LEADER

LV 7330

MULTI SDI RASTERIZER

INSTRUCTION MANUAL

LEADER
ELECTRONIC MEASURING INSTRUMENTS

Contents

GENERAL SAFETY SUMMARY

■ To Avoid Personal Injury

It is recommended that only qualified personnel with technical knowledge use this instrument only after reading and fully understanding all functions of the instrument described this instruction manual.

This instrument is not designed and manufactured for consumers.
If you do not have enough knowledge on electricity, to avoid personal injury and prevent damage to this product, please be sure to use this product only under the supervision of an engineer who has sufficient knowledge about electronics.

■ Note about Reading This Manual

Should you find the contents in this manual and any of its technical terms confusing, please feel free to contact your local LEADER agent.

■ Symbols and Terms

Following terms and symbols indicate necessary warnings and cautions used in this manual and on the product are there for safe operation.

＜Symbol＞ 	The sections where this symbol is marked in this manual or instrument, if not correctly performed or practiced, could result in personal injury or cause serious danger to the instrument. Misuse could also produce unintentional movement to create an operational impediment on the instrument or other products that might be connected to it. Be sure to refer to the safety precautions in this manual to safely use the part of the instrument where the symbol is marked.
＜Term＞ 	Warning statements identify warning conditions that if disregarded or not correctly performed or adhered to, could result in serious personal injury or even loss of life.
＜Term＞ 	Caution statements identify caution conditions that if disregarded or not correctly performed or adhered to, could result in personal injury or damage to the instrument.

GENERAL SAFETY SUMMARY

Review the following safety precautions to avoid operator's injury and loss of life and prevent damage and deterioration to this instrument. To avoid potential hazards, use this product as specified.

■ Warnings about the Case and Panels

Operator should not remove any cases or panel for any reasons. If you touch inside the instrument it could result personal shock or fire hazard. Refrain from spilling any liquid on or inserting anything flammables or piece of metal into the ventilation of the instrument. Such actions could cause fire, shock, malfunction and be an accident hazard while the power is on.

■ Warnings about the Power Source

This instrument works in the DC power supply, and uses an accessory AC adaptor.
There is danger of the product malfunction and a fire when things other than specification are used.

■ Warnings about the Installation Environment

●Operating Temperature Range
Operate the instrument between the temperature range of 0 to 40 °C. Operating the instrument at higher temperatures could cause a fire hazard.
Rapid changes of temperatures from cold to warm can create internal moisture or condensation and could damage the instrument. If there is a possibility of moisture condensation, allow the instrument to sit for 30 minutes without the power on.

●Operating Humidity Range
Operating humidity range is < 85 % RH. (without condensation)
Do not operate the instrument with wet hands, this could cause a shock and fire hazard.

●Operation in the Presence of Gasses
Operating the instrument in and near the presence or storage locations of flammable, explosive gasses or fumes could create an explosion and fire hazard. Do not operate the instrument anywhere near such environments.

●Avoid Insertions
Do not insert metals or flammable objects or drop liquid on or into the instrument. To do so could cause fire, shock, malfunction and create a dangerous accident hazard.

■ 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 to avoid the threat of fire. Turn off the power switch, and remove the AC adapter from the instrument. After making sure that fire has not spread anywhere, contact your local LEADER agent.

GENERAL SAFETY SUMMARY

■ Cautions about the Input and Output Connectors

Input Terminals are rated with a maximum input. Do not supply an input over the specified rating in the standard section of the instruction manual. Also, do not supply external power to Output terminal, this could cause the instrument to malfunction.

■ Cautions Concerning the AC Adapter

Only use the specified type of AC adapter. Using a non-specified type of adapter could damage the instrument and lead to fire.
We recommend you replace the AC adapter at least once every five years.

■ Caution When Not Using the Instrument for a Long Time

Make sure to disconnect the power cord of the AC adaptor from the socket when you do not use the instrument for a long time.

■ Cautions Concerning the Ethernet Port

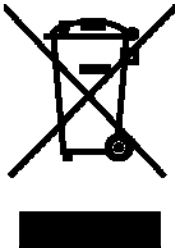
When you are connecting the instrument to the communication provider's equipment, connect to the Ethernet port through a hub that is authorized for use in the country that you are using the instrument in.

GENERAL SAFETY SUMMARY

■ Routine Maintenance

Remove the power cord plug from the socket when cleaning the instrument.
Avoid the use of thinner or benzene solvents for cleaning cases, panels and knobs since this might remove the paint or damage plastic surfaces.
Wipe cases, panels, and knobs lightly with a soft cloth damped with neutral detergent.
Do not allow water, detergent, or other foreign objects to enter the instrument while cleaning.
If a liquid or metal object enters the instrument, it can cause electric shock or fire.

■ About the European WEEE Directive



The EU WEEE Directive applies to this product and its accessories. When disposing of this product or its accessories, follow the regulations in your country or region.
(WEEE Directive: Waste Electrical and Electronic Equipment)

Please conform to the above warnings and cautions for safe operation. There are cautions in each area of in this instruction manual, so please conform to each caution. If you have any questions about this manual, please feel free to contact your local LEADER agent.

1. Introduction

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

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

1.1 Scope of Warranty

This LEADER instrument has been manufactured under the strictest quality control guidelines.

LEADER shall not be obligated to furnish the following free services during the warranty period.

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

1.2 Operating Precautions

1.2.1 Power Supply Voltage

The operating supply voltage range of this instrument’s DC power supply is 10 to 18 V. Do not apply a voltage that exceeds this range. Doing so may damage the instrument or lead to fire.

1.2.2 Maximum Allowable Input Voltage

CAUTION

Table 1-1 indicates the maximum signal voltage that can be applied to the input connectors.
Do not apply excessive voltage to the connectors. Doing so may damage the instrument or lead to injury.

Table 1-1 Maximum allowable input voltage

Input Connector	Maximum Allowable Input Voltage
INPUT SDI A, INPUT SDI B	±2 V (DC + peak AC)
INPUT VIEW FINDER	±5 V (DC + peak AC)
EXT REF	±5 V (DC + peak AC)
REMOTE	0 to +5 V

1.2.3 Shorting and Applying External Input to the Output Connectors

Do not short the output connectors. Doing so may damage the instrument.
Do not apply an external signal to the output connectors. Doing so may damage the instrument and devices that are connected to it.

1.2.4 Mechanical Shock

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

1.2.5 Electrostatic Damage

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

1.2.6 Warming Up

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

1.2.7 USB Memory Devices

Some USB memory devices are not properly recognized by the LV 7330. If the USB icon does not appear in the upper left of the screen when a USB memory device is connected to the LV 7330, restart the LV 7330, and then connect a different USB memory device.

1.2.8 Trademark Acknowledgments

Windows is a registered trademark of Microsoft Corporation in the United States and other countries.

2. Specifications

2.1 General

The LV 7330 is a highly functional, compact, light-weight SDI rasterizer that boasts exceptional cost performance.
When the LV 7330 is connected to an external XGA monitor, it can display the picture of an HD-SDI or SD-SDI signal in addition to video signal waveforms, vectors, audio data, and data analyses of the signal. The LV 7330 also comes standard-equipped with CINELITE II, a convenient tool for analyzing luminance data.

2.2 Features

- **SDI I/O**

  The LV 7330 has two SDI input connectors that can be used for both HD-SDI and SD-SDI input. It also has an SDI output connector that you can use to send a reclocked SDI signal.

- **DVI-I Output**

  The various LV 7330 displays are transferred through a DVI-I connector to an XGA (1024 × 768) display. The LV 7330 also uses a squeeze method to support aspect ratios of 16:9 (1366 × 768) and 16:10 (1920 × 1200).

- **CINELITE II**

  The LV 7330 comes standard-equipped with CINELITE II (CINELITE and CINEZONE), which is a video signal luminance information analysis tool.
  With CINELITE, you can use the cursor to select any 3 points and display their f Stop numbers, percentage values, and level values. You can choose to analyze a single pixel or a small area by setting the size of the measured area to 1 pixel or to the average value for 9 or 81 pixels. Furthermore, the CINELITE Advanced feature makes it possible to synchronize measurements with the video signal waveform display and vector display.
  With CINEZONE, you can display the luminance levels in the picture using different colors. This allows you to quickly determine the overall luminance distribution in the picture, and it makes it easy to spot overexposure, underexposure, and different luminance levels in dark areas.

- **Picture Display**

  The LV 7330 has a wide assortment of SDI signal picture display features including zoom, various safety markers, and brightness, contrast, and chroma adjustment.
  The LV 7330 also supports CEA/EIA-608 closed captioning and superimposition.

- **Video Signal Waveform Display**

  The LV 7330 uses fully digital waveform display processing to achieve high precision and quality. From video signal waveform display gain expansion, sweep expansion, and cursor measurement to pseudo-composite and RGB displays, the LV 7330 has all of the features that people look for in a waveform monitor. The LV 7330 is equipped with an external sync signal input, and it can display video signal waveforms based on a tri-level sync signal or an NTSC or PAL black burst signal.

- **Vector Display**

  The LV 7330 can display component chrominance signal vectors.
  The amplitude can be automatically zoomed, or set to a fixed magnification value such as five.
  The IQ axes, which are useful for vector observation, can be turned on and off.

- **5 Bar Display**

  The LV 7330 can display the peak levels of the Y, R, G, B and pseudo-composite signals. This feature is useful for monitoring gamut errors.

- **Audio Display**

  The LV 7330 can extract the audio signal embedded in an SDI signal and display level meters, Lissajous curves, and surround-sound images for up to eight channels.
  The LV 7330 also supports external digital audio input, for which it can display a two-channel level meter and Lissajous curves.
  The level meter supports loudness metering and is useful for managing the volume level experienced by the listener.
  (The resolution of SD-SDI audio quantization is up to 20 bits.)

- **Stereo Headphone Output**

  The LV 7330 can extract the audio signal embedded in an SDI signal. You can select two channels from the extracted audio and transmit them in stereo through the headphone output jack.

- **Status Display**

  The status display has a number of advanced features, including SDI signal error detection and analysis features.
  • Error Detection
    The error detection feature can help you to catch transmission errors such as CRC errors (HD-SDI), EDH errors (SD-SDI), BCH errors, and checksum errors.
  • Event Log
    The ability to log events such as detected errors and input signal switching makes long-term error monitoring easy. The event log can be saved to USB memory or sent to a PC through an Ethernet connection as text data.
  • Data Dump
    The ability to display digital data after parallel conversion in hexadecimal or binary format is very useful when there is a problem and for various kinds of data analysis. Data dumps can be saved to USB memory or sent to a PC over an Ethernet as text data.
  • Packet Analysis
    The LV 7330 can analyze and display the various packets embedded in an SDI signal.

- **Time Code Display**

  The LV 7330 can decode SMPTE ST 12-2 time codes (LTC or VITC) and SMPTE ST 266 time codes (D-VITC) and display them. These codes can be used as timestamps in the event log.

- **Screen Capture**

  The display can be captured. Captured displays can be viewed or superimposed over an input signal.
  Captured displays can be saved in internal memory (RAM) or USB memory or sent to a PC through an Ethernet connection as bitmap data.

- **Preset Settings**

  The LV 7330 can remember up to 30 frequently used setting configurations. The configurations can be recalled easily from the front panel or using commands sent through the Ethernet or remote connector.

- **Remote Connector**

  You can recall presets by sending commands through the remote connector.
  Also, a tally light can be displayed on the screen.

- **Ethernet Connector**

  From a PC connected to the LV 7330 through the Ethernet connector, you can recall presets, execute panel operations, transfer files, and monitor errors.

- **Last Memory**

  The LV 7330 backs up the current settings so that you can use the same settings that you were using before immediately after powering it up.

- **Power Supply**

  The LV 7330 has an XLR DC input connector and runs on the supplied AC adapter or a 12- VDC power supply.

2.3 Specifications

2.3.1 Video Signal Formats and Corresponding Standards

Table 2-1 Single Link System Video

Color System	Quantization	Format		Corresponding Standards
		Scanning	Frame (Field) Rates	
YC_BC_R 4:2:2	10 bits	1080i	60/59.94/50	SMPTE ST 274
		1080p	30/29.97/25/24/23.98	SMPTE ST 292
		1080PsF	30/29.97/25/24/23.98	
		720p	60/59.94/50 / 30/29.97/25/24/23.98	SMPTE ST 296 SMPTE ST 292
		525i	59.94	SMPTE ST 259
		625i	50	

Table 2-2 Dual Link System Video*1

Color System	Quantization	Format		Corresponding Standard
		Scanning	Frame (Field) Rates	
GBR 4:4:4	10 bits	1080i	60/59.94/50	SMPTE ST 372 (1920×1080)
		1080p	30/29.97/25/24/23.98	
		1080PsF	30/29.97/25/24/23.98	

Format Setting	Can be set automatically according to the corresponding format or set manually (set manually for dual link).
Supported Sampling Frequencies	
HD	74.25 MHz or 74.25/1.001 MHz.
SD	13.5 MHz.
External Sync	Automatically set from the corresponding format.

*1 Only link A can be displayed. Link B cannot be displayed.

2.3.2 Audio Playback

Compliant Standard	
HD	SMPTE ST 299
SD	SMPTE ST 272
Sampling Frequency	48 kHz (must be synchronized to the video signal)
Quantization	
HD	24 bits
SD	20 bits
Clock Generation	Generated from the video clock
Synchronization	All audio channels must be synchronized to the video clock.
Phases	All phases must be in-sync.
Channel Separation	Two groups of eight channels are selectable.

2.3.3 Input/Output Connectors

SDI Input

Input Connector	2 BNC connectors (A/B switching)
Input Impedance	75 Ω
Input Return Loss	≥ 15 dB for 5 MHz to the serial clock frequency
Maximum Input Voltage	±2V (DC + peak AC)

External Reference Input*[1]

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

AES/EBU Input

Input Connector	1 BNC connector
Supported Formats	IEC 60958
Sampling Frequency	48 kHz
Input Impedance	75 Ω
Maximum Input Voltage	±5 V (DC + peak AC)

SDI Output

Output Signal	Reclocks and transmits the selected SDI input signal
Output Connector	1 BNC connector
Output Impedance	75 Ω
Output Voltage	800 mVp-p ± 10 %

DVI-I Output

Output Connector	1 DVI-I connector
Signal Format	Single Link T.M.D.S analog RGB
Output Format	XGA (1024 × 768) Supports wide displays (using squeeze methods)
DDC	Not supported
HOT PLUG Detection	Not supported

Headphone Output

Output Signal	The LV 7330 extracts and transmits the audio signal embedded in an SDI signal. (Must be synchronized to the video signal.)
Output Connector	One 6.3-mm (1/4 in.) stereo jack
Volume Adjustment	Configured in the menu
Impedance	32 Ω (16 to 600 Ω)

*1 If the video signal waveform or phase difference is displayed using an external sync signal as reference, the waveform phase one clock before or after an SDI signal is inserted or removed or the power is turned on is indefinite.

2.3.4 Control Connectors

USB Connector

Function	Used to save screen captures, event logs, preset data, and data dumps
Specifications	USB 2.0
Media	Only USB memory devices are supported.

Remote Connector

Function	Used to recall preset settings, display a tally light, and switch input channels (A/B)
Control Signal	TTL level (active-low logic)
Control Connector	15-pin D-sub (female)
Locking Screws	Inch screws (No.4-40UNC)

Ethernet connector

Function	Used to control the LV 7330 from a PC and monitor errors and other events
Compliant Standard	IEEE 802.3
Control Connector	1 RJ-45 connector
Type	10Base-T/100Base-TX (automatic switching)
Supported Protocols	TELNET, FTP, SNMP

2.3.5 Display Arrangements

1 Screen Display	Picture display, CINELITE display, CINEZONE display, video signal waveform display, vector display, audio display, and status display
2 Screen Display	Video signal waveform display and picture display Video signal waveform display and vector display Video signal waveform display and audio level display Audio waveform display and level meter display
4 Screen Display	Video signal waveform display, picture display, vector display (switchable to audio display), and status display (switchable to audio level meter or 5 bar display)
Format Display	Displays the video signal format at the top of the screen.
Color System Display	Displays the video signal color system at the top of the screen.
Date Display	Displays the date according to the internal clock at the top of the screen.
Time or Time Code Display	Displays the time according to the internal clock or a time code at the top of the screen.
Time Code	LTC, VITC, or D-VITC
Compliant Standard	
LTC and VITC	SMPTE ST 12-2
D-VITC	SMPTE ST 266

2.3.6 Screen Capture

Function	Captures the screen
Display	Displays the captured image or superimposes the captured image over the input signal
Media	Internal memory (RAM) and USB memory Only one screen capture can be stored in the internal memory.
Data Output	Screen captures can be saved as bitmap files or in a file format that the LV 7330 can load. They can be saved to USB memory or sent to a PC through an Ethernet connection as bitmap data.
Data Input	Data saved to USB memory can be loaded and displayed on the LV 7330.

2.3.7 Preset Settings

Number of Presets	30
Media	Internal memory and USB memory
Recall Method	Front panel or remote connector or Ethernet command
Copying	Preset configurations can be copied as a group to or from USB memory.

2.3.8 Video Signal Waveform Display

Waveform Operations	
Display Modes	
Overlay	Overlays component signals.
Parade	Displays component signals side by side.
Timing	Computes and displays Y-C_B and Y-C_R. Uses a bowtie signal.
Blanking Period	Show or hide
RGB Conversion	Converts a YC_BC_R signal into an RGB signal and displays the result.
Pseudo-Composite Display	Artificially converts component signals into composite signals and displays the result.
Channel Assignment	In RGB conversion display, the order can be set to GBR order or RGB order.
Line Select	Displays the selected line.
Sweep Modes	H and V
Vertical Axis	
Gain	×1 or ×5
Variable Gain	×0.2 to ×2.0
Amplitude Accuracy	±0.5 %
HD Frequency Characteristics	
Y Signal	±0.5 % for 1 to 30 MHz
C_BC_R Signals	±0.5 % for 0.5 to 15 MHz
Low-Pass Attenuation	≥ 20 dB (at 20 MHz)

SD Frequency Characteristics	
Y Signal	±0.5 % for 1 to 5.75 MHz
C_BC_R Signals	±0.5 % for 0.5 to 2.75 MHz
Low-Pass Attenuation	≥ 20 dB (at 3.8 MHz)
Horizontal Axis	
Line Display	×1, ×10, ×20, ACTIVE, or BLANK
Field Display	×1, ×20, or ×40
Cursor Measurement	
Composition	
Horizontal Cursors	2 (REF and DELTA)
Vertical Cursors	2 (REF and DELTA)
Amplitude Measurement	mV, %, R%, 3FF, or 1023
Time Measurement	sec
Frequency Measurement	Measures the frequency with the length of one period set to the time between two cursors.
Scale	
Type	%, V, 3FF or 1023
75 % Marker	Displays where the location of the peak of a 75 % color bar chrominance signal would be.
Display Colors	7 colors to choose from

2.3.9 Vector Display

Gain	×1, ×5, or IQ-MAG
Variable Gain	×0.2 to ×2.0
Amplitude Accuracy	±0.5 %
Blanking Period	Masked*1
Scale	
Type	75 % or 100 % (color bar)
IQ Axis	Show or hide
Display Colors	7 colors to choose from
Line Select	Displays the selected line.
Pseudo-Composite Display	Artificially converts component signals into composite signals and displays the result.

*1 In the multi-screen display, the blanking period depends on the video signal waveform display blanking display settings.

2.3.10 5 Bar Display

Function	Displays five peak levels: those of the Y, R, G, B and composite signals.
Error Level	Based on gamut error level and composite gamut error level settings.
Filter	1 MHz LPF or 2.8MHz LPF (only HD signals) (removes transient errors and can be turned ON and OFF)
Line Select	Displays the selected line.

2.3.11 Phase Difference Display

Display	Displays the phase difference between an SDI signal and the external sync signal both numerically and graphically.
Display Range	
Vertical	Approx. ±1/2 frame
Horizontal	±1 line

2.3.12 Picture Display

Image Quality Adjustment	Brightness, contrast, chroma level, and aperture
Display Sizes	FIT, ×1, or ×2
Color Selection	Color or monochrome
Frame Rate	The frame rate is converted and displayed using the internal sync signal.
Marker Displays	
Center Marker	
Aspect Markers	
HD	4:3, 14:9, 13:9, 2.35:1, 1.85:1, and 1.66:1
SD	16:9, 14:9, 13:9, 2.35:1, 1.85:1, and 1.66:1
Safe Action Markers	95 %, 93 %, and 90 %
Safe Title Markers	88 % and 80 %
Line Select	Marks the selected line
Gamut Error Display	Displays gamut error locations over the picture

2.3.13 CINELITE Display

CINELITE Display	
Function	f Stop display, percentage display, and level display
f Stop Display	Displays the f value relative to the reference point The reference point is set to the value of an object with a reflection level of 18 %.
f Stop Gamma Correction	
Reference Gamma	0.45 (ITU-R BT709)
User-Defined Correction Tables	3
External Correction Tables	5 (read from USB memory)
Regamma	ON or OFF
Percentage Display	Displays luminance or RGB components as percentages
Level Display	Displays RGB components with 256 levels (8 bits)
Measured Points	3
Measurement Sizes	1 pixel, 3 × 3 pixels, or 9 × 9 pixels

CINELITE Advanced Display

Features	Synchronized marker display, vector marker display
Synchronized Marker Display	Synchronizes the markers on the vector display or waveform display to the measurement points of the CINELITE display's f Stop display or % display
Vector Marker Display	Displays numerically the specified position on the vector display
Number of Markers	
Synchronized Marker	Up to 4
Vector Marker	1
Vector Numeric Display	Displays numerically the active marker position
Cb	Displays the C_B position as a percentage
Cr	Displays the C_R position as a percentage
deg	Displays the hue in degrees
d	Displays the distance from the center as a percentage

2.3.14 CINEZONE Display

CINEZONE Display

Function	Displays the luminance levels in the picture using different colors
Display Colors	Linear (1024 colors) or step (12 colors)
Upper Limit Setting	-6.3 to 109.4 % (Values above the upper limit are displayed using white.)
Lower Limit Setting	-7.3 to 108.4 % (Values below the lower limit are displayed using black.)

Level Search Display

Function	Colors are added to the display in accordance with luminance level ranges
Luminance Level Setting	-7.3 to 109.4 %
Luminance Level Range Setting	0.5 to 100.0 % (values greater than or equal to the specified range are displayed in white; values less than or equal to the range are displayed in black)

2.3.15 Audio Display

Lissajous Display

Displayed Channels	2 channels or 8 channels (2 channels only for AES/EBU signals)
Display Mode	X-Y or MATRIX

Sound Image Display (only for embedded audio)

Channel Mapping	L, R, C, LFE, SL(S), SR, RL, and RR
Surround Formats	3-1, 3-2, and 3-2-2

Level Meter Display	
Displayed Channels	2 channels or 8 channels (2 channels only for AES/EBU signals)
Meter	60 dB peak level, 90 dB peak level, average, or loudness
Peak Hold Time	0.5 to 5.0 seconds/HOLD (when displaying the peak level)
Group Selection:	You can select any two groups from groups 1, 2, 3, and 4.
Sampling Frequency	48 kHz (must be synchronized to the video signal)

2.3.16 Status Display

SDI Signal Error Detection	
Signal Detection	Detects the presence of an SDI signal
TRS Error	Detects TRS location and protection bit errors
Line Number Error	Detects HD-SDI signal line number errors
CRC Error	Detects HD-SDI signal transmission errors
EDH Error	Detects SD-SDI signal transmission errors
Gamut Error	Detects gamut errors
Detection Range Upper Limit	90.8 to 109.4 %
Detection Range Lower Limit	-7.2 to 6.1 %
Filter	1 MHz LPF or 2.8MHz LPF (only HD signals) (removes transient errors and can be turned ON and OFF)
Composite Gamut Error	Detects level errors that occur when component signals are converted to composite signals
Detection Range Upper Limit	90.0 to 135.0 %
Detection Range Lower Limit	-40.0 to -20.0 %
Filter	1 MHz LPF or 2.8MHz LPF (only HD signals) (removes transient errors and can be turned ON and OFF)
Parity Error	Detects ancillary data header parity errors
Checksum Error	Detects ancillary data transmission errors
BCH Error	Detects errors in the transmission of the audio signal embedded in an HD-SDI signal
Audio CRC Error	Detects CRC errors in channel status bits
Audio Information Detection	Detects the presence of each audio channel
Error Count	Up to 100,000 errors (Only the specified errors are counted.)
Count Period	Only one error is counted for each second or frame.
Elapsed Time	Time elapsed since the error count was cleared

Event Log Display

Recording Capacity	Up to 1,000 events
Description	Records all events from start to finish
Recorded Events	Errors, changes in input type, time stamps, etc.
Data Output	Event logs can be saved to USB memory or sent to a PC through an Ethernet connection as text data.

Data Dump Display

Display Modes	Display data separated by serial data sequence or by channel
Line Select	Displays the selected line.
Sample Select	Displays from the selected sample.
Jump Feature	Jumps to an EAV or SAV
Data Output	Event logs can be saved to USB memory or sent to a PC through an Ethernet connection as text data.

Audio Status Display

Control Packets	Analyzes and displays SDI signal audio control packets
Channel Status	Analyzes and displays or displays the dump of the channel status of the embedded audio signal

EDH Display

Compliant Standard	SMPTE RP165
Display Details	Analyzes and displays received EDH packets

Format ID Display

Compliant Standards	SMPTE ST 352 and ARIB STD-B39
Display Details	Analyzes and displays the format ID.

Closed Caption Display

Compliant Standards	ARIB STD-B37, CEA-608, and EIA-708
Display Details	Analyzes and displays the closed caption signal.
Display Formats	Text, hexadecimal, and binary

Inter-Stationary Control Data Display (NET-Q)

Compliant Standard	ARIB STD-B39
Display Details	Analyzes and displays inter-stationary control data
Display Formats	Text, hexadecimal, and binary

2.3.17 Front Panel

Key LEDs	All the keys are dimly back-lit, and the selected key lights more brightly.
Power Switch	Turns the power on and off. If power is removed when the switch is on, the instrument will turn on when power is restored.
Last Memory	Backs up the panel settings.

2.3.18 General Specifications

Environmental Conditions	
Operating Temperature	0 to 40°C
Operating Humidity	85 %RH or less (no condensation)
Optimal Temperature	10 to 30°C
Optimal Humidity	85 %RH or less (no condensation)
Power Supply	
Voltage	10 to 18 VDC (XLR connector)
Power Consumption	18 W max.
Dimensions	215 (W) × 44 (H) × 250 (D) mm (excluding protruding parts)
Weight	1.3 kg
Accessories	Instruction manual..... 1 AC adapter (SPU40-105)..... 1 15-pin D-sub connector..... 1 15-pin D-sub connector cover..... 1

2.3.19 AC adapter (SPU40-105)

Input	100 to 240 VAC, 50/60 Hz, 1 A
Output	12 VDC, 3.33 A max.
Dimensions	52 (W) × 34.5 (H) × 118 (D) mm (excluding the power cord)
Weight	0.35 kg (excluding the power cord)

3. Component Names and Functions

3.1 Front Panel

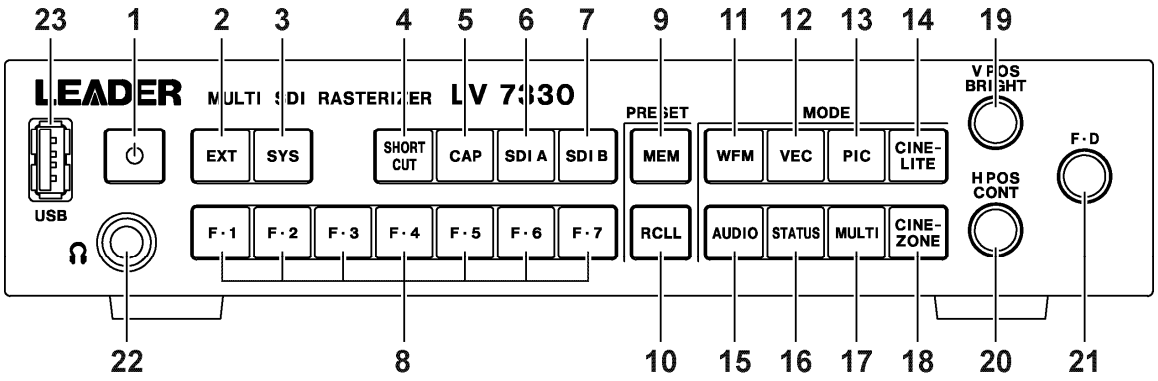


Figure 3-1 Front panel

Table 3-1 Front panel items and functions

No.	Name	Function
1	Power switch	A quick push switches the power from off to on. Holding the switch switches the power from on to off. [Reference] Section 4.1, “Preparing the Power Supply”
2	EXT	Switches between the internal sync signal and an external sync signal. [Reference] Section 4.6, “Applying an External Sync Signal”
3	SYS	Press this key to make system settings. [Reference] Chapter 5, “System Settings”
4	SHORT CUT	Can be configured to be used for one of the following operations: taking a screen capture, recalling a preset setting configuration, adjusting the volume , or adjusting the contrast. [Reference] Section 5.6, “Assigning a Function to the SHORT CUT Key”
5	CAP	Takes a screen capture of the display. [Reference] Chapter 7, “Screen Capture Feature”
6	SDI A	Sets the input channel to Ach. [Reference] Section 4.3, “Applying SDI Input Signals”
7	SDI B	Sets the input channel to Bch. [Reference] Section 4.3, “Applying SDI Input Signals”
8	F•1 to F•7	Used to select menu items and pop-up commands.
9	MEM	Press this key to save or delete presets. [Reference] Chapter 6, “Presets”
10	RCLL	Press this key to recall a preset setting configuration. [Reference] Section 6.2, “Loading Presets”
11	WFM	Switches to the video signal waveform display. [Reference] Chapter 8, “Video Signal Waveform Display”
12	VEC	Switches to the vector display. [Reference] Chapter 9, “Vector Display”
13	PIC	Displays the picture. [Reference] Chapter 10, “Picture Display”

No.	Name	Function
14	CINELITE	Switches to the CINELITE display. [Reference] Chapter 13, “CINELITE Display”
15	AUDIO	Shows the audio display. [Reference] Chapter 11, “Audio Display”
16	STATUS	Switches to the status display. [Reference] Chapter 12, “Status Display”
17	MULTI	Shows multiple displays at the same time. [Reference] Chapter 15, “Multi-Screen Display Feature”
18	CINEZONE	Switches to the CINEZONE display. [Reference] Chapter 14, “CINEZONE Display”
19	V POS/BRIGHT	Changes the vertical position in the video signal waveform display and changes the brightness in the picture display. Pushing the knob returns the value that you are adjusting to its default setting. [Reference] Section 8.2.1, “Setting the Vertical Position,” section 10.2.1, “Adjusting the Brightness”
20	H POS/CONT	Changes the horizontal position in the video signal waveform display and changes the contrast in the picture display. Pushing the knob returns the value that you are adjusting to its default setting. [Reference] Section 8.2.2 “Setting the Horizontal Position,” section 10.2.2, “Adjusting the Contrast”
21	F•D	Mostly used to set values. Generally, pressing this knob will return the value you are adjusting to its default setting. [Reference] Section 4.8.2, “Menu Operations”
22	Headphone jack	6.3-mm (1/4 in.) stereo jack for connecting headphones. [Reference] Section 11.5, “Headphone Settings”
23	USB port	Use to connect USB memory. USB memory is used to load and save various kinds of data. [Reference] Section 1.2.7, “USB Memory Devices”

3.2 Rear Panel

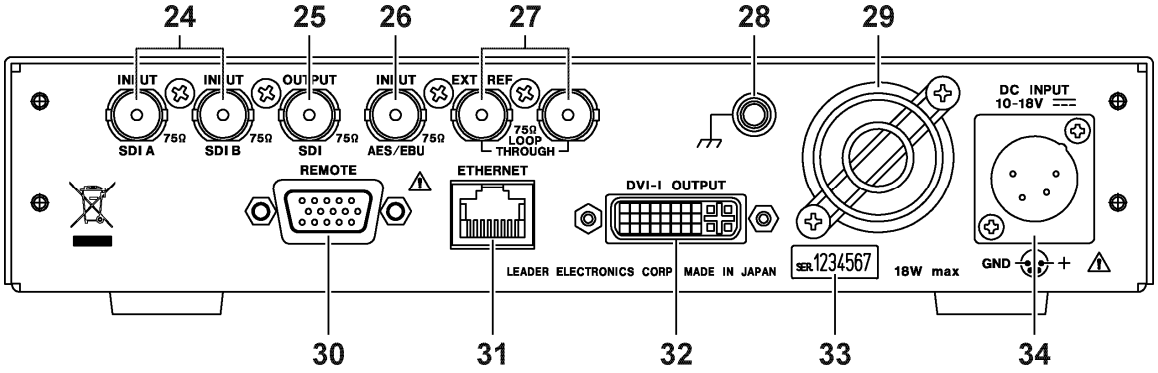


Figure 3-2 Rear panel

Table 3-2 Rear panel items and functions

No.	Name	Function
24	INPUT SDI A INPUT SDI B	SDI signal input connectors. [Reference] Section 4.3, “Applying SDI Input Signals”
25	OUTPUT SDI	Reclocked SDI signal output connector. [Reference] Section 4.4, “Transmitting an SDI Output Signal”
26	INPUT AES/EBU	AES/EBU signal input connector. [Reference] Section 4.5, “Applying AES/EBU Signals”
27	EXT REF	External reference input connectors. They are loop-through. [Reference] Section 4.6, “Applying an External Sync Signal”
28	Protective Ground Terminal	Terminal for connecting to external ground.
29	FAN	Cooling fan.
30	REMOTE	Remote control connector. Can be used to execute actions such as recalling presets. [Reference] Section 16.1, “Remote Control Feature”
31	ETHERNET	Ethernet connector. Supports TELNET and FTP; SNMP. Can be used to execute panel operations. [Reference] Section 16.2, “TELNET,” section 16.3, “FTP,” section 16.4, “SNMP”
32	DVI-I OUTPUT	DVI-I connector for connecting a display.
33	Serial Number Label	The serial number is printed here.
34	DC INPUT	Input connector for the DC power supply. [Reference] Section 4.1.1, “Attaching the DC Power Cord”

4. Before You Begin Measuring

4.1 Preparing the Power Supply

4.1.1 Attaching the DC Power Cord

The LV 7330 operates on DC power. Connect the supplied AC adapter to the DC input connector.
When the LV 7330 is connected to the DC power supply, the internal microcomputer is in standby mode and some power is consumed even if the power switch is turned off. If you do not intend to use the LV 7330 for an extended period of time, disconnect the DC power supply.

WARNING

Do not connect a power supply other than the designated one to the DC input connector. Doing so may damage the instrument or lead to fire.

The DC input connector and its pin assignments are shown below.

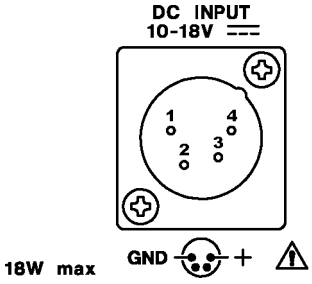


Figure 4-1 DC power supply input connector

Table 4-1 DC power supply input connector pin alignment

Pin No.	Pin Name
1	GND
2	NC
3	NC
4	+12 V

4.1.2 Turning On the Power

To turn on the power, press the power switch on the front panel. The LED next to the power switch lights when the power is on.
When you turn on the power, the LV 7330 starts up with the same panel settings that were set when it was last turned off. However, the error counter and event log in the status display are cleared.

4.1.3 Turning Off the Power

To turn off the power, hold the power switch on the front panel for one second or more. The LED next to the power switch turns off when you turn off the power.

4.2 Connecting the LV 7330 to a Display

By connecting a display to the DVI-I output connector, you can view a variety of screens. Using a DVI-I cable, connect the LV 7330 to an XGA (1024×768) display. (The display and the cable are not included with the LV 7330.)

The DVI-I output connector supports both serial digital output (Single Link T.M.D.S) and RGB analog output. The initial display format is XGA (1024×768), but you can change it to 16:9 (1366×768) or 16:10 (1920×1200) that uses a squeeze method, in the system settings. Hot plug detection and DDC are not supported.

[Reference] Squeeze method → Section 5.3.6, “Selecting the Display Aspect Ratio”

The DVI-I output connector and its pin assignments are shown below.

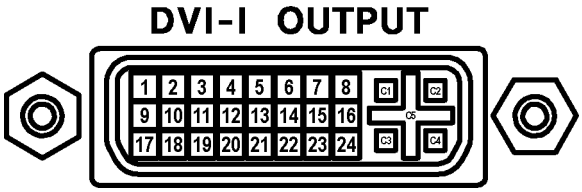


Figure 4-2 DVI-I output connector

Table 4-2 DVI-I output connector pin assignments

Pin No.	Function	Pin No.	Function
1	TMDS Data2-	16	NC
2	TMDS Data2+	17	TMDS Data0-
3	TMDS Data2 Shield	18	TMDS Data0+
4	NC	19	TMDS Data0 Shield
5	NC	20	NC
6	DDC Clock	21	NC
7	DDC Data	22	TMDS Clock Shield
8	Analog Vertical Sync	23	TMDS Clock+
9	TMDS Data1-	24	TMDS Clock-
10	TMDS Data1+	C1	Analog Red
11	TMDS Data1 Shield	C2	Analog Green
12	NC	C3	Analog Blue
13	NC	C4	Analog Horizontal Sync
14	+5V DC POWER	C5	Analog Ground (RGB return)
15	Ground (return for +5, Hsync, Vsync)		

4.3 Applying SDI Input Signals

The figure below shows the SDI signal input connectors.

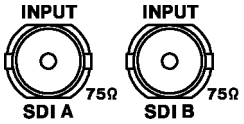


Figure 4-3 SDI input connectors

- The SDI input connectors (INPUT SDI A and INPUT SDI B) are for component SDI (serial digital interface) signals only. Do not apply analog video signals, composite SDI signals, or any other kind of signal besides component SDI.
- The SDI input connectors (INPUT SDI A and INPUT SDI B) are terminated internally at 75 Ω. You do not need to attach a terminator. Connect each of the SDI input connectors to a cable with a characteristic impedance of 75 Ω.
- Make sure that the SDI input signal strength is 800 mVp-p ± 10 % at the input signal source BNC output connector. An SDI signal that is outside of this range may not be received properly.

  You can press SDI A or SDI B on the front panel to choose which connector you want to display the input signal from.

  For the different formats that the LV 7330 supports, see section 2.3.1, “Video Signal Formats and Corresponding Standards.” You can switch between single link and dual link in the system settings.
  For single link, the LV 7330, by default, automatically detects the input format. For dual link or to set the input format manually, use the system settings.
  [Reference] Section 5.1, “Setting the Input Format”

  CAUTION

  The maximum allowable voltage of the SDI input connectors is ±2 V. Do not apply excessive voltage to the connectors. Doing so may damage the instrument or lead to injury.

4.4 Transmitting an SDI Output Signal

The signal that the SDI output connector delivers is a reclocked version of the SDI signal that has been selected using the SDI A or SDI B on the front panel. Use the output connector to transmit the signal to a picture monitor that supports SDI signals.
The output impedance of the connector is 75 Ω. Terminate the other end at 75 Ω.

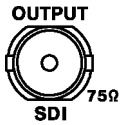


Figure 4-4 SDI output connector

4.5 Applying AES/EBU Signals

The figure below shows the AES/EBU signal input connector. To measure the input signal, you must change the audio signal setting in the system settings.
The AES/EBU input connector is terminated internally at 75 Ω, so there is no need to connect a terminator to it when it is not in use. Connect a cable with a characteristic impedance of 75 Ω to the input connector.

[Reference] Section 5.2, “Selecting the Audio Signal to Measure,” section 11, “Audio Display”

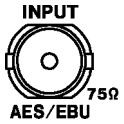


Figure 4-5 AES/EBU input connector

CAUTION

The maximum allowable voltage of the AES/EBU input ports is ±5 V. Do not apply excessive voltage to the ports. Doing so may damage the device or lead to injury.

4.6 Applying an External Sync Signal

You can use an external sync signal for in the video signal waveform and vector displays. Apply a tri-level sync signal or an NTSC/PAL black burst signal to the external reference input connectors. The LV 7330 determines the sync signal format automatically.

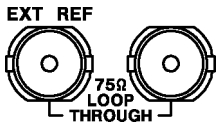


Figure 4-6 External reference input connectors

- As shown in the figure below, the external reference 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’s connector at 75 Ω. Connect each of the external reference input connectors to a cable with a characteristic impedance of 75 Ω.

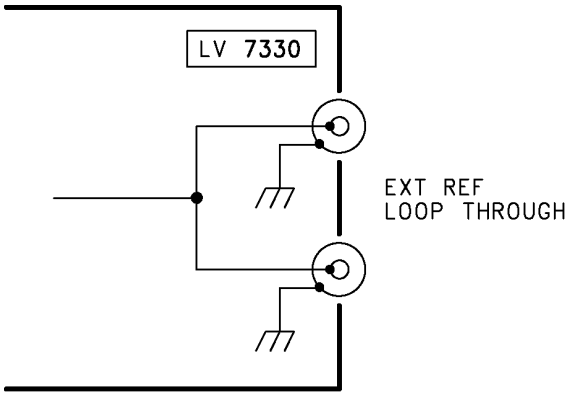


Figure 4-7 Loop-through

- To use an external sync signal, press EXT on the front panel to select EXT.
  Regardless of this setting, the picture, audio, and status displays all use the internal sync signal.
- If the video signal waveform or phase difference is displayed using an external sync signal as a reference, the waveform phase one clock before or after an SDI signal is inserted or the power is turned on is indefinite.
- If you are going to apply a tri-level sync signal, be sure to use one that has the same frame and line rates as the HD signal.
- The formats in which waveforms can be displayed while using a black burst signal as the sync signal are listed below. If the external sync signal is an NTSC black burst signal with an embedded 10-field ID and the SDI signal is 1080PsF/23.98 or 1080p/23.98, the LV 7330 automatically recognizes the 10-field ID.

  525i/59.94 black burst signal
  1080i/59.94
  1080p/29.97
  1080PsF/29.97
  1080PsF/23.98 (The black burst signal must have a 10-field ID.)
  1080p/23.98 (The black burst signal must have a 10-field ID.)
  720p/59.94
  525i/59.94

  625i/50 black burst signal
  1080i/50
  1080p/25
  1080PsF/25
  625i/50

CAUTION

The maximum allowable voltage of the external reference input connectors is ±5 V. Do not apply excessive voltage to the connectors. Doing so may damage the instrument or lead to injury.

4.7 General Display Explanation

This section explains the common elements in all measurement displays.

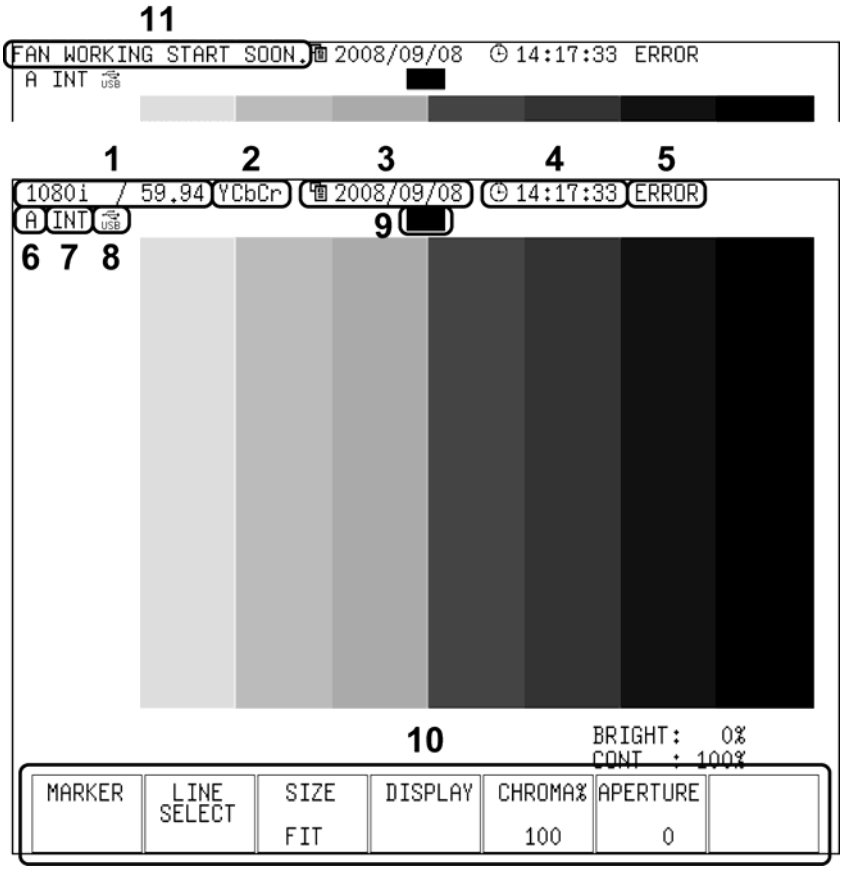


Figure 4-8 General display explanation

1 Input format

The input signal format appears here. You can hide this item.
You can choose to specify the input format manually or to have the LV 7330 detect it automatically. If there is no input signal or the format of the signal is different from the manually set format, "----------" appears here.

[Reference] Section 5.1, "Setting the Input Format," section 5.3.1, "Displaying the Input Format"

2 Color system

The video signal waveform display color system (YCbCr, GBR, RGB, YGBR, YRGB, or COMP) appears here. You can hide this item.

[Reference] Section 5.3.4, "Displaying the Color System," section 8.8, "Color System Settings"

3 Date

The date set in the system settings appears here. You can choose the date display format from one of the following options: Y/M/D, M/D/Y, D/M/Y, or OFF.

[Reference] Section 5.3.2, "Selecting the Date Display Format," section 5.5, "Setting the Date and Time"

4 Time

The time set in the system settings or the timecode embedded in the SDI input signal appears here. You can hide this item.
You can set the timecode to LTC or VITC.

[Reference] Section 5.3.3, “Selecting the Time Display Format,” section 5.3.5, “Selecting the Timecode Display Format,” section 5.5, “Setting the Date and Time”

5 Error message

Error messages appear here. The error messages that appear and the conditions that cause them are listed below. If “It...stops.” or “FAN ALARM” appears even though there are no problems with the operating environment, contact your local LEADER agent.

NO_SIGNAL	This message appears when there is no signal.
ERROR	This message appears when an error occurs that has been set to be detected in the status display or when there is an error in the input format.
It...stops.	This message appears when the internal temperature of the LV 7330 has reached or exceeded 80 °C.
FAN ALARM	This message appears when the fan is broken.

6 Input channel

The input channel (A or B) appears here. You can change the input channel by pressing SDI A or SDI B on the front panel.

7 Sync signal

“INT” appears here when an internal sync signal is being used, and “EXT” appears when an external sync signal is being used. You can change the sync signal by pressing EXT on the front panel.

8 USB

Appears when USB memory is connected.

[Reference] Section 1.2.7, “USB Memory Devices”

9 Tally light

This item appears in green when pin 13 of the remote connector is connected to a ground. This item does not appear in the video signal waveform, vector, audio, multi, or status display.

[Reference] Section 16.1.4, “Displaying a Tally Light”

10 Menu

The menu here is used to configure various settings. In some displays, the menu disappears after approximately five seconds have passed since the last operation. When the menu has disappeared, pressing any key will cause it to reappear.

11 Message

Messages are displayed here. The messages that appear and the conditions that cause them are listed below.

FAN WORKING START SOON.	This message appears when the fan is not operating and the internal temperature of the LV 7330 has reached or exceeded 40 °C. The fan will start spinning one minute after this message appears.
POWER OFF START SOON.	This message appears when the internal temperature of the LV 7330 has reached or exceeded 85 °C. The power will be turn off one minute after this message appears.

4.8 Basic Operation

4.8.1 Connection

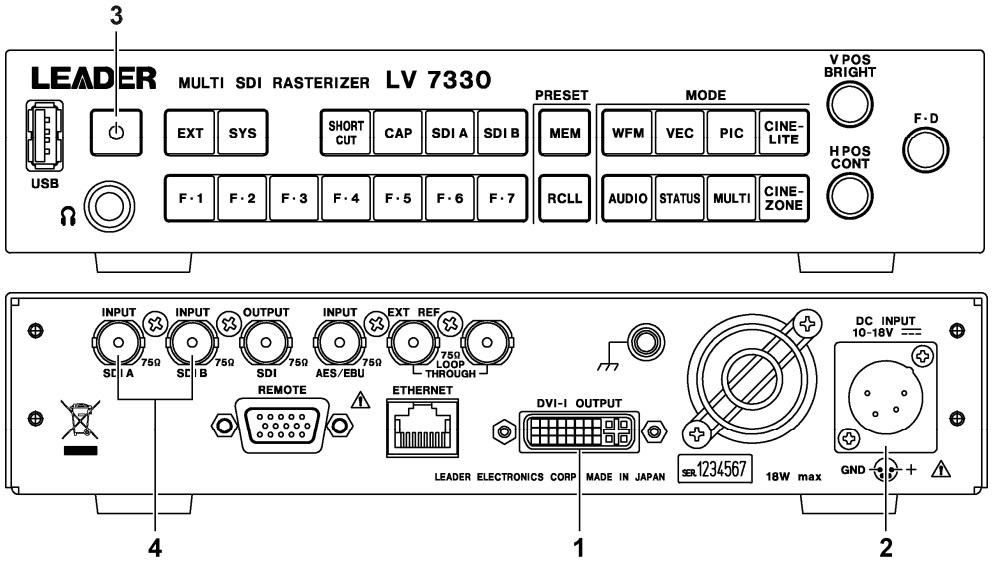


Figure 4-9 Connection

1. **Connect a display to the DVI-I output connector.**
2. **Connect the supplied AC adapter to the DC input connector.**
3. **Press the power switch.**
4. **Apply SDI signals to the SDI input ports.**

   You can apply up to two signals to the SDI input ports. To switch between measurement channels, press SDI A or SDI B on the front panel. You do not have to terminate unused ports.
   By default, the LV 7330 displays the video signal waveform when it receives an SDI signal. To change the display mode, press any MODE key on the front panel.

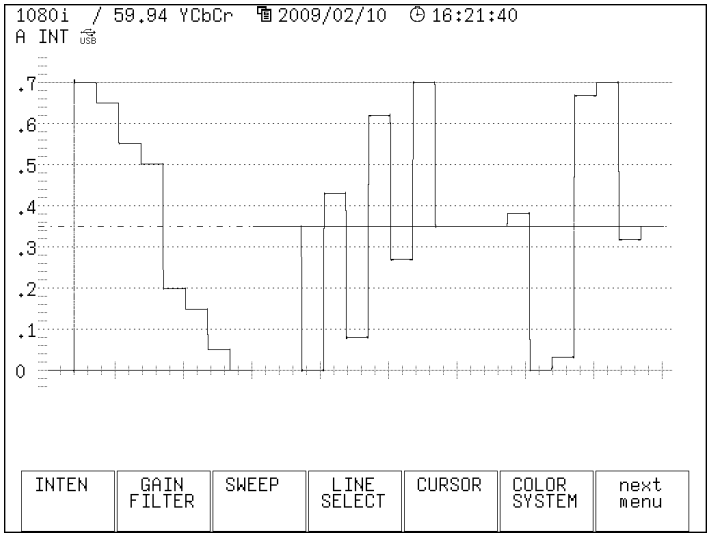


Figure 4-10 Video signal waveform display

4.8.2 Menu Operations

Most of the settings are configured using the setup menu.
This section explains how to operate the setup menu, using the setup menu in the vector display as an example.
The menu items correspond to F•1 to F•7 on the front panel

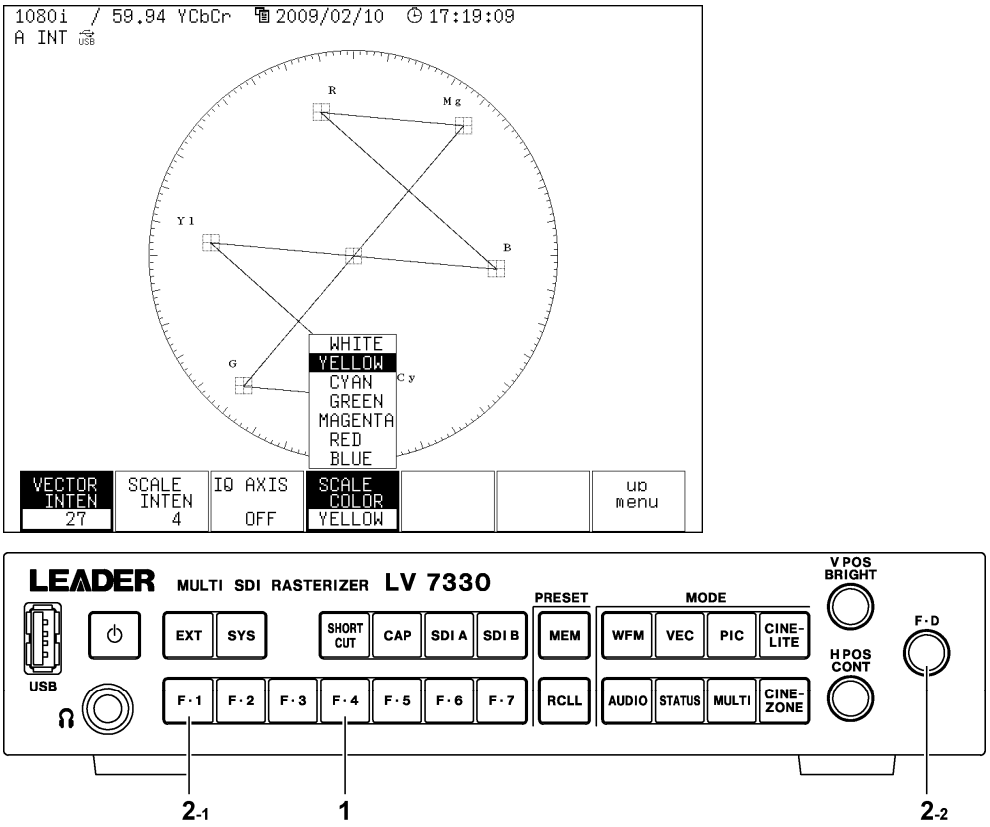


Figure 4-11 Menu operations

1 Selecting a setting

To select a setting from a list like the one shown above F•4 SCALE COLOR in the figure, press F•4 repeatedly to select the setting you want. The setting changes each time you press F•4. After you stop pressing F•4, the setting is confirmed and the pop-up menu disappears.

2 Setting a value

To set the value of a setting like F•1 VECTOR INTEN, which is shown above, press F•1, and then turn F•D. Generally, pressing F•D will return the value you are adjusting to its default setting.

5. System Settings

You can configure general LV 7330 settings in the system menu.
To display the system menu, press SYS.

SYS →

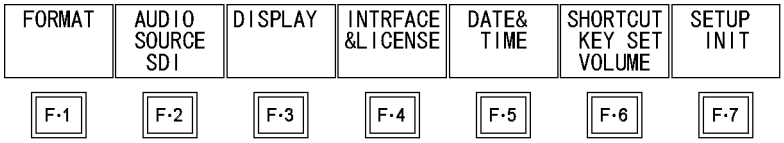


Figure 5-1 System menu

5.1 Setting the Input Format

To set the input format, press F•1 FORMAT in the system menu. A menu for setting the input format appears.

SYS → F•1 FORMAT →

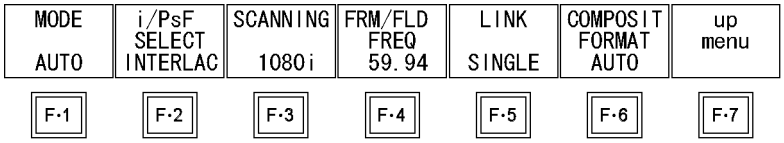


Figure 5-2 FORMAT menu

5.1.1 Setting the Input Format Detection Method

To select whether to detect the input format automatically or to set it manually, follow the procedure below.

Procedure

SYS → F•1 FORMAT → F•1 MODE

Settings

AUTO:	The input format is detected automatically (this is the default setting).
MANUAL:	The input format must be set manually.

5.1.2 Selecting i or PsF

Even if you set F•1 MODE to AUTO, the following formats cannot be detected automatically.

- 1080i/60 and 1080PsF/30
- 1080i/59.94 and 1080PsF/29.97
- 1080i/50 and 1080PsF/25

To select whether to display the input format name as interlaced or segmented frame, follow the procedure below.
This setting is available when F•1 MODE is set to AUTO.

Procedure

SYS → F•1 FORMAT → F•2 i/PsF SELECT

Settings

INTERLAC: The input format name is displayed as interlaced (this is the default setting).
SEG.FRM: The input format name is displayed as segmented frame.

5.1.3 Setting the Input Format

If you set F•1 MODE to MANUAL, you have to set the input format manually.

To set the input format, follow the procedure below.
These settings are available when F•1 MODE is set to MANUAL.

Procedure

1. SYS → F•1 FORMAT → F•3 SCANNING (Select the scanning method.)
2. F•4 FRM/FLD FREQ (Set the field or frame frequency.)

Table 5-1 Input formats

F•3 SCANNING	F•4 FRM/FLD FREQ
1080i	60, 59.94, and 50
1080PsF	30, 29.97, 25, 24, and 23.98
1080p	30, 29.97, 25, 24, and 23.98
720p	60, 59.94, 50, 30, 29.97, 25, 24, and 23.98
525i	59.94
625i	50

5.1.4 Selecting a Link Format

To select a link format, follow the procedure below.

Procedure

SYS → F•1 FORMAT → F•5 LINK

Settings

SINGLE:	The LV 7330 is set to single link mode. This is the default setting.
DUAL-A:	The LV 7330 is set to dual link mode. Only link A is supported. You must manually set the input format. Set F•1 MODE to MANUAL. You cannot set the video signal waveform display's display format to YCbCr. The LV 7330 does not detect gamut errors or composite gamut errors in the status display.

5.1.5 Setting the Composite Display Format

To set the composite display format, follow the procedure below.
The composite display format affects how video signal waveforms and vectors are converted into pseudo-composite signals.

Procedure

SYS → F•1 FORMAT → F•6 COMPOSIT FORMAT

Settings

AUTO:	When the field frequency of a received SDI signal is 50 Hz or the frame frequency is 25 or 50 Hz, the signal is converted into a PAL pseudo-composite signal. Otherwise, the signal is converted into an NTSC pseudo-composite signal (this is the default setting).
NTSC:	All received SDI signals are converted into NTSC pseudo-composite signals.
PAL:	All received SDI signals are converted into PAL pseudo-composite signals.

5.2 Selecting the Audio Signal to Measure

To select the signal source for the audio display and headphone output, follow the procedure below.

Procedure

SYS → F•2 AUDIO SOURCE

Settings

AES/EBU:	The signal applied to the rear panel AES/EBU input connector is measured.
SDI:	The audio signal embedded in the SDI signal is measured. This is the default setting.

5.3 Display Settings

To configure the display settings, press F•3 DISPLAY in the system menu. You can configure the display and set the display aspect ratio.

SYS → F•3 DISPLAY →

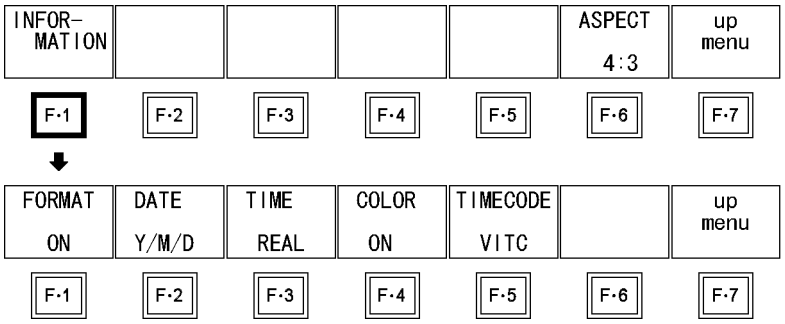


Figure 5-3 DISPLAY menu

5.3.1 Displaying the Input Format

To show or hide the input format, follow the procedure below. The input format appears at the top of the screen.

Procedure

SYS → F•3 DISPLAY → F•1 INFORMATION → F•1 FORMAT

Settings

ON:	The input format is displayed (this is the default setting).
OFF:	The input format is not displayed.

5.3.2 Selecting the Date Display Format

To set the date display format, follow the procedure below. The date appears in places such as at the top of the screen, in the event log, and in the USB memory display.

Procedure

SYS → F•3 DISPLAY → F•1 INFORMATION → F•2 DATE

Settings

Y/M/D:	The date is displayed in this order: year, month, day (this is the default setting).
M/D/Y:	The date is displayed in this order: month, day, year.
D/M/Y:	The date is displayed in this order: day, month, year.
OFF:	The date is not displayed at the top of the screen. All other date displays are arranged in this order: year, month, day.

5.3.3 Selecting the Time Display Format

To set the time display format, follow the procedure below. The time appears in places such as at the top of the screen, in the event log, and in the USB memory display.

Procedure

SYS → F•3 DISPLAY → F•1 INFORMATION → F•3 TIME

Settings

REAL:	The date set in the system settings is displayed (this is the default setting).
TIMECODE:	The timecode embedded in the SDI input signal is displayed at the top of the screen and in the event log.
OFF:	The time is not displayed at the top of the screen. All other time displays are based on the time set in the system settings.

5.3.4 Displaying the Color System

To show or hide the color system, follow the procedure below. The color system is indicated at the top of the screen as YCbCr, GBR, YGBR, D.GBR, or COMP.

Procedure

SYS → F•3 DISPLAY → F•1 INFORMATION → F•4 COLOR

Settings

ON:	The color system is displayed (this is the default setting).
OFF:	The color system is not displayed.

5.3.5 Selecting the Timecode Display Format

When you have set F•3 TIME to TIMECODE, follow the procedure below to set the timecode display format.

Procedure

SYS → F•3 DISPLAY → F•1 INFORMATION → F•5 TIMECODE

Settings

LTC:	The LTC timecode is displayed.
VITC:	The VITC timecode is displayed (this is the default setting).

5.3.6 Selecting the Display Aspect Ratio

To set the aspect ratio of the display that you will connect to the LV 7330 to, follow the procedure below.

Procedure

SYS → F•3 DISPLAY → F•6 ASPECT

Settings

4:3:	The LV 7330 produces a signal for a 4:3 (1024×768) display. This is the default setting.
16:9:	The LV 7330 produces a signal for a 9:16 (1366×768) display using the squeeze method.
16:10:	The LV 7330 produces a signal for a 16:10 (1920×1200) display using the squeeze method.

5.4 Configuring the External Interface

To configure the external interface settings, press F•4 INTRFACE&LICENSE in the system menu. A menu appears for configuring remote control, Ethernet, and license settings.

SYS → F•4 INTRFACE&LICENSE →

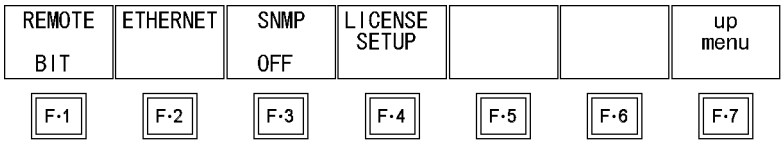


Figure 5-4 INTRFACE&LICENSE menu

5.4.1 Selecting the Method for Loading Presets

You can load presets using remote control connector pins /P1 through /P8. There are two different methods for loading presets. To choose which method to use, follow the procedure below.

[Reference] Section 16.1, “Remote Control Feature”

Procedure

SYS → F•4 INTRFACE&LICENSE → F•1 REMOTE

Settings

BIT:	/P1 through /P8 are assigned to preset numbers 1 through 8, and you can load one of eight presets. This is the default setting.
BINARY:	/P5 is set to the MSB, and /P1 is set to the LSB. You can load one of 30 presets by specifying a binary value.

5.4.2 Configuring Ethernet Settings

To configure Ethernet settings, press F•2 ETHERNET in the system menu. The settings configured here are valid after you restart the LV 7330. These settings are not initialized even if you initialize the LV 7330 by following the procedure in section 5.7.1, “Initializing the Settings Using SETUP INIT.”

SYS → F•4 INTRFACE&LICENSE → F•2 ETHERNET →

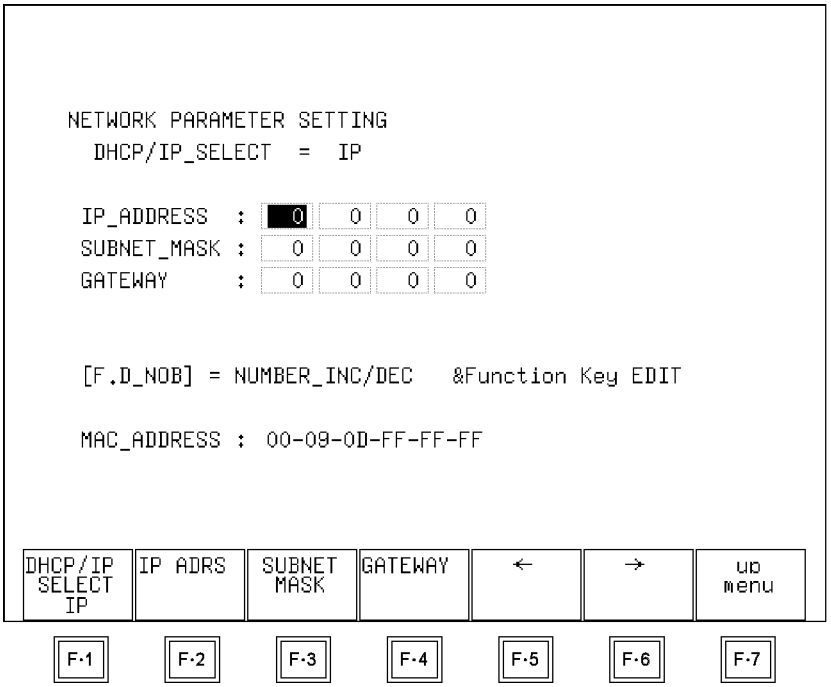


Figure 5-5 ETHERNET menu

First, follow the procedure below to choose DHCP or IP.

Procedure

SYS → F•4 INTRFACE&LICENSE → F•2 ETHERNET → F•1 DHCP/IP SELECT

Settings

DHCP:	The IP_ADDRESS, SUBNET_MASK, and GATEWAY settings are all configured automatically using DHCP (this is the default setting).
IP:	The IP_ADDRESS, SUBNET_MASK, and GATEWAY settings must be configured manually.

If you select IP, follow the procedure below to set IP_ADDRESS, SUBNET_MASK, and GATEWAY. If you select DHCP, F•2 IP ADRS, F•3 SUBNET MASK, and F•4 GATEWAY will not appear.

Procedure

1.	F•2 IP ADRS or F•3 SUBNET MASK or F•4 GATEWAY	(Select an item.)
2.	F•D	(Set the value of the item.)
3.	Press F•5 → or F•D	(Move the cursor.)

Settings

Selectable range: 0 to 255 (The default setting is 0.)

5.4.3 Setting the SNMP Mode

To select the SNMP access mode, follow the procedure below.

Procedure

SYS → F•4 INTRFACE&LICENSE → F•3 SNMP

Settings

OFF:	Settings cannot be read or written. This is the default setting.
ONLY:	Settings can be read, but they cannot be written.
WRITE:	Settings can be read and written.

5.4.4 Configuring License Settings

To use an option that requires a license, you must enter the appropriate license key.

A license key is a key code that activates an option on the LV 7330. Leader will send you a license key when you purchase an option. When purchasing an option tell us the MAC address and the serial number of your LV 7330.*1, *2 Each LV 7330 requires a unique license key. You cannot use the same key for multiple instruments.

*1 You can view the MAC address from the license display.

*2 The serial number is printed on a label on the rear panel.

To install an option, follow the procedure below.
Even if you initialize the LV 7330, the options that you install through this procedure will not be uninstalled.

1. **Press SYSTEM.**
2. **Press F•4 INTRFACE&LICENSE.**
3. **Press F•4 LICENSE SETUP.**

   The license display appears.
   In this display, you can check the MAC address and the registered options.

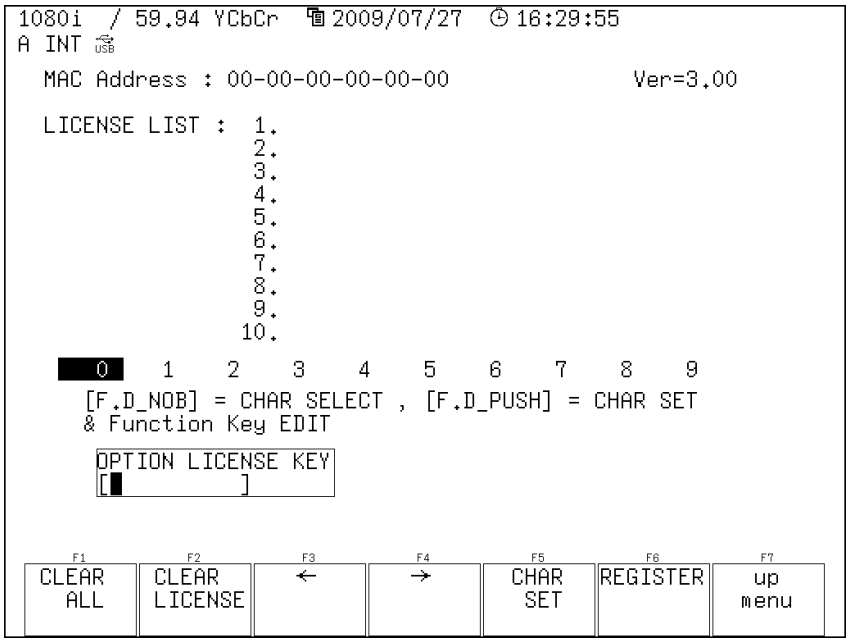


Figure 5-6 License display

4. **Enter the 10-digit license key number for the option that you want to install.**

   The key operations that you can perform in the license display are as follows:

   F•1 CLEAR ALL: Deletes the license key that you are currently entering
   F•3 ←: Moves the cursor to the left
   F•4 →: Moves the cursor to the right
   F•5 CHAR SET: Enters the selected number
   F•D: Turn to select a number, and press to enter the number

5. **Press F•6 REGISTER.**

   If the license key was entered correctly, the option name is added to the LICENSE LIST, and the option can now be used.
   “FAILED” appears if the license key is not correct. Reenter the license key correctly.

5.5 Setting the Date and Time

To set the date and time, press F•5 DATE&TIME in the system menu.
The date and time that you set here will not be initialized even if you initialize the settings by following the procedure described in section 5.7, “Initialization.”

SYS → F•5 DATE&TIME →

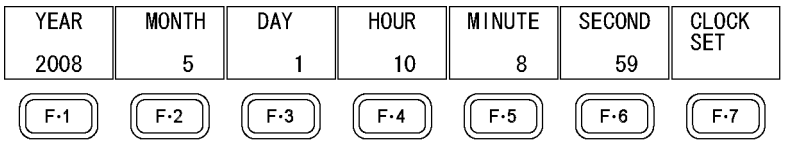


Figure 5-7 DATE&TIME menu

To set the date and time, follow the procedure below. When you press F•7 CLOCK SET, the clock is set to the time that you have selected. To cancel the date and time settings, press SYSTEM.

Procedure

1. SYS → F•5 DATE&TIME
2. Press F•1 YEAR → F•D (Set the year.)
3. Press F•2 MONTH → F•D (Set the month.)
4. Press F•3 DAY → F•D (Set the day of the month.)
5. Press F•4 HOUR → F•D (Set the hour.)
6. Press F•5 MINUTE → F•D (Set the minute.)
7. Press F•6 SECOND → F•D (Set the second.)
8. F•7 CLOCK SET (Confirm the settings you have made.)

5.6 Assigning a Function to the SHORT CUT Key

To assign a function to the SHORT CUT key on the front panel, follow the procedure below.

Procedure

SYS → F•6 SHORTCUT KEY SET

Settings

CAP USB: Pressing the SHORT CUT key causes the LV 7330 to capture the current display and save it to USB memory in the specified format.

DIRECT_K: Pressing the SHORT CUT key causes the LV 7330 to load the registered preset. To register a preset, follow this procedure:
1. Set the LV 7330 to the settings that you want to register.
2. Press MEM.
3. Press SHORT CUT. The SHORT CUT key LED blinks twice, and the preset is registered.

VOLUME: Pressing the SHORT CUT key allows you to adjust the headphone volume with F•D (the function dial). The function dial reverts to its ordinary function after an operation has been performed. This is the default setting.

CONTRAST: Pressing the SHORT CUT key switches the picture display contrast in this order: 50%, 100%, and 200%.

5.7 Initialization

There are two different ways to initialize the settings. One is to select SETUP INIT from the system menu, and the other is to follow a special procedure after restarting the LV 7330. The table below indicates which settings are initialized for each method. “Yes” means that a setting is initialized. “No” means that a setting is not initialized.
All of the settings that are not listed in the table are initialized by both methods. For information about the initial settings, see section 18.1, “Menu Tree.” The initial settings are in brackets.

Table 5-2 Settings That Are Initialized

Item	SETUP INIT	Restart
Ethernet settings	No	Yes
Presets*1	No	Yes
User-defined correction tables for the CINELITE display	No	Yes
GAMMA for the CINELITE display	No	Yes
Date and time	No	No

*1 Includes the preset that is assigned to the SHORT CUT key.

5.7.1 Initializing the Settings Using SETUP INIT

To initialize the settings from the system menu, press F•7 SETUP INIT.

SYS → F•7 SETUP INIT

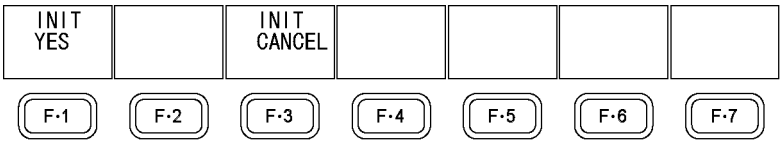


Figure 5-8 SETUP INIT menu

To initialize the settings, follow the procedure below. To cancel the initialization of the settings, press F•3 INIT CANCEL.

Procedure

SYS → F•7 SETUP INIT → F•1 INIT YES

5.7.2 Initializing the Settings by Restarting the LV 7330

To initialize the settings by restarting the LV 7330, follow the procedure below.

Procedure

1. Turn off the power.
2. Turn on the power while holding down V POS and H POS.
3. Release V POS and H POS when the following message appears.
   ERROR_SRAM FILE SYSTEM
   PRESET DATA LOST!!!
   PUSH [WFM] KEY
4. Press WFM.

6. Presets

You can use the preset feature to register and load panel settings. Also, you can use the same settings on multiple LV 7330s by copying presets to USB memory.

You cannot register date and time or Ethernet settings. Registered presets are not deleted even if you initialize the LV 7330 by following the procedure in section 5.7.1, “Initializing the Settings Using SETUP INIT.”

6.1 Registering Presets

To register a preset, follow the procedure below.

1. **Set the LV 7330 to the settings that you want to register.**
2. **Press MEM.**

   The file list display appears.
3. **Press F • 1 COMMENT INPUT.**

   The file name input display appears.
4. **Enter a file name using up to 16 characters.**

   The key operations on the file name input display are as follows:

F•1	CLEAR ALL	Clears all characters.
F•2	DELETE	Deletes the character above the cursor.
F•3	INSERT	Inserts a space 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 a character.
F•D		Turn to select a character, and press to enter the character.
5. **Press F • 7 up menu.**
6. **Turn F • D to select the file number of the file you want to register.**
7. **Press F • 2 STORE.**
8. **Press F • 1 STORE YES.**

   If a file has already been stored with the file number that you selected, the previous file is overwritten. To cancel the registration of the preset, press F•3 STORE NO.

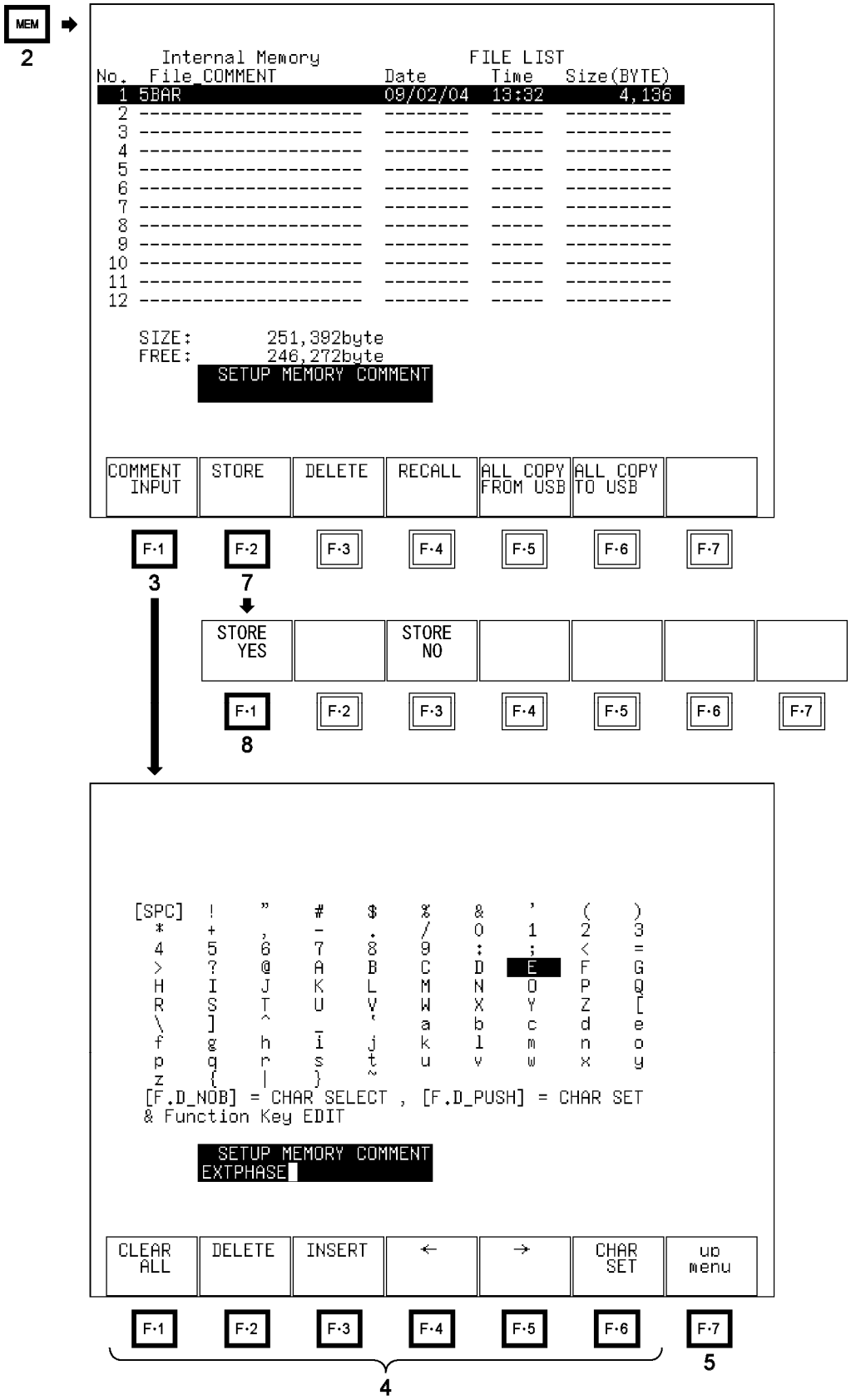


Figure 6-1 Registering presets

6.2 Loading Presets

You can load registered presets by pressing RCLL on the front panel or by using the file list display. Normally, you would press RCLL, but the file list display is convenient if you want to copy presets.

If SHORTCUT KEY SET in the system settings has been set to DIRECT_K, you can load a preset simply by pressing SHORT CUT.

[Reference] SHORTCUT KEY SET → Section 5.6, “Assigning a Function to the SHORT CUT Key”

6.2.1 Loading Presets Using the RCLL Key

To load a preset using the RCLL key, follow the procedure below.

1. **Press RCLL.**

   The preset menu appears.

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

   If the preset number that you want to load is greater than 6, press F•7 more.

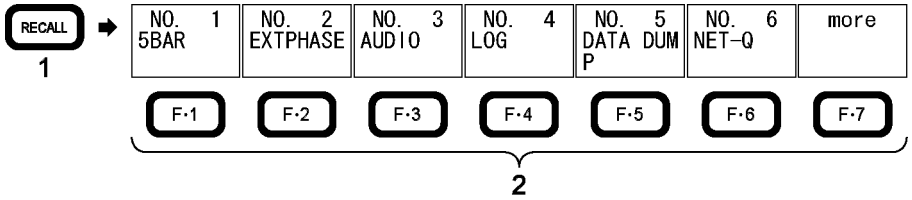


Figure 6-2 Loading presets

6.2.2 Loading Presets Using the File List Display

To load a preset using the file list display, follow the procedure below.

1. **Press MEM.**

   The file list display appears.

2. **Turn F•D to select the file number of the file you want to load.**
3. **Press F•4 RECALL.**

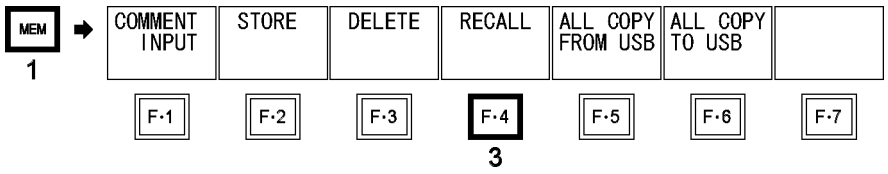


Figure 6-3 Loading presets (2)

6.3 Deleting Presets

To delete a preset, follow the procedure below.

1. **Press MEM.**

   The file list display appears.

2. **Turn F • D to select the file number of the file you want to delete.**
3. **Press F • 3 DELETE.**
4. **Press F • 1 DELETE YES.**

   To abort the deletion of the selected preset, press F•3 DELETE NO.

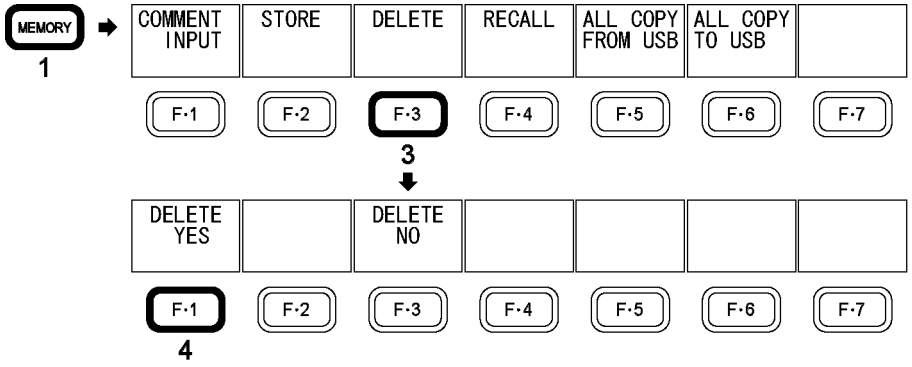


Figure 6-4 Deleting presets

6.4 Copying All Presets

You can copy all of the presets by using F•5 ALL COPY FROM USB and F•6 ALL COPY TO USB in the preset registration menu.

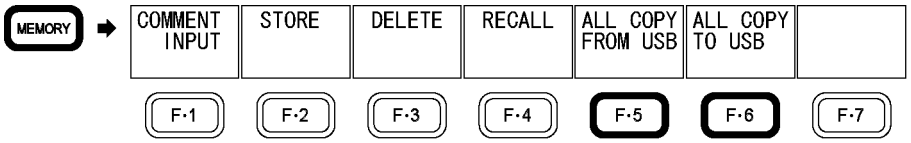


Figure 6-5 Copying all presets

6.4.1 Copying Presets from USB Memory to the LV 7330

To copy all of the presets that have been saved to USB memory to the LV 7330, follow the procedure below.
If presets have already been saved to the LV 7330 memory, they will be overwritten.
To cancel the copy operation, press F•3 COPY NO.

Procedure

MEM → F•5 ALL COPY FROM USB → F•1 COPY YES

6.4.2 Copying Presets from the LV 7330 to USB Memory

To copy all of the presets that have been saved to the LV 7330 to USB memory, follow the procedure below.
If presets have already been saved to the USB memory, they will be overwritten.
To cancel the copy operation, press F•3 COPY NO.

The file structure in the USB memory is shown below. Note that the file numbers in the USB memory are different from the LV 7330 file numbers by one.
If you change the file names in the USB memory, you will not be able to copy the files from the USB memory to the LV 7330.

USB memory
└ SETUP
  └ 00.LVX (to 29.LVX) ..... Presets No.1 to 30

Procedure

MEM → F•6 ALL COPY TO USB → F•1 COPY YES

7. Screen Capture Feature

You can use the screen capture feature to acquire still image data of the current display. You can save the acquired data to USB memory or overlay it on the input signal and display it using the LV 7330.

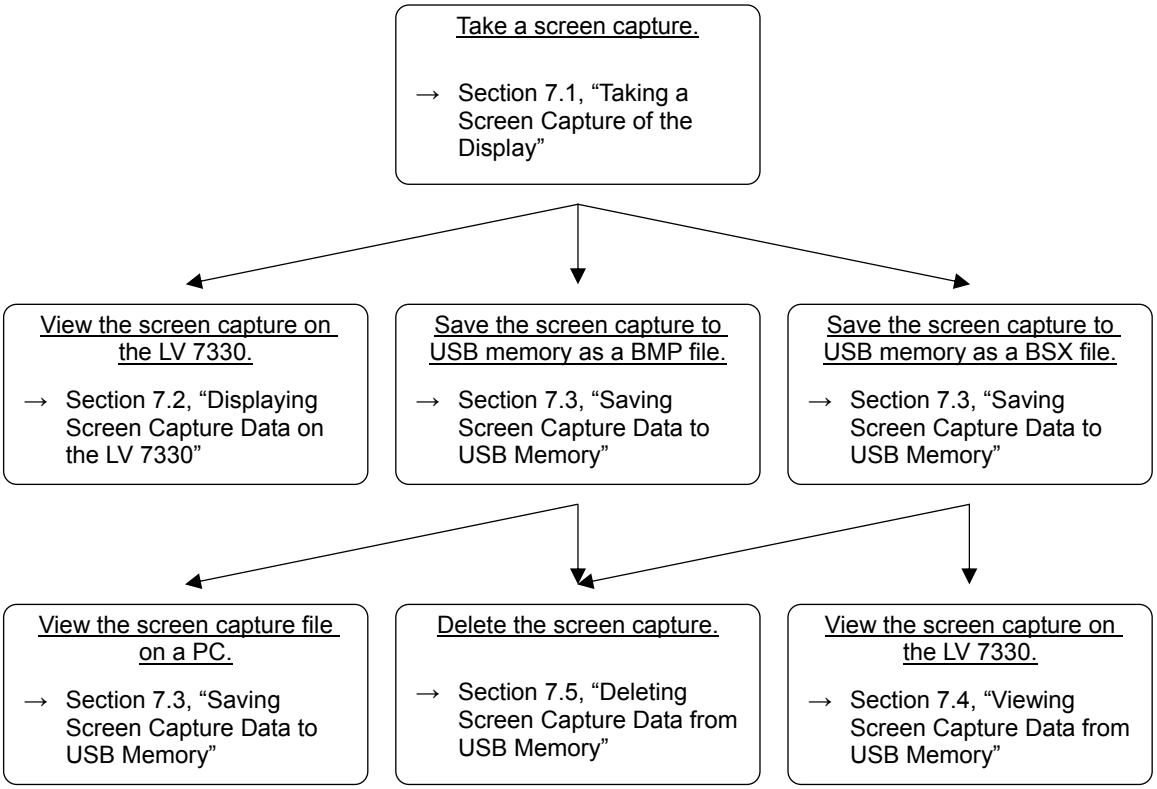


Figure 7-1 Screen capture feature

7.1 Taking a Screen Capture of the Display

To take a screen capture of the display, follow the procedure below.

1. **Configure the LV 7330 so that the display that you want to capture appears on the screen.**

   Only measurement displays can be captured. The file list display and the preset registration display cannot be captured.

2. **Press CAP.**

   When you press CAP, the LV 7330 takes a screen capture of the display. You can also take screen captures by pressing F•1 HOLD while the screen capture menu is displayed.

   Note that if you perform one of the following operations after capturing a display, the captured data will be cleared.
   - Change the display mode.
   - Press SYS, MEM, or RCLL.
   - Turn off the power.

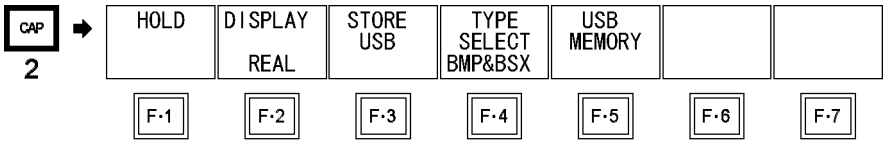


Figure 7-2 Taking a screen capture of the display

7.2 Displaying Screen Capture Data on the LV 7330

The data that you capture by following the procedure in section 7.1, “Taking a Screen Capture of the Display,” can be displayed, or it can be overlaid on the current input signal. To display or overlay the captured data, follow the procedure below.

1. **Press F•2 DISPLAY, and select the display format.**

   The display formats that you can select are explained below.

REAL	The input signal is displayed (this is the default setting).
HOLD	The screen capture data is displayed.
BOTH	The input signal and the captured data are displayed on top of each other with their intensities halved.

   You can display the captured data of video signal waveforms, vectors, lissajous waveforms, pictures, and audio meters on the LV 7330. Other kinds of data (CINELITE, CINEZONE, status, and 5-bar) cannot be displayed. However, these other kinds of data can be saved to USB memory as BMP files.
   For details, see section 7.3, “Saving Screen Capture Data to USB Memory.”

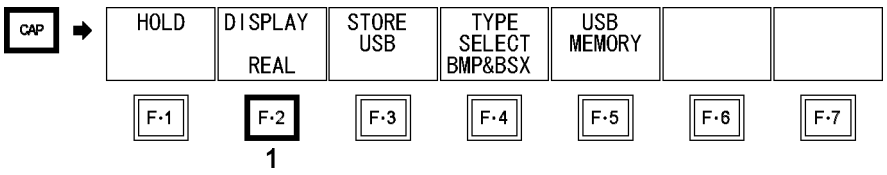


Figure 7-3 Displaying screen capture data

7.3 Saving Screen Capture Data to USB Memory

The data that you capture by following the procedure in section 7.1, “Taking a Screen Capture of the Display,” is cleared when operations such as changing the display mode are performed. However, you can display the captured data on the LV 7330 even after the power has been turned off by saving it to USB memory (if you save it in BSX format).
You can also view captured data on a PC (if you save it in BMP format).

If you set SHORTCUT KEY SET in the system settings to CAP USB, you can save the current display to USB memory simply by pressing SHORT CUT.
[Reference] SHORTCUT KEY SET → Section 5.6, “Assigning a Function to the SHORT CUT Key”

1. **Press F•4 TYPE SELECT to select the file format that you want to save the screen capture data in.**

   The file formats that you can select are explained below.

   BMP&BSX The screen capture data is saved to a BMP file and a BSX file in the USB memory. You can view the saved data on a PC or on the LV 7330. This is the default setting.
   BMP The screen capture data is saved to a BMP file in the USB memory. You can view the saved data on a PC.
   BSX The screen capture data is saved to a BSX file in the USB memory. You can view the saved data on the LV 7330.

2. **Press F•3 STORE USB.**

   The captured data is saved to the USB memory.

   The file name is automatically set to “CAP” + the date and time that have been set using the system settings.
   The date is written using the format that has been specified in the system settings. The time is written in this order: hour, minute, second.
   Example: CAP20080501100859.BMP

   The file structure in the USB memory is shown below.

   USB memory
   └ BMP
   ├ CAP********hhmmss.BMP
   └ CAP********hhmmss.BSX

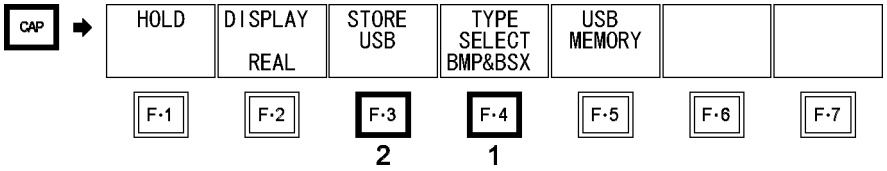


Figure 7-4 Saving screen capture data

7.4 Viewing Screen Capture Data from USB Memory

The screen capture data that you save in BSX format by following the procedure in section 7.3, “Saving Screen Capture Data to USB Memory,” can be displayed, or it can be overlaid on the current input signal. Screen capture data that has been saved in BMP format cannot be displayed on the LV 7330.

1. **Press CAP.**
2. **Press F • 5 USB MEMORY.**

   The file list display appears. F•5 USB MEMORY appears when USB memory is connected.
3. **Turn F • D to select the file number of the file you want to display.**
4. **Press F • 4 RECALL USB.**

   F•4 RECALL appears when the selected file is a BSX file.
5. **Press F • 2 DISPLAY, and select the display format.**

   After you press F•4 RECALL USB, the display format is BOTH. For details about the different display formats, see section 7.2, “Displaying Screen Capture Data on the LV 7330.”

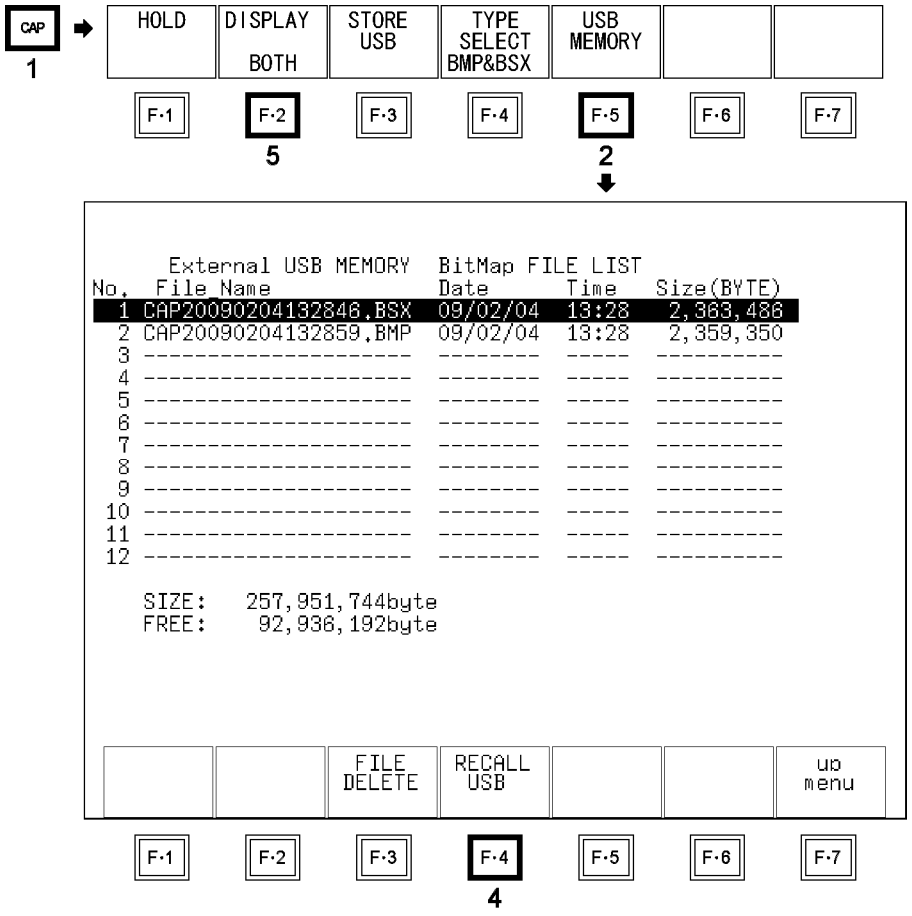


Figure 7-5 Viewing screen capture data from USB memory

7.5 Deleting Screen Capture Data from USB Memory

To delete the screen capture data that you save by following the procedure in section 7.3, “Saving Screen Capture Data to USB Memory,” follow the procedure below. You can also delete screen capture data from USB memory using a PC.

1. **Press CAP.**
2. **Press F•5 USB MEMORY.**

   The file list display appears. F•5 USB MEMORY appears when USB memory is connected.
3. **Turn F•D to select the file number of the file you want to delete.**
4. **Press F•3 FILE DELETE.**
5. **Press F•1 DELETE YES.**

   To abort the deletion of the selected screen capture data file, press F•3 DELETE NO.

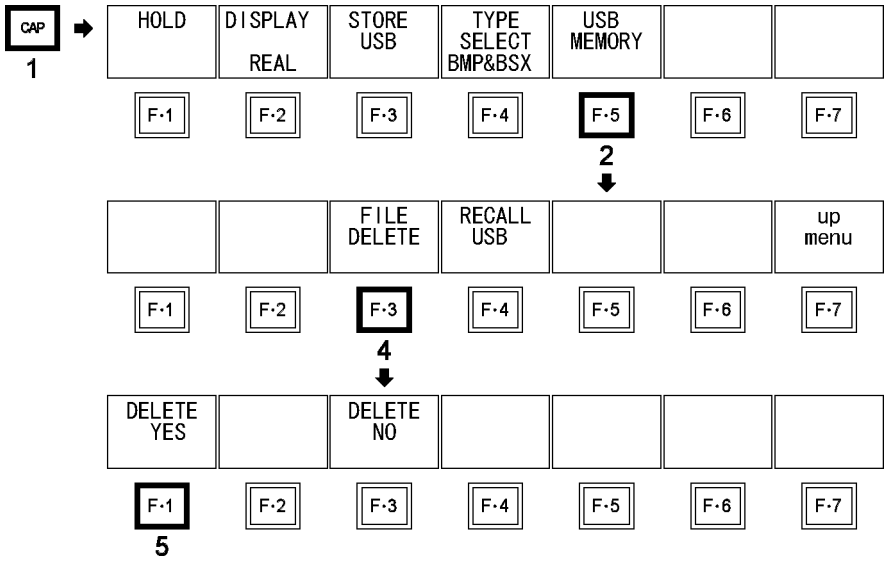


Figure 7-6 Deleting screen capture data from USB memory

8. Video Signal Waveform Display

8.1 Video Signal Waveform Display Explanation

To view the video signal waveform display, press WFM.

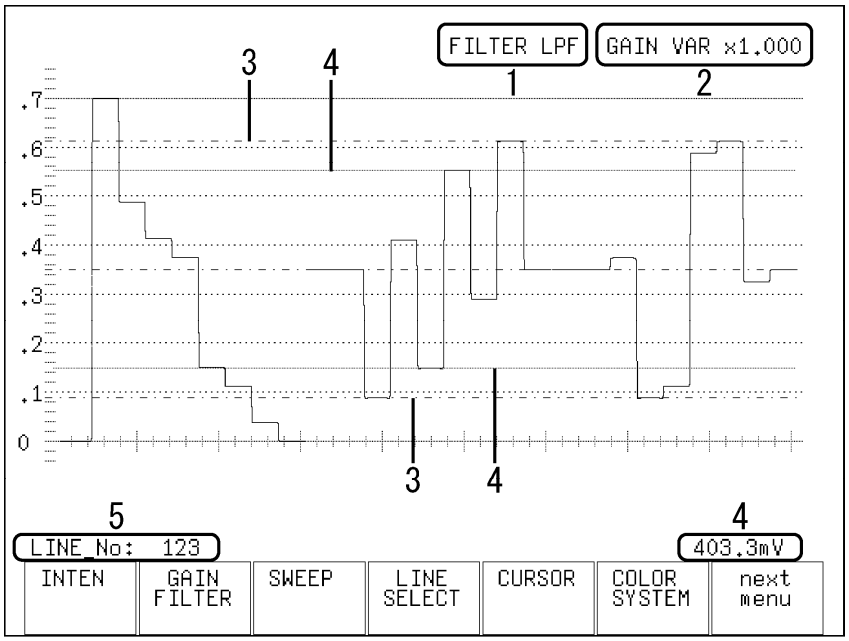


Figure 8-1 Video signal waveform display

Table 8-1 Video signal waveform display explanation

No.	Item	Explanation
1	Filter	Appears when you have set a low pass filter. [Reference] Section 8.4.3, “Selecting a Filter”
2	Gain	The video signal waveform gain is displayed here. You can set the gain to a value between 0.2 and 10 by setting GAIN MAG and GAIN VARIABLE. [Reference] Section 8.4.1, “Selecting the Fixed Gain,” section 8.4.2 “Setting the Variable Gain”
3	Scale for 75 % color bars	A scale that matches the peak levels of the chroma of a 75 % color bar test signal can be displayed here. [Reference] Section 8.9.2, “Displaying a Scale for 75 % Color Bars”
4	Cursor	You can measure the time or amplitude using cursors. [Reference] Section 8.7, “Cursor Settings”
5	Selected line	You can display the waveform of the selected line. [Reference] Section 8.6, “Line Selection Settings”

8.2 Display Position Settings

8.2.1 Setting the Vertical Position

Turn V POS to set the video signal waveform's vertical position.
Pressing V POS will return the vertical display position to its default location.

8.2.2 Setting the Horizontal Position

Turn H POS to set the video signal waveform's horizontal position.
Pressing H POS will return the horizontal display position to its default location.

8.3 Intensity Settings

To configure the intensity settings, press F•1 INTEN in the video signal waveform menu. You can set the video signal waveform and scale intensities.

WFM → F•1 INTEN →

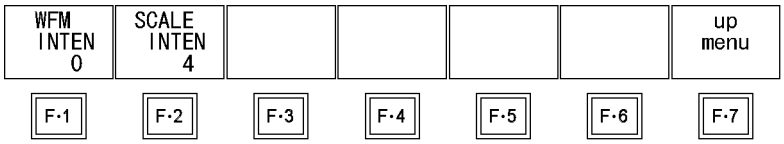


Figure 8-2 INTEN menu

8.3.1 Setting the Video Signal Waveform Intensity

To set the video signal waveform intensity, follow the procedure below. Regardless of this setting, in the multi-screen display, waveforms are displayed using the intensity that MULTI WFM is set to. The WFM INTEN value set using MULTI WFM and the VECTOR INTEN value set using MULTI VEC are the same.
If you press F•D, the intensity will be reset to its default value of 0.
[Reference] MULTI WFM → Section 15.2, "Setting Each Measurement Mode"

Procedure

WFM → F•1 INTEN → F•1 WFM INTEN

Settings

Selectable range: -128 to 127 (The default value is 0.)

8.3.2 Setting the Scale Intensity

To set the scale intensity, follow the procedure below. Regardless of this setting, in the multi-screen display, scales are displayed using the intensity that MULTI WFM is set to. The SCALE INTEN values set using MULTI WFM, MULTI VEC, and MULTI AUDIO are the same.
If you press F•D, the scale intensity will be reset to its default value of 4.
[Reference] MULTI WFM → Section 15.2, “Setting Each Measurement Mode”

Procedure

WFM → F•1 INTEN → F•2 SCALE INTEN

Settings

Selectable range: -8 to 7 (The default setting is 4.)

8.4 Gain and Filter Settings

To configure gain and filter settings, press F•2 GAIN FILTER in the video signal waveform menu. You can configure the video signal waveform gain and filter.

WFM → F•2 GAIN FILTER →

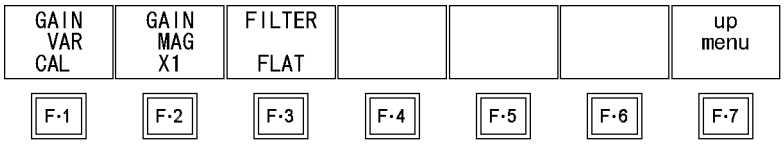


Figure 8-3 GAIN FILTER menu

8.4.1 Selecting the Fixed Gain

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

Procedure

WFM → F•2 GAIN FILTER → F•2 GAIN MAG

Settings

X1:	No gain. This is the default setting.
X5:	Waveforms are magnified to five times their normal size.

8.4.2 Setting the Variable Gain

To set the variable video signal waveform gain, follow the procedure below.
You can set the video signal waveform gain to a value between 0.2 and 10 by setting F•2 GAIN MAG and F•1 GAIN VAR.

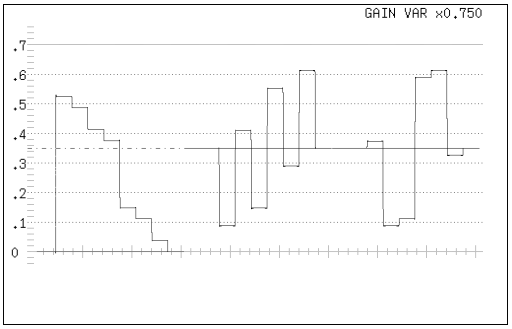
Procedure

WFM → F•2 GAIN FILTER → F•1 GAIN VAR

Settings

CAL:	The video signal waveform gain is fixed. This is the default setting.
VAR:	You can adjust the video signal waveform gain using F•D as described below. The gain value appears in the upper right of the screen. If you press F•D, the gain is set to its default value of 1.000 or 5.000. 0.200 to 2.000 (when GAIN MAG is ×1) 1.000 to 10.000 (when GAIN MAG is ×5)

GAIN MAG = ×1
GAIN VAR = VAR



GAIN MAG = ×5
GAIN VAR = CAL

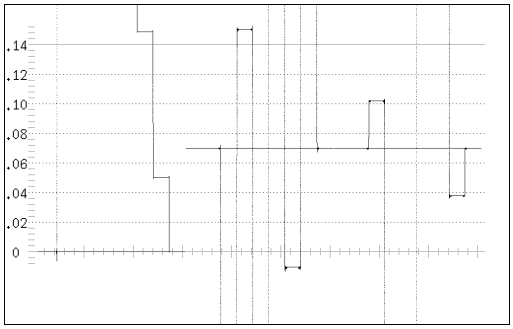


Figure 8-4 Video signal waveform gain

8.4.3 Selecting a Filter

To select a filter, follow the procedure below.
The filters that you can select vary depending on how COLOR MATRIX is set.
[Reference] COLOR MATRIX → Section 8.8.1, “Selecting the Display Format”

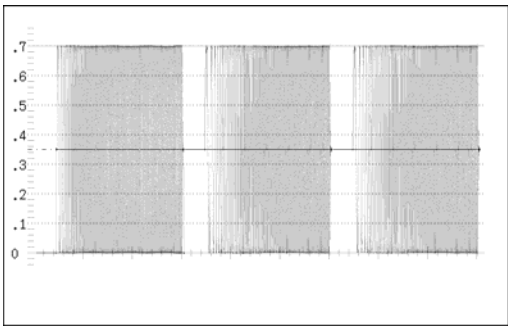
Procedure

WFM → F•2 GAIN FILTER → F•3 FILTER

• **When COLOR MATRIX is set to YCbCr; GBR; or RGB**

Settings	
FLAT:	This filter has a flat frequency response over the entire bandwidth of the input signal. This is the default setting.
LOW PASS:	This filter is a low-pass filter with the following frequency responses: Attenuation of 20 dB or more at 20 MHz when the input signal is HD-SDI Attenuation of 20 dB or more at 3.8 MHz when the input signal is SD-SDI

FILTER = FLAT



FILTER = LOW PASS

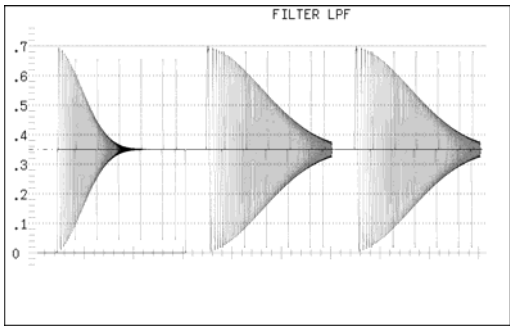
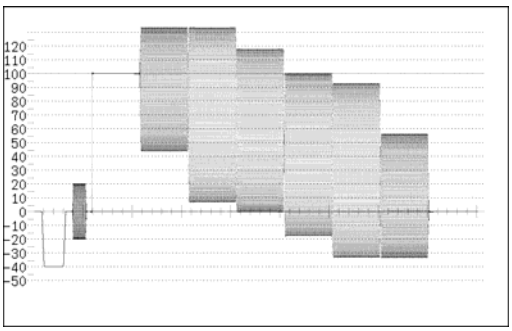


Figure 8-5 Component signal filter displays

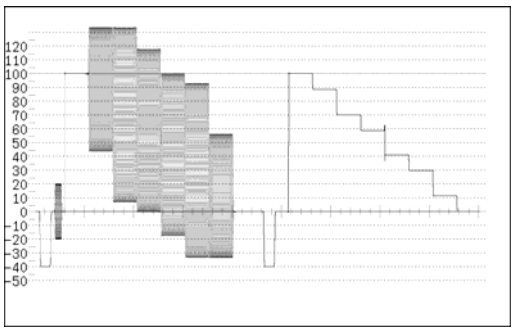
• **When COLOR MATRIX is set to COMPOSIT**

Settings	
FLAT:	Only the pseudo-composite signal is displayed. This is the default setting.
FLAT+LUM:	The pseudo-composite signal and the luminance signal are displayed side by side.
LUMA:	Only the luminance signal is displayed.

FILTER = FLAT



FILTER = FLAT+LUM



FILTER = LUMA

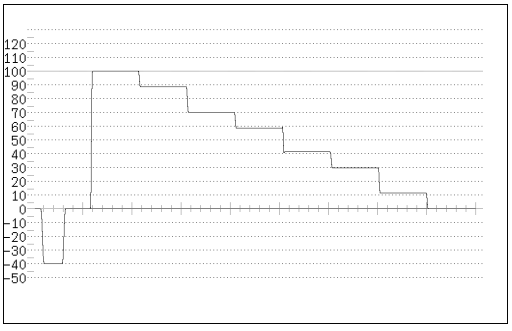


Figure 8-6 Pseudo-composite signal filter display

8.5 Sweep Settings

To configure the video signal waveform sweep settings, press F•3 SWEEP in the video signal waveform menu.

WFM → F•3 SWEEP →

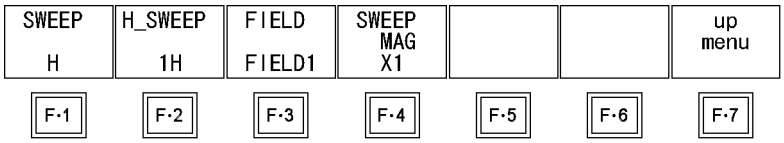


Figure 8-7 SWEEP menu

8.5.1 Selecting the Sweep Method

To select a video signal waveform sweep method, follow the procedure below.
This setting is available when MODE is set to OVERLAY or PARADE. When MODE is set to TIMING, the sweep mode setting is fixed at H.

[Reference] MODE → Section 8.12, “Switching the Display Mode”

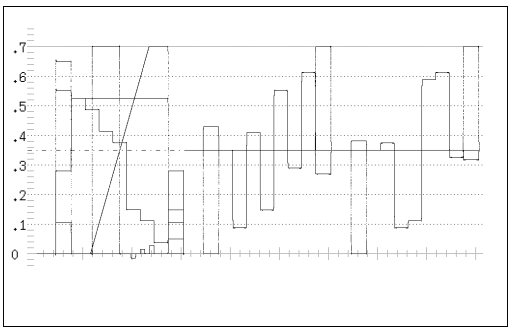
Procedure

WFM → F•3 SWEEP → F•1 SWEEP

Settings

H:	Lines are displayed. This is the default setting.
V:	Fields are displayed when the input format is interlaced or segmented frame. Frames are displayed when the input format is progressive or when F•2 V_SWEEP is set to 2V.

SWEEP = H



H_SWEEP = V

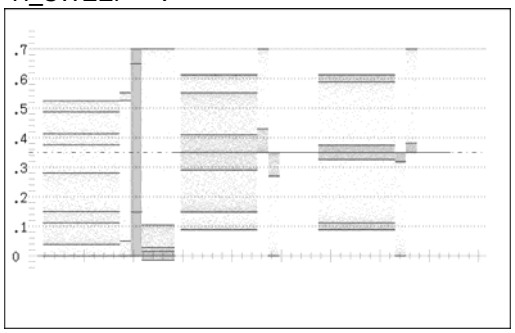


Figure 8-8 Sweep methods

8.5.2 Selecting the Line Display Sweep Time

To select the line display sweep time, follow the procedure below.
This setting is available when F•1 SWEEP is set to H and COLOR MATRIX is set to COMPOSIT or when F•1 SWEEP is set to H and MODE is set to OVERLAY. When MODE is set to PARADE, the sweep mode setting is fixed at 1H.

[Reference] COLOR MATRIX → Section 8.8.1, “Selecting the Display Format”
MODE → Section 8.12, “Switching the Display Mode”

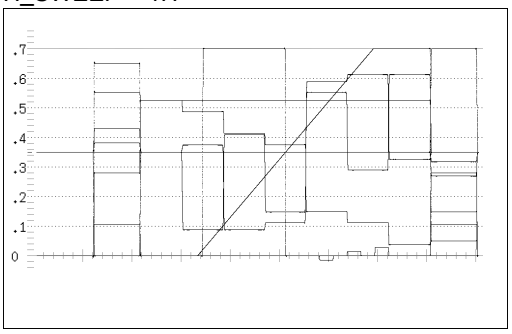
Procedure

WFM → F•3 SWEEP → F•2 H_SWEEP

Settings

1H:	The sweep time is set to that of one line. This is the default setting.
2H:	The sweep time is set to that of two lines.

H_SWEEP = 1H



H_SWEEP = 2H

Figure 8-9 Line display sweep times

8.5.3 Selecting the Field or Frame Display Sweep Time

To select the field or frame display sweep time, follow the procedure below.
This setting is available when F•1 SWEEP is set to V and the input format is set to interlaced or segmented frame (as long as MODE is set to PARADE and COLOR MATRIX is set to COMPOSIT).
When the input format is progressive, the sweep time is fixed at one frame. The sweep time is fixed at 1V unless MODE is set to PARADE and COLOR MATRIX is set to COMPOSIT.

[Reference] COLOR MATRIX → Section 8.8.1, “Selecting the Display Format”
MODE → Section 8.12, “Switching the Display Mode”

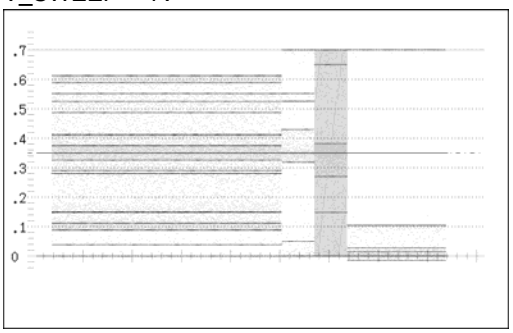
Procedure

WFM → F•3 SWEEP → F•2 V_SWEEP

Settings

1V:	The sweep time is set to that of one field. This is the default setting.
2V:	The sweep time is set to that of one frame.

V_SWEEP = 1V



V_SWEEP = 2V

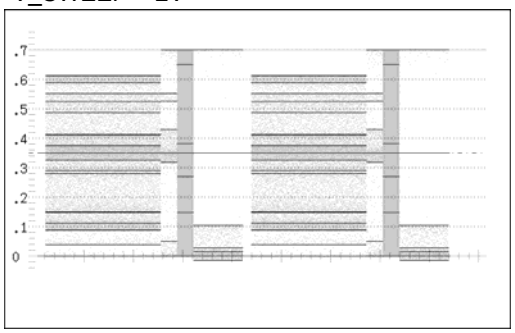


Figure 8-10 Field/frame display sweep times

8.5.4 Selecting Which Field to Display

When displaying fields, follow the procedure below to select which field to display. This setting is available when F•1 SWEEP is set to V and the input format is set to interlaced or segmented frame. However, this setting is invalid when F•2 V_SWEEP is set to 2V.

Procedure

WFM → F•3 SWEEP → F•3 FIELD

Settings

FIELD1: Field 1 is displayed. This is the default setting.
FIELD2: Field 2 is displayed.

8.5.5 Selecting the Horizontal Magnification

To select the horizontal magnification, follow the procedure below. The magnifications that you can select vary depending on the F•1 SWEEP, COLOR MATRIX, MODE, and F•2 H_SWEEP settings as indicated in the table below. When F•2 H_SWEEP is set to 2H and COLOR MATRIX is set to COMPOSIT, the magnification is fixed at ×1.

[Reference] COLOR MATRIX → Section 8.8.1, “Selecting the Display Format”
MODE → Section 8.12, “Switching the Display Mode”

Table 8-2 Horizontal magnifications

SWEEP	COLOR MATRIX	MODE	H_SWEEP	×1	×10	×20	×40	ACTIVE	BLANK
H	YCbCr	PARADE	—	Yes	Yes	Yes	No	Yes	Yes
	GBR	OVERLAY	1H	Yes	Yes	Yes	No	Yes	Yes
	RGB		2H	Yes	Yes	Yes	No	No	Yes
		TIMING	—	Yes	Yes	Yes	No	Yes	No
	COMPOSIT	—	1H	Yes	No	No	No	Yes	No
V	—	—	—	Yes	No	Yes	Yes	No	No

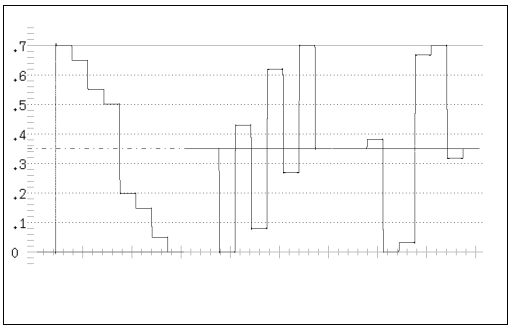
Procedure

WFM → F•3 SWEEP → F•4 SWEEP MAG

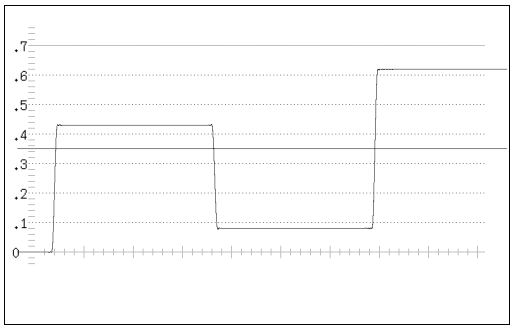
Settings

X1:	The video signal waveforms are displayed so that they fit in the screen. This is the default setting.
X10:	The video signal waveforms are magnified from the center of the display to 10 times the size of ×1.
X20:	The video signal waveforms are magnified from the center of the display to 20 times the size of ×1.
X40:	The video signal waveforms are magnified from the center of the display to 40 times the size of ×1.
ACTIVE:	Everything but the video signal waveform blanking interval is magnified.
BLANK:	The video signal waveform blanking interval is magnified.

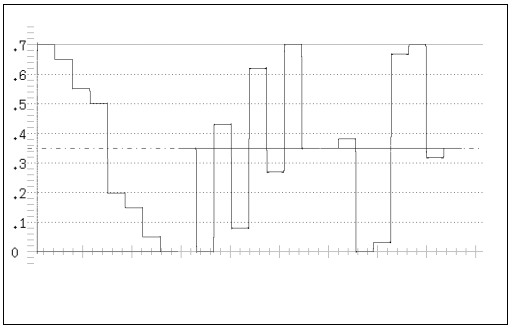
SWEEP MAG = ×1



SWEEP MAG = ×10



SWEEP MAG = ACTIVE



SWEEP MAG = BLANK

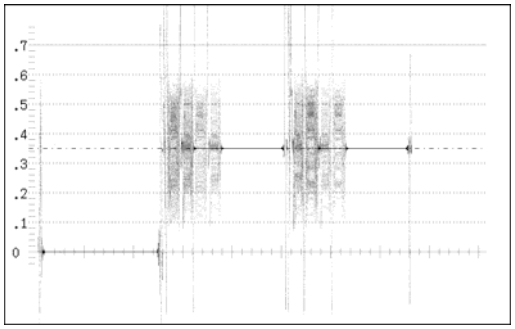


Figure 8-11 Horizontal magnifications

8.6 Line Selection Settings

To configure the line select settings, press F•4 LINE SELECT in the video signal waveform menu. You can display the waveform of the selected line.
This setting is available when SWEEP is set to H.

[Reference] SWEEP → Section 8.5.1, “Selecting the Sweep Method”

WFM → F•4 LINE SELECT →

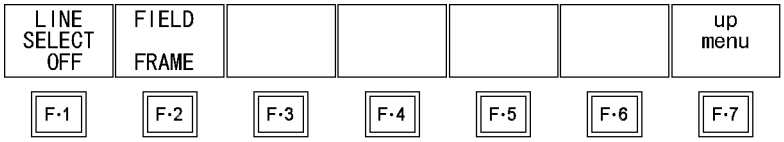


Figure 8-12 LINE SELECT menu

8.6.1 Displaying the Waveform of the Selected Line

To display the waveform of the selected line, follow the procedure below.
Changing this setting will also change the picture display and vector display line selection settings.

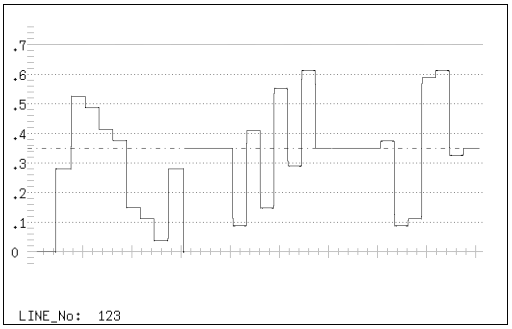
Procedure

WFM → F•4 LINE SELECT → F•1 LINE SELECT

Settings

ON:	The waveform of the selected line is displayed.
OFF:	The waveforms of all lines are displayed on top of each other. This is the default setting.

LINE SELECT = ON



LINE SELECT = OFF

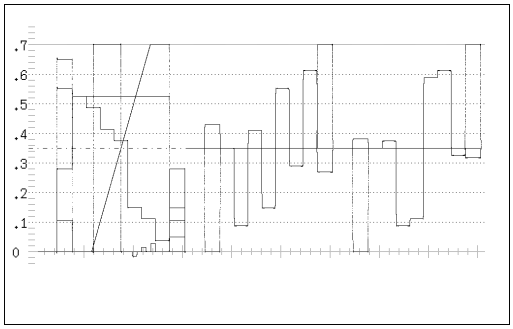


Figure 8-13 Turning line selection on and off

8.6.2 Selecting a Line

To select a line to display the waveform of, follow the procedure below. The selected line is indicated in the lower left of the display.
Changing this setting will also change the selected line in the picture, CINELITE, vector, and status (data dump) displays.

Procedure

WFM → F•4 LINE SELECT → F•D

8.6.3 Setting the Line Selection Range

To set the line selection range, follow the procedure below.
The line selection range setting is valid when the input format is set to interlaced or segmented frame. Changing this setting will also change the picture display and vector display line selection ranges.

Procedure

WFM → F•4 LINE SELECT → F•2 FIELD

Settings (the examples are the selectable ranges when the input format is 1080i/59.94)

FIELD1:	A line from field one 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. This is the default setting.	(Example: 1 to 1125.)

8.7 Cursor Settings

To configure cursor settings, press F•5 CURSOR in the video signal waveform menu. You can display cursors and use them to make measurements.

WFM → F•5 CURSOR →

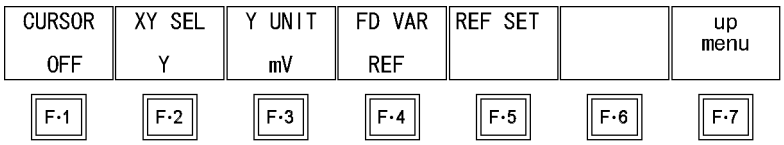


Figure 8-14 CURSOR menu

8.7.1 Displaying Cursors

To display cursors, follow the procedure below.
The REF cursor is displayed in blue, and the DELTA cursor is displayed in green. The measured value of DELTA-REF is displayed in the bottom right of the screen.

Procedure

WFM → F•5 CURSOR → F•1 CURSOR

Settings

ON:	Cursors are displayed.
OFF:	Cursors are not displayed. This is the default setting.

8.7.2 Selecting the Cursor Type

To select the cursor type, follow the procedure below.
This setting is available when COLOR MATRIX is set to an option other than COMPOSIT.
When COLOR MATRIX is set to COMPOSIT, the cursor type setting is fixed at Y.

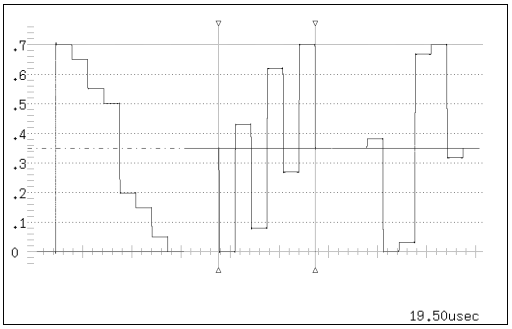
Procedure

WFM → F•5 CURSOR → F•2 XY SEL

Settings

X:	X cursors are displayed for measuring time.
Y:	Y cursors are displayed for measuring amplitude.

XY SEL = X



XY SEL = Y

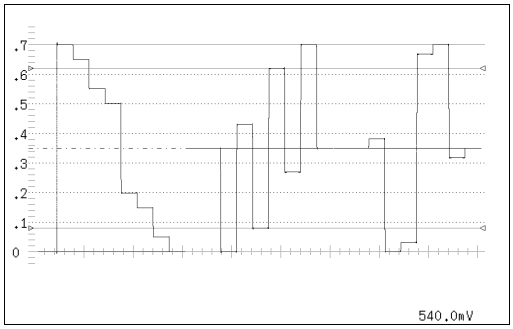


Figure 8-15 Cursor types

8.7.3 Moving the Cursors

Follow the procedure below to select a cursor and then move it by turning F•D. Triangles appear on both ends of the selected cursor.
You can also select a cursor by pressing F•D. Each time you press F•D, the selected cursor switches from REF, to DELTA, to TRACK, and so on.

Procedure

WFM → F•5 CURSOR → F•4 FD VAR

Settings

REF:	The REF cursor (blue) is selected. This is the default setting.
DELTA:	The DELTA cursor (green) is selected.
TRACK:	The REF cursor and DELTA cursor are both selected.

8.7.4 Setting the Units of Measurement

To select the units used in cursor measurement, follow the procedure below.

- **When CURSOR is set to Y**

Procedure

WFM → F•5 CURSOR → F•3 Y UNIT

Settings

mV:	Measurements are made in units of voltage. This setting cannot be chosen when COLOR MATRIX is set to COMPOSIT. This is the default setting.
%:	Measurements are made as percentages. When COLOR MATRIX is set to YCbCr, GBR, or RGB 700 mV = 100 % When COLOR MATRIX is set to COMPOSIT and the composite format is set to NTSC 714 mV = 100 % When COLOR MATRIX is set to COMPOSIT and the composite format is set to PAL 700 mV = 100 %
R%:	The amplitude will be measured as a percentage of the amplitude at the time when you pressed F•5 REF SET. This setting cannot be chosen when COLOR MATRIX is set to COMPOSIT.
3FF:	Measurements are made in hexadecimal with 0 to 100 % expressed as 040 to 3AC. This setting cannot be chosen when COLOR MATRIX is set to COMPOSIT.
1023:	Measurements are made in decimal with 0 to 100 % expressed as 64 to 940. This setting cannot be chosen when COLOR MATRIX is set to COMPOSIT.

- **When CURSOR is set to X**

Procedure

WFM → F•5 CURSOR → F•3 X UNIT

Settings

sec:	Measurements are made in units of seconds. This is the default setting.
Hz:	Measurements are made in units of frequency, with the length of one period set to the distance between the two cursors.

8.7.5 Setting the Base Value

When F•3 Y UNIT is set to R%, follow the procedure below to set the amplitude at the location of your choice to 100 %.

Procedure

WFM → F•5 CURSOR → F•5 REF SET

8.8 Color System Settings

To configure the color system settings, press F•6 COLOR SYSTEM in the video signal waveform menu. You can set the video signal waveform display format and setup level.

WFM → F•6 COLOR SYSTEM →

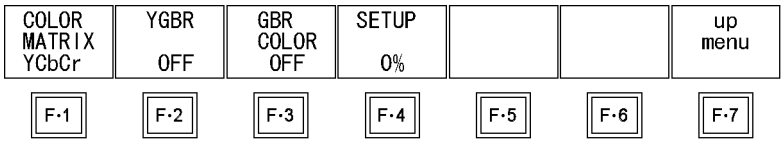


Figure 8-16 COLOR SYSTEM menu

8.8.1 Selecting the Display Format

To select a video signal waveform display format, follow the procedure below. The selected display format is indicated in the upper left of the display.
If you select COMPOSIT, choose the composite display format (NTSC or PAL) by setting COMPOSIT FORMAT in the system settings.
[Reference] COMPOSIT FORMAT → Section 5.1.5, “Setting the Composite Display Format”

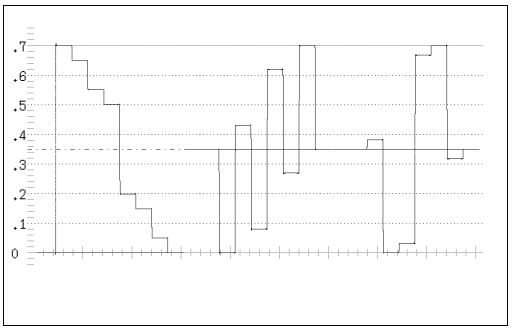
Procedure

WFM → F•6 COLOR SYSTEM → F•1 COLOR MATRIX

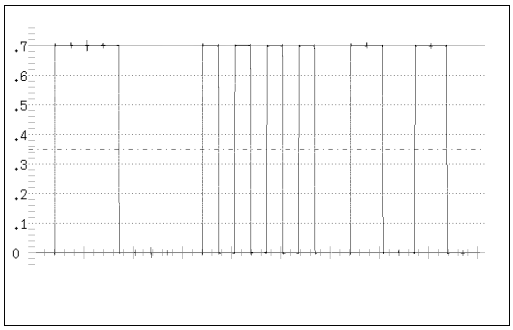
Settings

YCbCr:	Luminance and chrominance signals are displayed. You cannot select this setting when the LV 7330 is set to dual link mode. This is the default setting.
GBR:	A YC_BC_R signal is converted into a GBR signal and displayed.
RGB:	A YC_BC_R signal is converted into an RGB signal and displayed.
COMPOSIT:	A YC_BC_R signal is converted into a pseudo-composite signal and displayed.

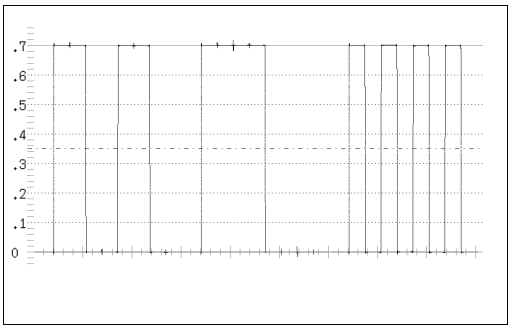
COLOR MATRIX = YCbCr



COLOR MATRIX = GBR



COLOR MATRIX = RGB



COLOR MATRIX = COMPOSIT

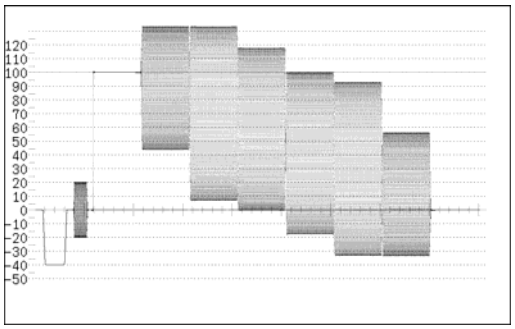


Figure 8-17 Component and pseudo-composite displays

8.8.2 Displaying the GBR or RGB Signal Simultaneously with the Luminance Signal

To display the GBR or RGB signal simultaneously with the luminance signal, follow the procedure below.
The selected display format is indicated in the upper right of the display.
This setting is available when F•1 COLOR MATRIX is set to GBR or RGB.

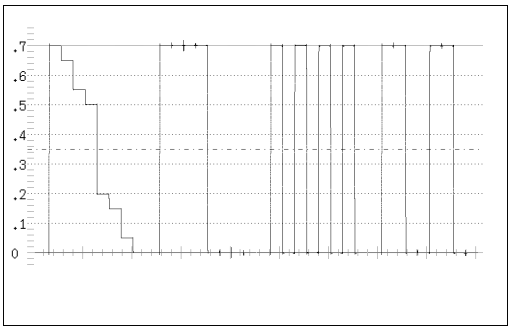
Procedure

WFM → F•6 COLOR SYSTEM → F•2 YGBR
→ F•2 YRGB

Settings

ON:	The GBR or RGB signal is displayed simultaneously with the luminance signal.
OFF:	The GBR or RGB signal is displayed by itself. This is the default setting.

YGBR = ON



YRGB = ON

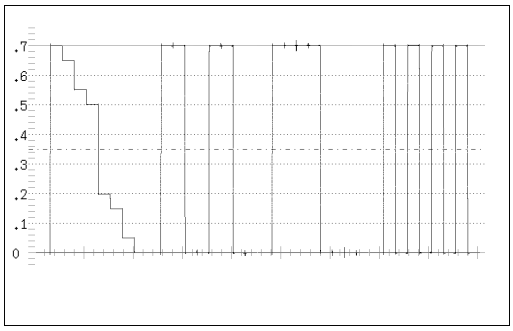


Figure 8-18 YGBR and YRGB displays

8.8.3 Selecting the Waveform Colors

To display waveforms in colors that correspond to G, B, and R, follow the procedure below.
This setting is available when F•1 COLOR MATRIX is set to GBR or RGB.

Procedure

WFM → F•6 COLOR SYSTEM → F•3 GBR COLOR
→ F•3 RGB COLOR

Settings

ON:	Waveforms are displayed in colors that correspond to G, B, and R. Waveforms are displayed in white in the parade and V sweep displays.
OFF:	Waveforms are displayed in white. This is the default setting.

8.8.4 Setting the Setup Level

To set the setup level of the pseudo-composite display, follow the procedure below. This setting is available when F•1 COLOR MATRIX is set to COMPOSIT and the composite display format is set to NTSC.

[Reference] Composite display format → Section 5.1.5, “Setting the Composite Display Format”

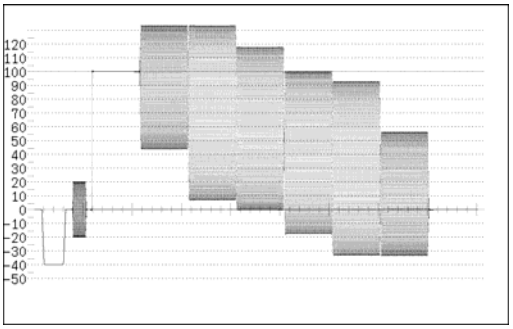
Procedure

WFM → F•6 COLOR SYSTEM → F•4 SETUP

Settings

0%:	No setup level is added. This is the default setting.
7.5%:	A setup level of 7.5 % is added.

SETUP = 0%



SETUP = 7.5%

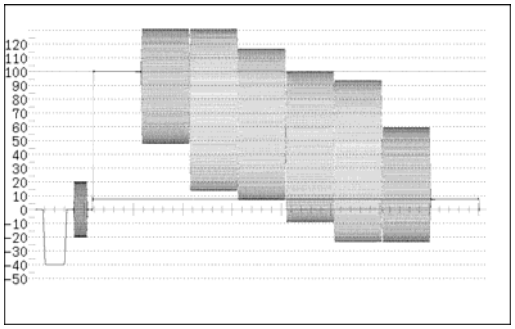


Figure 8-19 Pseudo-composite display setup levels

8.9 Scale Settings

To configure the scale settings, press F•1 SCALE in the video signal waveform menu. You can set the scale unit, type, and color.

WFM → F•7 next menu → F•1 SCALE →

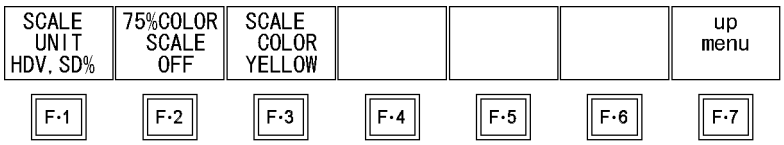


Figure 8-20 SCALE menu

8.9.1 Selecting the Scale Unit

To select the scale unit, follow the procedure below.
This setting is available when COLOR MATRIX is set to an option other than COMPOSIT. When COLOR MATRIX is set to COMPOSIT, the scale unit setting is fixed at percentage if the composite display format is NTSC, and it is fixed at V if the composite display format is PAL.

[Reference] COLOR MATRIX → Section 8.8.1, “Selecting the Display Format”
Composite display format → Section 5.1.5, “Setting the Composite Display Format”

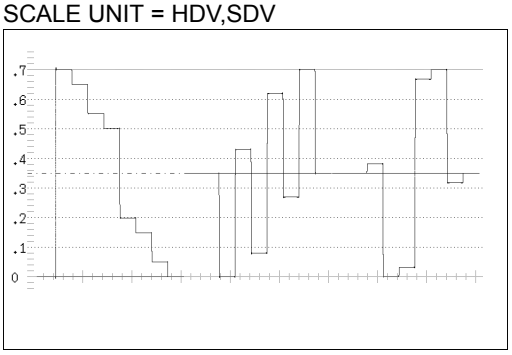
Procedure

WFM → F•7 next menu → F•1 SCALE → F•1 SCALE UNIT

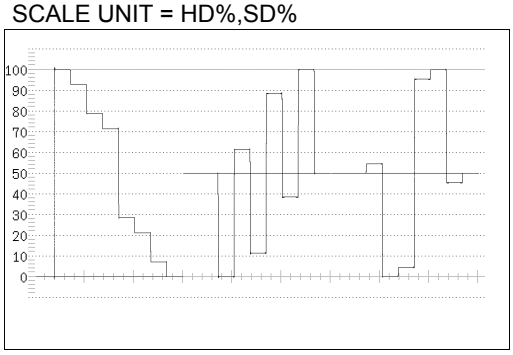
Settings

HDV,SD%:	The scale unit is set to V when the input signal is HD-SDI and to % when the input signal is SD-SDI. This is the default setting.
HDV,SDV:	The scale unit is set to V.
HD%,SD%:	The scale unit is set to %.
3FF:	0 to 100 % is displayed as 040 to 3AC (YGBR) or 040 to 3C0 (CbCr).
1023:	0 to 100 % is displayed as 64 to 940 (YGBR) or 64 to 960 (CbCr).

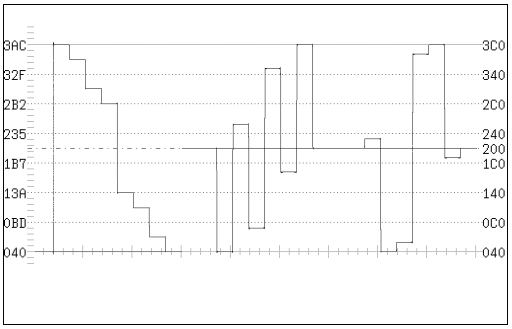
SCALE UNIT = HDV,SDV



SCALE UNIT = HD%,SD%



SCALE UNIT = 3FF



SCALE UNIT = 1023

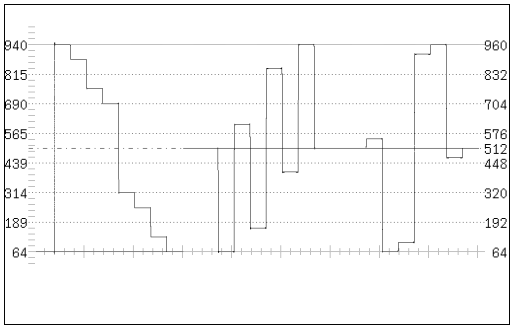


Figure 8-21 Scale units

8.9.2 Displaying a Scale for 75 % Color Bars

To display a scale that matches the peak levels of the chroma of a 75 % color bar test signal, follow the procedure below.
This setting is available when COLOR MATRIX is set to YCbCr.
[Reference] COLOR MATRIX → Section 8.8.1, “Selecting the Display Format”

Procedure

WFM → F•7 next menu → F•1 SCALE → F•2 75%COLOR SCALE

Settings

ON:	A scale for 75 % color bars is displayed.
OFF:	A scale for 75 % color bars is not displayed. This is the default setting.

75%COLOR SCALE = ON

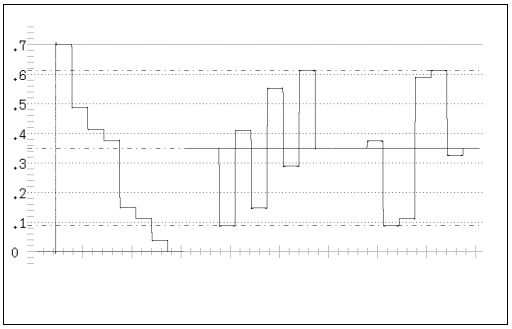


Figure 8-22 Scale for 75 % color bars

8.9.3 Changing the Scale Color

To select the scale color from one of seven options, follow the procedure below.

Procedure

WFM → F•7 next menu → F•1 SCALE → F•3 SCALE COLOR

Settings

WHITE:	The scale is displayed in white.
YELLOW:	The scale is displayed in yellow. This is the default setting.
CYAN:	The scale is displayed in cyan.
GREEN:	The scale is displayed in green.
MAGENTA:	The scale is displayed in magenta.
RED:	The scale is displayed in red.
BLUE:	The scale is displayed in blue.

8.10 Displaying the Blanking Interval

To display the blanking interval, follow the procedure below.

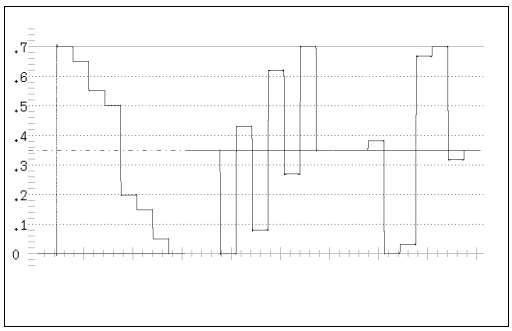
Procedure

WFM → F•7 next menu → F•2 EAV-SAV

Settings

REMOVE:	The blanking interval is blacked out. This is the default setting.
PASS:	The blanking interval is displayed.

EAV-SAV = REMOVE



EAV-SAV = PASS

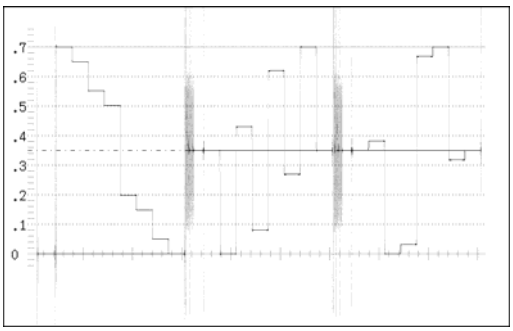


Figure 8-23 Blanking interval displays

8.11 Setting the Display Mode to TIMING

You can set the display mode using F•4 MODE, but TIMING cannot be selected with the default settings. To enable the selection of TIMING, set F•4 MODE to TIMING after first setting F•3 TIMING MODE to NORMAL by following the procedure below.

Procedure

WFM → F•7 next menu → F•3 TIMING MODE

Settings

NORMAL:	TIMING is added to the options for F•4 MODE.
PASS:	TIMING is not included in the options for F•4 MODE. This is the default setting.

8.12 Switching the Display Mode

To switch the display mode, follow the procedure below.

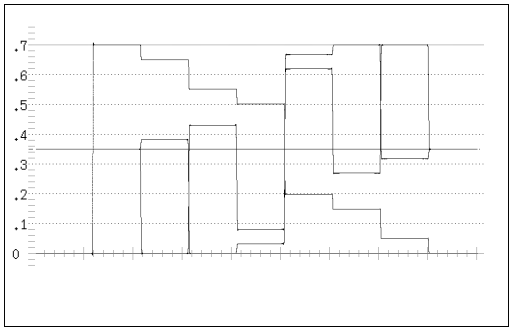
Procedure

WFM → F•7 next menu → F•4 MODE

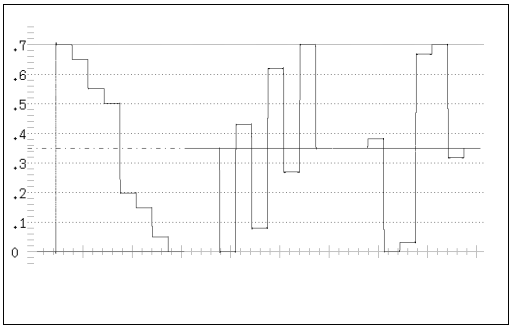
Settings

OVERLAY:	Component signals are displayed on top of each other (overlaid).
PARADE:	Component signals are displayed side by side (parade display). This is the default setting.
TIMING:	The time and amplitude differences between a given channel and channel 1 are displayed (timing display).

MODE = OVERLAY



MODE = PARADE



MODE = TIMING

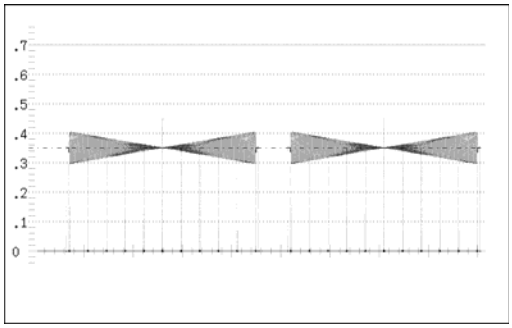


Figure 8-24 Display Modes

In the timing display, a bowtie signal is used as the signal source. Y and C_B are displayed on the left half and Y and C_R are displayed on the right half.

You can examine the space between the narrow area of the waveform, referred to as the null, and the long reference markers in the center for timing problems. If you use an LT 443D signal as the signal source, the marker spacing indicates a time difference of 1 ns. If the null of the C_B or C_R waveform is further to the left of the screen than the marker, C_B or C_R is ahead, if the null is further to the right of the screen than the marker, C_B or C_R is behind.

You can examine the width of the pinched areas of the waveform to determine amplitude differences. If the amplitudes are different between channels, the pinched areas will be thicker.

8.13 Turning YC_BC_R; GBR; and RGB Channels On and Off

To turn signal channels on and off, press F•5 DISPLAY in the video signal waveform menu.
The settings made here are invalid when:
• MODE is set to TIMING.
• COLOR MATRIX is set to COMPOSIT.
• YGBR or YRGB is set to ON.

[Reference] MODE → Section 8.12, “Switching the Display Mode”
COLOR MATRIX → Section 8.8.1, “Selecting the Display Format”
YGBR, YRGB → Section 8.8.2, “Displaying the GBR or RGB Signal Simultaneously with the Luminance Signal”

WFM → F•7 next menu → F•5 DISPLAY →

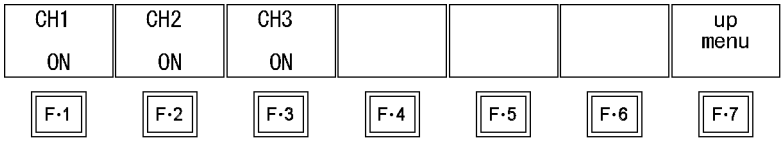


Figure 8-25 DISPLAY menu

To turn individual channels in a YC_BC_R; GBR; or RGB signal on and off, follow the procedure below.
You cannot set every channel to OFF.

Procedure

WFM → F•7 next menu → F•5 DISPLAY → F•1 CH1
F•2 CH2
F•3 CH3

Settings

ON:	The specified channel in the YC_BC_R, GBR, or RGB signal is displayed. This is the default setting.
OFF:	The specified channel in the YC_BC_R, GBR, or RGB signal is not displayed.

The waveforms that are assigned to each channel are indicated in the table below.

Table 8-3 Waveform assignments

COLOR MATRIX	CH1	CH2	CH3
YCbCr	Y	Cb	Cr
GBR	G	B	R
RGB	R	G	B

9. Vector Display

9.1 Vector Display Explanation

To display vectors, press VEC.

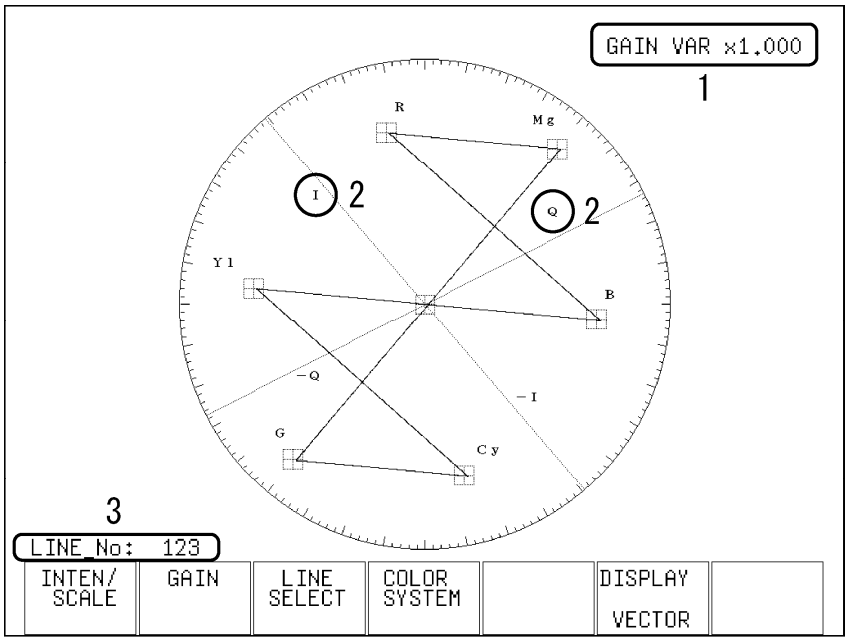


Figure 9-1 Vector display

Table 9-1 Vector display explanation

No.	Item	Explanation
1	Gain	The vector gain is displayed here. You can set the gain to a value between 0.2 and 10 by setting GAIN MAG and GAIN VARIABLE. [Reference] Section 9.3.1, “Selecting the Fixed Gain,” section 9.3.2 “Setting the Variable Gain”
2	I and Q axes	The I and Q axes can be displayed. [Reference] Section 9.2.3, “Displaying the I and Q Axes”
3	Selected line	You can display the waveform of the selected line. [Reference] Section 9.4, “Line Selection Settings”

9.2 Vector and Scale Settings

To configure vector and scale settings, press F•1 INTEN/SCALE in the vector menu. You can configure the I and Q axes display, the vector intensity, the scale intensity and colors, and the vector marker.

VEC → F•1 INTEN/SCALE →

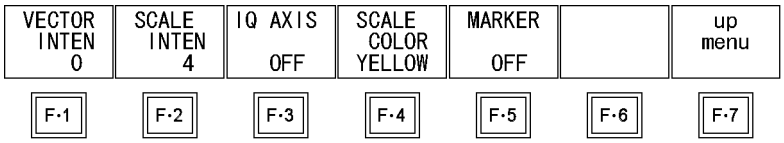


Figure 9-2 INTEN/SCALE menu

9.2.1 Setting the Vector Intensity

To set the vector intensity, follow the procedure below. Regardless of this setting, in the multi-screen display, scales are displayed using the intensity that MULTI VEC is set to. The VECTOR INTEN value set using MULTI VEC and the WFM INTEN value set using MULTI WFM are the same.
If you press F•D, the intensity will be reset to its default value of 0.
This setting is valid when DISPLAY is set to VECTOR.

[Reference] MULTI VEC → Section 15.2, “Setting Each Measurement Mode”
DISPLAY → Section 9.6, “Switching between the Vector, 5 Bar, and Phase Difference Displays”

Procedure

VEC → F•1 INTEN/SCALE → F•1 VECTOR INTEN

Settings

Selectable range: -128 to 127 (The default value is 0.)

9.2.2 Setting the Scale Intensity

To set the scale intensity, follow the procedure below. Regardless of this setting, in the multi-screen display, scales are displayed using the intensity that MULTI VEC is set to. The SCALE INTEN values set using MULTI WFM, MULTI VEC, and MULTI AUDIO are the same.
If you press F•D, the scale intensity will be reset to its default value of 4.

[Reference] MULTI VEC → Section 15.2, “Setting Each Measurement Mode”

Procedure

VEC → F•1 INTEN/SCALE → F•2 SCALE INTEN

Settings

Selectable range: -8 to 7 (The default setting is 4.)

9.2.3 Displaying the I and Q Axes

To display the I and Q axes, follow the procedure below.
This setting is valid when DISPLAY is set to VECTOR.

[Reference] DISPLAY → Section 9.6, “Switching between the Vector, 5 Bar, and Phase Difference Displays”

Procedure

VEC → F•1 INTEN/SCALE → F•3 IQ AXIS

Settings

ON:	The I and Q axes are displayed, unless the input format is 625i/50.
OFF:	The I and Q axes are not displayed. This is the default setting.

IQ AXIS = ON

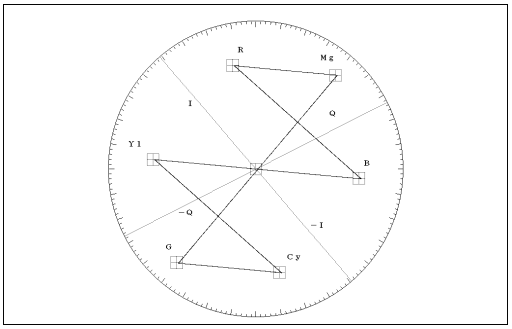


Figure 9-3 The I and Q axes display

9.2.4 Changing the Scale Color

To select the scale color from one of seven options, follow the procedure below.

Procedure

VEC → F•1 INTEN/SCALE → F•4 SCALE COLOR

Settings

WHITE:	The scale is displayed in white.
YELLOW:	The scale is displayed in yellow. This is the default setting.
CYAN:	The scale is displayed in cyan.
GREEN:	The scale is displayed in green.
MAGENTA:	The scale is displayed in magenta.
RED:	The scale is displayed in red.
BLUE:	The scale is displayed in blue.

9.2.5 Displaying the Vector Marker

When the link format is set to single, to display a marker on the vector display, follow the procedure below.

You can move the marker horizontally using H POS and vertically using V POS. The measured values are displayed in the lower right of the display. Press H POS to move the marker to the Cb = 0.0% position. Press V POS 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, marker is displayed in green. When if falls outside the display, it blinks in red.

This setting is valid when DISPLAY is set to VECTOR.

[Reference] DISPLAY → Section 9.6, “Switching between the Vector, 5 Bar, and Phase Difference Displays”

Procedure

VEC → F•1 INTEN/SCALE → F•5 MARKER

Settings

ON:	The vector marker is displayed.
OFF:	The vector marker is not displayed. This is the default setting.

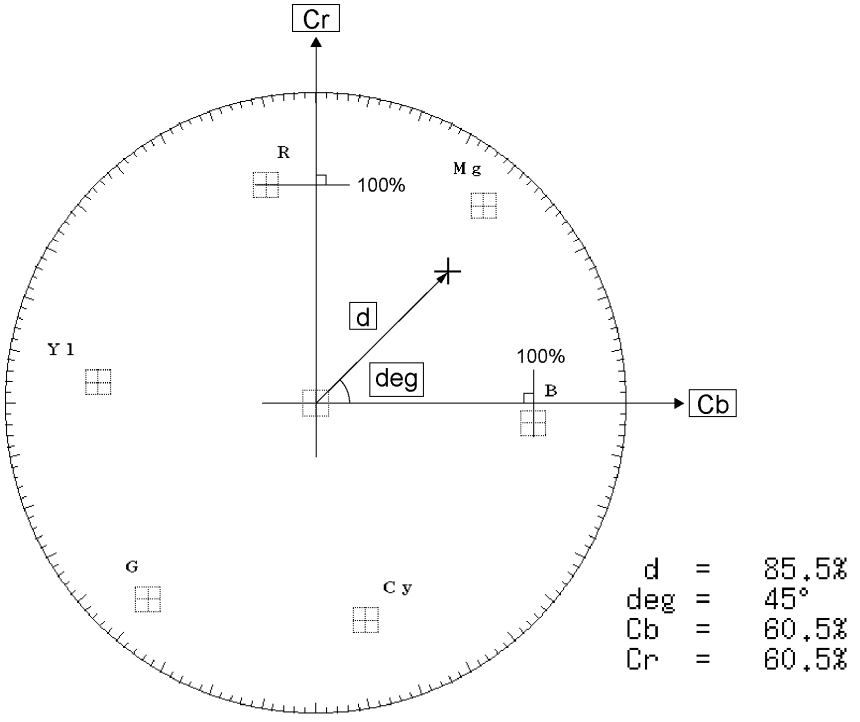


Figure 9-4 Displaying the vector marker

9.3 Gain Settings

To set the vector gain, press F•2 GAIN in the vector menu.
These settings are valid when DISPLAY is set to VECTOR.
[Reference] DISPLAY → Section 9.6, “Switching between the Vector, 5 Bar, and Phase Difference Displays”

VEC → F•2 GAIN →

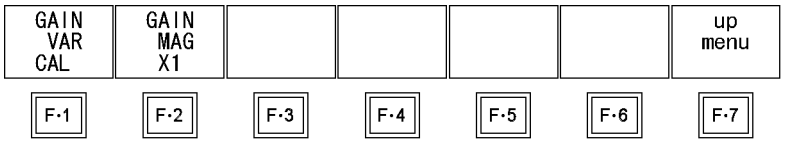


Figure 9-5 GAIN menu

9.3.1 Selecting the Fixed Gain

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

Procedure

VEC → F•2 GAIN → F•2 GAIN MAG

Settings

X1:	No gain. This is the default setting.
X5:	Vectors are magnified to five times their normal size.
IQ-MAG:	Vectors are magnified to 3.14 times their normal size. (The gain is set so that the IQ signal fits within the perimeter of the scale when NTSC SMPTE color bars are up-converted to HDTV.)

9.3.2 Setting the Variable Gain

To set the variable vector gain, follow the procedure below.
You can set the vector gain to a value between 0.2 and 10 by setting F•1 GAIN MAG and F•1 GAIN VAR.

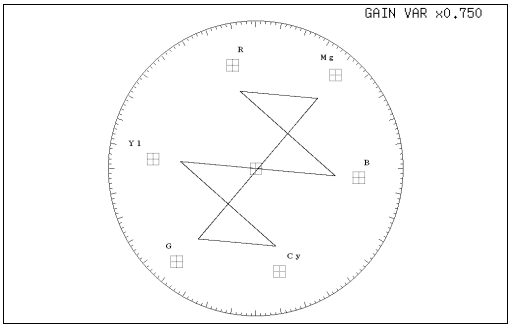
Procedure

VEC → F•2 GAIN → F•1 GAIN VAR

Settings

CAL:	The vector gain is fixed. This is the default setting.
VAR:	You can adjust the vector gain using F•D as described below. The gain value appears in the upper right of the screen. If you press F•D, the gain is set to its default value of 1.000, 5.000, or 3.140. 0.200 to 2.000 (when GAIN MAG is set to ×1) 1.000 to 10.000 (when GAIN MAG is set to ×5) 0.628 to 6.280 (when GAIN MAG is set to IQ-MAG)

GAIN MAG = ×1
GAIN VAR = VAR



GAIN MAG = IQ-MAG
GAIN VAR = CAL

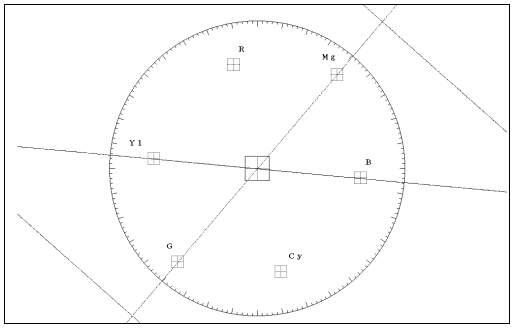


Figure 9-6 Vector gains

9.4 Line Selection Settings

To configure the line select settings, press F•3 LINE SELECT in the vector menu. You can display the vectors of the selected line.
These settings are valid when DISPLAY is set to VECTOR or 5BAR.
[Reference] DISPLAY → Section 9.6, “Switching between the Vector, 5 Bar, and Phase Difference Displays”

VEC → F•3 LINE SELECT →

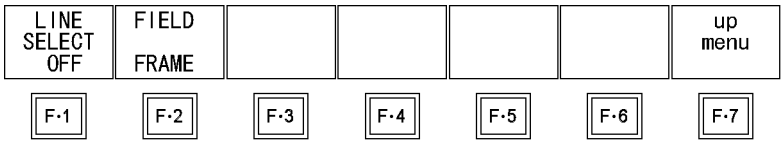


Figure 9-7 LINE SELECT menu

9.4.1 Displaying the Vectors of the Selected Line

To display the vectors of the selected line, follow the procedure below.
Changing this setting will also change the picture display and video signal waveform display line selection settings.

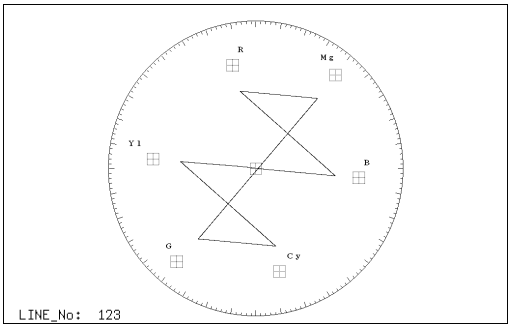
Procedure

VEC → F•3 LINE SELECT → F•1 LINE SELECT

Settings

ON:	The vectors of the selected line are displayed.
OFF:	The vectors of all lines are displayed on top of each other. This is the default setting.

LINE SELECT = ON



LINE SELECT = OFF

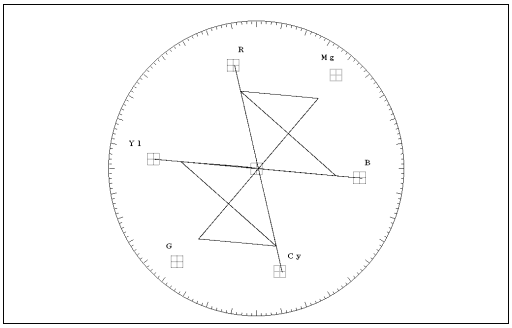


Figure 9-8 Turning line selection on and off

9.4.2 Selecting a Line

To select a line, follow the procedure below. The selected line is indicated in the lower left of the display.
Changing this setting will also change the selected line in the picture, CINELITE, video signal waveform, and status (data dump) displays.

Procedure

VEC → F•3 LINE SELECT → F•D

9.4.3 Setting the Line Selection Range

To set the line selection range, follow the procedure below.
The line selection range setting is valid when the input format is set to interlaced or segmented frame. Changing this setting will also change the picture display and video signal waveform display line selection ranges.

Procedure

VEC → F•3 LINE SELECT → F•2 FIELD

Settings (the examples are the selectable ranges when the input format is 1080i/59.94)

FIELD1:	A line from field one 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. This is the default setting.	(Example: 1 to 1125.)

9.5 Color System Settings

To configure color system settings, press F•4 COLOR SYSTEM in the vector menu. You can set the vector display format and display a scale for 75 % color bars.
This setting is valid when DISPLAY is set to VECTOR.

[Reference] DISPLAY → Section 9.6, “Switching between the Vector, 5 Bar, and Phase Difference Displays”

VEC → F•4 COLOR SYSTEM →

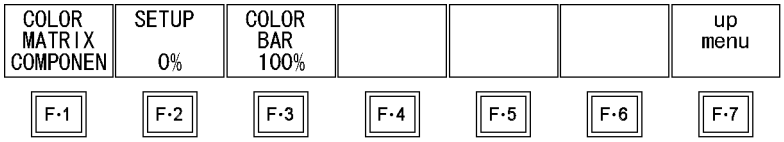


Figure 9-9 COLOR SYSTEM menu

9.5.1 Selecting the Display Format

To select the vector display format, follow the procedure below.
If you select COMPOSIT, choose the composite display format (NTSC or PAL) by setting COMPOSIT FORMAT in the system settings.

[Reference] COMPOSIT FORMAT → Section 5.1.5, “Setting the Composite Display Format”

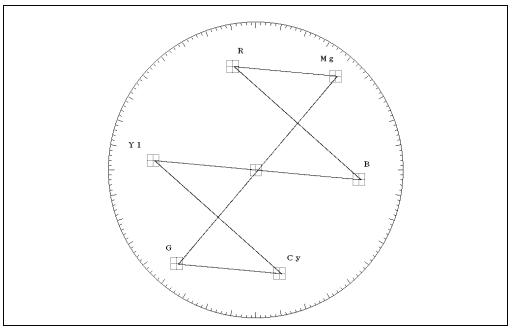
Procedure

VEC → F•4 COLOR SYSTEM → F•1 COLOR MATRIX

Settings

COMPONEN:	The component chrominance signal is displayed on the X and Y axes. This is the default setting.
COMPOSIT:	The component signal is converted into a composite signal, and the composite signal’s chrominance signal is displayed on the X and Y axes.

COLOR MATRIX = COMPONEN



COLOR MATRIX = COMPOSIT

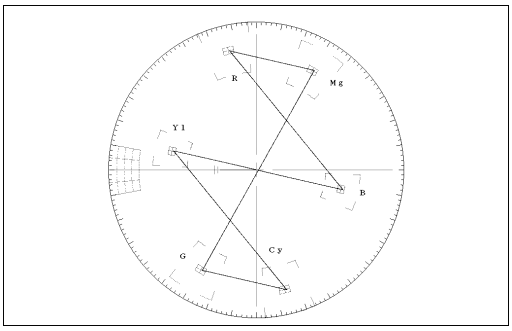


Figure 9-10 Component and pseudo-composite displays

9.5.2 Setting the Setup Level

To set the setup level of the pseudo-composite display, follow the procedure below. This setting is available when F•1 COLOR MATRIX is set to COMPOSIT and the composite display format is set to NTSC.

[Reference] Composite display format → Section 5.1.5, “Setting the Composite Display Format”

Procedure

VEC → F•4 COLOR SYSTEM → F•2 SETUP

Settings

0%:	No setup level is added. This is the default setting.
7.5%:	A setup level of 7.5 % is added.

9.5.3 Displaying a Scale for 75 % Color Bars

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

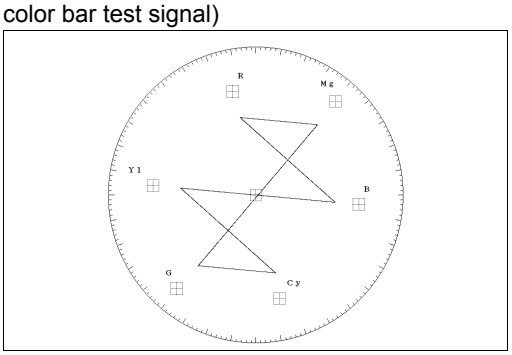
Procedure

VEC → F•4 COLOR SYSTEM → F•3 COLOR BAR

Settings

100%:	A scale that matches the peak levels of a 100 % color bar test signal appears. This is the default setting.
75%:	A scale that matches the peak levels of a 75 % color bar test signal appears.

COLOR BAR = 100% (when receiving a 75 % color bar test signal)



COLOR BAR = 75% (when receiving a 75 % color bar test signal)

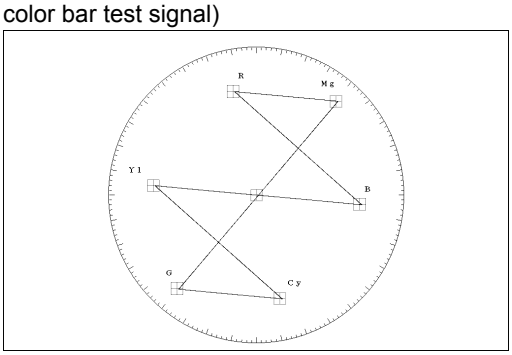


Figure 9-11 Scale types

9.6 Switching between the Vector, 5 Bar, and Phase Difference Displays

To switch between the vector, 5 bar, and phase difference displays, follow the procedure below.
When the LV 7330 is in dual link mode, it can only display vector waveforms. F•6 DISPLAY does not appear.

Procedure

VEC → F•6 DISPLAY

Settings

VECTOR:	The vector display is shown. This is the default setting.
5BAR:	The 5 bar display is shown.
EXTPHASE:	The phase difference between an SDI signal and an external sync signal is displayed.

9.7 5 Bar Display

9.7.1 5 Bar Display Explanation

In the 5 bar display, the positive and negative peak levels are displayed simultaneously. The levels are typically displayed in cyan, but portions that exceed their limits are displayed in red.
To show the 5 bar display, set F•6 DISPLAY to 5BAR.

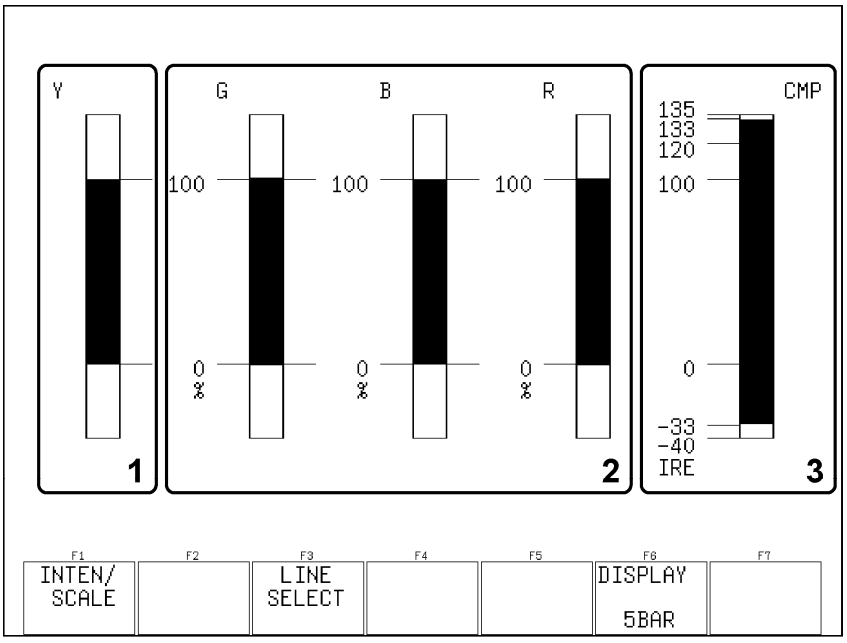


Figure 9-12 5 bar display

Table 9-2 5 bar display explanation

No.	Item	Explanation
1	Y	The luminance signal level is displayed here. Levels less than 0 % or greater than 100 % are displayed in red. (If you install an LV 7330SER02, which is sold separately, you can set the level that is considered an error.)
2	G, B, and R	The GBR signal levels of the converted YC_BC_R signal are displayed. The levels that fall outside of the range you set using GAMUT ERROR in the status display are displayed in red. [Reference] Section 12.6.6, “Setting Gamut Error Detection Levels”
3	CMP	The pseudo-composite signal level of the converted YC_BC_R signal is displayed. (The blanking interval is not included.) Levels that fall outside of the range you set using COMPOSIT GAMUT in the status display are displayed in red. [Reference] Section 12.6.7, “Setting Composite Gamut Error Detection Levels”

9.7.2 Selecting the 5 Bar Display Unit

The 5 bar display unit is the same as the UNIT setting that you have made on the status menu. To select the 5 bar display unit, follow the procedure below.

Procedure

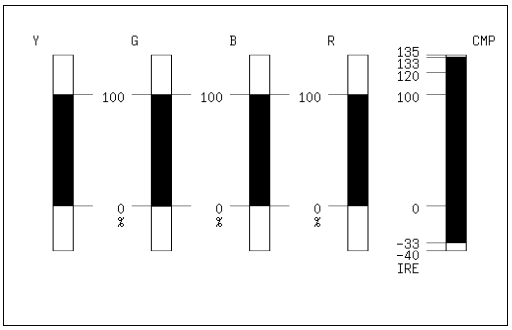
STATUS → F•5 ERROR CONFIG → F•4 ERROR LEVEL → F•6 UNIT

Settings

%: The display unit for YGBR is percentage, and the display unit for CMP is IRE. This is the default setting.

mV: The display unit is mV. Depending on the composite display format, the scale differs as follows:
NTSC: 100 % = 700 mV (YGBR) and 100 IRE = 714 mV (CMP)
PAL: 100 % (IRE) = 700 mV

UNIT = %



UNIT = mV

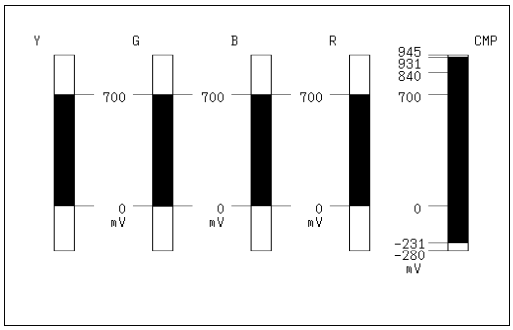


Figure 9-13 5 bar display unit (PAL)

9.8 Phase Difference Display

9.8.1 Explanation of the Phase Difference Display

In the phase difference display, you can measure the phase difference between an SDI signal and an external sync signal. To show the phase difference display, set F•6 DISPLAY to EXTPHASE.
To configure phase difference display settings, press F•5 EXTREF PHASE. F•5 EXTREF PHASE appears when F•6 DISPLAY is set to EXTPHASE.

VEC → F•5 EXTREF PHASE →

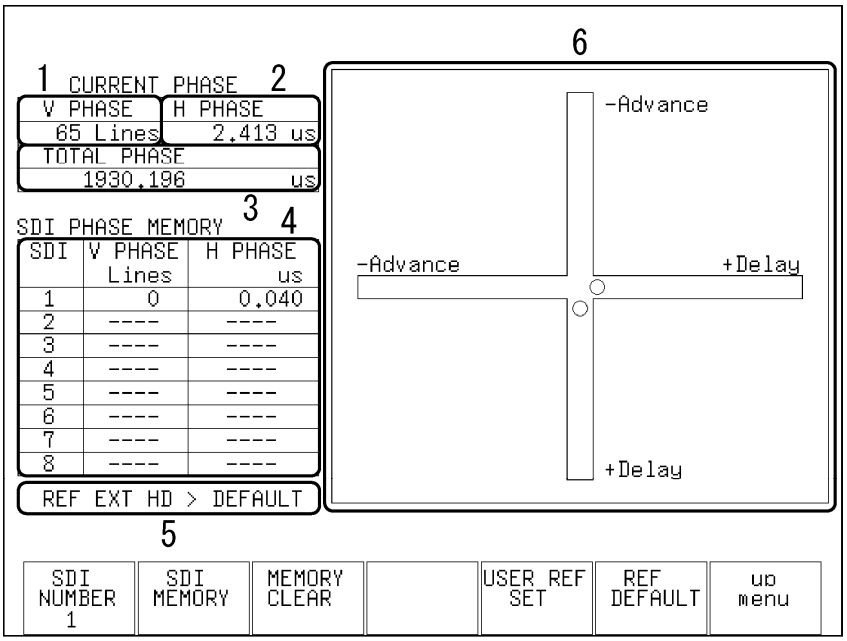


Figure 9-14 Phase difference display

To measure phase differences, press EXT to switch to external sync mode and apply an external sync signal to the LV 7330. The supported external sync signal formats are listed below.

- 1080i/60, 1080i/59.94, and 1080i/50
- 1080p/30, 1080p/29.97, 1080p/25, 1080p/24, and 1080p/23.98
- 1080PsF/30, 1080PsF/29.97, 1080PsF/25, 1080PsF/24, and 1080PsF/23.98
- 720p/60, 720p/59.94, 720p/50, 720p/30, 720p/29.97, 720p/25, 720p/24, and 720p/23.98
- NTSC and NTSC with a 10-field ID
- PAL

Table 9-3 Explanation of the phase difference display

No.	Item	Explanation
1	V PHASE	The phase difference in lines is displayed here.
2	H PHASE	The phase difference in microseconds (us) is displayed here.
3	TOTAL PHASE	The total of the V phase and H phase differences is displayed here in microseconds (us).
4	SDI PHASE MEMORY	Recorded phase differences are displayed here. [Reference] Section 9.8.3, “Recording the Current Phase Difference”
5	REF	The external sync signal setting is indicated using one of the following messages: INT — Indicates that the internal sync signal is being used. Phase difference measurement cannot be performed. EXT HD > DEFAULT — Indicates that a tri-level sync signal is being used with the default phase difference setting. EXT HD > USER REF — Indicates that a tri-level sync signal is being used with a user-defined phase difference setting. EXT BB > DEFAULT — Indicates that a BB signal is being used with the default phase difference setting. EXT BB > USER REF — Indicates that a BB signal is being used with a user-defined phase difference setting. NO SIGNAL — Indicates that no external sync signal is being applied. [Reference] Section 9.8.5, “Setting the Current Phase Difference to Zero” Section 9.8.6, “Initializing the Phase Difference Settings”
6	Graphical display	The vertical axis indicates 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 H circle turns green when it is within ±3 clocks of the center. The V circle turns green when it is in the center. Circles do not appear when the LV 7330 uses internal synchronization. For both the V and H axes, differences of up to approximately +1/2 frames from the center are displayed in the Delay axis and differences of up to approximately -1/2 frames from the center are displayed in the Advance axis. See the tables below for details. The H axis phase difference display may fluctuate within the range of ±1 clock in cases such as when the signal is switched.

Table 9-4 Delay and Advance axis display ranges

Format	Displayed in the Advance Axis			Displayed in the Delay Axis				
	V PHASE (in lines)	H PHASE (in µs)		V PHASE (in lines)	H PHASE (in µs)		V PHASE (in lines)	H PHASE (in µs)
1080i/59.94, 1080p/29.97, 1080PsF/29.97	-562	-29.645	to	0	0	to	562	0
1080i/60, 1080p/30, 1080PsF/30	-562	-29.616	to	0	0	to	562	0
1080i/50, 1080p/25, 1080PsF/25	-562	-35.542	to	0	0	to	562	0
1080p/23.98, 1080PsF/23.98	-562	-37.060	to	0	0	to	562	0
1080p/24, 1080PsF/24	-562	-37.023	to	0	0	to	562	0
720p/59.94	-375	0	to	0	0	to	374	22.230
720p/60	-375	0	to	0	0	to	374	22.208
720p/50	-375	0	to	0	0	to	374	26.653
720p/29.97	-375	0	to	0	0	to	374	44.475
720p/30	-375	0	to	0	0	to	374	44.430
720p/25	-375	0	to	0	0	to	374	53.319
720p/23.98	-375	0	to	0	0	to	374	55.597
720p/24	-375	0	to	0	0	to	374	55.542
525i/59.94	-262	-63.518	to	0	0	to	262	0
625i/50	-312	-63.962	to	0	0	to	312	0

9.8.2 Setting the Phase Difference Memory Number

You can record up to eight phase differences between the SDI signal and the external sync signal. This is useful in cases such as when you are using a switcher to change signals and you want to align the separate phases.
To select which of the eight different memory numbers to record to or delete, follow the procedure below.

Procedure

VEC → F•5 EXTREF PHASE → F•1 SDI NUMBER

Settings

Selectable range: 1 to 8 (The default setting is 1.)

9.8.3 Recording the Current Phase Difference

To record the difference between the SDI signal and the external sync signal to the memory number that you have selected using F•1 SDI NUMBER, follow the procedure below.

Procedure

VEC → F•5 EXTREF PHASE → F•2 SDI MEMORY

9.8.4 Deleting Recorded Phase Differences

To delete the phase difference stored in the memory number that you have selected using F•1 SDI NUMBER, follow the procedure below.

Procedure

VEC → F•5 EXTREF PHASE → F•3 MEMORY CLEAR

9.8.5 Setting the Current Phase Difference to Zero

To set the current SDI signal and external sync signal phase difference to zero, follow the procedure below. You can change the reference phase difference to match the system that you are using.

Procedure

VEC → F•5 EXTREF PHASE → F•5 USER REF SET

9.8.6 Initializing the Phase Difference Settings

To set the current SDI signal and external sync signal phase difference to the default setting, follow the procedure below.
The default setting is the phase difference between the SDI output signal of the LEADER LT 443D Multiformat Video Generator without a timing offset and a BB signal when both signals are connected through cables of equal length. Because of device inconsistencies and phase fluctuations when the SDI signal is switched, a display error within the range of ±3 clocks may occur.

Procedure

VEC → F•5 EXTREF PHASE → F•6 REF DEFAULT

10. Picture Display

10.1 Picture Display Explanation

To make the picture display appear, press PIC.

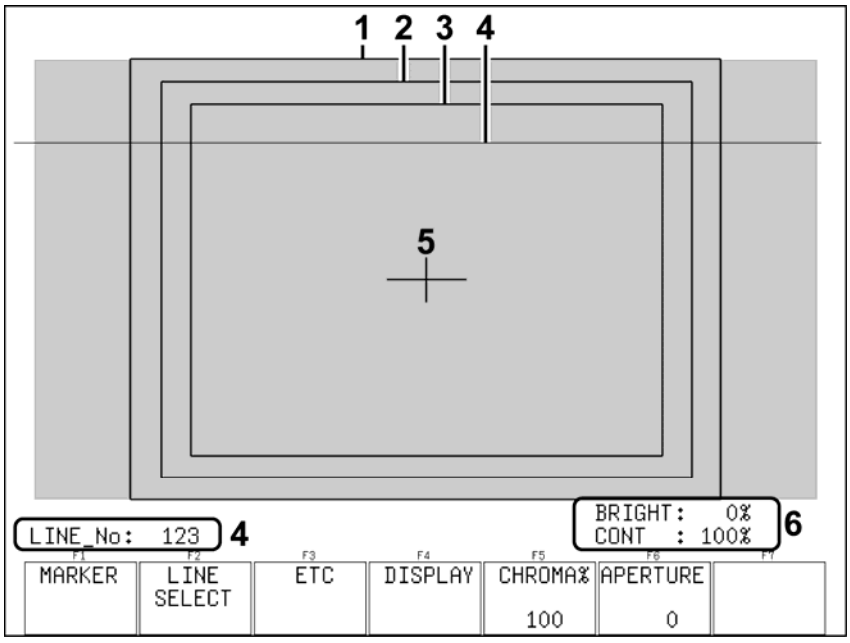


Figure 10-1 Picture display

Table 10-1 Picture display explanation

No.	Item	Explanation
1	Aspect marker	You can display a marker for the selected aspect ratio in relation to the frame. [Reference] Section 10.3.1, “Displaying an Aspect Marker”
2	Safe action marker	You can display a marker of a selected size in relation to the frame or aspect marker. [Reference] Section 10.3.2, “Displaying a Safe Action Marker”
3	Safe title marker	You can display a marker of a selected size in relation to the frame or aspect marker. [Reference] Section 10.3.3, “Displaying a Safe Title Marker”
4	Selected line	You can display a marker on the selected line. [Reference] Section 10.3.5, “Line Selection Settings”
5	Center marker	You can display a marker in the center of the picture that is 10 % the size of the frame. [Reference] Section 10.3.4, “Displaying a Center Marker”
6	Brightness and contrast display	The brightness and contrast of the picture are displayed. The brightness and contrast can be adjusted at all levels of the picture display. [Reference] Section 10.2, “Setting the Brightness and Contrast”

10.2 Setting the Brightness and Contrast

You can set the brightness and contrast of the picture by using BRIGHT and CONT. The brightness and contrast can be adjusted at all levels of the picture display. The current brightness and contrast settings appear in the lower right of the display.
The settings made here do not affect the CINELITE display, CINEZONE display, or multi-screen display.

10.2.1 Adjusting the Brightness

You can adjust the brightness of the picture by turning BRIGHT.
Pressing BRIGHT returns the brightness to its default setting (0 %).

Settings

Selectable range: -50 % to 50 % (The default value is 0 %.)

10.2.2 Adjusting the Contrast

You can adjust the contrast of the picture by turning CONT.
Pressing CONT returns the contrast to its default setting (100 %).
Regardless of this setting, when the multi-screen display format is set to PIC+WFM or PIC+VECT, the contrast is fixed at 60%. If you set SHORTCUT KEY SET in the system settings to CONTRAST, you will be able to press SHORT CUT on the front panel to switch the contrast in this order: 50%, 100%, and 200%.

[Reference] MODE → Section 15.1, “Selecting the Multi-Screen Display Format”
SHORTCUT KEY SET → Section 5.6, “Assigning a Function to the SHORT CUT Key”

Settings

Selectable range: 50 % to 200 % (The default value is 100 %.)

10.3 Marker Settings

To configure marker settings, press F•1 MARKER in the picture menu. You can use the menu that appears to configure the display settings for every type of marker.
The markers that you set here do not appear in the multi-screen display. F•1 MARKER appears when SIZE is set to FIT and CC is set to OFF.

[Reference] SIZE → Section 10.6.1, “Selecting the Picture Display Size”
CC → Section 10.5.1, “Displaying Closed Captions”

PIC → F•1 MARKER →

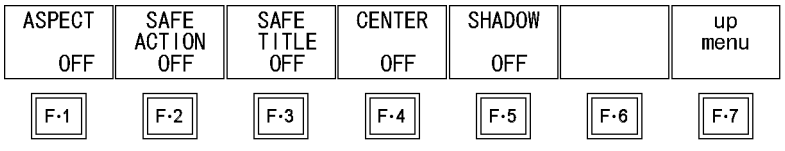


Figure 10-2 MARKER menu

10.3.1 Displaying an Aspect Marker

To display an aspect marker, follow the procedure below.
An aspect marker is displayed as white lines. You can also shade the area outside of the aspect marker.

[Reference] Section 10.3.5, “Shading the Area Outside of an Aspect Marker”

Procedure

PIC → F•1 MARKER → F•1 ASPECT

Settings

2.35:1:	A 2.35:1 aspect marker is displayed.
1.85:1:	A 1.85:1 aspect marker is displayed.
1.66:1:	A 1.66:1 aspect marker is displayed.
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 setting cannot be selected when the input signal is SD-SDI and SQUEEZE is set to OFF.
16:9:	A 16:9 aspect marker is displayed. This setting cannot be selected when the input signal is HD-SDI or SD-SDI and SQUEEZE is set to ON.
OFF:	An aspect marker is not displayed. This is the default setting.

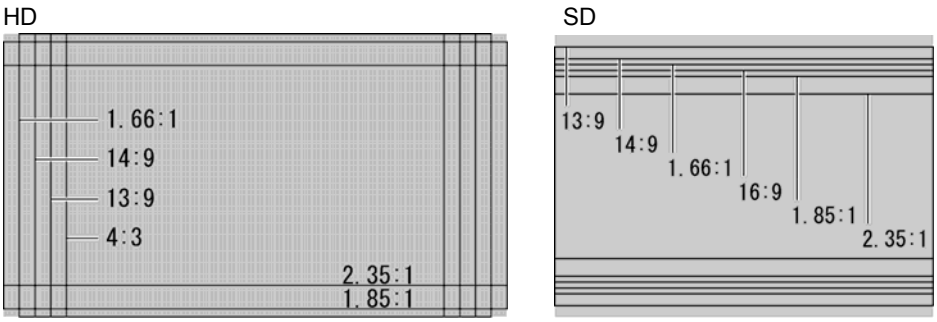


Figure 10-3 Aspect markers

10.3.2 Displaying a Safe Action Marker

To display a safe action marker, follow the procedure below.

Procedure

PIC → F•1 MARKER → F•2 SAFE ACTION

Settings

95%:	A safe action marker whose size is 95 % that of the frame (or aspect marker if an aspect marker is being displayed) is displayed.
93%:	A safe action marker whose size is 93 % that of the frame (or aspect marker if an aspect marker is being displayed) is displayed.
90%:	A safe action marker whose size is 90 % that of the frame (or aspect marker if an aspect marker is being displayed) is displayed.
OFF:	A safe action marker is not displayed. This is the default setting.

10.3.3 Displaying a Safe Title Marker

To display a safe title marker, follow the procedure below.

Procedure

PIC → F•1 MARKER → F•3 SAFE TITLE

Settings

88%:	A safe title marker whose size is 88 % that of the frame (or aspect marker if an aspect marker is being displayed) is displayed.
80%:	A safe title marker whose size is 80 % that of the frame (or aspect marker if an aspect marker is being displayed) is displayed.
OFF:	A safe title marker is not displayed. This is the default setting.

10.3.4 Displaying a Center Marker

To display a center marker, follow the procedure below.
The center marker is displayed in the center of the frame at 10 % of the frame's size.

Procedure

PIC → F•1 MARKER → F•4 CENTER

Settings

ON:	A center marker is displayed.
OFF:	A center marker is not displayed. This is the default setting.

CENTER = ON

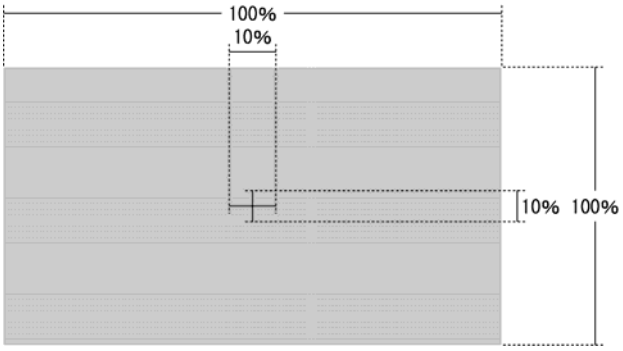


Figure 10-4 Center marker

10.3.5 Shading the Area Outside of an Aspect Marker

To shade the area outside of an aspect marker, follow the procedure below.

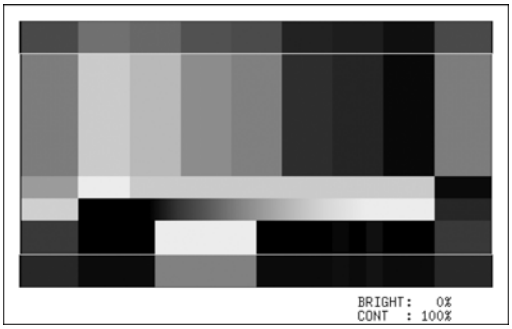
Procedure

PIC → F•1 MARKER → F•5 SHADOW

Settings

ON:	The LV 7330 shades the area outside of the aspect marker. This setting is not valid when F•1 ASPECT is set to OFF.
OFF:	Only the aspect marker is displayed. This is the default setting.

SHADOW = ON



SHADOW = OFF

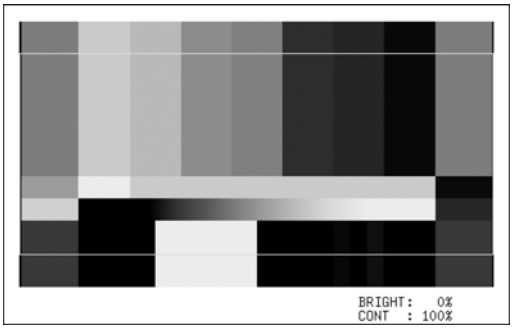


Figure 10-5 Aspect marker settings

10.4 Line Selection Settings

To configure line selection settings, press F•2 LINE SELECT in the picture menu. The line selection feature allows you to display a marker on the selected line.
The markers that you set here do not appear in the CINELITE or CINEZONE display.
F•2 LINE SELECT appears when SIZE is set to FIT.

[Reference] SIZE → Section 10.6.1, “Selecting the Picture Display Size”

PIC → F•2 LINE SELECT →

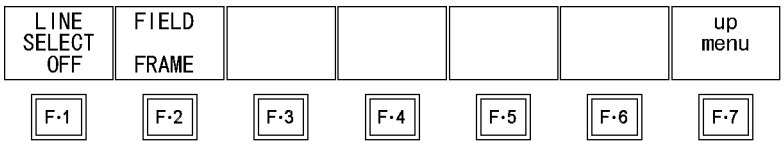


Figure 10-6 LINE SELECT menu

10.4.1 Displaying a Marker on the Selected Line

To display a marker on the selected line, follow the procedure below.
Changing this setting will also change the video signal waveform display and vector display line selection settings.

Procedure

PIC → F•2 LINE SELECT → F•1 LINE SELECT

Settings

ON:	A marker appears on the selected line.
OFF:	A marker does not appear on the selected line. This is the default setting.

LINE SELECT = ON

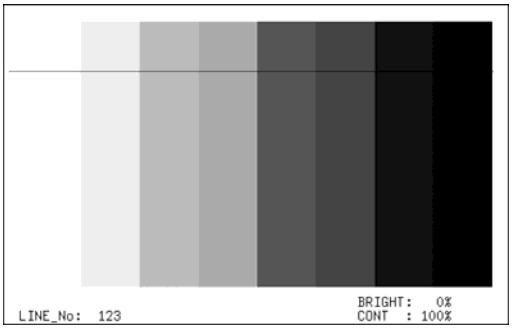


Figure 10-7 Line select display

10.4.2 Selecting a Line

To select a line to display a marker on, follow the procedure below. The selected line is indicated in the lower left of the display.
Changing this setting will also change the selected line in the CINELITE, video signal waveform, vector, and status (data dump) displays.

Procedure

PIC → F•2 LINE SELECT → F•D

10.4.3 Setting the Line Selection Range

To set the line selection range, follow the procedure below.
The line selection range setting is valid when the input format is set to interlaced or segmented frame. Changing this setting will also change the video signal waveform display and vector display line selection ranges.

Procedure

PIC → F•2 LINE SELECT → F•2 FIELD

Settings (the examples are the selectable ranges when the input format is 1080i/59.94)

FIELD1:	A line from field one 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. This is the default setting.	(Example: 1 to 1125.)

10.5 Other Settings

To configure other settings, press F•3 ETC in the picture menu. You can configure closed caption and gamut error display settings from this menu.
When the LV 7330 is in dual link mode, F•1 CC is not displayed.

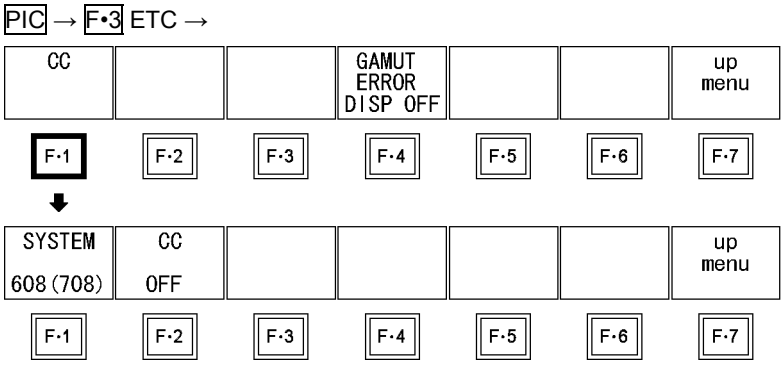


Figure 10-8 ETC menu

10.5.1 Displaying Closed Captions

To display SMPTE closed captions, follow the procedure below.
If you select a setting other than OFF, no markers are displayed.

Procedure

PIC → F•3 ETC → F•1 CC → F•2 CC

Settings

OFF:	Closed captions are not displayed. This is the default setting.
CC1:	SMPTE CC1 is displayed.
CC2:	SMPTE CC2 is displayed.
CC3:	SMPTE CC3 is displayed.
CC4:	SMPTE CC4 is displayed.
TEXT1:	SMPTE TEXT1 is displayed.
TEXT2:	SMPTE TEXT2 is displayed.
TEXT3:	SMPTE TEXT3 is displayed.
TEXT4:	SMPTE TEXT4 is displayed.

10.5.2 Selecting the Closed Caption Format

To select the format of SMPTE closed captions, follow the procedure below.

Procedure

PIC → F•3 ETC → F•1 CC → F•1 SYSTEM

Settings

608(708):	Display CEA/EIA-608-B closed caption data that is embedded in EIA-708-B CDP packets. This is the default setting.
608(608):	Display CEA/EIA-608-B closed caption data.
VBI:	Display CEA/EIA-608-B closed caption data that is embedded in vertical blanking intervals.

10.5.3 Displaying Gamut Errors

To display the locations where gamut errors or composite gamut errors are occurring over the picture, follow the procedure below. If the detected value is greater than the upper limit, a red mesh pattern indicates the error location. If the detected value is less than the lower limit, a black mesh pattern indicates the error location.
Gamut errors are displayed if GAMUT ERROR on the status menu is set to ON. Composite gamut errors are displayed if C.GAMUT ERROR is set to ON. Additionally, you can use the GAMUT and COMPOSIT GAMUT settings on the status menu to set the levels that are used to detect errors.
Gamut errors are not displayed on the CINELITE, CINEZONE, and multi-screen displays.

Reference: GAMUT ERROR, C.GAMUT ERROR → Section 12.6.3, “Configuring Error Detection Settings”
GAMUT → Section 12.6.7, “Setting Gamut Error Detection Levels”
COMPOSIT GAMUT → Section 12.6.8, “Setting Composite Gamut Error Detection Levels”

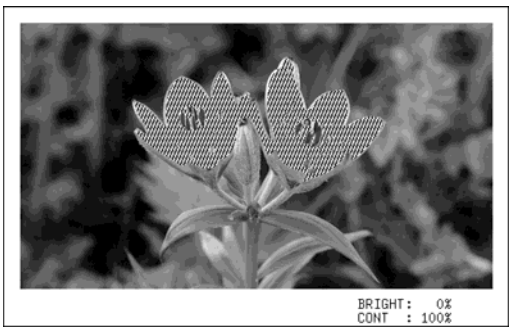
Procedure

PICTURE → F•3 ETC → F•4 GAMUT ERROR

Settings

DISP ON: Gamut error is displayed.
DISP OFF: Gamut error is not displayed. This is the default setting.

GAMUT ERROR = DISP ON



GAMUT ERROR = DISP OFF

Figure 10-9 Gamut error display

10.6 Display Settings

To configure the display settings, press F•4 DISPLAY in the picture menu. From this menu, you can turn on or off each RGB channel and configure the display size, squeezed image display, and IP conversion settings.

PIC → F•4 DISPLAY →

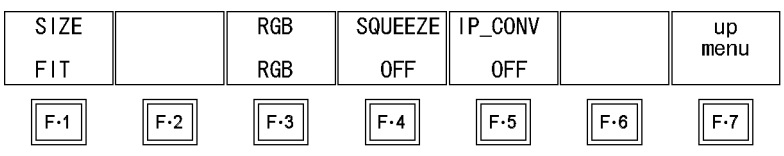


Figure 10-10 DISPLAY menu

10.6.1 Selecting the Picture Display Size

To set the picture display size, follow the procedure below.
Regardless of the setting made here, the picture is displayed using the FIT setting in the CINELITE, CINEZONE, and multi-screen displays.

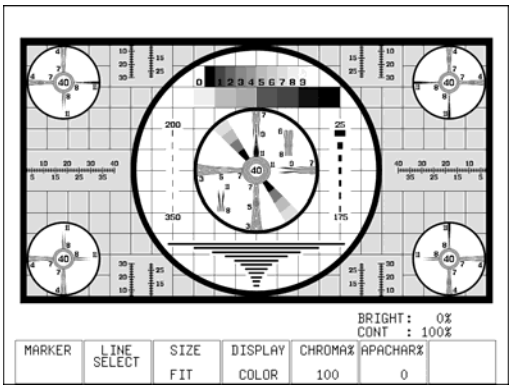
Procedure

PIC → F•4 DISPLAY → F•1 SIZE

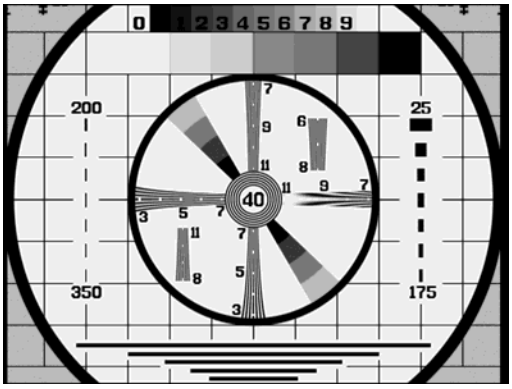
Settings

FIT:	The picture size is adjusted to the most suitable size for the screen. This is the default setting.
x1:	A single sample of the video signal is displayed with a single pixel on the screen. The marker and line select features cannot be used. When the input signal is HD-SDI, you can use the F•D to adjust the location of the picture. To switch the direction that the picture is moved (along the line or the sample axis), press F•D. Approximately five seconds after the last operation is performed, the menu and the information displays at the top of the screen disappear. To redisplay the menu and information, perform some kind of operation.
x2:	A single sample of the video signal is displayed with a four pixels on the screen. The marker and line select features cannot be used. You can use the F•D to adjust the location of the picture. To switch the direction that the picture is moved (along the line or the sample axis), press F•D. Approximately five seconds after the last operation is performed, the menu and the information displays at the top of the screen disappear. To redisplay the menu and information, perform some kind of operation.

SIZE = FIT



SIZE = x1



SIZE = x2

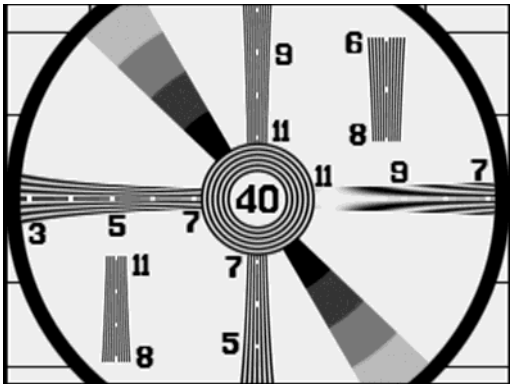


Figure 10-11 Picture display sizes

10.6.2 Turning R, G, and B ON or OFF

To turn the display of the individual R, G, and B signals ON or OFF, follow the procedure below. You cannot turn all the signals OFF.

Procedure

PIC → F•4 DISPLAY → F•3 RGB

Settings

RGB:	All the RGB signals are displayed. This is the default setting.
MONO:	The picture is displayed in monochrome.
RG-:	The R and G signals are displayed.
R-B:	The R and B signals are displayed.
-GB:	The G and B signals are displayed.
R--:	The R signal is displayed.
-G-:	The G signal is displayed.
--B:	The B signal is displayed.

10.6.3 Displaying Squeezed Images

To horizontally expand and display squeezed images, follow the procedure below.
This setting is valid when the input signal is SD-SDI and SIZE is set to FIT.
Regardless of the setting made here, the picture is displayed using the OFF setting in the CINELITE and CINEZONE displays.

[Reference] SIZE → Section 10.6.1, “Selecting the Picture Display Size”

Procedure

PIC → F•4 DISPLAY → F•4 SQUEEZE

Settings

ON:	Images with an aspect ratio of 4:3 are expanded horizontally and displayed with an aspect ratio of 16:9.
OFF:	No image expansion is performed. This is the default setting.

10.6.4 Performing IP Conversion

To convert an interlaced signal to a progressive signal and generate it, follow the procedure below. This setting is valid when the input signal is SD-SDI and SIZE is set to x1 or x2. This menu item does not appear when input signal is HD-SDI.

[Reference] SIZE → Section 10.6.1, “Selecting the Picture Display Size”

Procedure

PIC → F•4 DISPLAY → F•5 IP_CONV

Settings

ON:	IP conversion is performed. This is the default setting.
OFF:	IP conversion is not performed.

10.7 Adjusting the Chroma Gain

To adjust the chroma gain, follow the procedure below. If you press F•D, the chroma gain will be reset to its default value of 100.

Regardless of the setting made here, the picture is displayed using a chroma gain of 100 in the CINELITE and CINEZONE displays.

Procedure

PIC → F•5 CHROMA%

Settings

Selectable range: 0 to 150 (The default setting is 100.)

10.8 Adjusting the Aperture

To adjust the aperture, follow the procedure below. A larger number will result in more well-defined outlines. If you press F•D, the aperture will be reset to its default value of 0.

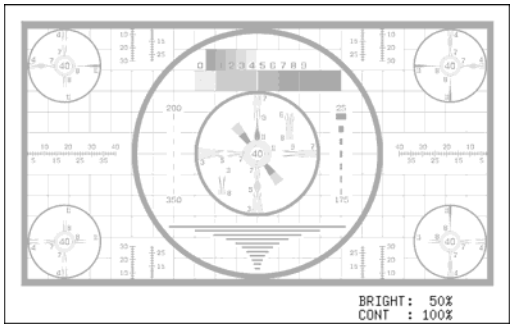
Procedure

PIC → F•6 APERTURE

Settings

Selectable range: 0 to 200 (The default setting is 0.)

APERTURE = 0



APERTURE = 100

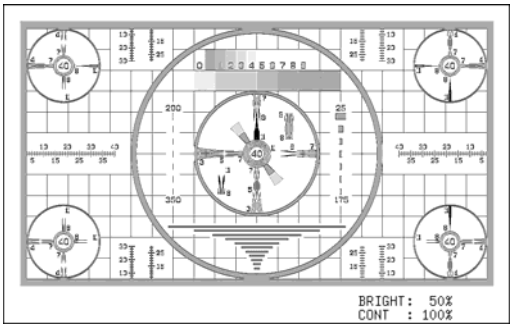


Figure 10-12 Aperture settings

11. Audio Display

The audio display allows you to switch between viewing audio signals that have been extracted from SDI signals and viewing audio signals applied to the rear panel AES/EBU connector. Specify the type of signal to measure by setting AUDIO SOURCE in the system settings beforehand.

[Reference] AUDIO SOURCE → Section 5.2, “Selecting the Audio Signal to Measure”

To display audio signals, press AUDIO.

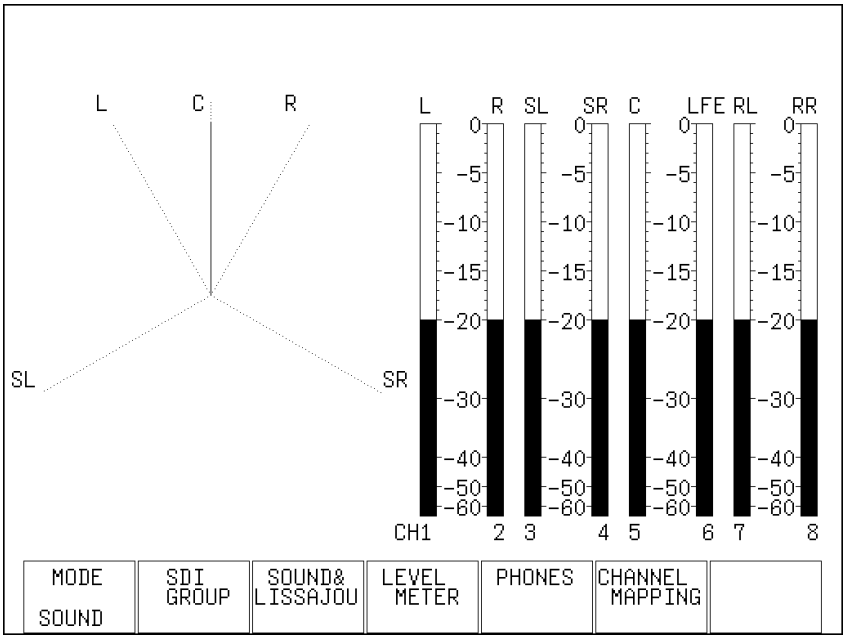


Figure 11-1 Audio display

11.1 Selecting the Display Mode

To set the audio display mode, follow the procedure below.

Procedure

AUDIO → F•1 MODE

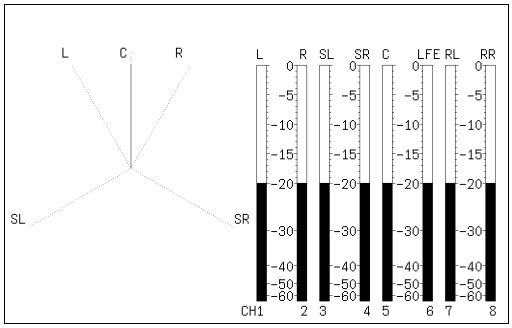
Settings

SOUND:	The sound image and level meters for eight channels*1 are displayed next to each other. This is the default setting.
LISSAJOU:	The lissajous curves, level meters,*1 and correlation meter*2 for two channels are displayed. (single-lissajous display)
MLT_LISS:	The lissajous curves and level meters*1 for eight channels are displayed next to each other. (multi-lissajous display)
VALUE:	The level values and level meters*1 for eight channels are displayed next to each other.

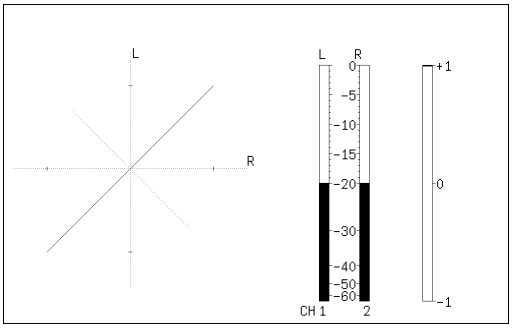
*1 The meters are typically green, but meters whose values are above the reference level are displayed using red.

*2 The correlation meter displays the phase relationship between two signals. 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.

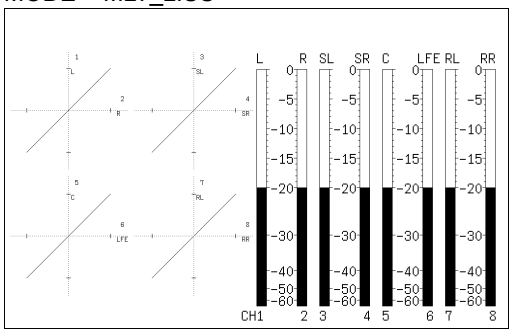
MODE = SOUND



MODE = LISSAJOU



MODE = MLT_LISS



MODE = VALUE

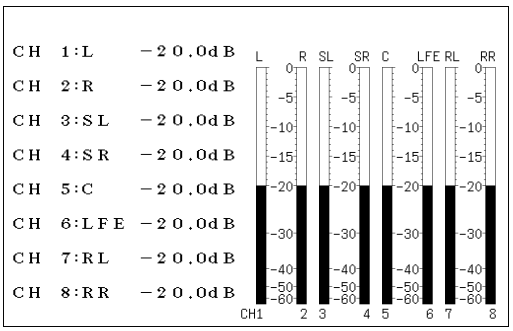


Figure 11-2 Audio display modes

11.2 Selecting Which Channels to Measure

When AUDIO SOURCE is set to SDI, audio signals for eight channels can be measured on the multi-lissajous, numerical, and meter displays. To select which channels to measure, press F•2 SDI GROUP in the audio menu. This menu appears when AUDIO SOURCE is set to SDI.

You choose the channel for the sound image display, single-lissajous display, and headphone output from the 8ch you select here.

AUDIO → F•2 SDI GROUP →

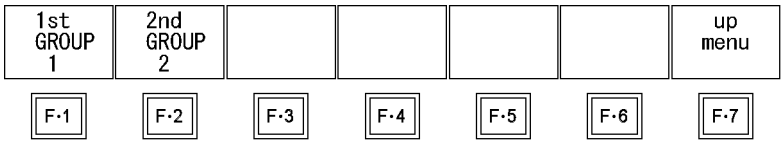


Figure 11-3 SDI GROUP menu

To select the 8ch to show in the audio display, follow the procedure below.

Procedure

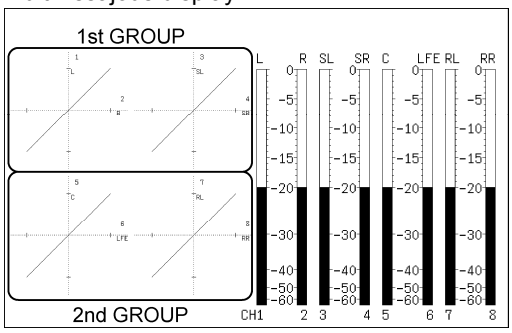
AUDIO → F•2 SDI GROUP → F•1 1st GROUP
→ F•2 2nd GROUP

Settings

1:	Channels 1 through 4 are displayed. This is the default setting for 1st GROUP.
2:	Channels 5 through 8 are displayed. This is the default setting for 2nd GROUP.
3:	Channels 9 through 12 are displayed.
4:	Channels 13 through 16 are displayed.

The channels assigned to 1st GROUP and 2nd GROUP are listed below.

Multi-lissajous display



Numerical and meter displays

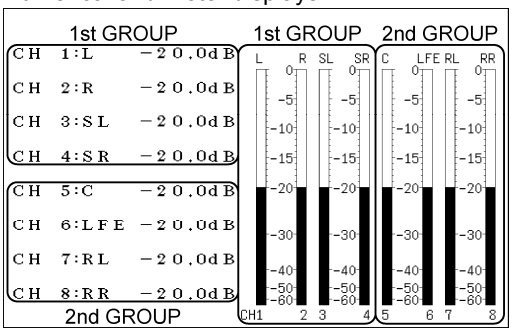


Figure 11-4 Channel assignments

11.3 Configuring the Sound Image and Lissajous Displays

To configure sound image and lissajous settings, press F•3 SOUND&LISSAJOU in the audio menu. You can set the audio waveform and scale intensities, the display format, the channel to display in the single-lissajous display, and the gain.

AUDIO → F•3 SOUND&LISSAJOU →

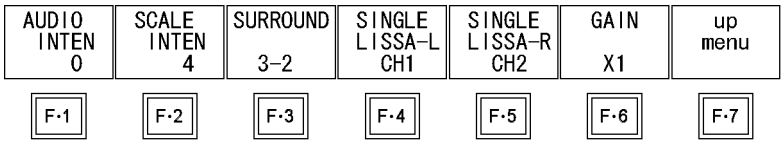


Figure 11-5 SOUND&LISSAJOU menu

11.3.1 Setting the Audio Waveform Intensity

To set the sound image waveform and lissajous curve intensity, follow the procedure below. If you press F•D, the intensity will be reset to its default value of 0.

Procedure

AUDIO → F•3 SOUND&LISSAJOU → F•1 AUDIO INTEN

Settings

Setting range: -8 to 7 (The default setting is 0.)

11.3.2 Setting the Scale Intensity

To set the scale intensity, follow the procedure below. Regardless of this setting, in the multi-screen display, scales are displayed using the intensity that MULTI AUDIO is set to. The SCALE INTEN values set using MULTI WFM, MULTI VEC, and MULTI AUDIO are the same.
If you press F•D, the scale intensity will be reset to its default value of 4.
[Reference] MULTI AUDIO → Section 15.2, “Setting Each Measurement Mode”

Procedure

AUDIO → F•3 SOUND&LISSAJOU → F•2 SCALE INTEN

Settings

Setting range: -8 to 7 (The default setting is 4.)

11.3.3 Selecting the Sound Image Display Format

To set the sound image display format, follow the procedure below. The sound arrival direction for each speaker arrangement shown below is displayed.
This setting is available when MODE is set to SOUND.
[Reference] MODE → Section 11.1, “Selecting the Display Mode”

Procedure

AUDIO → F•3 SOUND&LISSAJOU → F•3 SURROUND

Settings

3-1:	The four channels L, R, C, and S*1 are used.
3-2:	The five channels L, R, C, SL,*1 and SR are used. This is the default setting.
3-2-2:	The seven channels L, R, C, SL,*1 SR, RL, and RR are used.

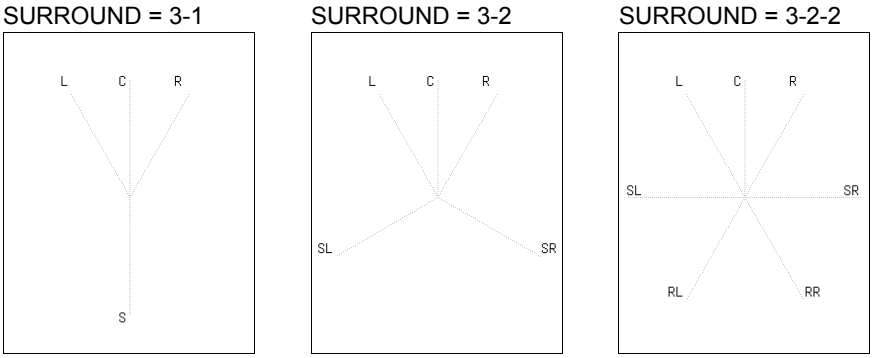


Figure 11-6 Sound image display formats

*1 S and SL are the same. In channel mapping, assign a channel to SL(S).

11.3.4 Selecting the Lissajous Display Format

To set the lissajous display format, follow the procedure below.
This setting is available when MODE is set to LISSAJOU or MLT_LISS.
[Reference] MODE → Section 11.1, “Selecting the Display Mode”

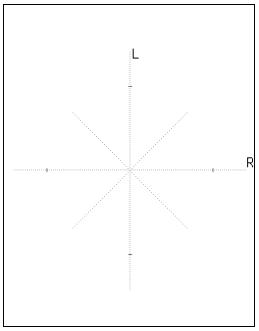
Procedure

AUDIO → F•3 SOUND&LISSAJOU → F•3 LISSAJOU

Settings

X-Y:	Maps the R and L axes to the horizontal and vertical axes. This is the default setting.
MATRIX:	The R and L axes are positioned at 45° angles to the X and Y axes.

LISSAJOU = X-Y



LISSAJOU = MATRIX

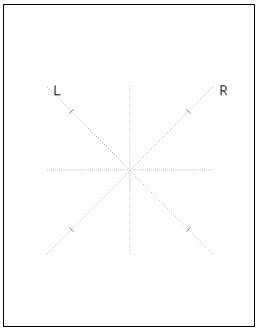


Figure 11-7 Lissajous display format

11.3.5 Selecting Measurement Channels in the Single-Lissajous Display

To select the measurement channels in the single-lissajous display when AUDIO SOURCE is set to SDI, follow the procedure below. You can select the channels from those that are assigned to 1st GROUP and 2nd GROUP.
When AUDIO SOURCE is set to AES/EBU, F•4 SINGLE LISSA-L is fixed to CH1, and F•5 SINGLE LISSA-R is fixed to CH2.
This setting is valid when MODE is set to LISSAJOU.
[Reference] 1st GROUP and 2nd GROUP → Section 11.2, “Selecting Which Channels to Measure”

Procedure

AUDIO → F•3 SOUND&LISSAJOU → F•4 SINGLE LISSA-L
→ F•5 SINGLE LISSA-R

Settings

Setting range for L:	The channels assigned to 1st GROUP and the channels assigned to 2nd GROUP. The default setting is CH1.
Setting range for R:	The channels assigned to 1st GROUP and the channels assigned to 2nd GROUP. The default setting is CH2.

11.3.6 Selecting the Audio Waveform Gain

To set the gain for the sound image and lissajous displays, follow the procedure below.

Procedure

AUDIO → F•3 SOUND&LISSAJOU → F•6 GAIN

Settings

X1:	The waveform is displayed at the reference gain. The waveform amplitude aligns with the scale marker when a reference level signal is applied. This is the default setting.
X2:	The waveform amplitude is displayed at twice the reference gain.
X10:	The waveform amplitude is displayed at 10 times the reference gain.
X0.5:	The waveform amplitude is displayed at 0.5 times the reference gain.
AUTO:	The gain is automatically adjusted to align the waveform amplitude with the scale marker.

11.4 Meter Settings

To configure meter settings, press F•4 LEVEL METER in the audio menu. You can set the meter reference level, range, and scale.

AUDIO → F•4 LEVEL METER →

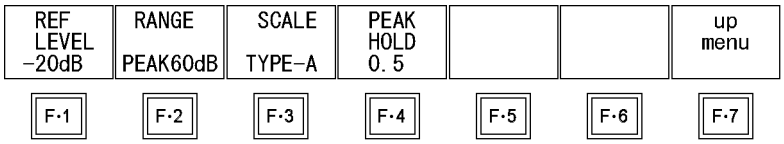


Figure 11-8 LEVEL METER menu

11.4.1 Setting the Reference Level

To set the meter reference level, follow the procedure below.
Levels that exceed the reference level are displayed in red, and levels that are within the reference level are displayed in green.

Procedure

AUDIO → F•4 LEVEL METER → F•1 REF LEVEL

Settings

-20 dB:	The reference level is set to -20 dB. This is the default setting.
-18dB:	The reference level is set to -18 dB.
-12dB:	The reference level is set to -12 dB.
-9dB:	The reference level is set to -9 dB.

11.4.2 Setting the Range

To set the meter range, follow the procedure below.

Procedure

AUDIO → F•4 LEVEL METER → F•2 RANGE

Settings

PEAK60dB: The meter range is -60 to 0 dB, and the meters have peak markers. This is the default setting.
PEAK90dB: The meter range is -90 to 0 dB, and the meters have peak markers.
AVERAGE: The reference level is set to 0 dB, and the range is set to -20 to 3 dB. The meters do not have peak markers.
LOUDNESS: The meter range is -60 to 0 dB. The meters do not have peak markers.

The table below shows the responsiveness for different meter RANGE settings.

Figure 11-1 Meter responsiveness

RANGE	delay time*1	return time*2	Average time
PEAK60dB	0 sec	1.7 sec	-
PEAK90dB	0 sec	1.7 sec	-
AVERAGE	-	-	0.3 sec
LOUDNESS	-	-	-

*1 The amount of time it takes for the meter to show -20 dB when a -20 dB/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 dB when the application of a -20 dB/1 kHz sine-wave signal stops.

11.4.3 Selecting the Type of Scale

To select the type of meter scale to use, follow the procedure below.
This setting is valid when F•2 RANGE is not set to AVERAGE.

Procedure

AUDIO → F•4 LEVEL METER → F•3 SCALE

Settings

TYPE-A: A scale that covers the range determined by the RANGE setting is displayed. This is the default setting.
TYPE-B: A scale where the value determined by REF LEVEL is set to 0 dB is displayed.

11.4.4 Setting the Peak Value Hold Time

To set the meter's peak value hold time (in 0.5-second steps), follow the procedure below.
This setting is valid when F•2 RANGE is set to PEAK60dB or PEAK90dB.

Procedure

AUDIO → F•4 LEVEL METER → F•4 PEAK HOLD

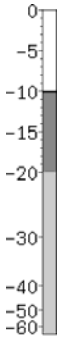
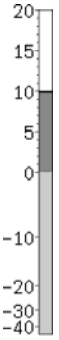
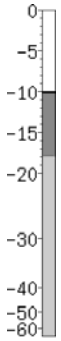
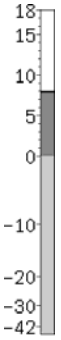
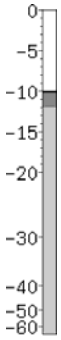
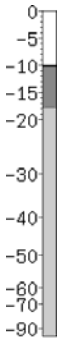
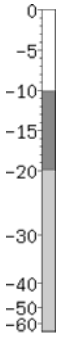
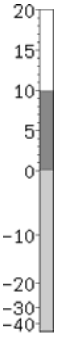
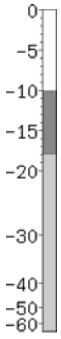
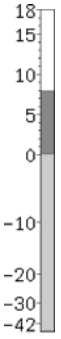
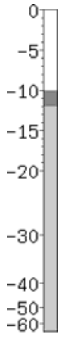
Settings

Selectable range: 0.5 to 5.0 or HOLD. The default setting is 0.5.

11.4.5 Meter Settings Overview

The meter readings for a -10 dB audio signal are shown below.

Figure 11-2 Meter Settings

F•1 REF LEVEL		-20dB		-18dB		-12dB		F•4
F•3 SCALE		TYPE-A	TYPE-B	TYPE-A	TYPE-B	TYPE-A	TYPE-B	PEAK HOLD
F•2 RANGE	PEAK60dB							0.5 to 5.0 / HOLD
	PEAK90dB							0.5 to 5.0 / HOLD
	AVERAGE							Not valid
	LOUDNESS							Not valid

11.5 Headphone Settings

The 6.3-mm (1/4 in.) headphone jack on the front panel transmits the signal that you selected for the AUDIO SOURCE setting. Connect your headphones here.
To configure the headphone settings, press F•5 PHONES in the audio menu. You can turn headphone output on and off, adjust the headphone volume, and set the headphone output channels.

AUDIO → F•5 PHONES →

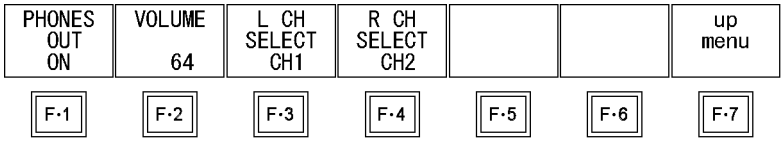


Figure 11-9 PHONES menu

11.5.1 Turning Headphones On and Off

To turn the headphone jack signal transmission on and off, follow the procedure below.

Procedure

AUDIO → F•5 PHONES → F•1 PHONES OUT

Settings

ON:	An audio signal is transmitted through the headphone jack. This is the default setting.
OFF:	An audio signal is not transmitted through the headphone jack.

11.5.2 Adjusting the Headphone Volume

To adjust the headphone volume, follow the procedure below.
If you press F•D, the headphone volume will be reset to its default value of 64.

If SHORTCUT KEY SET in the system settings has been set to VOLUME, you can adjust the headphone volume simply by pressing SHORT CUT.
[Reference] SHORTCUT KEY SET → Section 5.6, “Assigning a Function to the SHORT CUT Key”

Procedure

AUDIO → F•5 PHONES → F•2 VOLUME

Settings

Selectable range: 0 to 128 (The default setting is 64.)

11.5.3 Selecting the Headphone Jack Output Channels

To select the left and right headphone jack output channels separately, follow the procedure below. You can select the two headphone channels from the channels that are assigned to 1st GROUP and 2nd GROUP.
[Reference] 1st GROUP and 2nd GROUP → Section 11.2, “Selecting Which Channels to Measure”

Procedure

AUDIO → F•5 PHONES → F•3 L CH SELECT
→ F•4 R CH SELECT

Settings

Selectable range: The channels assigned to 1st GROUP and the channels assigned to 2nd GROUP.
The default setting is CH1 for L and CH2 for R.

11.6 Channel Mapping Settings

In the audio display, you can assign the following names to different channels: L, R, SL(S), SR, C, LFE, RL, and RR. To assign channel names, press F•6 CHANNEL MAPPING in the audio menu.

AUDIO → F•6 CHANNEL MAPPING →

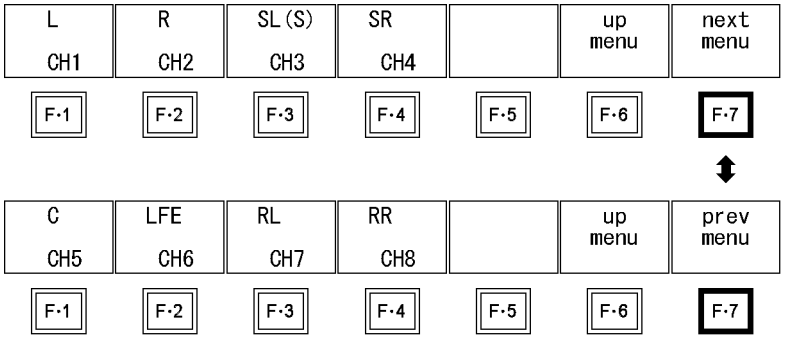


Figure 11-10 CHANNEL MAPPING menu

To assign channel names to different channels, follow the procedure below.
You can see channel names in the audio display. When AUDIO SOURCE is set to AES/EBU, F•1 L is fixed to CH1, and F•2 R is fixed to CH2. F•3 SL(S), F•4 SR, F•1 C, F•2 LFE, F•3 RL, and F•4 RR are not displayed.

Procedure

AUDIO → F•6 CHANNEL MAPPING → F•1 L
→ F•2 R
→ F•3 SL(S)
→ F•4 SR
→ F•7 next menu → F•1 C
→ F•7 next menu → F•2 LFE
→ F•7 next menu → F•3 RL
→ F•7 next menu → F•4 RR

Settings

Selectable range: The channels assigned to 1st GROUP and the channels assigned to 2nd GROUP.
(The initial channel assignment settings are L:CH1, R:CH2, SL(S):CH3, SR:CH4, C:CH5, LFE:CH6, RL:CH7, and RR:CH8.)

12. Status Display

12.1 Status Display Explanation

To show the status display, press STATUS.

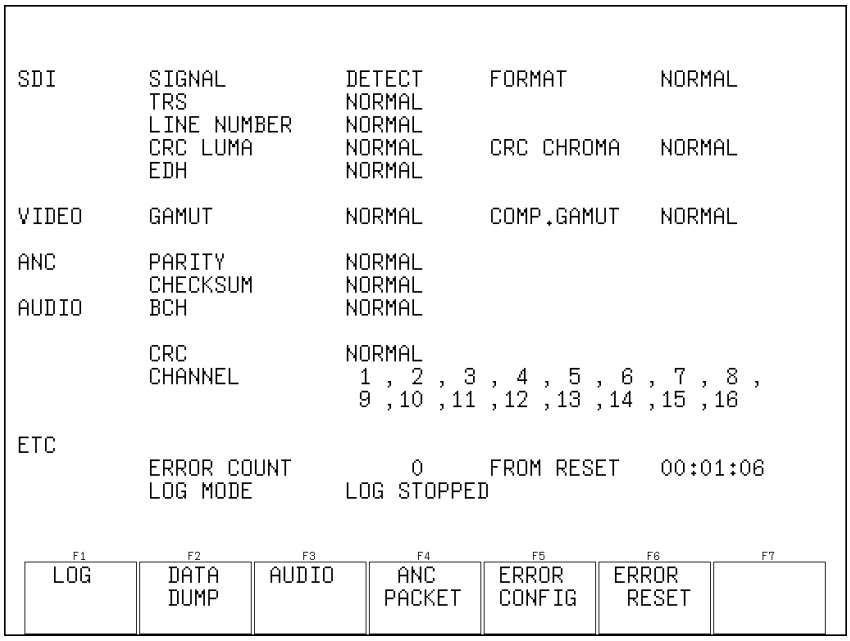


Figure 12-1 Status display

Figure 12-1 Status display explanation

Item	Display	Explanation
SIGNAL		Indicates whether or not an SDI signal is being applied to one of the SDI input connectors. “NO SIGNAL” may appear even when an SDI signal is applied to one of the connectors if the signal amplitude is small or if there is a lot of jitter. If “NO SIGNAL” appears, the rest of the information that follows will be blank.
	DETECT	An SDI signal is being applied.
	NO SIGNAL	An SDI signal is not being applied.
FORMAT		Indicates the video signal format detection status. The meanings of the indications vary as described below depending on whether the input format in the system settings has been set to AUTO or MANUAL. If “UNKNOWN” appears, the rest of the information that follows will be blank. [Reference] Section 5.1, “Setting the Input Format”
	NORMAL	When the input format is set to AUTO, this indication means that a signal that the LV 7330 supports is being applied. When the input format is set to MANUAL, this indication means that a signal is being applied whose format is the same as that of the manually specified format.
	UNKNOWN	When the input format is set to AUTO, this indication means that a signal that the LV 7330 does not support is being applied. When the input format is set to MANUAL, this indication means that a signal is being applied whose format is other than that of the manually specified format.

Item	Display	Explanation
TRS		Indicates the TRS error detection results. A TRS error occurs when the EAV and SAV of the SDI input signal are not in the right places.
	NORMAL	No errors have been detected.
	ERROR	An error has been detected.
	Blank	TRS ERROR has been set to OFF. [Reference] Section 12.6.3, “Configuring Error Detection Settings”
LINE NUMBER		Indicates the line number error detection results. A line number error occurs when the line number embedded in the SDI input signal is different than the line number counted internally by the LV 7330. This indication is not displayed when the input signal is SD-SDI.
	NORMAL	No errors have been detected.
	ERROR	An error has been detected.
	Blank	LINE ERROR has been set to OFF. [Reference] Section 12.6.3, “Configuring Error Detection Settings”
CRC LUMA CRC CHROMA		Indicates CRC error detection results separately for the chrominance and luminance signals. An error occurs if the CRC embedded in the SDI input signal and the CRC computed by the LV 7330 do not match. This indication is not displayed when the input signal is SD-SDI.
	NORMAL	No errors have been detected.
	ERROR	An error has been detected.
	Blank	CRC ERROR has been set to OFF. [Reference] Section 12.6.3, “Configuring Error Detection Settings”
EDH		Indicates the EDH error detection results. An error occurs if there is an error flag in an EDH packet embedded in the SDI input signal and or if the CRC computed from the SDI input signal is different than an EDH packet’s CRC data. This indication is not displayed when the input signal is HD-SDI. [Reference] Section 12.5.2, “EDH Packet Display Explanation”
	NORMAL	No errors have been detected.
	ERROR	An error has been detected.
	NOT FOUND	No EDH packets have been found.
	Blank	EDH ERROR has been set to OFF. [Reference] Section 12.6.3, “Configuring Error Detection Settings”
GAMUT		Indicates the gamut error detection results. An error occurs when the gamut level exceeds the level set by GAMUT, accessed through ERROR CONFIG. [Reference] Section 12.6.6, “Setting Gamut Error Detection Levels”
	NORMAL	No errors have been detected.
	ERROR	An error has been detected.
	-----	The LV 7330 is in dual link mode.
	Blank	GAMUT ERROR has been set to OFF. [Reference] Section 12.6.3, “Configuring Error Detection Settings”

Item	Display	Explanation
COMP. GAMUT		Indicates the composite gamut error detection results. An error occurs when the gamut level of the pseudo-composite signal exceeds the level set by COMPOSIT GAMUT, accessed through ERROR CONFIG. [Reference] Section 12.6.7, “Setting Composite Gamut Error Detection Levels”
	NORMAL	No errors have been detected.
	ERROR	An error has been detected.
	-----	The LV 7330 is in dual link mode.
	Blank	C.GAMUT ERROR has been set to OFF. [Reference] Section 12.6.3, “Configuring Error Detection Settings”
PARITY		Indicates the parity error detection results. UDW errors are not detected.
	NORMAL	No errors have been detected.
	ERROR	An error has been detected.
	Blank	PARITY ERROR has been set to OFF. [Reference] Section 12.6.3, “Configuring Error Detection Settings”
CHECKSUM		Indicates the checksum error detection results.
	NORMAL	No errors have been detected.
	ERROR	An error has been detected.
	Blank	CHECKSUM ERROR has been set to OFF. [Reference] Section 12.6.3, “Configuring Error Detection Settings”
BCH		Indicates the BCH error detection results. An error is counted if the SDI input signal’s embedded audio BCH code causes an error. This indication is not displayed when the input signal is SD-SDI or when AUDIO SOURCE is set to AES/EBU. [Reference] Section 5.2, “Selecting the Audio Signal to Measure”
	NORMAL	No errors have been detected.
	ERROR	An error has been detected.
	Blank	BCH ERROR has been set to OFF. [Reference] Section 12.6.3, “Configuring Error Detection Settings”
CRC		Indicates the CRC error detection results. An error is counted if the channel status bit of the audio signal has a CRC error.
	NORMAL	No errors have been detected.
	ERROR	An error has been detected.
	WARNING	The channel status FORMAT is Consumer. [Reference] Section 12.4.1, “Audio Status Display Explanation”
	Blank	AUDIO CRC has been set to OFF. [Reference] Section 12.6.3, “Configuring Error Detection Settings”

Item	Display	Explanation
CHANNEL		The detected channels in the audio signals are displayed here. If audio control packets are embedded in the SDI input signal, the channels are detected from the audio control packet ACT bit. Otherwise, the channels are detected from the audio data packet.
	Number	Audio channels are embedded.
	—	Audio channels are not embedded.
ERROR COUNT		The number of detected errors is displayed within the range of 0 to 100,000. You can select whether to count once for every second with a detected error or once for every field with a detected error. [Reference] Section 12.6.2, “Selecting the Error Count Rate”
FROM RESET		Indicates the amount of time that has passed since the last error reset.
LOG MODE		Indicates the current condition of the event logging operation. [Reference] Section 12.2.3, “Starting Event Logging”
	LOG STOPPED	Event logging is stopped.
	NOW LOGGING	Event logging is in progress.

12.2 Event Log Settings

The LV 7330 can log various events and save event logs in text format to a USB memory device. Events include signal reception, error occurrence, and recovery from an error.
To configure event log settings, press F•1 LOG in the status menu.

STATUS → F•1 LOG →

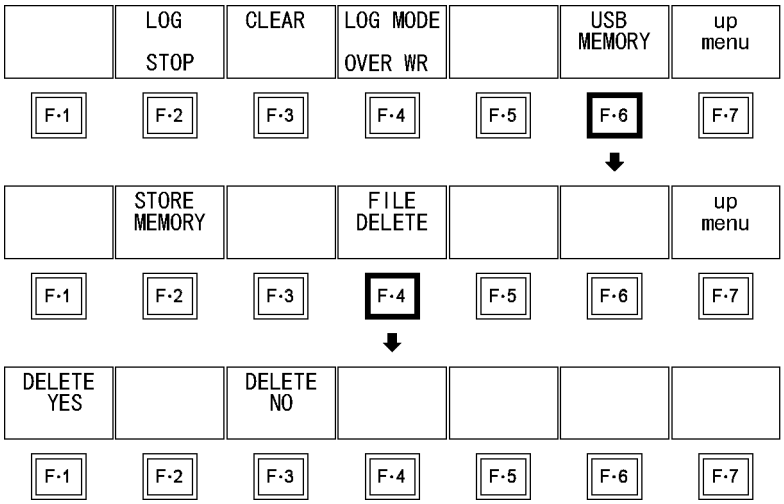


Figure 12-2 LOG menu

12.2.1 Event Log Explanation

To display the event log, press F•1 LOG.

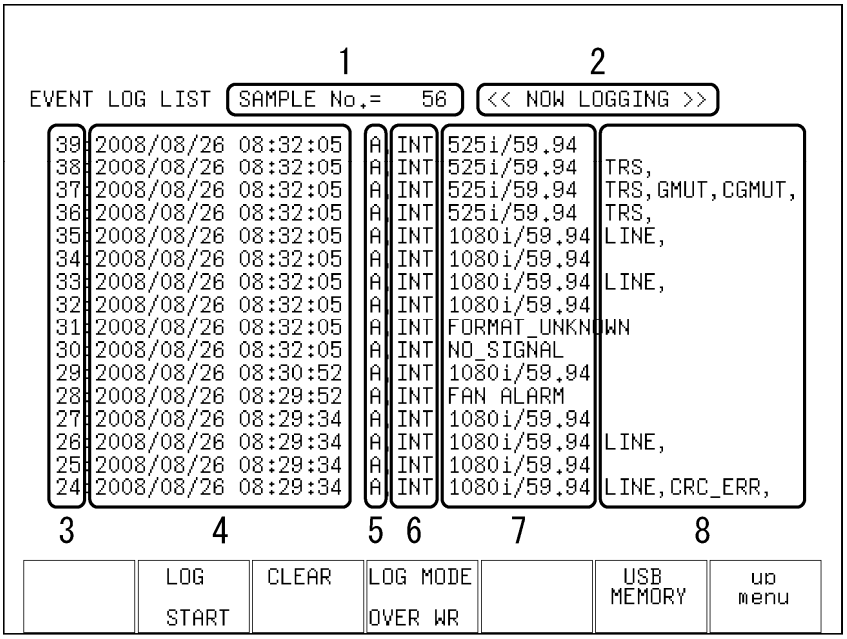


Figure 12-3 Event log

Table 12-2 Event log explanation

No.	Item	Explanation
1	SAMPLE No.	The total number of events (a number from 0 to 1000) is displayed.
2	Logging status	"NOW LOGGING" appears here when events are being logged. "LOGGING STOPPED" appears when logging is stopped. You can start and stop event logging by pressing F•2 LOG. [Reference] Section 12.2.3, "Starting Event Logging"
3	Event numbers	Events are assigned numbers in order of their occurrence. The most recent event appears at the top of the list. To view earlier events, turn F•D to the right. You can display a maximum of 1000 events. To set whether or not events after the 1000th event are written over earlier events, press F•4 LOG MODE. [Reference] Section 12.2.2, "Scrolling through the Event Log" Section 12.2.5, "Setting the Event Log Overwrite Mode"
4	Event dates and times	The dates and times when events occurred are listed here. You can set the date and time in the system settings by following the procedures in section 5.5, "Setting the Date and Time."
5	Event channels	The channels that events occurred on (A or B) are listed here.
6	Sync signals	The sync signal statuses (INT or EXT) when events occurred are listed here.
7	Input formats	The input formats when events occurred are listed here. NO_SIGNAL This message appears if there was no signal. FORMAT_UNKNOWN This message appears if the input format could not be determined. FAN ALARM This message occurs if the fan was not operating properly.

No.	Item	Explanation
8	Event type	The types of events that occurred are listed here. When the same kind of event occurs successively or when multiple events occur at the same time, they are treated as a single event in the event log. You can view all of the events by saving the event log to USB memory. This is especially useful when multiple events occur at the same time and you cannot view all of them on the LV 7330 screen. The displayed event types are listed below. If the detection of a particular error has been disabled, its corresponding event will not be recorded. TRS TRS error LINE HD-SDI signal line number error CRC_L HD-SDI Y signal transmission error CRC_C HD-SDI C_BC_R signal transmission error EDH SD-SDI signal transmission error GMUT Gamut error CGMUT Composite gamut error PRTY Ancillary data parity error CHK Ancillary data checksum error BCH Embedded audio transmission error CRC_WAR Channel status FORMAT is Consumer CRC_ERR Embedded audio CRC error [Reference] Section 12.2.6, “Saving the Event Log to USB Memory” Section 12.6.3, “Configuring Error Detection Settings”

12.2.2 Scrolling through the Event Log

To scroll through the event log and view parts of the list that are outside of the display, follow the procedure below. The event log entries are listed in order with the most recent events listed first. To view earlier events, turn F•D to the right. To view later events, turn it to the left. If you press F•D, the most recent events appear.

Procedure

STATUS → F•1 LOG → F•D

12.2.3 Starting Event Logging

To start event logging, follow the procedure below.

Procedure

STATUS → F•1 LOG → F•2 LOG

Settings

START: Event logging is started. “NOW LOGGING” appears in the event log and the status display.

STOP: Event logging is stopped. “LOGGING STOPPED” appears in the event log and the status display. This is the default setting.

12.2.4 Deleting the Event Log

To delete the event log that is displayed on the screen, follow the procedure below.
The event log is also deleted when you:
• Initialize the LV 7330.
• Perform an error reset operation.
• Turn off the power.

Procedure

STATUS → F•1 LOG → F•3 CLEAR

12.2.5 Setting the Event Log Overwrite Mode

To set the event log overwrite mode, follow the procedure below. The event log can record up to 1000 events. When the same error occurs successively, it is treated as a single event in the event log.

Procedure

STATUS → F•1 LOG → F•4 LOG MODE

Settings

OVER WR:	Events after the 1000th event are written over the oldest logged events. This is the default setting.
STOP:	Events after the 1000th event are not logged.

12.2.6 Saving the Event Log to USB Memory

To save the event log in text format to USB memory, follow the procedure below.
You can view the saved event log on a PC.
F•6 USB MEMORY appears when USB memory is connected.

The file name is automatically set to “LOG” + the date and time that you have set using the system settings.
The date is written using the format that has been specified in the system settings. The time is written in this order: hour, minute, second.
Example: LOG20080501100859.txt

The file structure in the USB memory is shown below.

USB memory
└ LOG
  └ LOG********hhmmss.TXT

Procedure

STATUS → F•1 LOG → F•6 USB MEMORY → F•2 STORE MEMORY

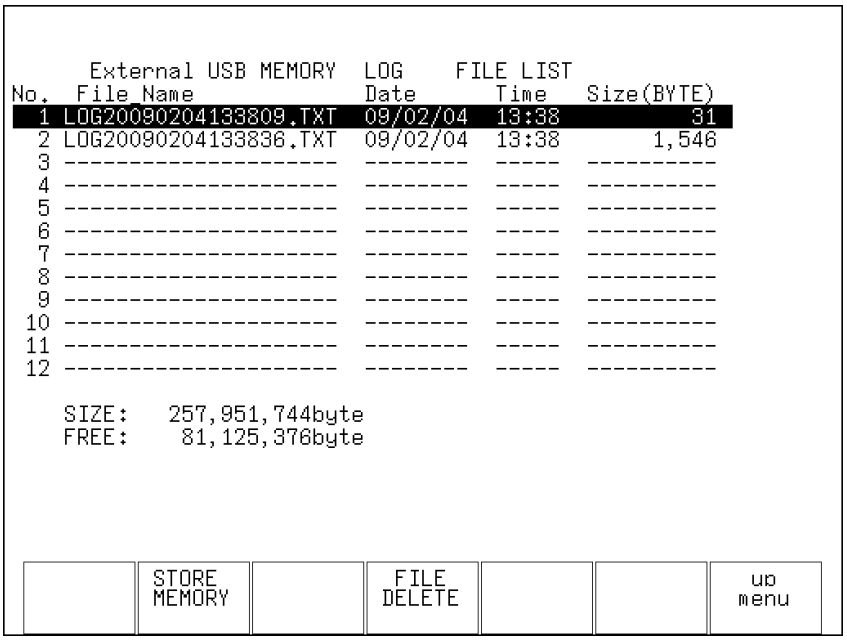


Figure 12-4 Event log file list display

12.2.7 Deleting Event Logs in USB Memory

To delete an event log that has been saved to USB memory, follow the procedure below. To abort the deletion of the selected event log, press F•3 DELETE NO.
F•4 FILE DELETE appears when there are files in USB memory.

Procedure

STATUS → F•1 LOG → F•6 USB MEMORY → F•4 FILE DELETE → F•1 DELETE YES

12.3 Data Dump Settings

To configure data dump settings, press F•2 DATA DUMP in the status menu. You can display the data of a selected line and save the displayed data to USB memory.

STATUS → F•2 DATA DUMP →

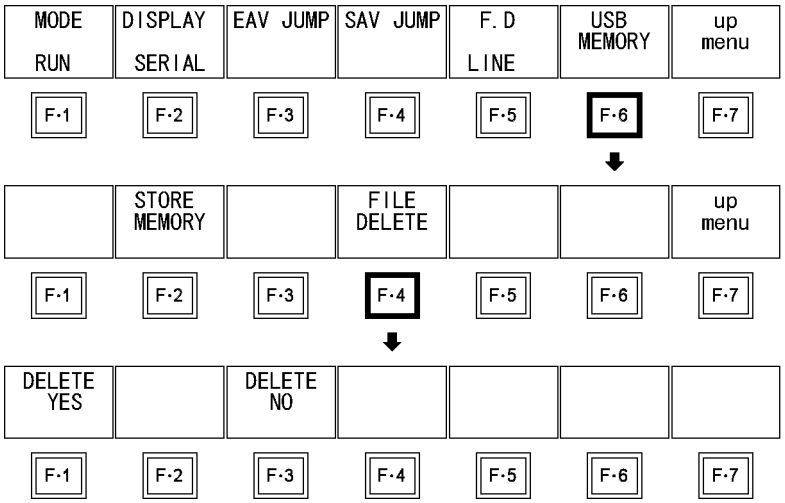


Figure 12-5 DATA DUMP menu

12.3.1 Data Dump Explanation

To show the data dump display, press F•2 DATA DUMP.

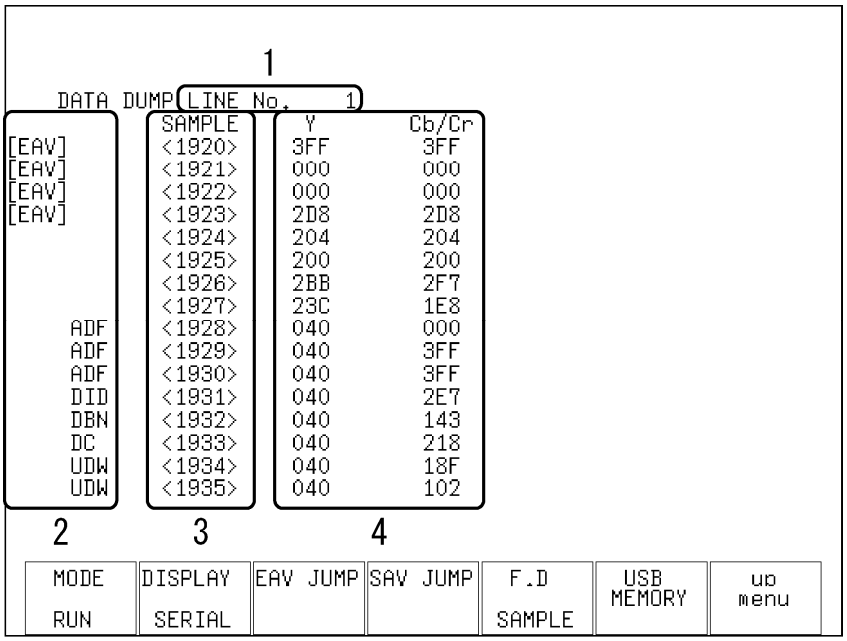


Figure 12-6 Data dump

Table 12-3 Data dump explanation

No.	Item	Explanation
1	LINE No.	The data dump display shows the data of the selected line. The selected line is indicated next to LINE No. To select a line, set F•5 F.D to LINE, and then turn F•D. [Reference] Section 12.3.5, “Selecting Data Dump Lines and Samples”
2	Ancillary data	The type of ancillary data embedded in the SDI signal is indicated as shown in the table below. ADF (cyan) Ancillary data header word DID (cyan) Ancillary data ID word SDID (cyan) Data in the secondary format, in which DID is smaller than 80H. DBN (cyan) Data in the primary format, in which DID is larger than 80H. DC (cyan) Ancillary data count word UDW (cyan) Ancillary data user data word CS (magenta) Ancillary data checksum word AP (yellow) The active picture from after the SAV to just before the EAV when the selected line is within the active video area.
3	SAMPLE	The sample numbers of the selected line are displayed here. To select a sample, set F•5 F.D to SAMPLE, and then turn F•D. [Reference] Section 12.3.5, “Selecting Data Dump Lines and Samples”
4	Data	The data contained in the line samples is displayed here. You can change the data display format by pressing F•2 DISPLAY. [Reference] Section 12.3.3, “Selecting the Data Dump Display Format”

12.3.2 Selecting the Data Dump Display Mode

To set the data dump display mode, follow the procedure below.

Procedure

STATUS → F•2 DATA DUMP → F•1 MODE

Settings

RUN: The displayed SDI input signal data is updated automatically. This is the default setting.

STOP: The displayed SDI input signal data is held.

12.3.3 Selecting the Data Dump Display Format

To select the data dump display format, follow the procedure below.

Procedure

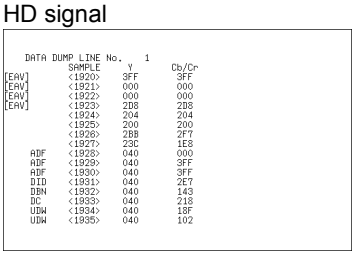
STATUS → F•2 DATA DUMP → F•2 DISPLAY

Settings

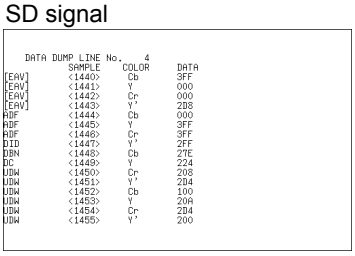
SERIAL:	The data is converted from parallel to serial data and displayed. This is the default setting.
COMPO:	The data is converted from parallel to serial data, split into Y, Cb, and Cr or G, B, and R, and then displayed.
BINARY:	The data is converted from parallel to serial data and displayed in binary format.

When DISPLAY is set to SERIAL:

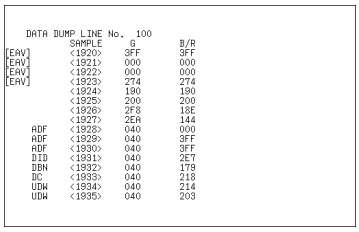
HD signal



SD signal

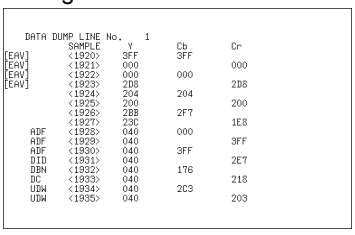


LINK is set to DUAL

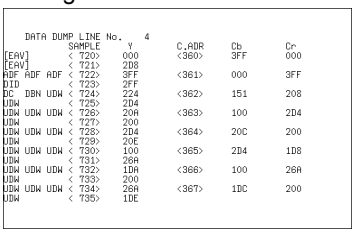


When DISPLAY is set to COMPO:

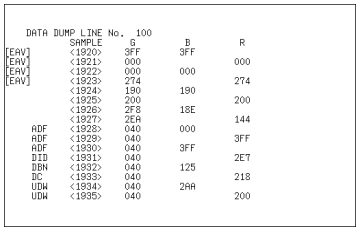
HD signal



SD signal

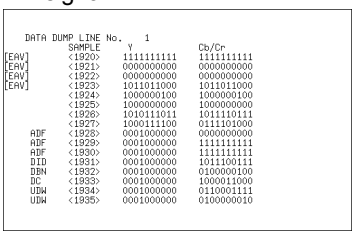


LINK is set to DUAL

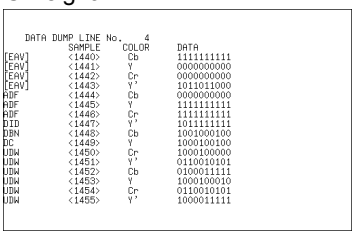


When DISPLAY is set to BINARY:

HD signal



SD signal



LINK is set to DUAL

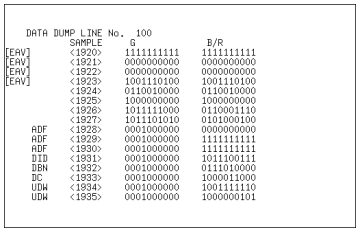


Figure 12-7 Data dump display formats

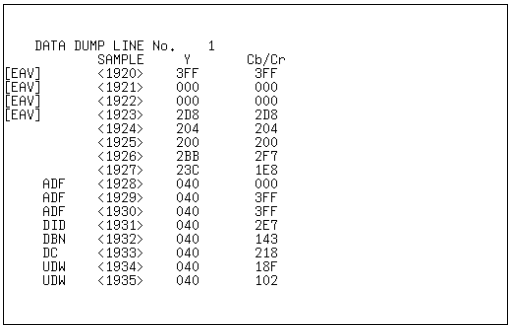
12.3.4 Selecting the Data Dump Display Start Position

To set the data dump display start position to EAV, follow the procedure below and press F•3 EAV JUMP. To set the data dump display start position to SAV, press F•4 SAV JUMP.

Procedure

STATUS → F•2 DATA DUMP → F•3 EAV JUMP
→ F•4 SAV JUMP

EAV JUMP



SAV JUMP

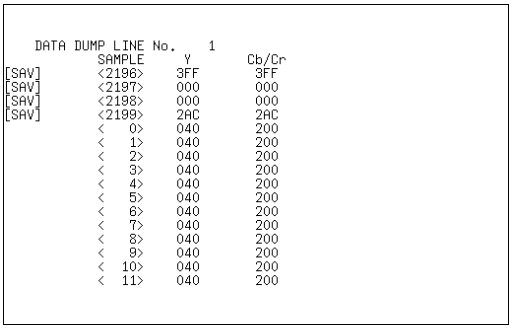


Figure 12-8 Data dump display start position

12.3.5 Selecting Data Dump Lines and Samples

To set the data dump line and sample numbers, turn F•D.
To set whether to set the line or sample number when you turn F•D, follow the procedure below.
When F•1 MODE is set to STOP, this setting is fixed to SAMPLE. F•5 F.D does not appear.

Procedure

STATUS → F•2 DATA DUMP → F•5 F.D

Settings

LINE:	Turning F•D changes the line number. Changing this setting will also change the picture, CINELITE, video signal waveform, and vector display line selection settings.
SAMPLE:	Turning F•D changes the sample number. This is the default setting.

12.3.6 Saving a Data Dump to USB Memory

To save the data of the selected line in text format to USB memory, follow the procedure below. You can view the saved data dump on a PC.
F•6 USB MEMORY appears when USB memory is connected.

The file name is automatically set to “DAT” + the date and time that you have set using the system settings.
The date is written using the format that has been specified in the system settings. The time is written in this order: hour, minute, second.

The file structure in the USB memory is shown below.

USB memory
└ DAT
  └ DAT********hhmmss.TXT

Procedure

STATUS → F•2 DATA DUMP → F•6 USB MEMORY → F•2 STORE MEMORY

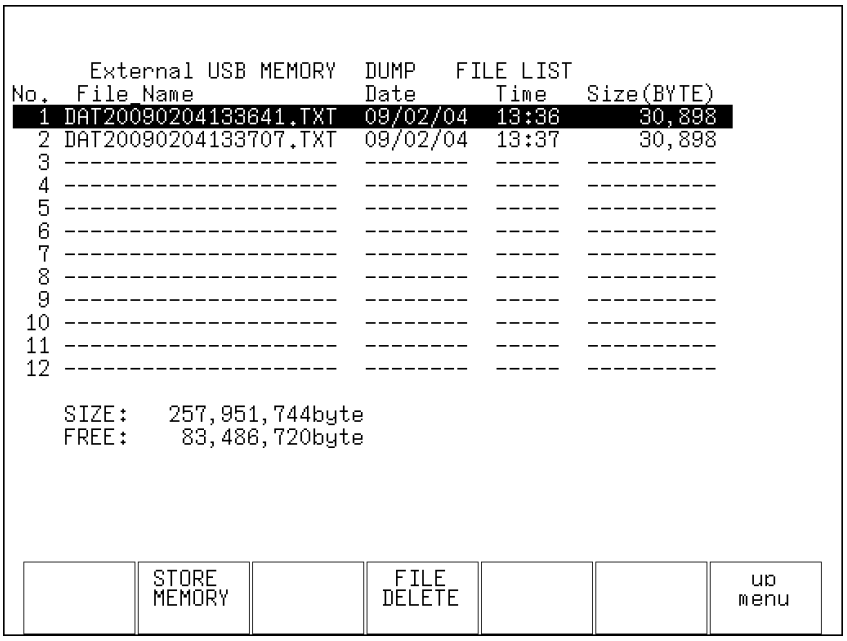


Figure 12-9 Data dump file list

12.3.7 Deleting Data Dumps in USB Memory

To delete a data dump that has been saved to USB memory, follow the procedure below. To abort the deletion of the selected data dump, press F•3 DELETE NO.
F•4 FILE DELETE appears when there are files in USB memory.

Procedure

STATUS → F•2 DATA DUMP → F•6 USB MEMORY → F•4 FILE DELETE →
F•1 DELETE YES

12.4 Audio Status Settings

To configure audio status settings, press F•3 AUDIO in the status menu. You can view the data of the selected channel.

12.4.1 Audio Status Display Explanation

To show the audio status display, press F•3 AUDIO.

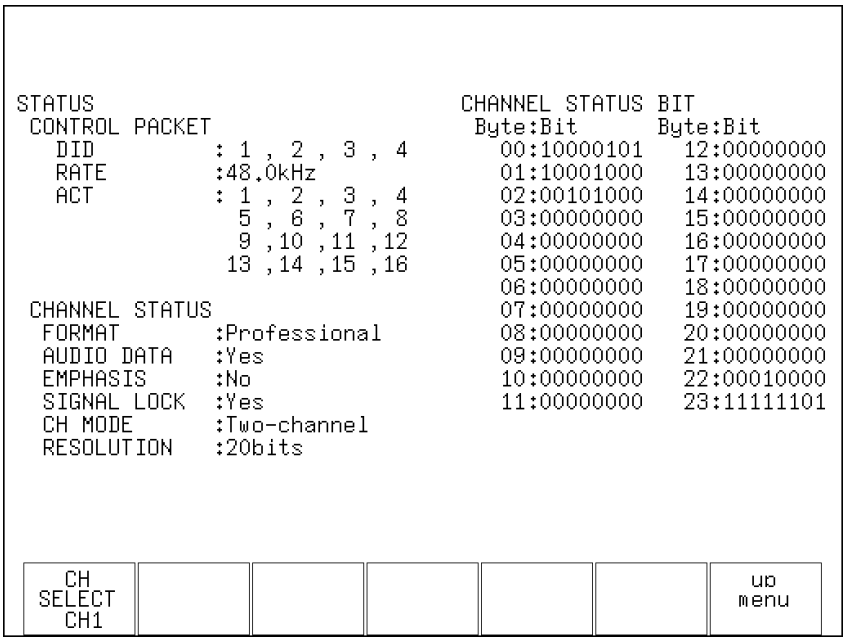


Figure 12-10 Audio status display

Table 12-4 Audio status display explanation

Item	Display	Explanation
DID*1		Indicates the embedded audio groups.
	Number	There are embedded audio groups in the signal.
	—	There are no embedded audio groups in the signal.
RATE*1		Indicates the audio signal sampling rate.
ACT*1		Indicates the embedded audio channels.
	Number	Audio channels are embedded.
	—	Audio channels are not embedded.
FORMAT		Displays the audio signal type.
	Professional	The signal format is intended for broadcast studios.
	Consumer	The signal format is intended for consumer audio.
AUDIO DATA		Indicates whether or not the selected signal is an audio signal.
	Yes	The signal is an audio signal.
	No	The signal is not an audio signal.

Item	Display	Explanation
EMPHASIS		Indicates the audio signal emphasis specification.
	Not_indicated	There is no emphasis specification.
	No	No emphasis
	50/15us	The emphasis time constant is 50/15us.
	CCIT_J17	CCITT J.17 (800 Hz insertion loss of 6.5 dB)
	Reserved	Undefined data has been received.
SIGNAL LOCK		Indicates the whether or not the sampling frequency is locked.
	Yes	Locked
	No	Not locked
CH MODE		Indicates the channel mode specification.
	Not_indicated	There is no mode specification.
	Two-channel	Two-channel mode has been specified.
	Single-channel	Single-channel mode has been specified.
	Primary/secondary	Primary/secondary mode has been specified.
	Stereo	Stereo mode
	Reserved	Undefined data has been received.
RESOLUTION		Indicates the quantization resolution.
	24bits	24-bit resolution
	20bits	20-bit resolution
CHANNEL STATUS BIT		Displays the 192 channel-status bits.

*1 The item does not appear when AUDIO SOURCE is set to AES/EBU.

12.4.2 Selecting Which Channels to Display

To select which channel to display in the audio status display, follow the procedure below. You can select a channel from the channels that have been assigned to 1st GROUP and 2nd GROUP in the audio menu.

[Reference] 1st GROUP and 2nd GROUP → Section 11.2, “Selecting Which Channels to Measure”

Procedure

STATUS → F•3 AUDIO → F•1 CH SELECT

Settings

Selectable range: The channels assigned to 1st GROUP and the channels assigned to 2nd GROUP (CH1 or CH2 when AUDIO SOURCE is set to AES/EBU). The default setting is CH1.

12.5 Ancillary Packet Settings

The LV 7330 can analyze and display the ancillary packets embedded in an SDI input signal. To display ancillary packets, press F•4 ANC PACKET in the status menu.

12.5.1 Explanation of the Ancillary Packet Display

In the ancillary packet display, DETECT appears next to packets that have been detected in the SDI input signal, and MISSING appears next to packets that have not been detected. To see whether or not ancillary packets have been detected, press F•4 ANC PACKET.

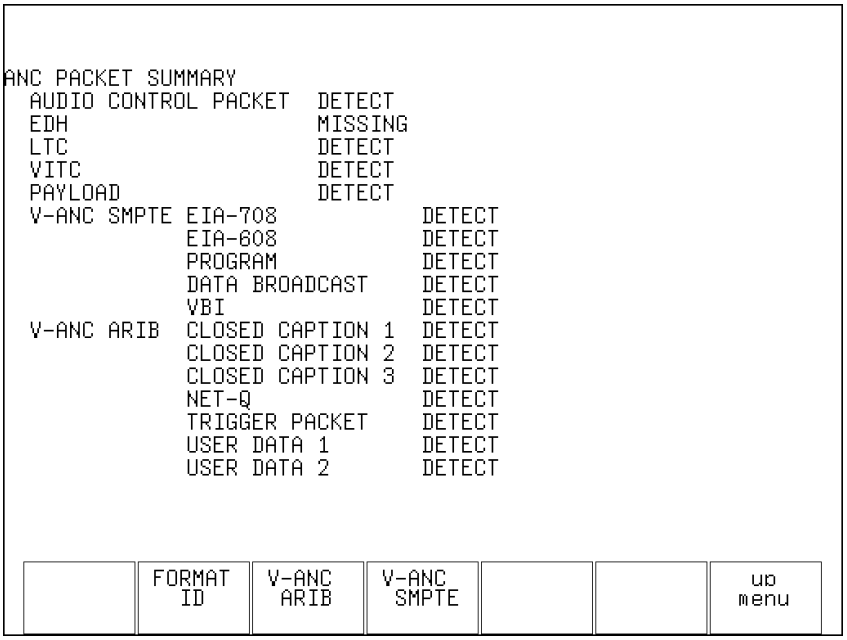


Figure 12-11 Ancillary packet display

Table 12-5 Explanation of the ancillary packet display

Item	Explanation	Compliant Standard	Lines
AUDIO CONTROL PACKET	An embedded audio control packet. Embedded audio streams contain groups that are composed of four channels each. Each group has a control packet. [Reference] Section 12.4.1, “Audio Status Display Explanation”		9 and 571 (HD) 12 and 275 (SD)
EDH	A packet for detecting SD-SDI signal 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. This packet is not detected when the input signal is HD-SDI. [Reference] Section 12.5.2, “EDH Packet Display Explanation”	SMPTE RP165	9 and 272 (525/59.94) 5 and 318 (625/50)
LTC	A type of time code. One is embedded per frame.	SMPTE ST 12-2	10 (HD)
VITC	A type of time code. One is embedded per field.	SMPTE ST 12-2	9 and 571 (HD)
PAYLOAD	A packet for identifying the input format. [Reference] Section 12.5.3, “Format ID Display Explanation”	SMPTE ST 352 ARIB STD-B39	
EIA-708	A standard closed caption packet for digital video. Only numbers and letters of the alphabet are supported. It is embedded in the V-ANC area.		
EIA-608	A closed caption packet whose standard was originally developed for analog composite video. Only numbers and letters of the alphabet are supported. It is embedded in the V-ANC area.		
PROGRAM	A program information packet. It is embedded in the V-ANC area.	SMPTE ST 334	
DATA BROADCAST	A data broadcast packet. It is embedded in the V-ANC area.	SMPTE ST 334	
VBI	A packet embedded in the V-ANC area.	SMPTE ST 334	
CLOSED CAPTION 1 to 3	Subtitle packets. Up to three sets of subtitle data can be embedded in the V-ANC area. [Reference] Section 12.5.4, “Subtitle Packet Display Explanation”	ARIB STD-B37	19 and 582 (HD) 18 and 281 (SD)
NET-Q	An inter-stationary control signal [Reference] Section 12.5.5, “Inter-Stationary Control Signal Display Explanation”	ARIB STD-B39	20 and 583 (HD) 19 and 282 (SD)
TRIGGER PACKET	A trigger signal for data transmission.	ARIB STD-B35	20 and 583 (HD) 19 and 282 (SD)
USER DATA 1 and 2	A packet for user-defined data.	ARIB TR-B23	20 and 583 (HD) 19 and 282 (SD)

12.5.2 EDH Packet Display Explanation

The EDH display is divided into a flag display (UES, IDA, IDH, EDA, and EDH) and a CRC display (RECEIVED CRC). The flag display shows the contents of the EDH packets that are embedded in the SDI input signal. The CRC display shows the results of comparing the CRCs from the EDH packets to the CRCs computed by the LV 7330.

Because SDI output is only transmitted through the serial clock circuit, packets are not rewritten even if an error occurs in RECEIVED CRC.

To display EDH packets, follow the procedure below. F•1 EDH appears when the input signal is SD-SDI.

Procedure

STATUS → F•4 ANC PACKET → F•1 EDH

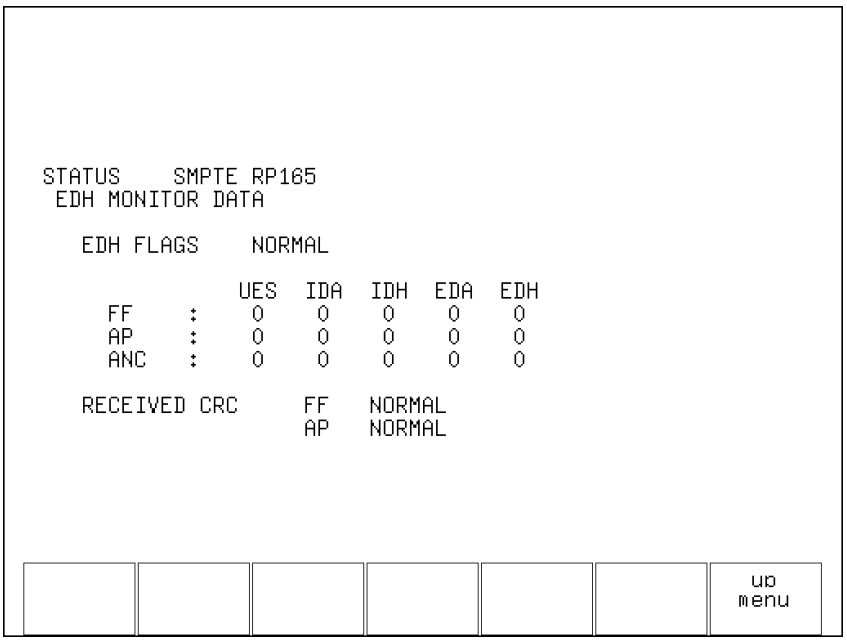


Figure 12-12 EDH Packet Display

Table 12-6 EDH Packet Display Explanation

Item	Display	Explanation
EDH FLAGS		Indicates the results of EDH packet error detection.
	NORMAL	This indication appears when all of the flags (UES, IDA, IDH, EDA, and EDH) are zeros and the CRC indications (RECEIVED CRC) are all NORMAL.
	ERROR	This indication appears when any of the flags (UES, IDA, IDH, EDA, and EDH) is 1 or when one of the CRC indications (RECEIVED CRC) is ERROR.
FF		Indicates the result of creating a CRC for an entire field and checking it for errors.
AP		Indicates the result of creating a CRC for the active video area and checking it for errors.
ANC		Indicates the result of creating a parity bit and checksum for the ancillary data and checking them for errors.
UES		Indicates whether or not the connected device supports EDH packets.
	0	The connected device supports EDH packets.
	1	The connected device does not support EDH packets.
IDA		Indicates internal data transmission errors in the devices before the LV 7330.
	0	No errors have been detected.
	1	An error has been detected.
IDH		Indicates internal data transmission errors in the device immediately before the LV 7330.
	0	No errors have been detected.
	1	An error has been detected.
EDA		Indicates data transmission errors from the devices before the LV 7330.
	0	No errors have been detected.
	1	An error has been detected.
EDH		Indicates data transmission errors from the device immediately before the LV 7330.
	0	No errors have been detected.
	1	An error has been detected.
RECEIVED CRC FF		Indicates full-field CRC errors.
	NORMAL	The full-field CRC embedded in the EDH packets and the full-field CRC computed by the LV 7330 match.
	ERROR	The full-field CRC embedded in the EDH packets and the full-field CRC computed by the LV 7330 do not match.
RECEIVED CRC AP		Indicates active picture CRC errors.
	NORMAL	The active picture CRC embedded in the EDH packets and the active picture CRC computed by the LV 7330 match.
	ERROR	The active picture CRC embedded in the EDH packets and the active picture CRC computed by the LV 7330 do not match.

12.5.3 Format ID Display Explanation

The format ID packet is an ancillary packet for identifying the video signal format.
To display the format ID packet, follow the procedure below.

Procedure

STATUS → F•4 ANC PACKET → F•2 FORMAT ID

To select the format ID packet type, follow the procedure below.

Procedure

STATUS → F•4 ANC PACKET → F•2 FORMAT ID → F•1 PACKET SELECT

Settings

SMPTE:	The format ID packet specified by SMPTE ST 352 is displayed.
ARIB:	The format ID packet specified by ARIB STD-B39 is displayed. This is the default setting.

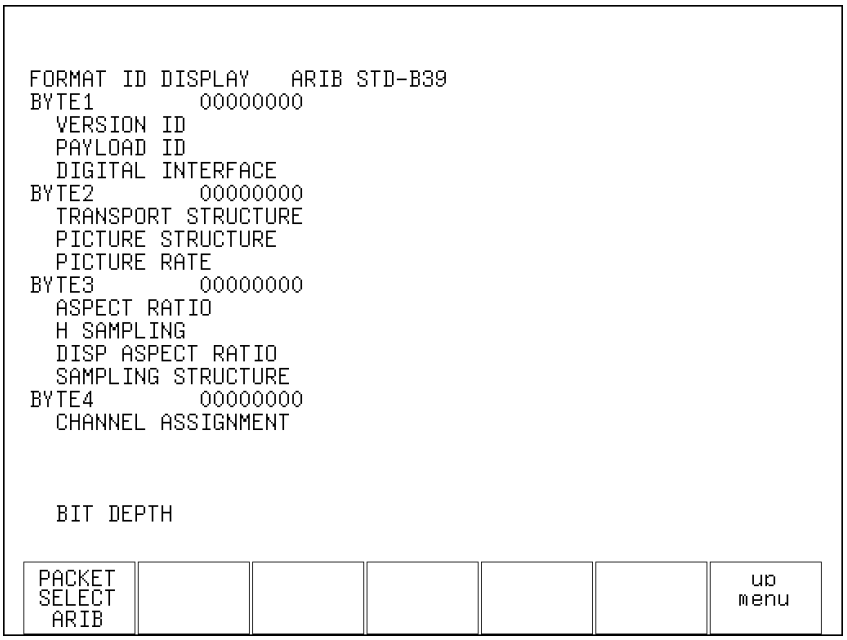


Figure 12-13 Format ID display (ARIB)

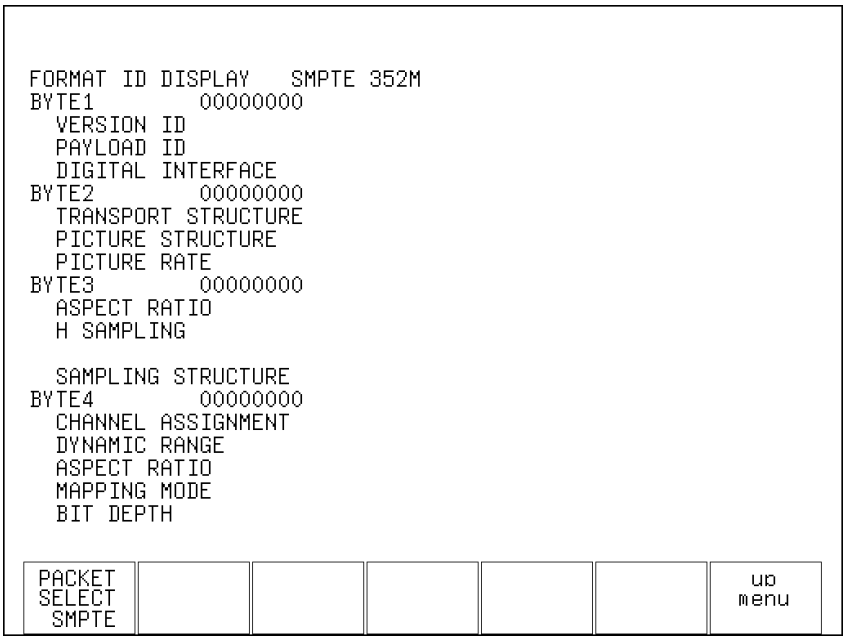


Figure 12-14 Format ID display (SMPTE)

Table 12-7 Format ID display explanation

Item	Explanation
BYTE1 to 4	Display the format ID using binary values.
VERSION ID	Displays the format ID version.
PAYLOAD ID	Displays the video format.
DIGITAL INTERFACE	Displays the SDI input signal bit rate.
TRANSPORT STRUCTURE	Displays the transmission scan mode.
PICTURE STRUCTURE	Displays the picture scan mode.
PICTURE RATE	Displays the frame rate.
ASPECT RATIO	Displays the aspect ratio.
H SAMPLING	Displays the number of horizontal samples.
DISP ASPECT RATIO	Displays the aspect ratio. This item does not appear when F•1 PACKET SELECT is set to SMPTE.
SAMPLING STRUCTURE	Displays the sampling structure.
CHANNEL ASSIGNMENT	Displays the dual-link links.
DYNAMIC RANGE	Displays the dynamic range of a single pixel. This item does not appear when F•1 PACKET SELECT is set to ARIB.
ASPECT RATIO	Displays the aspect ratio. This item does not appear when F•1 PACKET SELECT is set to ARIB.
MAPPING MODE	Displays the mapping mode. This item does not appear when F•1 PACKET SELECT is set to ARIB.
BIT DEPTH	Displays the bit depth of a single pixel.

12.5.4 Subtitle Packet Display Explanation

To display the contents of the subtitle packets specified by the ARIB standard, follow the procedure below.
The ARIB standard allows for up to three different subtitle packets to be embedded in a signal. You can select and display one of those packets. You can select to display packet contents in text format or in dump format.

Procedure

STATUS → F•4 ANC PACKET → F•3 V-ANC ARIB → F•1 CLOSED CAPTION

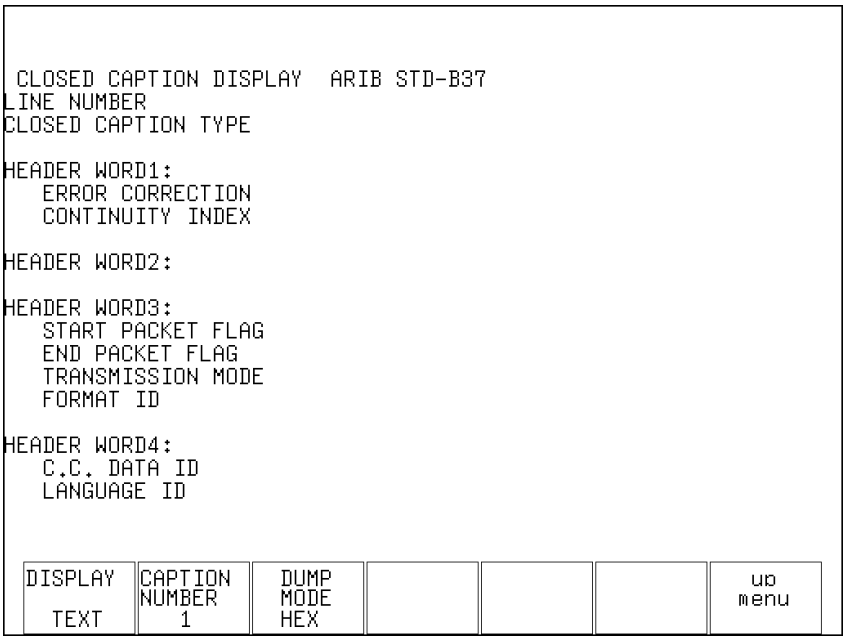


Figure 12-15 Subtitle packet display

Table 12-8 Subtitle packet display explanation

Item	Explanation
HEADER WORD1 to 4	Display the headers using binary values.
LINE NUMBER	Displays the numbers of the lines in which subtitle information is embedded.
CLOSED CAPTION TYPE	Displays the subtitle packet type.
ERROR CORRECTION	Indicates whether or not error correction has taken place.
CONTINUITY INDEX	Displays a counter that indicates packet continuity.
START PACKET FLAG	Displays the starting packet in the ancillary packets that compose the subtitle data group.
END PACKET FLAG	When packets are divided in MPEG-2 TS, this item indicates whether or not the end packet is included.
TRANSMISSION MODE	Displays the transmission mode.
FORMAT ID	Displays the subtitle packet type.
C.C. DATA ID	Displays the subtitle data identifier.
LANGUAGE ID	Displays the language identifier that is used when transmitting subtitles in multiple languages.

- **Selecting the Subtitle Packet Type**

To select the subtitle packet type, follow the procedure below. The values that you can set (1, 2, and 3) correspond to the order in which the subtitles are embedded.

Procedure

STATUS → F•4 ANC PACKET → F•3 V-ANC ARIB → F•1 CLOSED CAPTION → F•2 CAPTION NUMBER

Settings

Selectable range: 1 to 3 (The default value is 1.)

- **Selecting the Subtitle Packet Display Format**

To select the subtitle packet display format, follow the procedure below.
In the dump display, you can view the entire packet by scrolling through it with F•D.

Procedure

STATUS → F•4 ANC PACKET → F•3 V-ANC ARIB → F•1 CLOSED CAPTION → F•1 DISPLAY

Settings

TEXT:	The header section is analyzed and displayed in text format. This is the default setting.
DUMP:	The data for a single packet is shown using a dump display.

- **Selecting the Dump Display Format**

To select the dump display format, follow the procedure below.
This setting is valid when F•1 DISPLAY is set to DUMP.

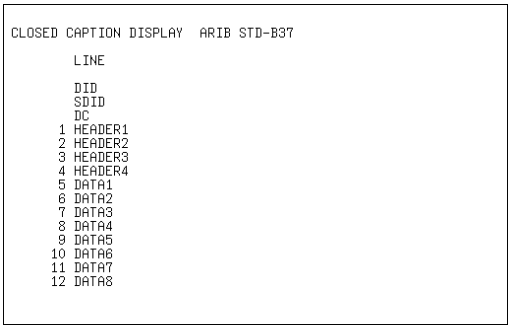
Procedure

STATUS → F•4 ANC PACKET → F•3 V-ANC ARIB → F•1 CLOSED CAPTION → F•3 DUMP MODE

Settings

HEX:	Data is displayed in hexadecimal format. This is the default setting.
BINARY:	Data is displayed in binary format.

DUMP MODE = HEX



DUMP MODE = BINARY

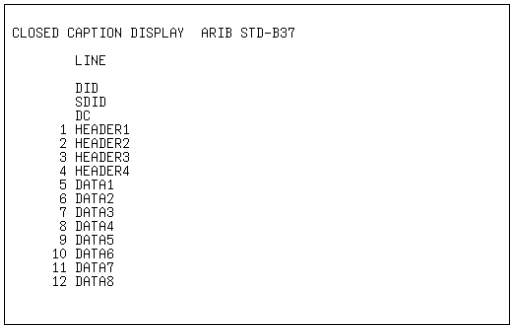


Figure 12-16 Dump display formats

12.5.5 Inter-Stationary Control Signal Display Explanation

To display the contents of the inter-stationary control signal specified by the ARIB standard, follow the procedure below.
You can select to display the signal contents in text format or in dump format.

Procedure

STATUS → F•4 ANC PACKET → F•3 V-ANC ARIB → F•2 NET-Q

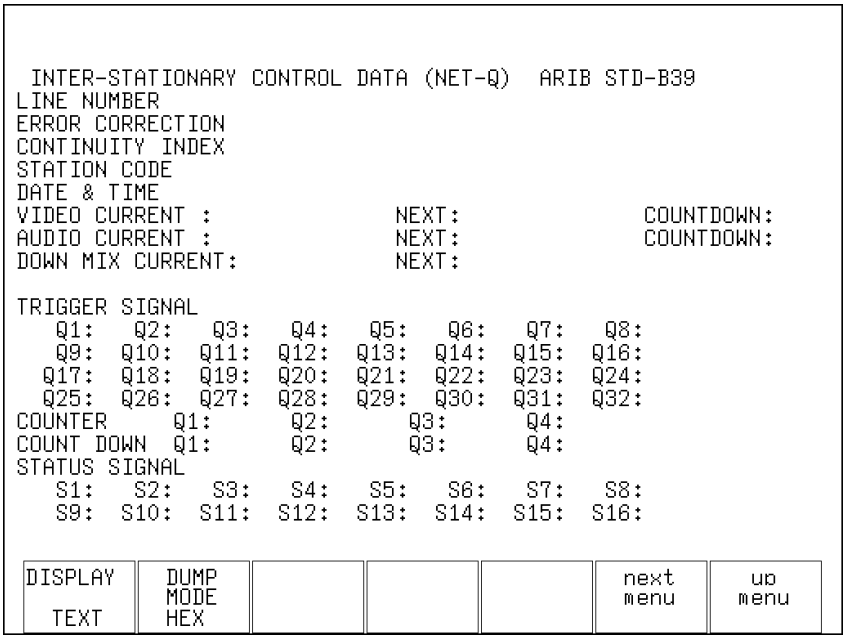


Figure 12-17 Inter-stationary control signal display

Table 12-9 Inter-stationary control signal display explanation

Item	Explanation
LINE NUMBER	Displays the numbers of the lines in which the inter-stationary control signal is embedded.
ERROR CORRECTION	Indicates whether or not error correction has taken place.
CONTINUITY INDEX	Displays a counter that indicates packet continuity.
STATION CODE	Uses letters to display the code of the station that produced the signal.
DATE & TIME	Displays the date and time when the signal was produced.
VIDEO CURRENT	Displays the current video mode.
AUDIO CURRENT	Displays the current audio mode.
DOWN MIX CURRENT	Displays the audio down-mix specification.
NEXT	Displays the next video mode, audio mode, or audio down-mix specification.
COUNTDOWN	Displays the countdown until the next video or audio signal mode switch.
TRIGGER SIGNAL	Displays the trigger signal, which indicates the signal timing.
COUNTER	Displays the counter for TRIGGER SIGNAL Q1 to Q4.
COUNTDOWN	Displays timing information for TRIGGER SIGNAL Q1 to Q4.
STATUS SIGNAL	Displays the status signal.

- **Selecting the Inter-Stationary Control Signal Format**

To select the inter-stationary control signal format, follow the procedure below.
In the dump display, you can view the entire packet by scrolling through it with F•D.

Procedure

STATUS → F•4 ANC PACKET → F•3 V-ANC ARIB → F•2 NET-Q → F•1 DISPLAY

Settings

TEXT:	The packet is analyzed and displayed in text format. This is the default setting.
DUMP:	The data for a single packet is shown using a dump display.

- **Selecting the Dump Display Format**

To select the dump display format, follow the procedure below.
This setting is valid when F•1 DISPLAY is set to DUMP.

Procedure

STATUS → F•4 ANC PACKET → F•3 V-ANC ARIB → F•2 NET-Q → F•2 DUMP MODE

Settings

HEX:	Data is displayed in hexadecimal format. This is the default setting.
BINARY:	Data is displayed in binary format.

DUMP MODE = HEX

```
INTER-STATIONARY CONTROL DATA (NET-Q)  ARIB STD-B39

      LINE

      DID
      SDID
      DC
    0 HEADER
    1 STATION CODE1
    2 STATION CODE2
    3 STATION CODE3
    4 STATION CODE4
    5 STATION CODE5
    6 STATION CODE6
    7 STATION CODE7
    8 STATION CODE8
    9 YEAR
   10 MONTH
   11 DAY
```

DUMP MODE = BINARY

```
INTER-STATIONARY CONTROL DATA (NET-Q)  ARIB STD-B39

      LINE

      DID
      SDID
      DC
    0 HEADER
    1 STATION CODE1
    2 STATION CODE2
    3 STATION CODE3
    4 STATION CODE4
    5 STATION CODE5
    6 STATION CODE6
    7 STATION CODE7
    8 STATION CODE8
    9 YEAR
   10 MONTH
   11 DAY
```

Figure 12-18 Dump display formats

- **Turning Q Signals On and Off**

To turn the displays for TRIGGER SIGNAL Q1 to Q32 on and off, follow the procedure below.This setting is valid when F•1 DISPLAY is set to TEXT.

Procedure

STATUS → F•4 ANC PACKET → F•3 V-ANC ARIB → F•2 NET-Q → F•6 next menu → F•1 Q1 to F•2 Q32

Settings

ON:	The specified Q signal is displayed. The default setting is 1.
OFF:	The specified Q signal is not displayed.

12.5.6 EIA-708 Data Display Explanation

To display EIA-708 data, follow the procedure below.
You can set the display format to text or dump format. If you select the dump format, turn F•D to view all the data.

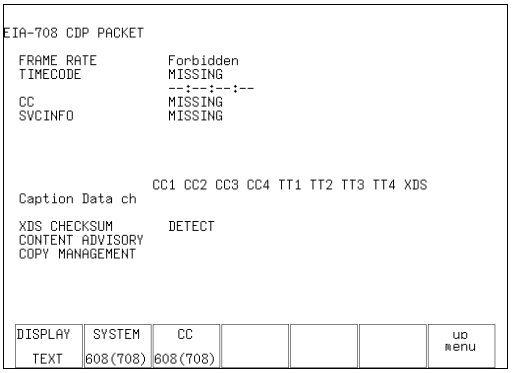
Procedure

STATUS → F•4 ANC PACKET → F•4 V-ANC SMPTE → F•1 EIA-708 → F•1 DISPLAY

Settings

TEXT:	Data is displayed in text format. This is the default setting.
DUMP:	A data dump is displayed in hexadecimal format.

DISPLAY = TEXT



DISPLAY = DUMP

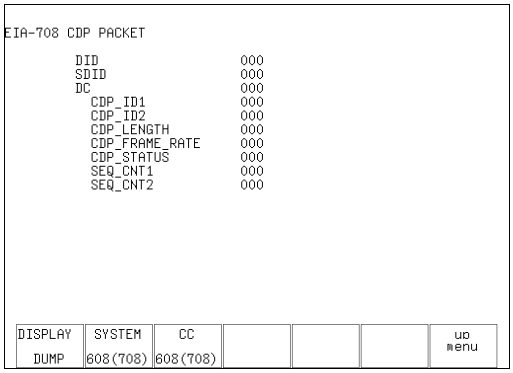


Figure 12-19 EIA-708 data display

Table 12-10 EIA-708 data display explanation

Item	Description
FRAME RATE	Displays the information from the frame_rate field in the header of EIA-708 CDP packets.
TIME CODE	Displays whether the EIA-708 time_code_section is present or not. The LV 7330 checks whether the time_code_section is present or not by examining the time_code_present field in the header of CDP packets. If the time code is present, its value is also displayed.
CC	Displays whether the EIA-708 ccdata_section is present or not. The LV 7330 checks whether the ccdata_section is present or not by examining the ccdata_present field in the header of CDP packets.
SVCINFO	Displays whether the EIA-708 ccsvcinfo_section is present or not. The LV 7330 checks whether the ccsvcinfo_section is present or not by examining the ccsvcinfo_present field in the header of CDP packets.
Caption Data ch	Displays the type of the CC packet that was received.
XDS CHECKSUM	Displays the result of a comparison of a checksum computed on the XDS data that was received and the checksum field in the XDS packet.
CONTENT ADVISORY	Displays the content advisory information of the XDS data that was received.
COPY MANAGEMENT	Displays the copy management information of the XDS data that was received.

12.5.7 EIA-608 Data Display Explanation

To display EIA-608 data, follow the procedure below.
You can set the display format to text or dump format. If you select the dump format, turn F•D to view all the data.

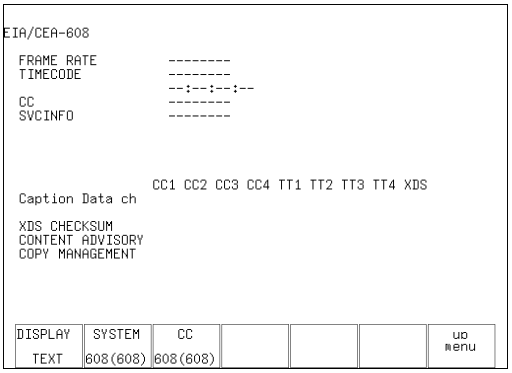
Procedure

STATUS → F•4 ANC PACKET → F•4 V-ANC SMPTE → F•2 EIA-608 → F•1 DISPLAY

Settings

TEXT:	Data is displayed in text format. This is the default setting.
DUMP:	A data dump is displayed in hexadecimal format.

DISPLAY = TEXT



DISPLAY = DUMP

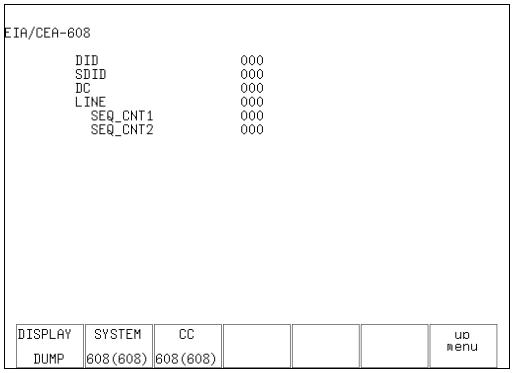


Figure 12-20 EIA-608 data display

12.5.8 Program Data Display Explanation

To display whether ATSC A/65 program description packets are present or not, follow the procedure below. For each descriptor, if its ID is present, “DETECT” is displayed; if its ID is not present, “MISSING” is displayed.

Procedure

STATUS → F•4 ANC PACKET → F•4 V-ANC SMPTE → F•3 PROGRAM

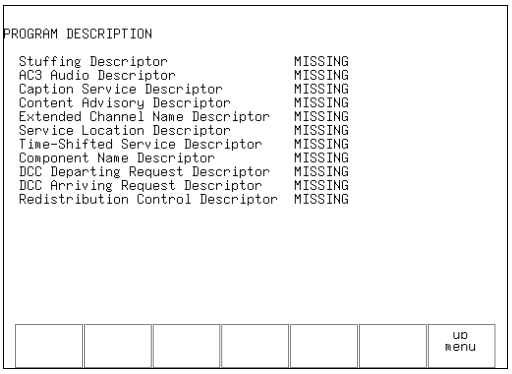


Figure 12-21 Program data display

12.5.9 VBI Data Display Explanation

To display VBI data, follow the procedure below.

Procedure

STATUS → F•4 ANC PACKET → F•4 V-ANC SMPTE → F•5 VBI

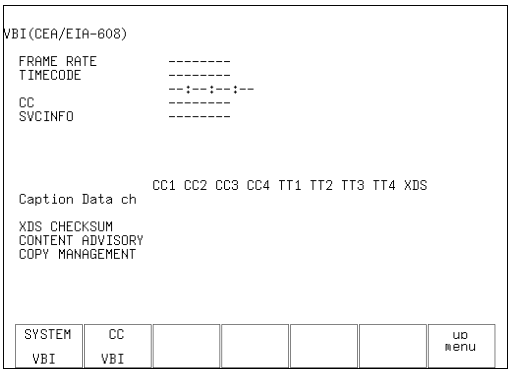


Figure 12-22 VBI data display

12.6 Error Settings

To configure error settings, press F•5 ERROR CONFIG in the status menu. You can configure remote control connector error transmission, the error count, error detection, error detection levels, and the error displays.

STATUS → F•5 ERROR CONFIG →

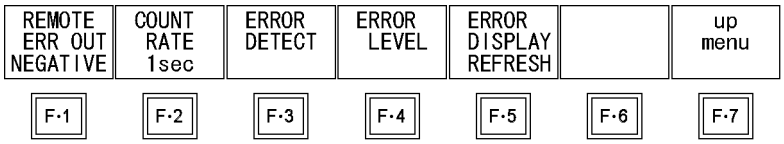


Figure 12-23 ERROR CONFIG menu

12.6.1 Selecting the Alarm Signal Polarity

When an error occurs in one of the items set to ON in the menu that appears when you press F•3 ERROR DETECT, an alarm signal is transmitted through pin 14 of the remote control connector.
To set the polarity of the alarm signal, follow the procedure below.
[Reference] Section 16.1.3, “Transmitting Alarm Signals”

Procedure

STATUS → F•5 ERROR CONFIG → F•1 REMOTE ERR OUT

Settings

OFF:	An alarm signal is not transmitted.
POSITIVE:	A high signal is transmitted when an error occurs.
NEGATIVE:	A low signal is transmitted when an error occurs. This is the default setting.

12.6.2 Selecting the Error Count Rate

When errors occur in items set to ON in the menu that appears when you press F•3 ERROR DETECT, the ERROR COUNT indication in the status display increases.
To set the rate at which the ERROR COUNT indication increases, follow the procedure below.

Procedure

STATUS → F•5 ERROR CONFIG → F•2 COUNT RATE

Settings

V RATE:	The ERROR COUNT indication increases each time that there is an error in a field (when the input format is interlaced or segmented frame) or a frame (when the input format is progressive). Even if multiple errors occur in the same field (or frame), the ERROR COUNT indication only increases by one.
1sec:	Errors are counted by seconds. Even if multiple errors occur within the same second, the ERROR COUNT indication only increases by one. This is the default setting.

12.6.3 Configuring Error Detection Settings

To configure error detection settings, press F•3 ERROR DETECT in the status menu. The errors that you set to ON here are detected and displayed in the status display.

STATUS → F•5 ERROR CONFIG → F•3 ERROR DETECT →

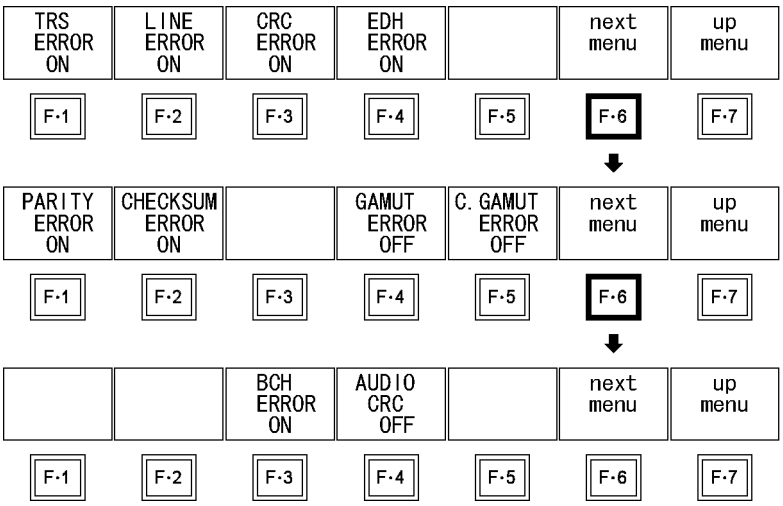


Figure 12-24 ERROR DETECT menu

• **Detecting TRS Errors**

To detect TRS errors, follow the procedure below. If you set this setting to ON, TRS error information appears next to TRS in the status display.

Procedure

STATUS → F•5 ERROR CONFIG → F•3 ERROR DETECT → F•1 TRS ERROR

Settings

ON:	TRS errors are detected. This is the default setting.
OFF:	TRS errors are not detected.

• **Detecting Line Number Errors**

To detect line number errors, follow the procedure below. If you set this setting to ON, line number error information appears next to LINE NUMBER in the status display.
This setting is valid when the input signal is HD-SDI.

Procedure

STATUS → F•5 ERROR CONFIG → F•3 ERROR DETECT → F•2 LINE ERROR

Settings

ON:	Line number errors are detected. This is the default setting.
OFF:	Line number errors are not detected.

• **Detecting CRC Errors**

To detect CRC errors, follow the procedure below. If you set this setting to ON, CRC error information appears next to CRC LUMA and CRC CHROMA in the status display.
This setting is valid when the input signal is HD-SDI.

Procedure

STATUS → F•5 ERROR CONFIG → F•3 ERROR DETECT → F•3 CRC ERROR

Settings

ON:	CRC errors are detected. This is the default setting.
OFF:	CRC errors are not detected.

• **Detecting EDH Errors**

To detect EDH errors, follow the procedure below. If you set this setting to ON, EDH error information appears next to EDH in the status display.
This setting is valid when the input signal is SD-SDI.

Procedure

STATUS → F•5 ERROR CONFIG → F•3 ERROR DETECT → F•4 EDH ERROR

Settings

ON:	EDH errors are detected. This is the default setting.
OFF:	EDH errors are not detected.

- **Detecting Parity Errors**

To detect parity errors in ancillary data, follow the procedure below. If you set this setting to ON, parity error information appears next to PARITY in the status display.

Procedure

STATUS → F•5 ERROR CONFIG → F•3 ERROR DETECT → F•6 next menu → F•1 PARITY ERROR

Settings

ON:	Parity errors are detected. This is the default setting.
OFF:	Parity errors are not detected.

- **Detecting Checksum Errors**

To detect checksum errors in ancillary data, follow the procedure below. If you set this setting to ON, checksum error information appears next to CHECKSUM in the status display.

Procedure

STATUS → F•5 ERROR CONFIG → F•3 ERROR DETECT → F•6 next menu → F•2 CHECKSUM ERROR

Settings

ON:	Checksum errors are detected. This is the default setting.
OFF:	Checksum errors are not detected.

- **Detecting Gamut Errors**

To detect gamut errors, follow the procedure below. If you set this setting to ON, gamut error information appears next to GAMUT in the status display.
To set the threshold for gamut error detection, press F•4 ERROR LEVEL.
The gamut error is not displayed when the LV 7330 is in dual link mode regardless of this setting.

Procedure

STATUS → F•5 ERROR CONFIG → F•3 ERROR DETECT → F•6 next menu → F•4 GAMUT ERROR

Settings

ON:	Gamut errors are detected.
OFF:	Gamut errors are not detected. This is the default setting.

• **Detecting Composite Gamut Errors**

To detect gamut errors in a pseudo-composite signal converted from the component signal, follow the procedure below. If you set this setting to ON, composite gamut error information appears next to COMP.GAMUT in the status display.
To set the threshold for composite gamut error detection, press F•4 ERROR LEVEL.
The composite gamut error is not displayed when the LV 7330 is in dual link mode regardless of this setting.

Procedure

STATUS → F•5 ERROR CONFIG → F•3 ERROR DETECT → F•6 next menu → F•5 C.GAMUT ERROR

Settings

ON:	Composite gamut errors are detected.
OFF:	Composite gamut errors are not detected. This is the default setting.

• **Detecting BCH Errors**

To detect BCH errors in the embedded audio, follow the procedure below. If you set this setting to ON, BCH error information appears next to BCH in the status display.
This setting is valid when the input signal is HD-SDI.

Procedure

STATUS → F•5 ERROR CONFIG → F•3 ERROR DETECT → F•6 next menu → F•6 next menu → F•3 BCH ERROR

Settings

ON:	BCH errors are detected. This is the default setting.
OFF:	BCH errors are not detected.

• **Detecting Audio CRC Errors**

To detect CRC errors in the embedded audio, follow the procedure below. If you set this setting to ON, audio CRC error information appears next to CRC in the status display.

Procedure

STATUS → F•5 ERROR CONFIG → F•3 ERROR DETECT → F•6 next menu → F•6 next menu → F•4 AUDIO CRC

Settings

ON:	Audio CRC errors are detected.
OFF:	Audio CRC errors are not detected. This is the default setting.

12.6.4 Setting the Gamut Filter

If you are detecting gamut errors or composite gamut errors, you can set a low-pass filter to remove transient errors such as overshoot.
To set the gamut filter, follow the procedure below.

Procedure

STATUS → F•5 ERROR CONFIG → F•4 ERROR LEVEL → F•3 GAMUT FILTER

Settings

1M:	A 1 MHz low-pass filter is applied during error detection. This is the default setting.
2.8M:	A 2.8 MHz (when the input signal is HD) or 1 MHz (when the input signal is SD) low-pass filter is applied during error detection.
OFF:	A low-pass filter is not applied during error detection.

12.6.5 Setting the Detection Level Unit

To select the unit for the error detection levels, follow the procedure below.
The unit that you select here is also applied to the 5 bar screen.
[Reference] Section 9.7.2, “Selecting the 5 Bar Display Unit”

Procedure

STATUS → F•5 ERROR CONFIG → F•4 ERROR LEVEL → F•6 UNIT

Settings

%:	The levels are set as percentages. This is the default setting.
mV:	The levels are set as mV.

12.6.6 Setting Gamut Error Detection Levels

To set gamut error detection levels, press F•1 GAMUT in the status menu.
The settings that you make here also apply to the R, G, and B bars in the 5 bar display. The unit for setting the level is the same as the unit that was specified with F•6 UNIT.
[Reference] Section 9.7.1, “5 Bar Display Explanation”

STATUS → F•5 ERROR CONFIG → F•4 ERROR LEVEL → F•1 GAMUT →

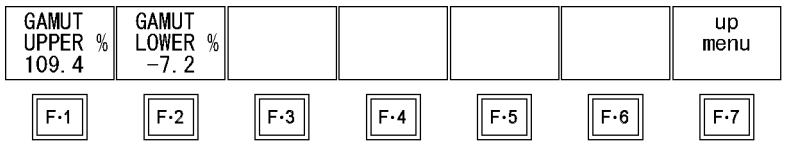


Figure 12-25 GAMUT menu

- **Setting the Upper Limit**

To set the gamut error upper limit, follow the procedure below. An error is detected when the SDI input signal level exceeds the specified value.
If you press F•D, the gamut error upper limit will be reset to its default value of 109.4 % or 765.8 mV.

Procedure

STATUS → F•5 ERROR CONFIG → F•4 ERROR LEVEL → F•1 GAMUT
→ F•1 GAMUT UPPER %
→ F•1 GAMUT UPPER mV

Settings

Selectable range: 90.8 to 109.4 % (The default setting is 109.4 %.)
635.6 to 765.8 mV (The default setting is 765.8 mV.)

- **Setting the Lower Limit**

To set the gamut error lower limit, follow the procedure below. An error is detected when the SDI input signal level goes below the specified value.
If you press F•D, the lower limit will be reset to its default value of –7.2 % or –50.4 mV.

Procedure

STATUS → F•5 ERROR CONFIG → F•4 ERROR LEVEL → F•1 GAMUT
→ F•2 GAMUT LOWER %
→ F•2 GAMUT LOWER mV

Settings

Selectable range: –7.2 to 6.1 % (The default setting is –7.2 %.)
–50.4 to 42.7 mV (The default setting is –50.4 mV.)

12.6.7 Setting Composite Gamut Error Detection Levels

To set composite gamut error detection levels, press F•2 COMPOSIT GAMUT in the status menu.
The settings that you make here also apply to the CMP bar in the 5 bar display. The unit for setting the level is the same as the unit that was specified with F•6 UNIT.
[Reference] Section 9.7.1, “5 Bar Display Explanation”

STATUS → F•5 ERROR CONFIG → F•4 ERROR LEVEL → F•2 COMPOSIT GAMUT →

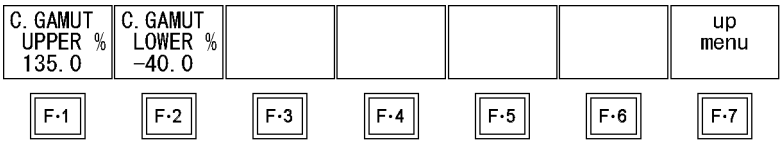


Figure 12-26 COMPOSIT GAMUT menu

- **Setting the Upper Limit**

To set the composite gamut error upper limit, follow the procedure below. An error is detected when the level of the pseudo-composite signal that is converted from the SDI input signal exceeds the specified value.
If you press F•D, the upper limit will be reset to its default value of 135.0 %, 963.9 mV or 945.0 mV.

Procedure

STATUS → F•5 ERROR CONFIG → F•4 ERROR LEVEL → F•2 COMPOSIT GAMUT
→ F•1 C.GAMUT UPPER %
→ F•1 C.GAMUT UPPER mV

Settings

Selectable range:	90.0 to 135.0 % (The default setting is 135.0 %.)
	642.6 to 963.9 mV (The default setting is 963.9 mV.) (NTSC)
	630.0 to 945.0 mV (The default setting is 945.0 mV.) (PAL)

- **Setting the Lower Limit**

To set the composite gamut error lower limit, follow the procedure below. An error is detected when the level of the pseudo-composite signal that is converted from the SDI input signal goes below the specified value.
If you press F•D, the lower limit will be reset to its default value of –40.0 %, –285.6 mV or –280.0 mV.

Procedure

STATUS → F•5 ERROR CONFIG → F•4 ERROR LEVEL → F•2 COMPOSIT GAMUT
→ F•2 C.GAMUT LOWER %
→ F•2 C.GAMUT LOWER mV

Settings

Selectable range:	–40.0 to –20.0 % (The default setting is –40.0 %.)
	–285.6 to –142.8 mV (The default setting is –285.6 mV.) (NTSC)
	–280.0 to –140.0 mV (The default setting is –280.0 mV.) (PAL)

12.6.8 Selecting the Error Display Format

You can select how errors are indicated after the signal returns to normal. You can select the error indication format from one of the options listed below. Error information appears in the status display and in the upper right of the screen.

Procedure

STATUS → F•5 ERROR CONFIG → F•5 ERROR DISPLAY

Settings

REFRESH:	Error indications disappear one second after the signal returns to normal. This is the default setting.
HOLD:	Error indications do not disappear until an error reset operation is performed. The error count increases normally.

12.7 Resetting Errors

To reset errors, follow the procedure below. After errors have been reset, the status display changes as follows:

- ERROR COUNT is reset to 0.
- FROM RESET becomes 00:00:00.
- The event log is deleted.

Procedure

STATUS → F•6 ERROR RESET

13. CINELITE Display

In the CINELITE display, you can display the luminance levels of up to three points on the picture that you have selected. To show the CINELITE display, press CINELITE.

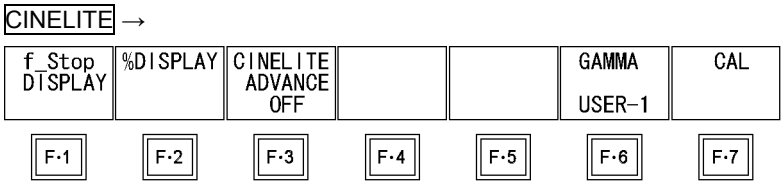


Figure 13-1 CINELITE menu

You can choose one of the following luminance level display formats.

- f Stop level (f Stop display)
  → Section 13.5, “Displaying Luminance Levels as f Stop Numbers”
- Luminance level (percentage)
  → Section 13.6, “Displaying Luminance Levels as Percentages or RGB Values”
- RGB level (percentage)
  → Section 13.6, “Displaying Luminance Levels as Percentages or RGB Values”
- RGB level (256 levels)
  → Section 13.6, “Displaying Luminance Levels as Percentages or RGB Values”

13.1 Selecting the Points to Measure

You can set up to three points to measure. To select which measurement point positions you will specify with the cursor, follow the procedure below.
The F•2 MEAS POS settings in the menus accessed by pressing F•1 f_Stop DISPLAY and F•2 %DISPLAY are the same.

Procedure

CINELITE → F•1 f_Stop DISPLAY → F•2 MEAS POS
→ F•2 %DISPLAY → F•2 MEAS POS

Settings

P1:	You can use the cursor to select the position of measurement point 1. This is the default setting.
P2:	You can use the cursor to select the position of measurement point 2.
P3:	You can use the cursor to select the position of measurement point 3.

13.2 Moving the Cursors

To set a measurement point, you must select a measurement point by pressing F•2 MEAS POS and then move the X and Y cursors to the point you want to measure. You can use the Y cursor to select a line and the X cursor to select a sample. The X and Y cursors are not displayed if they are within a blanking interval.

The measurement point settings made in the menus accessed by pressing F•1 f_Stop DISPLAY and F•2 %DISPLAY are the same. Changing the position of the Y cursor (LINE) will also change the selected line in the picture, video signal waveform, vector, and status (data dump) displays.

There are two different methods that you can use to move the cursors:

- **V POS and H POS**

Turn V POS clockwise to move the Y cursor (LINE) up. Press V POS to move the Y cursor to the center of the picture.
Turn H POS clockwise to move the X cursor (SMPL) to the right. Press H POS to move the X cursor to the center of the picture.

- **F • D**

You can move the cursors by turning F•D. You can toggle between the LINE and SAMPLE cursors by pressing F•D.
The F•1 F.D settings in the menus accessed by pressing F•1 f_Stop DISPLAY and F•2 %DISPLAY are the same.

Procedure

CINELITE → F•1 f_Stop DISPLAY → F•1 F.D
→ F•2 %DISPLAY → F•1 F.D

Settings

LINE:	You can move the Y cursor (LINE) up by turning F•D clockwise. This is the default setting.
SAMPLE:	You can move the X cursor (SMPL) to the right by turning F•D clockwise.

13.3 Selecting the Measurement Area

To select the area of luminance measurement, follow the procedure below. This setting is applied to P1 to P3.
The F•3 MEAS SIZE settings in the menus accessed by pressing F•1 f_Stop DISPLAY and F•2 %DISPLAY are the same.

Procedure

CINELITE → F•1 f_Stop DISPLAY → F•3 MEAS SIZE
→ F•2 %DISPLAY → F•3 MEAS SIZE

Settings

1X1:	The single pixel at the intersection of the cursors is measured. This is the default setting.
3X3:	The luminance of the 3×3 area of pixels centered around the pixel at the intersection of the cursors is averaged and measured.
9X9:	The luminance of the 9×9 area of pixels centered around the pixel at the intersection of the cursors is averaged and measured.

13.4 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.
The F•4 MEAS DISP settings in the menus accessed by pressing F•1 f_Stop DISPLAY and F•2 %DISPLAY are the same.

Procedure

CINELITE → F•1 f_Stop DISPLAY → F•4 MEAS DISP
→ F•2 %DISPLAY → F•4 MEAS DISP

Settings

P1P2P3:	The measured points P1 to P3 are displayed. This is the default setting.
P1P2--:	The measured points P1 and P2 are displayed.
P1--P3:	The measured points P1 and P3 are displayed.
--P2P3:	The measured points P2 and P3 are displayed.
P1----:	The measured point P1 is displayed.
--P2--:	The measured point P2 is displayed.
----P3:	The measured point P3 is displayed.

13.5 Displaying Luminance Levels as f Stop Numbers

In the f Stop display, the f Stop values relative to the reference position are displayed.
Typically, 18 % gray chart is used in the reference position.
Measurement points that have a luminance level of 0% or less are displayed as “****” and cannot be measured.

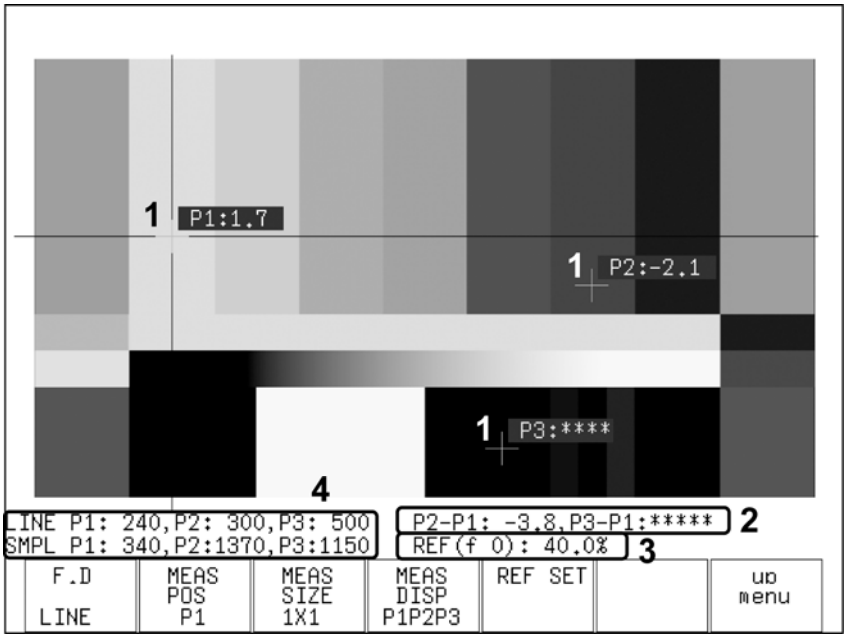


Figure 13-2 f Stop display

Table 13-1 f Stop display explanation

No.	Item	Explanation
1	Measurement points	You can set up to three measurement points. The f Stop value relative to the reference point is displayed at each point.
2	f Stop difference display	The f Stop value for P2 and P3 relative to P1 is displayed.
3	Reference value	The luminance level at the reference position is displayed as a percentage.
4	Coordinates	The measurement point coordinates are indicated here with both line and sample numbers.

To display luminance levels as f Stop numbers using 18 % gray chart as the reference position, follow the procedure below. Include an 18 % gray chart with the objects that you are filming.

1. **Press CINELITE.**
2. **Press F•2 %DISPLAY.**
3. **Press F•5 %/RGB, and select LEVEL%.**

   The luminance levels at the measurement points are displayed as percentages. The measured values of measurement points that are within the blanking interval are not displayed.

4. **Place the cursors over the 18 % gray chart area.**

   You can set the cursor to any measurement point from P1 to P3.
   [Reference] Section 13.2, “Moving the Cursors”

5. **Adjust the lighting so that the displayed luminance level is 45.0 % (for example).**
6. **Press F•7 up menu.**
7. **Press F•6 GAMMA 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 13.7, “Configuring User-Defined Correction Tables.”
   The type of user-defined correction table that you select here is not deleted even if you initialize the LV 7330 by following the procedure in section 5.7.1, “Initializing the Settings Using SETUP INIT.”

8. **Press F•1 f_Stop DISPLAY.**
9. **Check that the cursor is on the 18 % gray chart, and press F•5 REF_SET.**

   The f Stop value for 18 % gray chart becomes 0.0.

10. **Use the cursors to set the measurement point.**

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

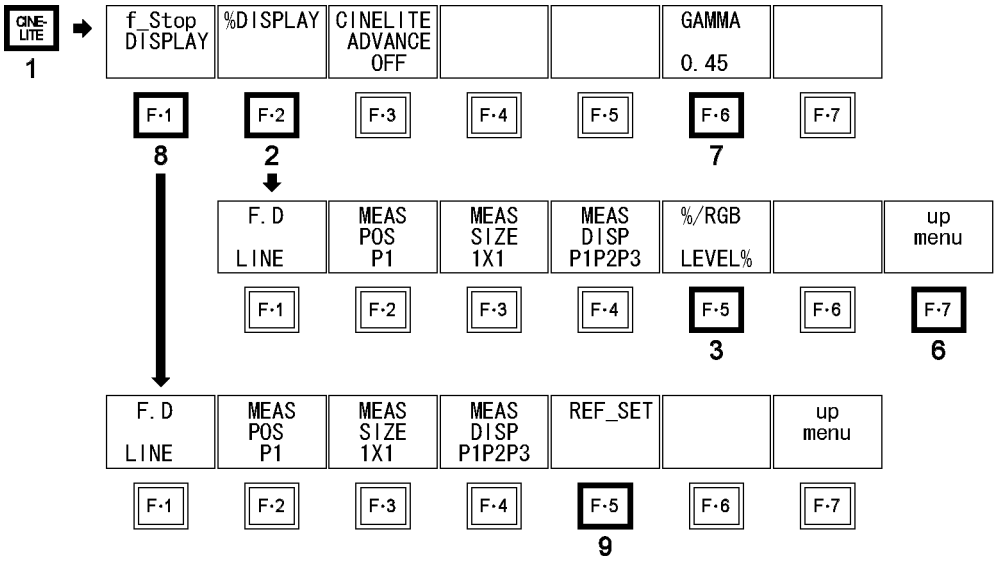


Figure 13-3 f Stop display

13.6 Displaying Luminance Levels as Percentages or RGB Values

In the percentage and RGB display, you can display luminance levels as level percentages, RGB percentages, or using 255 RGB levels.

- **LEVEL% display**

Luminance levels are indicated as percentages. This is the default setting.

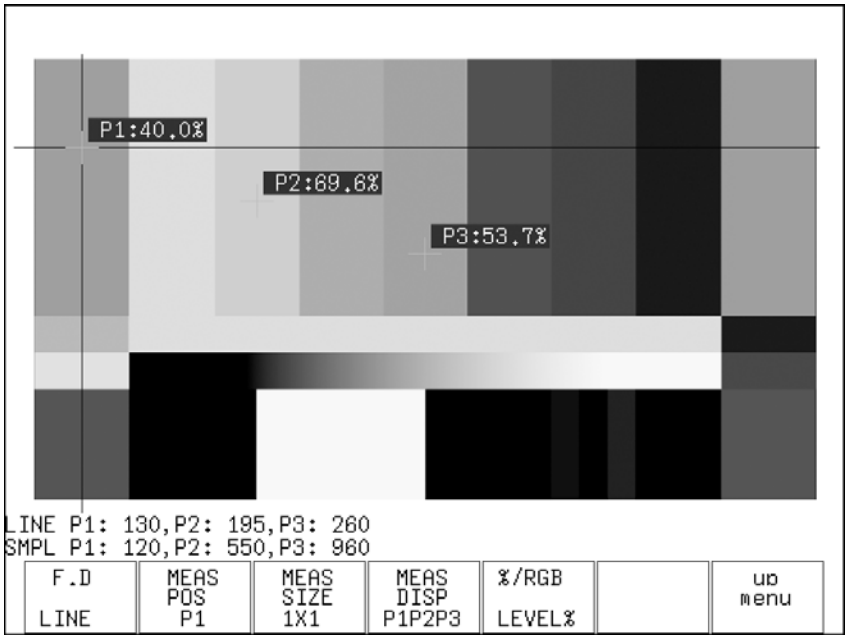


Figure 13-4 LEVEL% display

- **RGB% display**

Each R, G, and B luminance level 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).

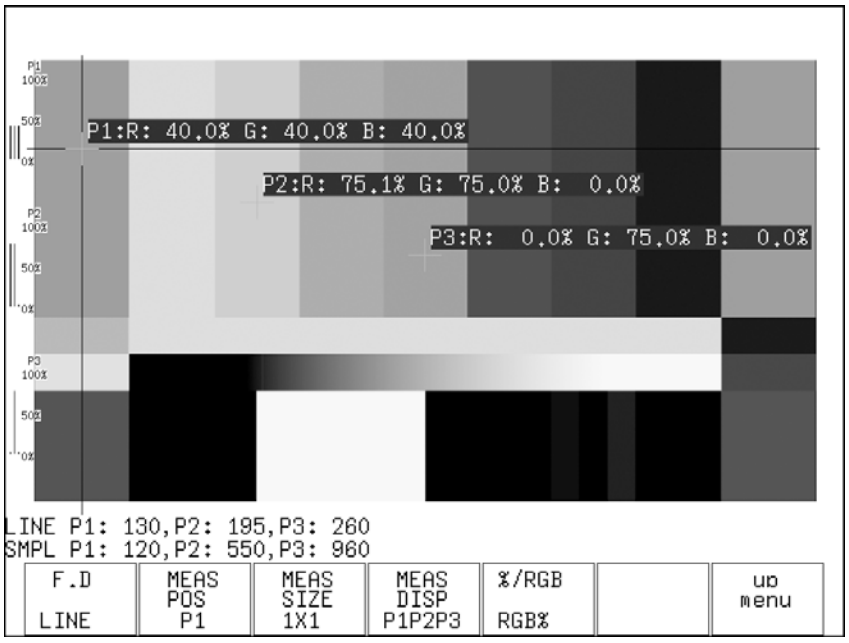


Figure 13-5 RGB% display

- **RGB 255 display**

The RGB levels are displayed 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.

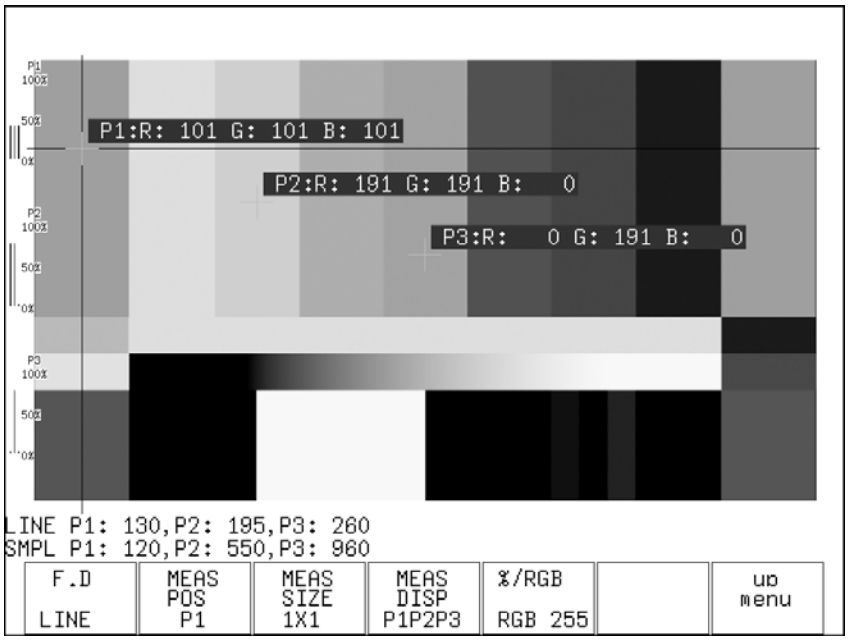


Figure 13-6 RGB 255 display

To display luminance levels as percentages or RGB levels, follow the procedure below.

1. **Press CINELITE.**
2. **Press F•2 %DISPLAY.**
3. **Press F•5 %/RGB, and select the display format.**

   You can select LEVEL%, RGB%, or RGB 255.

4. **Use the cursors to set the measurement point.**

   The measured values appear near the cursors in the format that you selected in step 3. The cursors are not displayed if they are within the blanking interval.

   [Reference] Section 13.2, “Moving the Cursors”

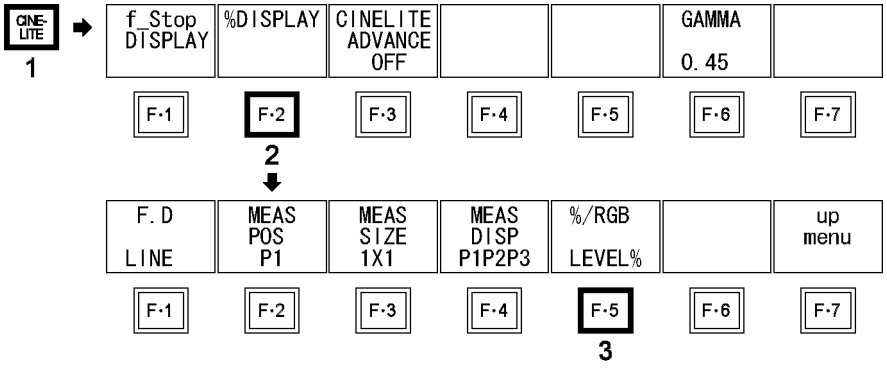


Figure 13-7 Percentage and RGB display

13.7 Displaying Synchronized Markers

When the link format is set to single, to synchronize the markers on the vector display and video signal waveform display to measurement points P1 to P3 and REF that you specify on the CINELITE display, follow the procedure below.

Markers cannot be displayed on the video signal waveform display under the following conditions.
• When SWEEP in the video signal waveform menu is V
• When COLOR MATRIX in the video signal waveform menu is COMPOSIT
Marker display will not work properly when waveforms are being displayed using an external sync signal.

If P+V or P+V+W is selected, the measured values of the selected measurement point are displayed in the lower left of the vector display. For details on the measured values, see section 9.2.5, “Displaying the Vector Marker.”

Procedure

CINELITE → F•3 CINELITE ADVANCE

Settings

OFF:	P1 to P3 and REF are displayed only on the CINELITE display. This is the default setting.
P+V:	P1 to P3 and REF are displayed on the CINELITE and vector displays.
P+W:	P1 to P3 and REF are displayed on the picture and video signal waveform displays.
P+V+W:	P1 to P3 and REF are displayed on the picture, vector, and video signal waveform displays.

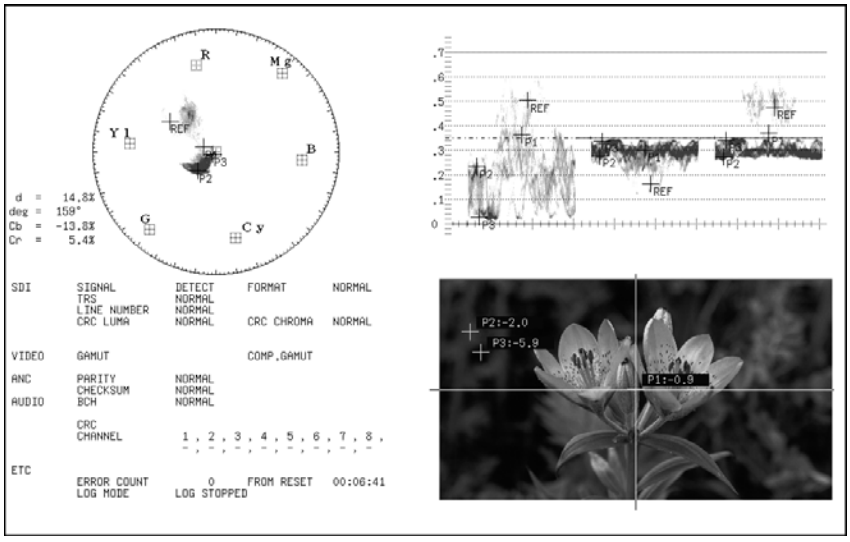


Figure 13-8 Displaying synchronized markers

13.8 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 includes USER-1 to USER-3 and consists of tables that are created using the LV 7330. The second type includes USER-A to USER-E and consists of tables that have been created externally using a device such as a PC. Neither type of user-defined correction table is deleted if you initialize the LV 7330 by following the procedure in section 5.7.1, “Initializing the Settings Using SETUP INIT.”

13.8.1 Creating User-Defined Correction Tables Using the LV 7330

You can create and store up to three user-defined correction tables on the LV 7330.
To create a user-defined gamma correction table that matches the gamma characteristics of the camera that you are using, follow the procedure below.
Include an 18 % gray chart with the objects that you are filming.

1. **Adjust the lighting so that the displayed luminance level of the 18 % gray chart is 45.0 % (for example) on a camera whose f Stop value is set to 5.6.**

   For instructions, see steps 1 through 5 in section 13.5, “Displaying Luminance Levels as f Stop Numbers.”

2. **Press F • 6 GAMMA, and select USER-1.**

   In this example, the table for USER-1 is created, but the tables for USER-2 and USER-3 can also be created in the same way.

3. **Press F • 7 CAL.**

   A user-defined correction table appears in the bottom left of the screen, and the luminance appears near the cursors as a 10-bit value (0 % is displayed as 64, and 100 % is displayed as 940).
   This setting is available when F•6 GAMMA is set to an option other than 0.45.

4. **Press F • 2 TABLE CLEAR.**

   All of 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.

5. **Press F • 1 DELETE YES.**
6. **Place the cursors over the 18 % gray chart.**
7. **Press F • 5 CAL F, and turn F • D to select 5.6.**
8. **Press F • 4 CAL SET.**

   The luminance level when the camera f Stop value is 5.6 is input into Lev in the user-defined correction table. To delete a line of data, press F•3 DATA CLEAR.

9. **Change F•5 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. Press F•4 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.

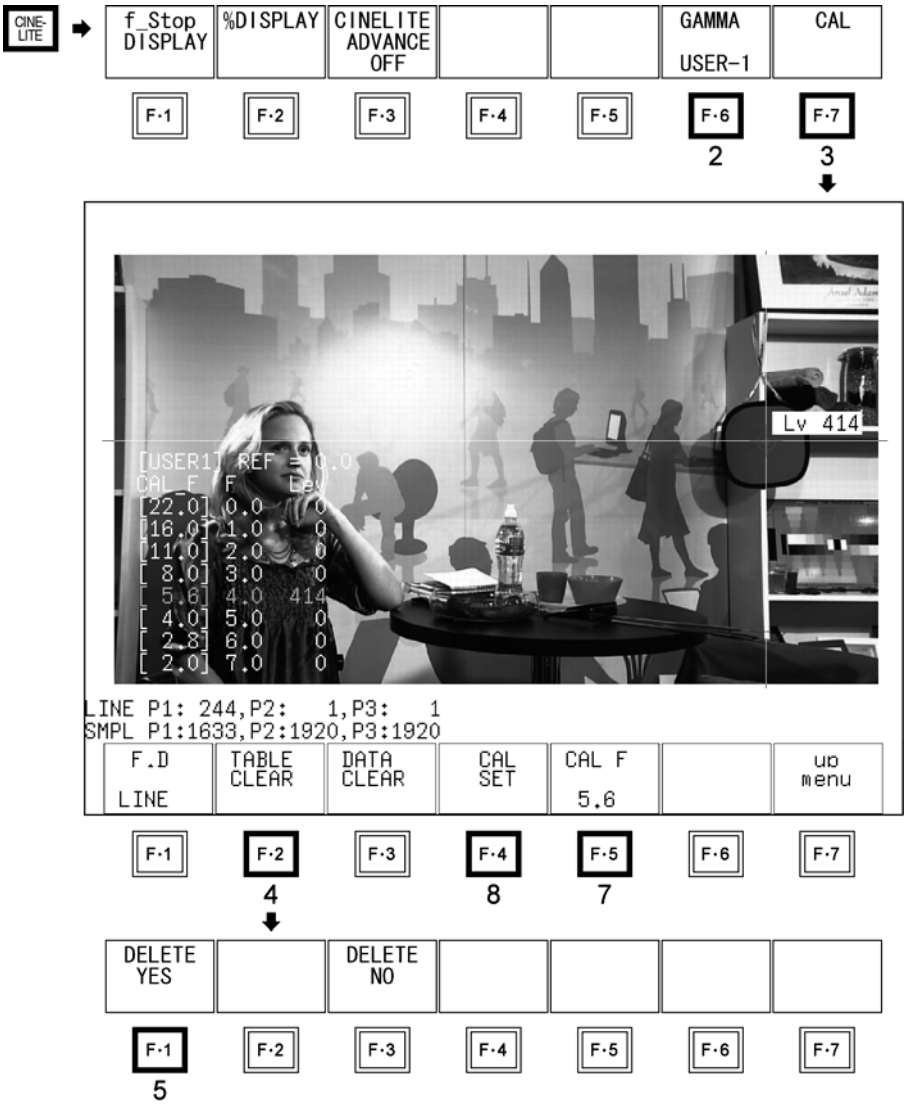


Figure 13-9 Creating user-defined correction tables

The REF value in the user-defined correction table is entered when you press F•5 REF_SET in the f Stop display.

For example, if you use the table shown below and press F•5 REF_SET when the luminance at the cursors (10-bit data) is 416, the f Stop value at that point (3.0) is displayed as the REF value.

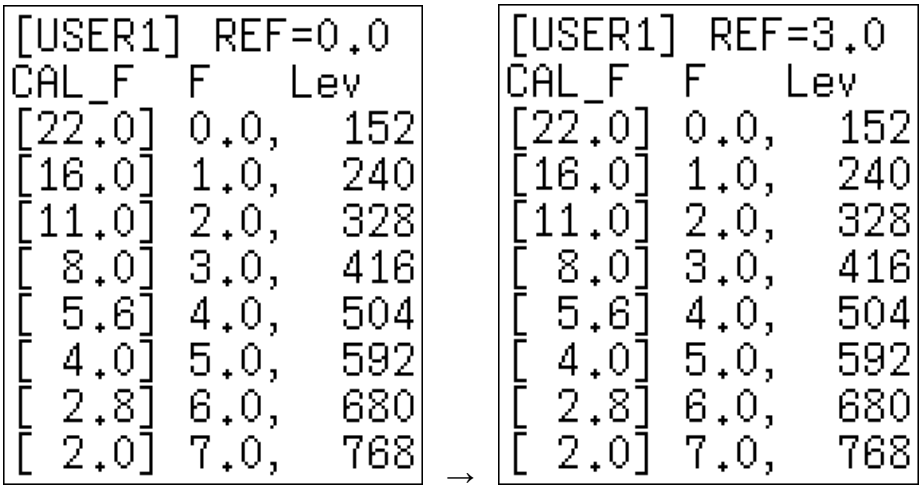


Figure 13-10 User-defined correction table

The f Stop value that corresponds to the luminance at the cursors when F•5 REF_SET is pressed is 0. The other f Stop values are indicated below. The values between specified values are interpolated linearly.

When Lv = 152 f Stop = 0.0 - 3.0 = -3.0
When Lv = 240 f Stop = 1.0 - 3.0 = -2.0
When Lv = 328 f Stop = 2.0 - 3.0 = -1.0
When Lv = 416 f Stop = 3.0 - 3.0 = 0.0
When Lv = 504 f Stop = 4.0 - 3.0 = 1.0
When Lv = 592 f Stop = 5.0 - 3.0 = 2.0
When Lv = 680 f Stop = 6.0 - 3.0 = 3.0
When Lv = 768 f Stop = 7.0 - 3.0 = 4.0

13.8.2 Loading a User-Defined Correction Table into the LV 7330

You can load up to five user-defined correction tables into the LV 7330.
To load a user-defined correction table into the LV 7330, 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

File Type	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 Specifications

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 Specifications

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 7330 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 Specifications

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 -131072 to 131071 (18 bits, ±2000%).

2. **Save the user-defined correction table to USB memory, and connect the USB memory to the LV 7330.**

   Save the user-defined correction table in the USB memory's root directory.

3. **Press CINELITE.**

4. **Press F • 6 GAMMA, and select USER-A.**

   In this example, a user-defined correction table is assigned to USER-A, but user-defined correction tables can be assigned to USER-B through USER-E in the same way.

5. **Press F • 7 CAL.**

   The file list display appears.
   This setting is available when F•6 GAMMA is set to an option other than 0.45.

6. **Turn the F • D to select the file in the USB memory that you want to copy from.**

7. **Press F • 2 COPY.**

   The user-defined correction table from the USB memory that you selected is copied to USER-A. If a file had already been copied to the selected table number (USER-A in this example), the previous file is overwritten.
   To clear the table that has been copied to USER-A, press F•3 TABLE CLEAR.

   To turn regamma OFF, set F•4 REGAMMA to OFF, and then press F•2 COPY. The default setting is ON.

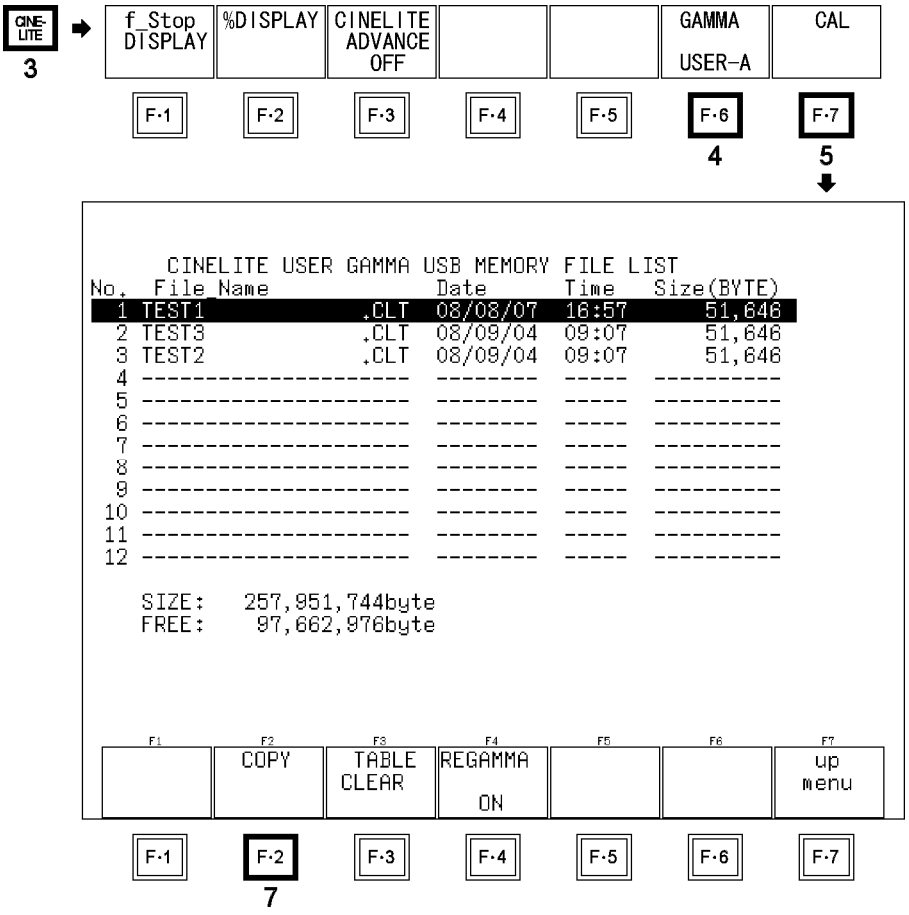


Figure 13-11 Loading user-defined correction tables

When you press F•6 GAMMA in the CINELITE menu, the user-defined correction tables that have been loaded from USB memory appear. A loaded correction table is displayed using the name determined by its NAME keyword. When regamma is OFF, an asterisk is displayed in front of the name of the correction table.

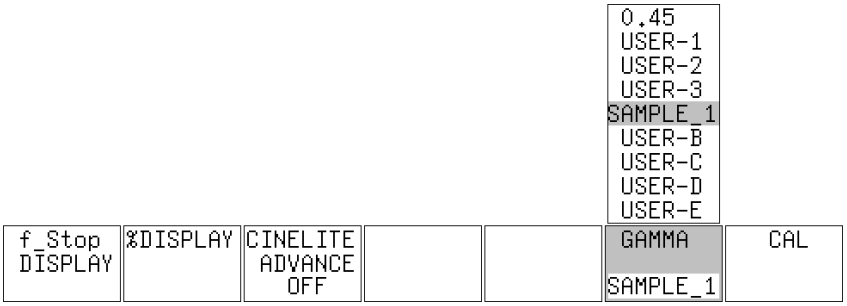


Figure 13-12 CINELITE menu

14. CINEZONE Display

The CINEZONE display has a CINEZONE display mode, in which the picture luminance levels are displayed using colors, and a level search display mode, in which the specified luminance level is displayed using green.
Both of these display modes can be accessed by pressing CINEZONE. Neither of them can be incorporated into the multi-screen display.

14.1 Switching between the CINEZONE and Level Search Displays

To switch between the CINEZONE and level search displays, follow the procedure below.

Procedure

CINEZONE → F•1 MODE

Settings

ZONE:	The CINEZONE display appears. This is the default setting.
SEARCH:	The level search display appears.

14.2 CINEZONE Display

In the CINEZONE display, the picture luminance levels are converted into RGB colors. As shown below, the CINELITE percentage display can be superimposed over the CINEZONE display.
Luminance levels above F•5 UPPER% are displayed using white, and levels below F•6 LOWER% are displayed using black. You can see what colors correspond to what luminance levels by looking at the scale on the right of the display.

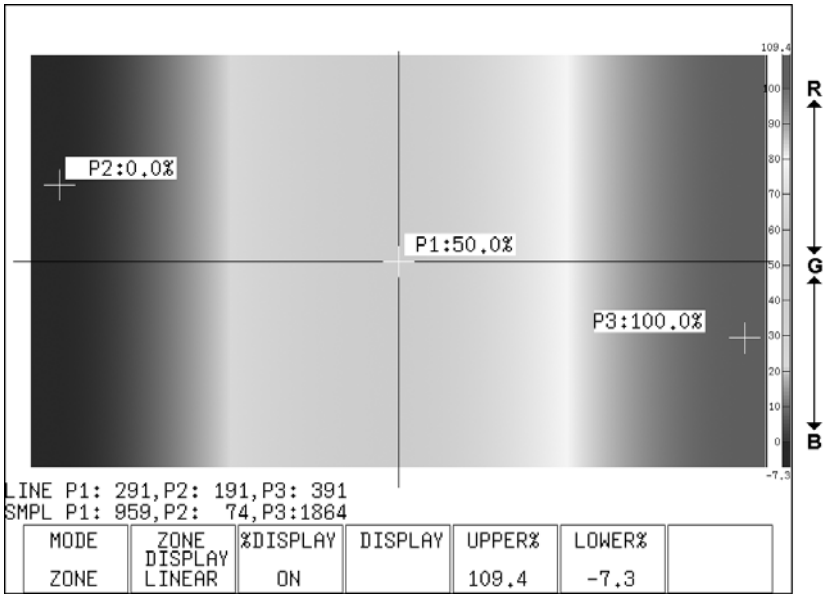


Figure 14-1 CINEZONE display

14.2.1 Selecting the Color Gradation

To select the color gradation, follow the procedure below.
F•2 ZONE DISPLAY appears when F•1 MODE is set to ZONE.

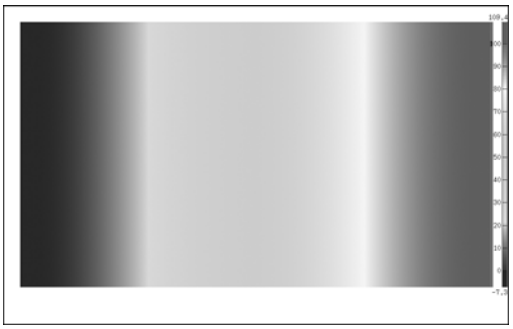
Procedure

CINEZONE → F•2 ZONE DISPLAY

Settings

LINEAR:	Luminance values from 0 to 100 % are displayed using 1024 different colors. This is the default setting.
STEP:	Values below 0 %, from 0 to 100 % (in 10 % steps), and above 100 % are displayed using 12 different colors.

ZONE DISPLAY = LINEAR



ZONE DISPLAY = STEP

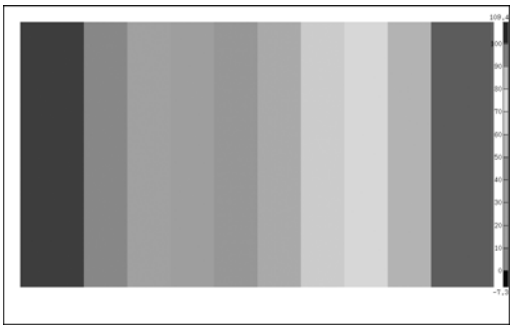


Figure 14-2 Color gradations

14.2.2 Superimposing the CINELITE Display

To superimpose the CINELITE percentage display over the CINEZONE display, follow the procedure below.
F•3 %DISPLAY appears when F•1 MODE is set to ZONE.

Procedure

CINEZONE → F•3 %DISPLAY

Settings

OFF:	The CINELITE percentage display is not superimposed. This is the default setting.
ON:	The CINELITE percentage display is superimposed.

If you set this setting to ON, the cursors that you configured for the CINELITE display appear. You can change the cursor settings by pressing F•4 DISPLAY. For instructions, see chapter 13, “CINELITE Display.”
F•4 DISPLAY appears when F•3 %DISPLAY is set to ON.

CINEZONE → F•4 DISPLAY →

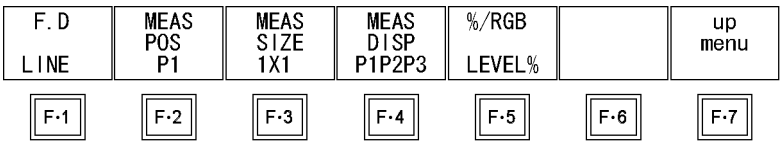


Figure 14-3 DISPLAY menu

14.2.3 Setting the Color Range

On the CINEZONE display, luminance levels above F•5 UPPER% are displayed using white, and levels below F•6 LOWER% are displayed using black.
To set the color range, follow the procedure below.

If F•5 UPPER% is 1 % greater than F•6 LOWER% and you lower the value of F•5 UPPER%, the value of F•6 LOWER% is automatically lowered to maintain a difference of 1 % between the two values. In the same way, if you raise the value of F•6 LOWER%, the value of F•5 UPPER% is automatically raised to maintain a difference of 1 % between the two values.

Procedure

CINEZONE → F•5 UPPER%
→ F•6 LOWER%

Settings

Range for UPPER%: -6.3 to 109.4 (The default setting is 100.0.)
Range for LOWER%: -7.3 to 108.4 (The default setting is 0.0.)

14.3 Level Search Display

In the level search display, the specified luminance level range is displayed with gradations. Also, luminance levels greater than or equal to the specified range are displayed using white, and levels less than equal to the specified range are displayed using black.

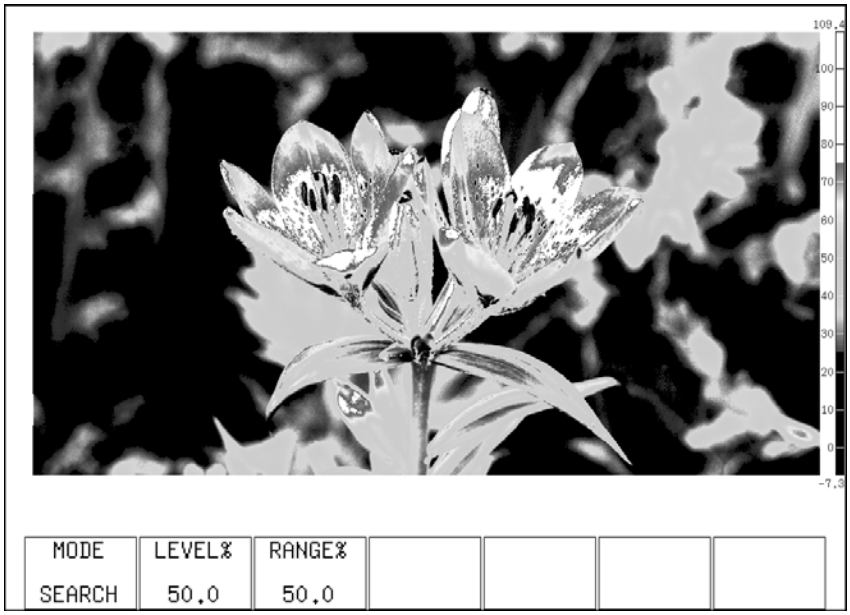


Figure 14-4 Level search display

14.3.1 Setting the Search Level

To set the luminance level that is displayed with gradation, follow the procedure below. The range specified by F•3 RANGE% in reference to F•2 LEVEL% is displayed with gradation.
F•2 LEVEL% appears when F•1 MODE is set to SEARCH.

Procedure

CINEZONE → F•2 LEVEL%
→ F•3 RANGE%

Settings

Range for LEVEL%:	-7.3 to 109.4 (The default setting is 50.0.)
Range for RANGE%:	0.5 to 100.0 (The default setting is 12.0.)

15. Multi-Screen Display Feature

The LV 7330 has seven display modes: picture, CINELITE, CINEZONE, video signal waveform, vector, audio, and status. The display that only shows one mode at a time is referred to as the single-screen display. The display that shows combinations of different modes at the same time is referred to as the multi-screen display. The CINEZONE display mode cannot be incorporated into the multi-screen display.
To show the multi-screen display, press MULTI, and then press F•1 MODE to select the combination of display modes that you want to show.

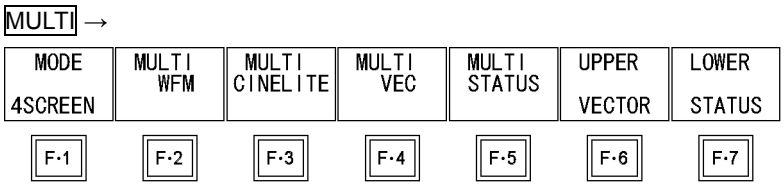


Figure 15-1 Multi-screen display menu

15.1 Selecting the Multi-Screen Display Format

To select the multi-screen display format, follow the procedure below.

Procedure

MULTI → F•1 MODE

Settings

4SCREEN: The vector, video signal waveform, status, and picture (or CINELITE) displays appear.
You can change the status display to the AUDIO*1 display by pressing F•6 LOWER.
You can change the status display to the audio meter or 5 bar display by pressing F•7 LOWER. This is the default setting.

PIC_WFM: The picture (or CINELITE) and video signal waveform displays appear one on top of the other.
Approximately five seconds after the last operation is performed, the menu and the information displays at the top of the screen disappear.

WFM_VEC: The video signal waveform and vector displays appear next to each other.

WFM_PIC: The video signal waveform and the picture appear.

WFM_AUD: The audio and video signal waveform displays appear next to each other.

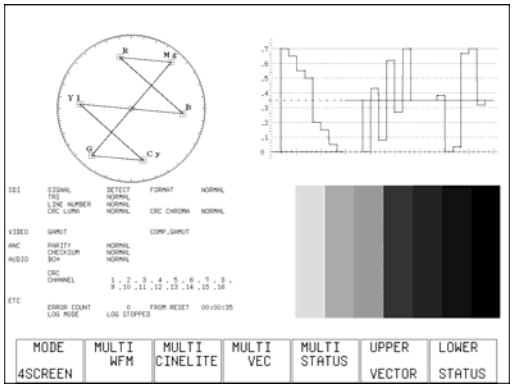
WFM_LVL: The audio meter and video signal waveform display appear next to each other.

PIC+WFM: The picture (or CINELITE) and video signal waveform displays are superimposed.
The picture is displayed with the contrast set to 60%.

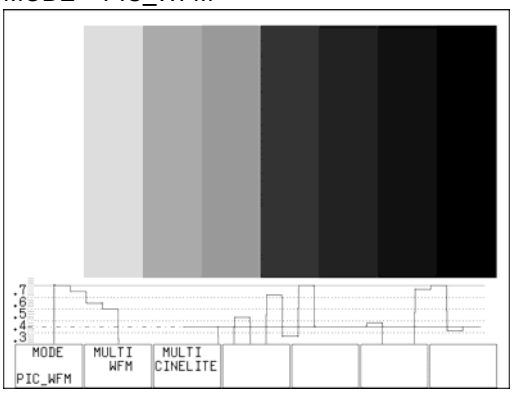
PIC+VECT: The picture (or CINELITE) and vector waveform displays are superimposed.
The picture is displayed with the contrast set to 60%.

*1 The sound image, single-lissajous, multi-lissajous, or numerical display is shown depending on the MODE setting in the audio menu.

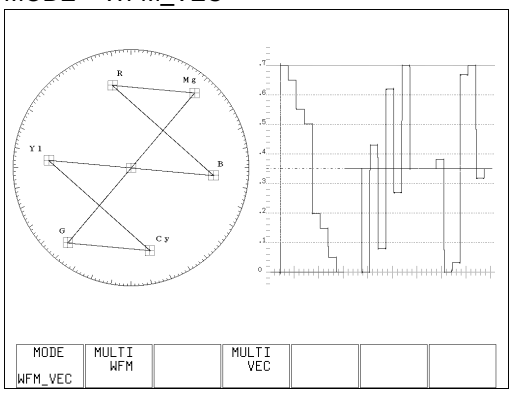
MODE = 4SCREEN



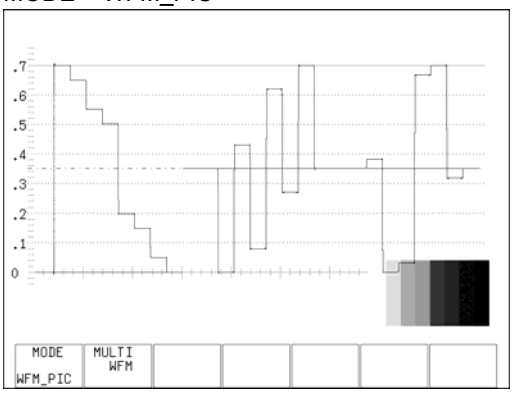
MODE = PIC_WFM



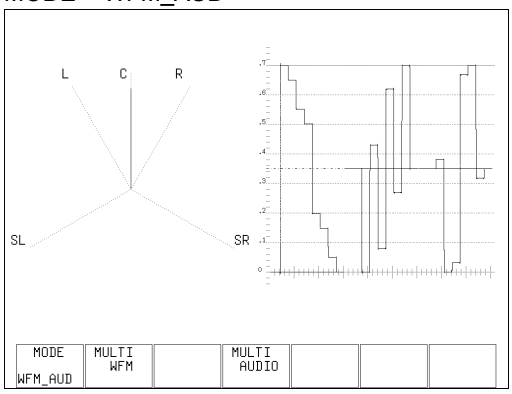
MODE = WFM_VEC



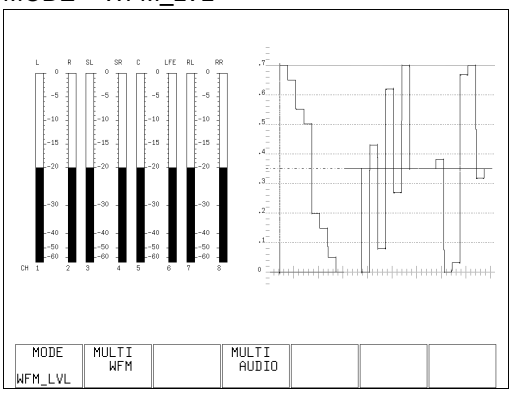
MODE = WFM_PIC



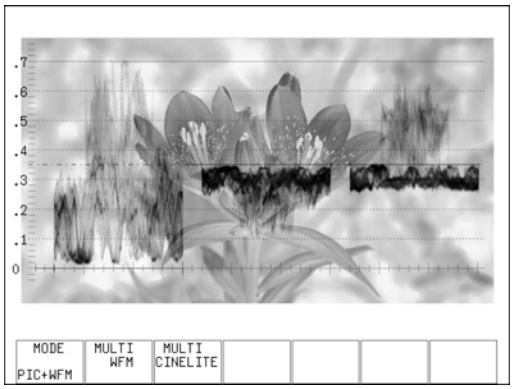
MODE = WFM_AUD



MODE = WFM_LVL



MODE = PIC+WFM



MODE = PIC+VECT

Figure 15-2 Multi-screen display formats

15.2 Setting Each Measurement Mode

Most of the single-screen display settings apply to the multi-screen display as well.
To configure the video signal waveform, CINELITE, vector, audio, or status display from the multi-screen display, follow the procedure below. Setting changes made in the multi-screen display will also change the single-screen display settings.

The single-screen display picture display settings (except for the line select feature) and WFM INTEN, VECTOR INTEN, and SCALE INTEN settings do not affect the settings in the multi-screen display. The VECTOR INTEN value set using MULTI VEC and the WFM INTEN value set using MULTI WFM are the same. Also, the SCALE INTEN value set using MULTI WFM and the SCALE INTEN value set using MULTI VEC and MULTI AUDIO are the same.

Procedure

MULTI → F•* MULTI WFM
→ F•* MULTI CINELITE
→ F•* MULTI VEC
→ F•* MULTI STATUS
→ F•* MULTI AUDIO

* F•* represents any of the function keys F•2 to F•5 and varies depending on the displayed contents.

15.3 Selecting the Displayed Contents in 4 SCREEN Display Mode

To change what is displayed in the left half of the screen when F•1 MODE is set to 4SCREEN, follow the procedure below.

Procedure

MULTI → F•6 UPPER
→ F•7 LOWER

F•6 UPPER Settings

VECTOR: The vector display is shown in the upper left of the multi-screen display. The vector waveform, 5 bar display, or phase difference is shown depending on the DISPLAY setting in the vector menu. This is the default setting.

AUDIO: The audio display is shown in the upper left of the multi-screen display. The sound image, single-lissajous, multi-lissajous, or numerical display is shown depending on the MODE setting in the audio menu.

F•7 LOWER Settings

STATUS: The status display appears in the lower left of the multi-screen display. This is the default setting.

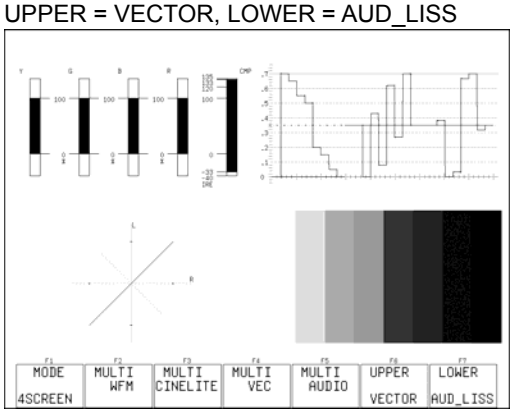
AUD_LVL: The audio meter is shown in the lower left of the multi-screen display. When MODE is set to LISSAJOU in the audio menu, the meters for two channels are displayed.

AUD_LISS: Regardless of what MODE is set to in the audio menu, the single lissajou is shown in the lower left of the multi-screen display. This cannot be selected when UPPER is set to AUDIO.

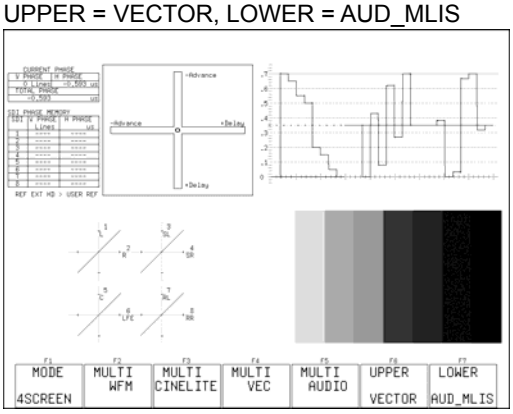
AUD_MLIS: Regardless of what MODE is set to in the audio menu, the multi lissajou is shown in the lower left of the multi-screen display. This cannot be selected when UPPER is set to AUDIO.

5BAR: Regardless of what DISPLAY is set to in the vector menu, the 5 bar display is shown in the lower left of the multi-screen display. You cannot select this setting when the LV 7330 is set to dual link mode.

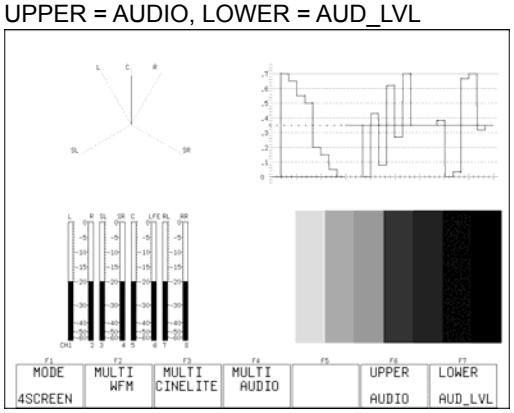
UPPER = VECTOR, LOWER = AUD_LISS



UPPER = VECTOR, LOWER = AUD_MLIS



UPPER = AUDIO, LOWER = AUD_LVL



UPPER = AUDIO, LOWER = 5BAR

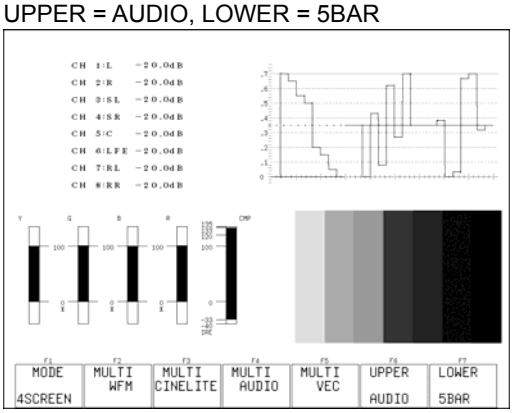


Figure 15-3 Displayed contents in 4 SCREEN display mode

16. External Interface

16.1 Remote Control Feature

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

16.1.1 Remote Control Connector Specifications

This section contains a diagram of the remote control connector, which is located on the rear panel, and a table that describes its pin alignment.

CAUTION

Do not apply voltage to the output pins.
The input pins are all pulled up to +3.3 V. Do not apply negative voltages or voltages above +5 V to the input pins.

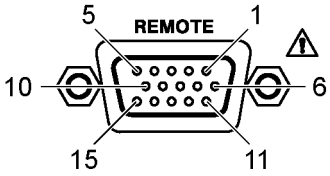


Figure 16-1 Remote control connector (inch screws)

Table 16-1 Remote control connector pin alignment

Pin No.	Name	Input or Output	Explanation
1	GND	-	Grounding pin
2	/P1	Input	Loads preset 1
3	/P2	Input	Loads preset 2
4	/P3	Input	Loads preset 3
5	/P4	Input	Loads preset 4
6	/P5	Input	Loads preset 5
7	/P6	Input	Loads preset 6
8	/P7	Input	Loads preset 7
9	/P8	Input	Loads preset 8
10	/ACH	Input	Selects channel A
11	/BCH	Input	Selects channel B
12	RESERVED	Input	Reserved
13	TALLY	Input	Tally light
14	ALARM	Output	Alarm output
15	GND	-	Grounding pin

* The input pins are active-low. When you use the remote control feature, make sure that you ground each connector. The pins operate on pulse widths at or above 1 second.
After configuring a setting, wait for 1 second or more before configuring the next setting.

16.1.2 Loading Presets

You can use pins 2 through 9 (/P1 through /P8) of the remote control connector to load presets. There are two different methods for loading presets. To choose which method to use, follow the procedure below.

Procedure

SYS → F•4 INTRFACE&LICENSE → F•1 REMOTE

Settings

BIT: /P1 through /P8 are assigned to preset numbers 1 through 8, and you can load one of the eight presets. This is the default setting.

BINARY: /P5 is set to the MSB, and /P1 is set to the LSB. You can load one of 30 presets by specifying a binary value.

Table 16-2 Loading presets

When REMOTE MODE is set to BIT								
9p	8p	7p	6p	5p	4p	3p	2p	Loaded
/P8	/P7	/P6	/P5	/P4	/P3	/P2	/P1	preset No.
H	H	H	H	H	H	H	L	1
H	H	H	H	H	H	L	H	2
H	H	H	H	H	L	H	H	3
H	H	H	H	L	H	H	H	4
H	H	H	L	H	H	H	H	5
H	H	L	H	H	H	H	H	6
H	L	H	H	H	H	H	H	7
L	H	H	H	H	H	H	H	8

When REMOTE MODE is set to BINARY											
6p	5p	4p	3p	2p	Loaded	6p	5p	4p	3p	2p	Loaded
/P5	/P4	/P3	/P2	/P1	preset No.	/P5	/P4	/P3	/P2	/P1	preset No.
H	H	H	H	L	1	L	H	H	H	H	16
H	H	H	L	H	2	L	H	H	H	L	17
H	H	H	L	L	3	L	H	H	L	H	18
H	H	L	H	H	4	L	H	H	L	L	19
H	H	L	H	L	5	L	H	L	H	H	20
H	H	L	L	H	6	L	H	L	H	L	21
H	H	L	L	L	7	L	H	L	L	H	22
H	L	H	H	H	8	L	H	L	L	L	23
H	L	H	H	L	9	L	L	H	H	H	24
H	L	H	L	H	10	L	L	H	H	L	25
H	L	H	L	L	11	L	L	H	L	H	26
H	L	L	H	H	12	L	L	H	L	L	27
H	L	L	H	L	13	L	L	L	H	H	28
H	L	L	L	H	14	L	L	L	H	L	29
H	L	L	L	L	15	L	L	L	L	H	30

16.1.3 Transmitting Alarm Signals

An alarm signal is transmitted from pin 14 of the remote control connector when the LV 7330 internal temperature is 80°C or greater, when the fan is broken, or when an error occurs in one of the items set to ON in the menu that appears when you press F•3 ERROR DETECT.
To set the polarity of the alarm signal, follow the procedure below. You can also turn alarm transmission off.

Procedure

STATUS → F•5 ERROR CONFIG → F•1 REMOTE ERR OUT

Settings

OFF:	An alarm signal is not transmitted.
POSITIVE:	A high signal is transmitted when an error occurs.
NEGATIVE:	A low signal is transmitted when an error occurs. This is the default setting.

16.1.4 Displaying a Tally Light

A green tally light appears at the top of the display when pin 13 of the remote connector is connected to a ground.
The tally light only appears when the display mode is set to picture, CINELITE, or CINEZONE.

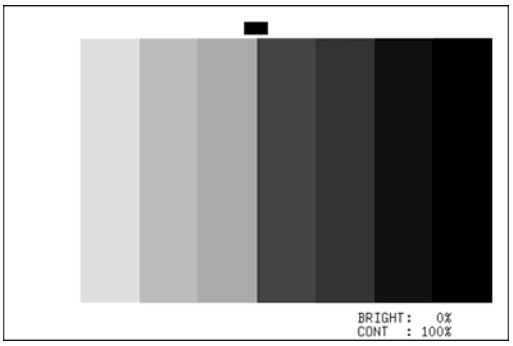


Figure 16-2 Tally light

16.2 TELNET

You can use the Ethernet connector on the rear panel and a PC to perform operations remotely. The operations that you can perform are approximately the same as those that you can perform using the front panel.

16.2.1 Procedure

1 Set the IP address, subnet mask, and gateway on the LV 7330.

These items can be configured in the system settings.
If necessary, ask you network administrator what values you should use.
[Reference] Section 5.4.2, “Configuring Ethernet Settings”

2 Restart the LV 7330.

The IP address, subnet mask, and gateway values that you set become valid.

3 Connect a cable to the LV 7330 ETHER port.

Use a cross cable to connect the LV 7330 to a PC directly. Use a straight cable to connect the LV 7330 to a PC through a hub.

4 Start TELNET.

After you start TELNET, the following display appears.
For information on how to start TELNET, see your PC user's manual.

```
login:
```

5 Enter the login name, and press Enter.

The login name is LV7330. Be sure to use capital letters.
You cannot change the login name.

```
login: LV7330
```

6 Enter the password, and press Enter.

The password is LV7330. Be sure to use capital letters.
You cannot change the password.

```
Password: ******
```

7 Enter commands.

After you enter the password, the following command prompt appears.
Enter commands while referring to sections 16.2.2, “How to Enter Commands,” and 16.2.3, “TELNET Commands.”

```
LV7330>
```

16.2.2 How to Enter Commands

The command syntax is explained below. You can enter commands using uppercase or lowercase letters. To query a setting on the LV 7330, use a question mark as the parameter.

```
LV7330> [Command] + [Space] + [Parameter]
```

Examples of how to enter commands are shown below.

- **Showing the status display**

```
LV7330> STATUS
```

- **Displaying the center marker in the picture display**

```
LV7330> PICTURE:MARKER:CENTER ON
```

- **Querying the vector intensity**

```
LV7330> VECTOR:INTEN:VECTOR ?
```

16.2.3 TELNET Commands

TELNET commands follow the LV 7330 menu structure. For explanations of each command, see the explanations of their corresponding menu items in this manual.

Table 16-3 TELNET Commands

Command	Parameters
SDI	A, B, or ?
REFERENCE	INT, EXT, or ?
PICTURE	—
PICTURE:MARKER:ASPECT_HD	2.35_1, 1.85_1, 1.66_1, 14_9, 13_9, 4_3, OFF, or ?
PICTURE:MARKER:ASPECT_SD	2.35_1, 1.85_1, 1.66_1, 16_9, 14_9, 13_9, OFF, or ?
PICTURE:MARKER:SAFE_ACTION	95, 93, 90, OFF, or ?
PICTURE:MARKER:SAFE_TITLE	88, 80, OFF, or ?
PICTURE:MARKER:CENTER	ON, OFF, or ?
PICTURE:MARKER:SHADOW	ON, OFF, or ?
PICTURE:LINE_SEL:LINE_SELECT	ON, OFF, or ?
PICTURE:LINE_SEL:LINE_NUMBER	1 to 1125, or ?
PICTURE:LINE_SEL:FIELD	1, 2, FRAME, or ?
PICTURE:SIZE	FIT, X1, X2, or ?
PICTURE:CC:SYSTEM	608(708), 608(608), VBI, or ?
PICTURE:CC:CC	OFF, CC1, CC2, CC3, CC4, TEXT1, TEXT2, TEXT3, TEXT4, or ?
PICTURE:DISPLAY:GAMMAT_ERROR	DISP_ON, DISP_OFF, or ?
PICTURE:DISPLAY:RGB	RGB, MONO, RG-, R-B, -GB, R--, -G-, --B, or ?
PICTURE:DISPLAY:SQUEEZE	ON, OFF, or ?
PICTURE:DISPLAY:IP_CONV	ON, OFF, or ?
PICTURE:CHROMA	0 to 150, or ?

Command	Parameters
PICTURE:APERTURE	0 to 200, or ?
PICTURE:BRIGHT	–50 to 50, or ?
PICTURE:CONTRAST	50 to 200, or ?
CINELITE	—
CINELITE:FSTOP	—
CINELITE:DISPLAY	—
CINELITE:P1	?
CINELITE:P2	?
CINELITE:P3	?
CINELITE:DISPLAY:LINE_NUMBER	1 to 1125, or ?
CINELITE:DISPLAY:SAMPLE	0 to 2749, or ?
CINELITE:DISPLAY:MEAS_POS	P1, P2, P3, or ?
CINELITE:DISPLAY:MEAS_SIZE	1X1, 3X3, 9X9, or ?
CINELITE:DISPLAY:MEAS_DISP	P1P2P3, P1P2--, P1--P3, --P2P3, P1----, --P2-- , ----P3, or ?
CINELITE:FSTOP:REF_SET	—
CINELITE:DISPLAY:%/RGB	LEVEL%, RGB%, RGB255, or ?
CINELITE:ADVANCE	OFF, P+V, P+W, P+V+W, or ?
CINELITE:GAMMA	0.45, USER-1, USER-2, USER-3, USER-A, USER-B, USER-C, USER-D, USER-E, or ?
CINELITE:CAL:TABLE_CLEAR	—
CINELITE:CAL:DATA_CLEAR	—
CINELITE:CAL:SET	—
CINELITE:CAL:CAL_F	22.0, 16.0, 11.0, 8.0, 5.6, 4.0, 2.8, 2.0, or ?
CINELITE:CAL2:TBL_CLR	—
CINELITE:CAL2:REGAMMA	ON, OFF, or ?
CINEZONE	—
CINEZONE:MODE	ZONE, SEARCH, or ?
CINEZONE:ZONE_DISPLAY	LINEAR, STEP, or ?
CINEZONE:%DISPLAY	OFF, ON, or ?
CINEZONE:DISPLAY	—
CINEZONE:SEARCH:LEVEL	–7.3 to 109.4, or ?
CINEZONE:SEARCH:RANGE	0.5 to 100.0, or ?
CINEZONE:UPPER	–6.3 to 109.4, or ?
CINEZONE:LOWER	–7.3 to 108.4, or ?
WFM	—
WFM:INTEN:WFM	–128 to 127, or ?
WFM:INTEN:SCALE	–8 to 7, or ?
WFM:GAIN:VAR	CAL, VAR, or ?
WFM:GAIN:MAG	1, 5, or ?
WFM:GAIN:FILTER	FLAT, LOW_PASS, or ?
WFM:GAIN:C.FILTER	FLAT, FLAT+LUM, LUMA, or ?
WFM:SWEEP:SWEEP	H, V, or ?
WFM:SWEEP:H_SWEEP	1H, 2H, or ?
WFM:SWEEP:V_SWEEP	1V, 2V, or ?

Command	Parameters
WFM:SWEEP:FIELD	1, 2, or ?
WFM:SWEEP:H_MAG	1, 10, 20, ACTIVE, BLANK, or ?
WFM:SWEEP:V_MAG	1, 20, 40, or ?
WFM:LINE_SEL:LINE_SELECT	ON, OFF, or ?
WFM:LINE_SEL:FIELD	1, 2, FRAME, or ?
WFM:LINE_SEL:LINE_NUMBER	1 to 1125, or ?
WFM:COLOR:MATRIX	YCBCR, GBR, RGB, COMPOSIT, or ?
WFM:COLOR:YGBR	ON, OFF, or ?
WFM:COLOR:YRGB	ON, OFF, or ?
WFM:COLOR:GBR_COLOR	ON, OFF, or ?
WFM:COLOR:RGB_COLOR	ON, OFF, or ?
WFM:COLOR:SETUP	0, 7.5, or ?
WFM:SCALE:UNIT	V%, V, %, 3FF, 1023, or ?
WFM:SCALE:COLOR75P	ON, OFF, or ?
WFM:EAV_SAV	PASS, REMOVE, or ?
WFM:TIMING	NORMAL, PASS, or ?
WFM:MODE	OVERLAY, PARADE, TIMING, or ?
WFM:DISPLAY:CH1	ON, OFF, or ?
WFM:DISPLAY:CH2	ON, OFF, or ?
WFM:DISPLAY:CH3	ON, OFF, or ?
VECTOR	—
VECTOR:INTEN:VECTOR	–128 to 127, or ?
VECTOR:INTEN:SCALE	–8 to 7, or ?
VECTOR:INTEN:IQ	ON, OFF, or ?
VECTOR:INTEN:MARKER	ON, OFF, or ?
VECTOR:GAIN:VAR	CAL, VAR, or ?
VECTOR:GAIN:MAG	1, 5, IQ-MAG, or ?
VECTOR:LINE_SEL:LINE_SELECT	ON, OFF, or ?
VECTOR:LINE_SEL:FIELD	1, 2, FRAME, or ?
VECTOR:LINE_SEL:LINE_NUMBER	1 to 1125, or ?
VECTOR:COLOR:MATRIX	COMPONET, COMPOSIT, or ?
VECTOR:COLOR:SETUP	0, 7.5, or ?
VECTOR:COLOR:COLOR_BAR	100%, 75%, or ?
VECTOR:EXTREF_PHASE:SDI_NUMBER	1, 2, 3, 4, 5, 6, 7, 8, or ?
VECTOR:EXTREF_PHASE:SDI_MEMORY	—
VECTOR:EXTREF_PHASE:MEMORY_CLEAR	—
VECTOR:EXTREF_PHASE:USER_REF_SET	—
VECTOR:EXTREF_PHASE:REF_DEFAULT	—
VECTOR:DISPLAY	VECTOR, 5BAR, EXTPHASE, or ?
MULTI	—
MULTI:MODE	4SCREEN, PIC_WFM, WFM_VEC, WFM_PIC, WFM_AUD, WFM_LVL, PIC+WFM, PIC+VECT, or ?
MULTI:UPPER	VECTOR, AUDIO, or ?
MULTI:LOWER	STATUS, AUD_LVL, AUD_LISS, AUD_MLIS,

Command	Parameters
	5BAR, or ?
AUDIO	—
AUDIO:MODE	SOUND, LISSAJOU, MLT_LISS, VALUE, or ?
AUDIO:GROUP:1ST	1, 2, 3, 4, or ?
AUDIO:GROUP:2ND	1, 2, 3, 4, or ?
AUDIO:SOUND:AUDIO	–8 to 7, or ?
AUDIO:SOUND:SCALE	–8 to 7, or ?
AUDIO:SOUND:LISSAJOU	X-Y, MATRIX, or ?
AUDIO:SOUND:SURROUND	3-1, 3-2, 3-2-2, or ?
AUDIO:SOUND:LISSA_L	1ST-1, 1ST-2, 1ST-3, 1ST-4, 2ND-1, 2ND-2, 2ND-3, 2ND-4, or ?
AUDIO:SOUND:LISSA_R	1ST-1, 1ST-2, 1ST-3, 1ST-4, 2ND-1, 2ND-2, 2ND-3, 2ND-4, or ?
AUDIO:SOUND:GAIN	1, 0.5, 2, 10, AUTO, or ?
AUDIO:METER:REF	–20, –18, –12, –9, or ?
AUDIO:METER:RANGE	60, 90, AVERAGE, LOUDNESS, or ?
AUDIO:METER:SCALE	TYPE-A, TYPE-B, or ?
AUDIO:METER:PEAKHOLD	0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, HOLD, or ?
AUDIO:PHONES:PHONES_OUT	ON, OFF, or ?
AUDIO:PHONES:VOLUME	0 to 128, or ?
AUDIO:PHONES:L_CH	1ST-1, 1ST-2, 1ST-3, 1ST-4, 2ND-1, 2ND-2, 2ND-3, 2ND-4, or ?
AUDIO:PHONES:R_CH	1ST-1, 1ST-2, 1ST-3, 1ST-4, 2ND-1, 2ND-2, 2ND-3, 2ND-4, or ?
AUDIO:MAP:L	1ST-1, 1ST-2, 1ST-3, 1ST-4, 2ND-1, 2ND-2, 2ND-3, 2ND-4, or ?
AUDIO:MAP:R	1ST-1, 1ST-2, 1ST-3, 1ST-4, 2ND-1, 2ND-2, 2ND-3, 2ND-4, or ?
AUDIO:MAP:SL	1ST-1, 1ST-2, 1ST-3, 1ST-4, 2ND-1, 2ND-2, 2ND-3, 2ND-4, or ?
AUDIO:MAP:SR	1ST-1, 1ST-2, 1ST-3, 1ST-4, 2ND-1, 2ND-2, 2ND-3, 2ND-4, or ?
AUDIO:MAP:C	1ST-1, 1ST-2, 1ST-3, 1ST-4, 2ND-1, 2ND-2, 2ND-3, 2ND-4, or ?
AUDIO:MAP:LFE	1ST-1, 1ST-2, 1ST-3, 1ST-4, 2ND-1, 2ND-2, 2ND-3, 2ND-4, or ?
AUDIO:MAP:RL	1ST-1, 1ST-2, 1ST-3, 1ST-4, 2ND-1, 2ND-2, 2ND-3, 2ND-4, or ?
AUDIO:MAP:RR	1ST-1, 1ST-2, 1ST-3, 1ST-4, 2ND-1, 2ND-2, 2ND-3, 2ND-4, or ?
STATUS	—
MAKE	STATUS (See section 16.3, “FTP”)
STATUS:LOG	—
MAKE	LOG (See section 16.3, “FTP”)

Command	Parameters
STAUTS:LOG:LOG	START, STOP, or ?
STAUTS:LOG:CLEAR	—
STAUTS:LOG:MODE	OVER_WR, STOP, or ?
STATUS:DUMP	—
MAKE	DUMP (See section 16.3, “FTP”)
STATUS:DUMP:MODE	RUN, HOLD, or ?
STATUS:DUMP:DISPLAY	SERIAL, COMPO, BINARY, or ?
STATUS:DUMP:EAV	—
STATUS:DUMP:SAV	—
STATUS:DUMP:LINE_NUMBER	1 to 1125, or ?
STATUS:DUMP:SAMPLE	0 to 2749, or ?
STATUS:AUDIO	—
STATUS:AUDIO:CH	1ST-1, 1ST-2, 1ST-3, 1ST-4, 2ND-1, 2ND-2, 2ND-3, 2ND-4, or ?
STATUS:EDH	—
STATUS:ANC:FORMAT:PACKET	SMPTE, ARIB, or ?
STATUS:ANC:VANC:CCAP:DISPLAY	TEXT, DUMP, or ?
STATUS:ANC:VANC:CCAP:CAP_NUMBER	1, 2, 3, or ?
STATUS:ANC:VANC:CCAP:DUMP_MODE	HEX, BINARY, or ?
STATUS:ANC:VANC:NETQ1:DISPLAY	TEXT, DUMP, or ?
STATUS:ANC:VANC:NETQ1:DUMP_MODE	HEX, BINARY, or ?
STATUS:ANC:VANC:NETQ2:Q1	ON, OFF, or ?
STATUS:ANC:VANC:NETQ2:Q2	ON, OFF, or ?
STATUS:ANC:VANC:NETQ2:Q3	ON, OFF, or ?
STATUS:ANC:VANC:NETQ2:Q4	ON, OFF, or ?
STATUS:ANC:VANC:NETQ2:Q5	ON, OFF, or ?
STATUS:ANC:VANC:NETQ3:Q6	ON, OFF, or ?
STATUS:ANC:VANC:NETQ3:Q7	ON, OFF, or ?
STATUS:ANC:VANC:NETQ3:Q8	ON, OFF, or ?
STATUS:ANC:VANC:NETQ3:Q9	ON, OFF, or ?
STATUS:ANC:VANC:NETQ3:Q10	ON, OFF, or ?
STATUS:ANC:VANC:NETQ4:Q11	ON, OFF, or ?
STATUS:ANC:VANC:NETQ4:Q12	ON, OFF, or ?
STATUS:ANC:VANC:NETQ4:Q13	ON, OFF, or ?
STATUS:ANC:VANC:NETQ4:Q14	ON, OFF, or ?
STATUS:ANC:VANC:NETQ4:Q15	ON, OFF, or ?
STATUS:ANC:VANC:NETQ5:Q16	ON, OFF, or ?
STATUS:ANC:VANC:NETQ5:Q17	ON, OFF, or ?
STATUS:ANC:VANC:NETQ5:Q18	ON, OFF, or ?
STATUS:ANC:VANC:NETQ5:Q19	ON, OFF, or ?
STATUS:ANC:VANC:NETQ5:Q20	ON, OFF, or ?
STATUS:ANC:VANC:NETQ6:Q21	ON, OFF, or ?
STATUS:ANC:VANC:NETQ6:Q22	ON, OFF, or ?
STATUS:ANC:VANC:NETQ6:Q23	ON, OFF, or ?
STATUS:ANC:VANC:NETQ6:Q24	ON, OFF, or ?

Command	Parameters
STATUS:ANC:VANC:NETQ6:Q25	ON, OFF, or ?
STATUS:ANC:VANC:NETQ7:Q26	ON, OFF, or ?
STATUS:ANC:VANC:NETQ7:Q27	ON, OFF, or ?
STATUS:ANC:VANC:NETQ7:Q28	ON, OFF, or ?
STATUS:ANC:VANC:NETQ7:Q29	ON, OFF, or ?
STATUS:ANC:VANC:NETQ7:Q30	ON, OFF, or ?
STATUS:ANC:VANC:NETQ8:Q31	ON, OFF, or ?
STATUS:ANC:VANC:NETQ8:Q32	ON, OFF, or ?
STATUS:ERROR:REMOTE_ERR	POSITIVE, NEGATIVE, OFF, or ?
STATUS:ERROR:RATE	V_RATE, 1SEC, or ?
STATUS:ERROR:DETECT:TRS	ON, OFF, or ?
STATUS:ERROR:DETECT:LINE	ON, OFF, or ?
STATUS:ERROR:DETECT:CRC	ON, OFF, or ?
STATUS:ERROR:DETECT:EDH	ON, OFF, or ?
STATUS:ERROR:DETECT:PARITY	ON, OFF, or ?
STATUS:ERROR:DETECT:CHECKSUM	ON, OFF, or ?
STATUS:ERROR:DETECT:GAMUT	ON, OFF, or ?
STATUS:ERROR:DETECT:C.GAMUT	ON, OFF, or ?
STATUS:ERROR:DETECT:BCH	ON, OFF, or ?
STATUS:ERROR:DETECT:AUDIO_CRC	ON, OFF, or ?
STATUS:ERROR:LEVEL:GAMUT_FILTER_HD	1M, 2.8M, OFF, or ?
STATUS:ERROR:LEVEL:GAMUT_FILTER_SD	1M, OFF, or ?
STATUS:ERROR:LEVEL:UNIT	%, mV, or ?
STATUS:ERROR:LEVEL:GAMUT:UPPER	90.8 to 109.4, or ? (when UNIT is %) 635.6 to 765.8, or ? (when UNIT is mV)
STATUS:ERROR:LEVEL:GAMUT:LOWER	–7.2 to 6.1, or ? (when UNIT is %) –50.4 to 42.7, or ? (when UNIT is mV)
STATUS:ERROR:LEVEL:C.GAMUT:UPPER	90.0 to 135.0, or ? (when UNIT is %) 630.0 to 963.9, or ? (when UNIT is mV)
STATUS:ERROR:LEVEL:C.GAMUT:LOWER	–40.0 to –20.0, or ? (when UNIT is %) –285.6 to –140.0, or ? (when UNIT is mV)
STATUS:ERROR:DISPLAY	REFRESH, HOLD, or ?
STATUS:RESET	—
CAPTURE	—
CAPTURE:HOLD	—
CAPTURE:DISPLAY	REAL, HOLD, BOTH, or ?
CAPTURE:TYPE_SELECT	BMP&BSX, BMP, BSX, or ?
SYSTEM:FORMAT:MODE	AUTO, MANUAL, or ?
FORMAT	1080I/60, 1080I/59.94, 1080I/50, 1080P/30, 1080P/29.97, 1080P/25, 1080P/24, 1080P/23.98, 1080PSF/30, 1080PSF/29.97, 1080PSF/25, 1080PSF/24, 1080PSF/23.98, 720P/60, 720P/59.94, 720P/50, 720P/30, 720P/29.97, 720P/25, 720P/24, 720P/23.98, 525I/59.94, 625I/50, or ?

Command	Parameters
SYSTEM:FORMAT:LINK	SINGLE, DUAL-A, or ?
SYSTEM:FORMAT:COMPOSIT_FORMAT	AUTO, NTSC, PAL, or ?
SYSTEM:AUDIO_SOURCE	AES/EBU, SDI, or ?
SYSTEM:DISPLAY:INFO:FORMAT	ON, FREQ, OFF, or ?
SYSTEM:DISPLAY:INFO:DATE	Y/M/D, M/D/Y, D/M/Y, OFF, or ?
SYSTEM:DISPLAY:INFO:TIME	REAL, TIMECODE, OFF, or ?
SYSTEM:DISPLAY:INFO:COLOR	ON, OFF, or ?
SYSTEM:DISPLAY:INFO:TIMECODE	VITC, LTC, D-VITC, or ?
SYSTEM:DISPLAY:ASPECT	4_3, 16_9, 16_10, or ?
SYSTEM:DATE	2000 to 2200, 1 to 12, 1 to 31, 0 to 23, 0 to 59, 0 to 59, or ? (Enter the year, month, day, hour, minute, and second, in that order, separated by commas.)
SYSTEM:INIT	—
RECALL	1 to 30

16.3 FTP

You can use the Ethernet connector on the rear panel to perform file transfer operations such as dumping data from the LV 7330 to a PC.

16.3.1 Procedure

1 Configure the LV 7330 Ethernet settings, and connect an Ethernet cable.

For more detailed instructions, see steps 1 through 3 in section 16.2.1, “Procedure.”

2 Start FTP.

After you start FTP, the following display appears.
For information on how to start FTP, see your PC user's manual.

```
User:
```

3 Enter the user name, and press Enter.

The user name is LV7330. Be sure to use capital letters.
You cannot change the user name.

```
User: LV7330
```

4 Enter the password, and press Enter.

The password is LV7330. Be sure to use capital letters.
You cannot change the password.

```
Password: ******
```

5 Enter commands.

After you enter the password, the following command prompt appears.
Enter commands while referring to sections 16.3.2, “How to Enter Commands,” and 16.3.3, “FTP Commands.”

```
ftp>
```

16.3.2 How to Enter Commands

To transfer files through FTP, you must run a MAKE or CAPTURE command through TELNET before you execute FTP commands.
The FTP command syntax is explained below. You can enter commands using uppercase or lowercase letters.

```
ftp> [Command] + [Space] + [Parameter 1] + [Space] + [Parameter 2]
```

Examples of how to enter commands are shown below.

- **Transferring a data dump**

1. Use the following TELNET command to save a data dump in the LV 7330 internal memory.

```
LV7330> MAKE DUMP
```

2. Use the following FTP command to transfer the data dump to “DUMP.TXT” on the D drive.

```
ftp> GET DUMP.TXT D:\DUMP.TXT
```

16.3.3 FTP Commands

The TELNET MAKE/CAPTURE commands and the FTP commands are listed in the tables below.

Table 16-4 MAKE/CAPTURE commands

Command	Parameter	Description
MAKE	STATUS	Saves the top level of the status display in the internal memory.
	LOG	Saves the event log in the internal memory.
	DUMP	Saves a data dump in the internal memory.
CAPTURE	-	Saves screen capture data in the internal memory.

Table 16-5 FTP commands

Command	Parameter 1	Parameter 2	Description
GET	STATUS.TXT	Directory name\file name.txt	The top level of the status display is transferred as a text file.
	LOG.TXT	Directory name\file name.txt	The event log is transferred as a text file.
	DUMP.TXT	Directory name\file name.txt	A data dump is transferred as a text file.
	CAPTURE.BMP	Directory name\file name.bmp	Screen capture data is transferred as a bitmap file.

16.4 SNMP

By using SNMP (Simple Network Management Protocol), you can control an LV 7330 from SNMP managers. Additionally, you can also notify the SNMP managers of SDI signal errors that the LV 7330 generates.

16.4.1 Procedure

1. **Configure the LV 7330 Ethernet settings, and connect an Ethernet cable.**

   See steps 1 through 3 in section 16.2.1, "Procedure" and also section 5.4.3, "Setting the SNMP Mode."

2. **Start the SNMP managers.** (***1**)

   To control the LV 7330 over SNMP, you need an SNMP manager (not included).

3. **Check that the SNMP managers can perform GET and SET operations.**

   For details on how to use the SNMP managers, see their instruction manuals.

4. **Set the following MIB items to the SNMP managers' IP addresses.**

   Perform the SET operation from the SNMP managers.

   1.3.6.1.4.1.leader(20111).lv7330(16).lv7330ST1(1).l16trapTBL(13).l16trapManagerIp(2).0

5. **Restart the LV 7330.**

6. **When the LV 7330 starts, it transmits the standard TRAP "coldStart(0)." Check that this is received by the SNMP managers.**

*1

SNMP Version	SNMPv1	
Community Names	Read community:	LDRUser
	Write community:	LDRAdm
	TRAP community:	LDRUser
SMI Definitions	IMPORTS	
	MODULE-IDENTITY, OBJECT-TYPE, NOTIFICATION-TYPE, enterprises	
	FROM SNMPv2-SMI	
	DisplayString	
	FROM SNMPv2-TC	
	OBJECT-GROUP, MODULE-COMPLIANCE	
	FROM SNMPv2-CONF;	

16.4.2 MIB

This section explains the MIB (Management Information Base) that the LV 7330 uses.
In the tables that follow, "ACCESS" has the following meanings:

ACCESS	Description
R/O	Information that can only be retrieved from the SNMP managers.
R/W	Information that can be retrieved and set from the SNMP managers.
R/WO	Information that can be retrieved and set from the SNMP managers. (However, the retrieved data consists of meaningless fixed values.)

16.4.3 Standard MIB

The LV 7330 uses the following standard MIBs:
• RFC1213 (MIB-II)
• RFC1354 (IP Forwarding Table MIB)

Note that in this version, there are objects that are not implemented.
In the tables that follow, “SUPPORT” has the following meanings:

SUPPORT	Description
○	Supports the MIB object as defined by the standard.
▲	Reading and writing are possible according to the standard, but the LV 7330 only supports reading.
×	Not supported.

● system group

MIB	OID	SYNTAX	ACCESS	SUPPORT
sysDescr	system.1	DisplayString	R/O	○
sysObjectID	system.2	ObjectID	R/O	○
sysUpTime	system.3	TimeTicks	R/O	○
sysContact (*1)	system.4	DisplayString	R/W	○
sysName (*1)	system.5	DisplayString	R/W	○
sysLocation (*1)	system.6	DisplayString	R/W	○
sysServices	system.7	INTEGER	R/O	○

*1 Set using up to 40 bytes.

● interface group

MIB	OID	SYNTAX	ACCESS	SUPPORT
ifNumber	interfaces.1	INTEGER	R/O	○
ifTable	interfaces.2	Aggregate	-	○
ifEntry	ifTable.1	Aggregate	-	○
ifIndex	ifEntry.1	INTEGER	R/O	○
ifDescr	ifEntry.2	DisplayString	R/O	○
ifType	ifEntry.3	INTEGER	R/O	○
ifMtu	ifEntry.4	INTEGER	R/O	○
ifSpeed	ifEntry.5	Gauge	R/O	○
ifPhysAddress	ifEntry.6	OctetString	R/O	○
ifAdminStatus	ifEntry.7	INTEGER	R/O	▲
ifOperStatus	ifEntry.8	INTEGER	R/O	▲
ifLastChange	ifEntry.9	TimeTicks	R/O	○
ifInOctets	ifEntry.10	Counter	R/O	○
ifInUcastPkts	ifEntry.11	Counter	R/O	○
ifInNUcastPkts	ifEntry.12	Counter	R/O	○
ifInDiscards	ifEntry.13	Counter	R/O	○
ifInErrors	ifEntry.14	Counter	R/O	○
ifInUnknownProtos	ifEntry.15	Counter	R/O	○
ifOutOctets	ifEntry.16	Counter	R/O	○

MIB	OID	SYNTAX	ACCESS	SUPPORT
ifOutUcastPkts	ifEntry.17	Counter	R/O	○
ifOutNUcastPkts	ifEntry.18	Counter	R/O	○
ifOutDiscards	ifEntry.19	Counter	R/O	○
ifOutErrors	ifEntry.20	Counter	R/O	○
ifOutQLen	ifEntry.21	Gauge	R/O	○
ifSpecific	ifEntry.22	ObjectID	R/O	○

- **ip group**

MIB	OID	SYNTAX	ACCESS	SUPPORT
ipForwarding	ip.1	INTEGER	R/O	○
ipDefaultTTL	ip.2	INTEGER	R/O	○
ipInReceives	ip.3	Counter	R/O	○
ipInHdrErrors	ip.4	Counter	R/O	○
ipInAddrErrors	ip.5	Counter	R/O	○
ipForwDatagrams	ip.6	Counter	R/O	○
ipInUnknownProtos	ip.7	Counter	R/O	○
ipInDiscards	ip.8	Counter	R/O	○
ipInDelivers	ip.9	Counter	R/O	○
ipOutRequests	ip.10	Counter	R/O	○
ipOutDiscards	ip.11	Counter	R/O	○
ipOutNoRoutes	ip.12	Counter	R/O	○
ipReasmTimeout	ip.13	INTEGER	R/O	○
ipReasmReqds	ip.14	Counter	R/O	○
ipReasmOKs	ip.15	Counter	R/O	○
ipReasmFails	ip.16	Counter	R/O	○
ipFragOKs	ip.17	Counter	R/O	○
ipFragFails	ip.18	Counter	R/O	○
ipFragCreates	ip.19	Counter	R/O	○
ipAddrTable	ip.20	Aggregate	-	○
ipAddrEntry	ipAddrTable.1	Aggregate	-	○
ipAdEntAddr	ipAddrEntry.1	IpAddress	R/O	○
ipAdEntIfIndex	ipAddrEntry.2	INTEGER	R/O	○
ipAdEntNetMask	ipAddrEntry.3	IpAddress	R/O	○
ipAdEntBcastAddr	ipAddrEntry.4	INTEGER	R/O	○
ipAdEntReasmMaxSize	ipAddrEntry.5	INTEGER	R/O	○
ipNetToMediaTable	ip.22	Aggregate	-	○
ipNetToMediaEntry	ipNetToMediaTable.1	Aggregate	-	○
ipNetToMediaIfIndex	ipNetToMediaEntry.1	INTEGER	R/O	▲
ipNetToMediaPhysAddress	ipNetToMediaEntry.2	OctetString	R/O	▲
ipNetToMediaNetAddress	ipNetToMediaEntry.3	IpAddress	R/O	▲
ipNetToMediaType	ipNetToMediaEntry.4	INTEGER	R/O	▲
ipRoutingDiscards	ip.23	Counter	R/O	○
ipForward	ip.24	Aggregate	-	○
ipForwardNumber	ipForward .1	Gauge	R/O	○
ipForwardTable	ipForward .2	Aggregate	-	○

MIB	OID	SYNTAX	ACCESS	SUPPORT
ipForwardDest	ipForwardTable.1	IpAddress	R/O	○
ipForwardMask	ipForwardTable.1	IpAddress	R/O	○
ipForwardPolicy	ipForwardTable.1	INTEGER	R/O	×
ipForwardNextHop	ipForwardTable.1	IpAddress	R/O	○
ipForwardIfIndex	ipForwardTable.1	INTEGER	R/O	○
ipForwardType	ipForwardTable.1	INTEGER	R/O	×
ipForwardProto	ipForwardTable.1	INTEGER	R/O	×
ipForwardAge	ipForwardTable.1	INTEGER	R/O	×
ipForwardInfo	ipForwardTable.1	ObjectID	R/O	×
ipForwardNextHopAS	ipForwardTable.1	INTEGER	R/O	×
ipForwardMetric1	ipForwardTable.1	INTEGER	R/O	×
ipForwardMetric2	ipForwardTable.1	INTEGER	R/O	×
ipForwardMetric3	ipForwardTable.1	INTEGER	R/O	×
ipForwardMetric4	ipForwardTable.1	INTEGER	R/O	×
ipForwardMetric5	ipForwardTable.1	INTEGER	R/O	×

- **icmp group**

MIB	OID	SYNTAX	ACCESS	SUPPORT
icmpInMsgs	icmp.1	Counter	R/O	○
icmpInErrors	icmp.2	Counter	R/O	○
icmpInDestUnreachs	icmp.3	Counter	R/O	○
icmpInTimeExcds	icmp.4	Counter	R/O	○
icmpInParmProbs	icmp.5	Counter	R/O	○
icmpInSrcQuenchs	icmp.6	Counter	R/O	○
icmpInRedirects	icmp.7	Counter	R/O	○
icmpInEchos	icmp.8	Counter	R/O	○
icmpInEchoReps	icmp.9	Counter	R/O	○
icmpInTimestamps	icmp.10	Counter	R/O	○
icmpInTimestampReps	icmp.11	Counter	R/O	○
icmpInAddrMasks	icmp.12	Counter	R/O	○
icmpInAddrMaskReps	icmp.13	Counter	R/O	○
icmpOutMsgs	icmp.14	Counter	R/O	○
icmpOutErrors	icmp.15	Counter	R/O	○
icmpOutDestUnreachs	icmp.16	Counter	R/O	○
icmpOutTimeExcds	icmp.17	Counter	R/O	○
icmpOutParmProbs	icmp.18	Counter	R/O	○
icmpOutSrcQuenchs	icmp.19	Counter	R/O	○
icmpOutRedirects	icmp.20	Counter	R/O	○
icmpOutEchos	icmp.21	Counter	R/O	○
icmpOutEchoReps	icmp.22	Counter	R/O	○
icmpOutTimestamps	icmp.23	Counter	R/O	○
icmpOutTimestampReps	icmp.24	Counter	R/O	○
icmpOutAddrMasks	icmp.25	Counter	R/O	○
icmpOutAddrMaskReps	icmp.26	Counter	R/O	○

● tcp group

MIB	OID	SYNTAX	ACCESS	SUPPORT
tcpRtoAlgorithm	tcp.1	INTEGER	R/O	○
tcpRtoMin	tcp.2	INTEGER	R/O	○
tcpRtoMax	tcp.3	INTEGER	R/O	○
tcpMaxConn	tcp.4	INTEGER	R/O	○
tcpActiveOpens	tcp.5	Counter	R/O	○
tcpPassiveOpens	tcp.6	Counter	R/O	○
tcpAttemptFails	tcp.7	Counter	R/O	○
tcpEstabResets	tcp.8	Counter	R/O	○
tcpCurrEstab	tcp.9	Gauge	R/O	○
tcpInSegs	tcp.10	Counter	R/O	○
tcpOutSegs	tcp.11	Counter	R/O	○
tcpRetransSegs	tcp.12	Counter	R/O	○
tcpConnTable	tcp.13	Aggregate	-	○
tcpConnEntry	tcpConnTable.1	Aggregate	-	○
tcpConnState	tcpConnEntry.1	INTEGER	R/O	▲
tcpConnLocalAddress	tcpConnEntry.2	IpAddress	R/O	○
tcpConnLocalPort	tcpConnEntry.3	INTEGER	R/O	○
tcpConnRemAddress	tcpConnEntry.4	IpAddress	R/O	○
tcpConnRemPort	tcpConnEntry.5	INTEGER	R/O	○
tcpInErrs	tcp.14	Counter	R/O	○
tcpOutRsts	tcp.15	Counter	R/O	○

● udp group

MIB	OID	SYNTAX	ACCESS	SUPPORT
udpInDatagrams	udp.1	Counter	R/O	○
udpNoPorts	udp.2	Counter	R/O	○
udpInErrors	udp.3	Counter	R/O	○
udpOutDatagrams	udp.4	Counter	R/O	○
udpTable	udp.5	Aggregate	-	○
udpEntry	udpTable.1	Aggregate	-	○
udpLocalAddress	udpEntry.1	IpAddress	R/O	○
udpLocalPort	udpEntry.2	INTEGER	R/O	○

● **snmp group**

MIB	OID	SYNTAX	ACCESS	SUPPORT
snmpInPkts	snmp.1	Counter	R/O	○
snmpOutPkts	snmp.2	Counter	R/O	○
snmpInBadVersions	snmp.3	Counter	R/O	○
snmpInBadCommunityNames	snmp.4	Counter	R/O	○
snmpInBadCommunityUses	snmp.5	Counter	R/O	○
snmpInASNParseErrs	snmp.6	Counter	R/O	○
snmpInTooBigs	snmp.8	Counter	R/O	○
snmpInNoSuchNames	snmp.9	Counter	R/O	○
snmpInBadValues	snmp.10	Counter	R/O	○
snmpInReadOnlys	snmp.11	Counter	R/O	○
snmpInGenErrs	snmp.12	Counter	R/O	○
snmpInTotalReqVars	snmp.13	Counter	R/O	○
snmpInTotalSetVars	snmp.14	Counter	R/O	○
snmpInGetRequests	snmp.15	Counter	R/O	○
snmpInGetNexts	snmp.16	Counter	R/O	○
snmpInSetRequests	snmp.17	Counter	R/O	○
snmpInGetResponses	snmp.18	Counter	R/O	○
snmpInTraps	snmp.19	Counter	R/O	○
snmpOutTooBigs	snmp.20	Counter	R/O	○
snmpOutNoSuchNames	snmp.21	Counter	R/O	○
snmpOutBadValues	snmp.22	Counter	R/O	○
snmpOutGenErrs	snmp.24	Counter	R/O	○
snmpOutGetRequests	snmp.25	Counter	R/O	○
snmpOutGetNexts	snmp.26	Counter	R/O	○
snmpOutSetRequests	snmp.27	Counter	R/O	○
snmpOutGetResponses	snmp.28	Counter	R/O	○
snmpOutTraps	snmp.29	Counter	R/O	○
snmpEnableAuthenTraps	snmp.30	IpAddress	R/W	○

16.4.4 Enterprise MIB

- **MIB File**

  Download the file on the LV 7330 using FTP.
  The file name is “lv7330.my”.

- **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 Structure**

```
lv7330          OBJECT IDENTIFIER ::= { leader 16 }
lv7330ST1       OBJECT IDENTIFIER ::= { lv7330 1 }
l16panelTBL     OBJECT IDENTIFIER ::= { lv7330ST1 1 }
l16wfmTBL       OBJECT IDENTIFIER ::= { lv7330ST1 2 }
l16vectorTBL    OBJECT IDENTIFIER ::= { lv7330ST1 3 }
l16pictureTBL   OBJECT IDENTIFIER ::= { lv7330ST1 4 }
l16cineliteTBL  OBJECT IDENTIFIER ::= { lv7330ST1 5 }
l16cinezoneTBL  OBJECT IDENTIFIER ::= { lv7330ST1 6 }
l16audioTBL     OBJECT IDENTIFIER ::= { lv7330ST1 7 }
l16multiTBL     OBJECT IDENTIFIER ::= { lv7330ST1 8 }
l16statusTBL    OBJECT IDENTIFIER ::= { lv7330ST1 9 }
l16captureTBL   OBJECT IDENTIFIER ::= { lv7330ST1 10 }
l16filesTBL     OBJECT IDENTIFIER ::= { lv7330ST1 11 }
l16systemTBL    OBJECT IDENTIFIER ::= { lv7330ST1 12 }
l16trapTBL      OBJECT IDENTIFIER ::= { lv7330ST1 13 }
```

- **l16panelTBL(1) group**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l16plSDI	l16panelTBL.2	INTEGER	R/W	0=a 1=b
l16plReference	l16panelTBL.3	INTEGER	R/W	0=int 1=ext
l16plDisplay	l16panelTBL.6	INTEGER	R/W	0=wfm 1=vector 2=audio 3=picture 4=multi 5=status 6=capture 7=system 8=memory 10=recall 11=cinelite 12=cinezone

- **l16wfmTBL(2) group**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l16wfmIntenTBL	l16wfmTBL.1	Aggregate	-	-
l16wfmIntenWfm	l16wfmIntenTBL.1	INTEGER	R/W	-128 - 127
l16wfmIntenSCALE	l16wfmIntenTBL.2	INTEGER	R/W	-8 - 7
l16wfmGainTBL	l16wfmTBL.2	Aggregate	-	-
l16wfmGainVAR	l16wfmGainTBL.1	INTEGER	R/W	0=cal 1=var
l16wfmGainMAG	l16wfmGainTBL.2	INTEGER	R/W	0=x1 1=x5
l16wfmGainFILTER	l16wfmGainTBL.3	INTEGER	R/W	0=flat 1=lowPass
l16wfmGainCFILTER	l16wfmGainTBL.4	INTEGER	R/W	0=flat 1=flatLum 2=luma
l16wfmSweepTBL	l16wfmTBL.3	Aggregate	-	-
l16wfmSweepSweep	l16wfmSweepTBL.1	INTEGER	R/W	0=h 1=v
l16wfmSweepHSweep	l16wfmSweepTBL.2	INTEGER	R/W	0=sp1H 1=sp2H
l16wfmSweepVSweep	l16wfmSweepTBL.3	INTEGER	R/W	0=sp1V 1=sp2V
l16wfmSweepField	l16wfmSweepTBL.4	INTEGER	R/W	0=field1 1=field2 2=frame
l16wfmSweepHMAG	l16wfmSweepTBL.5	INTEGER	R/W	0=x1 1=x10

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				2=x20 3=active 4=blank
l16wfmSweepVMAG	l16wfmSweepTBL.6	INTEGER	R/W	0=x1 1=x20 2=x40
l16wfmLineSelectTBL	l16wfmTBL.4	Aggregate	-	-
l16wfmLineSelect	l16wfmLineSelectTBL.1	INTEGER	R/W	0=off 1=on
l16wfmLineSelectNumber	l16wfmLineSelectTBL.2	INTEGER	R/W	1 - 1125
l16wfmLineSelectField	l16wfmLineSelectTBL.3	INTEGER	R/W	0=field1 1=field2 2=frame
l16wfmColorTBL	l16wfmTBL.5	Aggregate	-	-
l16wfmColorMatrix	l16wfmColorTBL.1	INTEGER	R/W	0=ycbcr 1=gbr 2=rgb 3=composite
l16wfmColorYGBR	l16wfmColorTBL.2	INTEGER	R/W	0=off 1=on
l16wfmColorYRGB	l16wfmColorTBL.3	INTEGER	R/W	0=off 1=on
l16wfmColorColorGBR	l16wfmColorTBL.4	INTEGER	R/W	0=off 1=on
l16wfmColorColorRGB	l16wfmColorTBL.5	INTEGER	R/W	0=off 1=on
l16wfmColorSetup	l16wfmColorTBL.6	INTEGER	R/W	0=p0Per 1=p7p5Per
l16wfmScaleTBL	l16wfmTBL.6	Aggregate	-	-
l16wfmScaleUnit	l16wfmScaleTBL.1	INTEGER	R/W	0=hdvsdp 1=hdvsdv 2=hdpsdp 3=y3ff 4=y1023
l16wfmScaleColor	l16wfmScaleTBL.3	INTEGER	R/W	0=white 1=yellow 2=cyan 3=green 4=magenta 5=red 6=blue
l16wfmScaleColor75P	l16wfmScaleTBL.4	INTEGER	R/W	0=off 1=on
l16wfmEavSav	l16wfmTBL.7	INTEGER	R/W	0=remove 1=pass
l16wfmTimingMode	l16wfmTBL.9	INTEGER	R/W	0=normal

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				1=pass
l16wfmMode	l16wfmTBL.10	INTEGER	R/W	0=overlay 1=parade 2=timing
l16wfmDisplayTBL	l16wfmTBL.11	Aggregate	-	-
l16wfmDisplayCH1	l16wfmDisplayTBL.1	INTEGER	R/W	0=off 1=on
l16wfmDisplayCH2	l16wfmDisplayTBL.2	INTEGER	R/W	0=off 1=on
l16wfmDisplayCH3	l16wfmDisplayTBL.3	INTEGER	R/W	0=off 1=on

- **l16vectorTBL(3) group**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l16vecIntenTBL	l16vectorTBL.1	Aggregate	-	-
l16vecIntenVector	l16vecIntenTBL.1	INTEGER	R/W	-128 - 127
l16vecIntenScale	l16vecIntenTBL.2	INTEGER	R/W	-8 - 7
l16vecGainTBL	l16vectorTBL.2	INTEGER	R/W	-
l16vecGainVar	l16vecGainTBL.1	INTEGER	R/W	0=cal 1=val
l16vecGainMag	l16vecGainTBL.2	INTEGER	R/W	0=x1 1=x5 2=iqmag
l16vecLineSelectTBL	l16vectorTBL.3	Aggregate	-	-
l16vecLineSelect	l16vecLineSelectTBL.1	INTEGER	R/W	0=off 1=on
l16vecLineSelectNumber	l16vecLineSelectTBL.2	INTEGER	R/W	1 - 1125
l16vecLineSelectField	l16vecLineSelectTBL.3	INTEGER	R/W	0=field1 1=field2 2=frame
l16vecColorSystemTBL	l16vectorTBL.4	Aggregate	-	-
l16vecColorSystemBar	l16vecColorSystemTBL.1	INTEGER	R/W	0=p100Per 1=p75Per
l16vecColorSystemMatrix	l16vecColorSystemTBL.2	INTEGER	R/W	0=componen 1=composite
l16vecColorSystemSetup	l16vecColorSystemTBL.3	INTEGER	R/W	0=p0Per 1=p7p5Per
l16vecScaleTBL	l16vectorTBL.5	Aggregate	-	-
l16vecScaleColor	l16vecScaleTBL.1	INTEGER	R/W	0=white 1=yellow 2=cyan 3=green 4=magenta 5=red 6=blue

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l16vecScaleIQAXIS	l16vecScaleTBL.2	INTEGER	R/W	0=off 1=on
l16vecScaleMarker	l16vecScaleTBL.3	INTEGER	R/W	0=off 1=on
l16vecSelect	l16vectorTBL.6	INTEGER	R/W	0=vector 1=bar
l16vecExtPhaseTBL	l16vectorTBL.7	Aggregate	-	-
l16vecExtPhaseSdiNumber	l16vecExtPhaseTBL.1	INTEGER	R/W	0=n1 1=n2 2=n3 3=n4 4=n5 5=n6 6=n7 7=n8
l16vecExtPhaseSdiMemory	l16vecExtPhaseTBL.2	INTEGER	R/W	0=ExtPhaseSdiMemory
l16vecExtPhaseMemoryClear	l16vecExtPhaseTBL.3	INTEGER	R/W	0=ExtPhaseMemoryClear
l16vecExtPhaseUserRefSet	l16vecExtPhaseTBL.4	INTEGER	R/W	0=ExtPhaseUserRefSet
l16vecExtPhaseRefDefault	l16vecExtPhaseTBL.5	INTEGER	R/W	0=ExtPhaseRefDefault

- **l16pictureTBL(4) group**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l16picMarkerTBL	l16pictureTBL.1	Aggregate	-	-
l16picMarker43	l16picMarkerTBL.1	INTEGER	R/W	0=hd235-1 1=hd185-1 2=hd166-1 3=hd14-9 4=hd13-9 5=hd4-3 6=off
l16picMarker169	l16picMarkerTBL.2	INTEGER	R/W	0=sd235-1 1=sd185-1 2=sd166-1 3=sd16-9 4=sd14-9 5=sd13-9 6=off
l16picMarkerSafeAction	l16picMarkerTBL.3	INTEGER	R/W	0=sa95 1=sa93 2=sa90 3=off
l16picMarkerSafeTitle	l16picMarkerTBL.4	INTEGER	R/W	0=st88 1=st80 2=off
l16picMarkerCenter	l16picMarkerTBL.5	INTEGER	R/W	0=off

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				1=on
l16picMarkerShadow	l16picMarkerTBL.6	INTEGER	R/W	0=off 1=on
l16picLineSelectTBLl	5pictureTBL.2	Aggregate	-	-
l16picLineSelect	l16picLineSelectTBL.1	INTEGER	R/W	0=off 1=on
l16picLineSelectNumber	l16picLineSelectTBL.2	INTEGER	R/W	1 - 1125
l16picLineSelectField	l16picLineSelectTBL.3	INTEGER	R/W	0=field1 1=field2 2=frame
l16picEtcTBL	l16pictureTBL.3	Aggregate	-	-
l16picCcTBL	l16picEtcTBL.1	Aggregate	-	-
l16picCcSystem	l16picCcTBL.1	INTEGER	R/W	0=eia608-708 1=eia608-608 2=vbi
l16picCcCc	l16picCcTBL.2	INTEGER	R/W	0=off 1=cc1 2=cc2 3=cc3 4=cc4 5=text1 6=text2 7=text3 8=text4
l16picGamutErr	l16picEtcTBL.4	INTEGER	R/W	0=dispon 1=dispoff
l16picDisplayTBL	l16pictureTBL.4	Aggregate	-	-
l16picSize	l16picDisplayTBL.1	INTEGER	R/W	0=fit 1=x1 2=x2
l16picRgb	l16picDisplayTBL.2	INTEGER	R/W	0=rgb 1=mono 2=rg 3=rb 4=gb 5=r 6=g 7=b
l16picSqueeze	l16picDisplayTBL.3	INTEGER	R/W	0=off 1=on
l16picIpConv	l16picDisplayTBL.4	INTEGER	R/W	0=off 1=on
l16picChroma	l16pictureTBL.5	INTEGER	R/W	0 - 150
l16picAperture	l16pictureTBL.6	INTEGER	R/W	0 - 200
l16picBright	l16pictureTBL.7	INTEGER	R/W	-50 - 50
l16picContrust	l16pictureTBL.8	INTEGER	R/W	50 - 200

- **l16cineliteTBL(5) group**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l16cineliteFstop	l16cineliteTBL.1	INTEGER	R/W	0=Fstop
l16cineliteDisplay	l16cineliteTBL.2	INTEGER	R/W	0=Display
l16cineliteDisplayTBL	l16cineliteTBL.3	Aggregate	-	-
l16cineliteDisplayLineNumber	l16cineliteDisplayTBL.1	INTEGER	R/W	1 - 1125
l16cineliteDisplaySampleNumber	l16cineliteDisplayTBL.2	INTEGER	R/W	0 - 2749
l16cineliteDisplayFD	l16cineliteDisplayTBL.3	INTEGER	R/W	0=line 1=sample
l16cineliteDisplayMeasPos	l16cineliteDisplayTBL.4	INTEGER	R/W	0=p1 1=p2 0=p3
l16cineliteDisplayMeasSize	l16cineliteDisplayTBL.5	INTEGER	R/W	0=s1x1 1=s3x3 2=s9x9
l16cineliteDisplayMeasDisp	l16cineliteDisplayTBL.6	INTEGER	R/W	0=p1p2p3 1=p1p2 2=p1p3 3=p2p3 4=p1 5=p2 6=p3
l16cineliteDisplayRGB	l16cineliteDisplayTBL.7	INTEGER	R/W	0=level 1=rgb 2=rgb255
l16cineliteFstopRefSet	l16cineliteDisplayTBL.8	INTEGER	R/W	0=FstopRefSet
l16cineliteGamma	l16cineliteTBL.4	INTEGER	R/W	0=gO45 1=user-1 2=user-2 3=user-3 4=user-A 5=user-B 6=user-C 7=user-D 8=user-E
l16cineliteCalTBL	l16cineliteTBL.5	Aggregate	-	-
l16cineliteCalTableClear	l16cineliteCalTBL.1	INTEGER	R/W	0=CalTableClear
l16cineliteCalDataClear	l16cineliteCalTBL.2	INTEGER	R/W	0=CalDataClear
l16cineliteCalSet	l16cineliteCalTBL.3	INTEGER	R/W	0=CalSet
l16cineliteCalCalF	l16cineliteCalTBL.4	INTEGER	R/W	0=f22-0 1=f16-0 2=f11-0 3=f8-0 4=f5-6 5=f4-0 6=f2-8

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				7=f2-0
l16cineliteCal2TBL	l16cineliteTBL.6	Aggregate	-	-
l16cineliteCal2TblClr	l16cineliteCal2TBL.1	INTEGER	R/W	0=Cal2TblClr
l16cineliteAdvance	l16cineliteTBL.7	INTEGER	R/W	0=off 1=P-V 2=P-W 3=P-V-W

- **l16cinezoneTBL(6) group**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l16cinezoneMode	l16cinezoneTBL.1	INTEGER	R/W	0=zone 1=search
l16cinezoneZoneDisplay	l16cinezoneTBL.2	INTEGER	R/W	0=linear 1=step
l16cinezonePerDisplay	l16cinezoneTBL.3	INTEGER	R/W	0=off 1=on
l16cinezoneDisplay	l16cinezoneTBL.4	INTEGER	R/W	0=Display
l16cinezoneUpper	l16cinezoneTBL.5	DisplayString	R/W	-6.3 - 109.4
l16cinezoneLower	l16cinezoneTBL.6	DisplayString	R/W	-7.3 - 108.4
l16cinezoneSearchLevel	l16cinezoneTBL.7	DisplayString	R/W	-7.3 - 109.4
l16cinezoneSearchRange	l16cinezoneTBL.8	DisplayString	R/W	0.5 - 100.0

- **l16audioTBL(7) group**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l16audMode	l16audioTBL.1	INTEGER	R/W	0=sound 1=lissajou 2=mltliss 3=value
l16audSdiTBL	l16audioTBL.2	Aggregate	-	-
l16audSdi1St	l16audSdiTBL.1	INTEGER	R/W	0=group1 1=group2 2=group3 3=group4
l16audSdi2nd	l16audSdiTBL.2	INTEGER	R/W	0=group1 1=group2 2=group3 3=group4
l16audSoundTBL	l16audioTBL.3	Aggregate	-	-
l16audSoundAudio	l16audSoundTBL.1	INTEGER	R/W	-8 - 7
l16audSoundScale	l16audSoundTBL.2	INTEGER	R/W	-8 - 7
l16audSoundSurround	l16audSoundTBL.3	INTEGER	R/W	0=sur31 1=sur32 2=sur322
l16audSoundLissajou	l16audSoundTBL.4	INTEGER	R/W	0=xy 1=matrix

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l16audSoundLissaL	l16audSoundTBL.5	INTEGER	R/W	0=ch1st1 1=ch1st2 2=ch1st3 3=ch1st4 4=ch2nd1 5=ch2nd2 6=ch2nd3 7=ch2nd4 8=lt
l16audSoundLissaR	l16audSoundTBL.6	INTEGER	R/W	0=ch1st1 1=ch1st2 2=ch1st3 3=ch1st4 4=ch2nd1 5=ch2nd2 6=ch2nd3 7=ch2nd4 8=lt
l16audSoundGain	l16audSoundTBL.7	INTEGER	R/W	0=x1 1=x2 2=x10 3=x0p5 4=auto
l16audMeterTBL	l16audioTBL.4	Aggregate	-	-
l16audMeterRef	l16audMeterTBL.1	INTEGER	R/W	0=minus20dB 1=minus18dB 2=minus12dB 3=minus9dB
l16audMeterRange	l16audMeterTBL.2	INTEGER	R/W	0=peak60dB 1=peak90dB 2=avarage 3=loudness
l16audMeterScale	l16audMeterTBL.3	INTEGER	R/W	0=typeA 1=typeB
l16audMeterPeakHold	l16audMeterTBL.4	INTEGER	R/W	0=ph0p5 1=ph1 2=ph1p5 3=ph2 4=ph2p5 5=ph3 6=ph3p5 7=ph4 8=ph4p5 9=ph5 10=hold
l16audPhonesTBL	l16audioTBL.5	Aggregate	-	-

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l16audPhonesOut	l16audPhonesTBL.1	INTEGER	R/W	0=off 1=on
l16audPhonesVolume	l16audPhonesTBL.2	INTEGER	R/W	0 - 128
l16audPhonesL	l16audPhonesTBL.3	INTEGER	R/W	0=ch1st1 1=ch1st2 2=ch1st3 3=ch1st4 4=ch2nd1 5=ch2nd2 6=ch2nd3 0=ch2nd4
l16audPhonesR	l16audPhonesTBL.4	INTEGER	R/W	0=ch1st1 1=ch1st2 2=ch1st3 3=ch1st4 4=ch2nd1 5=ch2nd2 6=ch2nd3 0=ch2nd4
l16audChMapTBL	l16audioTBL.6	Aggregate	-	-
l16audChMapL	l16audChMapTBL.1	INTEGER	R/W	0=ch1st1 1=ch1st2 2=ch1st3 3=ch1st4 4=ch2nd1 5=ch2nd2 6=ch2nd3 0=ch2nd4
l16audChMapR	l16audChMapTBL.2	INTEGER	R/W	0=ch1st1 1=ch1st2 2=ch1st3 3=ch1st4 4=ch2nd1 5=ch2nd2 6=ch2nd3 0=ch2nd4
l16audChMapSL	l16audChMapTBL.3	INTEGER	R/W	0=ch1st1 1=ch1st2 2=ch1st3 3=ch1st4 4=ch2nd1 5=ch2nd2 6=ch2nd3 0=ch2nd4
l16audChMapSR	l16audChMapTBL.4	INTEGER	R/W	0=ch1st1 1=ch1st2

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				2=ch1st3 3=ch1st4 4=ch2nd1 5=ch2nd2 6=ch2nd3 0=ch2nd4
l16audChMapC	l16audChMapTBL.5	INTEGER	R/W	0=ch1st1 1=ch1st2 2=ch1st3 3=ch1st4 4=ch2nd1 5=ch2nd2 6=ch2nd3 0=ch2nd4
l16audChMapLFE	l16audChMapTBL.6	INTEGER	R/W	0=ch1st1 1=ch1st2 2=ch1st3 3=ch1st4 4=ch2nd1 5=ch2nd2 6=ch2nd3 0=ch2nd4
l16audChMapRL	l16audChMapTBL.7	INTEGER	R/W	0=ch1st1 1=ch1st2 2=ch1st3 3=ch1st4 4=ch2nd1 5=ch2nd2 6=ch2nd3 0=ch2nd4
l16audChMapRR	l16audChMapTBL.8	INTEGER	R/W	0=ch1st1 1=ch1st2 2=ch1st3 3=ch1st4 4=ch2nd1 5=ch2nd2 6=ch2nd3 0=ch2nd4

- **l16multiTBL(8) group**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l16mulMode	l16multiTBL.1	INTEGER	R/W	0=m4SCREEN 1=picWFM 2=wfmVEC 3=wfmPIC 4=wfmAUD

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				5=wfmLVL 6=picpluswfm 7=picplusvect
l16mulUpper	l16multiTBL.2	INTEGER	R/W	0=vector 1=audio
l16mulLower	l16multiTBL.3	INTEGER	R/W	0=statusDisp 1=audioDisp 2=audlissDisp 3=audmlissDisp 4=fiveBarDisp

- **l16statusTBL(9) group**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l16staDisplayTBL	l16statusTBL.1	Aggregate	-	-
l16staDisplayLog	l16staDisplayTBL.1	INTEGER	R/W	0=DisplayLog
l16staDisplayDump	l16staDisplayTBL.2	INTEGER	R/W	0=DisplayDump
l16staDisplayAudio	l16staDisplayTBL.3	INTEGER	R/W	0=DisplayAudio
l16staDisplayEdh	l16staDisplayTBL.4	INTEGER	R/W	0=DisplayEdh
l16staLogTBL	l16statusTBL.2	Aggregate	-	-
l16staLogLog	l16staLogTBL.1	INTEGER	R/W	0=stop 1=start
l16staLogClear	l16staLogTBL.2	INTEGER	R/W	0=LogClear
l16staLogMode	l16staLogTBL.3	INTEGER	R/W	0=overWR 1=stop
l16staDumpTBL	l16statusTBL.3	Aggregate	-	-
l16staDumpMode	l16staDumpTBL.1	INTEGER	R/W	0=run 1=hold
l16staDumpDisplay	l16staDumpTBL.2	INTEGER	R/W	0=serial 1=compo 2=binary
l16staDumpLineNumber	l16staDumpTBL.3	INTEGER	R/W	1 - 1125
l16staDumpSample	l16staDumpTBL.4	INTEGER	R/W	0 - 2749
l16staDumpEav	l16staDumpTBL.5	INTEGER	R/W	0=DumpEav
l16staDumpSav	l16staDumpTBL.6	INTEGER	R/W	0=DumpSav
l16staDumpFD	l16staDumpTBL.7	INTEGER	R/W	0=line 1=sample
l16staAudioTBL	l16statusTBL.4	Aggregate	-	-
l16staAudioChSEL	l16staAudioTBL.1	INTEGER	R/W	0=ch1st1 1=ch1st2 2=ch1st3 3=ch1st4 4=ch2nd1 5=ch2nd2 6=ch2nd3 7=ch2nd4

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
I16staAncPacketTBL	I16statusTBL.5	Aggregate	-	-
I16staAncpacFormatidTBL	I16staAncPacketTBL.1	Aggregate	-	-
I16staAncpacFormatPacketsel	I16staAncpacFormatidTBL.1	INTEGER	R/W	0=smpte 1=arib
I16staAncpacVancaribTBL	I16staAncPacketTBL.2	Aggregate	-	-
I16staAncVanClocapTBL	I16staAncpacVancaribTBL.1	Aggregate	-	-
I16staAncVanClocapDisplay	I16staAncVanClocapTBL.1	INTEGER	R/W	0=text 1=dump
I16staAncVanClocapCaptionnumber	I16staAncVanClocapTBL.2	INTEGER	R/W	0=n1 1=n2 2=n3
I16staAncVanClocapDumpmode	I16staAncVanClocapTBL.3	INTEGER	R/W	0=hex 1=binary
I16staAncVanNetqTBL	I16staAncpacVancaribTBL.2	Aggregate	-	-
I16staAncVanNetqDisplay	I16staAncVanNetqTBL.1	INTEGER	R/W	0=text 1=dump
I16staAncVanNetqDumpmode	I16staAncVanNetqTBL.2	INTEGER	R/W	0=hex 1=binary
I16staAncVanNetqQ1	I16staAncVanNetqTBL.3	INTEGER	R/W	0=off 1=on
I16staAncVanNetqQ2	I16staAncVanNetqTBL.4	INTEGER	R/W	0=off 1=on
I16staAncVanNetqQ3	I16staAncVanNetqTBL.5	INTEGER	R/W	0=off 1=on
I16staAncVanNetqQ4	I16staAncVanNetqTBL.6	INTEGER	R/W	0=off 1=on
I16staAncVanNetqQ5	I16staAncVanNetqTBL.7	INTEGER	R/W	0=off 1=on
I16staAncVanNetqQ6	I16staAncVanNetqTBL.8	INTEGER	R/W	0=off 1=on
I16staAncVanNetqQ7	I16staAncVanNetqTBL.9	INTEGER	R/W	0=off 1=on
I16staAncVanNetqQ8	I16staAncVanNetqTBL.10	INTEGER	R/W	0=off 1=on
I16staAncVanNetqQ9	I16staAncVanNetqTBL.11	INTEGER	R/W	0=off 1=on
I16staAncVanNetqQ10	I16staAncVanNetqTBL.12	INTEGER	R/W	0=off 1=on
I16staAncVanNetqQ11	I16staAncVanNetqTBL.13	INTEGER	R/W	0=off 1=on
I16staAncVanNetqQ12	I16staAncVanNetqTBL.14	INTEGER	R/W	0=off 1=on
I16staAncVanNetqQ13	I16staAncVanNetqTBL.15	INTEGER	R/W	0=off 1=on
I16staAncVanNetqQ14	I16staAncVanNetqTBL.16	INTEGER	R/W	0=off

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				1=on
l16staAncVanNetqQ15	l16staAncVanNetqTBL.17	INTEGER	R/W	0=off 1=on
l16staAncVanNetqQ16	l16staAncVanNetqTBL.18	INTEGER	R/W	0=off 1=on
l16staAncVanNetqQ17	l16staAncVanNetqTBL.19	INTEGER	R/W	0=off 1=on
l16staAncVanNetqQ18	l16staAncVanNetqTBL.20	INTEGER	R/W	0=off 1=on
l16staAncVanNetqQ19	l16staAncVanNetqTBL.21	INTEGER	R/W	0=off 1=on
l16staAncVanNetqQ20	l16staAncVanNetqTBL.22	INTEGER	R/W	0=off 1=on
l16staAncVanNetqQ21	l16staAncVanNetqTBL.23	INTEGER	R/W	0=off 1=on
l16staAncVanNetqQ22	l16staAncVanNetqTBL.24	INTEGER	R/W	0=off 1=on
l16staAncVanNetqQ23	l16staAncVanNetqTBL.25	INTEGER	R/W	0=off 1=on
l16staAncVanNetqQ24	l16staAncVanNetqTBL.26	INTEGER	R/W	0=off 1=on
l16staAncVanNetqQ25	l16staAncVanNetqTBL.27	INTEGER	R/W	0=off 1=on
l16staAncVanNetqQ26	l16staAncVanNetqTBL.28	INTEGER	R/W	0=off 1=on
l16staAncVanNetqQ27	l16staAncVanNetqTBL.29	INTEGER	R/W	0=off 1=on
l16staAncVanNetqQ28	l16staAncVanNetqTBL.30	INTEGER	R/W	0=off 1=on
l16staAncVanNetqQ29	l16staAncVanNetqTBL.31	INTEGER	R/W	0=off 1=on
l16staAncVanNetqQ30	l16staAncVanNetqTBL.32	INTEGER	R/W	0=off 1=on
l16staAncVanNetqQ31	l16staAncVanNetqTBL.33	INTEGER	R/W	0=off 1=on
l16staAncVanNetqQ32	l16staAncVanNetqTBL.34	INTEGER	R/W	0=off 1=on
l16staErrTBL	l16statusTBL.6	Aggregate	-	-
l16staRemoteErr	l16staErrTBL.1	INTEGER	R/W	0=positive 1=negative 2=off
l16staErrCountRate	l16staErrTBL.2	INTEGER	R/W	0=vRATE 1=sec1
l16staErrDetectTBL	l16staErrTBL.3	Aggregate	-	-
l16staErrDetectTrs	l16staErrDetectTBL.1	INTEGER	R/W	0=off

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				1=on
l16staErrDetectLine	l16staErrDetectTBL.2	INTEGER	R/W	0=off 1=on
l16staErrDetectCRC	l16staErrDetectTBL.3	INTEGER	R/W	0=off 1=on
l16staErrDetectEDH	l16staErrDetectTBL.4	INTEGER	R/W	0=off 1=on
l16staErrDetectParity	l16staErrDetectTBL.6	INTEGER	R/W	0=off 1=on
l16staErrDetectCheckSum	l16staErrDetectTBL.7	INTEGER	R/W	0=off 1=on
l16staErrDetectGamut	l16staErrDetectTBL.9	INTEGER	R/W	0=off 1=on
l16staErrDetectCGamut	l16staErrDetectTBL.10	INTEGER	R/W	0=off 1=on
l16staErrDetectBCH	l16staErrDetectTBL.13	INTEGER	R/W	0=off 1=on
l16staErrDetectAudCrc	l16staErrDetectTBL.15	INTEGER	R/W	0=off 1=on
l16staErrLevTBL	l16staErrTBL.4	Aggregate	-	-
l16staErrLevGamutTBL	l16staErrLevTBL.1	Aggregate	-	-
l16staErrLevGamutUpper	l16staErrLevGamutTBL.1	DisplayString	R/W	90.8 - 109.4 (%) 635.6 - 765.8 (mV)
l16staErrLevGamutLower	l16staErrLevGamutTBL.2	DisplayString	R/W	-7.2 - 6.1 (%) -50.4 - 42.7 (mV)
l16staErrLevCGamutTBL	l16staErrLevTBL.2	Aggregate	-	-
l16staErrLevCGamutUpper	l16staErrLevCGamutTBL.1	DisplayString	R/W	90.0 - 135.0 (%) 630.0 - 963.9 (mV)
l16staErrLevCGamutLower	l16staErrLevCGamutTBL.2	DisplayString	R/W	-40.0 - -20.0 (%) -285.6 - -140.0 (mV)
l16staErrDetectGamutFilterSD	l16staErrLevTBL.3	INTEGER	R/W	0=1M 1=off
l16staErrLevUnit	l16staErrLevTBL.6	INTEGER	R/W	0=per 1=mV
l16staErrDetectGamutFilterHD	l16staErrLevTBL.7	INTEGER	R/W	0=1M 1=2p8M 2=off
l16staErrDisplay	l16staErrTBL.5	INTEGER	R/W	0=refresh 1=hold
l16staReset	l16statusTBL.7	INTEGER	R/W	0=Reset

- **l16capture(10) group**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l16capDisplay	l16captureTBL.1	INTEGER	R/W	0=real 1=hold

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				2=both
l16capFileSelect	l16captureTBL.2	INTEGER	R/W	0=bmpbsx 1=bmp 2=bsx

- **l16files(11) group**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l16filMakeTBL	l16filesTBL.1	Aggregate	-	-
l16filMakeStatus	l16filMakeTBL.1	INTEGER	R/W	0=MakeStatus
l16filMakeLog	l16filMakeTBL.2	INTEGER	R/W	0=MakeLog
l16filMakeDump	l16filMakeTBL.3	INTEGER	R/W	0=MakeDump
l16filMakeCapture	l16filMakeTBL.4	INTEGER	R/W	0=MakeCapture
l16filRecall	l16filesTBL.2	INTEGER	R/W	1 - 30

- **l16system(12) group**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l16sysFormatTBL	l16systemTBL.1	Aggregate	-	-
l16sysFormatMode	l16sysFormatTBL.1	INTEGER	R/W	0=auto 1=manual
l16sysFormatFormat	l16sysFormatTBL.2	INTEGER	R/W	0=frm1080I60 1=frm1080I59p94 2=frm1080I50 3=frm1080PSF30 4=frm1080PSF29p97 5=frm1080PSF25 6=frm1080PSF24 7=frm1080PSF23p98 8=frm1080P30 9=frm1080P29p97 10=frm1080P25 11=frm1080P24 12=frm1080P23p98 13=frm720P60 14=frm720P59p94 15=frm720P50 16=frm720P30 17=frm720P29p97 18=frm720P25 19=frm720P24 20=frm720P23p98 21=frm525I59p94 22=frm625I50
l16sysFormatLink	l16sysFormatTBL.3	INTEGER	R/W	0=single 1=dual-A
l16sysFormatCompositeFormat	l16sysFormatTBL.4	INTEGER	R/W	0=auto

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				1=ntsc 2=pal
l16sysFormatIPSF	l16sysFormatTBL.5	INTEGER	R/W	0=interlac 1=segFram
l16sysAudioSource	l16systemTBL.2	INTEGER	R/W	0=aesebu 1=sdi
l16sysDispTBL	l16systemTBL.3	Aggregate	-	-
l16sysDispInfoTBL	l16sysDispTBL.1	Aggregate	-	-
l16sysDispInfoFormat	l16sysDispInfoTBL.1	INTEGER	R/W	0=off 1=on
l16sysDispInfoTime	l16sysDispInfoTBL.2	INTEGER	R/W	0=real 1=timecode 2=off
l16sysDispInfoDate	l16sysDispInfoTBL.3	INTEGER	R/W	0=ymd 1=mdy 2=dmy 3=off
l16sysDispInfoColor	l16sysDispInfoTBL.4	INTEGER	R/W	0=off 1=on
l16sysDispInfoTimeCode	l16sysDispInfoTBL.5	INTEGER	R/W	0=ltc 1=vitc 2=dvitc
l16sysDispAspect	l16sysDispTBL.2	INTEGER	R/W	0=disp4-3 1=disp16-9 2=disp16-10
l16sysDate	l16systemTBL.4	DisplayString	R/W	yyyy/mm/dd hh:mm:ss
l16sysSCutShortCutKey	l16systemTBL.5	INTEGER	R/W	0=capusb 1=directK 2=volume 3=contrast
l16sysInit	l16systemTBL.6	INTEGER	R/W	90=initialize
l16sysVersionTBL	l16systemTBL.7	Aggregate	-	-
l16sysSoftwareVersion	l16sysVersionTBL.1	DisplayString	R/O	version

- **l16trap(13) group**

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l16trapStrTBL	l16trapTBL.1	Aggregate	-	-
l16trapManagerIp	l16trapTBL.2	IpAddress	R/W	-
l16trapID	l16trapTBL.3	IpAddress	R/W	-

16.4.5 Specific Trap

Specific Trap Type	Description
1	Fan stop
2	Fan start
3	No input signal

Specific Trap Type	Description
4	Format error
5	TRS error
6	Line number error
7	CRC LUMA error
8	CRC CHROMA error
9	Checksum error
10	BCH error
11	EDH error
13	Parity error
21	Audio CRC error
23	Gamut error
24	Composite gamut error
37	No error (at error recovery and startup)

16.4.6 Variable Binding List

- **index 1**

  OID : leader(20111).lv7330(16).lv7330ST1(1).l16trapTBL(13).l16trapStrTBL(1).1.0
  Syntax : Counter
  Range : 1 to 4294967295 (overflow occurs if this range is exceeded)
  Description : The total number of enterprise traps sent after starting up

- **index 2**

  OID : leader(20111).lv7330(16).lv7330ST1(1).l16trapTBL(13).l16trapStrTBL(1).2.0
  Syntax : Octet String
  Range : Up to 40 characters
  Description : Date/time when the error occurred and line information
  YYYY/MM/DD hh:mm:ss sdi,ref (example: 2004/07/15 11:30:11 A,INT)
  YYYY = year, MM = month, DD = day, hh = hour, mm = minute,
  ss = second, sdi = SDI input (A or B), ref = reference (INT or EXT)

- **index 3**

  OID : leader(20111).lv7330(16).lv7330ST1(1).l16trapTBL(13).l16trapStrTBL(1).3.0
  Syntax : Octet String
  Range : Up to 40 characters
  Description : Format information

- **index 4**

  OID : leader(20111).lv7330(16).lv7330ST1(1).l16trapTBL(13).l16trapStrTBL(1).4.0
  Syntax : Octet String
  Range : Up to 40 characters
  Description : Error information

17. Calibration and Repairs

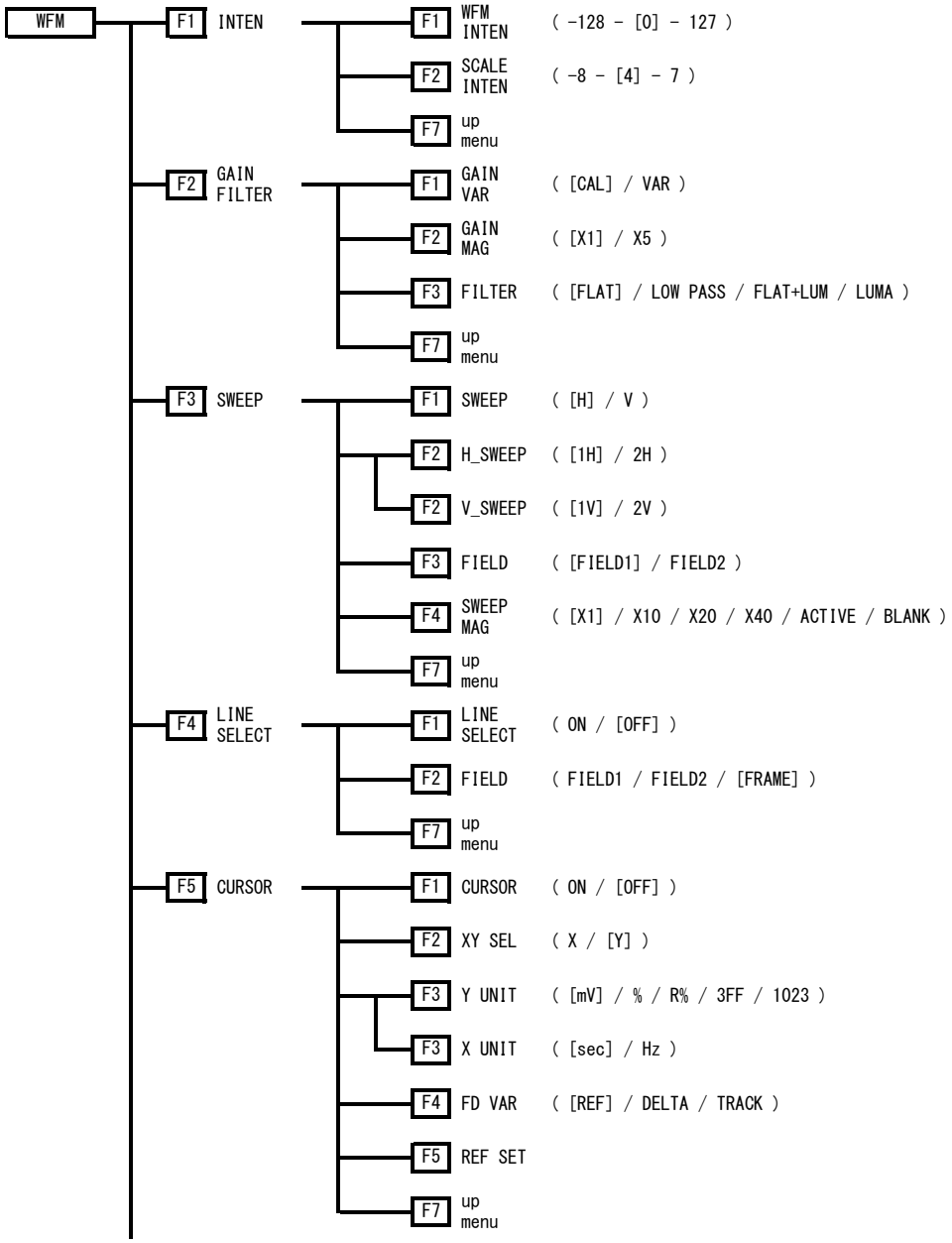
This instrument has been carefully examined at the factory to ensure that its performance is in accordance with the standards. However, because of factors such as parts wearing out over time, the performance of the instrument may degrade. To ensure stable performance, we recommend that you have the instrument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

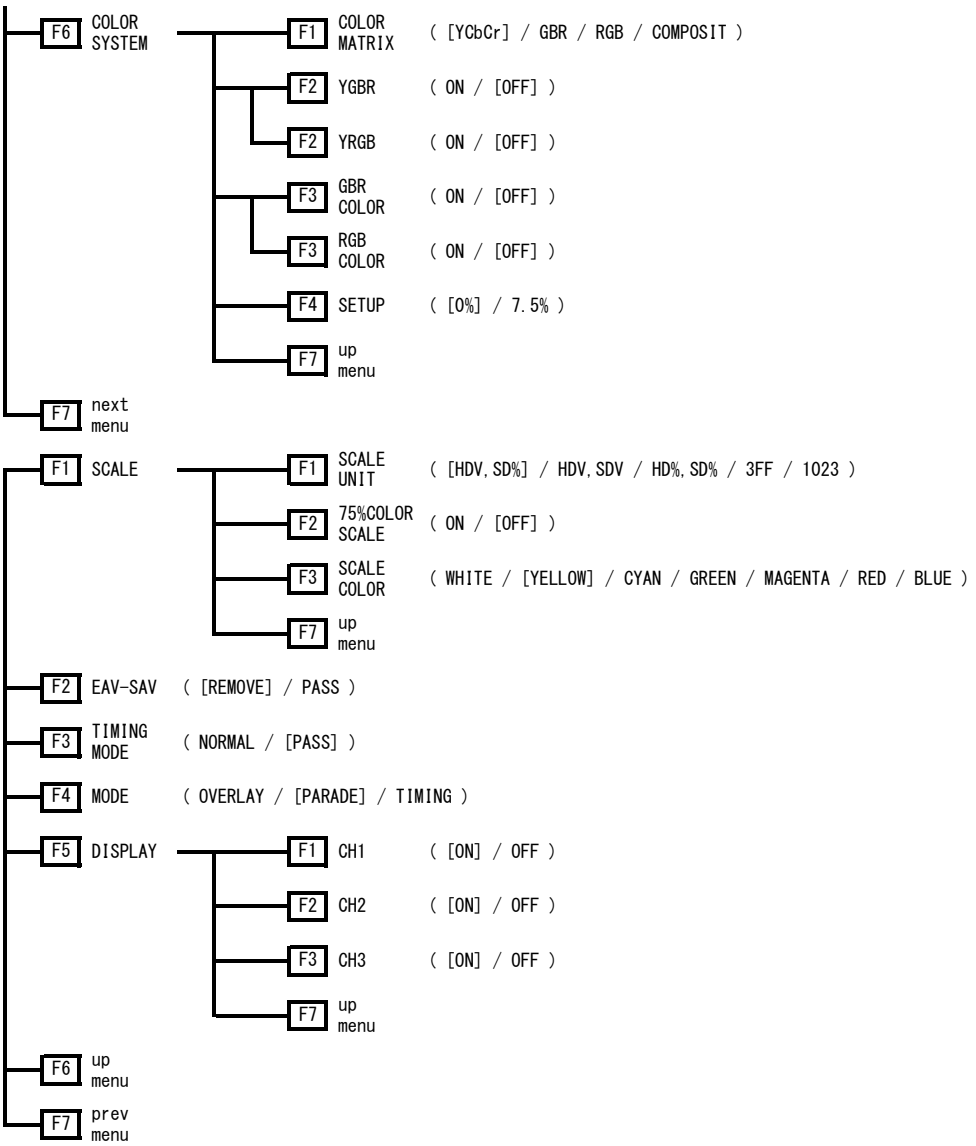
18. APPENDIX

18.1 Menu Tree

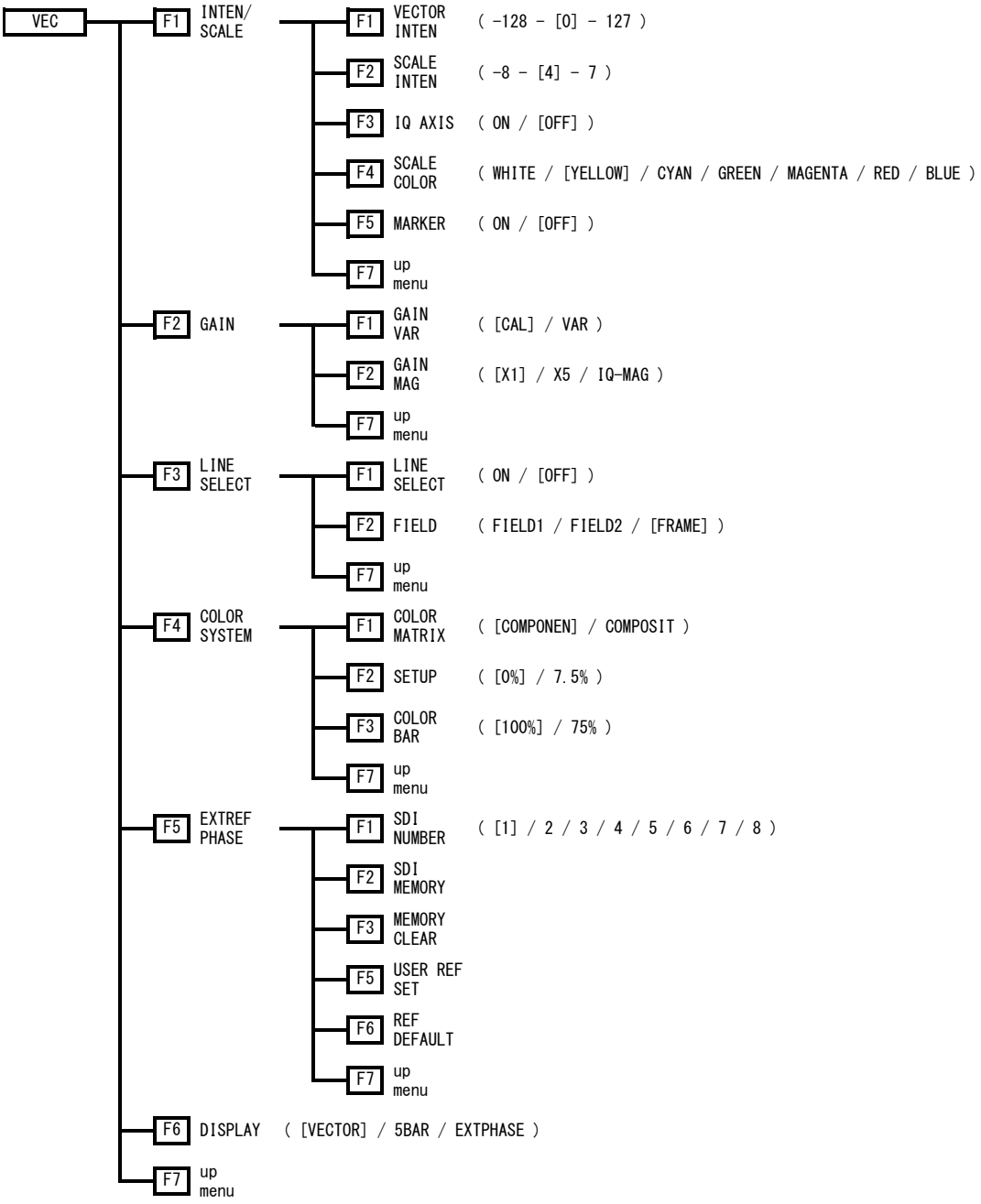
The menu structure is indicated below. The default settings are underlined.

18.1.1 Video Signal Waveform Menu

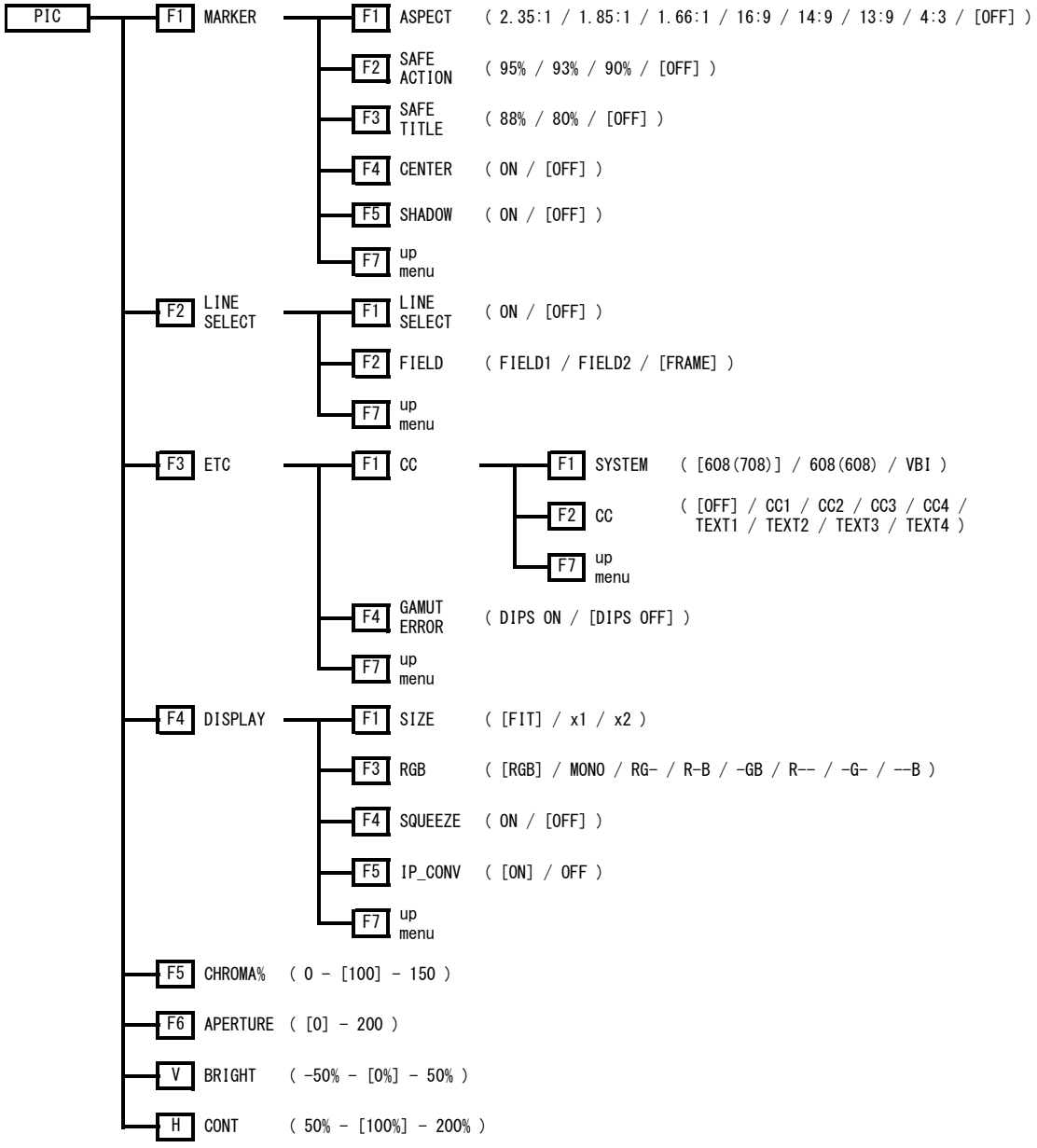



F6 COLOR SYSTEM
F1 COLOR MATRIX ([YCbCr] / GBR / RGB / COMPOSIT)
F2 YGBR (ON / [OFF])
F2 YRGB (ON / [OFF])
F3 GBR COLOR (ON / [OFF])
F3 RGB COLOR (ON / [OFF])
F4 SETUP ([0%] / 7.5%)
F7 up menu
F7 next menu
F1 SCALE
F1 SCALE UNIT ([HDV,SD%] / HDV,SDV / HD%,SD% / 3FF / 1023)
F2 75%COLOR SCALE (ON / [OFF])
F3 SCALE COLOR (WHITE / [YELLOW] / CYAN / GREEN / MAGENTA / RED / BLUE)
F7 up menu
F2 EAV-SAV ([REMOVE] / PASS)
F3 TIMING MODE (NORMAL / [PASS])
F4 MODE (OVERLAY / [PARADE] / TIMING)
F5 DISPLAY
F1 CH1 ([ON] / OFF)
F2 CH2 ([ON] / OFF)
F3 CH3 ([ON] / OFF)
F7 up menu
F6 up menu
F7 prev menu

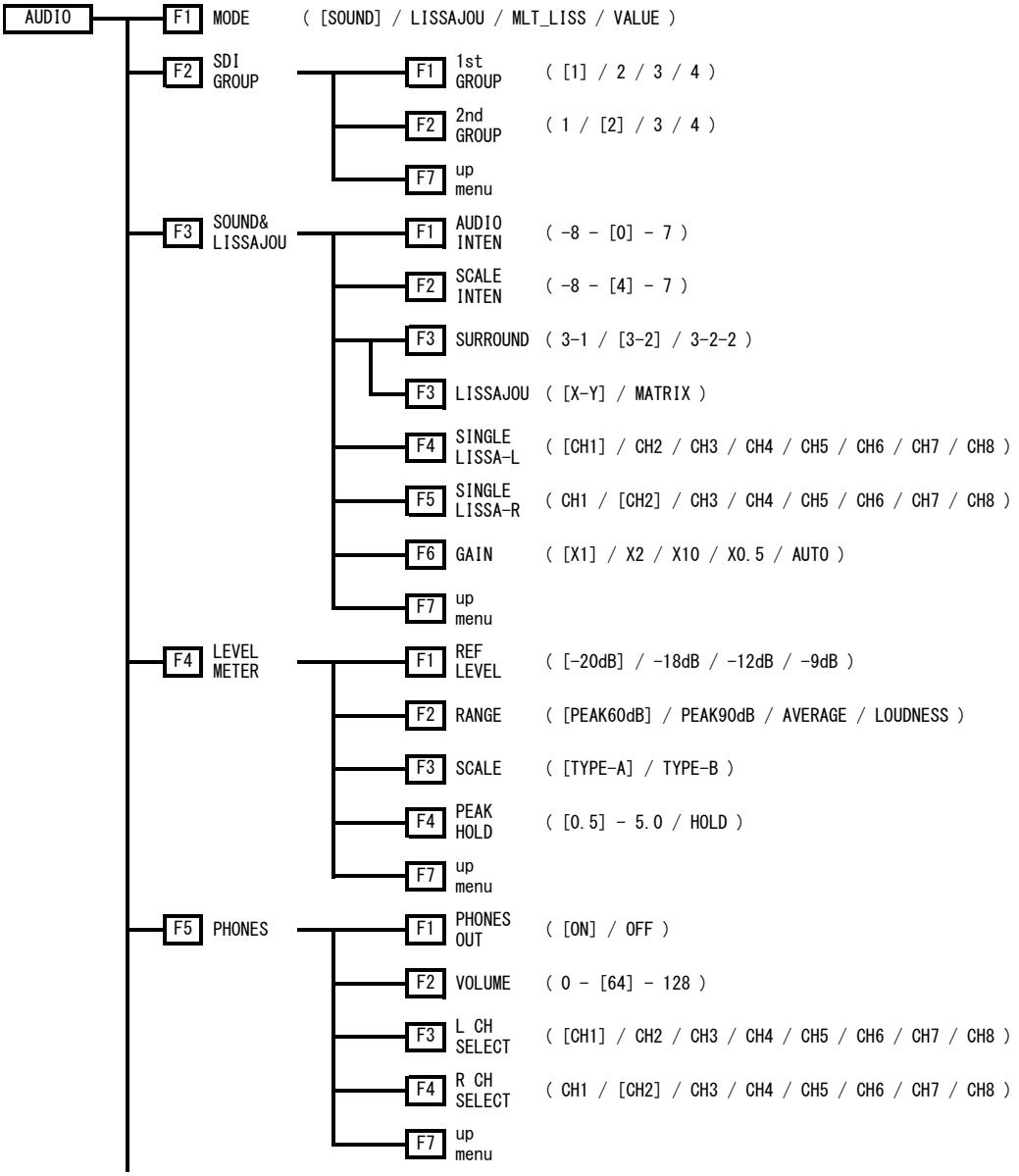
18.1.2 Vector Menu

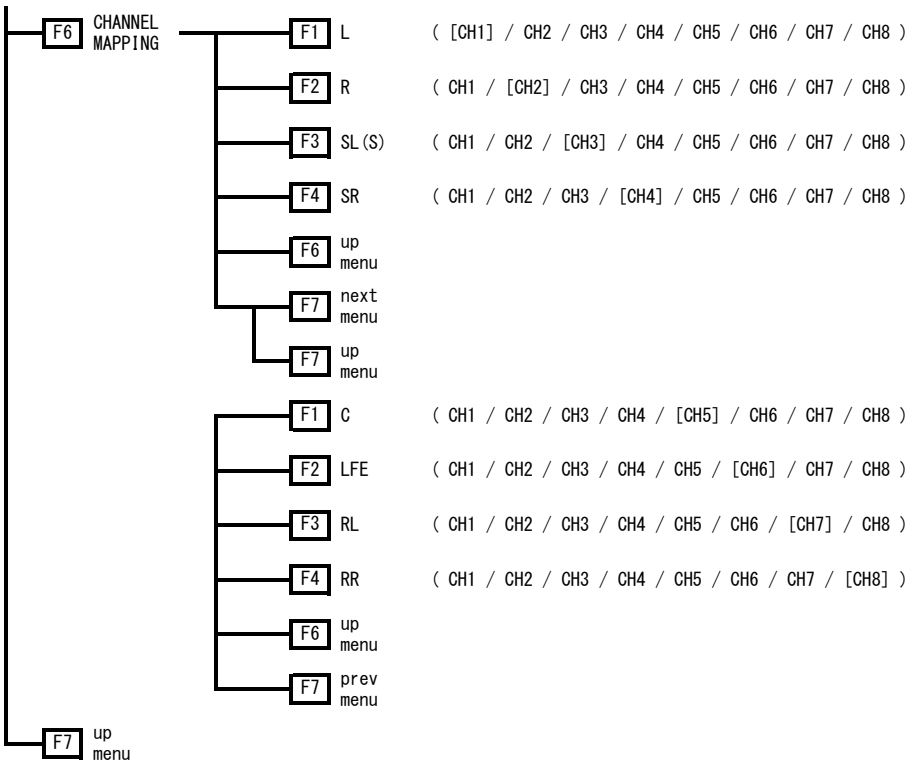


18.1.3 Picture Menu

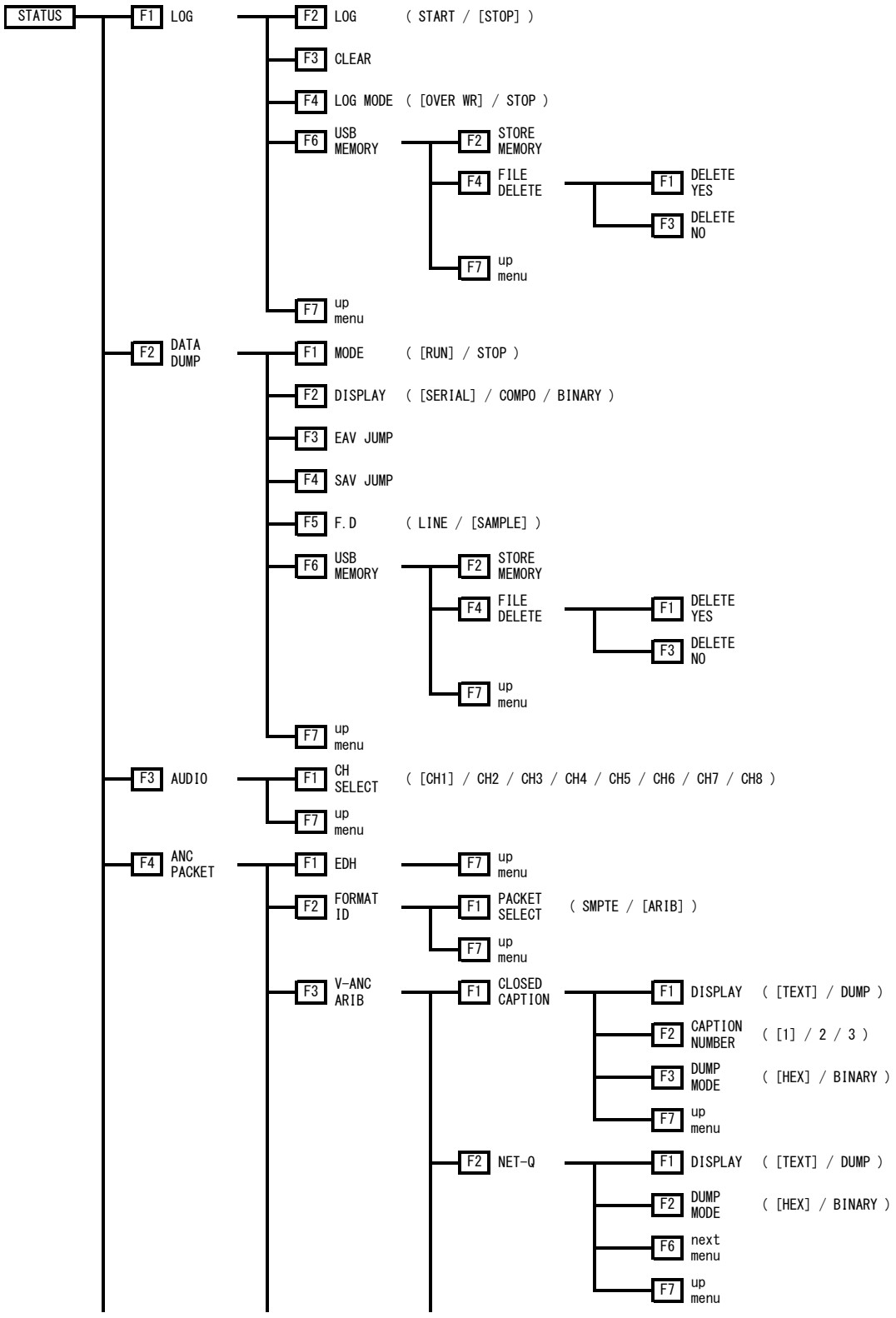


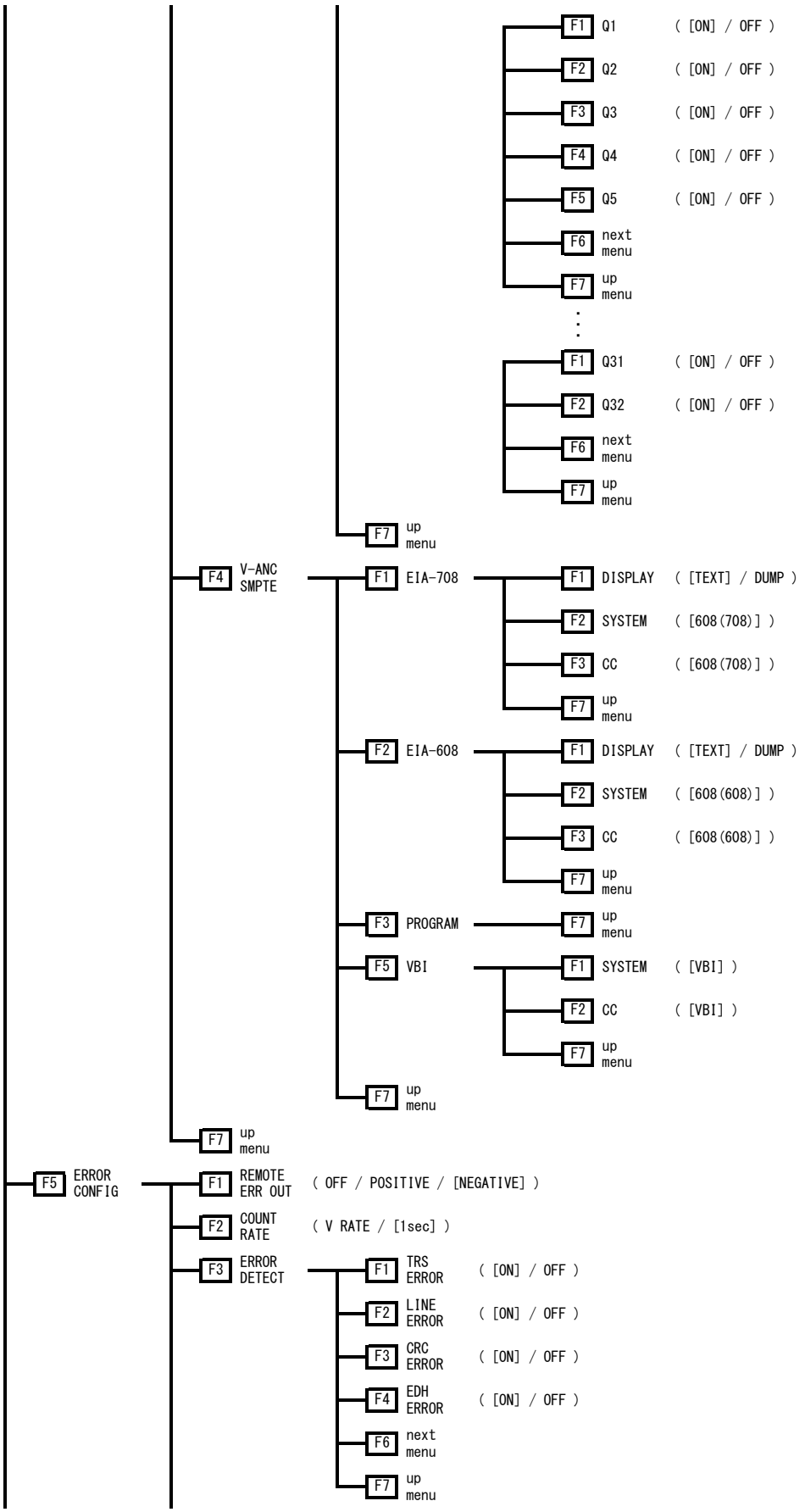
18.1.4 Audio Menu

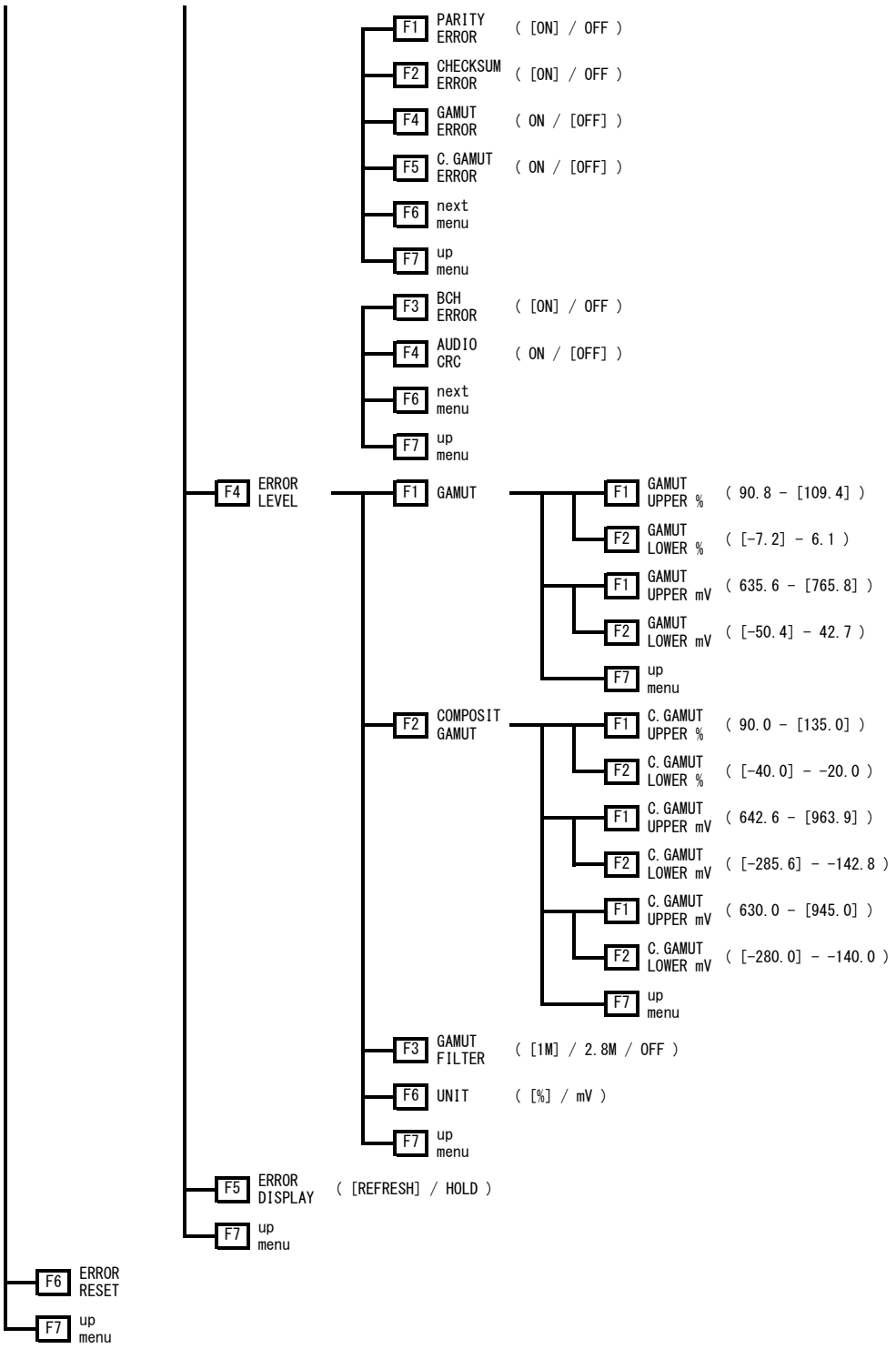



F6 CHANNEL MAPPING
F1 L ([CH1] / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8)
F2 R (CH1 / [CH2] / CH3 / CH4 / CH5 / CH6 / CH7 / CH8)
F3 SL(S) (CH1 / CH2 / [CH3] / CH4 / CH5 / CH6 / CH7 / CH8)
F4 SR (CH1 / CH2 / CH3 / [CH4] / CH5 / CH6 / CH7 / CH8)
F6 up menu
F7 next menu
F7 up menu
F1 C (CH1 / CH2 / CH3 / CH4 / [CH5] / CH6 / CH7 / CH8)
F2 LFE (CH1 / CH2 / CH3 / CH4 / CH5 / [CH6] / CH7 / CH8)
F3 RL (CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / [CH7] / CH8)
F4 RR (CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / [CH8])
F6 up menu
F7 prev menu
F7 up menu

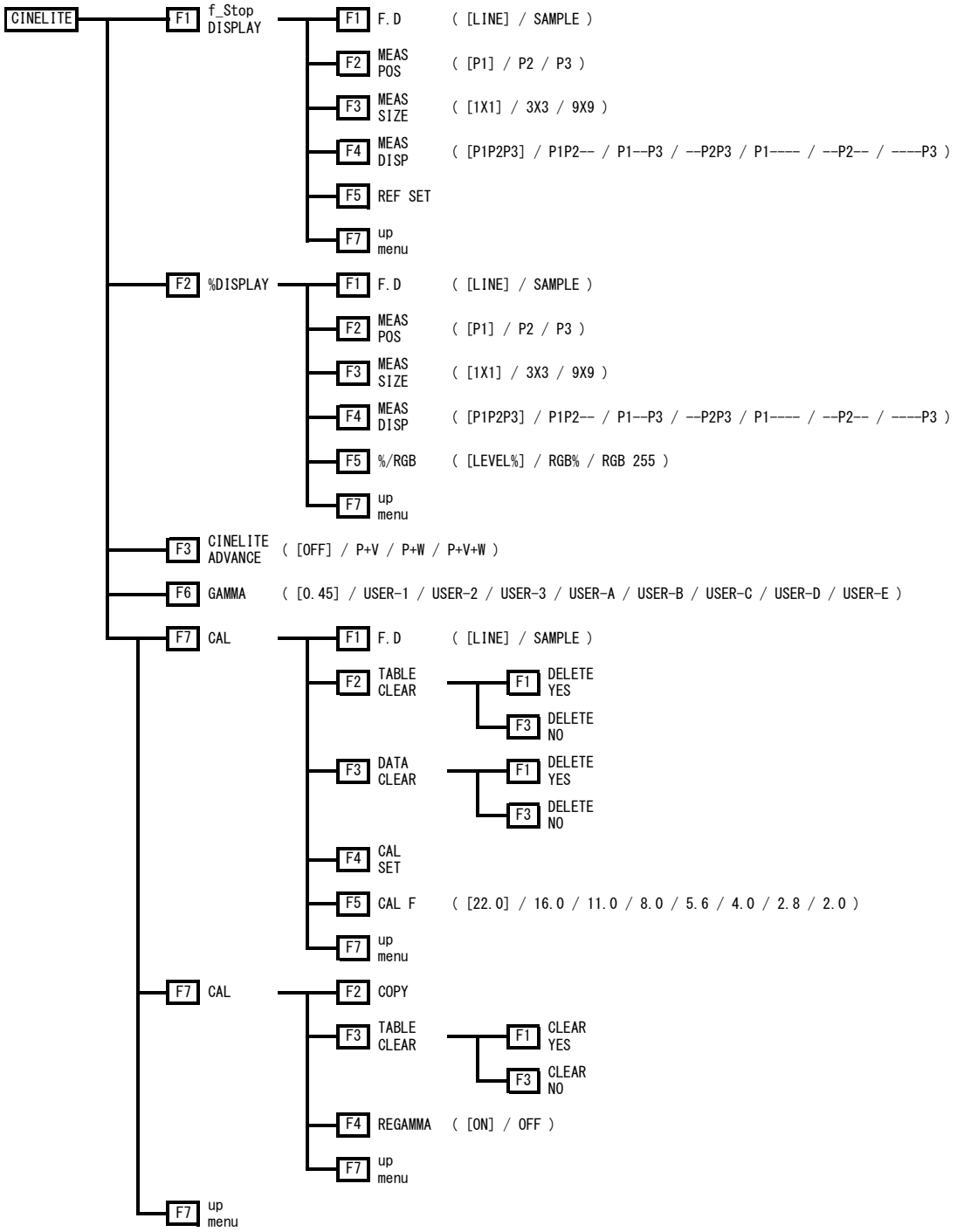
18.1.5 Status Menu



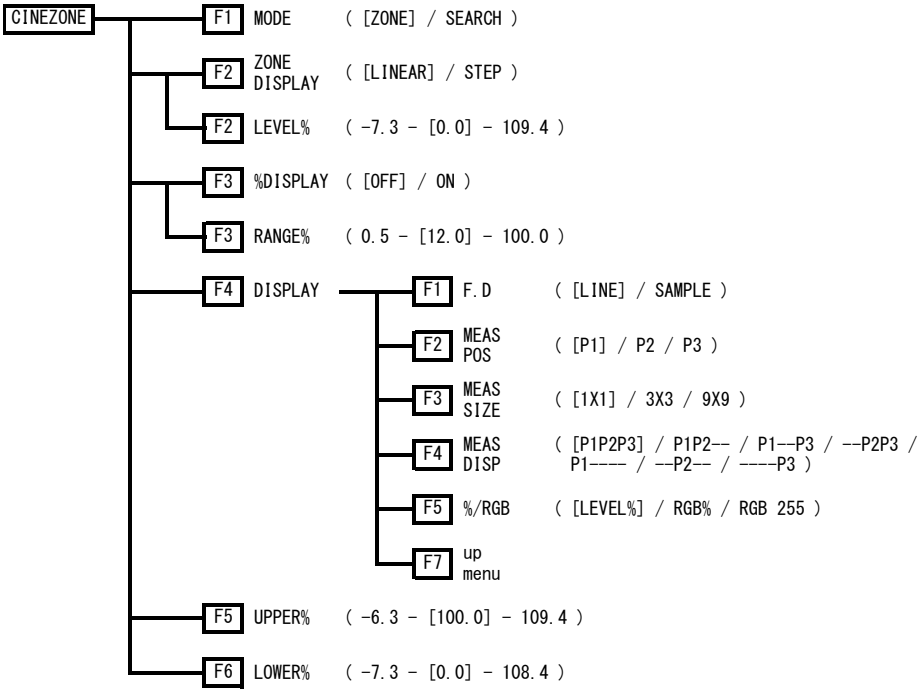

F1 Q1 ([ON] / OFF)
F2 Q2 ([ON] / OFF)
F3 Q3 ([ON] / OFF)
F4 Q4 ([ON] / OFF)
F5 Q5 ([ON] / OFF)
F6 next menu
F7 up menu
F1 Q31 ([ON] / OFF)
F2 Q32 ([ON] / OFF)
F6 next menu
F7 up menu
F7 up menu
F4 V-ANC SMPTE
F1 EIA-708
F1 DISPLAY ([TEXT] / DUMP)
F2 SYSTEM ([608(708)])
F3 CC ([608(708)])
F7 up menu
F2 EIA-608
F1 DISPLAY ([TEXT] / DUMP)
F2 SYSTEM ([608(608)])
F3 CC ([608(608)])
F7 up menu
F3 PROGRAM
F7 up menu
F5 VBI
F1 SYSTEM ([VBI])
F2 CC ([VBI])
F7 up menu
F7 up menu
F7 up menu
F5 ERROR CONFIG
F1 REMOTE ERR OUT (OFF / POSITIVE / [NEGATIVE])
F2 COUNT RATE (V RATE / [1sec])
F3 ERROR DETECT
F1 TRS ERROR ([ON] / OFF)
F2 LINE ERROR ([ON] / OFF)
F3 CRC ERROR ([ON] / OFF)
F4 EDH ERROR ([ON] / OFF)
F6 next menu
F7 up menu


F1 PARITY ERROR ([ON] / OFF)
F2 CHECKSUM ERROR ([ON] / OFF)
F4 GAMUT ERROR (ON / [OFF])
F5 C.GAMUT ERROR (ON / [OFF])
F6 next menu
F7 up menu
F3 BCH ERROR ([ON] / OFF)
F4 AUDIO CRC (ON / [OFF])
F6 next menu
F7 up menu
F4 ERROR LEVEL
F1 GAMUT
F1 GAMUT UPPER % (90.8 - [109.4])
F2 GAMUT LOWER % ([-7.2] - 6.1)
F1 GAMUT UPPER mV (635.6 - [765.8])
F2 GAMUT LOWER mV ([-50.4] - 42.7)
F7 up menu
F2 COMPOSIT GAMUT
F1 C.GAMUT UPPER % (90.0 - [135.0])
F2 C.GAMUT LOWER % ([-40.0] - -20.0)
F1 C.GAMUT UPPER mV (642.6 - [963.9])
F2 C.GAMUT LOWER mV ([-285.6] - -142.8)
F1 C.GAMUT UPPER mV (630.0 - [945.0])
F2 C.GAMUT LOWER mV ([-280.0] - -140.0)
F7 up menu
F3 GAMUT FILTER ([1M] / 2.8M / OFF)
F6 UNIT ([%] / mV)
F7 up menu
F5 ERROR DISPLAY ([REFRESH] / HOLD)
F7 up menu
F6 ERROR RESET
F7 up menu

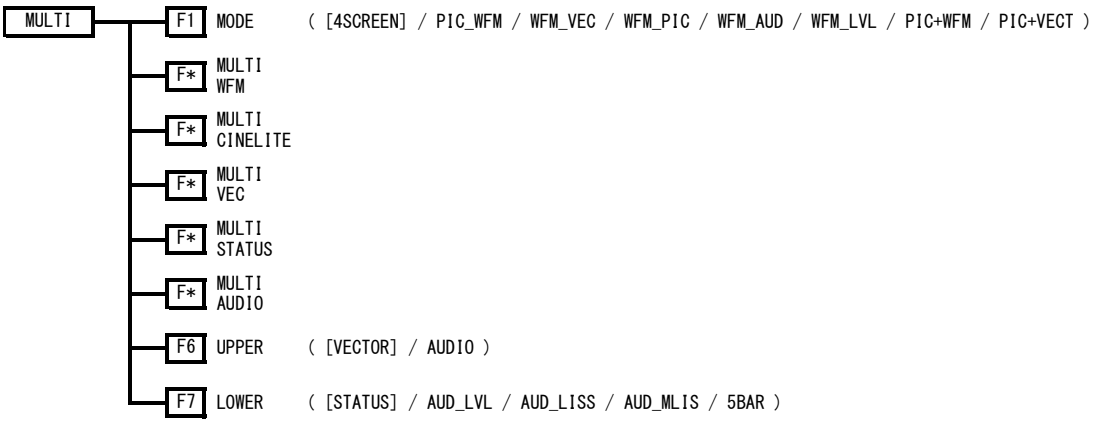
18.1.6 CINELITE Menu



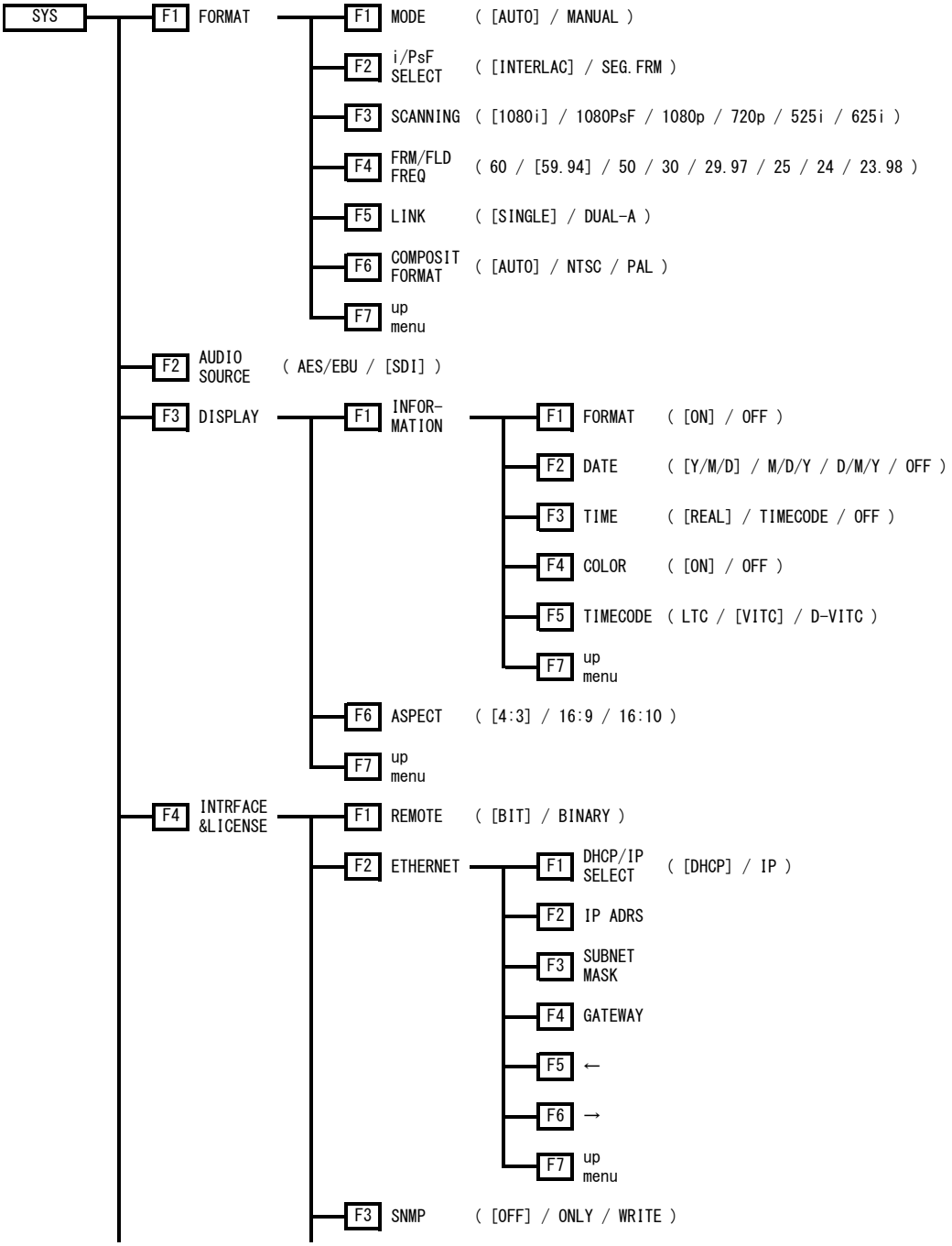
18.1.7 CINEZONE Menu

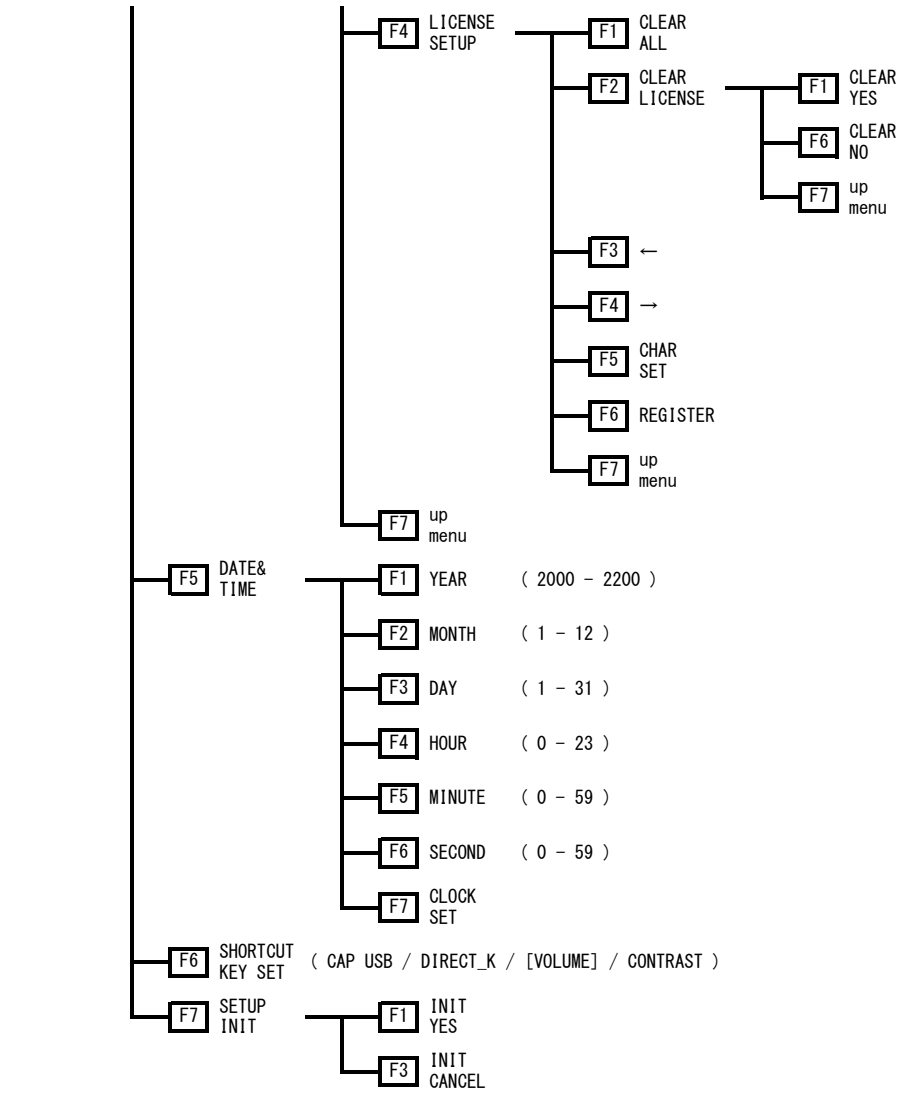


18.1.8 Multi Menu

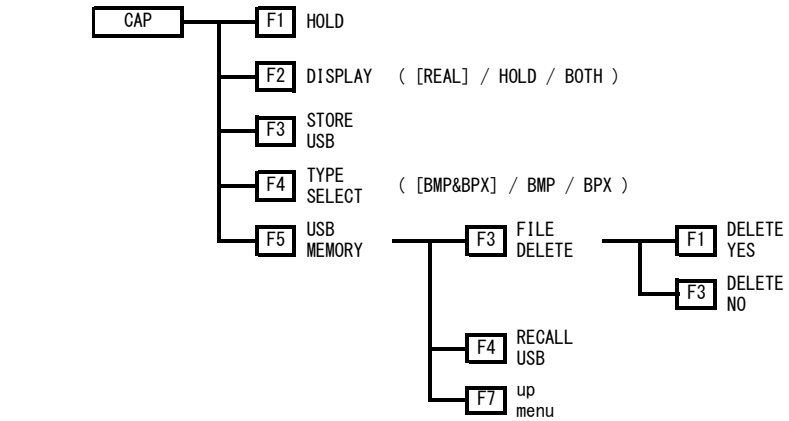


18.1.9 System Menu

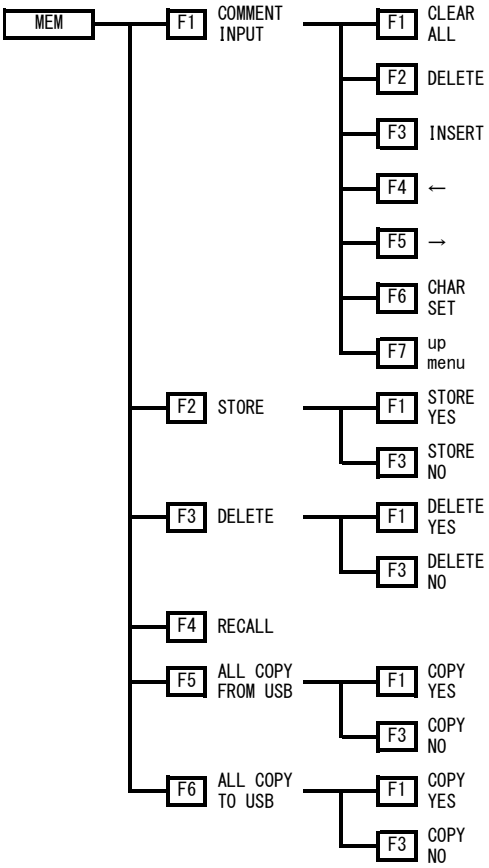




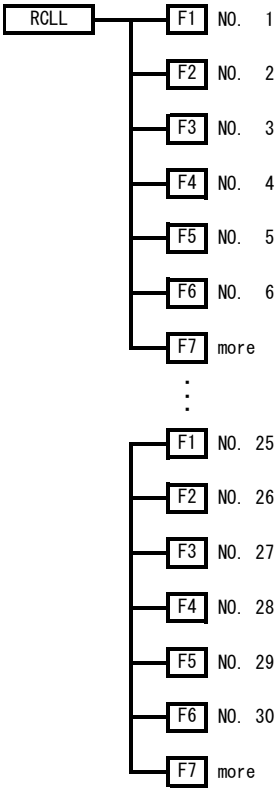
18.1.10 Screen Capture Menu



18.1.11 Preset Registration Menu



18.1.12 Preset Menu



18.2 CHANGE HISTORY OF THE SOFTWARE

This manual was written for firmware version 4.10.
To view the firmware version, press SYS, F•4 INTRFACE&LICENSE, and then F•4 LICENSE SETUP.

- **Ver 3.81**
  - The contrast range on the picture display has been expanded to 200%.
  - The CINELITE Advanced feature has been added to the CINELITE display.
  - Measured values can now be recalled through TELNET on the CINELITE display.
  - In the search feature of CINEZONE display, the range to assign colors has been made variable, and the colors are now displayed with gradation.
- **Ver 2.7**
  - LUMA has been added to the pseudo-composite display filters of the video signal waveform display.
  - A 2.8 MHz low-pass filter for gamut errors has been added to the status display (only for HD).
- **Ver 2.6**
  - SNMP support was added.
  - In the audio display, -9 dB reference level was added.
- **Ver 2.1**
  - LV 7330SER02 (GAMUT & LEVEL ERROR) support was added.
- **Ver 2.0**
  - LV 7330SER01 (HISTOGRAM & USER GAMMA DISPLAY) support was added.
  - A feature that enables you to display pictures at their gamut errors on the picture display was added.
  - A feature that enables you to turn regamma ON or OFF on the CINELITE display was added.
- **Ver 1.7**
  - A feature that enables you to display pictures at their full size on the picture display was added.
  - A feature that enables you to display squeezed pictures on the picture display was added.
  - A feature that enables you to perform IP conversion on the picture display was added.
- **Ver 1.5**
  - A feature that enables you to display waveforms in the video signal waveform display in colors that correspond to G, B, and R was added.

- **Ver 1.4**
  - D-VITC support was added.
  - A feature that enables you to turn R, G, and B ON or OFF on the picture display was added.
  - A feature that enables you to display the luminance level (%) at the reference position on the CINELITE display was added.
  - A feature that enables you to display the difference between measured points (P2-P1 and P3-P1) on the CINELITE display was added.
  - A feature that enables you to turn measured points ON or OFF on the CINELITE display was added.
  - A feature that enables you to color waveforms when you are displaying the GBR (RGB) parade display on the video signal waveform display was added.
  - ACTIVE was added to the options that can be selected for the SWEEP MAG setting on the video signal waveform display when you are displaying the composite display.
  - A feature that enables you to select the 5 bar display unit (% or mV) on the vector waveform display was added.
  - PIC+WFM and PIC+VEC were added to the options that can be selected for the MODE setting on the multi display.
  - A feature that enables you to turn the filter ON or OFF on the status display when you are detecting gamut and composite gamut errors was added.

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Following information is for Chinese RoHS only

所含有毒有害物质信息

部件号码：LV 7330

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	×	○	○	○	○	○
风扇	×	○	○	○	○	○
线材料一套	×	○	○	○	○	○
外筐	○	○	○	○	○	○
附件	×	○	○	○	○	○
包装材	○	○	○	○	○	○
电池	○	○	○	○	○	○

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.1

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June 19, 2013 Ver. 11 (FW Ver. 4.10)