Keyword 1
12	30h	Keyword 2
13	30h to 36h	Preset 1
14	30h to 39h	Preset 2

Example: To recall preset number 28, set “30h 30h 32h 38h.”

● Switching Input Channels

Collectively set the on and off states of channels A to D.
You can omit the command for channels that do not need to be changed.

byte	Transmission Commands	Description
11	30h	Keyword 1
12	31h	Keyword 2
13	41h	Ach
14	30h	OFF
	31h	ON
15	2Ch	Separator
16	42h	Bch
17	30h	OFF
	31h	ON
18	2Ch	Separator
19	43h	Cch
20	30h	OFF
	31h	ON
21	2Ch	Separator
22	44h	Dch
23	30h	OFF
	31h	ON
24	2Ch	Separator

Example: To specify “Ach: ON, Bch: OFF, Cch: no change, Dch: ON,”
set “30h 31h 41h 31h 2Ch 42h 30h 2Ch 44h 31h 2Ch.”
Ach Bch Dch

● **Tally Display**

Collectively set the tally display of channels A to D.
You can omit the command for channels that do not need to be changed.
To display tallies, you must place TALLY items in the layout, or set Tally Frame to ON.

byte	Transmission Commands	Description
11	30h	Keyword 1
12	32h	Keyword 2
13	41h	Ach
14	30h	TALLY-1: OFF TALLY-2: OFF TALLY-EXT: OFF
	31h	TALLY-1: ON TALLY-2: OFF TALLY-EXT: OFF
	32h	TALLY-1: OFF TALLY-2: ON TALLY-EXT: OFF
	33h	TALLY-1: ON TALLY-2: ON TALLY-EXT: OFF
	34h	TALLY-1: OFF TALLY-2: OFF TALLY-EXT: ON
	35h	TALLY-1: ON TALLY-2: OFF TALLY-EXT: ON
	36h	TALLY-1: OFF TALLY-2: ON TALLY-EXT: ON
	37h	TALLY-1: ON TALLY-2: ON TALLY-EXT: ON
15	2Ch	Separator
16	42h	Bch
17	30h to 37h	Tally on/off (see byte 14)
18	2Ch	Separator
19	43h	Cch
20	30h to 37h	Tally on/off (see byte 14)
21	2Ch	Separator
22	44h	Dch
23	30h to 37h	Tally on/off (see byte 14)
24	2Ch	Separator

Example: To specify “Ach: all ON, Bch: all OFF, Cch: no change, Dch: all ON,”
set “30h 32h 41h 31h 2Ch 42h 30h 2Ch 44h 31h 2Ch.”
Ach Bch Dch

● **Camera ID Display (collectively setting)**

Collectively set the camera ID display of channels A to D.
You can omit the command for channels or labels that do not need to be changed.
To display camera IDs, you must place LABEL-1, LABEL-2, and IRIS items in the layout.

byte	Transmission Commands	Description
11	31h	Keyword 1
12	30h	Keyword 2
13	41h	Ach
14	31h	LABEL-1
15	30h	No change
	31h	Left justified
	32h	Center justified
	33h	Right justified
16 to 31	ASCII code: 1 byte (20h to 7Eh) Shift JIS code: 2byte	• 16 bytes max. • Two channels not allowed • Default value (CAM A) if not set
32	2Ch	Separator
33	32h	LABEL-2
34	30h to 33h	Placement (see byte 15)
35 to 50	ASCII/Shift JIS	Character string (see bytes 16 to 31)
51	2Ch	Separator
52	33h	IRIS
53	30h to 33h	Placement (see byte 15)
54 to 69	ASCII/Shift JIS	Character string (see bytes 16 to 31)
70	2Ch	Separator
71	2Ch	Separator
72	42h	Bch
73 to 130	-	Channel B data (see bytes 14 to 71)
131	43h	Cch
132 to 189	-	Channel C data (see bytes 14 to 71)
190	44h	Dch
191 to 248	-	Channel D data (see bytes 14 to 71)

Example: To specify “Ach: LABEL-1=Tokyo1, LABEL-2=Tokyo2, IRIS=(delete), all left justified
Bch: LABEL-1=Osaka1, LABEL-2=Osaka2, IRIS=(no change), all center justified
Cch: all no change
Dch: all delete, set
“31h 30h
41h 31h 31h 93h 8Ch 8Bh 9Eh 31h 2Ch 32h 31h 93h 8Ch 8Bh 9Eh 32h 2Ch 33h 2Ch 2Ch
Ach LABEL-1 LABEL-2 IRIS
42h 31h 32h 91h E5h 8Dh E3h 31h 2Ch 32h 32h 91h E5h 8Dh E3h 32h 2Ch 2Ch
Bch LABEL-1 LABEL-2
44h 31h 2Ch 32h 2Ch 33h 2Ch 2Ch.”
Dch LABEL-1 LABEL-2 IRIS

● **Camera ID Display (collective channel setting)**

Set the camera ID display collectively for each channel.
You can omit the command for settings that do not need to be changed.
To display camera IDs, you must place LABEL-1, LABEL-2, and IRIS items in the layout.

byte	Transmission Commands	Description
11	31h	Keyword 1
12	31h	Keyword 2
13	41h	Ach
	42h	Bch
	43h	Cch
	44h	Dch
14	31h	LABEL-1
15	30h	No change
	31h	Left justified
	32h	Center justified
	33h	Right justified
16 to 31	ASCII code: 1 byte (20h to 7Eh) Shift JIS code: 2byte	• 16 bytes max. • Two channels not allowed • Default value (CAM A/B/C/D) if not set
32	2Ch	Separator
33	32h	LABEL-2
34	30h to 33h	Placement (see byte 15)
35 to 50	ASCII/Shift JIS	Character string (see bytes 16 to 31)
51	2Ch	Separator
52	33h	IRIS
53	30h to 33h	Placement (see byte 15)
54 to 69	ASCII/Shift JIS	Character string (see bytes 16 to 31)
70	2Ch	Separator

Example: To specify “Cch: LABEL-1=Tokyo1, LABEL-2=(no change), IRIS=4.0, do not change any of the placements,”
set “31h 31h 43h 31h 30h 93h 8Ch 8Bh 9Eh 31h 2Ch 33h 30h 34h 2Eh 30h 2Ch.”
Cch LABEL-1 IRIS

● **Camera ID Display (partial setting)**

Set the camera ID display for each item.
To display camera IDs, you must place LABEL-1, LABEL-2, and IRIS items in the layout.

byte	Transmission Commands	Description
11	31h	Keyword 1
12	32h	Keyword 2
13	41h	Ach
	42h	Bch
	43h	Cch
	44h	Dch
14	31h	LABEL-1
	32h	LABEL-2
	33h	IRIS
15	30h	No change
	31h	Left justified
	32h	Center justified
	33h	Right justified
16 to 31	ASCII code: 1 byte (20h to 7Eh) Shift JIS code: 2byte	• 16 bytes max. • Two channels not allowed • Default value (CAM A/B/C/D) if not set
32	2Ch	Separator

Example: To specify “Dch: LABEL-2=Tokyo1, left justified,”
set “31h 32h 44h 32h 31h 93h 8Ch 8Bh 9Eh 31h 2Ch.”

19.1.3 Setting the Checksum

Add the data from the header to the parameters, and set the lower two digits using a 2 byte ASCII code.

As an example, the checksum for the following command will be calculated.

Sender IP address: 01
LV 7390 address: 00
Function: Recall preset number 1

When we add the data from the header to the parameters, we obtain
37h + 33h + 39h + 30h + 30h + 31h + 30h + 30h + 30h + 30h + 30h + 30h + 31h = 2B5h
Therefore, we set 42h (B) for checksum1 and 35h (5) for checksum2.

byte	Transmission Commands	Description	
0	02h	STX	
1	37h	Header 1	Checksum calculation range
2	33h	Header 2	
3	39h	Header 3	
4	30h	Header 4	
5	30h	Sender IP address 1	
6	31h	Sender IP address 2	
7	30h	LV 7390 address 1	
8	30h	LV 7390 address 2	
9	30h	RESERVED	
10	30h	RESERVED	
11	30h	Keyword 1	
12	30h	Keyword 2	
13	30h	Parameter 1	
14	31h	Parameter 2	
15	(42h)	Checksum 1	
16	(35h)	Checksum 2	
17	03h	ETX	

19.2 Response Messages

The following three response messages are available. The format of each is shown below.

Table 19-4 Response messages

byte	Response Messages			Description
	Normal	Format error	Checksum error	
0	02h	02h	02h	STX
1	37h	37h	37h	Header 1
2	33h	33h	33h	Header 2
3	39h	39h	39h	Header 3
4	30h	30h	30h	Header 4
5	30h to 39h	30h to 39h	30h to 39h	Sender IP address 1
6	30h to 39h	30h to 39h	30h to 39h	Sender IP address 2
7	30h to 39h	30h to 39h	30h to 39h	LV 7390 address 1
8	30h to 39h	30h to 39h	30h to 39h	LV 7390 address 2
9	30h	30h	30h	RESERVED
10	30h	30h	30h	RESERVED
11	38h	38h	38h	Keyword 1
12	30h	31h	31h	Keyword 2
13	30h	30h	31h	Parameter 1
14	30h	31h	30h	Parameter 2
15	03h	03h	03h	ETX

● **Note**

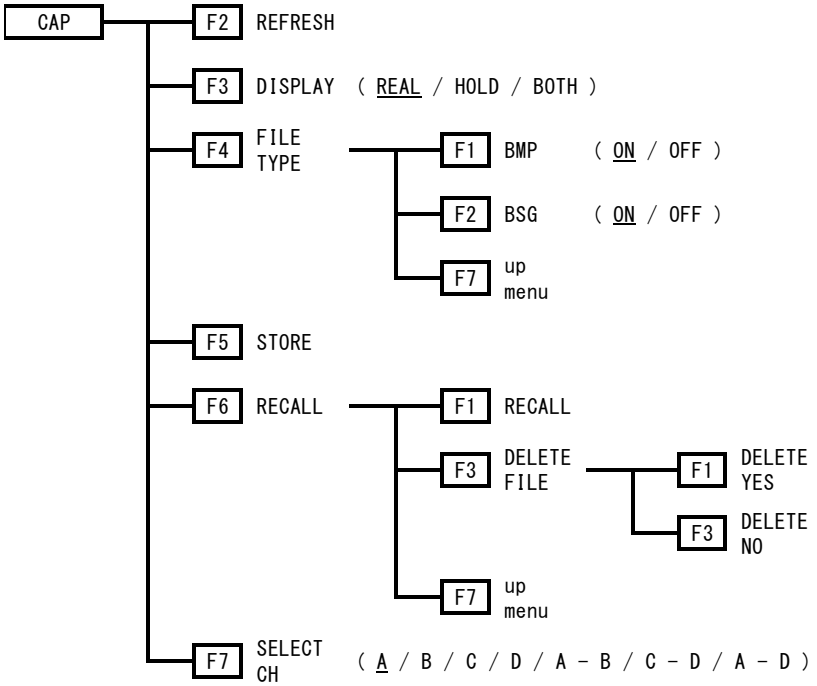
• Response messages are returned for recalling presets, switching input channels, and displaying tallies when the LV 7390 completes the configuration and for displaying camera IDs when the LV 7390 receives the command.

• The BUS is set to drive only when a response is returned for a setting command.

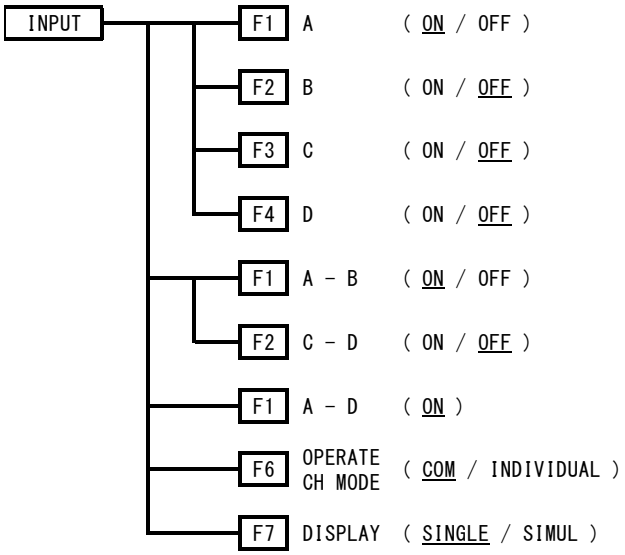
20. MENU TREE

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 7390 settings and whether a USB memory device is connected to the LV 7390.

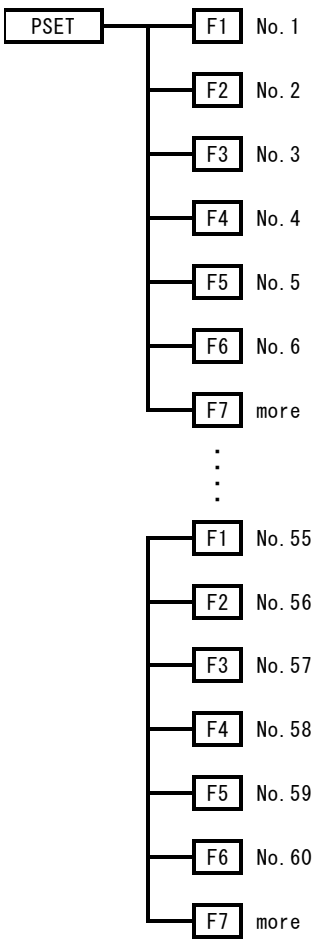
20.1 CAP menu

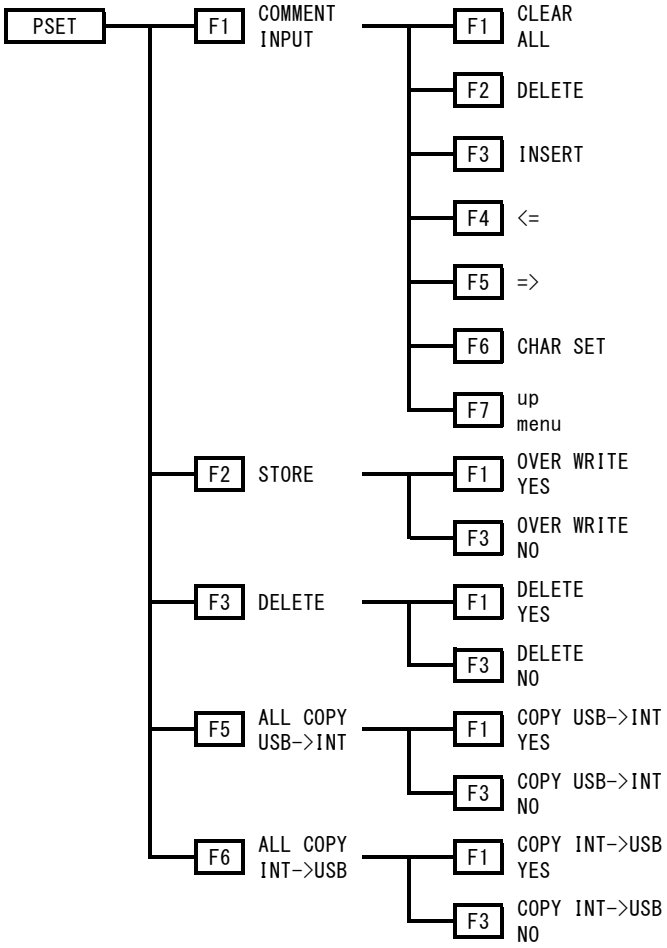


20.2 INPUT menu

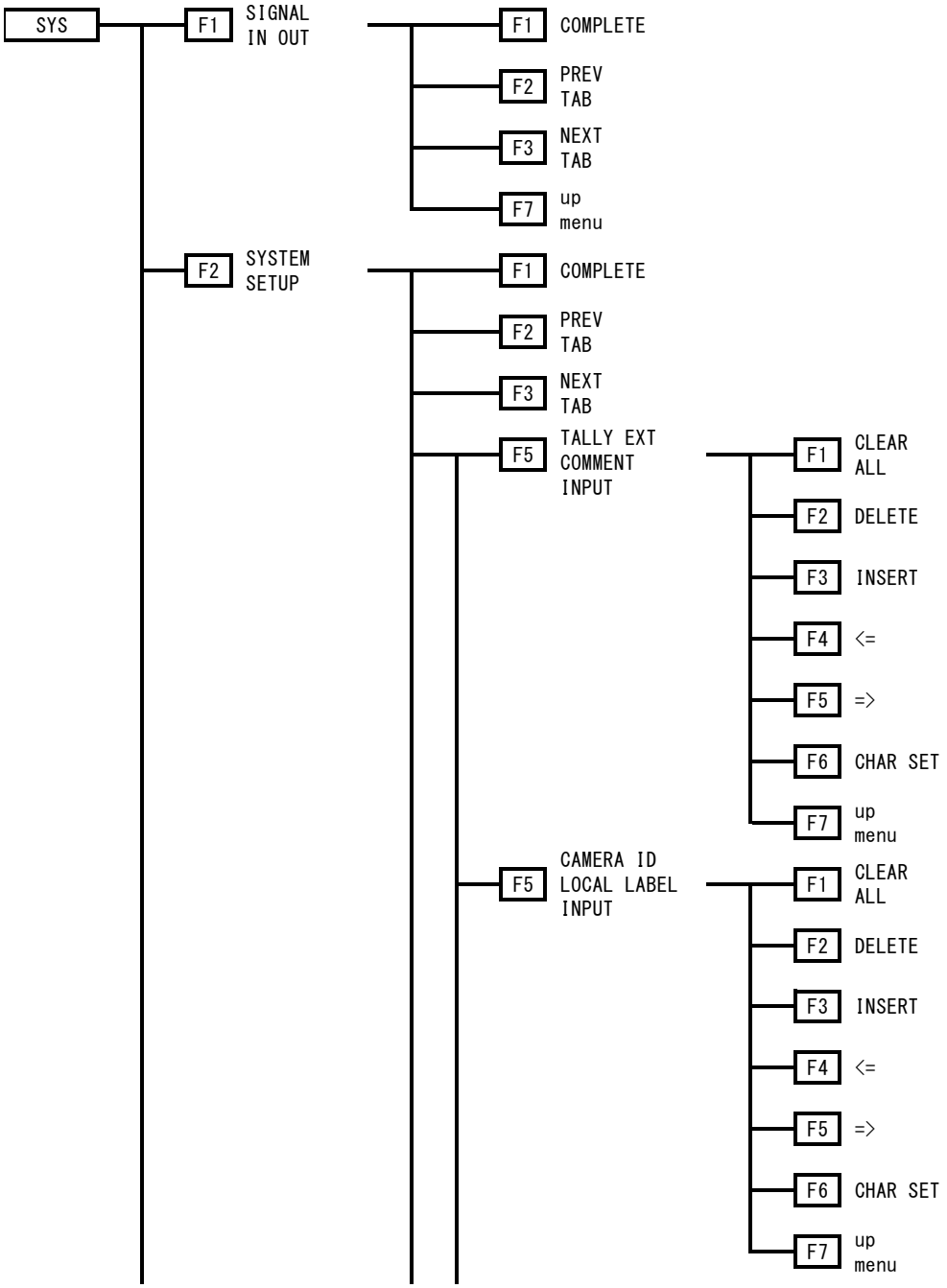


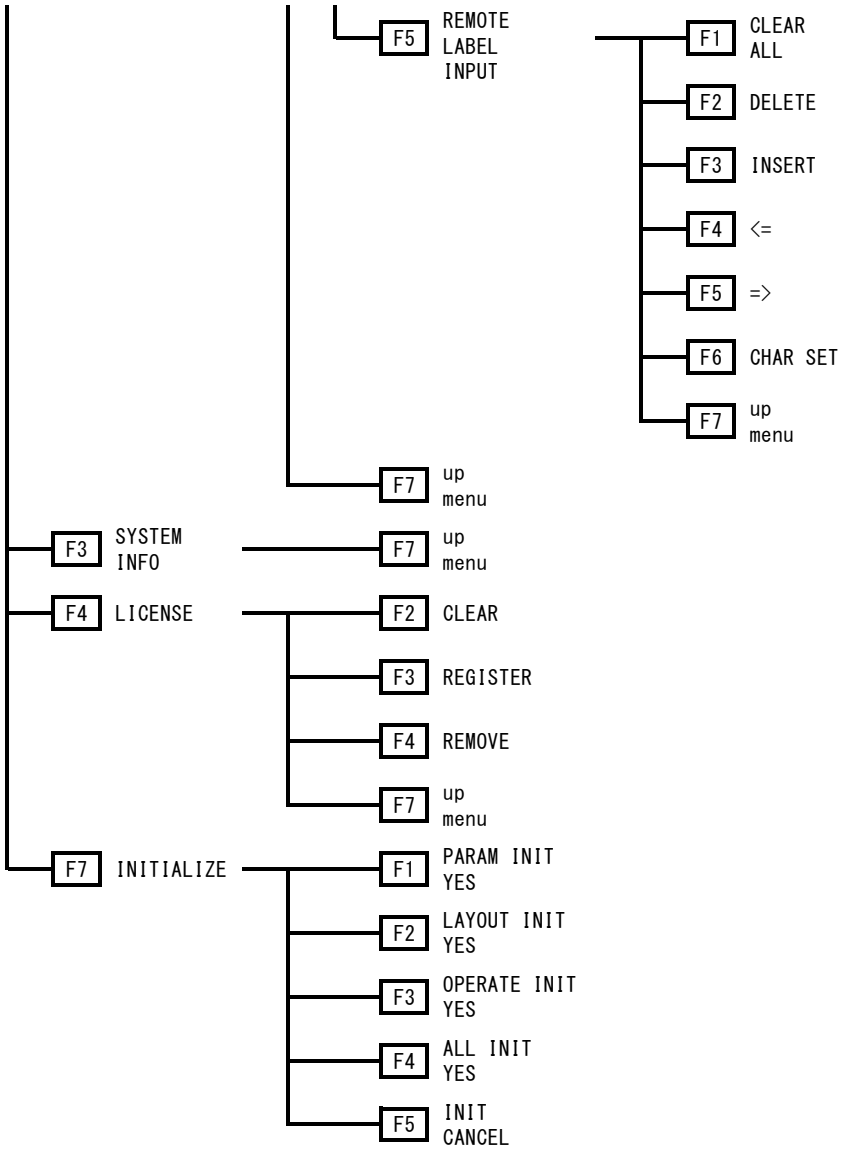
20.3 PSET menu



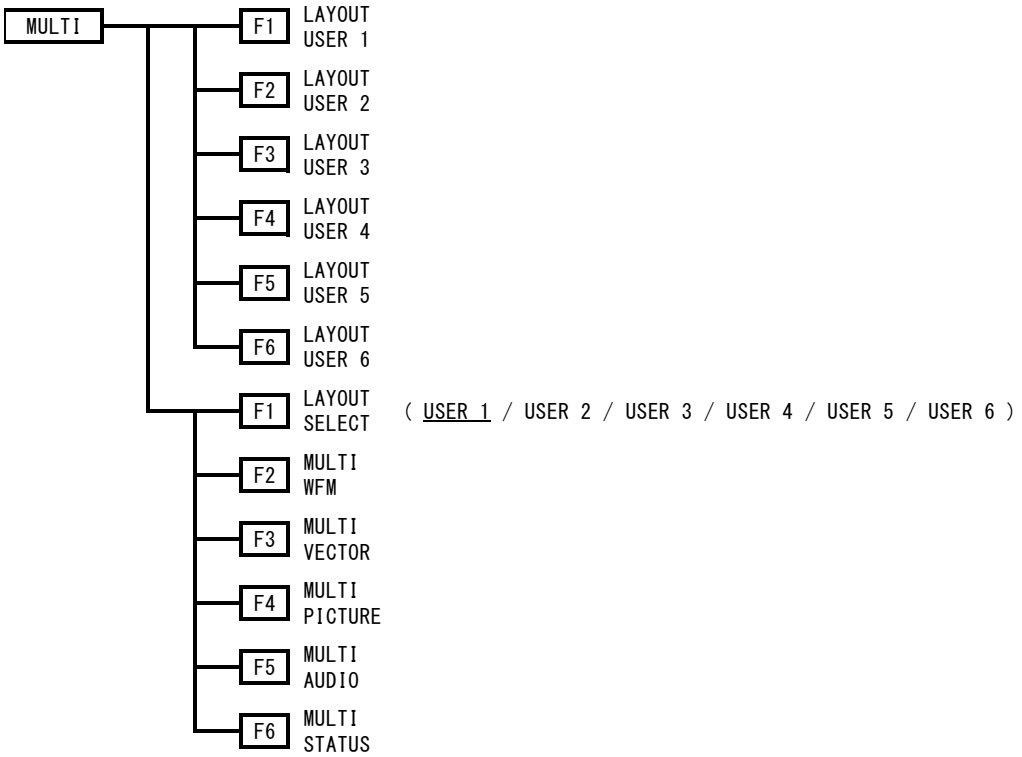


20.4 SYS menu

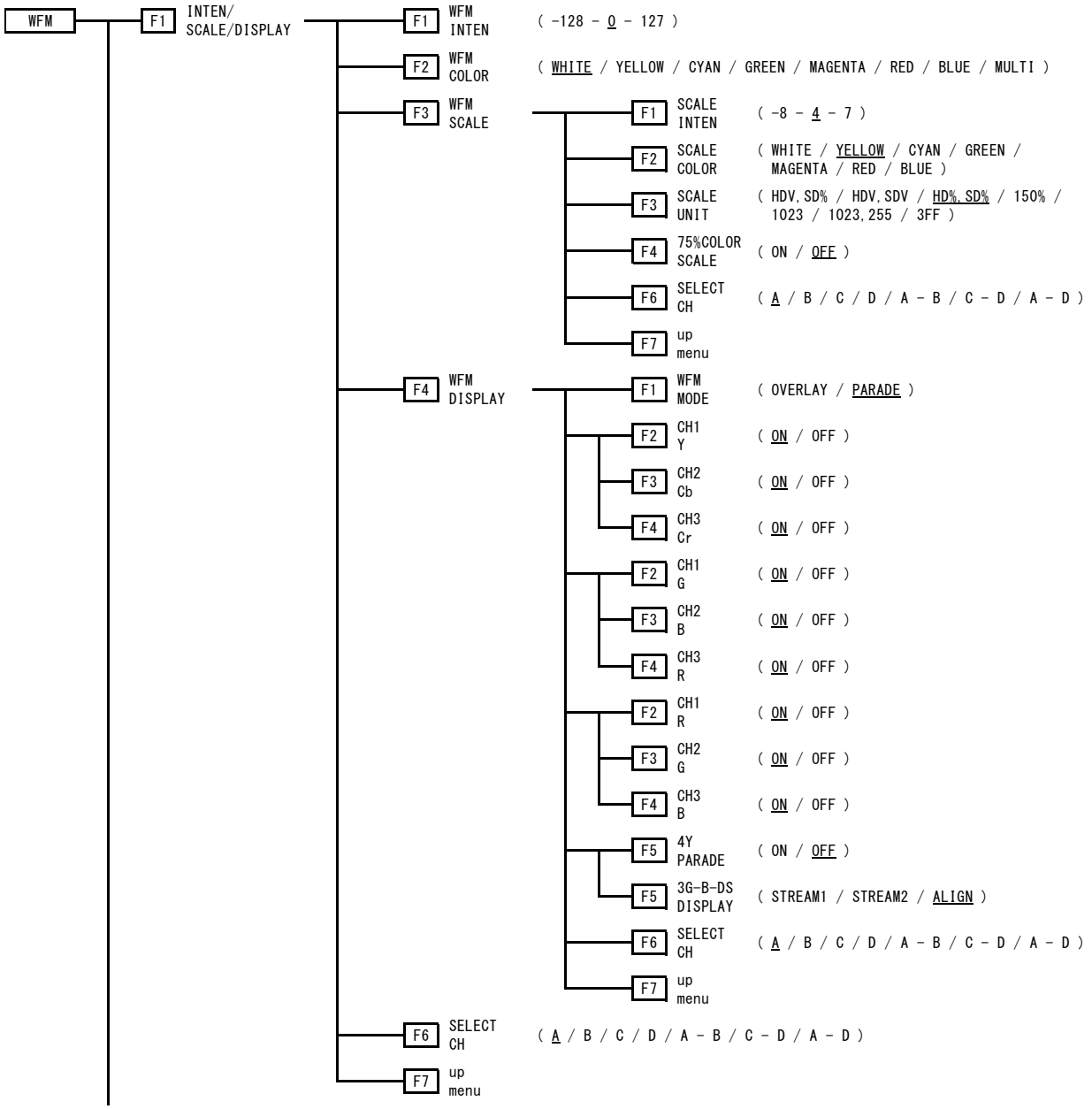

SYS
F1 SIGNAL IN OUT
F1 COMPLETE
F2 PREV TAB
F3 NEXT TAB
F7 up menu
F2 SYSTEM SETUP
F1 COMPLETE
F2 PREV TAB
F3 NEXT TAB
F5 TALLY EXT COMMENT INPUT
F1 CLEAR ALL
F2 DELETE
F3 INSERT
F4 <=
F5 =>
F6 CHAR SET
F7 up menu
F5 CAMERA ID LOCAL LABEL INPUT
F1 CLEAR ALL
F2 DELETE
F3 INSERT
F4 <=
F5 =>
F6 CHAR SET
F7 up menu


F5 REMOTE LABEL INPUT
F1 CLEAR ALL
F2 DELETE
F3 INSERT
F4 <=
F5 =>
F6 CHAR SET
F7 up menu
F7 up menu
F3 SYSTEM INFO
F7 up menu
F4 LICENSE
F2 CLEAR
F3 REGISTER
F4 REMOVE
F7 up menu
F7 INITIALIZE
F1 PARAM INIT YES
F2 LAYOUT INIT YES
F3 OPERATE INIT YES
F4 ALL INIT YES
F5 INIT CANCEL

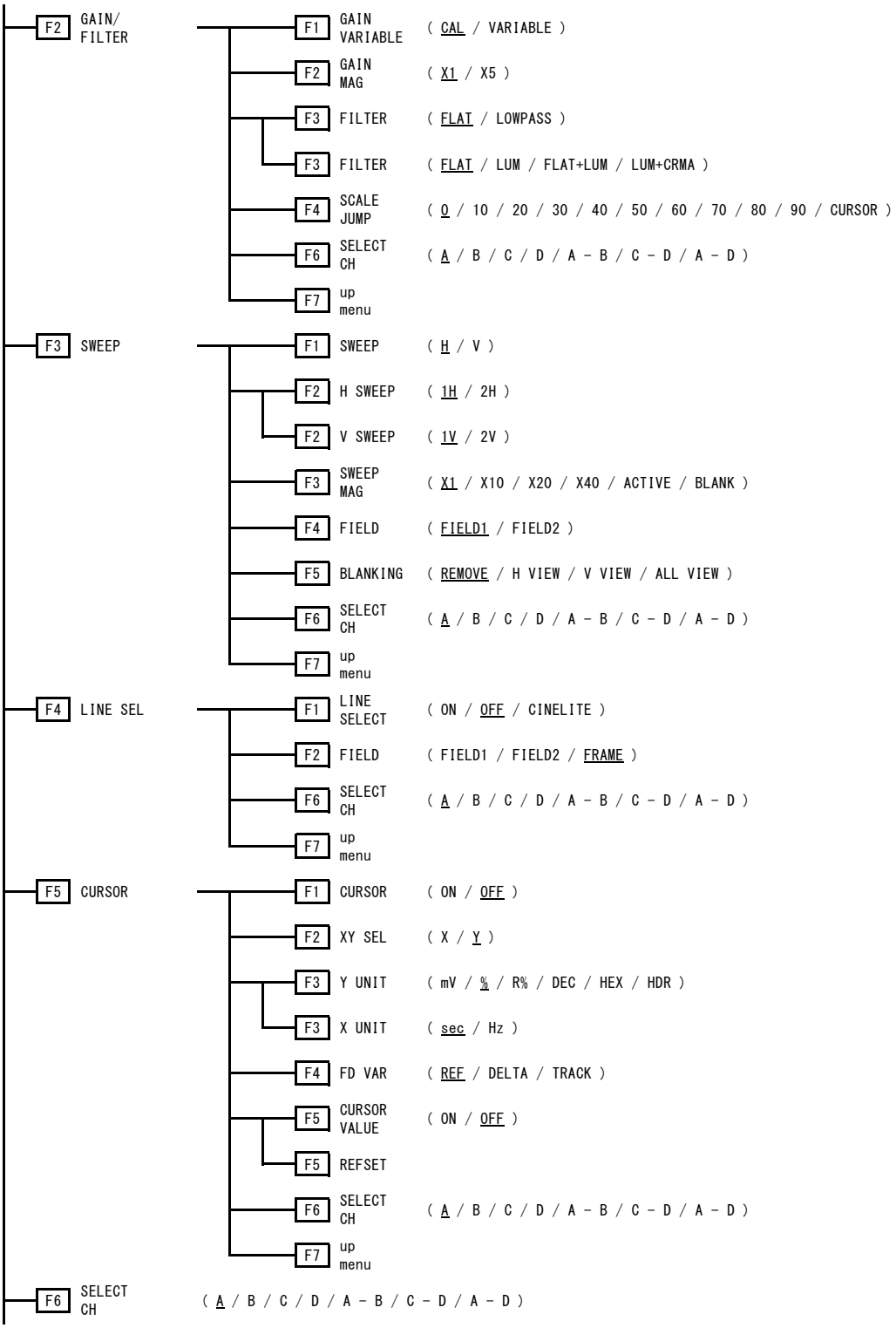
20.5 MULTI menu

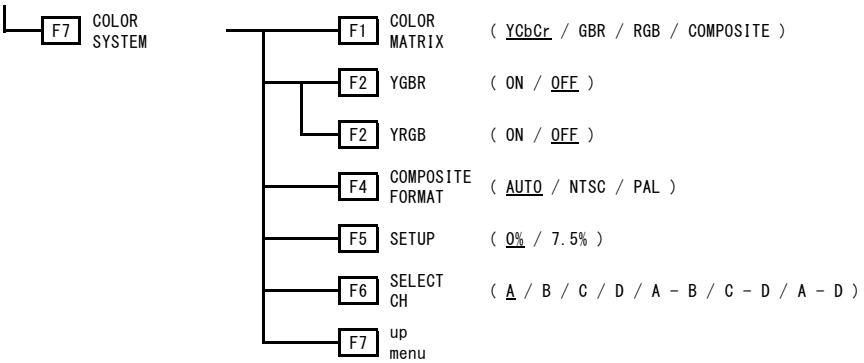


20.6 WFM menu

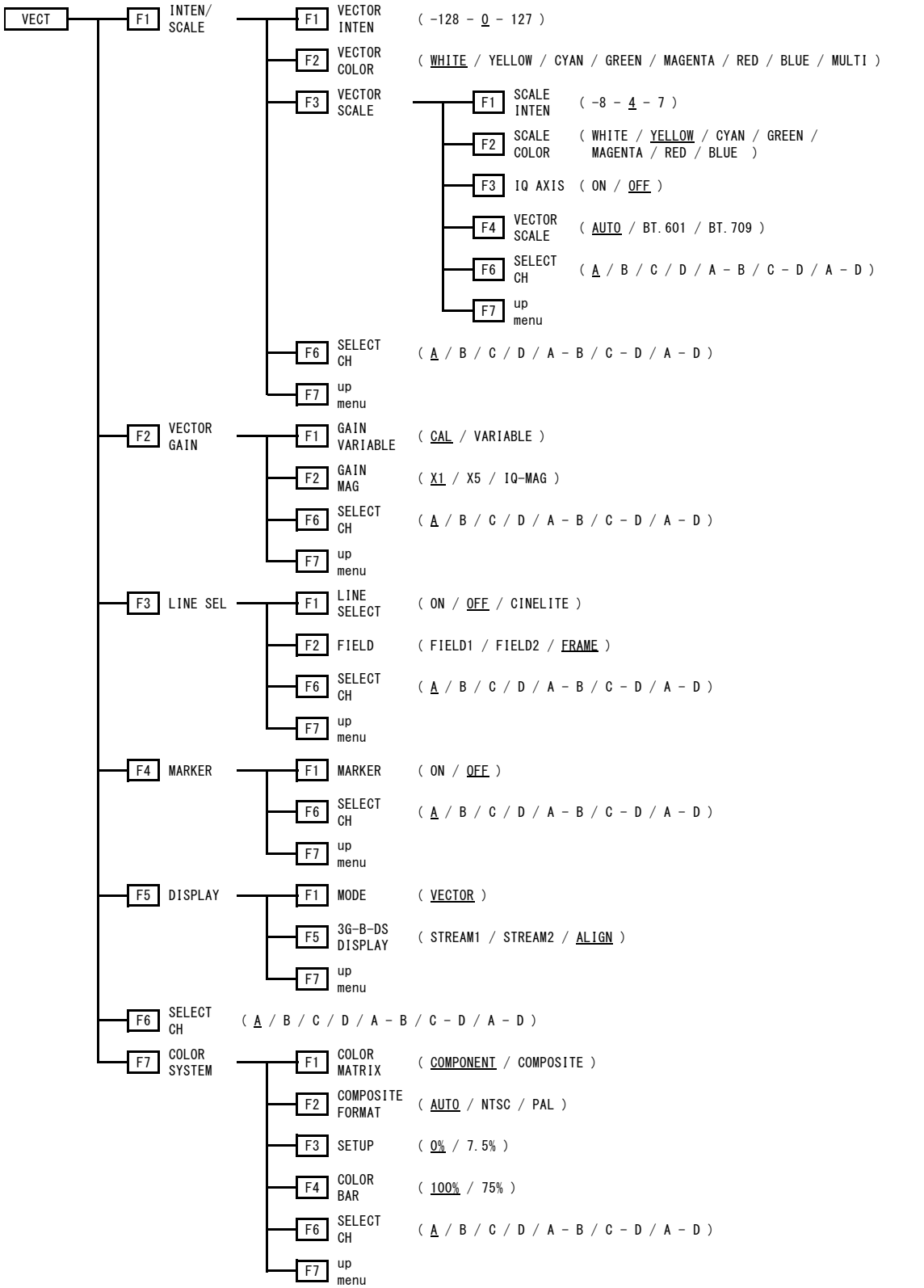

WFM
F1 INTEN/ SCALE/DISPLAY
F1 WFM INTEN (-128 - 0 - 127)
F2 WFM COLOR (WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE / MULTI)
F3 WFM SCALE
F1 SCALE INTEN (-8 - 4 - 7)
F2 SCALE COLOR (WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE)
F3 SCALE UNIT (HDV, SD% / HDV, SDV / HD%, SD% / 150% / 1023 / 1023, 255 / 3FF)
F4 75%COLOR SCALE (ON / OFF)
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F4 WFM DISPLAY
F1 WFM MODE (OVERLAY / PARADE)
F2 CH1 Y (ON / OFF)
F3 CH2 Cb (ON / OFF)
F4 CH3 Cr (ON / OFF)
F2 CH1 G (ON / OFF)
F3 CH2 B (ON / OFF)
F4 CH3 R (ON / OFF)
F2 CH1 R (ON / OFF)
F3 CH2 G (ON / OFF)
F4 CH3 B (ON / OFF)
F5 4Y PARADE (ON / OFF)
F5 3G-B-DS DISPLAY (STREAM1 / STREAM2 / ALIGN)
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu

20. MENU TREE

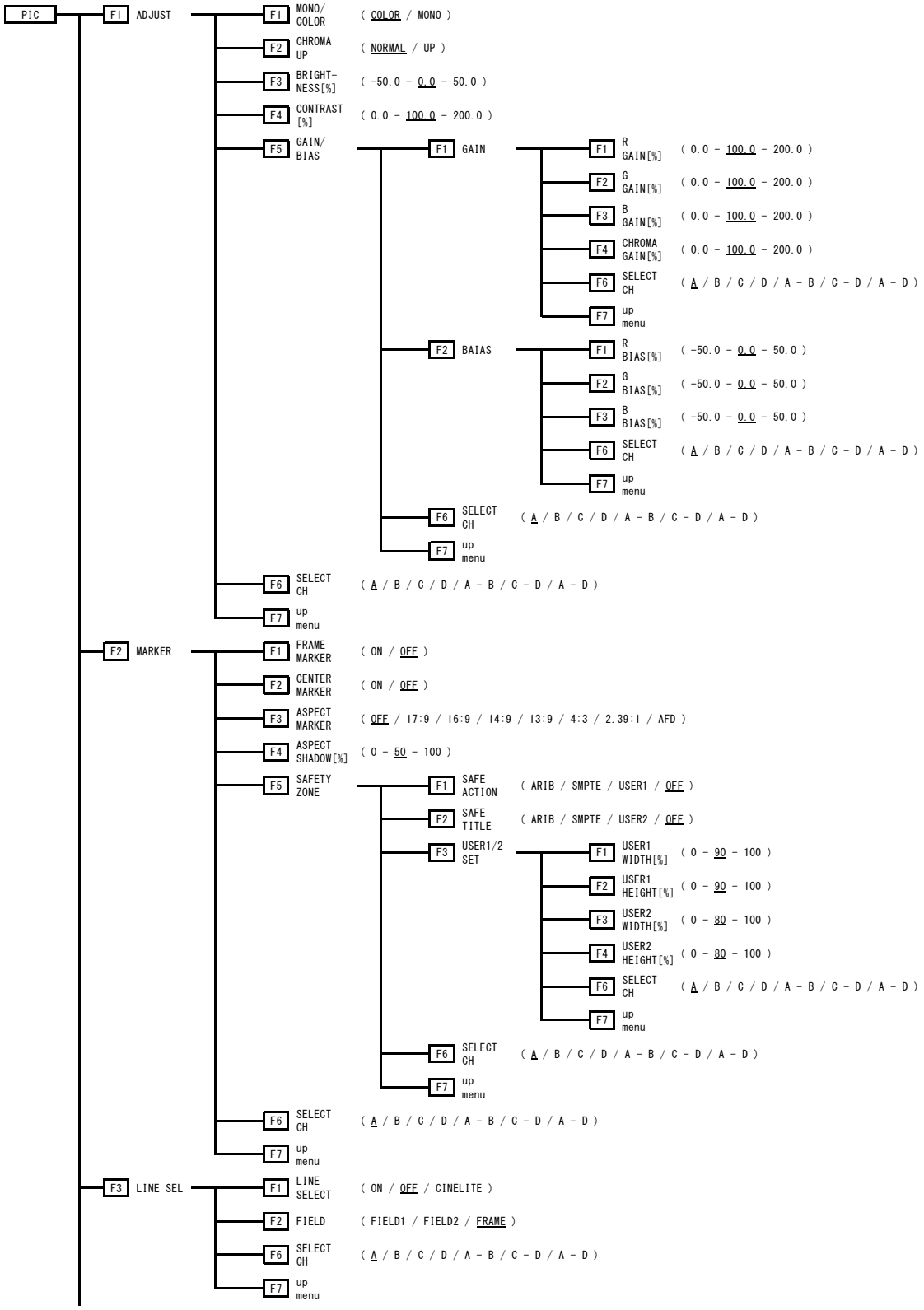

F2 GAIN/ FILTER
F1 GAIN VARIABLE (CAL / VARIABLE)
F2 GAIN MAG (X1 / X5)
F3 FILTER (FLAT / LOWPASS)
F3 FILTER (FLAT / LUM / FLAT+LUM / LUM+CRMA)
F4 SCALE JUMP (0 / 10 / 20 / 30 / 40 / 50 / 60 / 70 / 80 / 90 / CURSOR)
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F3 SWEEP
F1 SWEEP (H / V)
F2 H SWEEP (1H / 2H)
F2 V SWEEP (1V / 2V)
F3 SWEEP MAG (X1 / X10 / X20 / X40 / ACTIVE / BLANK)
F4 FIELD (FIELD1 / FIELD2)
F5 BLANKING (REMOVE / H VIEW / V VIEW / ALL VIEW)
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F4 LINE SEL
F1 LINE SELECT (ON / OFF / CINELITE)
F2 FIELD (FIELD1 / FIELD2 / FRAME)
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F5 CURSOR
F1 CURSOR (ON / OFF)
F2 XY SEL (X / Y)
F3 Y UNIT (mV / % / R% / DEC / HEX / HDR)
F3 X UNIT (sec / Hz)
F4 FD VAR (REF / DELTA / TRACK)
F5 CURSOR VALUE (ON / OFF)
F5 REFSET
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)

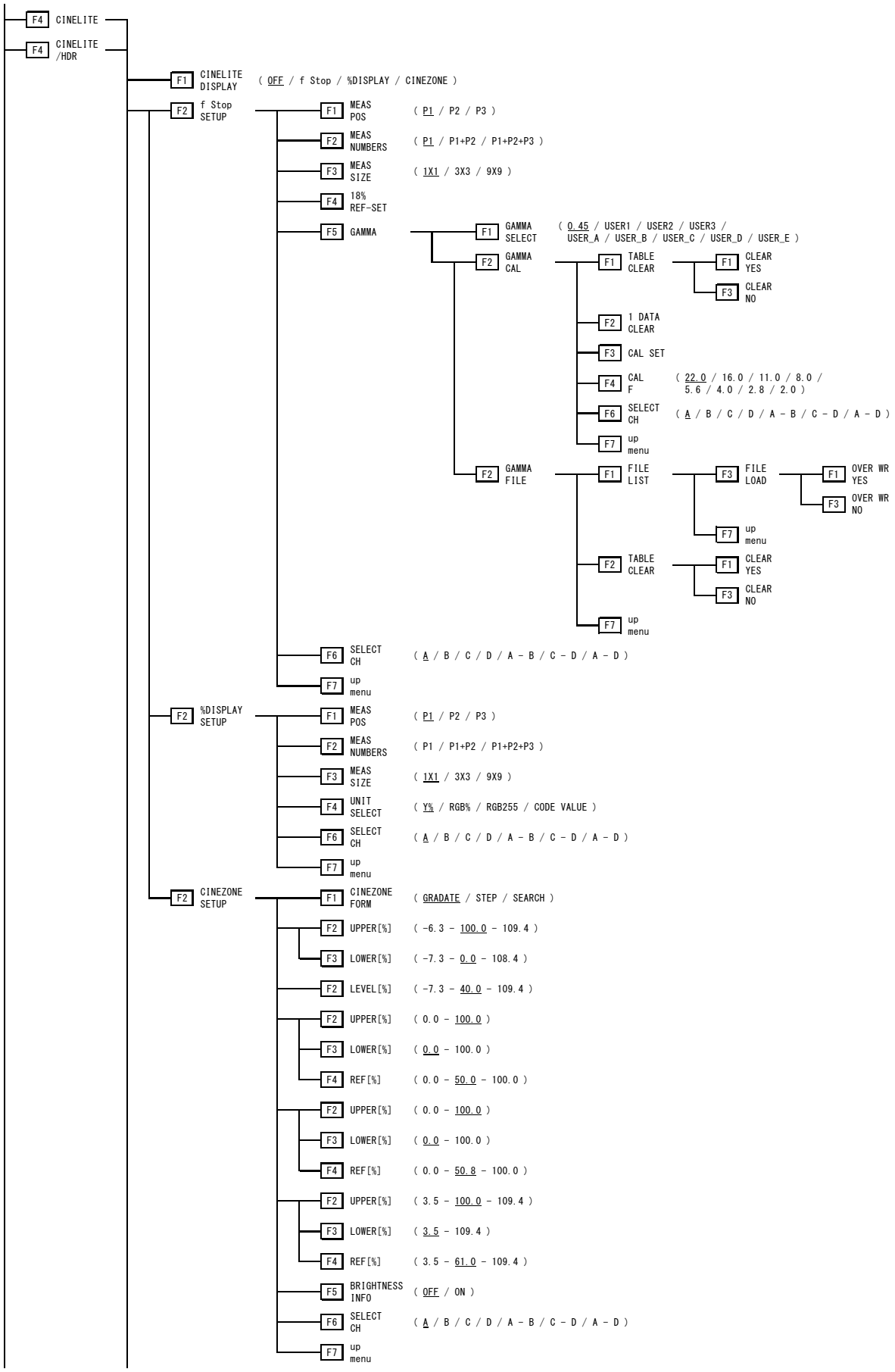

F7 COLOR SYSTEM
F1 COLOR MATRIX (YCbCr / GBR / RGB / COMPOSITE)
F2 YGBR (ON / OFF)
F2 YRGB (ON / OFF)
F4 COMPOSITE FORMAT (AUTO / NTSC / PAL)
F5 SETUP (0% / 7.5%)
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu

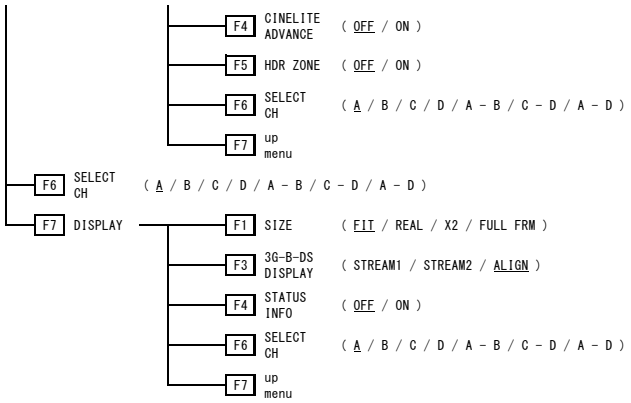
20.7 VECT menu



20.8 PIC menu

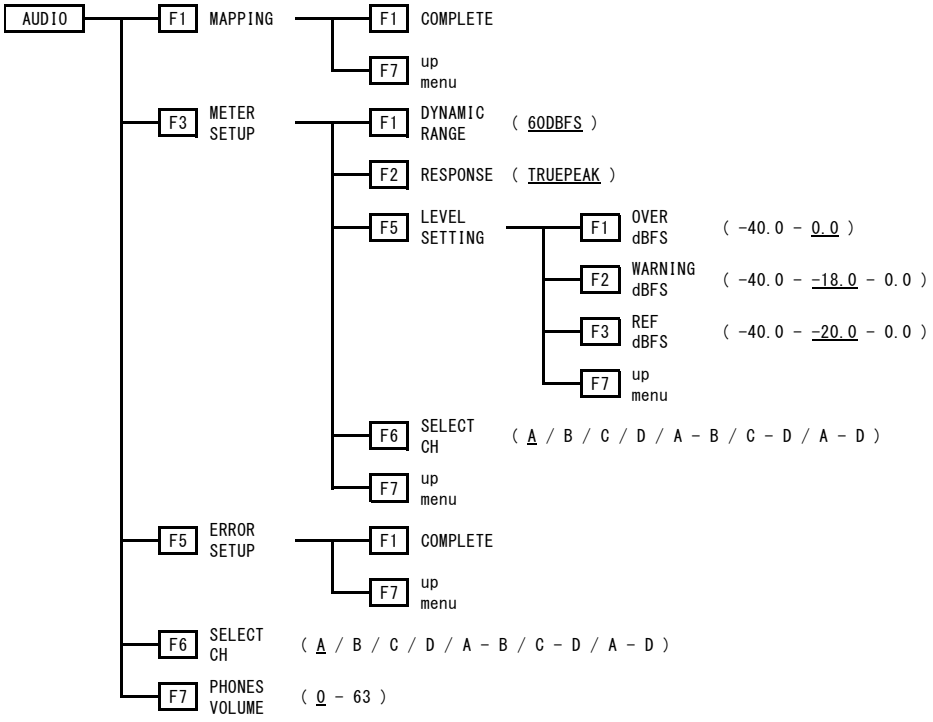

PIC
F1 ADJUST
F1 MONO/ COLOR (COLOR / MONO)
F2 CHROMA UP (NORMAL / UP)
F3 BRIGHT- NESS[%] (-50.0 - 0.0 - 50.0)
F4 CONTRAST [%] (0.0 - 100.0 - 200.0)
F5 GAIN/ BIAS
F1 GAIN
F1 R GAIN[%] (0.0 - 100.0 - 200.0)
F2 G GAIN[%] (0.0 - 100.0 - 200.0)
F3 B GAIN[%] (0.0 - 100.0 - 200.0)
F4 CHROMA GAIN[%] (0.0 - 100.0 - 200.0)
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F2 BAIAS
F1 R BIAS[%] (-50.0 - 0.0 - 50.0)
F2 G BIAS[%] (-50.0 - 0.0 - 50.0)
F3 B BIAS[%] (-50.0 - 0.0 - 50.0)
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F2 MARKER
F1 FRAME MARKER (ON / OFF)
F2 CENTER MARKER (ON / OFF)
F3 ASPECT MARKER (OFF / 17:9 / 16:9 / 14:9 / 13:9 / 4:3 / 2.39:1 / AFD)
F4 ASPECT SHADOW[%] (0 - 50 - 100)
F5 SAFETY ZONE
F1 SAFE ACTION (ARIB / SMPTE / USER1 / OFF)
F2 SAFE TITLE (ARIB / SMPTE / USER2 / OFF)
F3 USER1/2 SET
F1 USER1 WIDTH[%] (0 - 90 - 100)
F2 USER1 HEIGHT[%] (0 - 90 - 100)
F3 USER2 WIDTH[%] (0 - 80 - 100)
F4 USER2 HEIGHT[%] (0 - 80 - 100)
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F3 LINE SEL
F1 LINE SELECT (ON / OFF / CINELITE)
F2 FIELD (FIELD1 / FIELD2 / FRAME)
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu


F4 CINELITE
F4 CINELITE /HDR
F1 CINELITE DISPLAY (OFF / f Stop / %DISPLAY / CINEZONE)
F2 f Stop SETUP
F1 MEAS POS (P1 / P2 / P3)
F2 MEAS NUMBERS (P1 / P1+P2 / P1+P2+P3)
F3 MEAS SIZE (1X1 / 3X3 / 9X9)
F4 18% REF-SET
F5 GAMMA
F1 GAMMA SELECT (0.45 / USER1 / USER2 / USER3 / USER_A / USER_B / USER_C / USER_D / USER_E)
F2 GAMMA CAL
F1 TABLE CLEAR
F1 CLEAR YES
F3 CLEAR NO
F2 1 DATA CLEAR
F3 CAL SET
F4 CAL F (22.0 / 16.0 / 11.0 / 8.0 / 5.6 / 4.0 / 2.8 / 2.0)
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F2 GAMMA FILE
F1 FILE LIST
F3 FILE LOAD
F1 OVER WR YES
F3 OVER WR NO
F7 up menu
F2 TABLE CLEAR
F1 CLEAR YES
F3 CLEAR NO
F7 up menu
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F2 %DISPLAY SETUP
F1 MEAS POS (P1 / P2 / P3)
F2 MEAS NUMBERS (P1 / P1+P2 / P1+P2+P3)
F3 MEAS SIZE (1X1 / 3X3 / 9X9)
F4 UNIT SELECT (Y% / RGB% / RGB255 / CODE VALUE)
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F2 CINEZONE SETUP
F1 CINEZONE FORM (GRADATE / STEP / SEARCH)
F2 UPPER[%] (-6.3 - 100.0 - 109.4)
F3 LOWER[%] (-7.3 - 0.0 - 108.4)
F2 LEVEL[%] (-7.3 - 40.0 - 109.4)
F2 UPPER[%] (0.0 - 100.0)
F3 LOWER[%] (0.0 - 100.0)
F4 REF[%] (0.0 - 50.0 - 100.0)
F2 UPPER[%] (0.0 - 100.0)
F3 LOWER[%] (0.0 - 100.0)
F4 REF[%] (0.0 - 50.8 - 100.0)
F2 UPPER[%] (3.5 - 100.0 - 109.4)
F3 LOWER[%] (3.5 - 109.4)
F4 REF[%] (3.5 - 61.0 - 109.4)
F5 BRIGHTNESS INFO (OFF / ON)
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu



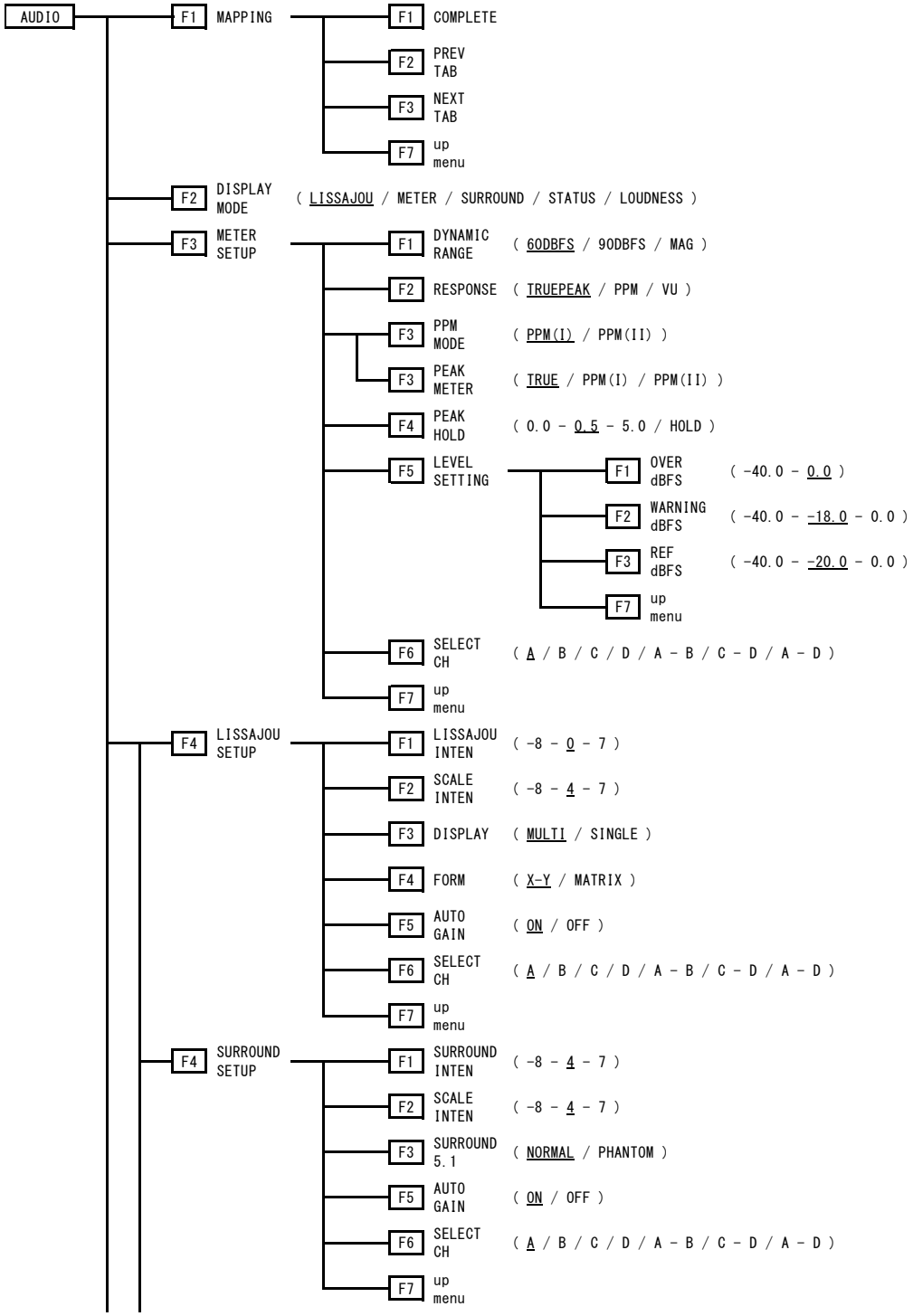
20.9 AUDIO menu (Simple Level Meter)

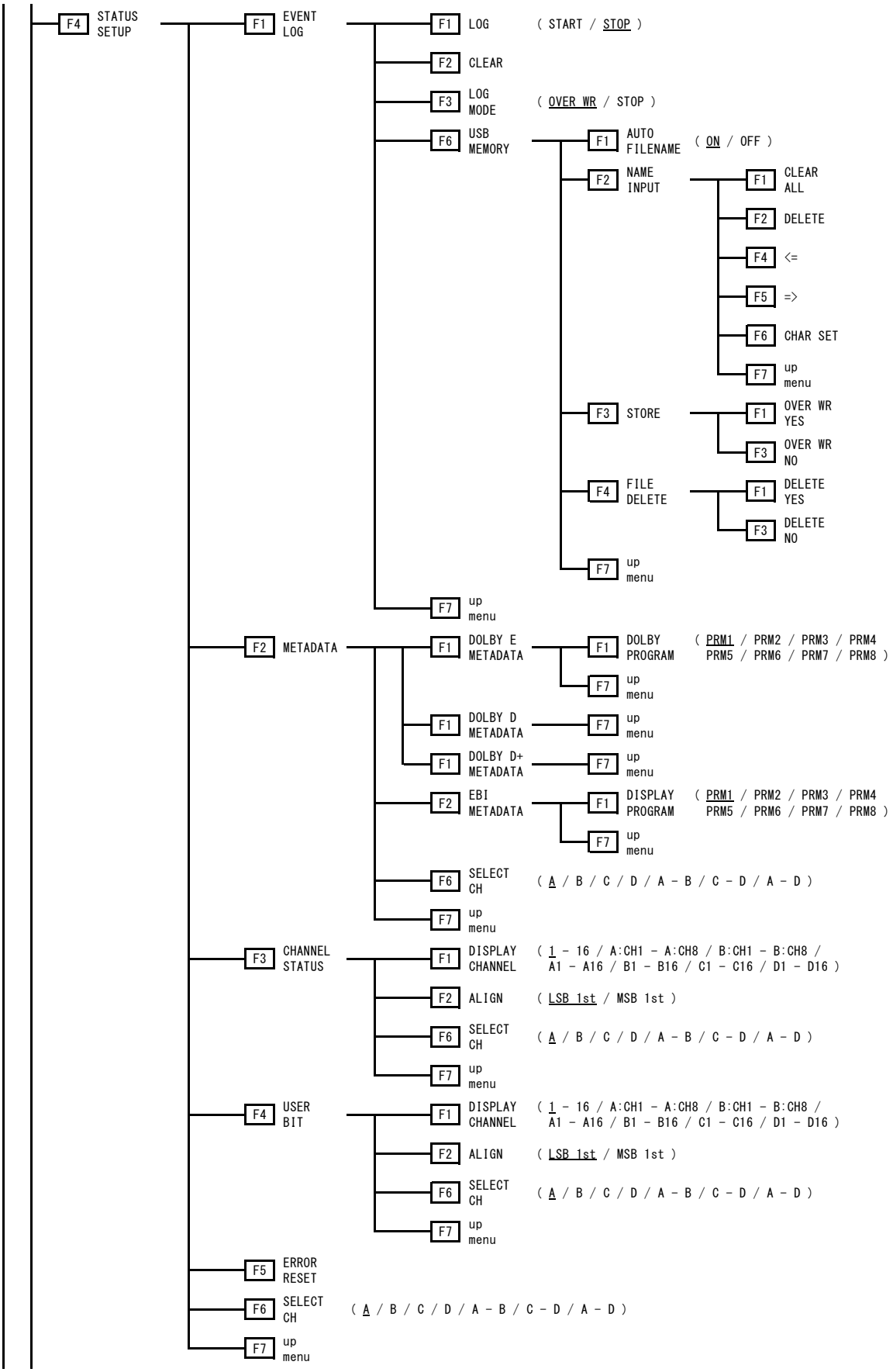
This menu tree is for when the SER03 is not installed.
For the menu tree when the SER03 is installed, see section 20.10, “AUDIO Menu (SER03).”

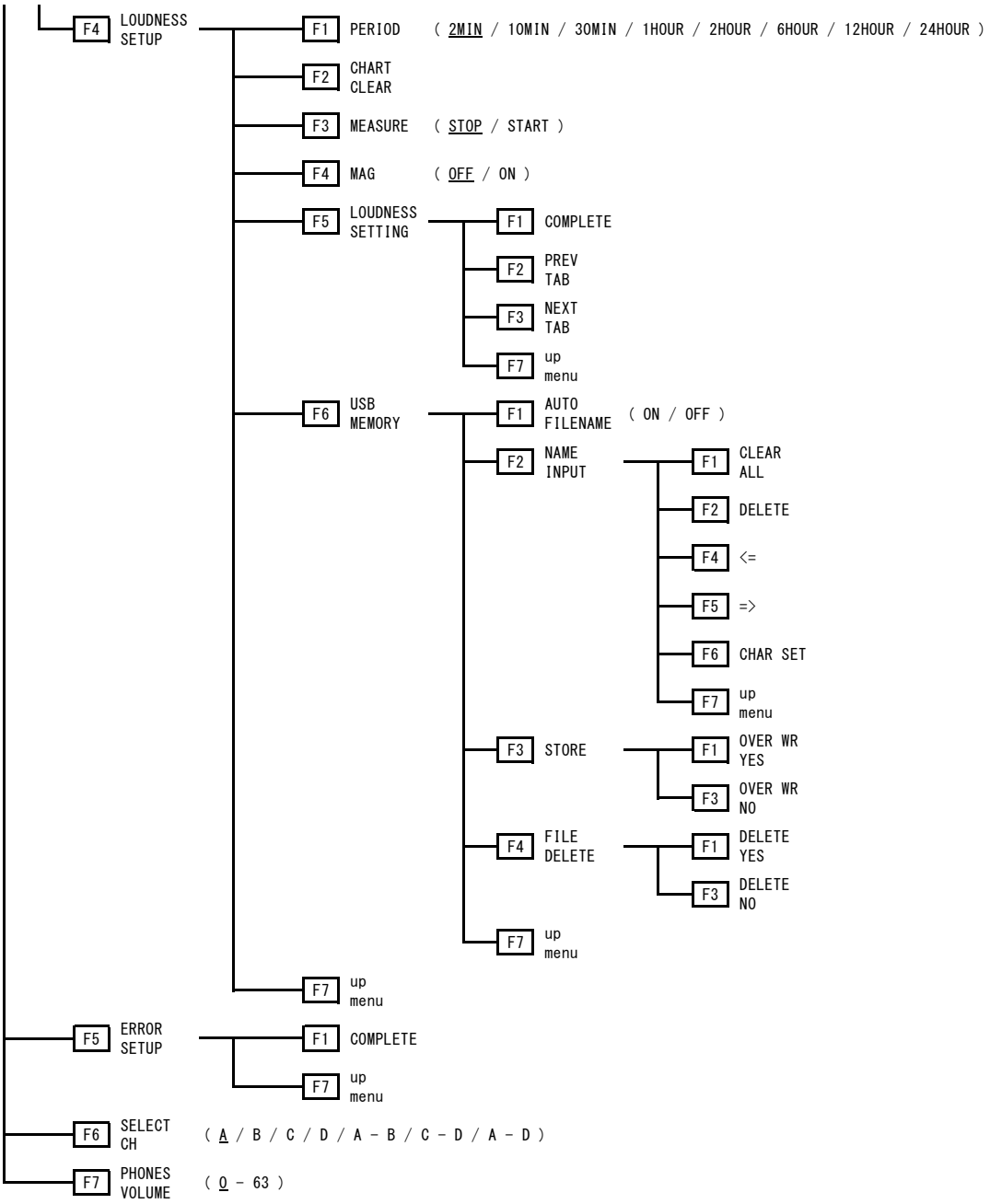


20.10 AUDIO menu (SER03)

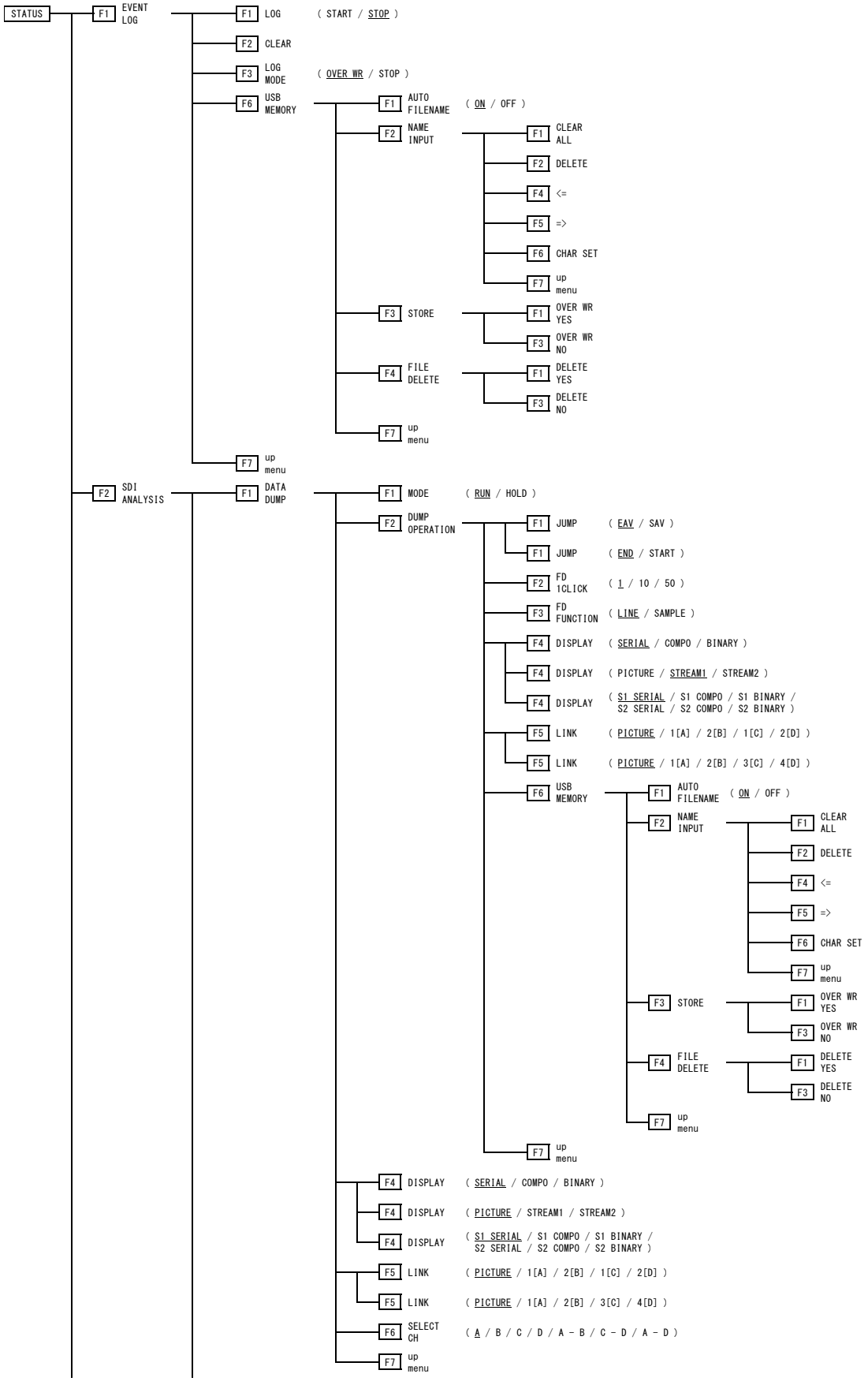
This menu tree is for when the SER03 is installed.
For the menu tree when the SER03 is not installed, see section 20.9, “AUDIO Menu (Simple Level Meter).”

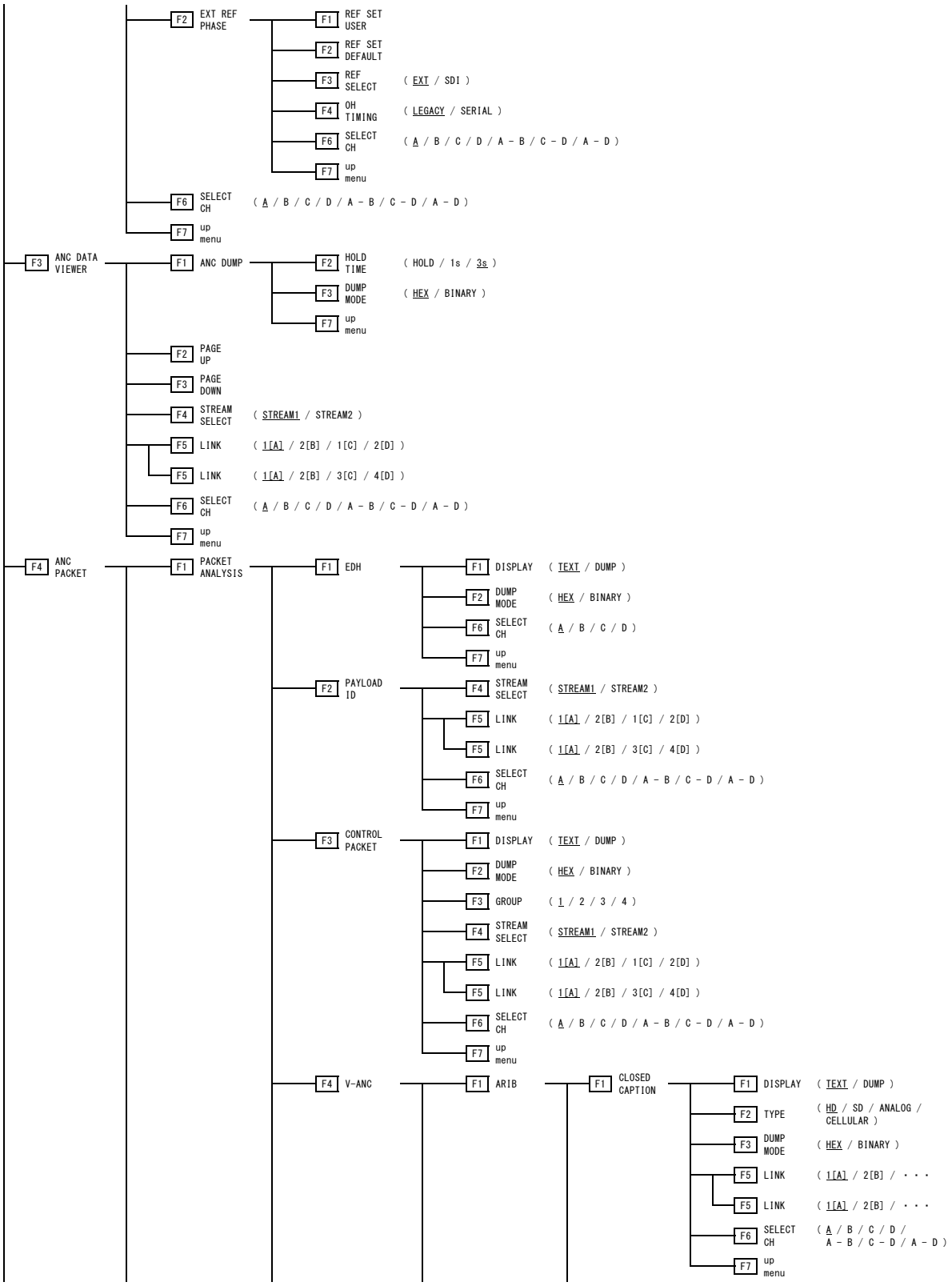


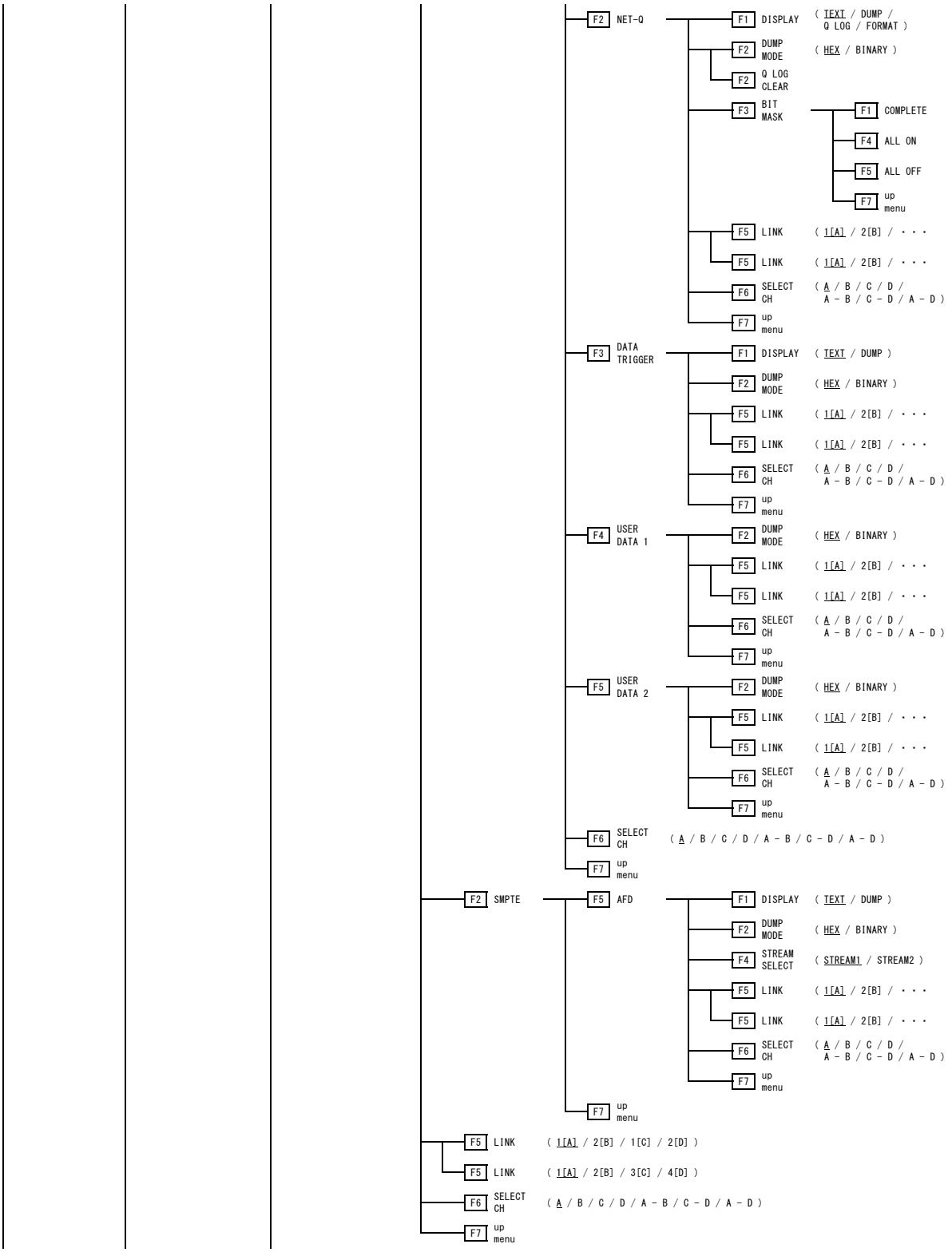

F4 STATUS SETUP
F1 EVENT LOG
F1 LOG (START / STOP)
F2 CLEAR
F3 LOG MODE (OVER WR / STOP)
F6 USB MEMORY
F1 AUTO FILENAME (ON / OFF)
F2 NAME INPUT
F1 CLEAR ALL
F2 DELETE
F4 <=
F5 =>
F6 CHAR SET
F7 up menu
F3 STORE
F1 OVER WR YES
F3 OVER WR NO
F4 FILE DELETE
F1 DELETE YES
F3 DELETE NO
F7 up menu
F7 up menu
F2 METADATA
F1 DOLBY E METADATA
F1 DOLBY PROGRAM (PRM1 / PRM2 / PRM3 / PRM4 PRM5 / PRM6 / PRM7 / PRM8)
F7 up menu
F1 DOLBY D METADATA
F7 up menu
F1 DOLBY D+ METADATA
F7 up menu
F2 EBI METADATA
F1 DISPLAY PROGRAM (PRM1 / PRM2 / PRM3 / PRM4 PRM5 / PRM6 / PRM7 / PRM8)
F7 up menu
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F3 CHANNEL STATUS
F1 DISPLAY CHANNEL (1 - 16 / A:CH1 - A:CH8 / B:CH1 - B:CH8 / A1 - A16 / B1 - B16 / C1 - C16 / D1 - D16)
F2 ALIGN (LSB 1st / MSB 1st)
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F4 USER BIT
F1 DISPLAY CHANNEL (1 - 16 / A:CH1 - A:CH8 / B:CH1 - B:CH8 / A1 - A16 / B1 - B16 / C1 - C16 / D1 - D16)
F2 ALIGN (LSB 1st / MSB 1st)
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F5 ERROR RESET
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu


F4 LOUDNESS SETUP
F1 PERIOD (2MIN / 10MIN / 30MIN / 1HOUR / 2HOUR / 6HOUR / 12HOUR / 24HOUR)
F2 CHART CLEAR
F3 MEASURE (STOP / START)
F4 MAG (OFF / ON)
F5 LOUDNESS SETTING
F1 COMPLETE
F2 PREV TAB
F3 NEXT TAB
F7 up menu
F6 USB MEMORY
F1 AUTO FILENAME (ON / OFF)
F2 NAME INPUT
F1 CLEAR ALL
F2 DELETE
F4 <=
F5 =>
F6 CHAR SET
F7 up menu
F3 STORE
F1 OVER WR YES
F3 OVER WR NO
F4 FILE DELETE
F1 DELETE YES
F3 DELETE NO
F7 up menu
F7 up menu
F5 ERROR SETUP
F1 COMPLETE
F7 up menu
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 PHONES VOLUME (0 - 63)

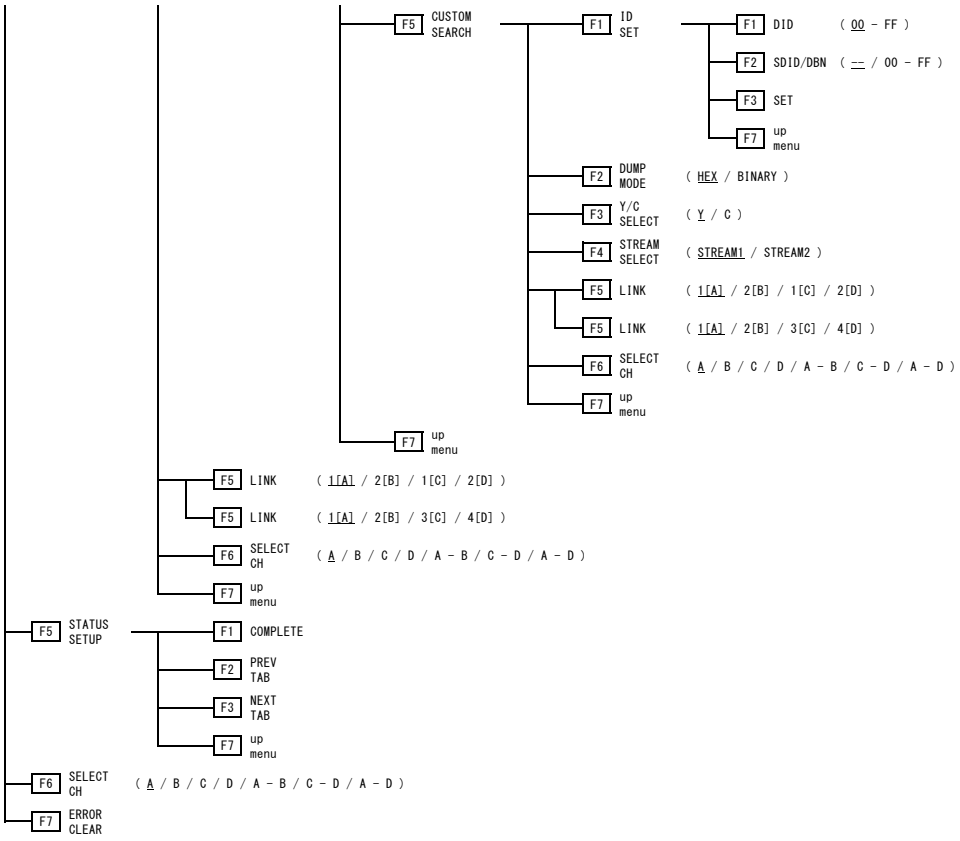
20.11 STATUS menu




F2 EXT REF PHASE
F1 REF SET USER
F2 REF SET DEFAULT
F3 REF SELECT (EXT / SDI)
F4 OH TIMING (LEGACY / SERIAL)
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F3 ANC DATA VIEWER
F1 ANC DUMP
F2 HOLD TIME (HOLD / 1s / 3s)
F3 DUMP MODE (HEX / BINARY)
F7 up menu
F2 PAGE UP
F3 PAGE DOWN
F4 STREAM SELECT (STREAM1 / STREAM2)
F5 LINK (1[A] / 2[B] / 1[C] / 2[D])
F5 LINK (1[A] / 2[B] / 3[C] / 4[D])
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F4 ANC PACKET
F1 PACKET ANALYSIS
F1 EDH
F1 DISPLAY (TEXT / DUMP)
F2 DUMP MODE (HEX / BINARY)
F6 SELECT CH (A / B / C / D)
F7 up menu
F2 PAYLOAD ID
F4 STREAM SELECT (STREAM1 / STREAM2)
F5 LINK (1[A] / 2[B] / 1[C] / 2[D])
F5 LINK (1[A] / 2[B] / 3[C] / 4[D])
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F3 CONTROL PACKET
F1 DISPLAY (TEXT / DUMP)
F2 DUMP MODE (HEX / BINARY)
F3 GROUP (1 / 2 / 3 / 4)
F4 STREAM SELECT (STREAM1 / STREAM2)
F5 LINK (1[A] / 2[B] / 1[C] / 2[D])
F5 LINK (1[A] / 2[B] / 3[C] / 4[D])
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F4 V-ANC
F1 ARIB
F1 CLOSED CAPTION
F1 DISPLAY (TEXT / DUMP)
F2 TYPE (HD / SD / ANALOG / CELLULAR)
F3 DUMP MODE (HEX / BINARY)
F5 LINK (1[A] / 2[B] / ・・・
F5 LINK (1[A] / 2[B] / ・・・
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu


F2 NET-Q
F1 DISPLAY (TEXT / DUMP / Q LOG / FORMAT)
F2 DUMP MODE (HEX / BINARY)
F2 Q LOG CLEAR
F3 BIT MASK
F1 COMPLETE
F4 ALL ON
F5 ALL OFF
F7 up menu
F5 LINK (1[A] / 2[B] / ・・・
F5 LINK (1[A] / 2[B] / ・・・
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F3 DATA TRIGGER
F1 DISPLAY (TEXT / DUMP)
F2 DUMP MODE (HEX / BINARY)
F5 LINK (1[A] / 2[B] / ・・・
F5 LINK (1[A] / 2[B] / ・・・
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F4 USER DATA 1
F2 DUMP MODE (HEX / BINARY)
F5 LINK (1[A] / 2[B] / ・・・
F5 LINK (1[A] / 2[B] / ・・・
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F5 USER DATA 2
F2 DUMP MODE (HEX / BINARY)
F5 LINK (1[A] / 2[B] / ・・・
F5 LINK (1[A] / 2[B] / ・・・
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F2 SMPTE
F5 AFD
F1 DISPLAY (TEXT / DUMP)
F2 DUMP MODE (HEX / BINARY)
F4 STREAM SELECT (STREAM1 / STREAM2)
F5 LINK (1[A] / 2[B] / ・・・
F5 LINK (1[A] / 2[B] / ・・・
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F7 up menu
F5 LINK (1[A] / 2[B] / 1[C] / 2[D])
F5 LINK (1[A] / 2[B] / 3[C] / 4[D])
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu

20. MENU TREE


F5 CUSTOM SEARCH
F1 ID SET
F1 DID (00 - FF)
F2 SDID/DBN (-- / 00 - FF)
F3 SET
F7 up menu
F2 DUMP MODE (HEX / BINARY)
F3 Y/C SELECT (Y / C)
F4 STREAM SELECT (STREAM1 / STREAM2)
F5 LINK (1[A] / 2[B] / 1[C] / 2[D])
F5 LINK (1[A] / 2[B] / 3[C] / 4[D])
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F7 up menu
F5 LINK (1[A] / 2[B] / 1[C] / 2[D])
F5 LINK (1[A] / 2[B] / 3[C] / 4[D])
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 up menu
F5 STATUS SETUP
F1 COMPLETE
F2 PREV TAB
F3 NEXT TAB
F7 up menu
F6 SELECT CH (A / B / C / D / A - B / C - D / A - D)
F7 ERROR CLEAR

21. FIRMWARE UPDATE HISTORY

This manual is written for firmware version 2.0.
You can view the firmware version by pressing F•3 SYSTEM INFO on the SYS menu.

Ver. 2.0

[LV 7390] Support has been added for LV 7290 (REMOTE CONTROLLER).

Ver. 1.9

[LV 7390] Enhanced Layout function, which allows measurement screens of four channels to be arranged to the user's liking, is now supported.
[LV 7390] Gray background function, which allows the background of the camera ID and TALLY-EXT to be displayed in gray, is now supported.
[LV 7390] Tally Off Color function, which allows dim lighting even when the tally display is off, is now supported.
[SER20] HDR display is now supported.

Ver. 1.7

[LV 7390] Support has been added for changing the display position on the video signal waveform display when GAIN MAG is set to X5.
[LV 7390] Tally frame display is now supported on the picture display.
[LV 7390] Audio level display is now supported on the picture display.
[LV 7390] In Simul mode on the audio display, 2 group display has been expanded to 4 group display.
[SER03] Loudness display and Dolby option (licensed) are now supported.
[SER20] Support has been added for LV 7390SER20 (4K) (licensed format).

Ver. 1.6

[SER03] Support has been added for LV 7390SER03 (DIGITAL AUDIO).

Ver. 1.5

[LV 7390] Support has been added for TELNET, FTP, SNMP, HTTP, and SNTP.
[SER01] Cursor value display is now supported on the video signal waveform display.
[SER01] Audio display is now supported.

Following information is for Chinese RoHS only

所含有毒有害物质信息

部件号码: LV 7390

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	×	○	○	○	○	○
开关电源	×	○	○	○	○	○
风扇	×	○	○	○	○	○
外筐	×	○	○	○	○	○
线材料一套	×	○	○	○	○	○
附件	×	○	○	○	○	○
包装材	○	○	○	○	○	○
电池	○	○	○	○	○	○
选件						
LV 7390SER01	×	○	○	○	○	○
LV 7390SER03	×	○	○	○	○	○

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.2

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JAN. 12, 2017 Ver. 5 (FW Ver. 2.0)