

LV 5382 MULTI SDI/HDMI MONITOR

LV 5382 OP72	REMOTE & TALLY
LV 5382 OP73	BATTERY MOUNT IDX
LV 5382 OP74	BATTERY MOUNT ANTON

INSTRUCTION MANUAL

TABLE OF CONTENTS

GENERAL SAFETY SUMMARY	I
1. INTRODUCTION	1
1.1 Scope of Warranty	1
1.2 Operating Precautions	1
1.2.1 Maximum Allowable Input Voltage	1
1.2.2 Shorting and Applying External Input to the Output Connectors	2
1.2.3 Mechanical Shock	2
1.2.4 Electrostatic Damage	2
1.2.5 Warming Up	2
1.2.6 Backup Battery	2
1.3 Trademark Acknowledgments	2
1.4 About Terminology Used in this Manual	3
2. SPECIFICATIONS	5
2.1 General	5
2.2 Features	5
2.2.1 Standard Features	5
2.2.2 Optional Features and Products Sold Separately	7
2.3 Specifications	8
2.3.1 SDI Input Signal Video Formats and Corresponding Standards	8
2.3.2 HDMI Input Signal Video Formats	9
2.3.3 SDI/HDMI I/O Features	9
2.3.4 SDI Signal Audio Format	10
2.3.5 HDMI Signal Audio Format	11
2.3.6 I/O Connectors	11
2.3.7 Control Connectors	12
2.3.8 LCD	13
2.3.9 Screen Capture	13
2.3.10 Presets	13
2.3.11 Main Display Features	14
2.3.12 Video Signal Waveform Display	15
2.3.13 Vectorscope Display	16
2.3.14 5 Bar Display	16
2.3.15 Picture Display	16
2.3.16 3D Assist Feature	17
2.3.17 CINELITE Display	18
2.3.18 Audio Display	20
2.3.19 SDI Signal Error Count Display	20
2.3.20 SDI Signal Status Display	21
2.3.21 Other Display Features	22
2.3.22 Front Panel	22
2.3.23 Battery Mount (Option)	22
2.3.24 General Specifications	22

3.	NAMES AND FUNCTIONS OF PARTS	23
3.1	Front Panel	23
3.2	Rear Panel.....	25
3.3	Bottom Panel	26
4.	BEFORE YOU BEGIN MEASURING	27
4.1	About the Power Supply	27
4.1.1	Applying DC Power.....	27
4.1.2	Turning the Power On.....	27
4.1.3	Turning the Power Off.....	27
4.1.4	Using a Battery (Option)	27
4.2	Setting the Signal to Measure	28
4.2.1	Selecting the Input Signal	28
4.2.2	Selecting the Input Mode	28
4.2.3	Turning Simul Mode On and Off	29
4.2.4	Selecting the 3D Format.....	30
4.2.5	Selecting the Input Channel.....	30
4.2.6	Selecting the Channels to Output	30
4.3	Applying the SDI Signal	31
4.4	HDMI Signal Input.....	31
4.5	SDI Signal Output	32
4.6	HDMI Signal Output.....	32
4.7	External Sync Signal Input.....	33
4.8	General Display Explanation.....	35
4.9	Panel Operation Basics	38
4.9.1	Displaying the Function Menu	38
4.9.2	Function Menu Operations	38
4.9.3	Tab Menu Operations	39
4.9.4	Enabling the Key Lock.....	40
4.10	Reconfiguration.....	40
4.11	Installing a VESA Stand	41
5.	SYSTEM SETTINGS	42
5.1	Setting the Input Format	42
5.2	Output Connector Settings.....	45
5.3	Configuring LCD Settings	47
5.3.1	Selecting the Auto Shutoff Time.....	47
5.3.2	Adjusting the Backlight	47
5.4	Setting IDs	48
5.5	Configuring the Display.....	49
5.5.1	Setting the Timecode Display Format.....	49
5.5.2	Displaying Error Counters and the Time	49
5.5.3	Displaying the Input Format.....	49
5.5.4	Indicating the Input Signal	50
5.6	Configuring Remote Settings (Option)	50
5.6.1	Selecting Remote Mode	50
5.6.2	Selecting the Alarm Polarity.....	51
5.6.3	Selecting the Alarm Channel	51

5.6.4	Selecting the Function to Assign to the Remote Control Connector	51
5.7	Setting the Date and Time	52
5.7.1	Setting the Date	52
5.7.2	Setting the Time	52
5.8	initialization	53
5.8.1	Initializing Settings	53
5.8.2	Restoring the Factory Default Settings	53
5.9	Setting the Menu Display Time	53
5.10	Battery Settings (Option)	53
5.11	Configuring License Settings	54
6.	PRESET SETTINGS	55
6.1	Presets	56
6.1.1	Registering Presets	56
6.1.2	Recalling Presets	57
6.1.3	Deleting Presets	57
6.2	Display Mode Presets	58
6.2.1	Registering Display Mode Presets	58
6.2.2	Loading Display Mode Presets	59
6.2.3	Deleting Display Mode Presets	59
6.3	Copying Presets	60
6.3.1	Copying All Presets from USB Memory to the LV 5382	60
6.3.2	Copying All Presets from the LV 5382 to USB Memory	60
7.	SCREEN CAPTURE FEATURE	61
7.1	Taking a Screen Capture of the Display	62
7.2	Saving Screen Capture Data	62
7.3	Displaying Screen Capture Data	63
7.4	Displaying Screen Capture Data Saved to USB Memory	64
8.	PICTURE DISPLAY	65
8.1	Picture Display Explanation	65
8.2	Setting the Brightness and Contrast	66
8.2.1	Setting the Brightness	66
8.2.2	Setting the Contrast	66
8.3	Adjusting the Picture	67
8.3.1	Switching between the Color and Monochrome Displays	67
8.3.2	Amplifying the Chroma Gain	67
8.3.3	Turning the RGB Signals On and Off	67
8.3.4	Setting the Gain	68
8.3.5	Setting the Bias	68
8.3.6	Setting the Chroma Gain	68
8.3.7	Selecting the Color Temperature	68
8.3.8	Setting the Aperture	68
8.3.9	Adjusting the Backlight	69
8.4	Configuring Marker Settings	69
8.4.1	Turning the Display of the Frame Marker On and Off	69
8.4.2	Turning the Display of the Center Marker On and Off	70

8.4.3	Displaying the Aspect Marker	70
8.4.4	Setting the Aspect Marker.....	71
8.4.5	Displaying Safety Markers	72
8.4.6	Turning the Display of the Safe Action Marker On and Off	72
8.4.7	Turning the Display of the Safe Title Marker On and Off.....	72
8.4.8	Turning the Display of User Markers On and Off	73
8.4.9	Setting User Markers	73
8.5	Configuring Line Selection Settings	73
8.5.1	Turning Line Selection On and Off.....	74
8.5.2	Selecting Lines	74
8.5.3	Setting the Line Selection Range	74
8.6	Display Settings	75
8.6.1	Selecting the Display Size	75
8.6.2	Adjusting the Display Position	77
8.6.3	Displaying Gamut Errors.....	77
8.6.4	Selecting the Simul Mode Display Format	78
8.6.5	Configuring Thumbnail Settings.....	78
8.6.6	Selecting the Video Signal Waveform Display Format.....	79
8.6.7	Selecting the Histogram Display Format.....	80
8.6.8	Selecting the Signals to Display Histograms Of.....	80
8.6.9	Selecting the Channels to Display Histograms Of	81
9.	CINELITE DISPLAY.....	82
9.1	Selecting the Display Format.....	82
9.2	Displaying Synchronized Markers.....	83
9.3	Configuring Line and Sample Numbers	85
9.4	Configuring the f Stop Display Settings.....	85
9.4.1	f Stop Display Explanation	86
9.4.2	Procedure for Displaying the f Stop Display	87
9.4.3	Setting Measurement Points.....	88
9.4.4	Setting the Area of Luminance Measurement.....	88
9.4.5	Configuring User-Defined Correction Tables	88
9.5	Configuring the Percentage Display Settings.....	94
9.5.1	Percentage Display Explanation	94
9.6	Configuring the CINEZONE Display Settings	96
9.6.1	CINEZONE Display Explanation.....	96
10.	3D ASSIST DISPLAY	98
10.1	Selecting the Display Format.....	98
10.2	Configuring the Checkerboard Display Settings	100
10.3	Configuring the Wipe Display Settings.....	100
10.3.1	Turning the Boundary Lines On and Off	101
10.3.2	Moving the Boundary Lines	101
10.4	Configuring the Inverted Display Settings	101
10.5	Selecting the Measurement Mode	102
10.6	Configuring the Grid Display Settings	102
10.6.1	Selecting the Displayed Grid	103
10.6.2	Selecting the Grid to Configure.....	103

10.6.3	Selecting the Grid Line Adjustment Unit	103
10.6.4	Selecting the Grid Color.....	104
10.6.5	Adjusting the Grid Line Spacing.....	104
10.6.6	Adjusting the Grid Line Positions.....	104
10.7	Configuring the Disparity Measurement Settings.....	105
10.7.1	Disparity Measurement Display Explanation	105
10.7.2	Disparity Measurement Procedure	107
11.	VIDEO SIGNAL WAVEFORM DISPLAY	109
11.1	Video Signal Waveform Display Explanation	109
11.2	Setting the Display Position	110
11.2.1	Setting the Horizontal Position.....	110
11.2.2	Setting the Vertical Position	110
11.3	Configuring the Video Signal Waveform and Scale Settings.....	111
11.3.1	Selecting the Scale Unit.....	111
11.3.2	Selecting the Scale Color	112
11.3.3	Selecting the Waveform Color	113
11.3.4	Selecting the Contrast	113
11.3.5	Displaying Markers for 75 % Intensity Color Bars.....	114
11.3.6	Displaying Horizontal Markers	115
11.3.7	Adjusting the Waveform Intensity	115
11.3.8	Adjusting the Scale Intensity.....	115
11.4	Configuring the Gain and Filter Settings	116
11.4.1	Selecting the Fixed Gain.....	116
11.4.2	Setting the Variable Gain	116
11.4.3	Selecting the Vertical Display Position.....	117
11.4.4	Selecting the Filter	117
11.5	Configuring Sweep Settings.....	119
11.5.1	Selecting the Sweep Method	119
11.5.2	Selecting the Line Display Format	119
11.5.3	Selecting the Field or Frame Display Format.....	120
11.5.4	Selecting the Horizontal Magnification.....	121
11.5.5	Displaying the Blanking Interval.....	122
11.6	Configuring the Line Selection and Sync Signal Settings	122
11.6.1	Turning Line Selection On and Off.....	123
11.6.2	Selecting Lines	123
11.6.3	Setting the Line Selection Range	124
11.6.4	Switching the Sync Signal	124
11.7	Configuring the Color System Settings	124
11.7.1	Selecting the Display Format.....	124
11.7.2	Displaying the Luminance and GBR Signals Simultaneously	125
11.7.3	Selecting the Composite Display Format.....	126
11.7.4	Selecting the Setup Level	126
11.8	Setting the Displayed Signals	127
11.8.1	Selecting Which Channels to Display	127
11.8.2	Switching between the Overlay and Parade Displays.....	127
11.9	Configuring Cursor Settings.....	128
11.9.1	Displaying Cursors.....	128

11.9.2	Moving Cursors.....	129
11.9.3	Selecting the Measurement Unit.....	129
11.9.4	Setting the Reference Value	130
11.10	Configuring the Display Settings.....	130
11.10.1	Selecting the Simul Mode Display Format	130
11.10.2	Configuring the Inverted Display Settings.....	131
11.10.3	Configuring Thumbnail Settings.....	131
12.	VECTOR WAVEFORM DISPLAY	132
12.1	Vector Display Explanation	132
12.2	Configuring Vector and Scale Settings.....	133
12.2.1	Turning the Display of the I and Q Axes On and Off	133
12.2.2	Selecting the Scale Color	133
12.2.3	Selecting the Vector Color	134
12.2.4	Selecting the Contrast	134
12.2.5	Selecting the Scale Type	135
12.2.6	Displaying the Vector Marker.....	136
12.2.7	Adjusting the Vector Intensity	136
12.2.8	Adjusting the Scale Intensity.....	136
12.3	Setting the Gain	137
12.3.1	Selecting the Fixed Gain.....	137
12.3.2	Setting the Variable Gain	137
12.4	Configuring the Line Selection and Sync Signal Settings	138
12.4.1	Turning Line Selection On and Off.....	138
12.4.2	Selecting Lines	139
12.4.3	Setting the Line Selection Range	139
12.4.4	Switching the Sync Signal	140
12.5	Configuring the Display Settings.....	140
12.5.1	Switching between the Vector and 5-Bar Displays.....	140
12.5.2	Selecting the Simul Mode Display Format	141
12.5.3	Configuring Thumbnail Settings.....	141
12.6	Configuring the Display Format Settings.....	141
12.6.1	Selecting the Display Format.....	142
12.6.2	Selecting the Composite Display Format.....	142
12.6.3	Selecting the Setup Level	143
12.6.4	Displaying a Scale for 75 % Intensity Color Bars.....	143
12.7	Configuring the 5 Bar Display	143
12.7.1	5 Bar Display Explanation.....	144
12.7.2	Setting the Display Order.....	145
12.7.3	Selecting the Scale Unit.....	145
13.	AUDIO DISPLAY	146
13.1	Audio Display Explanation	146
13.2	Setting the Input Channels.....	147
13.2.1	Selecting Channel Groups.....	147
13.2.2	Selecting the Single-Lissajous Display Channels	147
13.2.3	Selecting the Headphone Output Channels.....	148
13.3	Configuring the Meter Settings	148

13.3.1	Selecting the Reference Level	148
13.3.2	Selecting the Range	148
13.3.3	Selecting the Scale	149
13.3.4	Setting the Peak Value Hold Time	149
13.4	Configuring Lissajous Settings.....	149
13.4.1	Selecting the Display Format.....	150
13.4.2	Selecting the Scale Display Format	150
13.4.3	Selecting the Gain	151
13.4.4	Adjusting the Lissajous Curve Intensity	151
13.4.5	Adjusting the Scale Intensity.....	152
13.5	Configuring Thumbnail Settings	152
13.6	Adjusting the Headphone Volume.....	152
14.	STATUS DISPLAY	153
14.1	Status Screen Explanation.....	153
14.2	Configuring Event Log Settings	158
14.2.1	Event Log Screen Explanation.....	158
14.2.2	Scrolling through the Event Log	160
14.2.3	Starting the Event Log	160
14.2.4	Deleting the Event Log	160
14.2.5	Selecting the Overwrite Mode.....	161
14.2.6	Saving the Event Log.....	161
14.3	Configuring Data Dump Settings.....	161
14.3.1	Data Dump Display Explanation	162
14.3.2	Scrolling through the Data Dump.....	163
14.3.3	Selecting the Line Number	163
14.3.4	Selecting the Display Mode	163
14.3.5	Selecting the Display Format.....	164
14.3.6	Selecting the Display Start Position	164
14.3.7	Saving Data Dumps.....	165
14.4	Configuring Phase Difference Measurement Settings	165
14.4.1	Phase Difference Measurement Screen Explanation	166
14.4.2	Setting the User Reference of the Phase Difference	168
14.4.3	Using the Phase Difference Default.....	168
14.4.4	Measuring the Phase Difference between Channels	168
14.4.5	Measuring the Phase Difference between Links A and B	168
14.4.6	Switching the Sync Signal	169
14.5	Configuring Video Error Settings.....	169
14.5.1	Detecting CRC Errors	169
14.5.2	Detecting EDH Errors	169
14.6	Configuring Audio Error Settings.....	170
14.6.1	Detecting BCH Errors	170
14.6.2	Detecting CRC Errors	170
14.7	Configuring Gamut Error Settings.....	170
14.7.1	Turning the Filter ON and OFF	171
14.7.2	Selecting the Filter Characteristic	171
14.7.3	Detecting Gamut Errors	171
14.7.4	Setting the Gamut Error Levels.....	172

14.7.5	Detecting Composite Gamut Errors	173
14.7.6	Setting the Composite Gamut Error Levels	173
14.7.7	Detecting Luminance Errors	174
14.7.8	Setting the Luminance Error Levels.....	175
14.8	Clearing Errors.....	175
15.	MULTI-SCREEN DISPLAY FEATURE	176
15.1	Switching between the Single-Screen and Multi-Screen Displays	176
15.2	Selecting the Display Format	176
15.3	Selecting the Displays in Each Area	177
15.4	Selecting the Layout	178
15.5	Configuring the Display Mode Settings	178
15.6	Configuring the Wipe Display Settings.....	179
15.7	User Layout	180
15.7.1	User Layout Display.....	180
15.7.2	Copying All User Layouts.....	180
16.	REMOTE FEATURE (OPTION).....	181
16.1	Remote Control Connector Specifications	181
16.2	Control	182
16.3	Recalling Presets	183
16.4	Input Signal Switching.....	185
16.5	Tally Indication	185
16.6	Generating Alarms	186
17.	APPENDIX	187
17.1	Menu Tree.....	187
17.1.1	Picture Menu	187
17.1.2	Video Signal Waveform Menu	192
17.1.3	Vector Menu	195
17.1.4	Audio Menu	197
17.1.5	Status Menu.....	198
17.1.6	Multi-Screen Display Menu.....	200
17.1.7	Preset Registration Menu	201
17.1.8	Input Menu.....	202
17.1.9	Capture Menu	202
17.1.10	System Menu.....	203
17.2	Firmware Change History	205

Index

GENERAL SAFETY SUMMARY

■ Read This before Using the Instrument

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

This instrument is not designed or manufactured for households or ordinary consumers.




If unqualified personnel are to use the instrument, be sure the instrument is handled under the supervision of qualified personnel (those who have electrical knowledge). This is to prevent the possibility of personal injury or damage to the instrument.

■ Note about Reading This Manual

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

■ Symbols and Terms

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

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

GENERAL SAFETY SUMMARY

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



■ Warnings Concerning the Case and Panels

Do not remove the instrument's case or panels for any reason. Touching the internal components of the instrument could lead to fire or electric shock.

Also, do not allow foreign materials, such as liquids, combustible matter, and metal, to enter the instrument. Turning the instrument on when such materials are inside it could lead to fire, electric shock, damage to the instrument, or some other accident.

■ Installation Environment

• Operating Temperature Range

Use this instrument in a 0 to 40 °C environment. Using the instrument with its vents blocked or in a high temperature environment could lead to fire.

Drastic changes in temperature, such as might be caused by moving the instrument between two rooms with different temperatures, can damage the instrument by causing condensation to form within it. If there is a possibility that the instrument has condensation within it, wait for approximately 30 minutes before turning on the power.

• Operating Humidity Range

Use this instrument in an environment whose relative humidity is 85 % or less where there is no threat of condensation forming.

Also, do not operate this instrument with wet hands. Doing so could lead to electric shock or fire.

• Do Not Operate in an Explosive Atmosphere

Using this instrument in an environment where flammable gasses, explosive gasses, or steam is emitted or stored could lead to an explosion or fire. Do not use the instrument in such an environment.

• Do Not Insert Foreign Materials

If foreign materials, such as metal, flammable objects, or liquid are allowed into the instrument (through the vents for example), fire, electric shock, damage to the instrument, or some other accident may result.

■ If You Notice Something Wrong during Operation

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

GENERAL SAFETY SUMMARY

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



- **Warnings Concerning the Power Source**

Do not use a power source with a voltage other than the rated power source voltage for the instrument. Doing so could lead to fire.

- **Warnings Concerning the Panel**

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



- **Cautions Concerning the Input and Output Connectors**

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

Doing so could damage the instrument.

- **Cautions Concerning the 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.

- **If You Will Not Use the Instrument for an Extended Period of Time**

If you will not use the instrument for an extended period of time, remove the power plug from the outlet.

GENERAL SAFETY SUMMARY

■ Calibration and Repairs

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

■ Routine Maintenance

When you clean the instrument, remove the power plug from the outlet.

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

■ About the European WEEE Directive



This instrument and its accessories are subject to the European WEEE Directive.

Follow the applicable regulations of your country or region when discarding this instrument or its accessories. Follow the EU Battery Directive when discarding the batteries that you removed from this instrument.

(WEEE stands for Waste Electrical and Electronic Equipment.)

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

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

1. INTRODUCTION

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

If some point about the operation of this instrument is still unclear after you have read this instruction manual, refer to the contact information on the back cover of the manual to contact LEADER, or contact your local LEADER agent.

After you have finished reading this manual, keep it in a convenient place so that you can refer to it when necessary.

1.1 Scope of Warranty

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

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

- 1 Repair of malfunction or damages resulting from fire, natural calamity, or improper voltage applied by the user.
- 2 Repair of 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 Maximum Allowable Input Voltage



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

Table 1-1 Maximum allowable input voltage

Input Connector	Maximum Allowable Input Voltage
INPUT SDI A and INPUT SDI B	$\pm 2\text{V}$ (DC + peak AC)
EXT REF	$\pm 5\text{V}$ (DC + peak AC)
REMOTE (option)	0 to +5V

1.2.2 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 or devices that are connected to it.

1.2.3 Mechanical Shock

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

1.2.4 Electrostatic Damage

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

1.2.5 Warming Up

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

1.2.6 Backup Battery

If the backup battery runs out, the LV 5382 exhibits the following behavior. If this happens, contact your local LEADER agent.

- The last memory feature is disabled.
- The clock is initialized.
- The contents of all presets are deleted.

To continually use these features, we recommend that you replace the backup battery with a new one every five years after you purchase the LV 5382. Also, save the presets to a USB memory device.

You cannot replace the backup battery yourself. For more information, contact your nearest LEADER agent.

1.3 Trademark Acknowledgments

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

1.4 About Terminology Used in this Manual

This section explains the terminology used in this manual.

- **SDI input**

This refers to the state in which in the INPUT menu, INPUT SYSTEM is set to SDI.
The LV 5382 measures SDI signals in this state.

- **HDMI input**

This refers to the state in which in the INPUT menu, INPUT SYSTEM is set to HDMI.
The LV 5382 measures HDMI signals in this state.

- **2D mode**

This refers to the mode in which in the INPUT menu, INPUT MODE is set to 2D or INPUT MODE is set to AUTO and the signal is recognized as being 2D.

“2D mode” may be followed by “(single input)” or “(simul),” as in “2D mode (single input).”

(single input): In the INPUT menu, SIMUL MODE has been set to OFF.

(simul): In the INPUT menu, SIMUL MODE has been set to ON.

- **3D mode**

This refers to the mode in which in the INPUT menu, INPUT MODE is set to 3D ASIST or INPUT MODE is set to AUTO and the signal is recognized as being 3D ASIST.

“3D mode” may be followed by “(L/R DUAL),” “(FRM PACK),” “(HF SbyS),” or “(TOP&BOTM),” as in “3D mode (L/R DUAL).” These options can be selected by setting the 3D INPUT FORMAT item in the INPUT menu.

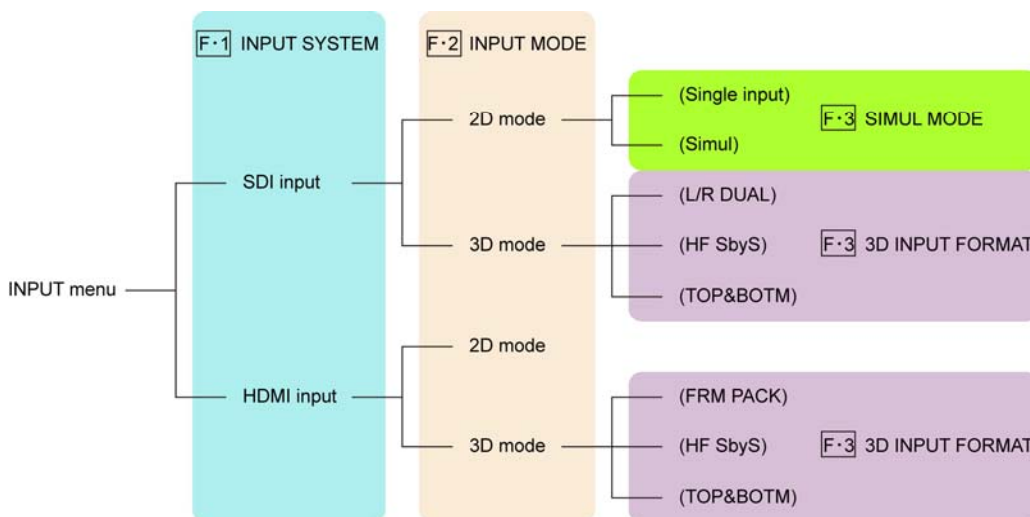


Figure 1-1 INPUT menu

- **1-screen display**

This refers to the mode in which the MULTI key is off. A single display mode is displayed as the main mode.

- **Multi-screen display**

This refers to the mode in which the MULTI key is on. Multiple display modes are displayed simultaneously.

- **Single link**

This refers to the state in which in the FORMAT submenu of the system menu, Link Format is set to SINGLE.

- **Dual link**

This refers to the state in which in the FORMAT submenu of the system menu, Link Format is set to DUAL or 2K.

- **About underlining (_)**

In this manual, abbreviations are used for procedures as shown below.

Colons are followed by a list of options or a range of settings. The default setting is underlined.

Procedure

VECT → F•2 GAIN : X1 / X5 / IQ-MAG

2. SPECIFICATIONS

2.1 General

The LV 5382 is a portable waveform monitor that supports SDI and HDMI signals.(*1) The LV 5382 has simultaneous HD-SDI dual input display features and supports HDMI frame-packing, side-by-side, and top-and-bottom formats. A battery option is also available. Thanks to these features, the LV 5382 is incredibly useful at 3D filming locations.

*1 HDCP is not supported.

2.2 Features

2.2.1 Standard Features

- **Features Tailored to 3D Filming**

The LV 5382 can handle 3D content with its support for HD-SDI 2-channel simultaneous display and HDMI frame-packing, side-by-side, and top-and-bottom formats. The LV 5382 has a number of features that are useful for evaluating 3D content. The anaglyph display enables easy expression of stereoscopic vision. The variable grid display is for horizon and parallax checking. The vertical and horizontal reversal feature is necessary when using a mirror rig.

- **SDI and HDMI I/O Connectors and the SDI to HDMI Conversion Feature**

The LV 5382 has two SDI input connectors, two reclocked SDI signal output connectors, an HDMI input connector, and an HDMI output connector. The HDMI output connector can actively transmit an HDMI input signal or output an HDMI signal that has been converted from an SDI signal.

- **High-Quality TFT LCD**

The TFT display (XGA with a resolution of 1024 × 768 pixels), which has high color reproducibility, gives the display improved quality and enables you to use the LV 5382 as a picture monitor.

- **Rich Assortment of Display Features**

Not only does the LV 5382 have essential displays for video signal quality monitoring, such as a video signal waveform display and a vector display, it also has a rich assortment of other display features, such as a picture display, audio level meter display, 5-bar display, transmission error detection, and gamut error detection. It can also be used for 2D filming in the same manner as previous models.

- **Rich Assortment of Waveform Features**

The LV 5382 uses fully digital waveform display processing to achieve high precision and quality. The video signal waveform display has gain, sweep, and cursor measurement features, along with RGB and pseudo-composite display features. In addition to video signal waveforms, the LV 5382 can also display vectors, the Lissajous curves of embedded audio, and level meters.

- **Versatile Picture Display**

The LV 5382 uses fully digital picture display processing to achieve high precision and versatility. The display has a number of adjustment features such as color temperature selection, brightness adjustment, contrast adjustment, gain adjustment, and bias adjustment. It also has monochrome, chroma up, gamut error, and safety marker display features.

- **Versatile Display Layouts**

The LV 5382 has a 1-screen display in which the picture, video signal waveform, vector, or audio meter display can be displayed in a single screen, a multi-screen display in which these displays can be combined, and a 2-channel simultaneous display in which two SDI signals can be displayed simultaneously. Also, users can register up to four user layouts that specify preferred display locations and sizes.(*1)

- **Standard-Equipped CINELITE II (*2)**

The CINELITE feature makes it easy to manage the levels of specific points on the picture display. This is useful for adjusting the gain of multiple cameras through the use of the same reference point. Furthermore, the CINELITE Advanced feature makes it possible to synchronize measurements with the video signal waveform display and vector display.

The CINEZONE feature makes it possible to check the luminance distribution of the whole picture display at a glance.

- **Screen Capture Feature**

The display can be captured and stored as still-image data. The captured data can be displayed on the LV 5382. Additionally, it can be saved as bitmap files to USB memory, which makes it possible to view the data on a PC.

- **External Sync Input (*2)**

The LV 5382 can receive a tri-level sync signal or an NTSC or PAL black burst signal as its external sync signal and then display video signal waveforms with this sync signal as its reference.

- **Preset Feature**

Up to 30 sets of panel settings can be registered as presets and loaded easily at a later time. Registration of settings that are used repeatedly can help you work more efficiently. In addition, the LV 5382 has a display mode preset feature that can be used to register the settings for each display—the video signal waveform display, vector display, and picture display. This makes it possible to use the displays according to different usage conditions.

- **Key LEDs**

All the panel keys have LEDs. This makes it easy to find the keys even in dark environments.

- **Last Memory Feature**

The LV 5382 always keeps a backup of the current settings. When the LV 5382 is restarted, it can be used with the same settings that were in use before it was turned off.

2. SPECIFICATIONS

- **ID Display**

IDs can be assigned to input signals. IDs are entered from the LV 5382 panel.

- **Stereo Headphone Output**

The LV 5382 can deliver the embedded audio of an SDI signal or HDMI signal in stereo through the headphone output jacks.

*1 To create a user layout file, contact your local LEADER agent.

*2 This feature is not available for HDMI signals.

2.2.2 Optional Features and Products Sold Separately

- **Remote and Tally Option (OP72, factory option)**

The addition of the remote and tally option enables the LV 5382 to load presets and display tallies according to the signals that it receives through the rear-panel remote control connector. This makes it possible to link the LV 5382 to a switcher or other device.

- **Battery Mount Option (OP73 or OP74, factory option)**

The addition of the battery mount option enables the LV 5382 to use IDX (OP73) or Anton/Bauer (OP74) batteries.

- **AC Adapter (SPU63-105, sold separately)**

An AC adapter is available.

- **Rack Mounting Kit (Sold separately)**

By attaching the LV 5382 to these rack supports (sold separately), you can mount it on a rack. When mounted to a rack, the LV 5382 can still be tilted up or down.

- **Carrying Handle (Sold separately)**

This handle is useful for carrying the LV 5382.

2. SPECIFICATIONS

2.3 Specifications

2.3.1 SDI Input Signal Video Formats and Corresponding Standards

2D Mode (Single-link system)

Format	Quantization	Scanning	Frame (Field) Rates	Compliant Standards
YCbCr 4:2:2	10 bit	1080i	60/59.94/50	SMPTE 274M
		1080p	30/29.97/25/24/23.98	SMPTE 292
		1080PsF (*1)	30/29.97/25/24/23.98	
		720p (*2)	60/59.94/50/ 30/29.97/25/24/23.98	SMPTE 296M SMPTE 292
		525i	59.94	SMPTE 259M
		625i	50	

2D Mode (Dual-link system)

Format	Quantization	Scanning	Frame (Field) Rates	Compliant Standards
RGB 4:4:4	10 bit	1080p	30/29.97/25/24/23.98	SMPTE 372 (1920×1080)
		1080PsF (*1)	30/29.97/25/24/23.98	
		1080i	60/59.94/50	
	12 bit	1080p	30/29.97/25/24/23.98	
		1080PsF (*1)	30/29.97/25/24/23.98	
YCbCr 4:2:2	12 bit	1080p	30/29.97/25/24/23.98	
		1080PsF (*1)	30/29.97/25/24/23.98	
		1080i	60/59.94/50	
		1080i	60/59.94/50	
RGB 4:4:4 (2K)	12 bit	1080p (*2)	24/23.98	(2048×1080)
		1080PsF (*2)	24/23.98	

3D Assist Mode

Format	Quantization	Scanning	Frame (Field) Rates
YCbCr 4:2:2	10 bit	1080i	60/59.94/50
		1080p	30/29.97/25/24/23.98
		1080PsF (*1)	30/29.97/25/24/23.98
		720p (*2)	60/59.94/50/ 30/29.97/25/24/23.98

*1 The HDMI output is interlaced.

You cannot output formats with frame rates of 24 Hz or 23.98 Hz as HDMI signals.

*2 You cannot output formats with frame rates of 24 Hz or 23.98 Hz as HDMI signals.

2. SPECIFICATIONS

2.3.2 HDMI Input Signal Video Formats

2D Mode (HDMI input)

Format	Quantization	Scanning	Frame (Field) Rates	VIC
RGB 4:4:4	12 bit	1920x1080p (*2)	60/59.94/50	16/31
YCbCr 4:2:2 (*1)	10 bit	1920x1080p	30/29.97/25/24/23.98	32/33/34
	8 bit	1920x1080i	60/59.94/50	5/20
		1280x720p (*2)	60/59.94/50/30/29.97/25	4/19/60/61/62
		640x480p (*3)	60/59.94	1
		720x480p(525p) (*3)	60/59.94	2/3
		720x576p(625p) (*3)	50	17/18
		720x480i(525i) (*2)	60/59.94	6/7
		720x576i(625i) (*2)	50	21/22

2D Mode (DVI input) (*3)

Format	Quantization	Scanning	Frame Rates
RGB 4:4:4	8 bit	640x480p	60/59.94
		720x480p(525p)	60/59.94
		720x576p(625p)	50

3D Assist Mode

Format	Quantization	Scanning	Frame (Field) Rates
RGB 4:4:4 (*2)	12 bit (*2)	1920x1080i	60/59.94/50
YCbCr 4:2:2	10 bit	1920x1080p	30/29.97/25/24/23.98
	8 bit	1280x720p	60/59.94/50/30/29.97/25

*1 The LV 5382 cannot distinguish between 8-bit, 10-bit, and 12-bit quantization.

*2 The signal is converted to a YCbCr 4:2:2 10 bit signal through internal processing.

*3 The pseudo-composite display, YCbCr to RGB conversion display, vector display, 5-bar display, and DVI input status display are not available.

2.3.3 SDI/HDMI I/O Features

Input System Options

SDI and HDMI

SDI Input Features

SDI Input Display Modes

2D and 3D assist

2D Display Modes

Single input mode (Select channel A or B.)

Dual input mode (Channels A and B are displayed simultaneously. You can select this mode in 2D display mode.)

3D Signal Formats

L/R dual, side by side, and top and bottom

Format Switching

SDI Single Link

Manual or automatic

SDI Dual Link

Manual (only the frame frequency can be switched automatically)

2D Dual Input Mode Synchronization between Channels A and B

Must be synchronized and have the same format

2D Dual Link Synchronization between Links A and B

Must be synchronized and have the same format

Permissible 2D Dual Link Phase Difference between Links A and B

2. SPECIFICATIONS

	Automatic correction up to 100 clocks (approx. 1.4 μ s)
3D Dual L/R Synchronization between Channels A and B	Must be synchronized and have the same format
Permissible 3D Dual L/R Phase Difference between Channels A and B	Automatic correction up to 100 clocks (approx. 1.4 μ s)
SDI Output Features	
Output Signal	Serial reclocked input SDI signal (for monitoring)
HDMI Input Features	
HDMI Input Identification	AUTO, 2D, and 3D assist
3D Signal Formats	Frame packing, side by side, and top and bottom
Format Switching	According to the AVI information frame
HDMI Output Features	
Output Signal	Output of HDMI or SDI video and audio input signals (1080PsF/24, 23.98 and 720p/24, 23.98 cannot be output)
SDI-HDMI Conversion Features	
Video Signal	Output an HDMI signal that has been converted from an SDI input signal
Audio Signal	Output the embedded audio through the HDMI output (up to 8 channels)
Format Conversion	RGB 4:4:4, YC _B C _R 4:4:4, and YC _B C _R 4:2:2 (there is no resolution conversion)
Deep Color Support	8 bit, 10 bit, and 12 bit
3D Signal Conversion Features	
SDI L/R Dual Input	HDMI frame packing output
SDI Side-by-Side Input	HDMI half side-by-side output
SDI Top-and-Bottom Input	HDMI top-and-bottom output

2.3.4 SDI Signal Audio Format

SDI Standards	
HD-SDI	SMPTE-299
SD-SDI	SMPTE-272M
Format	L-PCM
Sampling Frequency	48 kHz
Quantization	24 bits
Clock Generation	Generated from the video clock
Synchronization	All audio signals must be synchronized to the video clock.
Number of Channels	8 channels
Input Signal Combination	
Single Input Mode	Eight channels displayed
Dual Input Mode	4 channels \times 2-channel simultaneous display

- * When the link format is set to SDI dual, the LV 5382 only supports the audio signal received through link A.
In 3D mode (L/R DUAL), the LV 5382 only supports the audio signal embedded in channel A.

2. SPECIFICATIONS

2.3.5 HDMI Signal Audio Format

Format	L-PCM
Sampling Frequency	48 kHz
Quantization	16 bit, 20 bit, and 24 bit
Synchronization	All audio signals must be synchronized to the video clock
Number of Channels	8 channels

2.3.6 I/O Connectors

SDI Input

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

SDI Output

Output Connectors	Two BNC connectors
A/B Output Connector	Outputs the signal from the selected input channel (A or B)
B output connector	Outputs the signal from channel B
Output Impedance	75 Ω
Output Voltage	800 mVp-p ± 10 %
Output Return Loss	≥ 15 dB for 5 MHz to the serial clock frequency

HDMI Input

Input Connector	One type A connector
HDCP	Not supported
CEC	Not supported
xvYCC	Not supported
Lip Sync	Not supported
HEAC	Not supported

HDMI Output

Output Connectors	One type A connector
Output Signal (*1)	Active output of the HDMI input signal It is also possible to convert and output an SDI input signal (including 8 channels of embedded audio). The selected SDI input (channel A or B) is output as an HDMI signal.
One Input	The selected SDI input (channel A or B) is output as an HDMI signal.
Two Inputs	An SDI input must be manually selected.
3D Assist	Frame packing, side by side, and top and bottom
HPD	Supported (output is cut off if no sink device is connected)

2. SPECIFICATIONS

External Sync Input (*2)

Feature	A video signal waveform is displayed that is based on the phase of the external sync signal. (Only available for SDI signals.)
Input Signal	Tri-level sync or NTSC/PAL black burst signal
Input Connector	Two BNC connectors
Input Impedance	15 k Ω passive loop-through
Input Return Loss	≥ 30 dB for 50 kHz to 30 MHz into 75 Ω
Maximum Input Voltage	± 5 V (DC + peak AC)

Headphone Output

Output Signal	Extracts and transmits the audio signal embedded in an SDI signal or HDMI signal.
Output Channel	Specified AES/EBU pair
Output Connectors	One stereo miniature jack
Volume Adjustment	Configured from the menu
Power Output	50 mW max. (with 16 Ω load resistance)

- *1 For some formats, the LV 5382 internally converts the RGB 4:4:4 signal to YCbCr 4:2:2 and then reconverts the signal to RGB 4:4:4 before outputting it.
- *2 If the video signal waveform is displayed using an external sync signal as the reference, inserting or removing an SDI signal or restarting the device may cause the waveform phase to be off by one clock. Also, this feature does not function with 1080p/60, 59.94, 50 SDI signals or HDMI signals.

2.3.7 Control Connectors

USB Port

Specifications	USB 2.0
Media	Only USB memory devices are supported.
Features	Saving of screen captures, preset data, event logs, and data dumps and firmware updates

Remote Control Connector (OP72)

Features (*1)	Comprehensive preset recall, tally display, and input signal selection
Control Signal	LV-TTL level (low active)
Control Connectors	15-pin D-sub (female, inch screws)
Input Voltage Range	0 to 5V
Number of Presets	Eight presets (bits) or 30 presets (binary)
Input Signal Selection	Switch the input between channel A or B of an SDI signal and an HDMI signal
Tally Display Feature	Display red and green tallies independently or simultaneously
Alarm Output	Output the alarms detected by the LV 5382 Active during the period over which an error occurs
Output Level	LV-TTL level (select low active or high active)
Minimum Pulse Width	1 s

- *1 Display mode presets cannot be recalled.
In normal mode, tally indication (green) and SDI/HDMI switching cannot be used at the same time. You have to select which one to use.
In command mode, preset recall, tally indication, and input signal switching features cannot be used

2. SPECIFICATIONS

at the same time. You have to select one of them to use.

2.3.8	LCD	
	LCD Type	8.4-inch color TFT
	Display Format	XGA. The effective resolution is 1024 × 768.
	Backlight Brightness	32 levels
	Auto Shutoff	LCD can be automatically turned off after a set period of time.
2.3.9	Screen Capture	
	Screen capture	Captures the screen to an image file (only one screen capture is stored in internal memory)
	Media	Internal memory (RAM) and USB memory
	Data Output	Screen captures can be saved as bitmap files to USB memory.
	Data Input	Data saved to USB memory can be loaded and displayed on the LV 5382.
2.3.10	Presets	
	Preset Modes	Comprehensive preset and display mode preset
	Comprehensive Preset	Saves all panel settings to memory (excluding some settings)
	Display Mode Preset	Only saves the configuration of a particular display mode to memory
	Affected Items	Picture, video signal waveforms, vectors, audio, and status
	Number of Presets	
	Comprehensive Presets	30
	Display Mode Presets	Five for each display mode
	Recall Method	Front panel, remote control connector (OP72)
	Copying	Copies all preset configurations to or from USB memory

2.3.11 Main Display Features

SDI Input Modes	Single input mode, dual input mode, and 3D assist mode
Single Input Mode	Displays a single input signal
Dual Input Mode	Displays up to two input signals of the same format simultaneously
3D Assist Mode	Displays two SDI signals in a variety of formats so that the signals can be compared as components of a 3D video signal
HDMI Input Modes	2D mode and 3D assist mode
2D Mode	Displays the HDMI input signal as a single video signal
3D Assist Mode	Divides the HDMI input signal into two video signals and displays the signals in a variety of formats so that the signals can be compared as components of a 3D video signal
Dual Input Mode Display Formats	Mixed, tiled, aligned (differs depending on the displayed contents)
Mixed Display	Two input signals are displayed on top of each other.
Tiled Display	Two input signals are displayed in separate areas.
Aligned Display	Two input signals are displayed side by side.
Display Sizes	1-screen display, 2-screen display, 4-screen display, user layout
1-Screen Display	Displays a single, large screen (the thumbnail display can be turned on and off)
2-Screen Display	Splits the display into left and right screens
4-Screen Display	Splits the display into four screens
User Layout	Displays the user-defined layout
Number of User Layouts	Four (two for single input mode and two for simultaneous input mode)

2. SPECIFICATIONS

2.3.12 Video Signal Waveform Display

Dual Input Mode Display Formats	Mixed,(*1) tiled, aligned
Waveform Operations	
Display Modes	Overlay and parade
Overlay	Overlays component signals
Parade	Displays component signals side by side
Blanking Interval	H and V blanking periods can be displayed or hidden.
RGB Conversion	Converts a YC _B C _R signal into an RGB signal and displays the result
Pseudo-Composite Display	Artificially converts a component signal into a composite signal
Channel Assignment	Displayed in GBR or RGB order (selectable when RGB conversion is enabled)
Line Select	Displays the selected line
Sweep Modes	H (line), V (field/frame) (V cannot be selected in dual input mode)
Line Display	×1, ×10, ×20, ACTIVE, or BLANK
Frame or Field Display	×1, ×20, or ×40
Gain	×1 or ×5
Variable Gain	×0.2 to ×2.0
Filter	Flat or low pass
Contrast	LOW, MIDDLE, HIGH, or MONOTONE
Waveform Display Accuracy	
Amplitude Accuracy	±0.5 %
Frequency Response	
HD	
Y Signal	±0.5 % for 1 to 30 MHz
C _B ,C _R Signals	±0.5 % for 0.5 to 15 MHz
Low-Pass Attenuation	≥ 20 dB (at 20 MHz)
SD	
Y Signal	±0.5 % for 1 to 5.75 MHz
C _B ,C _R Signals	±0.5 % for 0.5 to 2.75 MHz
Low-Pass Attenuation	≥ 20 dB (at 3.8 MHz)
Cursor Measurement	
Composition	Two horizontal cursors (REF and DELTA) Two vertical cursors (REF and DELTA)
Amplitude Measurement	%, V, or R%
Time Measurement	Displayed in μsec or msec
Frequency Display	Computes and displays the frequency with the length of one period set to the time between two cursors
Scale	
Type	% scale, V scale, decimal scale, or hexadecimal scale
Display Color	7 colors
Thumbnail Display	Picture or audio level meter

*1 In dual input mode and 3D assist mode, the waveform display will flicker when the input video signal has a field or frame rate of 50, 25, 24, or 23.98 Hz.

2. SPECIFICATIONS

2.3.13 Vectorscope Display

Dual Input Mode Display Formats	Mixed(*1) and tiled
Blanking Interval	Masked
Contrast	LOW, MIDDLE, HIGH, or MONOTONE
Pseudo-Composite Display	Artificially converts a component signal into a composite signal
Colorimetry	ITU-R709 or ITU-R601 (screen display)
Line Select	Displays the selected line
Gain	×1, ×5, or IQ-MAG
Variable Gain	×0.2 to ×2.0
Amplitude Accuracy	±0.5 %
Scale	
Setting the Color Bar Saturation	75% or 100%
IQ Axis	Show or hide
Display Color	7 colors
Thumbnail Display	Picture or audio level meter

*1 In dual input mode and 3D assist mode, the waveform display will flicker when the input video signal has a field or frame rate of 50, 25, 24, or 23.98 Hz.

2.3.14 5 Bar Display

Dual Input Mode Display Formats	Tiled only
Features	Displays five peak levels: Y, R, G, B, and pseudo-composite
Channel Assignment	RGB or GBR
Scale	mV or %
Error Level	Based on the gamut error, composite gamut error, and luminance error thresholds
Line Select	Displays the selected line
Thumbnail Display	Picture or audio level meter

2.3.15 Picture Display

Dual Input Mode Display Formats	Mixed and tiled
Quantization	8 bits
Color Temperatures	6500 K and 9300 K
Image Quality Adjustment	Brightness, contrast, chroma gain, RGB gain, RGB bias, and aperture
Display Sizes	Fit, full frame, real, and 4:3 full screen
Color Selection	R, G, and B can be turned off separately. Chroma off
Frame Rate	The frame rate is converted and displayed using the internal sync signal.
Aspect Marker	
HD	4:3, 13:9, 14:9, or 2.39:1
SD	13:9, 14:9, or 16:9
Aspect Marker Format	Line, shadow (99 levels), or mask
Safety Marker Size	ARIB TR-B4, SMPTE RP-218, or user-defined
Line Select	Marks the selected line

2. SPECIFICATIONS

Gamut Error Display	Displays gamut error locations over the picture
Thumbnail Display	Video signal waveform, audio level meter, or histogram
Histogram Display	
Features	Displays the Y, R, G, and B histograms
Display Formats	Overlay and parade
2.3.16 3D Assist Feature	
Supported Formats	
SDI Input	L/R dual, side by side, and top and bottom (only supported with a single link)
HDMI Input	Frame packing, half side by side, and top and bottom
Channel Assignment for SDI L/R Dual Input	
Left Eye Video	Channel A
Right Eye Video	Channel B
Picture Display Assistance Features	
Anaglyph Display	Displays color or monochrome anaglyphs
Color	Green and blue are masked from the left eye video signal, and red is masked from the right eye video signal. These signals are then combined and displayed.
Monochrome	Green and blue are masked from the monochrome left eye video signal, and red is masked from the monochrome right eye video signal. These signals are then combined and displayed.
Convergence Display	The monochrome left eye video signal is added to a monochrome right eye video signal that has had its levels reversed, and a 50% offset is added.
Overlay	The levels of both the left and right eye video signals are halved, and the signals are combined and displayed.
Checkerboard Display	The left eye video signal and the right eye video signal are displayed in a checkerboard pattern.
Boundary Lines	Boundary lines can be moved horizontally and vertically
Wipe Display	The left eye video signal and the right eye video signal are divided by boundary lines and displayed.
Left-Right Boundary	The portion to the left of the boundary line is the left eye video signal, and the portion to the right of the boundary line is the right eye video signal.
Top-Bottom Boundary	The portion above the boundary line is the left eye video signal, and the portion below the boundary line is the right eye video signal.
Boundary Line Movement	Individual boundary lines can be moved horizontally and vertically.
Boundary Line Marker	ON or OFF
Flicker Display	The left eye video signal and the right eye video signal

2. SPECIFICATIONS

	are displayed on a time sharing display.
Inverted Display	
Horizontal Inversion	Horizontally inverts the picture and video signal waveform(*1)
Vertical Inversion	Vertically inverts the picture
Inverted Channel	Both channel A and B can be inverted.
Grid Display	Displays grid lines on the picture
Grid Options	Disparity, horizontal, or both
Disparity Grid Cell Width	6 to 192 pixels (0.3 to 10.0 %)
Horizontal Grid Cell Width:	6 to 108 lines (0.6 to 10.0 %)
Grid Position	Can be moved horizontally and vertically
Disparity Measurement Feature	
Feature	Position the cursor at a point in the picture to measure the disparity and level at that point.
Alarm	If the threshold is exceeded, "NG" (no good) is displayed.
Measurable Items	Screen disparity (% , cm, or dots), perceived depth (m), and angle of vergence (°)
Video Signal Waveform Display Assistance Features	
Display Formats	Mixed and tiled
Waveform Display Color	The waveform of the left eye video signal is displayed in red, and the waveform of the right eye video signal is displayed in cyan.
Wipe Feature	L/R wiping of the video signal waveform is possible (only in the mixed display)
Histogram Display	The L/R signals are displayed on top of each other.
Time Code Display	The timecodes for the left eye video signal and the right eye video signal can be displayed at the same time.

*1 Horizontal inversion of the video signal waveform occurs only during the video period.

2.3.17 CINELITE Display

CINELITE Display	
Features	f Stop display and percentage display
f Stop Display	The f Stop value relative to a reference point is displayed.
f Stop Gamma Correction	
Fundamental Gamma	0.45 (ITU-R BT709)
User Correction Table	3 types
External Correction Table	5 types (loaded from USB memory)
% Display	
Y% Display	Luminance components are displayed as percentages.
RGB% Display	RGB components are displayed as percentages.
RGB 255 Display	RGB components are displayed using an 8-bit, 256-step gradient.
Measured Points	3 points

2. SPECIFICATIONS

Measurement Sizes	1 × 1 pixel, 3 × 3 pixels, and 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
CINEZONE Display	
Feature	Colors are added to the display in accordance with luminance levels
Display Colors	
Gradation	1024 colors
Step	12 colors
Search	1024 colors
Gradation and Step Displays	
Upper Limit	-6.3 to 109.4 % (values equal to or greater than the upper limit are displayed in white)
Lower Limit	-7.3 to 108.4 % (values less than the lower limit are displayed in black)
Search Display Mode	
Feature	Colors are added to the display in accordance with luminance level ranges
Luminance Level	-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)

* The CINELITE feature is not available for HDMI signals.

2. SPECIFICATIONS

2.3.18	Audio Display	
	Dual Input Mode Display Format	Tiled only
	Display Types	Level meter, level values, and Lissajous
	Level Meter Display	
	Displayed Channels	Two or eight
	Meters	60 dB peak level, 90 dB peak level, and average (The peak level meters have a hold feature.)
	Numeric Display	Displays volume levels as dB values
	Lissajous Display	
	Displayed Channels	Two (single), eight (multi)
	Display Modes	X-Y and MATRIX
	Channel Selection	
	SDI Single Input Mode	Any two groups from groups 1, 2, 3, and 4
	SDI Dual Input Mode	One group and four channels per input channel
	HDMI Input	Up to 8 channels
2.3.19	SDI Signal Error Count Display	
	Feature	Counts the video, audio, and gamut errors in an SDI signal (not available for HDMI input)
	Video Error Display	Counts CRC (HD-SDI) and EDH (SD-SDI) errors
	Audio Error Display	Counts embedded audio BCH (HD-SDI) and channel status bit CRC errors
	Gamut Error Display	Counts gamut, composite gamut, and luminance level errors
	Low-Pass Filter	
	HD	1 MHz, 2.8 MHz, or OFF
	SD	1 MHz or OFF
	Detection Range	
	Gamut Error	
	Upper Limit	90.8 to 109.4 %
	Lower Limit	-7.2 to 6.1 %
	Composite Gamut Error	
	Upper Limit	90.0 to 135.0 %
	Lower Limit	-40.0 to 20.0 %
	Luminance level error	The same as for gamut errors
	Error Count	Up to 999999 errors can be counted separately for video, audio, and gamut.
	Count Period	One count per field
	Current Time Display	The time according to the internal clock
	Elapsed Time Display	The elapsed time since the error count was cleared

2.3.20 SDI Signal Status Display

Error Detection

Monitoring Feature

Regardless of the input mode, you can monitor two inputs simultaneously (not available for HDMI input).

SDI

Detects the presence of an SDI signal

Video

CRC Error

Detects HD-SDI signal transmission errors

EDH Error

Detects SD-SDI signal transmission errors

Phase Error

When the link format is set to dual, the LV 5982 detects phase difference errors between link A and link B (a difference greater than or equal to 100 clocks).

Audio

CRC Error

Detects CRC errors in channel status bits

BCH Error

Detects transmission errors in the audio packets that are embedded in HD-SDI signals

Gamut

Gamut Error

Detects gamut errors

Composite Gamut Error

Detects level errors that occur when component signals are converted to composite signals

Luminance Error

Detects level errors in the luminance component

Event Log

Recorded Events

Errors, changes in input type, time stamps, etc.

Recording Capacity

Up to 1000 events

Operation

Records all events from start to finish

Data Output

Saved in text format to USB memory

Data Dump

Operation mode

Run or hold

Data Array

Single Link Mode

Serial or component

Dual Link Mode

Link A, link B, or link A and B combined

Movement

EAV, SAV, line, or sample

Phase Difference Display

Feature

Displays the phase difference between the external sync signal and the SDI signal (does not function when the video format is 1080p/60, 59.94, or 50)

Reference Phase

No phase difference when connected directly to a LEADER TSG

Reference Phase Correction

Sets the reference phase to the current state

2. SPECIFICATIONS

2.3.21 Other Display Features

Input Information Display	Input channel or ID
Input Channel	Displays the selected channel (A, B, or HDMI)
ID Display	Up to 10 characters for each input channel
SDI Timecode	LTC, VITC, or OFF
Compliant Standards	SMPTE 12M-2 (decoded from ANC-TC) (When the link format is set to dual, only link A is decoded.)
Format	The format can be displayed when an SDI or HDMI signal is detected.

2.3.22 Front Panel

Key LEDs	All the keys are dimly back-lit, and the selected key is lit more brightly.
Power Switch	Stores whether the instrument is on or off
Last Memory	Backs up the panel settings

2.3.23 Battery Mount (Option)

Available Mounts	V-type mount (OP73) or a QR Gold Mount (OP74)
DC Input Range	10 to 18 VDC
Rated Battery Power	40 W or higher
Level Meter	Four level display, from empty to full
How the Power Supply Is Selected (*1)	When a power supply is connected to the DC INPUT connector, power from DC INPUT is prioritized.

*1 When you switch between a DC power supply and a battery, the LV 5382 may restart.

2.3.24 General Specifications

Environmental Conditions	
Operating Temperature	0 to 40 °C
Operating Humidity Range	85 %RH or less (no condensation)
Optimal Temperature	10 to 30 °C
Power Consumption	
Voltage	10 to 18 VDC
Power Consumption	40 W max.
Dimensions	215 (W) × 176 (H) × 85 (D) mm (excluding feet)
	215 (W) × 176 (H) × 118 (D) mm (with OP73, excluding feet)
	215 (W) × 176 (H) × 110 (D) mm (with OP74, excluding feet)
Weight	2.1 kg (without options or with OP72)
	2.4 kg (with OP73 or OP74)
Accessories	Instruction Manual..... 1
	VESA spacer..... 1
	15-pin D-sub connector (OP72)..... 1
	15-pin D-sub connector cover (OP72)..... 1

3. NAMES AND FUNCTIONS OF PARTS

3.1 Front Panel

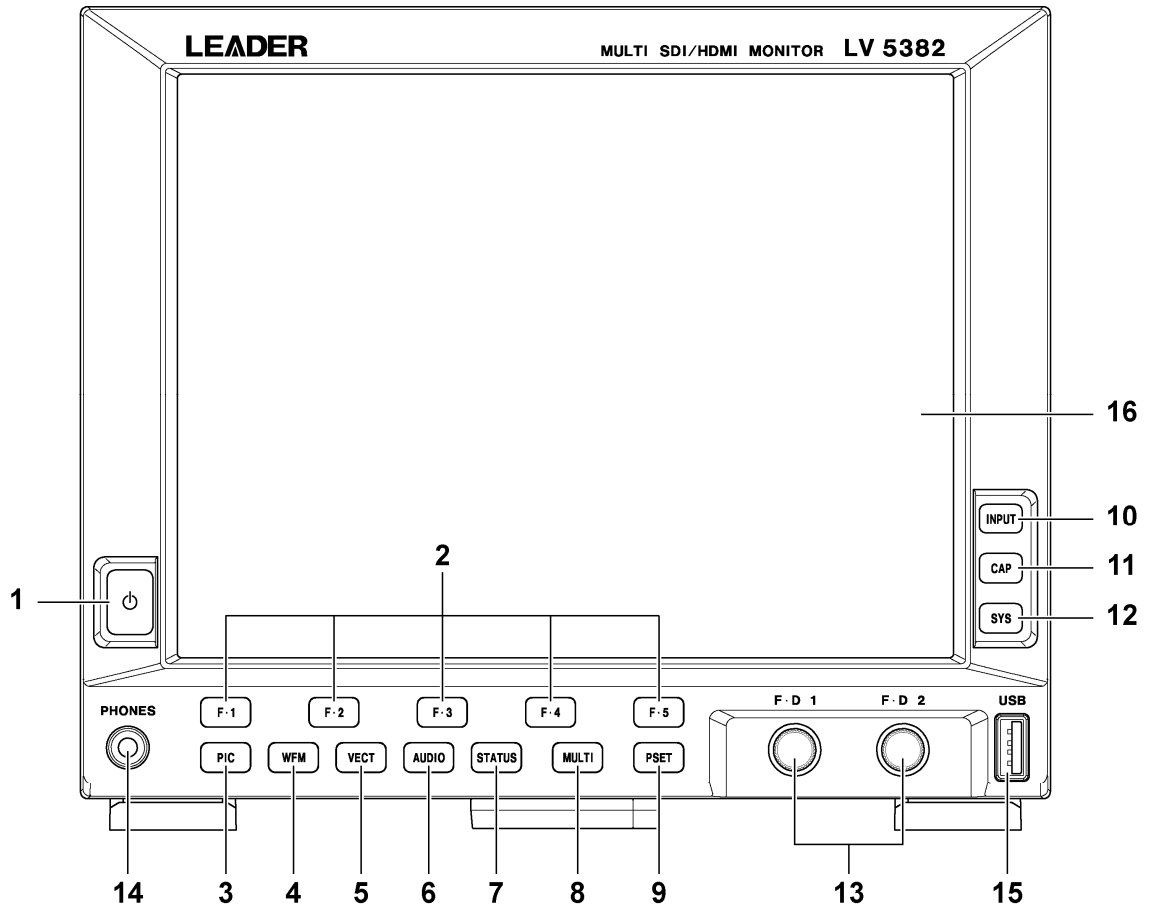


Figure 3-1 Front panel

3. NAMES AND FUNCTIONS OF PARTS

Table 3-1 Front panel items and functions

Number	Name	Function	See
1	Power switch	Press: Switches the power from off to on. Hold down: Switches the power from on to off.	4.1.2 4.1.3
2	F•1 to F•5 keys	Used to select menu items and pop-up commands.	4.9
3	PIC key	Press: Switches to the picture display. Shows the display mode preset menu.(*1) Hold down: Shows the picture menu.	Chapter 8 Chapter 9 Chapter 10
4	WFM key	Press: Shows the video signal waveform display. Shows the display mode preset menu.(*1) Hold down: Shows the video signal waveform menu.	Chapter 11
5	VECT key	Press: Switches to the vector waveform display. Shows the display mode preset menu.(*1) Hold down: Shows the vector menu.	Chapter 12
6	AUDIO key	Press: Switches to the audio display. Shows the display mode preset menu.(*1) Hold down: Shows the audio menu.	Chapter 13
7	STATUS key	Press: Switches to the status display. Shows the display mode preset menu.(*1) Hold down: Shows the status menu.	Chapter 14
8	MULTI key	Press: Switches between the single- and multi-screen displays. Hold down: Shows the multi-screen display menu.	Chapter 15
9	PSET key	Press: Shows the preset menu. Hold down: Shows the preset registration menu.	Chapter 6
10	INPUT key	Select the input signal.	4.2
11	CAP key	Captures the current display and shows the screen capture menu.	Chapter 7
12	SYS key	Press: Shows the system menu. Hold down: Enables and disables the key lock.	Chapter 5 4.9.4
13	F•D 1 F•D 2	Mostly used to set values. In most cases, pressing one of these knobs will return the value you are adjusting to its default setting.	4.9
14	PHONES	Used to connect headphones.	13.2.3 13.6
15	USB	Used to connect USB memory. USB memory is used to load and save various kinds of data.	-
16	LCD	This shows the different measurement displays.	-

*1 This appears when display mode presets are enabled.

3. NAMES AND FUNCTIONS OF PARTS

3.2 Rear Panel

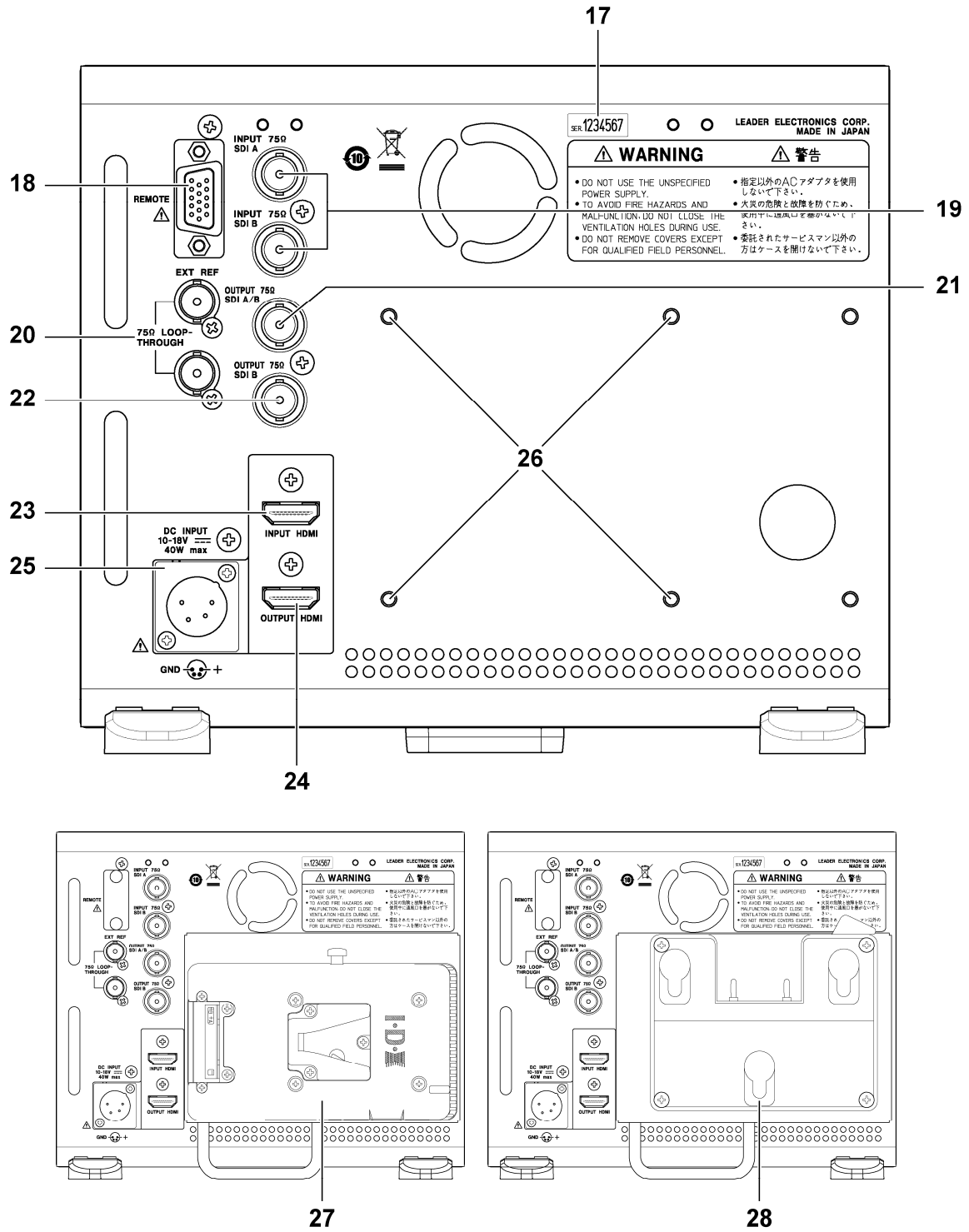


Figure 3-2 Rear panel

3. NAMES AND FUNCTIONS OF PARTS

Table 3-2 Rear panel items and functions

Number	Name	Function	See
17	Serial number label	The serial number is printed here.	-
18	REMOTE (OP72)	Remote control connector. Used to load presets and for tally display and other operations.	5.6 Chapter 16
19	INPUT SDI A INPUT SDI B	SDI signal input connectors.	4.3
20	EXT REF	Loop-through external sync signal input connectors	4.7
21	OUTPUT SDI A/B	Reclocked SDI signal output connectors.	4.5
22	OUTPUT SDI B	Reclocked SDI signal output connectors.	4.5
23	INPUT HDMI	HDMI signal input connector.	4.4
24	OUTPUT HDMI	HDMI signal output connector.	4.6
25	DC INPUT	DC inlet.	4.1.1
26	VESA mounting holes	These are 75 × 75 mm VESA compliant mounting holes.	4.11
27	Battery mount (OP73)	An adapter for attaching a V-mount type battery.	4.1.4 5.10
28	Battery mount (OP74)	An adapter for attaching a QR Gold Mount battery.	4.1.4 5.10

3.3 Bottom Panel

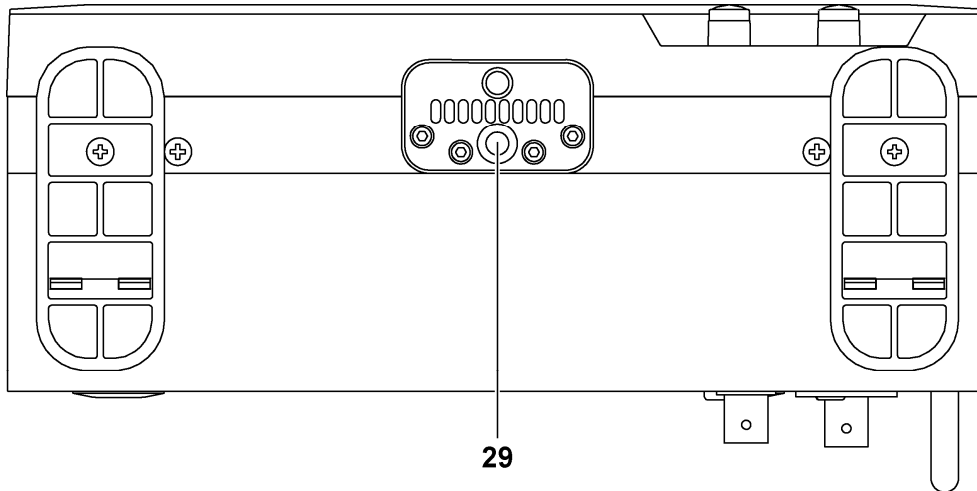


Figure 3-3 Bottom panel

Table 3-3 Bottom panel items and functions

Number	Name	Function	See
29	Tripod adapter	Used when attaching a tripod to the LV 5382.	-

4. BEFORE YOU BEGIN MEASURING

4.1 About the Power Supply

4.1.1 Applying DC Power

The DC inlet is shown below. Apply +12 V to pin 4 shown in the figure below.

When the LV 5382 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 5382 for an extended period of time, disconnect the DC power supply.

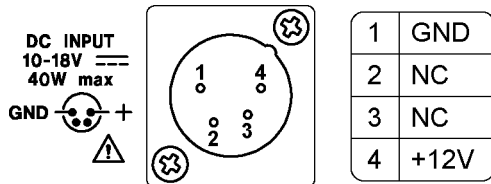


Figure 4-1 DC INPUT

* NC means that you should not connect anything to a pin.

4.1.2 Turning the Power On

To turn on the power, press the power switch on the front panel. The power switch's LED lights when the power is on.

When you turn ON the power, the LV 5382 starts up with the same panel settings that were set when it was last turned OFF. However, the following items are cleared: the error counter, LAPSED, the status display's error counts, the event log, and the capture data.

4.1.3 Turning the Power Off

To turn OFF the power, hold down the power switch on the front panel for one second or more. The power switch's LED turns off when you turn off the power.

4.1.4 Using a Battery (Option)

You can use batteries by equipping the LV 5382 with a battery pack.

Attaching a battery to the LV 5382 makes it extremely heavy. Take appropriate precautions to prevent the LV 5382 from falling.

The battery mount is a (separately sold) factory option. You must provide a battery and battery charger yourself.

- If you attach the battery while the power is off, the power switch LED will blink.
- The DC power supply has precedence when it is used at the same time as the battery. When you switch between the power supplies (battery to DC power supply or DC power supply to battery), the LV 5382 may restart.
- While the battery is being used, the remaining battery power is displayed in the upper right of the screen. To properly display the remaining battery power, in "System Settings," see section 5.10, "Battery Settings (Option)," to select the battery type.

4.2 Setting the Signal to Measure

Use the INPUT menu to configure the measurement signal settings.

To display the INPUT menu, press INPUT. No matter how much time elapses, the INPUT menu will not automatically disappear. To hide the INPUT menu, press INPUT again.

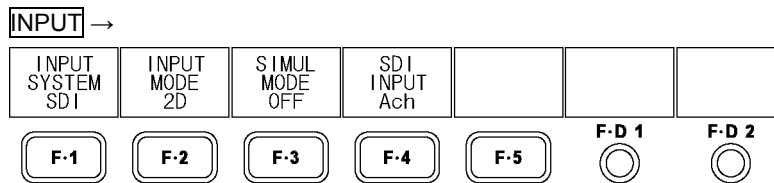


Figure 4-2 INPUT menu

4.2.1 Selecting the Input Signal

To select the input signal, follow the procedure below.

Procedure

INPUT → **F-1** INPUT SYSTEM : SDI / HDMI

Settings

SDI: The LV 5382 measures SDI signals.
HDMI: The LV 5382 measures HDMI signals.

4.2.2 Selecting the Input Mode

To select the input mode, follow the procedure below.

Procedure

INPUT → **F-2** INPUT MODE : AUTO / 2D / 3D ASIST

Settings

AUTO: The LV 5382 can automatically switch between 2D mode and 3D mode according to the Vendor Specific InfoFrame. If the Vendor Specific InfoFrame is not embedded in the signal, the LV 5382 will operate in 2D mode. This setting is available when **F-1** INPUT SYSTEM is set to HDMI. (This is the default setting for HDMI input.)

2D: A 2D signal is measured. (This is the default setting for SDI input.)

3D ASIST: A 3D signal is measured. This setting is not available when an unsupported format is being input or when the link format is set to dual.

4. BEFORE YOU BEGIN MEASURING

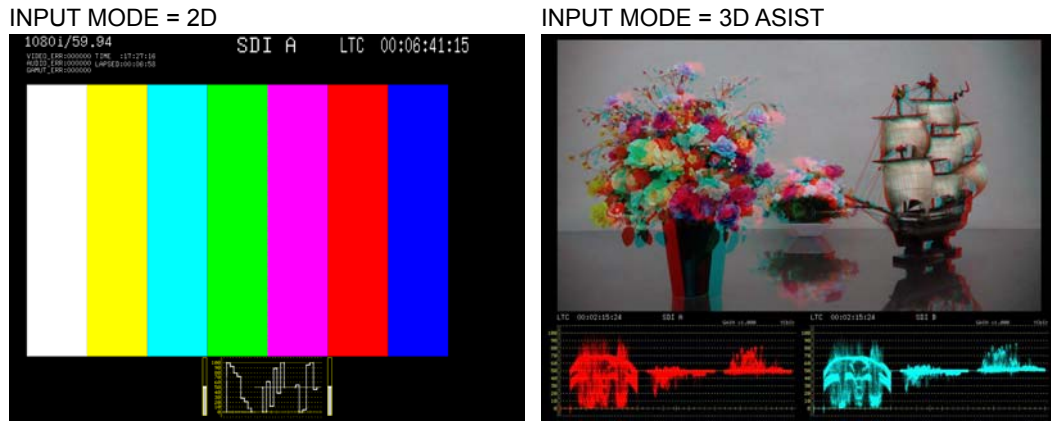


Figure 4-3 Selecting the input mode

4.2.3 Turning Simul Mode On and Off

When **[F•1]** INPUT SYSTEM is set to SDI and **[F•2]** INPUT MODE is set to 2D, to turn simul mode on and off, follow the procedure below. This menu is not displayed when the link format is set to dual.

Procedure

[INPUT] → **[F•3]** SIMUL MODE : ON / OFF

Settings

- ON: The LV 5382 measures the signals applied to channels A and B simultaneously.
- OFF: The LV 5382 measures either the signal applied to channel A or the signal applied to channel B.

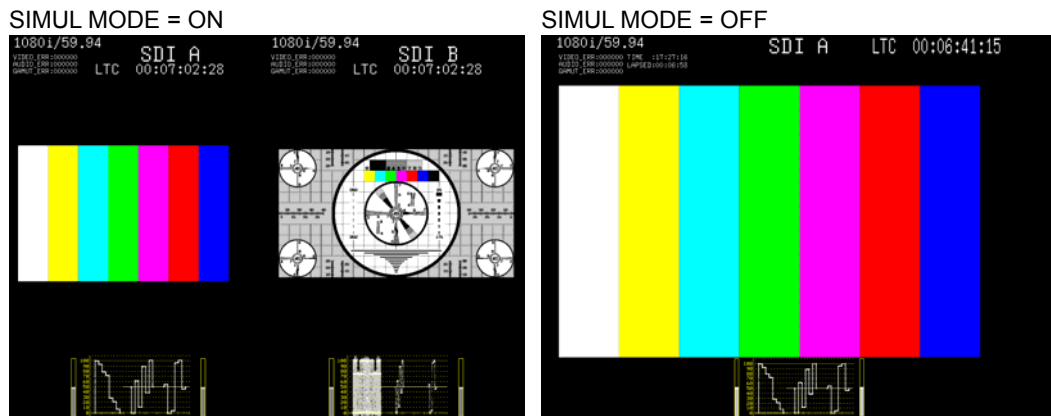


Figure 4-4 Selecting the input mode

4.2.4 Selecting the 3D Format

When **[F•2]** INPUT MODE is set to 3D, to select the 3D format, follow the procedure below.

Procedure

[INPUT] → **[F•3]** 3D INPUT FORMAT : L/R DUAL / FRM PACK / HF SbyS / TOP&BOTM

Settings

L/R DUAL: The left eye video signal applied to channel A and the right eye video signal applied to channel B are measured simultaneously. This setting is available when **[F•1]** INPUT SYSTEM is set to SDI. (This is the default setting for SDI input.)

FRM PACK: A frame-packing format 3D signal is measured.
This setting is available when **[F•1]** INPUT SYSTEM is set to HDMI. (This is the default setting for HDMI input.)

HF SbyS: A side-by-side format 3D signal is measured.

TOP&BOTM: A top-and-bottom format 3D signal is measured.

4.2.5 Selecting the Input Channel

When **[F•1]** INPUT SYSTEM is set to SDI, to select the input channel, follow the procedure below.

This setting not available when **[F•3]** SIMUL MODE is set to ON, **[F•3]** 3D INPUT FORMAT is set to L/R DUAL, or the link format is set to dual.

Procedure

[INPUT] → **[F•4]** SDI INPUT : Ach / Bch

4.2.6 Selecting the Channels to Output

When **[F•3]** SIMUL MODE is set to ON, to select the channel to output from the OUTPUT SDI A/B connector or the OUTPUT HDMI connector, follow the procedure below.

[Reference] SDI Select Output → Section 5.2, "Output Connector Settings"

Procedure

[INPUT]

→ **[F•5]** SDI/HDMI OUTPUT : SDI Ach / SDI Bch (when SDI Select Output is set to Ach/Bch)

→ **[F•5]** HDMI OUTPUT : SDI Ach / SDI Bch (when SDI Select Output is set to Ach)

4.3 Applying the SDI Signal

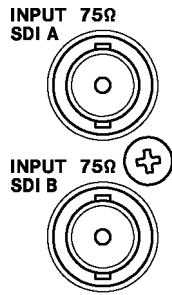


Figure 4-5 SDI input connectors

- **Input Format**

Apply a signal that has one of the formats specified in section 2.3.1, “SDI Input Signal Video Formats and Corresponding Standards.” The input format is detected automatically by default. To set the input format manually, see section 5.1, “Setting the Input Format.”

- **Terminators**

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

- **Input Levels**

Make sure that the input level is 800 mVp-p \pm 10 % at the signal source's BNC output connector. An SDI signal that is outside of this range may not be received properly.

- **Input Signal Setting**

To measure a signal that is applied to the SDI input connector, in the INPUT menu, set INPUT SYSTEM to SDI. You can also set the input mode and input channel settings in the INPUT menu. For details, see section 4.2, “Setting the Signal to Measure.”

- **Cables**

It has been confirmed that errors do not occur when the LV 5382 receives an 800 mVp-p stress pattern through the following cables.

HD: LS-5CFB cable, 110 m

SD: L-5C2V cable, 260 m

4.4 HDMI Signal Input

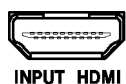


Figure 4-6 HDMI Input Connector

Apply a signal that has one of the formats specified in section 2.3.2, “HDMI Input Signal Video Formats.” The input format is detected automatically.

To measure a signal that is applied to the HDMI input connector, in the INPUT menu, set INPUT SYSTEM to HDMI. You can also set the input mode in the INPUT menu. For details, see section 4.2, “Setting the Signal to Measure.”

4.5 SDI Signal Output

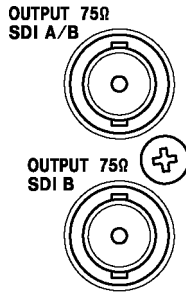


Figure 4-7 SDI output connectors

The following signals are output from the OUTPUT SDI connector. Use the signals for monitoring.

- **During SDI Input**

The reclocked signal of the channel selected in the INPUT menu using **F•4** SDI INPUT or **F•5** SDI/HDMI OUTPUT is output from the OUTPUT SDI A/B connector. In the FORMAT submenu of the system menu, you can also fix the output to the signal that is applied to the INPUT SDI A connector. In 3D mode (L/R DUAL), the signal that is applied to the INPUT SDI A connector is reclocked and output.

The signal that is applied to the INPUT SDI B connector is reclocked and output from the OUTPUT SDI B connector.

- **During HDMI Input**

The signal that is applied to the INPUT SDI A connector is reclocked and output from the OUTPUT SDI A/B connector, and the signal that is applied to the INPUT SDI B connector is reclocked and output from the OUTPUT SDI B connector.

4.6 HDMI Signal Output

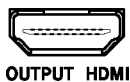


Figure 4-8 HDMI Output Connector

The following signals are output from the OUTPUT HDMI connector. Use the signals for monitoring.

You can set the output signal in the FORMAT submenu of the system menu.

[Reference] FORMAT → Section 5.2, “Output Connector Settings”

- **During SDI Input**

The SDI signal of the channel you select in the INPUT menu using **F•4** SDI INPUT, **F•5** SDI/HDMI OUTPUT, or **F•5** HDMI OUTPUT is converted to an HDMI signal and output. In 3D mode (L/R DUAL), the signal that is applied to the INPUT SDI A/B connector is frame packed and output as a 3D signal.

- **During HDMI Input**

The signal that is applied to the INPUT HDMI connector is output.

4.7 External Sync Signal Input

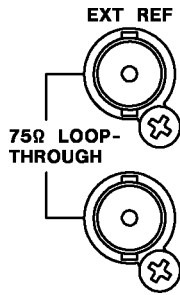


Figure 4-9 External sync signal input connectors

On the video signal waveform display, vector display, and status display (phase difference display), you can apply and display an external sync signal. Apply the external sync signal to the external sync signal input connector. The LV 5382 determines the sync signal format automatically.

*1 The LV 5382 cannot function in external sync mode under the following circumstances.

- During 1080p/60, 1080p/59.94, or 1080p/50 input
- During HDMI input

• Terminators

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

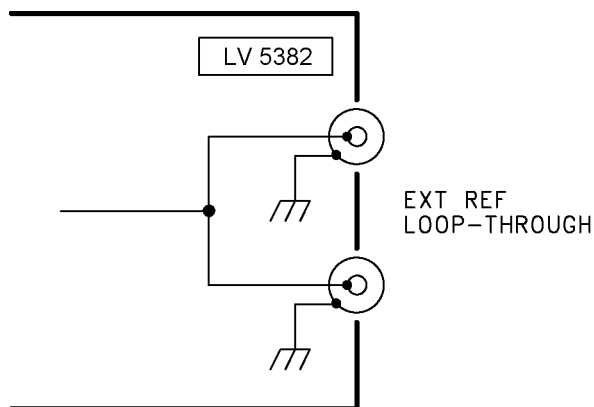


Figure 4-10 Loop-through

• Setting External Synchronization

When you are using an external sync signal, set EXT REF to ON on the video signal waveform display, vector display, or phase difference display. On other displays, waveforms are displayed in sync with the SDI signal regardless of the EXT REF setting.

4. BEFORE YOU BEGIN MEASURING

- **Precautions**

If the waveform or phase difference is displayed using an external sync signal as the reference, inserting or removing an SDI signal or restarting the device may cause the phase to be off by one clock.

- **Supported Formats**

External sync signals that are compatible with each input signal are indicated with a check mark in the following table.

Table 4-1 External sync signal formats

		Input Signal Format																							
		525i/59.94	625i/50	1080i/60	1080i/59.94	1080i/50	1080PsF/30	1080PsF/29.97	1080PsF/25	1080PsF/24	1080PsF/23.98	1080p/30	1080p/29.97	1080p/25	1080p/24	1080p/23.98	720p/60	720p/59.94	720p/50	720p/30	720p/29.97	720p/25	720p/24	720p/23.98	
External sync signal format	NTSC with 10 field ID (59.94 Hz)	✓			✓			✓			✓		✓			✓		✓			✓			✓	
	NTSC (59.94 Hz)	✓			✓			✓				✓						✓			✓				
	PAL (50 Hz)		✓			✓			✓				✓						✓			✓			
	1080i/60			✓			✓																		
	1080i/59.94				✓			✓																	
	1080i/50					✓			✓																
	1080PsF/30						✓																		
	1080PsF/29.97							✓																	
	1080PsF/25								✓																
	1080PsF/24									✓															
	1080PsF/23.98										✓														
	1080p/30											✓													
	1080p/29.97												✓												
	1080p/25													✓											
	1080p/24														✓										
	1080p/23.98															✓									
	720p/60																✓								
	720p/59.94																	✓							
	720p/50																		✓						
	720p/30																			✓					
	720p/29.97																				✓				
	720p/25																					✓			
	720p/24																						✓		
	720p/23.98																							✓	

4.8 General Display Explanation

This section explains the common items in all measurement displays by using the picture display as an example.

Depending on the measurement display, some of these items may not be displayed.

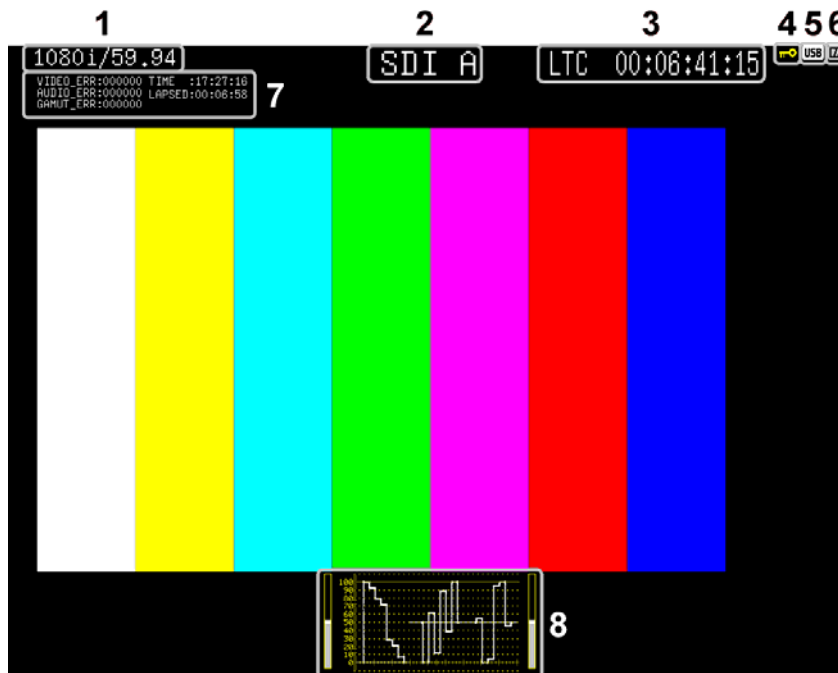


Figure 4-11 General display explanation

1 Input Format

The input signal format appears here. You can also choose to hide this information.

[Reference] Sections 5.1, “Setting the Input Format,” and 5.5.3, “Displaying the Input Format”

2 Input Signal Display

The input signal is indicated. You can indicate the input signal by using an ID that you set or hide the indication.

[Reference] Sections 5.5.4, “Setting the Input Channel Display Format” and 5.4, “Setting IDs”

3 Time Code and Alarms

The time code embedded in the input signal appears here. You can set the time code to LTC, VITC, or OFF.

[Reference] Section 5.5.1, “Setting the Time Code Display Format”

Additionally, the following alarms may appear here.

- **FAN ALARM**

This alarm appears when the fan is not functioning.

If “FAN ALARM” appears, immediately turn the power off, and then contact your local LEADER agent.

- **OVER HEAT**

This alarm appears when the internal temperature has exceeded the specified limits.

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

4 Key Lock Indication

This symbol appears when the key lock is enabled.

[Reference] Section 4.9.4, “Enabling the Key Lock”

5 USB Indication






Appears when USB memory is connected to the USB port.

6 Remaining Battery Power Indication (Option)

Indicates the amount of remaining battery power when the battery is being used. To display the amount of remaining power correctly, set the battery type in the system settings.

[Reference] Section 5.10, “Battery Settings (Option)”

Table 4-2 Remaining battery power indication

Display				
Color	White	White	Yellow	Red
Remaining power	High			Low

7 Error Counter

The error counter, the current time, and the elapsed time appear here. You can also choose to hide this information.

The error counters increase by one for each field that has at least one error, and they can count up to 999,999 errors each. The text here is typically displayed in white, but it is displayed in red when errors are being counted.

To clear the error counts, press ERROR CLEAR in the status menu. You can also clear the error counts by initializing or restarting the LV 5382.

[Reference] Sections 5.5.2, “Displaying Error Counters and the Time,” 14.8, “Clearing Errors,” and 5.8, “Initialization”

- **VIDEO_ERR**

This displays the sum of the counts of CRC (VIDEO) errors (only for HD), EDH errors (only for SD), and A/B Delay errors (only when the link format is set to dual). This error count does not appear during HDMI input.

- **AUDIO_ERR**

This displays the sum of the counts of BCH (only for HD signals) and CRC (AUDIO) errors. This error count does not appear during HDMI input.

4. BEFORE YOU BEGIN MEASURING

- **GAMUT_ERR**

This displays the sum of the counts of GAMUT, COMP GAMUT, and LUMA errors. This error count does not appear during HDMI input.

- **TIME**

The time that you set using TIME in the system settings appears here. This indication does not appear in 2D mode (simul) or 3D mode (L/R DUAL).

- **LAPSED**

The amount of elapsed time appears here. The timer is reset to 00:00:00 when ERROR CLEAR is pressed in the status menu, the date and time are set, the settings are initialized, or the power is turned off. This indication does not appear in 2D mode (simul) or 3D mode (L/R DUAL).

8 Thumbnail Display

A display other than the one that is currently being shown appears here. For example, on the picture display, the thumbnail display can show the audio meter display and the video signal waveform display. The contents of the thumbnail display vary, as shown below, depending on the selected display mode.

You can also choose to hide this information, except for the status display.

Table 4-3 Thumbnail displays

Display Mode	Thumbnail Display				Reference
	Audio Meter	Picture	Video Signal Waveform	Histogram	
PIC	✓ (*1)	-	✓	✓ (*2)	Section 8.6.5, "Configuring Thumbnail Settings"
WFM	✓	✓	-	×	Section 11.10.3, "Configuring Thumbnail Settings"
VECT	✓	✓	×	×	Section 12.5.3, "Configuring Thumbnail Settings"
AUDIO	-	✓	×	×	Section 13.5, "Configuring Thumbnail Settings"
STATUS	×	✓	×	×	-

*1 Not available in 3D mode.

*2 You cannot display a histogram thumbnail at the same time as another thumbnail.

4.9 Panel Operation Basics

4.9.1 Displaying the Function Menu

The function menu is used to specify a variety of settings. If you do not perform any operations for 10 seconds, the function menu will automatically disappear. (You can change the length of time before the menu disappears in the system settings.)

Some menus, such as the system menu, do not automatically disappear.

[Reference] Section 5.9, “Setting the Menu Display Time“

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

To hide the menu, press the display mode key (PIC, WFM, VECT, AUDIO, STATUS, or MULTI) that corresponds to the currently selected display mode.

- **Hold Down a Display Mode Key to Display Its Menu**

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

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

If you press one of the function keys, that is, **F•D 1** or **F•D 2**, the menu will appear. When you perform this operation, the menu is displayed at the level that was displayed before it disappeared.

4.9.2 Function Menu Operations

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

The function menu items correspond to **F•1** to **F•5**.

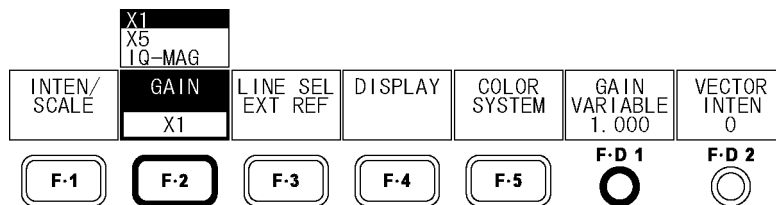


Figure 4-12 Function menu operations

- **Selecting a Setting**

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

- **Changing a Value**

To change a value like **F•D 1** GAIN VARIABLE shown in the figure above, turn **F•D 1**. You can reset most settings to their default values by pressing **F•D 1** or **F•D 2**.

4.9.3 Tab Menu Operations

Normally, the function menus are used to configure the various settings. However, tab menus—such as that shown below—are used in some situations.

This section explains how to operate the tab menu, using the SDI FORMAT tab menu as an example.

SDI FORMAT		OUTPUT	
Link Format	<input checked="" type="checkbox"/> SINGLE <input type="checkbox"/> DUAL <input type="checkbox"/> 2K		
Auto/Manual	<input checked="" type="checkbox"/> Auto <input type="checkbox"/> Manual		
i/PsF Select	<input checked="" type="checkbox"/> Interlace <input type="checkbox"/> Segmented Frame(PsF)		
Scanning	<input checked="" type="checkbox"/> 1080P <input type="checkbox"/> 1080i <input type="checkbox"/> 1080PsF		
	<input type="checkbox"/> 720P <input type="checkbox"/> 525i <input type="checkbox"/> 625i		
Color System	<input checked="" type="checkbox"/> YCbCr422 <input type="checkbox"/> RGB444		
Pixel Depth	<input checked="" type="checkbox"/> 10bit <input type="checkbox"/> 12bit		
Frame Rate	<input checked="" type="checkbox"/> 60 <input type="checkbox"/> 59.94 <input type="checkbox"/> 50 <input type="checkbox"/> 30		
	<input type="checkbox"/> 29.97 <input type="checkbox"/> 25 <input type="checkbox"/> 24 <input type="checkbox"/> 23.98		
EX. 59.94p : F.R. = 59.94 59.94i : F.R. = 29.97			

Figure 4-13 Tab menu operations

- To Move the Cursor

Turn **[F•D 1] SELECT**. Depending on what you are setting, there are some items in which you cannot move the cursor.

- To Change the Tab

When there are multiple tabs such as in the figure above, press **[F•2] PREV TAB** and **[F•3] NEXT TAB** to change between tabs. Even if you switch to another tab, the settings are not confirmed until you press **[F•1] COMPLETE**.

- To Select a Checkbox

Move the cursor to the check box that you want to select, and press **[F•D 1] SELECT**.

- To Enter a Value

Move the cursor to the item that you want to enter the value for, and press **[F•D 1] SELECT**. When you press **[F•D 1] SELECT**, the color of the cursor changes from light blue to yellow, and you can set the value. Turn **[F•D 1]** to set the value. To confirm the value, press **[F•D 1]** again.

- To Confirm the Settings

Press **[F•1] COMPLETE**. All the tab settings are applied, and the previous menu is displayed.

- To Cancel the Settings

Press **[F•5] CANCEL**. All the tab settings are canceled, and the previous menu is displayed.

4.9.4 Enabling the Key Lock

You can prevent accidental operations on the LV 5382 by enabling the key lock. The key lock disables all LV 5382 keys except for the power switch and SYS.

- **Enabling the Key Lock**

Hold down SYS for 2 seconds or more. Release SYS after the message “Keylock Press 'SYS' for 2sec.” appears in red in the bottom right of the screen.

While the key lock is enabled, a key symbol appears in the upper right of the screen.

- **Releasing the Key Lock**

Hold down SYS for 2 seconds or more. Release SYS after the message “Keylock Canceled.” appears in green in the bottom right of the screen.

4.10 Reconfiguration

Reconfiguration is performed in the following conditions.

While reconfiguration is in progress, “System reconfiguration.” is displayed, and you will not be able to operate the LV 5382 for about 20 seconds.

- During SD-SDI input, when the I/P conversion feature is switched between on and off
- During SDI input, when a switch is made between single link and dual link in the FORMAT submenu of the system menu
- During HDMI input, when the input format is changed between Format 1 and Format 2 shown in the following table

Format 1			↔	Format 2		
Input mode	Scanning	Format		Input mode	Scanning	Format
2D mode	1920x1080p	YCbCr 4:2:2		2D mode	1920x1080p	RGB 4:4:4
	1920x1080i	YCbCr 4:2:2			1920x1080i	RGB 4:4:4
	1280x720p	-			640x480p	-
	720x480i(525i)	-			720x480p(525p)	-
	720x576i(625i)	-			720x576p(625p)	-
3D mode	-	-				

4.11 Installing a VESA Stand

On the LV 5382, you can install a commercially available, VESA compliant (75 mm × 75 mm) stand. When you install the stand, insert the attached VESA spacer between the LV 5382 and the stand.

You cannot use a VESA stand if a battery mount option is installed.

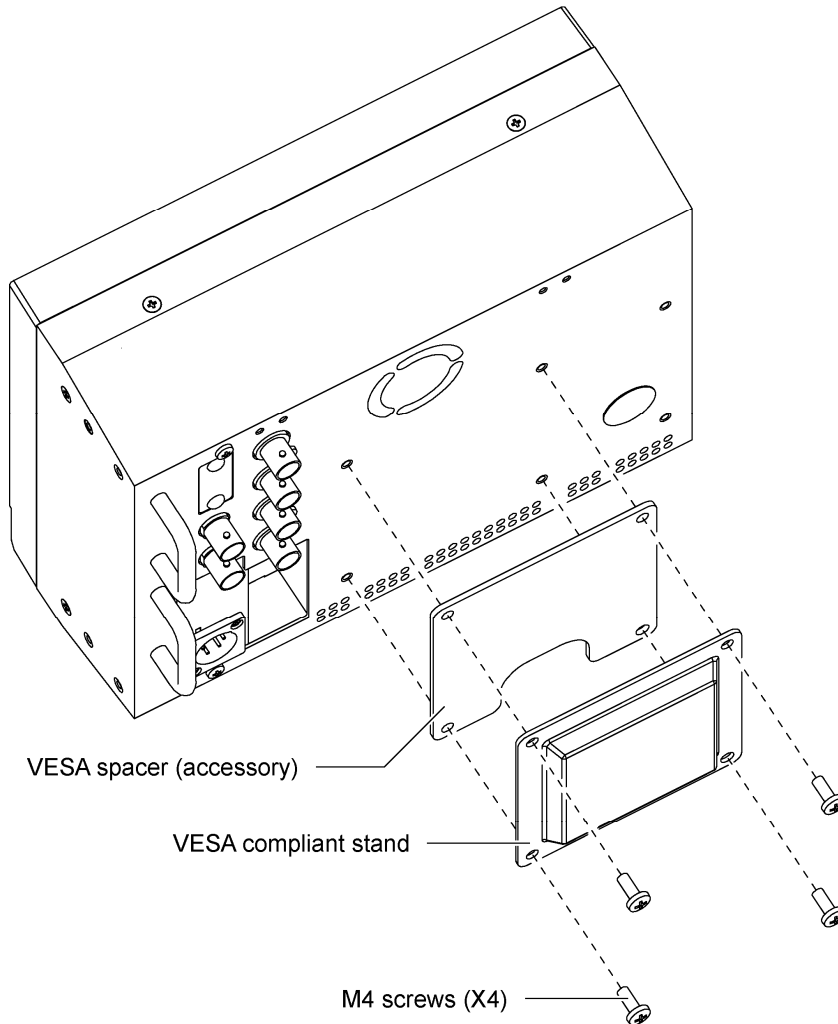


Figure 4-14 Installing a VESA stand

5. SYSTEM SETTINGS

You can configure general LV 5382 settings in the system menu.

To display the system menu, press **SYS**. No matter how much time elapses, the system menu will not automatically disappear. To hide the system menu, press **SYS** again.

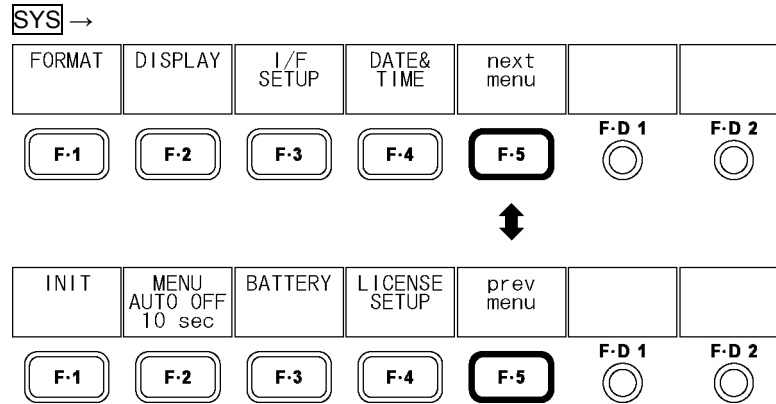


Figure 5-1 System menu

5.1 Setting the Input Format

To set the input format, press **F-1** **FORMAT** in the system menu.

During HDMI input, the input format is detected automatically by default, and this setting is not available.

[Reference] Section 4.9.3, "Tab Menu Operations"

SYS → **F-1** **FORMAT** →

SDI FORMAT		OUTPUT	
Link Format	<input checked="" type="checkbox"/> SINGLE <input type="checkbox"/> DUAL <input type="checkbox"/> 2K		
Auto/Manual	<input checked="" type="checkbox"/> Auto <input type="checkbox"/> Manual		
i/PsF Select	<input checked="" type="checkbox"/> Interlace <input type="checkbox"/> Segmented Frame(PsF)		
Scanning	<input checked="" type="checkbox"/> 1080P <input type="checkbox"/> 1080i <input type="checkbox"/> 1080PsF		
	<input type="checkbox"/> 720P <input type="checkbox"/> 525i <input type="checkbox"/> 625i		
Color System	<input checked="" type="checkbox"/> YCbCr422 <input type="checkbox"/> RGB444		
Pixel Depth	<input checked="" type="checkbox"/> 10bit <input type="checkbox"/> 12bit		
Frame Rate	<input checked="" type="checkbox"/> 60 <input type="checkbox"/> 59.94 <input type="checkbox"/> 50 <input type="checkbox"/> 30		
	<input type="checkbox"/> 29.97 <input type="checkbox"/> 25 <input type="checkbox"/> 24 <input type="checkbox"/> 23.98		
ex. 59.94p : F.R. = 59.94 59.94i : F.R. = 29.97			

Figure 5-2 SDI FORMAT tab

- **Link Format : SINGLE / DUAL / 2K**

Select the link format.

It takes approximately 20 seconds to switch between the dual link and single link formats.

Settings

SINGLE: The LV 5382 receives single link signals.

DUAL: The LV 5382 receives dual link 1920 × 1080 signals.
This setting is not available in 2D mode (simul) or 3D mode.

2K: The LV 5382 receives dual link 2048 × 1080 signals.
This setting is not available in 2D mode (simul) or 3D mode.

- **Auto/Manual : Auto / Manual**

Select the input format detection method.

When the link format is set to dual, you have to manually set the input format. In this situation, you cannot specify this value.

Settings

AUTO: The input format is detected automatically.

MANUAL: The input format must be set manually.

- **i/PsF Select : Interlace / Segmented Frame(PsF)**

Even if you set Auto/Manual to Auto, the LV 5382 will be unable to distinguish between the following formats.

Select which format to choose.

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

Settings

Internal: The interlaced format is displayed.

Segmented Frame (PsF): The segmented frame format is displayed.

- **Scanning, Color System, Pixel Depth, and Frame Rate**

When Auto/Manual is set to Manual or the link format is set to dual, set the input format manually.

The combinations that you can select on the display are indicated below. If you specify a combination of settings that is not shown in this table, the “ILLEGAL FORMAT” error message is displayed. If this happens, specify one of the combinations of settings indicated below.

When Scanning is set to i, please be aware that the frame rate is being displayed. For example, to specify 1080i/59.94 (field rate), set Frame Rate to 29.97.

Figure 5-1 Combinations

Link Format	Scanning	Color System	Pixel Depth	Frame Rate
SINGLE	1080P	YCbCr422	10bit	30 / 29.97 / 25 / 24 / 23.98
	1080i	YCbCr422	10bit	30 / 29.97 / 25
	1080PsF	YCbCr422	10bit	30 / 29.97 / 25 / 24 / 23.98
	720P	YCbCr422	10bit	60 / 59.94 / 50 / 30 / 29.97 / 25 / 24 / 23.98
	525i(*1)	YCbCr422	10bit	29.97
	625i(*1)	YCbCr422	10bit	25
DUAL	1080P	YCbCr422	10bit	(60 / 59.94 / 50)(*2)
	1080P	YCbCr422	12bit	(30 / 29.97 / 25 / 24 / 23.98)(*2)
	1080P	RGB444	10bit	(30 / 29.97 / 25 / 24 / 23.98)(*2)
	1080P	RGB444	12bit	(30 / 29.97 / 25 / 24 / 23.98)(*2)
	1080i	YCbCr422	12bit	(30 / 29.97 / 25)(*2)
	1080i	RGB444	10bit	(30 / 29.97 / 25)(*2)
	1080i	RGB444	12bit	(30 / 29.97 / 25)(*2)
	1080PsF	YCbCr422	12bit	(30 / 29.97 / 25 / 24 / 23.98)(*2)
	1080PsF	RGB444	10bit	(30 / 29.97 / 25 / 24 / 23.98)(*2)
	1080PsF	RGB444	12bit	(30 / 29.97 / 25 / 24 / 23.98)(*2)
2K	1080P	RGB444	12bit	(24 / 23.98)(*2)
	1080PsF	RGB444	12bit	(24 / 23.98)(*2)

*1 Not available in 3D mode

*2 The frame rate is detected automatically and cannot be set manually.

5.2 Output Connector Settings

To configure the output terminal settings, press **[F•1]** FORMAT in the system menu. During HDMI input, this menu item does not appear.

[Reference] Section 4.9.3, "Tab Menu Operations"

[SYS] → **[F•1]** FORMAT → **[F•3]** NEXT TAB →

SDI FORMAT	OUTPUT
SDI Output	
SDI Select Output <input checked="" type="checkbox"/> Ach/Bch <input type="checkbox"/> Ach	
SDI -> HDMI Output Format	
Output Mode	<input checked="" type="checkbox"/> HDMI <input type="checkbox"/> DVI
HDMI Color Format	<input type="checkbox"/> AUTO <input checked="" type="checkbox"/> RGB444 <input type="checkbox"/> YCbCr444 <input type="checkbox"/> YCbCr422
HDMI Pixel Depth	<input type="checkbox"/> AUTO <input checked="" type="checkbox"/> 8bit <input type="checkbox"/> 10bit <input type="checkbox"/> 12bit
Audio ch Count	<input checked="" type="checkbox"/> 2ch <input type="checkbox"/> 4ch <input type="checkbox"/> 6ch <input type="checkbox"/> 8ch
Audio 1st Group	<input checked="" type="checkbox"/> G1 <input type="checkbox"/> G2 <input type="checkbox"/> G3 <input type="checkbox"/> G4
Audio 2nd Group	<input type="checkbox"/> G1 <input checked="" type="checkbox"/> G2 <input type="checkbox"/> G3 <input type="checkbox"/> G4
SD i/p Convert	<input checked="" type="checkbox"/> OFF <input type="checkbox"/> ON
[525i/625i -> 525p/625p]	

Figure 5-3 OUTPUT tab

- **SDI Output**

Configure the SDI output connector settings.

- **SDI Select Output : Ach/Bch / Ach**

Select the signal that is generated from OUTPUT SDI A/B.

Settings

Ach/Bch: The signal of the channel selected in the INPUT menu using SDI INPUT or SDI/HDMI OUTPUT is output. In dual link or 3D mode (L/R DUAL), the signal that is applied to the INPUT SDI A connector is output.

Ach: The signal that is applied to the INPUT SDI A connector is output.

- **SDI -> HDMI Output Format**

Configure the output format settings for when an SDI signal is converted to an HDMI signal.

- **Output Mode : HDMI / DVI**

Set the output signal format to HDMI or DVI.

- **HDMI Color Format : AUTO / RGB444 / YCbCr444 / YCbCr422**

Select the color system of the output signal.

If you select AUTO, the same color system as that of the current input signal will be used.

- **HDMI Pixel Depth : AUTO / 8bit / 10bit / 12bit**

Select the quantization of the output signal.

When HDMI Color Format is set to YCbCr422 or AUTO and the current input signal color system is YCbCr422, the quantization is fixed at 8 bits and cannot be set manually.

5. SYSTEM SETTINGS

- **Audio ch Count : 2ch / 4ch / 6ch / 8ch**

Select the number of audio channels in the output signal. For example, if Audio ch Count is set to 6ch, Audio 1st Group is set to G2, and Audio 2nd Group is set to G3, the LV 5382 outputs audio signals of channels 5 to 10.

- **Audio 1st Group : G1 / G2 / G3 / G4**

- **Audio 2nd Group : G1 / G2 / G3 / G4**

Select the audio channel group for the output signals.

G1 is channels 1 to 4, G2 is channels 5 to 8, G3 is channels 9 to 12, and G4 is channels 13 to 16.

- **SD i/p Convert : OFF / ON**

Select whether to perform I/P conversion on the output signal. If you select ON, an interlaced signal will be converted to a progressive signal and output.

This setting is available when the input signal format is 525i or 625i.

It takes approximately 20 seconds to switch the I/P conversion feature on or off.

5.3 Configuring LCD Settings

To configure the LCD, press **F•1** LCD in the system menu.

SYS → **F•2** DISPLAY → **F•1** LCD →

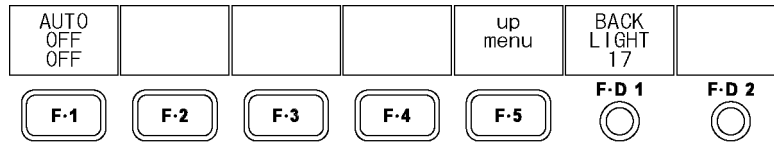


Figure 5-4 LCD menu

5.3.1 Selecting the Auto Shutoff Time

To select the backlight auto shutoff time, follow the procedure below.

After the backlight has been automatically shut off, it will turn on again when any key other than the power key is pressed.

Procedure

SYS → **F•2** DISPLAY → **F•1** LCD → **F•1** AUTO OFF : OFF / 5sec / 5min / 30min

Settings

OFF:	The backlight is not shut off automatically.
5sec:	The backlight is shut off after 5 seconds of user inactivity.
5min:	The backlight is shut off after 5 minutes of user inactivity.
30min:	The backlight is shut off after 30 minutes of user inactivity.

5.3.2 Adjusting the Backlight

To adjust the backlight brightness, follow the procedure below. The larger the number, the brighter the backlight. If you press **F•D 1**, the brightness will be set to its default value of 17.

You can also adjust the backlight brightness on the picture display by following the procedure described in section 8.3.9, “Adjusting the Backlight.” Changing one of these values will also change the other value.

Procedure

SYS → **F•2** DISPLAY → **F•1** LCD → **F•D 1** BACK LIGHT : 1 - 17 - 32

5.4 Setting IDs

The LV 5382 can display user-defined IDs for the input signals. To display an ID, follow the procedure below.

1. Press **SYS**, **F•2** **DISPLAY**, and then **F•3** **ID NAME**.

The ID NAME menu appears.

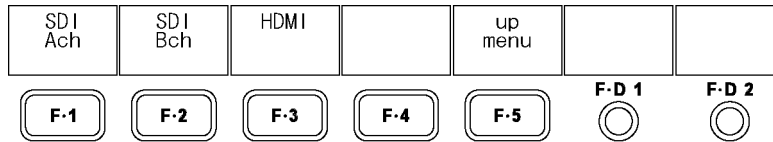


Figure 5-5 ID NAME menu

2. Press **F•1** **SDI Ach**, **F•2** **SDI Bch**, or **F•3** **HDMI**.

The following screen for creating the ID appears.

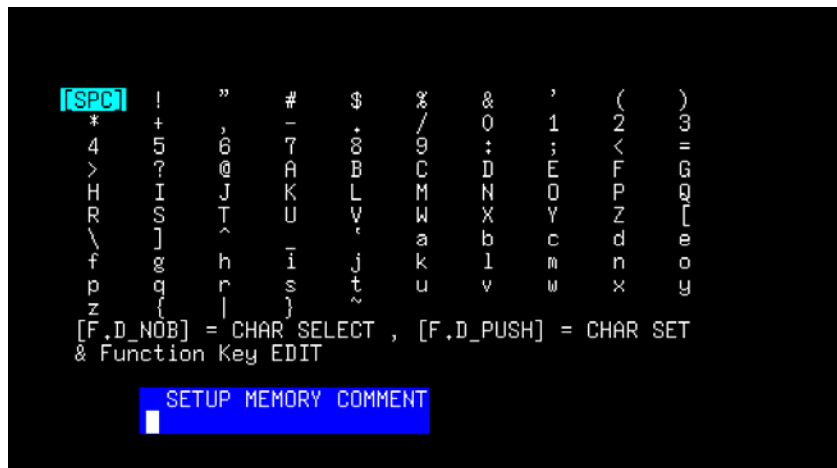


Figure 5-6 ID creation screen

3. Enter the ID.

IDs can be up to 10 characters long. The key operations that you can perform on the ID creation screen are as follows:

- | | |
|----------------------------------|---|
| F•1 DELETE: | Deletes the character at the cursor position. |
| F•2 <=: | Moves the cursor to the left. |
| F•3 >=: | Moves the cursor to the right. |
| F•4 CHAR SET: | Enters the character |
| F•D 1 CHAR SELECT: | Turn to select a character, and press to enter the character. |

4. Press **F•5** **up menu**, **F•5** **up menu**, and then **F•4** **INFORMATION**.

5. Set **F•4** **INPUT INFO** to **ID**.

The ID that you have created for the input signal is displayed.

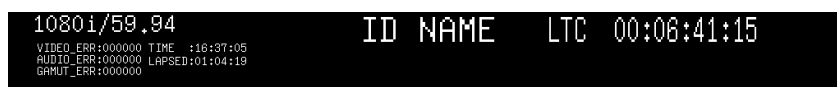


Figure 5-7 ID display

5.5 Configuring the Display

To configure the display, press **F•4** INFORMATION in the system menu.

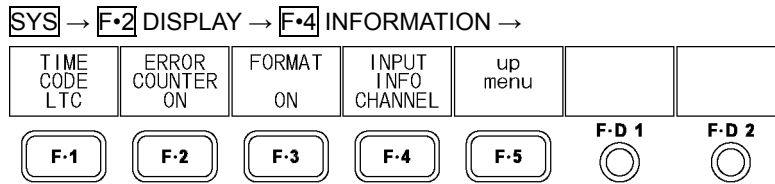


Figure 5-8 INFORMATION menu

5.5.1 Setting the Timecode Display Format

To select the display format for the time code that is embedded in the SDI signal, follow the procedure below.

When the link format is set to dual, only the time code that is embedded in link A is displayed.

Procedure

SYS → **F•2** DISPLAY → **F•4** INFORMATION → **F•1** TIME CODE : LTC / VITC / OFF

Settings

LTC:	The LTC timecode is displayed.
VITC:	The VITC timecode is displayed.
OFF:	No timecodes are displayed.

5.5.2 Displaying Error Counters and the Time

To select whether to display the error counters (VIDEO_ERR, AUDIO_ERR, and GAMUT_ERR) and time (TIME and LAPSED), follow the procedure below.

Procedure

SYS → **F•2** DISPLAY → **F•4** INFORMATION → **F•2** ERROR COUNTER : ON / OFF

5.5.3 Displaying the Input Format

To select whether to display the input format, follow the procedure below.

Procedure

SYS → **F•2** DISPLAY → **F•4** INFORMATION → **F•3** FORMAT : ON / OFF

5.5.4 Indicating the Input Signal

To select the format that is used to indicate the input signal, follow the procedure below.

Procedure

[SYS] → **[F•2]** DISPLAY → **[F•4]** INFORMATION → **[F•4]** INPUT INFO : ID / CHANNEL / OFF

Settings

ID: The input signal is indicated using the ID you set in section 5.4, “Setting IDs.”
When the link format is set to dual, the ID you created for SDI Ach is used.

CHANNEL: The input signal is indicated as being SDI A, SDI B, SDI AB, or HDMI.

OFF: No input signal indication is displayed.

5.6 Configuring Remote Settings (Option)

To configure remote settings, press **[F•1]** REMOTE SETUP in the system menu. This menu item is available when the remote and tally option (OP72) is installed.

The settings that you specify here will not be initialized even if you initialize the LV 5382. In addition, they are not recorded to presets.

[Reference] Section 16, “Remote Control Feature (Option)”

[SYS] → **[F•3]** I/F SETUP → **[F•1]** REMOTE SETUP →

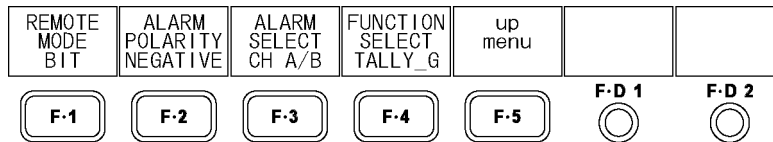


Figure 5-9 REMOTE SETUP menu

5.6.1 Selecting Remote Mode

To select remote mode, follow the procedure below. The functions that can be remotely controlled varies depending on which remote mode that you select.

[Reference] Section 16, “Remote Control Feature (Option)”

Procedure

[SYS] → **[F•3]** I/F SETUP → **[F•1]** REMOTE SETUP → **[F•1]** REMOTE MODE : BIT / BINARY / COMMAND

Settings

BIT: Normal mode is selected. The method for loading presets is BIT.

BINARY: Normal mode is selected. The method for loading presets is BINARY

COMMAND: Command mode is selected.

5.6.2 Selecting the Alarm Polarity

The alarm signal is transmitted from pin 14 (ALARM) of the remote control connector when the LV 5382 internal temperature rises, 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•4]** ERROR CONFIG in the status menu.

To select the polarity of the alarm signal, follow the procedure below.

Procedure

[SYS] → **[F•3]** I/F SETUP → **[F•1]** REMOTE SETUP → **[F•2]** ALARM POLARITY : POSITIVE / NEGATIVE

Settings

POSITIVE: An active-high signal is transmitted.

NEGATIVE: An active-low signal is transmitted.

5.6.3 Selecting the Alarm Channel

To select the channels whose errors are indicated by the alarm signal, follow the procedure below. If you select CH A/B, an alarm is generated whenever an error occurs on either channel A or channel B.

Procedure

[SYS] → **[F•3]** I/F SETUP → **[F•1]** REMOTE SETUP → **[F•3]** ALARM SELECT : CH A / CH B / CH A/B

5.6.4 Selecting the Function to Assign to the Remote Control Connector

When **[F•1]** REMOTE MODE is set to BIT or BINARY, to select the function that is assigned to pin 13 (/TALLY2) of the remote control connector, follow the procedure below.

Procedure

[SYS] → **[F•3]** I/F SETUP → **[F•1]** REMOTE SETUP → **[F•4]** FUNCTION SELECT : HDMI SEL / TALLY_G

Settings

HDMI SEL: SDI/HDMI switching is assigned.

TALLY_G: Green tally display is assigned.

5.7 Setting the Date and Time

To set the date and time, press **F·4** DATE&TIME in the system menu.

The date and time settings that you make here will not be reset to their default values even if you initialize the LV 5382.

SYS → **F·4** DATE&TIME →

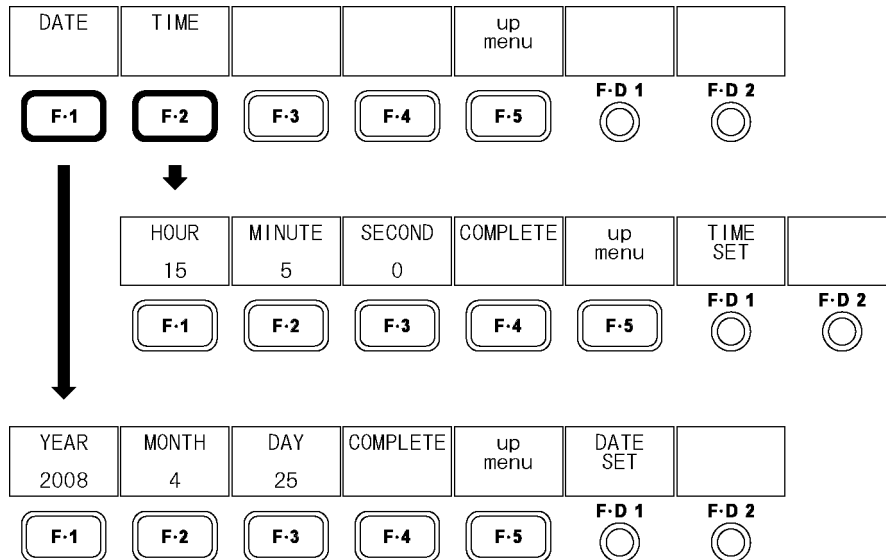


Figure 5-10 DATE&TIME menu

5.7.1 Setting the Date

To set the date, follow the procedure below.

The date that you set will be used when various kinds of data are saved to USB memory.

Procedure

1. **SYS** → **F·4** DATE&TIME → **F·1** DATE
2. **F·1** YEAR → **F·D 1** DATE SET (To set the year)
3. **F·2** MONTH → **F·D 1** DATE SET (To set the month)
4. **F·3** DAY → **F·D 1** DATE SET (To set the day)
5. **F·4** COMPLETE (To confirm the date setting)

5.7.2 Setting the Time

To set the time, follow the procedure below.

The time you set appears in the upper left of the screen next to TIME. It is also used when various kinds of data are saved to USB memory.

Procedure

1. **SYS** → **F·4** DATE&TIME → **F·2** TIME
2. **F·1** HOUR → **F·D 1** DATE SET (To set the hour)
3. **F·2** MINUTE → **F·D 1** DATE SET (To set the minute)
4. **F·3** SECOND → **F·D 1** DATE SET (To set the second)
5. **F·4** COMPLETE (To confirm the time setting)

5.8 initialization

5.8.1 Initializing Settings

To initialize the settings to their default values, follow the procedure below. For information about the default values, see section 17.1, “Menu Tree.” The default values are underlined. To cancel the initialization of the settings, press **F•3** INIT CANCEL.

Even if you initialize the settings, the date, time, presets, display mode presets, CINELITE external correction table, remote control settings (option), and user layouts are not initialized.

Procedure

SYS → **F•5** next menu → **F•1** INIT → **F•1** INIT YES

5.8.2 Restoring the Factory Default Settings

To initialize all the settings other than the date and time to their default values, follow the procedure below.

The message “SRAM INITIALISED” will appear, and after a few seconds, the measurement display will appear.

Procedure

Turn on the power while holding **F•D 1** and **F•D 2**.

5.9 Setting the Menu Display Time

Menus automatically disappear after 10 seconds of user inactivity. To set this time in units of 5 seconds, follow the procedure below (menus do not automatically disappear if OFF is selected.) Press **F•D 1** to reset the setting to its default value (10 seconds).

Regardless of the display time setting, the input menu, system menu, preset registration menu, and preset menu do not disappear because of user inactivity.

Procedure

SYS → **F•5** next menu → **F•2** MENU AUTO OFF → **F•D 1** TIME SET : 5 sec - 10 sec - 60 sec / OFF

5.10 Battery Settings (Option)

When you are using a battery, the approximate remaining battery power is indicated using a four-level meter in the upper right of the screen. To correctly display the remaining battery power, you need to select the battery type.

To select the battery type, follow the procedure below.

F•3 BATTERY appears if a battery mount option is installed.

Procedure

SYS → **F•5** next menu → **F•3** BATTERY : IDX / ANTON-BA / OTHERS / OFF

Settings

IDX:	Select this option if you are using a V-mount type battery. However, if you are using a battery that does not have remaining battery power output (analog), select OTHERS. (This is the default setting when OP73 is installed.)
ANTON-BA:	Select this option if you are using a QR Gold Mount battery. (This is the default setting when OP74 is installed.)
OTHERS:	Select this option if you are using a battery other than the ones described above. The remaining battery power meter will only work properly with 14.4 V lithium batteries. Also, because the remaining battery power is detected using the battery terminal voltage, it may not be displayed correctly.
OFF:	The remaining battery power is not displayed.

5.11 Configuring License Settings

To show the license display, follow the procedure below.

In the license display, you can check the installed options and the MAC address.

Procedure

[SYS] → **[F•5]** next menu → **[F•4]** LICENSE SETUP

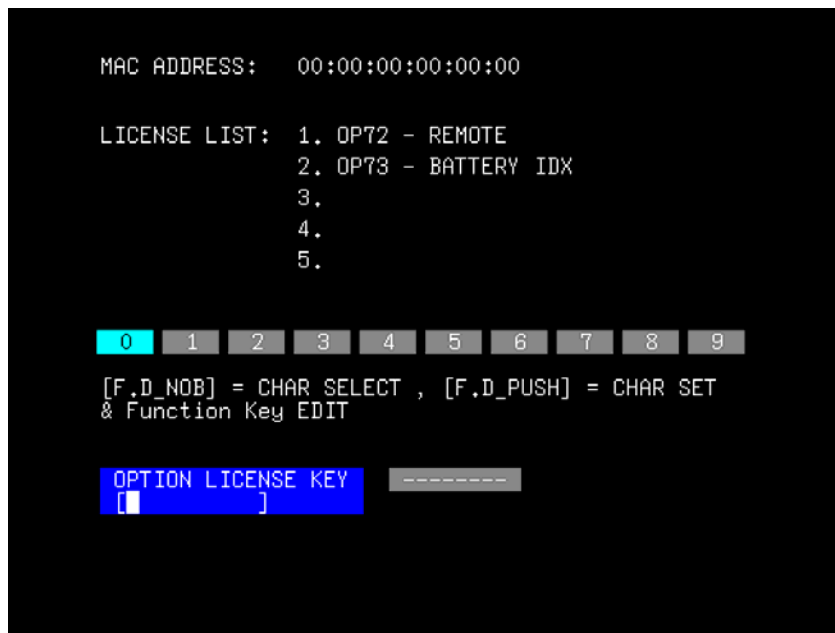


Figure 5-11 License display

The options (sold separately) that the LV 5382 supports are shown below.

Table 5-2 Supported options

Option Number	Name	Notes
LV 5382 OP72	REMOTE & TALLY	Factory option
LV 5382 OP73	BATTERY MOUNT IDX	Factory option
LV 5382 OP74	BATTERY MOUNT ANTON	Factory option

6. PRESET SETTINGS

You can use the preset feature to register and load panel settings. Also, you can use the same settings on multiple LV 5382s by copying presets to USB memory.

There are two kinds of presets: comprehensive presets (usually just referred to as presets) and display mode presets.

The registered panel settings are not deleted when you initialize the settings.

[Reference] See section 5.8.1, "Initializing Settings."

- **Presets**

You can register up to 30 different sets of all the panel settings (some settings are not included).(*1)

- **Registering Presets**

Set the LV 5382 to the settings that you want to register, and then hold down PSET.

Press **[F•1]** FULL PRESET in the preset registration menu to register the settings.

- **Loading Presets**

Press PSET to load the preset settings from the preset menu.

- **Display Mode Presets**

You can register up to five different sets of panel settings for each display mode.(*2) When you load a display mode preset, the settings of other display modes and the input channels are not affected. This feature cannot be used with the multi-screen display.

- **Registering Display Mode Presets**

Set the LV 5382 to the settings that you want to register, and then hold down PSET.

Press **[F•2]** FUNCTION PRESET in the preset registration menu to register the settings.

- **Loading Display Mode Presets**

After setting FUNCTION PRESET to ON in the preset registration menu, press PIC, WFM, VECT, AUDIO, or STATUS. Load the preset settings from the display mode preset menu.

*1 The date and time settings and the optional remote control connector settings.

*2 The picture, video signal waveform, vector, audio, and status displays.

* No matter how much time elapses, the preset registration menu and the preset menu will not automatically disappear. To hide these menus, press PSET again.

6.1 Presets

6.1.1 Registering Presets

1. Set the LV 5382 to the settings that you want to register.
2. Hold down PSET.

The preset registration menu appears.

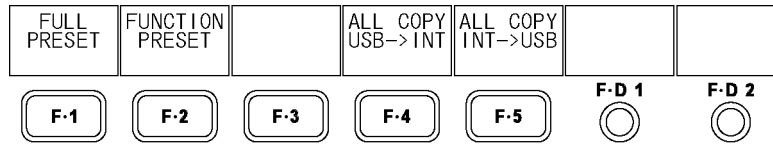


Figure 6-1 Preset registration menu

3. Press **F.1** FULL PRESET.

The file list display appears.

4. Press **F.2** COMMENT INPUT.

The file name input display appears.



Figure 6-2 File name input display

5. Enter a file name using up to 16 characters.

The key operations that you can perform in the file name input display are as follows:

- | | |
|--------------------------|---|
| F.1 DELETE | Deletes the character at the cursor position. |
| F.2 <= | Moves the cursor to the left. |
| F.3 => | Moves the cursor to the right. |
| F.4 CHAR SET | Enters the selected character. |
| F.D 1 CHAR SELECT | Turn to select a character, and press to enter the character. |

After you enter the file name, press **F.5** up menu.

You can also copy the file name of an already registered file. To copy a file name, move the cursor to the file in the file list whose name you want to copy, and then press

F.D 1 FILE SELECT.

6. PRESET SETTINGS

6. Turn **F•D 1** FILE SELECT to select the file number of the file you want to register.
7. Press **F•3** STORE.

If a file has already been stored with the file number that you selected, an overwrite confirmation prompt appears. If you want to overwrite the current file, press **F•1** OVER WR YES. Otherwise, press **F•3** OVER WR NO.

6.1.2 Recalling Presets

1. Press PSET.

The preset menu appears.

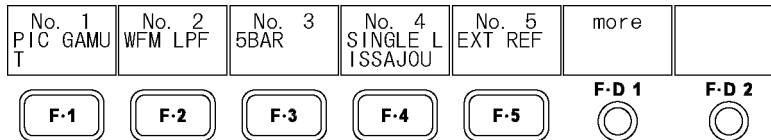


Figure 6-3 Preset load menu

2. Press a function key from **F•1** No.1 to **F•5** No.5.

If the preset number that you want to load is greater than 5, turn **F•D 1** more.

6.1.3 Deleting Presets

1. Hold down PSET.

The preset registration menu appears.

2. Press **F•1** FULL PRESET.

The file list display appears.

3. Turn **F•D 1** FILE SELECT to select the file number of the file you want to delete.

4. Press **F•4** DELETE.

F•4 DELETE appears if a file exists that has the selected file number.

5. Press **F•1** DELETE YES.

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

6.2 Display Mode Presets

6.2.1 Registering Display Mode Presets

1. Set the LV 5382 to the settings that you want to register.

2. Hold down PSET.

The preset registration menu appears.

3. Press **F•2** FUNCTION PRESET.

The file list display appears. This setting does not appear when the multi-screen display is in use.

4. Press **F•2** COMMENT INPUT.

The file name input display appears.

5. Enter a file name using up to 16 characters.

The key operations that you can perform in the file name input display are as follows:

F•1 DELETE	Deletes the character at the cursor position.
F•2 <=	Moves the cursor to the left.
F•3 =>	Moves the cursor to the right.
F•4 CHAR SET	Enters the selected character.
F•D 1 CHAR SELECT	Turn to select a character, and press to enter the character.

After you enter the file name, press **F•5** up menu.

You can also copy the file name of an already registered file. To copy a file name, move the cursor to the file in the file list whose name you want to copy, and then press

F•D 1 FILE SELECT.

6. Turn **F•D 1** FILE SELECT to select the file number of the file you want to register.

7. Press **F•3** STORE.

If a file has already been stored with the file number that you selected, an overwrite confirmation prompt appears. If you want to overwrite the current file, press **F•1** OVER WR YES. Otherwise, press **F•3** OVER WR NO.

6.2.2 Loading Display Mode Presets

1. Hold down PSET.

The preset registration menu appears.

2. Press **F•2** FUNCTION PRESET.

The file list display appears. This setting does not appear when the multi-screen display is in use.

3. Set **F•1** FUNCTION PRESET to ON.

The default value is OFF.

4. Press the key of the display mode whose preset you want to load.

The display mode preset menu appears.

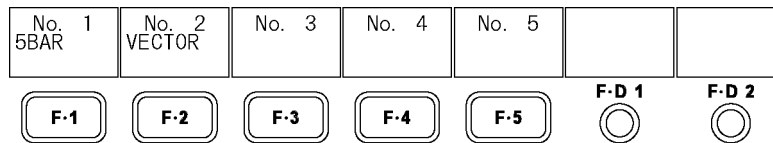


Figure 6-4 Display mode preset load menu

5. Press a function key from **F•1** No.1 to **F•5** No.5.

6.2.3 Deleting Display Mode Presets

1. Press the key of the display mode whose preset you want to delete.

2. Hold down PSET.

The preset registration menu appears.

3. Press **F•2** FUNCTION PRESET.

The file list display appears. This setting does not appear when the multi-screen display is in use.

4. Turn **F•D 1** FILE SELECT to select the file number of the file you want to delete.5. Press **F•4** DELETE.

F•4 DELETE appears if a file exists that has the selected file number.

6. Press **F•1** DELETE YES.

To cancel the deletion of the selected display mode preset, press **F•3** DELETE NO.

6.3 Copying Presets

You can copy all the presets and display mode presets by pressing **F•4** ALL COPY USB->INT or **F•5** ALL COPY INT->USB.

These commands appear when USB memory is connected.

Hold down **PSET** →

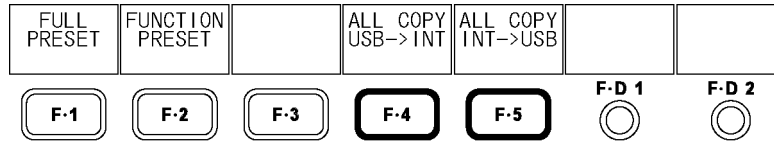


Figure 6-5 ALL COPY menu

6.3.1 Copying All Presets from USB Memory to the LV 5382

To copy all the presets that have been saved to USB memory to the LV 5382, follow the procedure below.

If presets have already been saved to the LV 5382 memory, they will be overwritten.

To cancel the copy operation, press **F•3** COPY NO.

Procedure

Hold down **PSET** → **F•4** ALL COPY USB->INT → **F•1** COPY YES

6.3.2 Copying All Presets from the LV 5382 to USB Memory

To copy all the presets that have been saved to the LV 5382 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 5382 file numbers by one.

If you change the file names on the USB memory device, you will not be able to copy the files from the USB memory to the LV 5382.

📁 USB Memory

└ 📁 LV5382_USER

└ └ 📁 PRESET

└ └ └ 📁 PIC_00.PRE (to PIC_04.PRE) Display mode presets (PIC) No. 1 to 5

└ └ └ 📁 WFM_00.PRE (to WFM_04.PRE) Display mode presets (WFM) No. 1 to 5

└ └ └ 📁 VEC_00.PRE (to VEC_04.PRE)..... Display mode presets (VECT) No. 1 to 5

└ └ └ 📁 AUD_00.PRE (to AUD_04.PRE) Display mode presets (AUDIO) No. 1 to 5

└ └ └ 📁 STTS_00.PRE (to STTS_04.PRE) Display mode presets (STATUS) No. 1 to 5

└ └ └ 📁 PRESET_00.PRE (to PRESET_29.PRE)..... Presets No.1 to 30

Procedure

Hold down **PSET** → **F•5** ALL COPY INT->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 5382.

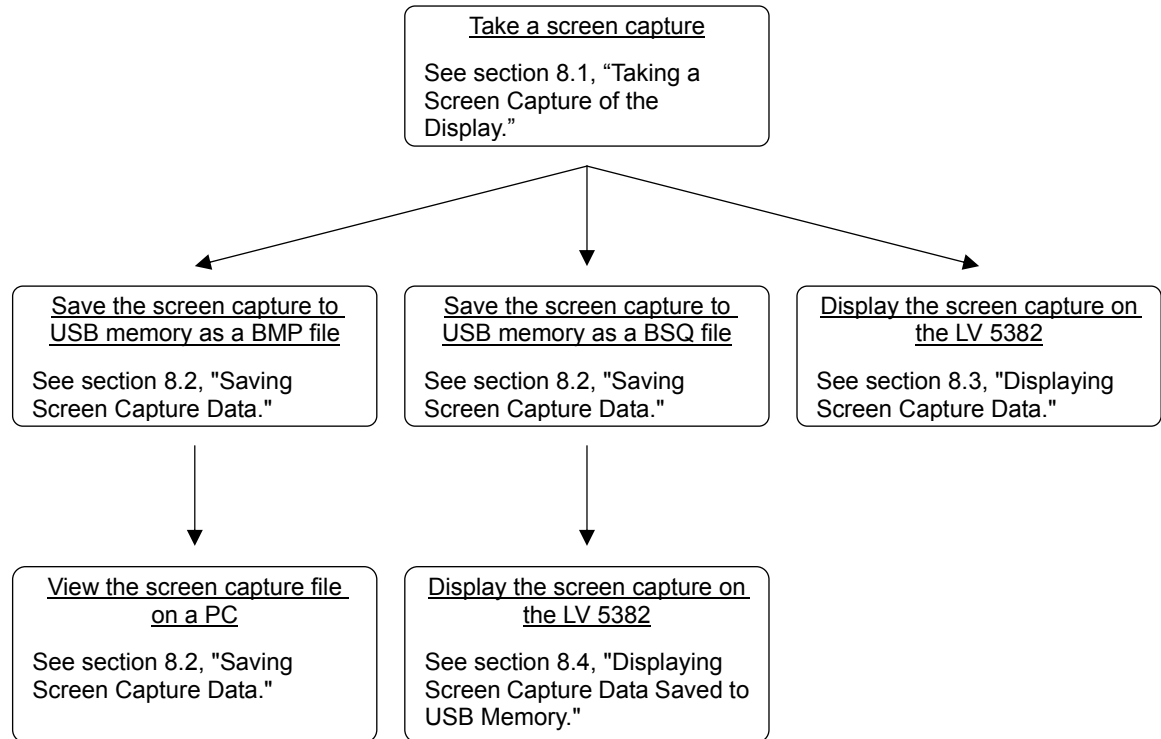


Figure 7-1 Screen capture feature

7.1 Taking a Screen Capture of the Display

1. **Configure the LV 5382 so that the display that you want to capture appears on the screen.**
Only measurement displays can be captured. Preset setup screens and file list screens cannot be captured.

2. **Press CAP.**

The currently displayed screen is captured, and the screen capture menu appears.

You can also capture a display by pressing **F•1** REFRESH in the screen capture menu.

The screen capture menu will disappear if a certain period of time passes with no user activity. To use the menu to make a setting, press one of the function keys from **F•1** to **F•5**. The screen capture menu appears again.

Note that the captured data will be cleared if, after capturing a display, you:

- Change the display mode
- Press MULTI, PSET, INPUT, or SYS
- Turn OFF the power

When the captured data is cleared, the CAP key LED will turn off.

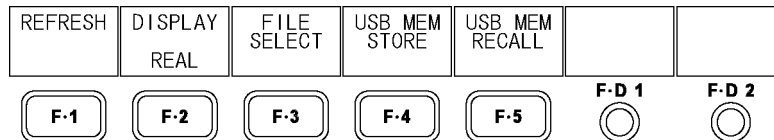


Figure 7-2 Screen capture menu

7.2 Saving Screen Capture Data

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. You can display the captured data on the LV 5382 even after the power has been turned off by saving the captured data to USB memory (if you save the captured data in BSQ format). You can also view the screen capture data on a PC (if you save the screen capture data in BMP format).

1. **Press **F•3** FILE SELECT.**

The file format selection menu appears. **F•5** USB MEMORY appears when USB memory is connected to the LV 5382.

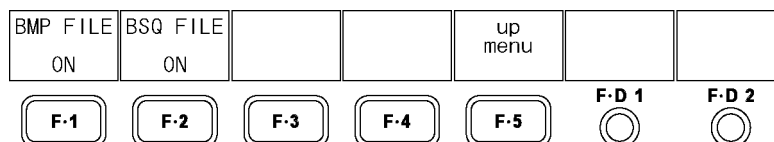


Figure 7-3 File format selection menu

2. Select the file formats.

The file formats that you can select are explained below. Set one of these formats to ON. Both of the formats are set to ON by default.

BMP FILE The captured data is saved to the USB memory as a bitmap file.
You can view the saved files on a PC.

BSQ FILE The captured data is saved to the USB memory as a BSQ file.
You can view the saved data on the LV 5382.

After you have finished setting the file formats, press **F•5** up menu.

3. Press **F•4 USB MEM STORE.**

The captured data is saved to the USB memory.

This setting appears when USB memory is connected to the LV 5382 and BMP FILE or BSQ FILE is set to ON.

The file name is automatically set to the date and time that you have set using the system settings according to the procedure in section 5.7, "Setting the Date and Time."
Example: 20080425150500.bmp (the order is: year, month, day, hour, minute, second)

The file structure in the USB memory is shown below.

```

└─ USB Memory
   └─ LV5382_USER
      └─ BMP
         ├── yyyyymmddhhmmss.bmp
         └─ yyyyymmddhhmmss.bsq

```

7.3 Displaying Screen Capture Data

The data that you capture by following the procedure in section 7.1, "Taking a Screen Capture of the Display," can be displayed on the LV 5382, or it can be overlaid onto the LV 5382's current input signal.

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

The display formats that you can select are explained below.

REAL The input signal is displayed (this is the default value).

HOLD The screen capture data is displayed. The video signal waveform display,(*1) vector display,(*1) and Lissajous curve display are displayed in cyan.

BOTH The input signal and the captured data are displayed on top of each other with their intensities halved.

The video signal waveform display,(*1) vector display,(*1) and Lissajous curve displays of the captured data are displayed in cyan.

You can display captured video signal waveform, vector, Lissajous curve, picture display, and histogram data on the LV 5382. Other kinds of data (such as status, audio meter, and 5-bar data) cannot be displayed. However, these other kinds of data can be saved to USB memory as BMP files.

[Reference] See section 7.2, "Saving Screen Capture Data."

*1 In 3D mode (L/R DUAL or FRM PACK), the display colors are the same as the waveform colors selected in the video signal waveform and vector waveform menus.

7.4 Displaying Screen Capture Data Saved to USB Memory

The data that you save in BSQ format by following the procedure in section 7.2, “Saving Screen Capture Data,” can be displayed on the LV 5382, or it can be overlaid on the LV 5382's current input signal.

(Screen capture data that has been saved in BMP format and screen capture data that has been saved in BSQ format on a different model cannot be displayed on the LV 5382.)

1. Press **CAP**.

2. Press **F•5** **USB MEM RECALL**.

The file list display appears. **F•5** **USB MEMORY** appears when USB memory is connected to the LV 5382.

3. Turn **F•D 1** **FILE SELECT** to select the file that you want to display.

Files are displayed in chronological order, with the oldest files first. Up to 999 files can be displayed.

You can press **F•3** **DELETE** here to delete the selected file.

4. Press **F•1** **RECALL**.

This setting appears when the selected file is a BSQ file.

You can cancel the captured data display operation by pressing **F•5** up menu.

5. Press **F•2** **DISPLAY** to select the display format.

After you press **F•1** **RECALL**, the display format is BOTH. For details on the display format, see section 7.3, “Displaying Screen Capture Data.”

8. PICTURE DISPLAY

8.1 Picture Display Explanation

The picture display appears when you press PIC.

To display the picture menu, hold down PIC for 0.5 seconds or more, or use the function keys and function dials on the picture display. The picture menu will disappear when you press PIC again or after a certain period of time passes with no user activity.

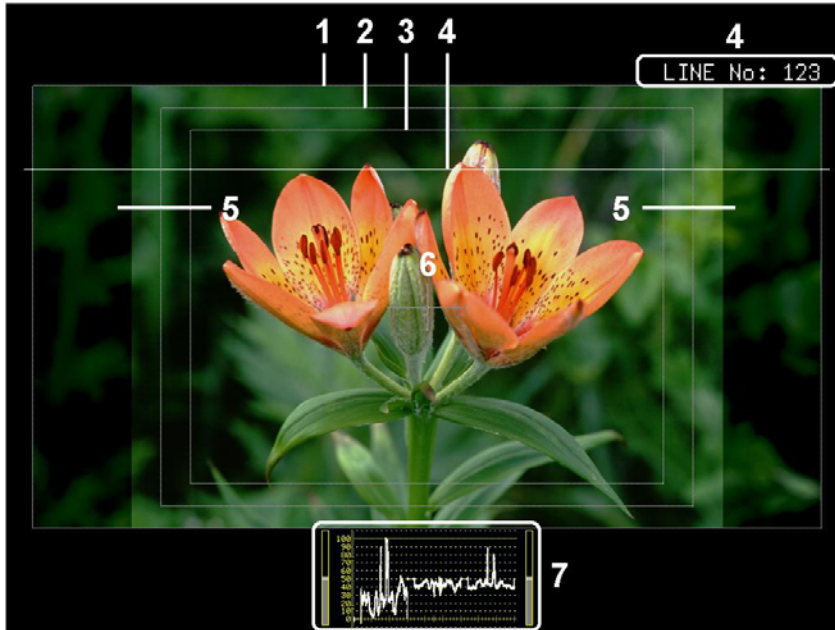


Figure 8-1 Picture display

1 Frame Marker

You can display a marker around the outer edge of the picture.

[Reference] See section 8.4.1, "Turning the Display of the Frame Marker On and Off."

2 Safe Action Marker

You can display a safe action marker according to the ARIB TR-B4 or SMPTE RP 218 specifications. You can also display a marker that you specify the size of.

[Reference] Section 8.4.5, "Displaying Safety Markers" and section 8.4.6, "Turning the Display of the Safe Action Marker On and Off"

3 Safe Title Marker

You can display a safe title marker according to the ARIB TR-B4 or SMPTE RP 218 specifications. You can also display a marker that you specify the size of.

[Reference] Section 8.4.5, "Displaying Safety Markers" and section 8.4.7, "Turning the Display of the Safe Title Marker On and Off"

4 Selected Line

You can display a marker on the selected line.

[Reference] Section 8.5, "Configuring Line Selection Settings"

5 Aspect Marker

You can display a marker for the selected aspect ratio using a shadow, a black space, or a line.

[Reference] Sections 8.4.3, “Displaying the Aspect Marker” and 8.4.4, “Setting the Aspect Marker”

6 Center Marker

You can display a marker in the center of the picture that is 10 % its size.

[Reference] Section 8.4.2, “Turning the Display of the Center Marker On and Off”

7 Thumbnail Display

The thumbnail display shows the audio meter (fixed to channels 1 and 2) and the video signal waveform. You can also turn each of these displays off.

[Reference] Section 8.6.5, “Setting the Thumbnail Display”

8.2 Setting the Brightness and Contrast

You can set the picture brightness and contrast by using **F•D 1** BRIGHTNESS and **F•D 2** CONTRAST in the picture menu.

F•D 1 BRIGHTNESS and **F•D 2** CONTRAST appear in other levels of the picture menu as well and function in the same way.

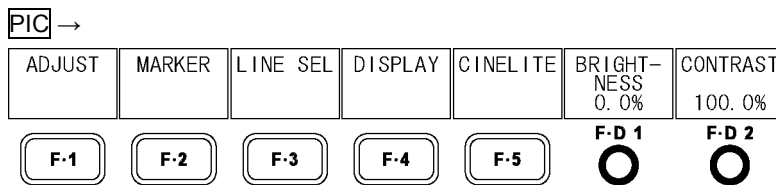


Figure 8-2 Picture menu

8.2.1 Setting the Brightness

To set the picture brightness, follow the procedure below.

If you press **F•D 1**, the brightness will be set to its default value of 0.0%.

Procedure

PIC → **F•D 1** BRIGHTNESS : -50.0% - 0.0% - 50.0%

8.2.2 Setting the Contrast

To set the picture contrast, follow the procedure below.

If you press **F•D 2**, the contrast will be set to its default value of 100.0%.

Procedure

PIC → **F•D 2** CONTRAST : 0.0% - 100.0% - 200.0%

8.3 Adjusting the Picture

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

PIC → **F.1** ADJUST →

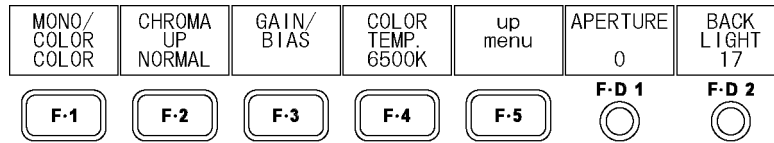


Figure 8-3 ADJUST menu

8.3.1 Switching between the Color and Monochrome Displays

To switch between the color and monochrome displays, follow the procedure below.
This setting is not available in 3D mode.

Procedure

PIC → **F.1** ADJUST → **F.1** MONO/COLOR : COLOR / MONO

8.3.2 Amplifying the Chroma Gain

To switch between the two chroma gain settings, follow the procedure below.

Procedure

PIC → **F.1** ADJUST → **F.2** CHROMA UP : NORMAL / UP

Settings

NORMAL: The chroma gain is the value that has been set using **F.4** CHROMA GAIN.

UP: The chroma gain is set to 2 (200.0 %). **F.4** CHROMA GAIN is not displayed.

8.3.3 Turning the RGB Signals On and Off

To set the gain and bias, press **F.3** GAIN/BIAS in the picture menu.

PIC → **F.1** ADJUST → **F.3** GAIN/BIAS →

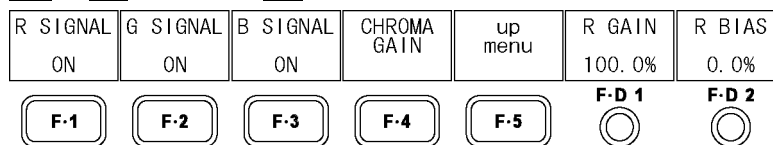


Figure 8-4 GAIN/BIAS menu

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.1** ADJUST → **F.3** GAIN/BIAS → **F.1** R SIGNAL : ON / OFF
 → **F.2** G SIGNAL : ON / OFF
 → **F.3** B SIGNAL : ON / OFF

8.3.4 Setting the Gain

To set the RGB signal gain separately for each color, follow the procedure below.
If you press **F•D 1**, the gain will be set to its default value of 100.0 %.

Procedure

PIC → **F•1** ADJUST → **F•3** GAIN/BIAS
 → (when **F•1** R SIGNAL is set to ON) → **F•D 1** R GAIN : 0.0% - 100.0% - 200.0%
 → (when **F•2** G SIGNAL is set to ON) → **F•D 1** G GAIN : 0.0% - 100.0% - 200.0%
 → (when **F•3** B SIGNAL is set to ON) → **F•D 1** B GAIN : 0.0% - 100.0% - 200.0%

8.3.5 Setting the Bias

To set the RGB signal bias separately for each color, follow the procedure below.
If you press **F•D 2**, the bias will be set to its default value of 0.0%.

Procedure

PIC → **F•1** ADJUST → **F•3** GAIN/BIAS
 → (when **F•1** R SIGNAL is set to ON) → **F•D 2** R BIAS: -50.0% - 0.0% - 50.0%
 → (when **F•2** G SIGNAL is set to ON) → **F•D 2** G BIAS : -50.0% - 0.0% - 50.0%
 → (when **F•3** B SIGNAL is set to ON) → **F•D 2** B BIAS : -50.0% - 0.0% - 50.0%

8.3.6 Setting the Chroma Gain

When **F•2** CHROMA UP is set to NORMAL, to set the chroma gain, follow the procedure below.

If you press **F•D 1**, the chroma gain will be set to its default value of 100.0 %.

Procedure

PIC → **F•1** ADJUST → **F•3** GAIN/BIAS → **F•4** CHROMA GAIN → **F•D 1** CHROMA GAIN : 0.0% - 100.0% - 200.0%

8.3.7 Selecting the Color Temperature

To select the monitor's color temperature, follow the procedure below.

Procedure

PIC → **F•1** ADJUST → **F•4** COLOR TEMP. : 6500K / 9300K

8.3.8 Setting the Aperture

To set the aperture, follow the procedure below.

A larger number will result in more well-defined outlines.

If you press **F•D 1**, the aperture will be set to its default value of 0.

Procedure

PIC → **F•1** ADJUST → **F•D 1** APERTURE : 0 - 100

8.3.9 Adjusting the Backlight

To adjust the backlight brightness, follow the procedure below.

The larger the number, the brighter the backlight.

If you press **F•D 2**, the brightness will be set to its default value of 17.

You can also adjust the backlight brightness in the system setup by following the procedure described in section 5.3.2, "Adjusting the Backlight." Changing one of these values will also change the other value.

This setting affects other displays in addition to the picture display.

Procedure

PIC → **F•1** ADJUST → **F•D 2** BACK LIGHT : 1 - 17 - 32

8.4 Configuring Marker Settings

To configure marker settings, press **F•2** MARKER in the picture menu.

This menu item appears when SIZE is set to FIT.

[Reference] SIZE → Section 8.6.1, "Selecting the Display Size"

PIC → **F•2** MARKER →

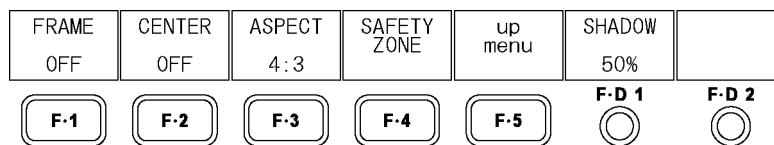


Figure 8-5 MARKER menu

8.4.1 Turning the Display of the Frame Marker On and Off

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

The frame marker is displayed around the outer edge of the picture.

Procedure

PIC → **F•2** MARKER → **F•1** FRAME : ON / OFF

8.4.2 Turning the Display of the Center Marker On and Off

To turn the display of the center marker on and off, follow the procedure below.
The center marker is displayed in the center of the picture at 10 % of the picture's size.

Procedure

PIC → **F•2** MARKER → **F•2** CENTER : ON / OFF

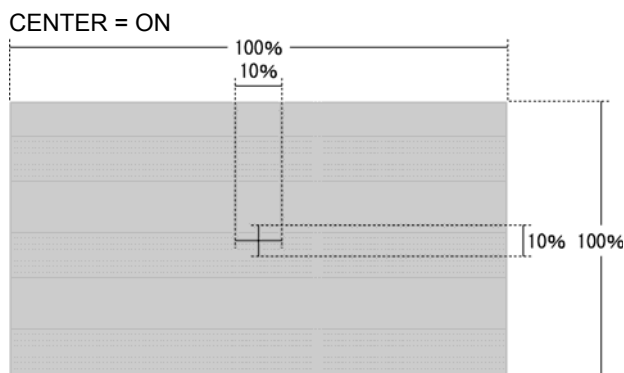


Figure 8-6 Turning the display of the center marker on and off

8.4.3 Displaying the Aspect Marker

To display the aspect marker, follow the procedure below.
There are three kinds of aspect markers: line, shadow, and black. The aspect marker type can be set using **F•D 1** SHADOW.

Procedure

PIC → **F•2** MARKER → **F•3** ASPECT : OFF / 16:9 / 14:9 / 13:9 / 4:3 / 2.39:1

Settings

OFF:	An aspect marker is not displayed.
16:9:	The 16:9 aspect marker is displayed. This option cannot be selected when the input signal is HD.
14:9:	The 14:9 aspect marker is displayed.
13:9:	The 13:9 aspect marker is displayed.
4:3:	The 4:3 aspect marker is displayed. This option cannot be selected when the input signal is SD.
2.39:1:	The 2.39:1 aspect marker is displayed. This option cannot be selected when the input signal is SD.

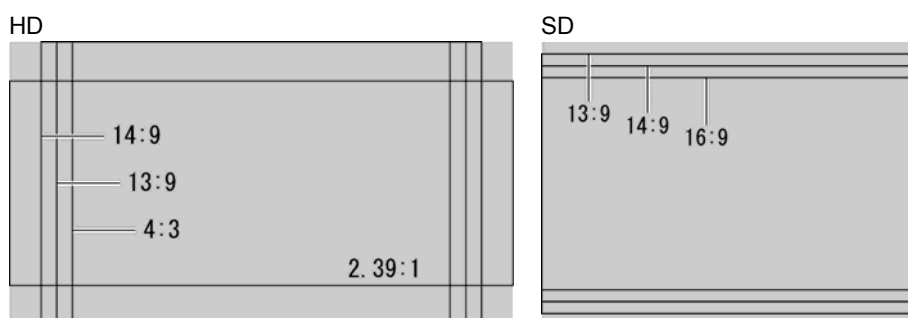


Figure 8-7 Aspect markers

8.4.4 Setting the Aspect Marker

When **F•3** ASPECT is set to OFF, to select the type of aspect marker to use, follow the procedure below.

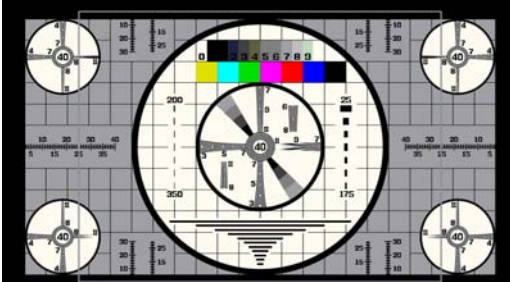
Procedure

PIC → **F•2** MARKER → **F•D 1** SHADOW : 0% - 50% - 100%

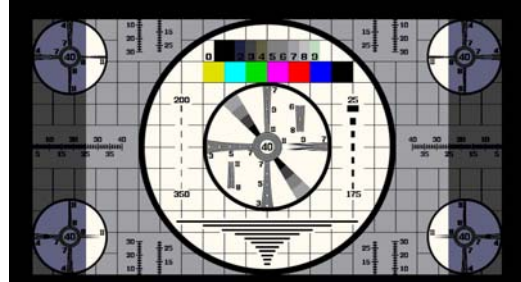
Settings

- 0%: The aspect marker is indicated with a line.
- 1 - 99%: The area around the aspect marker is indicated with a shadow.
- 100%: The area outside the aspect marker is indicated with black space.

SHADOW = 0%



SHADOW = 50%



SHADOW = 100%

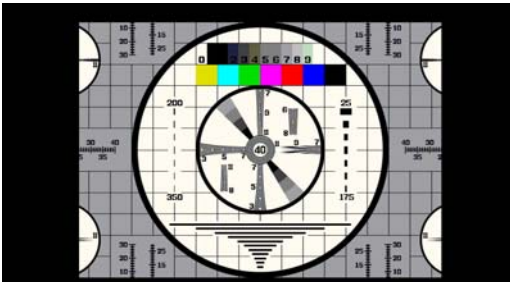


Figure 8-8 Aspect marker settings

8.4.5 Displaying Safety Markers

To configure safety marker settings, press **F•4** SAFETY ZONE in the picture menu.

PIC → **F•2** MARKER → **F•4** SAFETY ZONE →

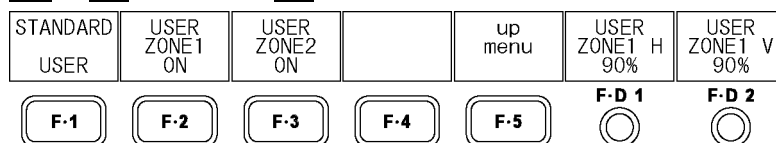


Figure 8-9 SAFETY ZONE menu

To select the safety marker type, follow the procedure below.

The display of the safe action marker, safe title marker, and user markers (two types) can be turned on and off separately.

Procedure

PIC → **F•2** MARKER → **F•4** SAFETY ZONE → **F•1** STANDARD : ARIB / SMPTE / USER

Settings

ARIB: ARIB TR-B4 safe action and safe title markers are displayed.
 SMPTE: SMPTE RP-218 safe action and safe title markers are displayed.
 USER: Up to two user markers are displayed. You can set user markers to any size you like.

8.4.6 Turning the Display of the Safe Action Marker On and Off

When **F•1** STANDARD is set to ARIB or SMPTE, to turn the display of the safe action marker on or off, follow the procedure below.

Procedure

PIC → **F•2** MARKER → **F•4** SAFETY ZONE → **F•2** SAFE ACTION : ON / OFF

8.4.7 Turning the Display of the Safe Title Marker On and Off

When **F•1** STANDARD is set to ARIB or SMPTE, to turn the display of the safe title marker on or off, follow the procedure below.

Procedure

PIC → **F•2** MARKER → **F•4** SAFETY ZONE → **F•3** SAFE TITLE : ON / OFF

8.4.8 Turning the Display of User Markers On and Off

You can set up to two user markers and turn them on and off separately.
This setting is available when **F•1** STANDARD is set to USER.

Procedure

PIC → **F•2** MARKER → **F•4** SAFETY ZONE → **F•2** USER ZONE1 : ON / OFF
→ **F•3** USER ZONE2 : ON / OFF

8.4.9 Setting User Markers

To set the size of a user marker, follow one of the procedures below.

The percentages used to specify the user marker sizes are based on the size of the picture (or the size of the aspect marker if the aspect marker is displayed). There are two types of user markers. You can set their horizontal (H) and vertical (V) sizes separately.

• Setting User Marker 1

Procedure

PIC → **F•2** MARKER → **F•4** SAFETY ZONE → **F•2** USER ZONE1 (when the user marker is displayed)
→ **F•D 1** USER ZONE1 H : 0% - 90% - 100%
→ **F•D 2** USER ZONE1 V : 0% - 90% - 100%

• Setting User Marker 2

Procedure

PIC → **F•2** MARKER → **F•4** SAFETY ZONE → **F•3** USER ZONE2 (when the user marker is displayed)
→ **F•D 1** USER ZONE2 H : 0% - 80% - 100%
→ **F•D 2** USER ZONE2 V : 0% - 80% - 100%

8.5 Configuring Line Selection Settings

To configure line selection settings, press **F•3** LINE SEL in the picture menu.

This menu item appears when SIZE is set to FIT. This menu item will not appear in 2D mode (simul) or 3D mode (L/R DUAL) when the input formats are different.

[Reference] SIZE → Section 8.6.1, "Selecting the Display Size"

PIC → **F•3** LINE SEL →

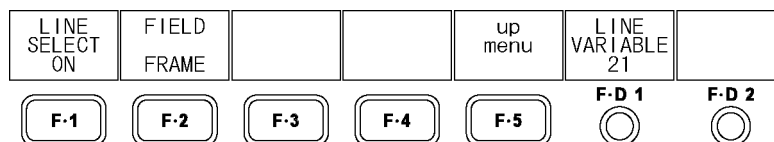


Figure 8-10 LINE SEL menu

8.5.1 Turning Line Selection On and Off

To display a marker on the selected line, follow the procedure below. However, in 3D mode, when MEASURE SELECT is set to DISPRTY, a marker will not appear, even if you set **F•1** LINE SELECT to ON.

Changing this setting will also change the video-signal-waveform-display and vector-display line selection settings.

[Reference] MEASURE SELECT → Section 10.5, “Selecting the Measurement Mode“

Procedure

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

Settings

CINELITE: The selected line of the line select feature is set to the line that you specify on the CINELITE display. This setting is available when CINELITE DISPLAY is set to f Stop or %DISPLAY.

ON: A marker is displayed at the line you selected with **F•D 1** LINE VARIABLE.

OFF: The marker is not displayed.

8.5.2 Selecting Lines

When **F•1** LINE SELECT is set to ON, to select a line to display a marker on, follow the procedure below. The selected line is indicated in the upper right of the screen. If you press **F•D 1**, the selected line changes to the first video line.

In 3D mode, you cannot select lines that are in the blanking interval.

Changing this setting will also change the selected line on the video signal waveform display, vector display, and data dump display.

Procedure

PIC → **F•3** LINE SEL → **F•D 1** LINE VARIABLE

8.5.3 Setting the Line Selection Range

When **F•1** LINE SELECT is set to ON and the input signal format is interlaced or segmented frame, to set the line selection range, follow the procedure below.

Changing this setting will also change the video-signal-waveform-display and vector-display line selection ranges.

Procedure

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

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

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

8.6 Display Settings

To configure the display settings, press **F•4** DISPLAY in the picture menu.

PIC → **F•4** DISPLAY →

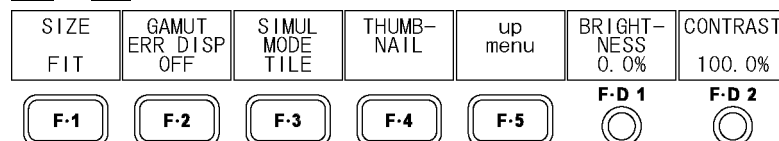


Figure 8-11 DISPLAY menu

8.6.1 Selecting the Display Size

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

This setting is not available in the multi-screen display or 3D mode when the display format is set to CHECKER or WIPE.

Procedure

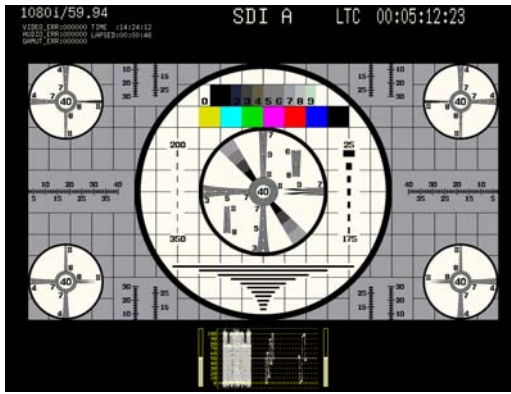
PIC → **F•4** DISPLAY → **F•1** SIZE : FIT / REAL / X2 / X4 / FULL FRM / FUL SCR N

Settings

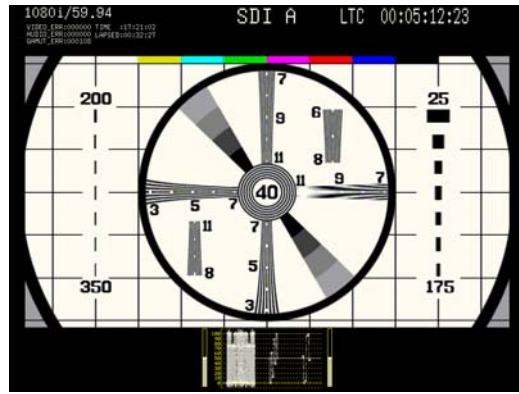
- | | |
|------------|---|
| FIT: | The picture size is adjusted to the most suitable size for the screen. |
| REAL: | <p>A single sample of the video signal is displayed with a single pixel on the screen.</p> <p>You can adjust the picture position by using H POS and V POS.</p> <p>This setting cannot be selected when the input signal is 1080p/60, 1080p/59.94, or 1080p/50.</p> |
| X2: | <p>A single sample of the video signal is displayed with 4 pixels (2 horizontal and 2 vertical pixels) on the screen.</p> <p>You can adjust the picture position by using H POS and V POS.</p> <p>This setting cannot be selected in 3D mode or when the input signal is 1080p/60, 1080p/59.94, or 1080p/50.</p> |
| X4: | <p>A single sample of the video signal is displayed with 16 pixels (4 horizontal and 2 vertical pixels) on the screen.</p> <p>You can adjust the picture position by using H POS and V POS.</p> <p>This setting cannot be selected in 3D mode or when the input signal is 1080p/60, 1080p/59.94, or 1080p/50.</p> |
| FULL FRM: | <p>A single frame, including the blanking interval, is displayed.</p> <p>This setting cannot be selected in 3D mode, during HDMI input, or when the input signal is 1080p/60, 1080p/59.94, or 1080p/50.</p> |
| FUL SCR N: | <p>When the input signal is SD, the picture is displayed on the whole screen.</p> <p>When the signal is HD, the center of the picture is displayed on the entire screen.</p> <p>This setting is not available in 2D mode (simul) or 3D mode.</p> |

8. PICTURE DISPLAY

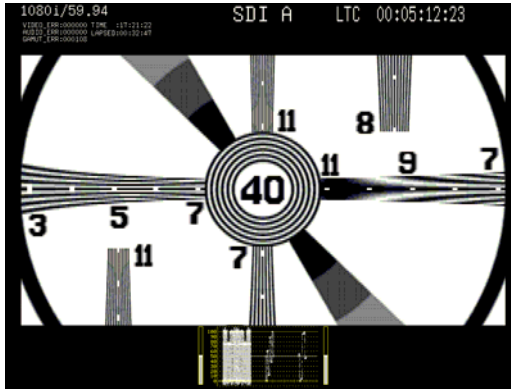
SIZE = FIT



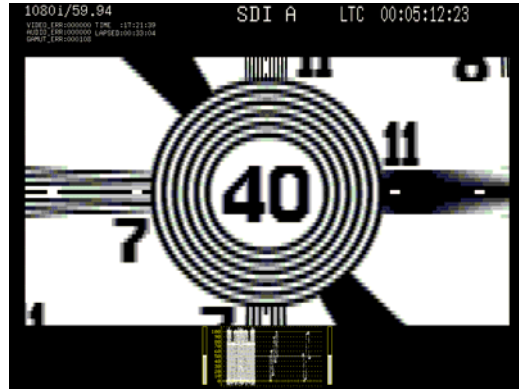
SIZE = REAL



SIZE = X2



SIZE = X4



SIZE = FULL FRM



SIZE = FUL SCRNR

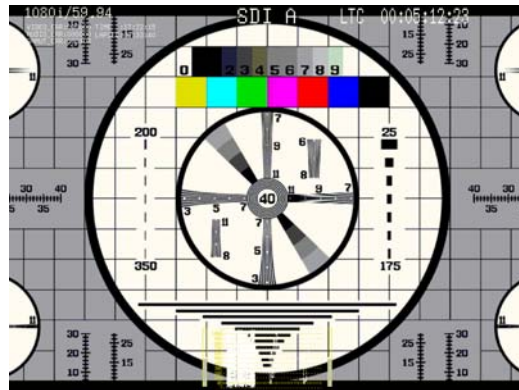


Figure 8-12 Selecting the display size

8.6.2 Adjusting the Display Position

When **F•1** SIZE is set to REAL, X2, or X4, follow the procedure below to adjust the picture's display position.

Press **F•D 1** or **F•D 2** to return the corresponding picture position to the center.

Procedure

PIC → F•4 DISPLAY → F•D 1 H POS
→ F•D 2 V POS

8.6.3 Displaying Gamut Errors

To display, on the picture, the locations where gamut errors, composite gamut errors, and luminance errors occur, follow the procedure below. The error level display ranges can be set separately in the status menu for each error type.

This setting is not available when in the status menu, GAMUT ERROR, COMPOSIT
GAMUT, and LUMA ERROR are all set to OFF.

[Reference] Section 14.7, “Configuring Gamut Error Settings”

Procedure

PIC → F.4 DISPLAY → F.2 GAMUT ERR DISP : OFF / WHITE / RED / MESH

Settings

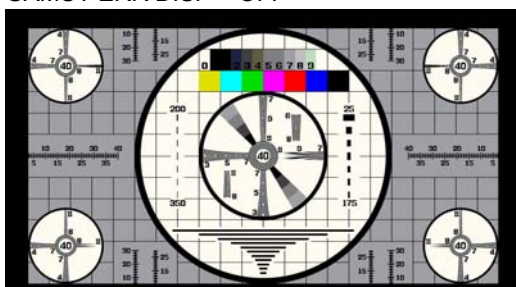
OFF: Gamut errors are not displayed.

WHITE: The picture intensity is halved, and gamut error locations are marked in white.

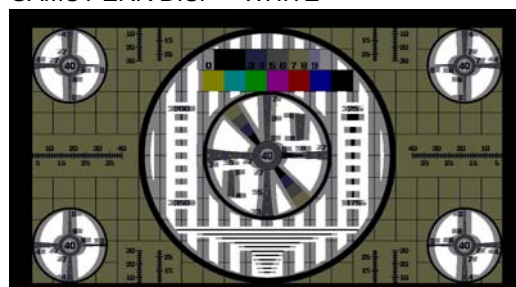
RED: The picture intensity is halved, and gamut error locations are marked in red.

MESH: Gamut error locations are filled with a mesh pattern.

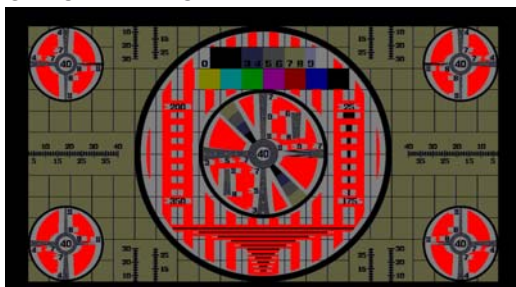
GAMUT ERR DISP = OFF



GAMUT ERR DISP = WHITE



GAMUT ERR DISP = RED



GAMUT ERR DISP = MESH

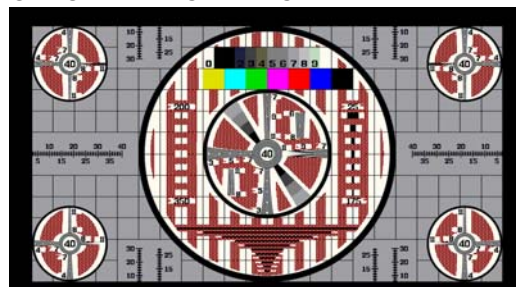


Figure 8-13 Displaying gamut errors

8.6.4 Selecting the Simul Mode Display Format

In 2D mode (simul), follow the procedure below to select the display format.

Procedure

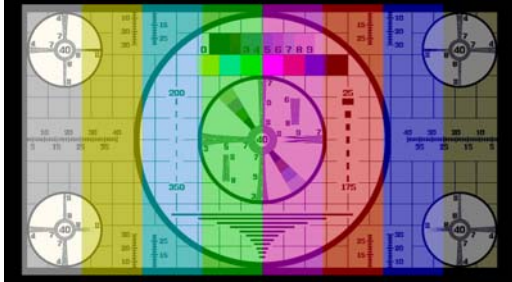
PIC → **F•4** DISPLAY → **F•3** SIMUL MODE : MIX / TILE

Settings

MIX: The pictures are overlapped and displayed.

TILE: The pictures are displayed separately.

SIMUL MODE = MIX



SIMUL MODE = TILE

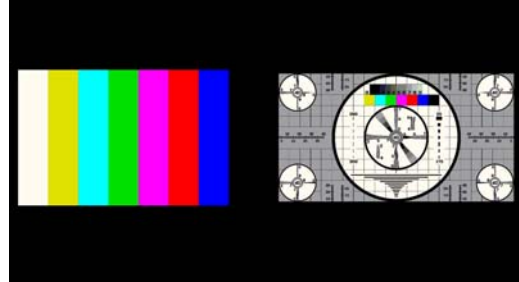


Figure 8-14 Selecting the simul mode display format

8.6.5 Configuring Thumbnail Settings

To configure the display settings, press **F•4** THUMBNAIL in the picture menu.

This setting is not available in the multi-screen display or 3D mode when MEASURE SELECT is set to DISPRTY.

[Reference] MEASURE SELECT → Section 10.5, "Selecting the Measurement Mode"

PIC → **F•4** DISPLAY → **F•4** THUMBNAIL →

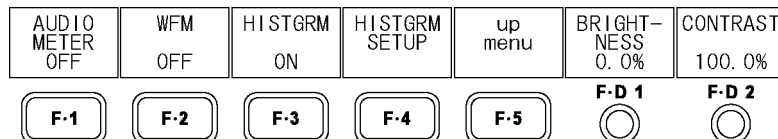


Figure 8-15 THUMBNAIL menu

To turn the audio meter, video signal waveform, and histogram thumbnails on and off separately, follow the procedure below.

The audio meter thumbnail is not available in 3D mode. Also, you cannot display a histogram thumbnail at the same time as another thumbnail.

Procedure

PIC → **F•4** DISPLAY → **F•4** THUMBNAIL → **F•1** AUDIO METER : ON / OFF
 → **F•2** WFM : ON / OFF
 → **F•3** HISTGRM : ON / OFF

8. PICTURE DISPLAY

AUDIO METER / WFM = ON



HISTGRM = ON

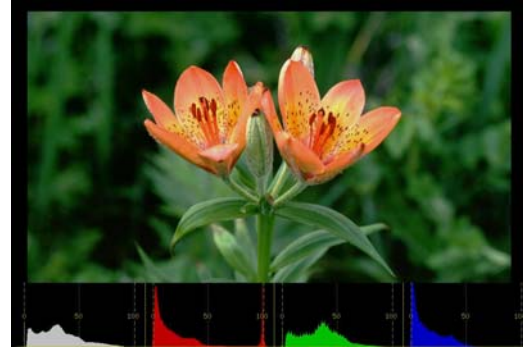


Figure 8-16 Configuring thumbnail settings

8.6.6 Selecting the Video Signal Waveform Display Format

To configure the video signal waveform thumbnail, press **F•4** WFM SETUP in the picture menu.

This setting is available in 3D mode (L/R DUAL or FRM PACK) when **F•2** WFM is set to ON.

PIC → **F•4** DISPLAY → **F•4** THUMBNAIL → **F•4** WFM SETUP →

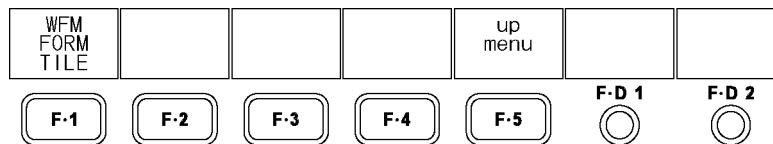


Figure 8-17 WFM SETUP menu

To select the display format of the video signal waveform thumbnail, follow the procedure below.

Procedure

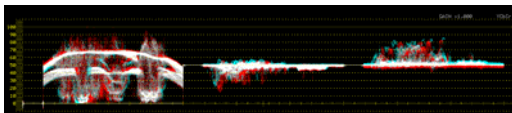
PIC → **F•4** DISPLAY → **F•4** THUMBNAIL → **F•4** WFM SETUP → **F•1** WFM FORM : MIX / TILE

Settings

MIX: The left eye video signal and right eye video signal are displayed on top of each other.

TILE: The left eye video signal and right eye video signal are displayed separately.

WFM FORM = MIX



WFM FORM = TILE

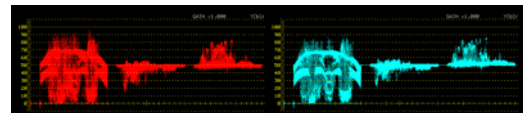


Figure 8-18 Selecting the video signal waveform display format

8.6.7 Selecting the Histogram Display Format

To configure the histogram thumbnail, press **F•4** HISTGRM SETUP in the picture menu. This setting is available when **F•3** HISTGRM is set to ON.

PIC → **F•4** DISPLAY → **F•4** THUMBNAIL → **F•4** HISTGRM SETUP →

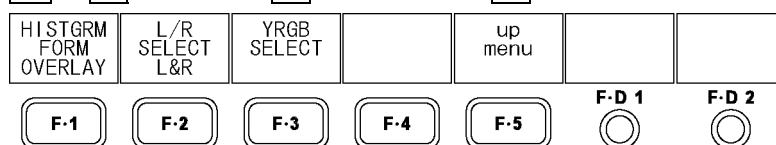


Figure 8-19 HISTGRM SETUP menu

To select the display format of the histogram thumbnail, follow the procedure below.

Procedure

PIC → **F•4** DISPLAY → **F•4** THUMBNAIL → **F•4** HISTGRM SETUP → **F•1** HISTGRM FORM : LUMA / PARADE / OVERLAY

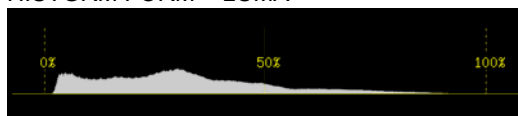
Settings

LUMA: A luminance histogram is displayed.

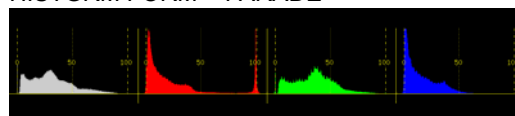
PARADE: The histograms of the Y, R, G, and B signals (in this order) are displayed side by side.

OVERLAY: The histograms of the Y, R, G, and B signals are displayed on top of each other as lines.

HISTGRM FORM = LUMA



HISTGRM FORM = PARADE



HISTGRM FORM = OVERLAY

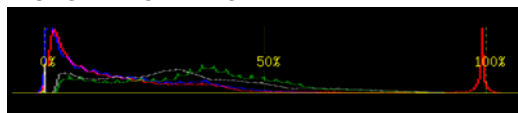


Figure 8-20 Selecting the Histogram Display Format

8.6.8 Selecting the Signals to Display Histograms Of

When **F•1** HISTOGRAM FORM is set to OVERLAY, follow the procedure below to turn the Y, R, G, and B histograms on and off separately. You cannot turn all the signals off.

Procedure

PIC → **F•4** DISPLAY → **F•4** THUMBNAIL → **F•4** HISTGRM SETUP → **F•3** YRGB SELECT

→ **F•1** Y : ON / OFF

→ **F•2** R : ON / OFF

→ **F•3** G : ON / OFF

→ **F•4** B : ON / OFF

8.6.9 Selecting the Channels to Display Histograms Of

In 3D mode (L/R DUAL or FRM PACK), to select the channels to display histograms of, follow the procedure below.

Procedure

PIC → **F•4** DISPLAY → **F•4** THUMBNAIL → **F•4** HISTGRM SETUP → **F•2** L/R SELECT :
LEFT / RIGHT / L&R

Settings

LEFT:	The left eye video channel is displayed.
RIGHT:	The right eye video channel is displayed.
L&R:	The left eye video channel and right eye video channel are displayed on top of each other.

9. CINELITE DISPLAY

This chapter explains the CINELITE display, which is one of the picture display features.

To configure the CINELITE display, use **[F.5]** CINELITE on the picture menu or **[F.4]** CINELITE on the multi menu. In the explanations in the following sections, the picture menu is used in the procedures, but you can also perform the same procedures in the multi menu.

This menu item does not appear in 3D mode or during HDMI input.

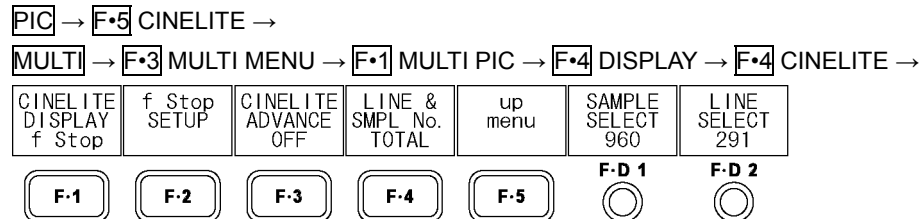


Figure 9-1 CINELITE menu

9.1 Selecting the Display Format

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

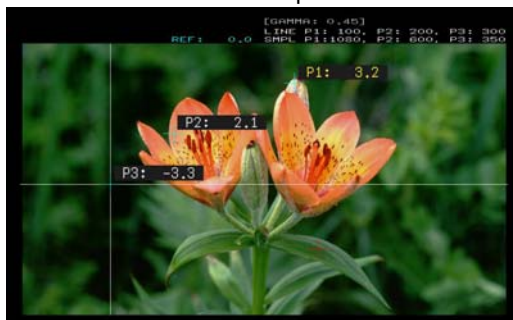
Procedure

PIC → **[F.5]** CINELITE → **[F.1]** CINELITE DISPLAY : OFF / f Stop / %DISPLAY / CINEZONE

Settings

- OFF:** CINELITE is disabled.
- f Stop:** Luminance levels are indicated as f-stop (exposure) values.
You cannot select this option in 2D mode (simul) or when SIZE is set to an option other than FIT.
- %DISPLAY:** Luminance levels are indicated as percentages or using 256 levels.
You cannot select this option in 2D mode (simul) or when SIZE is set to an option other than FIT.
- CINEZONE:** Luminance levels are indicated in different colors.

CINELITE DISPLAY = f Stop



CINELITE DISPLAY = %DISPLAY



CINELITE DISPLAY = CINEZONE

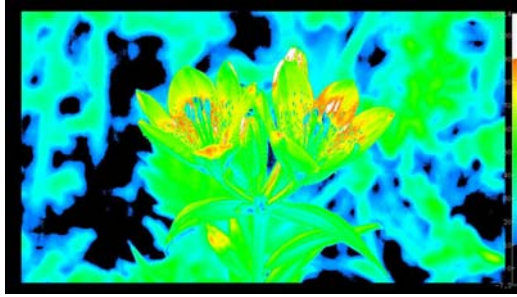


Figure 9-2 Selecting the display format

9.2 Displaying Synchronized Markers

When **[F•1]** CINELITE DISPLAY is set to f Stop or %DISPLAY, 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 is set to V or H SWEEP is set to 2H in the video signal waveform menu
- When COLOR MATRIX in the video signal waveform menu is COMPOSIT

Marker display will not work properly when waveforms are being displayed using an external sync signal.

Procedure

[PIC] → **[F•5]** CINELITE → **[F•3]** CINELITE ADVANCE : OFF / P+V / P+W / P+V+W

Settings

OFF:	P1 to P3 and REF are displayed only on the picture display.
P+V:	P1 to P3 and REF are displayed on the picture 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.

9. CINELITE DISPLAY

CINELITE ADVANCE = P+V+W

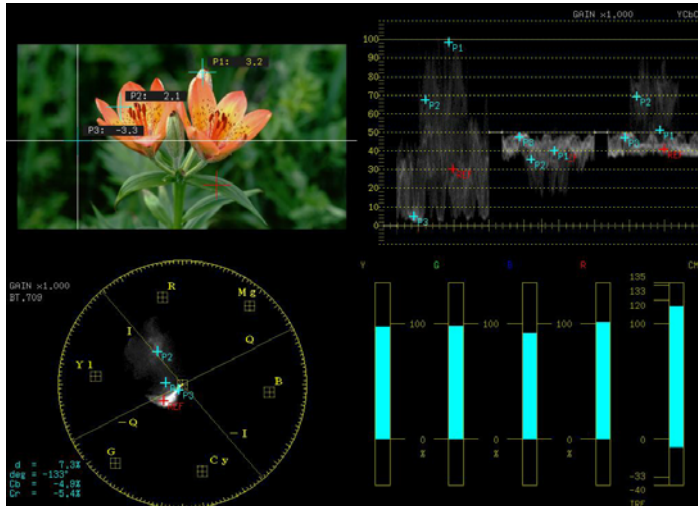


Figure 9-3 Synchronized marker display

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.

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, markers P1 to P3 are displayed in light blue and REF in red. When they fall outside the display, they blink in red. If this occurs, “OVER” appears above the measured values.

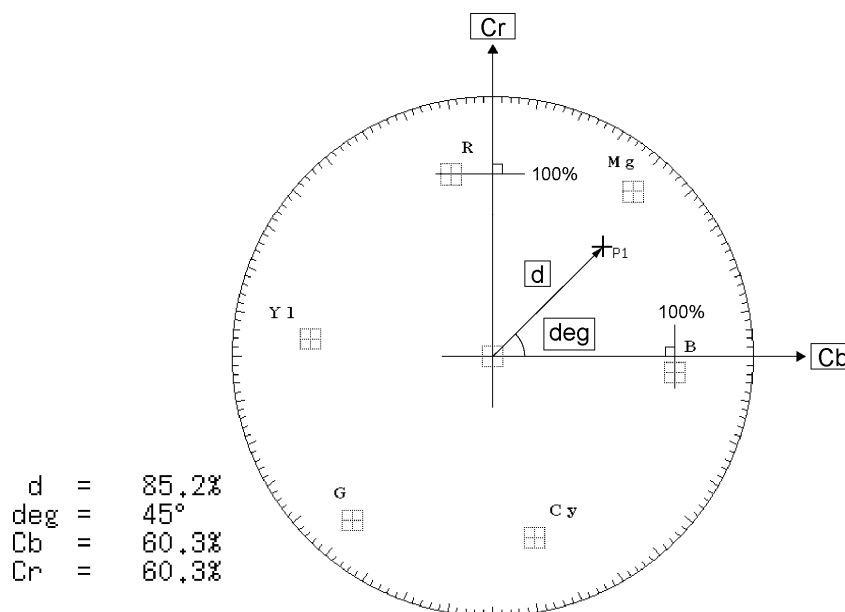


Figure 9-4 Marker description

9.3 Configuring Line and Sample Numbers

In the f Stop and percentage displays, you can use cursors to measure luminance levels. To specify how lines and samples are numbered, follow the procedure below.

This setting is not available in 2D mode (simul).

Procedure

PIC → F•5 CINELITE → F•4 LINE & SMPL No. : TOTAL / ACTIVE

Settings

TOTAL: The first line in the picture is numbered 1, and the first sample is numbered 0.

ACTIVE: The start of the active interval of the picture is numbered (1, 1).

9.4 Configuring the f Stop Display Settings

To configure f Stop display settings, press F•2 f Stop SETUP in the picture menu.

This menu item is available when F•1 CINELITE DISPLAY is set to f Stop.

PIC → F•5 CINELITE → F•2 f Stop SETUP →

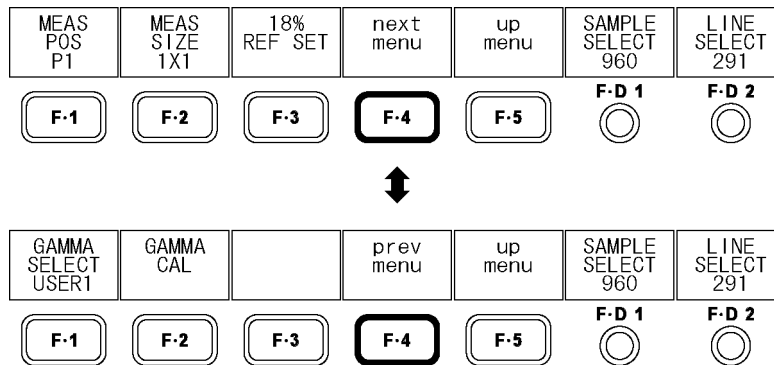


Figure 9-5 f Stop SETUP menu

9.4.1 f Stop Display Explanation

On the f Stop display, luminance levels are displayed using f-stop (exposure) values. The measured f Stop value for a group of measured points is typically displayed using white, but it will be displayed using yellow when it corresponds to a luminance level of 80 % or more. Additionally, f Stop values that correspond to luminance levels equal to or less than 0 % cannot be measured. They are displayed in yellow as "****".

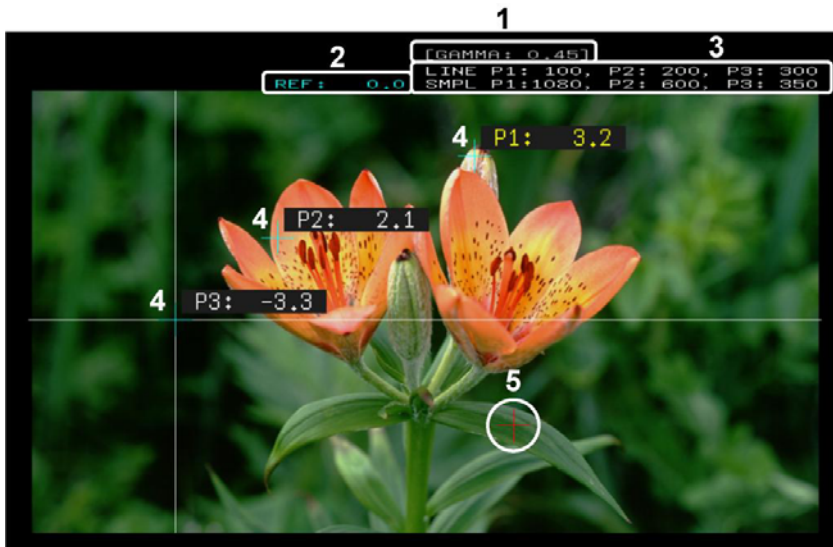


Figure 9-6 f Stop display

1 Gamma Correction Value

The gamma correction value that you selected using **[F•1]** GAMMA SELECT appears here.

2 Reference Value

The f Stop value at the reference position appears here. The value immediately after you have pressed **[F•3]** 18% REF SET is zero, but it will change when the picture changes.

3 Coordinates

The measurement point coordinates are indicated here with both line and sample numbers.

4 Cursor

You can set up to three measurement points. The f Stop value relative to the reference point is displayed at each point.

5 Reference Position

The position where the cursors intersected when **[F•3]** 18% REF SET was pressed is displayed in red. This is the reference position for f-stop measurement.

9.4.2 Procedure for Displaying the f Stop Display

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

1. Press **PIC**.
2. Press **F•5** CINELITE.
3. Press **F•1** CINELITE DISPLAY, and select %DISPLAY.
4. Press **F•2** %DISPLAY SETUP.
5. Press **F•3** UNIT SELECT, and select Y%.

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.

6. Place the cursors over the 18 % gray chart.

Adjust the lighting so that the displayed luminance level is 45.0 % (for example).

7. Press **F•5** up menu.
8. Press **F•1** CINELITE DISPLAY, and select f Stop.
9. Press **F•2** f Stop SETUP.
10. Press **F•4** next menu.
11. Press **F•1** GAMMA SELECT to select a gamma correction table.

The default gamma correction value is 0.45, but you can also use a user-defined gamma correction table that matches the gamma characteristics of the camera that you are using. For details, see section 9.4.5, "Configuring User-Defined Correction Tables."

The selected gamma correction value is indicated in the upper right of the display.

12. Press **F•4** prev menu.
13. Make sure that the cursors are over the 18 % gray chart, and press **F•3** 18% REF SET.

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

14. Use the cursors to set the measurement points.

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

9.4.3 Setting Measurement Points

You can set up to three measurement points. Follow the procedure below to select which measurement point to set with the cursors, and then move the X and Y cursors by using **[F•D 1]** SAMPLE SELECT and **[F•D 2]** LINE SELECT, respectively. Press **[F•D 1]** or **[F•D 2]** to return the corresponding cursor to the center.

The cursors are not displayed if they are within the blanking interval. To display cursors that do not appear, move them within the screen.

You cannot turn off one of the points from P1 to P3. To hide a cursor, move it outside of the screen.

Procedure

[PIC] → **[F•5]** CINELITE → **[F•2]** f Stop SETUP → **[F•1]** MEAS POS : P1 / P2 / P3

9.4.4 Setting the Area of Luminance Measurement

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

Procedure

[PIC] → **[F•5]** CINELITE → **[F•2]** f Stop SETUP → **[F•2]** MEAS SIZE : 1X1 / 3X3 / 9X9

Settings

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

9.4.5 Configuring User-Defined Correction Tables

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

There are two types of user-defined correction tables. The first type consists of tables that are created using the LV 5382 and is made up of the USER1 to USER3 tables. The second type consists of tables that have been created externally using a device such as a PC and is made up of the USER-A to USER-E tables.

Neither type of user-defined correction table is deleted if you initialize the LV 5382.

[Reference] See section 5.8.1, "Initializing Settings"

● Creating User-Defined Correction Tables Using the LV 5382

You can create and store up to three user-defined correction tables on the LV 5382.

As an example, the following procedure shows how to create a user-defined correction table that matches a camera's gamma characteristics.

Set the camera's f Stop value to 5.6 beforehand, and put an 18 % gray chart in the area that you will film.

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 details, see steps 1 through 5 in section 9.4.2, "Procedure for Displaying the f Stop Display."

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

In this example, the table for USER1 is created, but the tables for USER2 and USER3 can also be created in the same way.

7. Press **F•2** GAMMA CAL.

When you press **F•2** GAMMA CAL, a user-defined correction table appears in the bottom left of the screen, and the luminance level appears as a 10-bit value (0 % is displayed as 64, and 100 % is displayed as 940) close to the cursor.

This setting is available when **F•1** GAMMA SELECT is set to an option from USER1 to USER3.



Figure 9-7 User-defined correction table creation screen

8. Press **F•1** TABLE CLEAR.

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

9. Press **F•1** CLEAR YES.

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

10. Place the cursors over the 18 % gray chart.

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

12. Press **F•3** 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•2** 1 DATA CLEAR.

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

Do not change the lighting or the position of the 18 % gray chart.

Also, make sure that the Lev value for f Stop values 22.0 to 2.0 increases linearly.

The REF value in the user-defined correction table is entered when you press **F•3** 18% REF SET on the f Stop display.

For example, if you use the left-hand table shown below and press **F•3** 18% REF SET when the luminance value at the intersection of the cursors is 416 (10-bit value), the f Stop value at that point (3.0) is displayed as the REF value.

[USER1] REF=0.0				[USER1] REF=3.0		
CAL_F	F	Lev		CAL_F	F	Lev
[22.0]	0.0,	152		[22.0]	0.0,	152
[16.0]	1.0,	240		[16.0]	1.0,	240
[11.0]	2.0,	328		[11.0]	2.0,	328
[8.0]	3.0,	416	→	[8.0]	3.0,	416
[5.6]	4.0,	504		[5.6]	4.0,	504
[4.0]	5.0,	592		[4.0]	5.0,	592
[2.8]	6.0,	680		[2.8]	6.0,	680
[2.0]	7.0,	768		[2.0]	7.0,	768

Figure 9-8 User-defined correction tables

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

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

- **Loading a User-Defined Correction Table into the LV 5382**

You can load up to five user-defined correction tables into the LV 5382.

To load a user-defined correction table into the LV 5382, 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

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

You can put comments anywhere.

Keyword

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

NAME	The LV 5382 displays the eight characters that follow the separator (colon) as the name of the correction table. After the separator, enter the correction table name using letters of the alphabet (A to Z; uppercase and lowercase), numbers (0 to 9), and underscores (_). You can enter up to 10 characters.
TYPE	This is a code for identifying the file type. Enter a zero after the separator (colon).

Data

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

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

2. **Save the user-defined correction table to USB memory, and connect the USB memory to the LV 5382.**

Save the correction table in the following directory.

```

└─ USB Memory
   └─ LV5382_USER
      └─ TEST.CLT (example)

```

3. Press **PIC**.
4. Press **F•5** CINELITE.
5. Press **F•1** CINELITE DISPLAY, and select f Stop.
6. Press **F•2** f Stop SETUP.
7. Press **F•4** next menu.
8. Press **F•1** GAMMA SELECT, and select USER-A.

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

9. Press **F•2** GAMMA FILE.

This setting is available when **F•1** GAMMA SELECT is set to an option from USER-A to USER-E.

10. Press F•1 FILE LIST.

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

11. Use F•D 1 FILE SELECT to select the file to copy from the USB memory.

This menu item appears when you press F•1 FILE LIST.

12. Press F•3 FILE LOAD.

The user-defined correction table that you selected is copied from the USB memory to USER-A. The copy operation is complete when the file list screen disappears and the display returns to the measurement screen.

If a file has already been stored to USER-A, an overwrite confirmation prompt appears.

If you want to overwrite the current file, press F•1 OVER WR YES. Otherwise, press F•3 OVER WR NO.

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

9.5 Configuring the Percentage Display Settings

To configure the percentage display settings, press **F•2** %DISPLAY SETUP in the picture menu.

This menu item is available when **F•1** CINELITE DISPLAY is set to %DISPLAY.

PIC → **F•5** CINELITE → **F•2** %DISPLAY SETUP →



Figure 9-9 Percentage DISPLAY SETUP menu

9.5.1 Percentage Display Explanation

To select the display format, follow the procedure below.

The measured values are typically displayed using white, but they are displayed using yellow when the luminance level at a measurement point is 80 % or more or 0 % or less. The methods for setting measurement points and the measurement size are the same as those for the f Stop display. See section 9.4, “f Stop display settings.”

Procedure

PIC → **F•5** CINELITE → **F•2** %DISPLAY SETUP → **F•3** UNIT SELECT : Y% / RGB% / RGB 255

• Y% Display

Luminance levels are indicated as percentages.

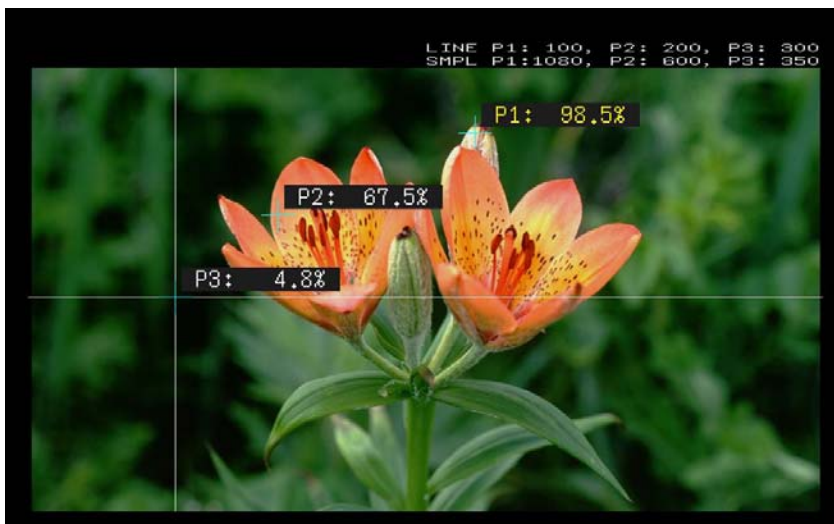


Figure 9-10 Y% display

- **RGB% Display**

Each R, G, and B 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).

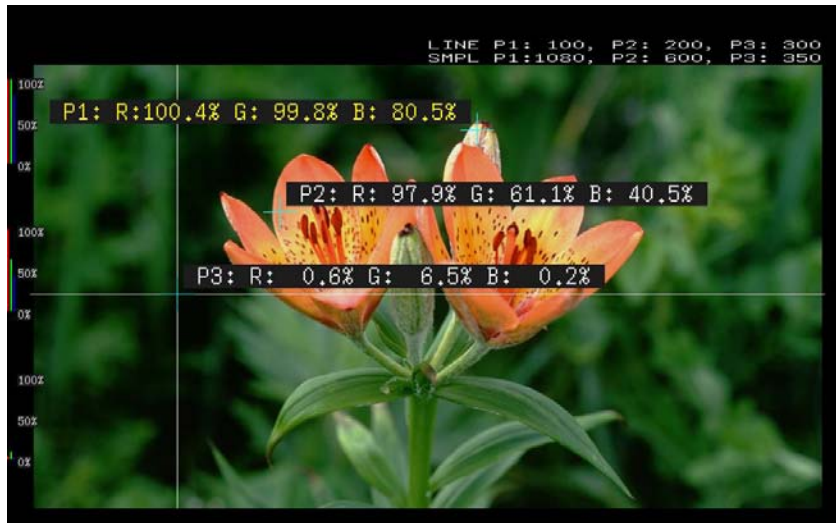


Figure 9-11 RGB% display

- **RGB 255 Display**

Each R, G, and B level is indicated using 256 steps from 0 to 255. The levels are also indicated using bars on the left side of the display (the order is R, G, and then B).

The value of an RGB level that is 100 % or greater is 255. The value of an RGB level that is 0 % or less is 0.

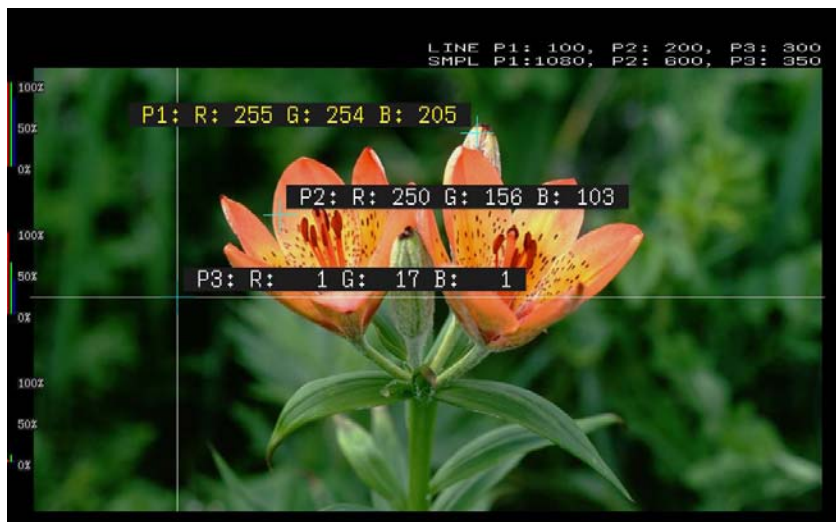


Figure 9-12 RGB 255 display

9.6 Configuring the CINEZONE Display Settings

To configure CINEZONE display settings, press **F•2** CINEZONE SETUP in the picture menu. This menu item is available when **F•1** CINELITE DISPLAY is set to CINEZONE.

PIC → **F•5** CINELITE → **F•2** CINEZONE SETUP →

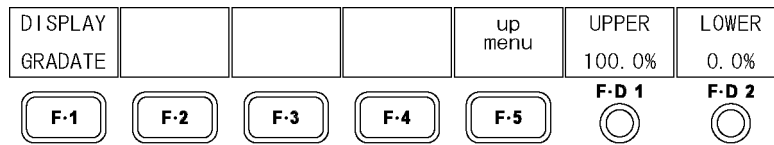


Figure 9-13 CINEZONE SETUP menu

9.6.1 CINEZONE Display Explanation

To select the display format, follow the procedure below.

Procedure

PIC → **F•5** CINELITE → **F•2** CINEZONE SETUP → **F•1** DISPLAY : GRADATE / STEP / SEARCH

• GRADATE Display

Luminance levels are displayed using 1024 colors. Also, luminance levels above **F•D 1** UPPER are displayed using white, and levels below **F•D 2** 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 (only available in the 1-screen display).

If **F•D 1** UPPER is 1 % greater than **F•D 2** LOWER and you lower the value of **F•D 1** UPPER, the value of **F•D 2** 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•D 2** LOWER, the value of **F•D 1** UPPER is automatically raised to maintain a difference of 1 % between the two values.

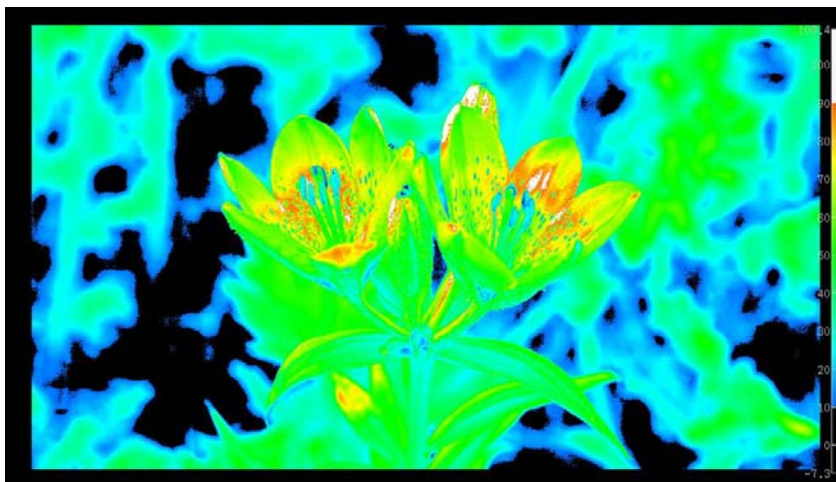


Figure 9-14 GRADATE display

- **STEP Display**

Luminance levels are divided into 10 % steps and assigned to 12 different colors. Also, luminance levels above **F•D 1** UPPER are displayed using white, and levels below **F•D 2** 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 (only available in the 1-screen display).

If **F•D 1** UPPER is 1 % greater than **F•D 2** LOWER and you lower the value of **F•D 1** UPPER, the value of **F•D 2** 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•D 2** LOWER, the value of **F•D 1** UPPER is automatically raised to maintain a difference of 1 % between the two values.

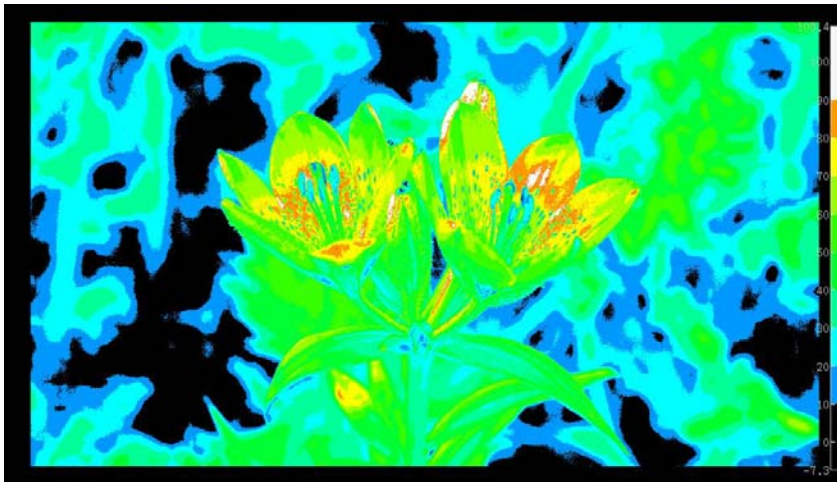


Figure 9-15 STEP display

- **SEARCH Display**

The range specified by **F•D 2** RANGE is displayed in gradation with the luminance level specified by **F•D 1** LEVEL at the center. 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.

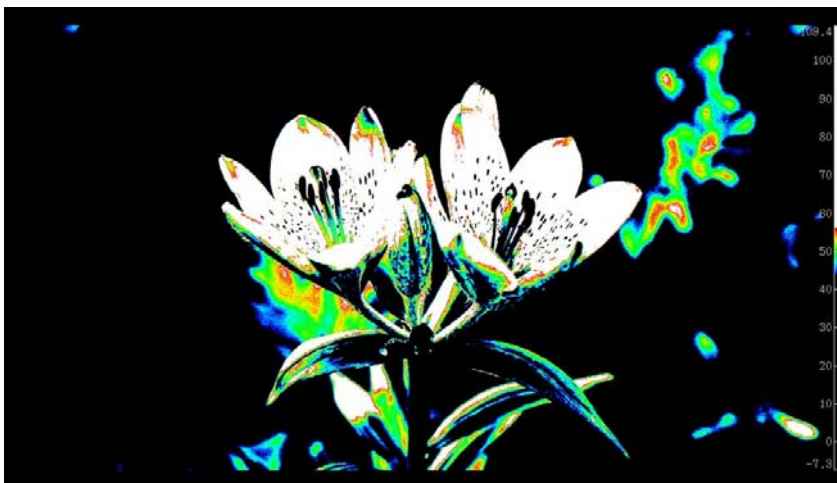


Figure 9-16 SEARCH display

10. 3D ASSIST DISPLAY

This chapter explains the 3D assist display, which is one of the picture display features.

You can configure the 3D assist display settings by pressing **F•5** 3D FUNCTION in the picture menu. This menu item appears in 3D mode.

PIC → **F•5** 3D FUNCTION →

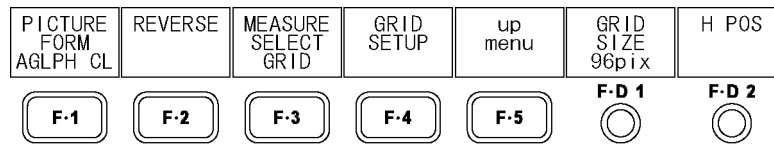


Figure 10-1 3D FUNCTION menu

10.1 Selecting the Display Format

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

This menu item does not appear in the multi-screen display when MULTI MODE is set to COMPARE.

[Reference] MULTI MODE → Section 15.2, "Selecting the Display Format"

Procedure

PIC → **F•5** 3D FUNCTION → **F•1** PICTURE FORM : AGLPH CL / AGLPH MO / CNVRGNCE / OVERLAY / CHECKER / WIPE / FLICKER

Settings

AGLPH CL: Green and blue are masked from the left eye video signal, and red is masked from the right eye video signal. These signals are then combined and displayed. You can easily check 3D images by using glasses designed for viewing anaglyphs.

AGLPH MO: Green and blue are masked from the monochrome left eye video signal, and red is masked from the monochrome right eye video signal. These signals are then combined and displayed. This is useful when you are measuring the amount of disparity because only the parts of the video that have disparity are colored. You can easily check 3D images by using glasses designed for viewing anaglyphs.

CNVRGNCE: A 50 % offset is added to the difference between the monochrome video signal for the left eye and the monochrome video signal for the right eye. The signals are then displayed. This is useful when you are adjusting the convergences of two cameras.

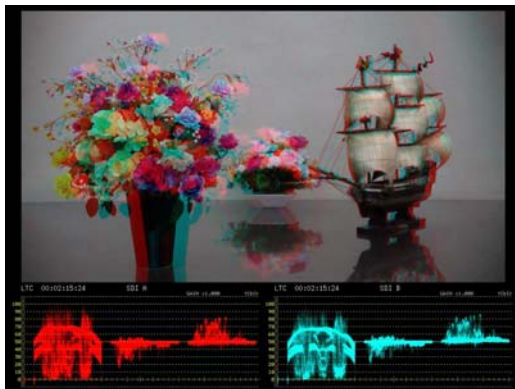
OVERLAY: The levels of both the left and right eye video signals are halved, and the signals are combined and displayed.

CHECKER: The left eye video signal and the right eye video signal are displayed in a checkerboard pattern. You can move the boundary lines. This is useful when you are matching the video levels of two cameras.

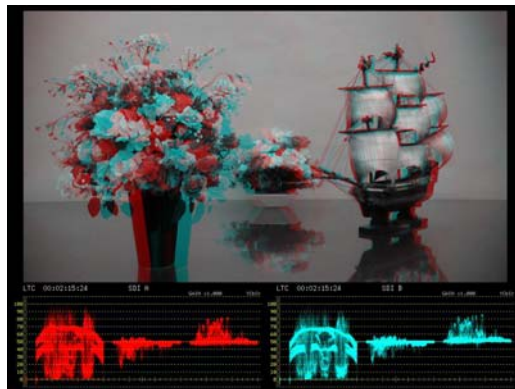
WIPE: The left eye video signal and the right eye video signal are divided by boundary lines and displayed. You can move the boundary lines, and the portion to the upper left of the boundary lines is the left eye video signal, while the portion to the right of the boundary lines is the right eye video signal. This is useful when you are matching the video levels of two cameras.

FLICKER: The left eye video signal and the right eye video signal are displayed on a time sharing display.

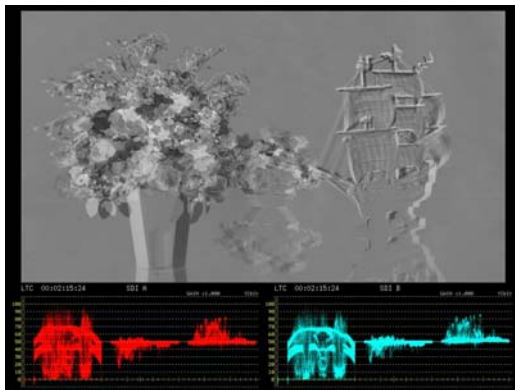
PICTURE FORM = AGLPH CL



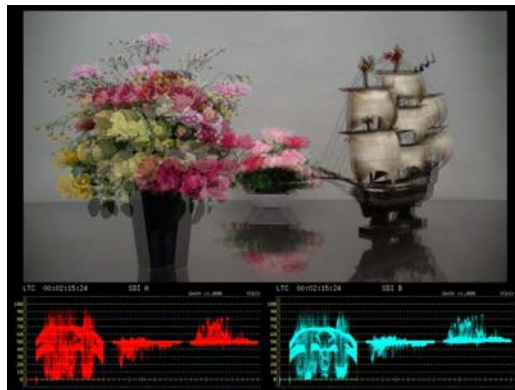
PICTURE FORM = AGLPH MO



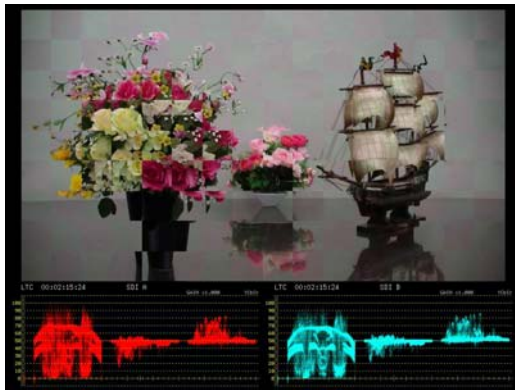
PICTURE FORM = CNVRGNCE



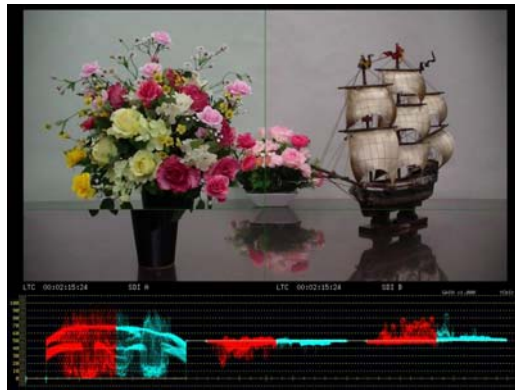
PICTURE FORM = OVERLAY



PICTURE FORM = CHECKER



PICTURE FORM = WIPE



PICTURE FORM = FLICKER

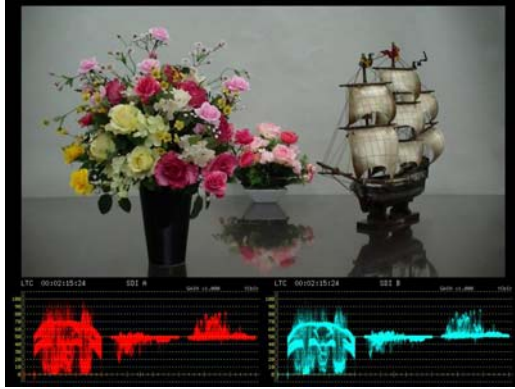


Figure 10-2 Selecting the display format

10.2 Configuring the Checkerboard Display Settings

When **F•1** PICTURE FORM is set to CHECKER, follow the procedure below to move the boundary lines.

Press **F•D 1** to move the left-right boundary lines and **F•D 2** to move the top-bottom boundary lines in a way that makes each square the same size in the checkerboard pattern.

PIC → **F•5** 3D FUNCTION →

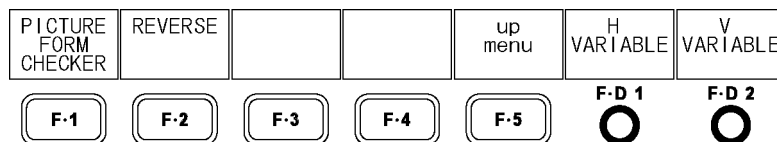


Figure 10-3 3D FUNCTION menu

Procedure

PIC → **F•5** 3D FUNCTION → **F•D 1** H VARIABLE (left-right boundary lines)
→ **F•D 2** V VARIABLE (top-bottom boundary lines)

10.3 Configuring the Wipe Display Settings

When **F•1** PICTURE FORM is set to WIPE, use the 3D FUNCTION menu to configure the boundary line settings.

PIC → **F•5** 3D FUNCTION →

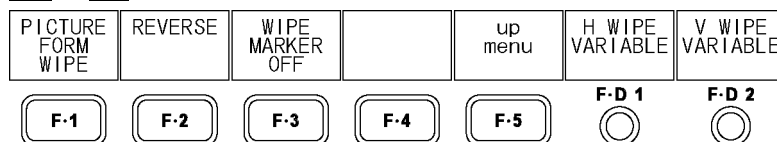


Figure 10-4 3D FUNCTION menu

10.3.1 Turning the Boundary Lines On and Off

To turn the boundary lines on and off, follow the procedure below.

Procedure

PIC → **F•5** 3D FUNCTION → **F•3** WIPE MARKER : OFF / ON

10.3.2 Moving the Boundary Lines

To move the boundary lines, follow the procedure below. Press **F•D 1** to move the left-right boundary line to the middle of the screen. Press **F•D 2** to move the top-bottom boundary line to the bottom of the screen.

When WFM FORM is set to MIX, you can display the video signal waveforms separately on the left and right sides of the screen by turning **F•D 1**.

[Reference] WFM FORM → Section 8.6.6, "Selecting the Video Signal Waveform Display Format"

Procedure

PIC → **F•5** 3D FUNCTION → **F•D 1** H WIPE VARIABLE (left-right boundary lines)
→ **F•D 2** V WIPE VARIABLE (top-bottom boundary lines)

10.4 Configuring the Inverted Display Settings

To configure the inverted display settings, press **F•2** REVERSE in the 3D FUNCTION menu.

PIC → **F•5** 3D FUNCTION → **F•2** REVERSE →

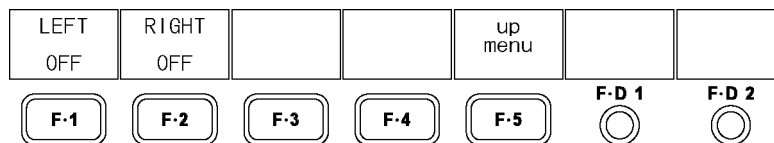


Figure 10-5 REVERSE menu

To invert the display of the picture and the video signal waveform for each input channel, follow the procedure below. Use this feature when you are measuring video that is projected using half mirrors.

Procedure

PIC → **F•5** 3D FUNCTION → **F•2** REVERSE
→ **F•1** LEFT : OFF / VERTICAL / HORIZONTAL / H&V
→ **F•2** RIGHT : OFF / VERTICAL / HORIZONTAL / H&V

Settings

OFF: The display is not inverted.

VERTICAL: Pictures are inverted vertically.

HORIZONTAL: Pictures and video signal waveforms are inverted horizontally.(*1)

H&V: Pictures are inverted vertically and horizontally, and video signal waveforms are inverted horizontally.(*1)

*1 Horizontal inversion of the video signal waveform occurs only during the video period. The video is not inverted in 3D mode (HF SbyS or TOP&BOTM).

10.5 Selecting the Measurement Mode

In the 1-screen display, when **F•1** PICTURE FORM is set to AGLPH CL, AGLPH MO, CNVRGNCE, or OVERLAY, you can use the grid or the cursors to measure disparity. To select the disparity measurement mode, follow the procedure below.

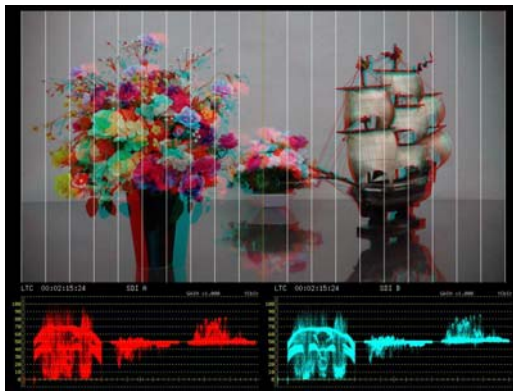
Procedure

PIC → **F•5** 3D FUNCTION → **F•3** MEASURE SELECT : OFF / GRID / DISPRTY

Settings

OFF: No grid lines or cursors are displayed.
 GRID: Grid lines are displayed. You can use the grid to measure disparity.
 DISPRTY: Cursors are displayed. You can perform detailed disparity measurements by setting the viewing environment.

MEASURE SELECT = GRID



MEASURE SELECT = DISPRTY



Figure 10-6 Selecting the measurement mode

10.6 Configuring the Grid Display Settings

To configure the grid display settings, press **F•4** GRID SETUP in the 3D FUNCTION menu. This menu item is available when **F•3** MEASURE SELECT is set to GRID.

PIC → **F•5** 3D FUNCTION → **F•4** GRID SETUP →

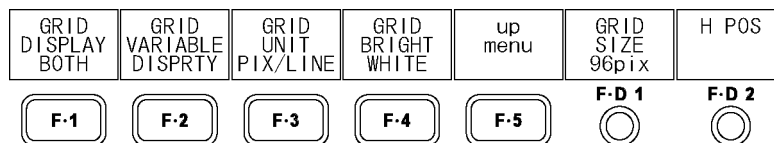


Figure 10-7 GRID SETUP menu

10.6.1 Selecting the Displayed Grid

To select the type of grid that is displayed, follow the procedure below. The reference grid lines for both the disparity and horizontal grid lines are displayed in yellow.

Procedure

PIC → **F•5** 3D FUNCTION → **F•4** GRID SETUP → **F•1** GRID DISPLAY : DISPRTY / HORIZONTAL / BOTH

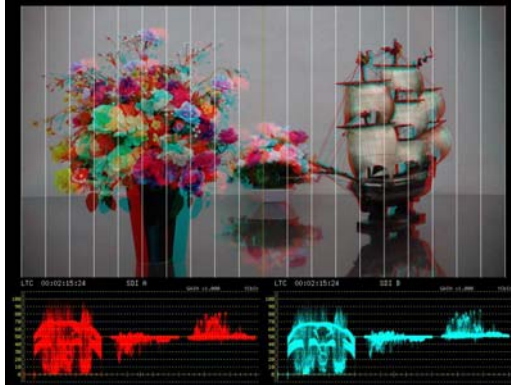
Settings

DISPRTY: Vertical grid lines are displayed. Use this option when you want to perform disparity measurements.

HORIZONTAL: Horizontal grid lines are displayed. Use this option when you want to match the horizontal position of one camera or multiple cameras.

BOTH: Both vertical and horizontal grid lines are displayed.

GRID DISPLAY = DISPRTY



GRID DISPLAY = HORIZONTAL

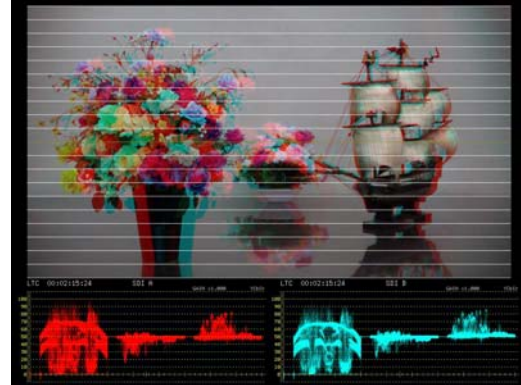


Figure 10-8 Selecting the displayed grid

10.6.2 Selecting the Grid to Configure

Configure the disparity grid and the horizontal grid separately.

When **F•1** GRID DISPLAY is set to BOTH, to select the grid that you want to configure, follow the procedure below.

Procedure

PIC → **F•5** 3D FUNCTION → **F•4** GRID SETUP → **F•2** GRID VARIABLE : DISPRTY / HORIZONTAL

Settings

DISPRTY: The disparity grid is selected.

HORIZONTAL: The horizontal grid is selected.

10.6.3 Selecting the Grid Line Adjustment Unit

To select the grid line adjustment unit, follow the procedure below.

Procedure

PIC → **F•5** 3D FUNCTION → **F•4** GRID SETUP → **F•3** GRID UNIT : PIX/LINE / %

Settings

PIX/LINE:	The disparity grid lines are adjusted with pixels as the unit. The horizontal grid lines are adjusted with lines as the unit.
%:	The disparity and horizontal grid lines are adjusted with percentage as the unit. The picture frame is 100 %.

10.6.4 Selecting the Grid Color

To select the grid line color, follow the procedure below.

Procedure

PIC → **F•5** 3D FUNCTION → **F•4** GRID SETUP → **F•4** GRID BRIGHT : WHITE / BLACK / GRAY1 / GRAY2

Settings

WHITE:	The grid lines are displayed in white.
BLACK:	The grid lines are displayed in black.
GRAY1:	The grid lines are displayed in dark gray.
GRAY2:	The grid lines are displayed in light gray.

10.6.5 Adjusting the Grid Line Spacing

To adjust the grid line spacing, follow the procedure below.

If you press **F•D 1**, the spacing will be returned to its default value.

Procedure

PIC → **F•5** 3D FUNCTION → **F•4** GRID SETUP → **F•D 1** GRID SIZE
 : 6pix - 96pix - 192pix(*1) / 0.3% - 5.0% - 10.0%
 (When **F•1** GRID DISPLAY or **F•2** GRID VARIABLE is set to DISPRTY)
 : 6line - 54line - 108line (*1) / 0.6% - 5.0% - 10.0%
 (When **F•1** GRID DISPLAY or **F•2** GRID VARIABLE is set to HORIZONT)

*1 The selectable range varies depending on the input signal. The values shown here are for an input signal whose format is 1080i/59.94.

10.6.6 Adjusting the Grid Line Positions

To adjust the grid line positions, follow the procedure below.

The reference grid lines (displayed in yellow) can be moved from one side of the picture to the other. Press **F•D 2** to center the reference grid lines.

Procedure

PIC → **F•5** 3D FUNCTION → **F•4** GRID SETUP
 → **F•D 2** H POS (When **F•1** GRID DISPLAY or **F•2** GRID VARIABLE is set to DISPRTY)
 → **F•D 2** V POS (When **F•1** GRID DISPLAY or **F•2** GRID VARIABLE is set to HORIZONT)

10.7 Configuring the Disparity Measurement Settings

To configure the disparity measurement settings, press **F•4** DISPRTY SETUP on the 3D FUNCTION menu.

These settings are available when **F•3** MEASURE SELECT is set to DISPRTY.

PIC → **F•5** 3D FUNCTION → **F•4** DISPRTY SETUP →

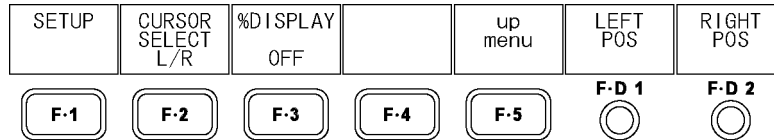


Figure 10-9 DISPRTY SETUP menu

10.7.1 Disparity Measurement Display Explanation

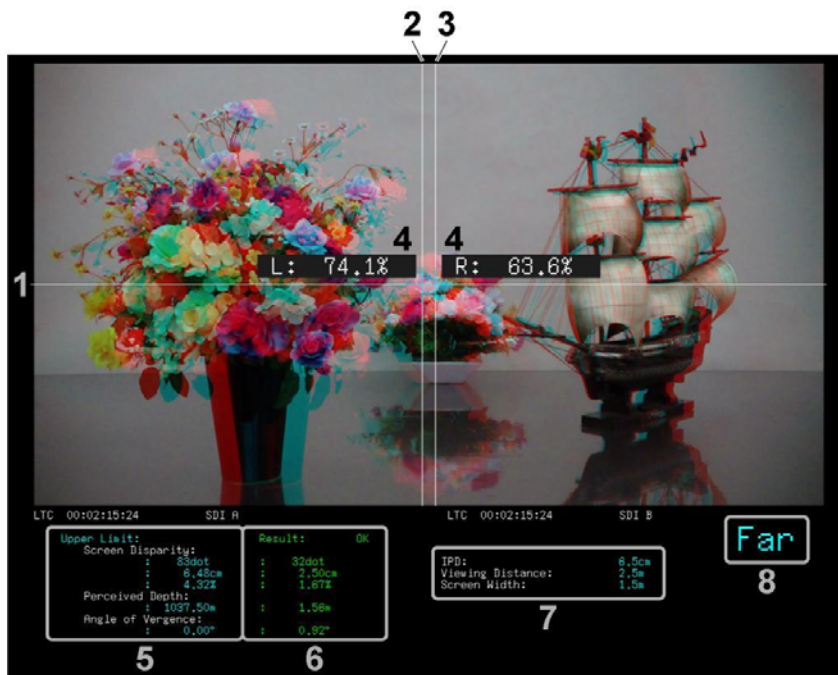


Figure 10-10 Disparity Measurement Display

1 V cursor

This is the vertical cursor.

2 L cursor

This is a disparity measurement cursor. Align it with the left eye video signal.

3 R cursor

This is a disparity measurement cursor. Align it with the right eye video signal.

4 Luminance levels

If you set **F•3** %DISPLAY to ON, the luminance levels at the cursor intersections are displayed. When the luminance level is below 0.0% or above 80.0%, the measured values are displayed in yellow.

5 Upper Limit

This displays the upper disparity limits that were set in the PARAMETER display. Depending on the cursor position, these switch automatically between the Far upper limits and the Near upper limits.

6 Result

This displays the disparities that are measured by the cursors. At the top, when at least one measured value exceeds its upper limit, "NG" is displayed in red. When all measured values are less than or equal to their upper limits, "OK" is displayed in green.

7 Viewing environment

This displays the viewing environment that has been configured on the PARAMETER display.

8 Far or Near

When the L cursor is to the left of the R cursor, "Far" is displayed here. When the L cursor is to the right of the R cursor, "Near" is displayed here.

- **About the Names of Settings and Measurement Items**

The names of the settings and measurement items that are used with the LV 5382 are shown below.

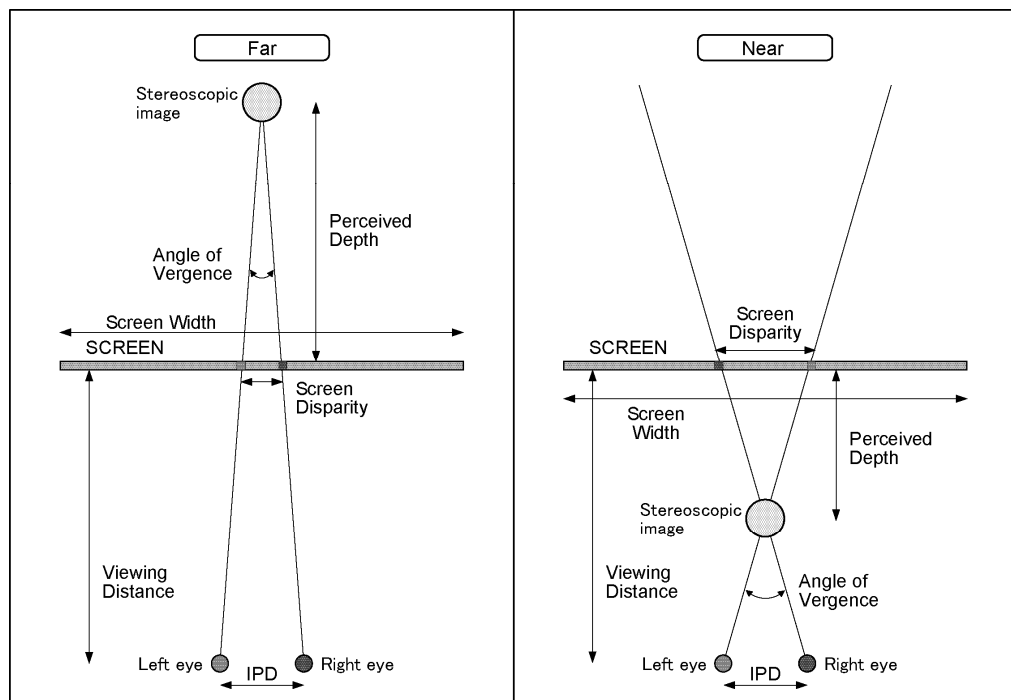


Figure 10-11 Setting and measurement item names

10.7.2 Disparity Measurement Procedure

To measure disparity, follow the procedure below.

Before you begin this procedure, set **F•3** MEASURE SELECT to DISPRTY on the 3D FUNCTION menu.

1. Press **F•4** DISPRTY SETUP and then **F•1** SETUP.

The PARAMETER display appears.

PARAMETER

Parameter		
IPD	6.5cm	
Viewing Distance	2.5m	
Screen Width	1.5m	
Upper Limit	Far	Near
Screen Disparity	83dot	-96dot
	6.48cm	-7.50cm
	4.32%	5.00%
Perceived Depth	1037.50m	-1.34m
Angle of Vergence	0.00°	3.21°

Figure 10-12 PARAMETER display

2. Under Parameter, enter the assumed viewing environment.

IPD	Enter the interpupillary distance. For adults, the distance is 6.5 cm. For children, it is approximately 5.0 cm. (Setting range: 2.0 to 20.0 cm. The default setting is 6.5 cm.)
Viewing Distance	Enter the distance from the screen to the viewer. (Setting range: 0.1 to 99.9 m. The default setting is 2.5 m.)
Screen Width	Enter the screen width. (Setting range: 0.1 to 250.0 m. The default setting is 1.5 m.)

3. Under Upper Limit, enter the upper limits for the measured values.

If at least one measured value exceeds the limit that you enter for it here, “NG” is displayed on the disparity measurement display.

Screen Disparity	Enter the upper limit for the screen disparity. When you specify the value in units of dots, the cm, %, Perceived Depth, and Angle of Vergence values are set automatically. Enter a negative value under Near. (Setting range: ±1920 dots. The default Far setting is 83 dots. The default Near setting is -96 dots.)
Perceived Depth	This displays the near and far limits as distances from the screen.
Angle of Vergence	This displays the angle of vergence limit.

4. Press **F•1** COMPLETE.

The settings are confirmed, and the disparity measurement display appears. To cancel the settings, press **F•5** CANCEL.



Figure 10-13 Disparity Measurement Display

5. Set **F•2** CURSOR SELECT to L/R.

6. Turn **F•D 1** LEFT POS to match the L cursor with the left eye video signal.

Press **F•D 1** to move the cursor to approximately the center of the screen.

7. Turn **F•D 2** RIGHT POS to match the R cursor with the right eye video signal.

The measured disparity is displayed at the bottom of the screen.

Press **F•D 2** to move the cursor to approximately the center of the screen.

- **To Move the V Cursor**

It is useful to use the V cursor when you are matching the positions of the L and R cursors. Also, the luminance levels at the cursor intersections are displayed.

To move the V cursor, set **F•2** CURSOR SELECT to V/TRACK, and then turn **F•D 1** VERT POS. Press **F•D 1** to move the cursor to the center of the screen.

- **To Move the L and R Cursors at the Same Time**

To move the L and R cursors at the same time, set **F•2** CURSOR SELECT to V/TRACK, and then turn **F•D 2** LR TRACK POS.

11. VIDEO SIGNAL WAVEFORM DISPLAY

11.1 Video Signal Waveform Display Explanation

To display video signal waveforms, press WFM.

To display the video signal waveform menu, hold down WFM for 0.5 seconds or more, or use the function keys and function dials on the video signal waveform display. The video signal waveform menu will disappear when you press WFM again or after a certain period of time passes with no user activity.

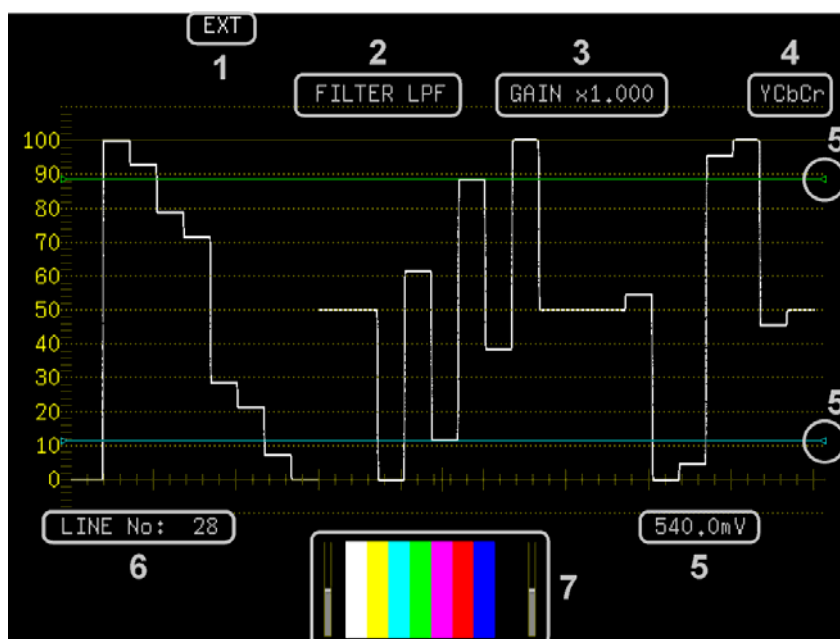


Figure 11-1 Video signal waveform display

1 Sync Signal

EXT appears here when an external sync signal is being used.

[Reference] Section 11.6.4, "Switching the Sync Signal"

2 Filter

FILTER LPF appears here when FILTER has been set to LOW PASS.

[Reference] FILTER → Section 11.4.3, "Selecting the Filter"

3 Gain

The video signal waveform gain appears here. You can set the gain to a value between 0.2 and 10 by setting GAIN MAG and GAIN VARIABLE.

[Reference] GAIN MAG → Section 11.4.1, "Selecting the Fixed Gain"

GAIN VARIABLE → Section 11.4.2, "Setting the Variable Gain"

4 Display Format

The video signal waveform display format (YCbCr, GBR, YGBR, RGB, YRGB, or COMPOSITE) appears here.

[Reference] Sections 11.7.1, "Selecting the Display Format," and 11.7.2, "Displaying the Luminance and GBR Signals Simultaneously"

5 Cursor

You can measure the time or amplitude using cursors.

[Reference] Section 11.9, “Configuring Cursor Settings”

6 Selected Line

The waveform of the selected line is displayed.

[Reference] Sections 11.6.1, “Turning Line Selection On and Off,” and 11.6.2, “Selecting Lines”

7 Thumbnail Display

The thumbnail display shows the audio meter (fixed to channels 1 and 2) and the picture.

You can also turn each of these displays off.

[Reference] Section 11.10.3, “Setting the Thumbnail Display”

11.2 Setting the Display Position

To set the display position, use **F•D 1** H POS and **F•D 2** V POS in the video signal waveform menu.

These settings appear on other levels of the video signal waveform menu as well and function in the same way.

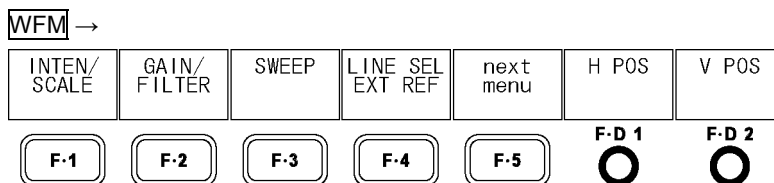


Figure 11-2 Video signal waveform menu

11.2.1 Setting the Horizontal Position

To set the video signal waveform horizontal position, follow the procedure below.

To return the position to its default location, press **F•D 1**.

Procedure

WFM → **F•D 1** H POS

11.2.2 Setting the Vertical Position

To set the video signal waveform vertical position, follow the procedure below.

To return the position to its default location, press **F•D 2**.

Procedure

WFM → **F•D 2** V POS

11.3 Configuring the Video Signal Waveform and Scale Settings

To configure video-signal-waveform and scale settings, press **[F•1]** INTEN/SCALE in the video signal waveform menu.

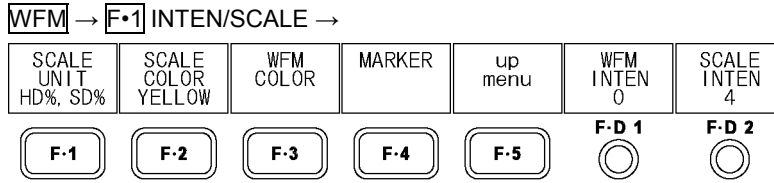


Figure 11-3 INTEN/SCALE menu

11.3.1 Selecting the Scale Unit

To select the scale unit, follow the procedure below.

[Reference] COLOR MATRIX → 11.7.1, “Selecting the Display Format”

Procedure

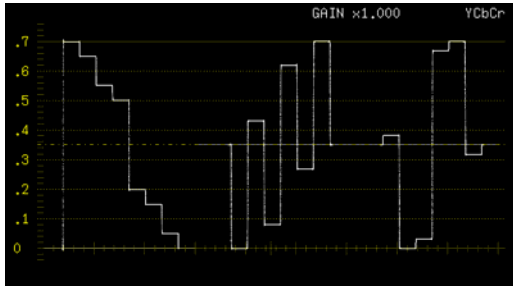
[WFM] → **[F•1]** INTEN/SCALE → **[F•1]** SCALE UNIT : HD%,SD% / HDV,SDV / HDV,SD% / 150% / 1023 / 3FF / % / V

Settings

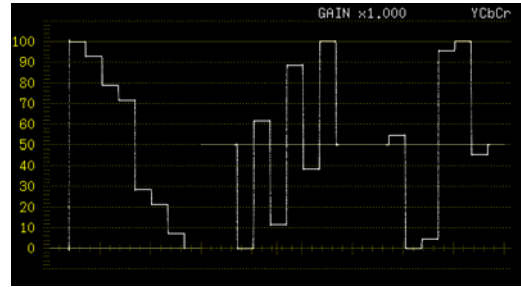
HD%,SD%:	The scale unit is set to %.
HDV,SD%:	The scale unit is set to V for HD signals and % for SD signals. This setting cannot be selected when SIMUL MODE is set to ALIGN or MIX.
HDV,SDV:	The scale unit is set to V.
150%:	The scale unit is set to %, and the display starts at -50 %. This setting is available when COLOR MATRIX is set to GBR or RGB.
1023:	0 to 100 % is displayed as 64 to 940 (YGBR) or 64 to 960 (CbCr).
3FF:	0 to 100 % is displayed as 040 to 3AC (YGBR) or 040 to 3C0 (CbCr).
%:	When COLOR MATRIX is set to COMPOSIT and the composite display format is NTSC, the scale unit setting is fixed at %. The scale unit is set to %.
V:	When COLOR MATRIX is set to COMPOSIT and the composite display format is PAL, the scale unit setting is fixed at V. The scale unit is set to V.

11. VIDEO SIGNAL WAVEFORM DISPLAY

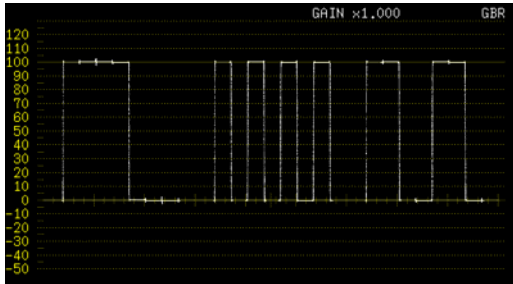
SCALE UNIT = HDV,SDV



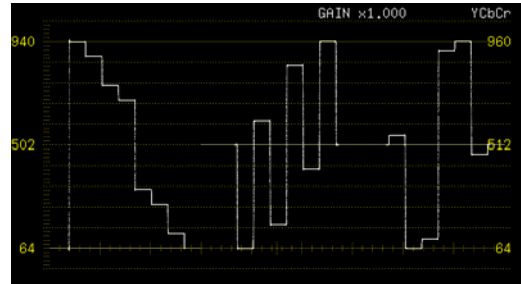
SCALE UNIT = HD%,SD%



SCALE UNIT = 150%



SCALE UNIT = 1023



SCALE UNIT = 3FF

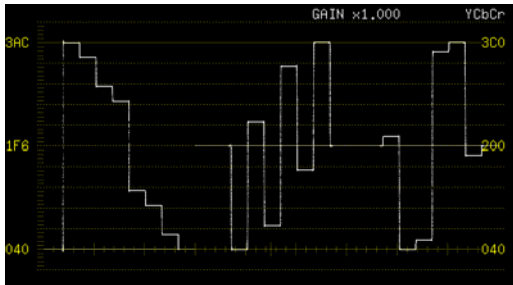


Figure 11-4 Selecting the scale unit

11.3.2 Selecting the Scale Color

To select the scale color, follow the procedure below.

Procedure

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

11.3.3 Selecting the Waveform Color

To configure the waveform color settings, press **F•3** WFM COLOR in the video signal waveform menu.

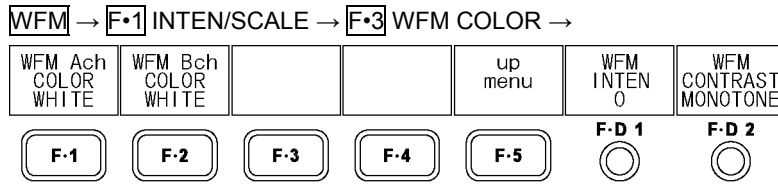


Figure 11-5 WFM COLOR menu

To select the video signal waveform color for each channel, follow the procedure shown below.

When the multi-screen display is in use, vectors are displayed in the same colors as the waveforms.

Procedure

WFM → **F•1** INTEN/SCALE → **F•3** WFM COLOR
 → **F•1** WFM Ach COLOR : WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE
 → **F•2** WFM Bch COLOR : WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE

- * The menu shown above is an example of the menu that appears in the 1-screen display during SDI input in 2D mode when the link format is set to single. The menu items may vary depending on the settings.
- * In 3D mode (L/R DUAL or FRM PACK), the default setting for LEFT COLOR is RED, and the default setting RIGHT COLOR is CYAN.

11.3.4 Selecting the Contrast

To select the video signal waveform contrast, follow the procedure below.

Waveforms are usually displayed with gradations, but you can display waveforms using single colors by selecting MONOTONE. This is useful for comparing overlapping waveforms.

If you press **F•D 2**, the contrast will be set to its default value of MONOTONE.

Procedure

WFM → **F•1** INTEN/SCALE → **F•3** WFM COLOR → **F•D 2** WFM CONTRAST :
MONOTONE / LOW / MIDDLE / HIGH

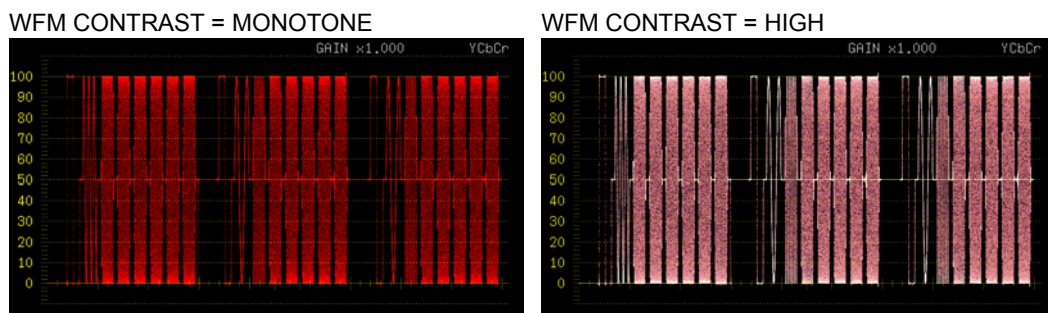


Figure 11-6 Selecting the contrast

11.3.5 Displaying Markers for 75 % Intensity Color Bars

To display the markers, press **F•4** MARKER in the video signal waveform menu.

WFM → **F•1** INTEN/SCALE → **F•4** MARKER →

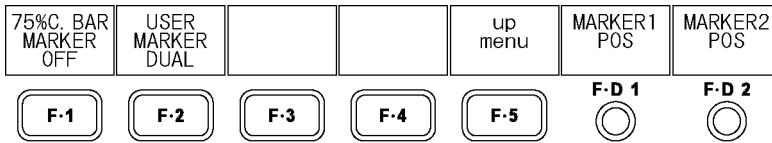


Figure 11-7 MARKER menu

When a 75% color bar signal is being input, to display markers that correspond to the chrominance signal peak levels, follow the procedure below.

Procedure

WFM → **F•1** INTEN/SCALE → **F•4** MARKER → **F•1** 75% C. BAR MARKER : ON / OFF

75% C. BAR MARKER = ON

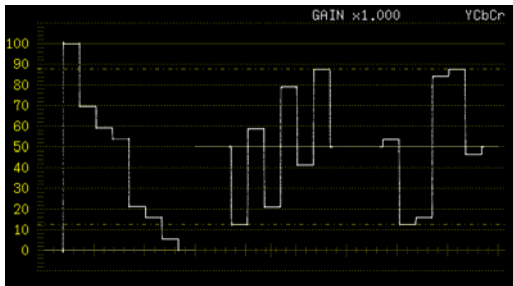


Figure 11-8 Displaying a scale for 75 % intensity color bars

11.3.6 Displaying Horizontal Markers

To display up to two horizontal markers, follow the procedure below.

The horizontal markers correspond to GAIN MAG or V POS when GAIN MAG is set to X5.

[Reference] GAIN MAG → Section 11.4.1, "Selecting the Fixed Gain"

Use **F•D 1** MARKER1 POS to move marker 1 (blue) and **F•D 2** MARKER2 POS to move marker 2 (green). The marker values are displayed in the lower right of the screen using the same unit as the scale. Press **F•D 1** to move marker 1 to the 0.0% position. Press **F•D 2** to move marker 2 to the 100.0% position.

When CURSOR is set to X or Y, you cannot display the horizontal markers.

[Reference] CURSOR → Section 11.9.1, "Displaying Cursors"

Procedure

WFM → **F•1** INTEN/SCALE → **F•4** MARKER → **F•2** USER MARKER : SINGLE / DUAL / OFF

Settings

SINGLE: Marker 1 is displayed.
 DUAL: Marker 1 and Marker 2 are displayed.
 OFF: Markers are not displayed.

USER MARKER = DUAL

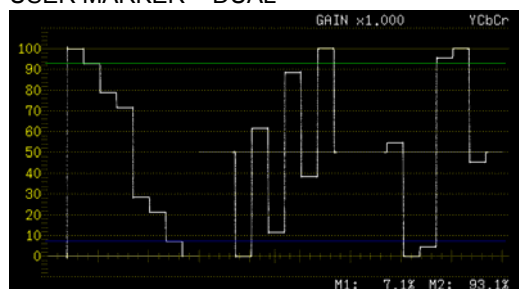


Figure 11-9 Displaying Horizontal Markers

11.3.7 Adjusting the Waveform Intensity

To adjust the video signal waveform intensity, follow the procedure below.

When the multi-screen display is in use, vectors are displayed with the same intensity as the waveforms. If you press **F•D 1**, the intensity will be set to its default value of 0.

Procedure

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

11.3.8 Adjusting the Scale Intensity

To adjust the scale intensity, follow the procedure below.

If you press **F•D 2**, the intensity will be set to its default value of 4.

Procedure

WFM → **F•1** INTEN/SCALE → **F•D 2** SCALE INTEN : -8 - 4 - 7

11.4 Configuring the Gain and Filter Settings

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

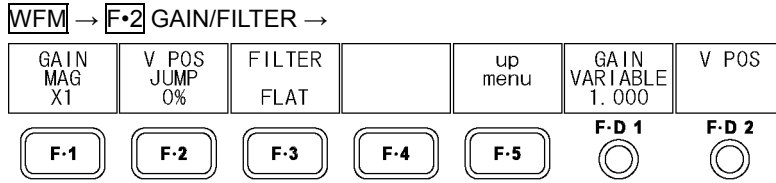


Figure 11-10 GAIN/FILTER menu

11.4.1 Selecting the Fixed Gain

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

Procedure

WFM → **F•2** GAIN/FILTER → **F•1** GAIN MAG : X1 / X5

11.4.2 Setting the Variable Gain

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

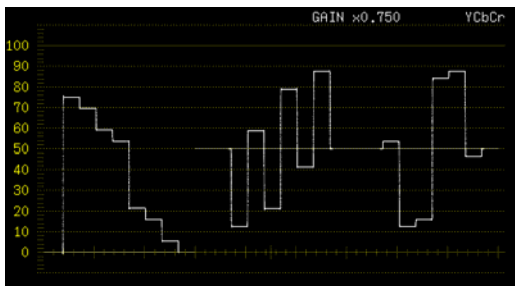
You can set the video signal waveform gain to a value between 0.2 and 10 by setting **F•1** GAIN MAG and **F•D 1** GAIN VARIABLE. The gain value appears in the upper right of the screen.

Procedure

WFM → **F•2** GAIN/FILTER → **F•D 1** GAIN VARIABLE
 : 0.200 - 1.000 - 2.000 (When GAIN MAG is set to X1)
 : 1.000 - 5.000 - 10.000 (When GAIN MAG is set to X5)

GAIN MAG = ×1

GAIN VARIABLE = 0.750



GAIN MAG = ×5

GAIN VARIABLE = 2.500

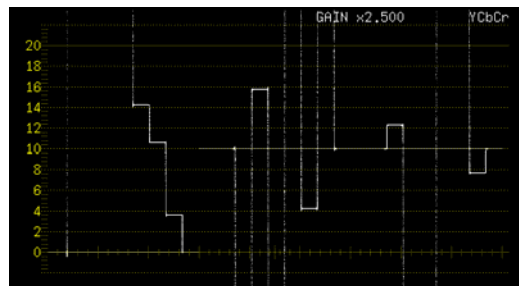


Figure 11-11 Setting the gain

11.4.3 Selecting the Vertical Display Position

When **[F•1]** GAIN MAG is set to $\times 5$, to select the vertical display position, follow the procedure below. Regardless of what you set here, the vertical display position returns to 0 % when you press **[F•D 2]** V POS.

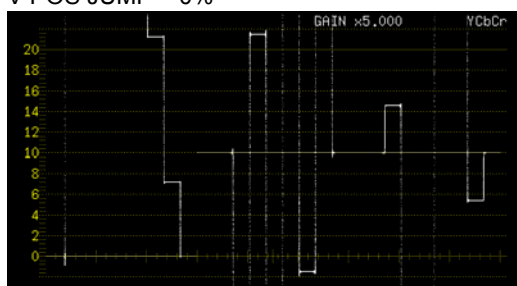
Procedure

[WFM] → **[F•2]** GAIN/FILTER → **[F•2]** V POS JUMP : 0% / 75% / 100%

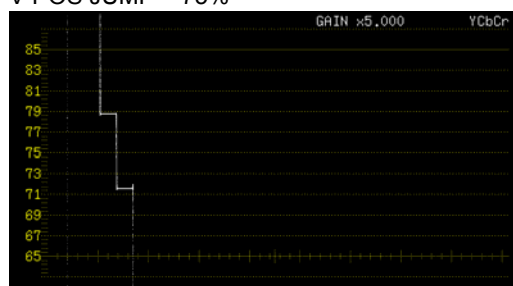
Settings

0%: The 0 % mark on the scale is displayed in the bottom corner.
 75%: The 75 % mark on the scale is displayed in the center.
 100%: The 100 % mark on the scale is displayed in the center.

V POS JUMP = 0%



V POS JUMP = 75%



V POS JUMP = 100%

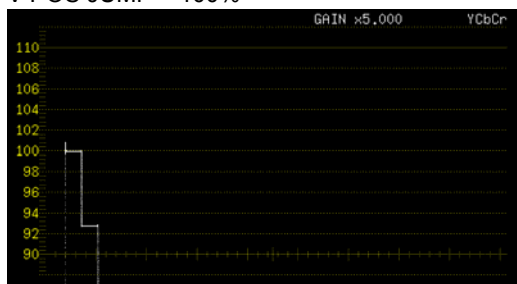


Figure 11-12 Selecting the vertical display position

11.4.4 Selecting the Filter

To select the filter, follow the procedure below.

The filters that you can select vary depending on how COLOR MATRIX is set.

[Reference] COLOR MATRIX → 11.7.1, "Selecting the Display Format"

Procedure

[WFM] → **[F•2]** GAIN/FILTER → **[F•3]** FILTER

: **[FLAT]** / LOW PASS (When COLOR MATRIX is not set to COMPOSIT)

: **[FLAT]** / FLAT+LUM / LUM+CRMA (When COLOR MATRIX is set to COMPOSIT)

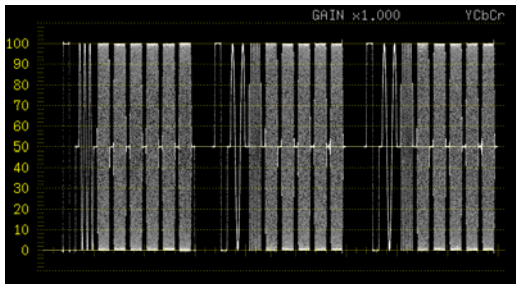
- When **COLOR MATRIX** Is Not Set to **COMPOSIT**

Settings

FLAT: A filter that has a flat frequency response over the entire bandwidth of the input signal is used.

LOW PASS: A low-pass filter with the following frequency responses is used.
 Attenuation of 20 dB or more at 20 MHz when the input signal is HD
 Attenuation of 20 dB or more at 3.8 MHz when the input signal is SD

FILTER = FLAT



FILTER = LOW PASS

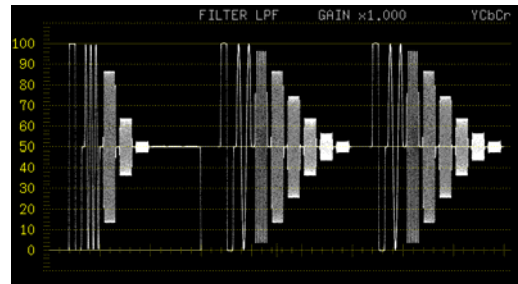


Figure 11-13 Selecting the component signal filter

- When **COLOR MATRIX** Is Set to **COMPOSIT**

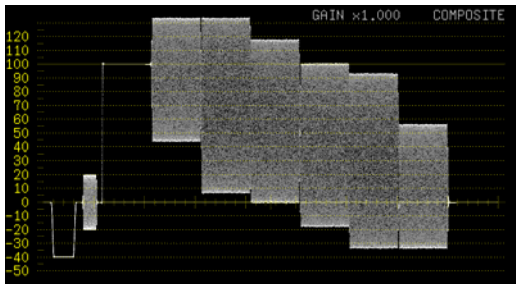
Settings

FLAT: Only the pseudo-composite signal is displayed.

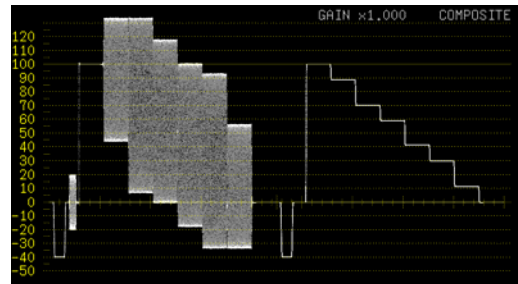
FLAT+LUM: The pseudo-composite signal and the luminance signal are displayed side by side.

LUM+CRMA: The luminance and chrominance signals are displayed side by side.

FILTER = FLAT



FILTER = FLAT+LUM



FILTER = LUM+CRMA

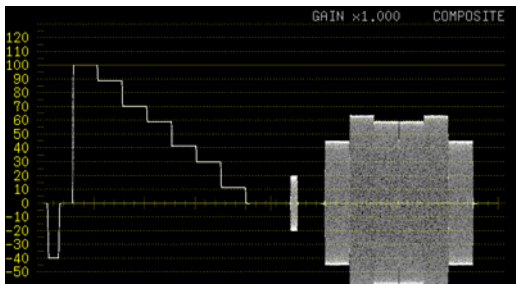


Figure 11-14 Selecting the pseudo-composite signal filter

11.5 Configuring Sweep Settings

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

WFM → **F•3** SWEEP →

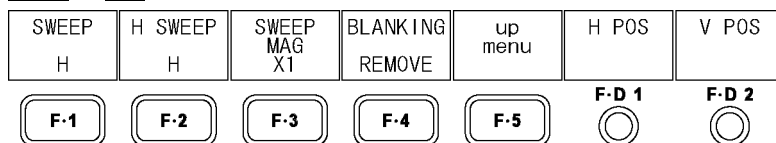


Figure 11-15 SWEEP menu

11.5.1 Selecting the Sweep Method

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

Procedure

WFM → **F•3** SWEEP → **F•1** SWEEP : H / V

Settings

H: Lines are displayed.

V: Fields or frames are displayed. This setting is not available in 2D mode (simul) or 3D mode (L/R DUAL or FRM PACK).

11.5.2 Selecting the Line Display Format

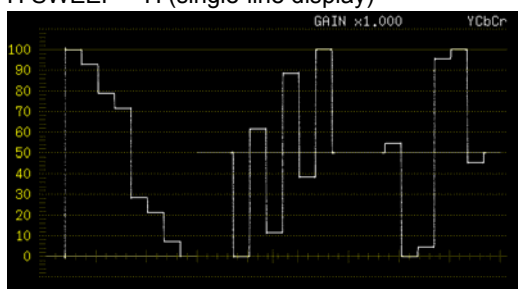
When **F•1** SWEEP is set to H, to select the line display format, follow the procedure below.

[Reference] MODE → Section 11.8.2, "Switching between the Overlay and Parade Displays"

Procedure

WFM → **F•3** SWEEP → **F•2** H SWEEP
 : H (When MODE is set to PARADE)
 : 1H / 2H (When MODE is set to OVERLAY)

H SWEEP = H (single-line display)



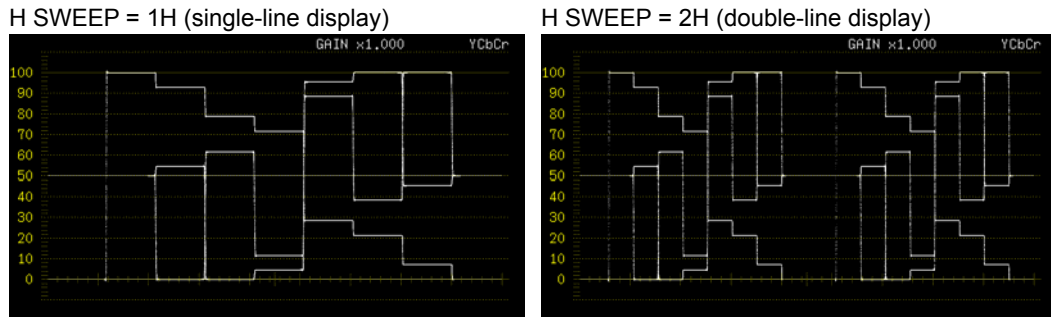


Figure 11-16 Selecting the line display format

11.5.3 Selecting the Field or Frame Display Format

When **[F•1]** SWEEP is set to V, to select the field or frame display format, follow the procedure below.

[Reference] MODE → Section 11.8.2, "Switching between the Overlay and Parade Displays"

Procedure

[WFM] → **[F•3]** SWEEP → **[F•2]** V SWEEP

: **FIELD1** / FIELD2

(When the input signal format is interlaced or segmented frame and MODE is set to PARADE)

: **FIELD1** / FIELD2 / 2V

(When the input signal format is interlaced or segmented frame and MODE is set to OVERLAY)

: **1V** (When the input signal format is progressive)

Settings

FIELD1: Field 1 is displayed.

FIELD2: Field 2 is displayed.

1V: Single frames are displayed.

2V: Single frames are displayed.

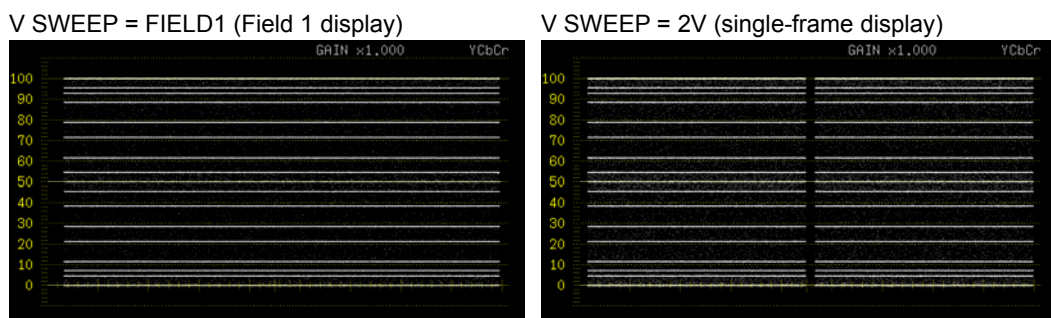


Figure 11-17 Selecting the field or frame display format

11.5.4 Selecting the Horizontal Magnification

To select the horizontal magnification, follow the procedure below. The magnifications that you can select vary as indicated below depending on the **F•1** SWEEP and **F•2** H SWEEP settings. (The table cells marked with “Yes” represent settings that can be selected.)

Table 11-1 Horizontal magnifications

F•1 SWEEP	F•2 H SWEEP	×1	×10	×20	×40	ACTIVE	BLANK
H	H or 1H	Yes	Yes	Yes	No	Yes	Yes (*1)
	2H	Yes	Yes	Yes	No	No	Yes (*1)
V	-	Yes	No	Yes	Yes	No	No

*1 This setting cannot be selected when COLOR MATRIX is set to COMPOSITE or during HDMI input.

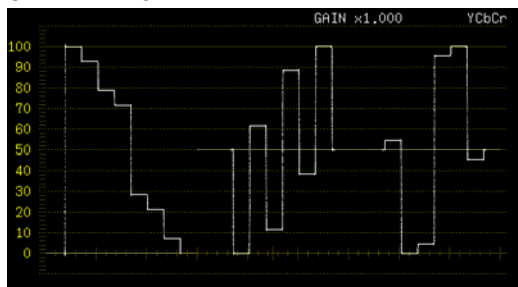
Procedure

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

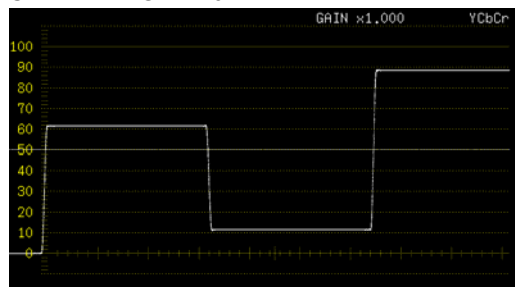
Settings

- ×1: The video signal waveforms are displayed so that they fit on the screen.
- ×10: The video signal waveforms are magnified from the center of the display to 10 times the size of ×1.
- ×20: The video signal waveforms are magnified from the center of the display to 20 times the size of ×1.
- ×40: 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.

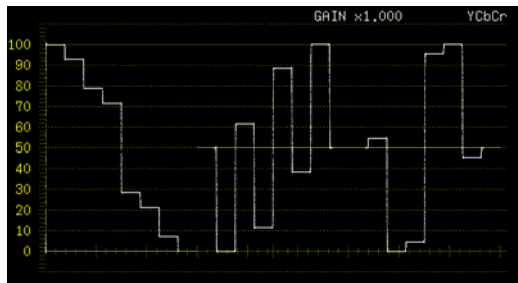
SWEEP MAG = ×1



SWEEP MAG = ×10



SWEEP MAG = ACTIVE



SWEEP MAG = BLANK

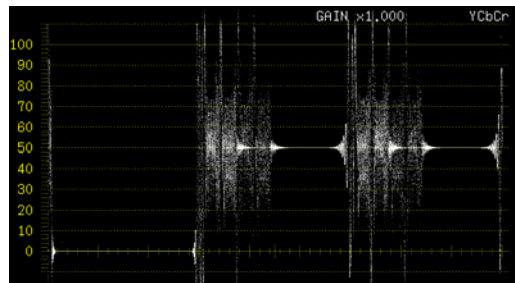


Figure 11-18 Horizontal magnifications

11.5.5 Displaying the Blanking Interval

To select the blanking interval display format, follow the procedure below.

The blanking interval is normally not shown on the vector display, but on the multi-screen display, the blanking interval is shown according to the setting that you make here.

During HDMI input, this setting is fixed at REMOVE and does not appear.

Procedure

WFM → F.3 SWEEP → F.2 BLANKING : REMOVE / H VIEW / V VIEW / ALL VIEW

Settings

REMOVE: Only the active interval of the input signal is displayed.

H VIEW: The active interval and the horizontal blanking interval of the input signal are displayed.

This option cannot be selected when COLOR MATRIX is set to COMPOSIT.

V VIEW: The active interval and the vertical blanking interval of the input signal are displayed.

ALL VIEW: The entire input signal is displayed.

This option cannot be selected when COLOR MATRIX is set to COMPOSIT.

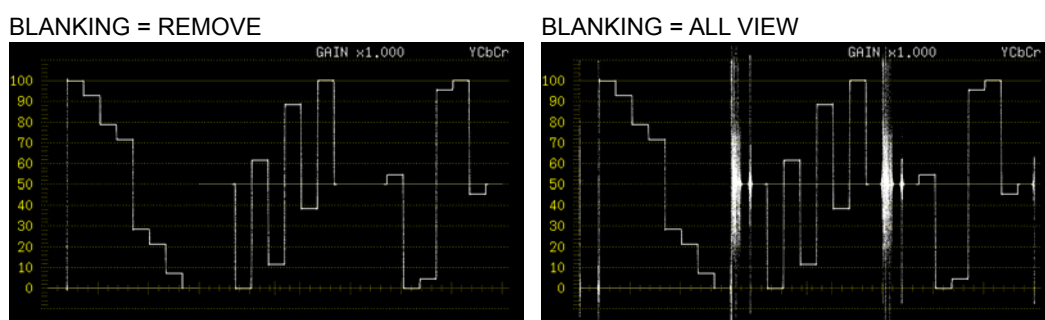


Figure 11-19 Displaying blanking intervals

11.6 Configuring the Line Selection and Sync Signal Settings

To configure the line selection and sync signal settings, press F.4 LINE SEL EXT REF in the video signal waveform menu.

WFM → F.4 LINE SEL EXT REF →

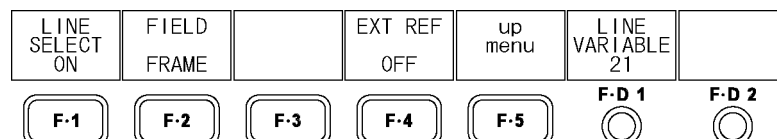


Figure 11-20 LINE SEL EXT REF menu

11.6.1 Turning Line Selection On and Off

To display the waveforms of the selected line (when lines are displayed), follow the procedure below.

Changing this setting will also change the picture display and vector display line selection settings.

This setting is not available when sweep is set to V or in 2D mode (simul) or 3D mode (L/R DUAL) when the input formats are different.

[Reference] SWEEP → Section 11.5.1, "Selecting the Sweep Method"

Procedure

WFM → **F•4** LINE SEL EXT REF → **F•1** LINE SELECT : CINELITE / ON / OFF

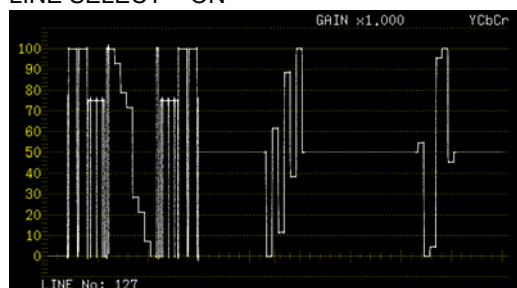
Settings

CINELITE: The waveform of the line selected on the CINELITE display is displayed. You can select this option when CINELITE DISPLAY in the picture menu is set to f Stop or %DISPLAY.

ON: The waveform of the line you select with **F•D 1** LINE VARIABLE is displayed.

OFF: The waveforms of all lines are displayed on top of each other.

LINE SELECT = ON



LINE SELECT = OFF

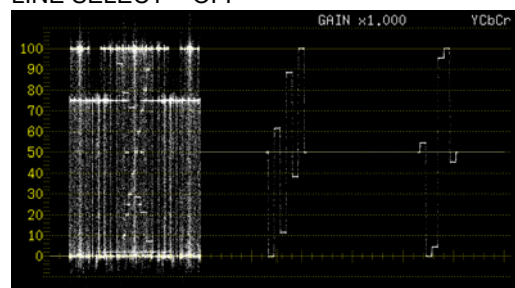


Figure 11-21 Turning line selection on and off

11.6.2 Selecting Lines

When **F•1** LINE SELECT is set to ON, to select a line, follow the procedure below. The selected line is indicated in the upper left of the screen. If you press **F•D 1**, the selected line changes to the first video line.

Changing this setting will also change the selected line on the picture display, vector display, and data dump display. In 3D mode, you cannot select lines that are in the blanking interval.

Procedure

WFM → **F•4** LINE SEL EXT REF → **F•D 1** LINE VARIABLE

11.6.3 Setting the Line Selection Range

When **F•1** LINE SELECT is set to ON and the input signal format is interlaced or segmented frame, to set the line selection range, follow the procedure below. Changing this setting will also change the picture display and vector display line selection ranges.

Procedure

WFM → **F•4** LINE SEL EXT REF → **F•2** FIELD : FIELD1 / FIELD2 / FRAME

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

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

11.6.4 Switching the Sync Signal

To switch to an external sync signal, follow the procedure below. Changing this setting will also change the vector display and status display sync signal settings. During HDMI input and when the input signal is 1080p/60, 1080p/59.94, or 1080p/50, this setting is fixed at OFF and does not appear.

Procedure

WFM → **F•4** LINE SEL EXT REF → **F•4** EXT REF : ON / OFF

Settings

ON:	An external sync signal is used.
OFF:	The internal sync signal is used.

11.7 Configuring the Color System Settings

To configure the color system settings, press **F•1** COLOR SYSTEM in the video signal waveform menu.

WFM → **F•5** next menu → **F•1** COLOR SYSTEM →

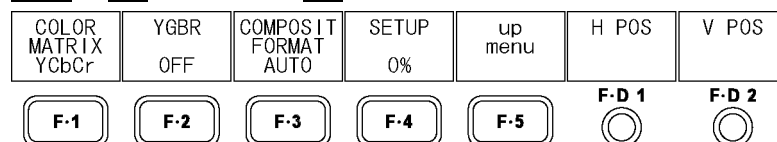


Figure 11-22 COLOR SYSTEM menu

11.7.1 Selecting the Display Format

To select the video signal waveform display format, follow the procedure below. The selected display format is indicated in the upper right of the display.

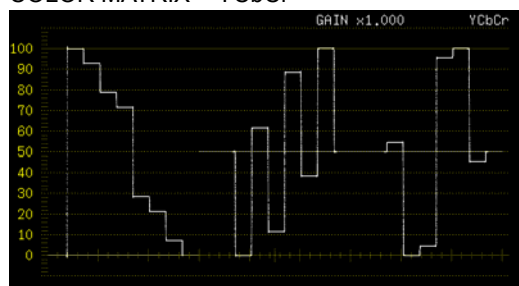
Procedure

WFM → **F•5** next menu → **F•1** COLOR SYSTEM → **F•1** COLOR MATRIX : YCbCr / GBR / RGB / COMPOSIT

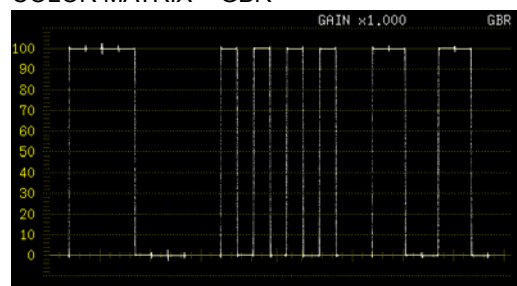
Settings

YCbCr:	Luminance and chrominance signals are displayed. This setting cannot be selected when the input signal is RGB.
GBR:	The YC _B C _R signal is converted into a GBR signal and displayed. This setting cannot be selected when the input signal is YCbCr and the format is 480p, 525p, or 625p.
RGB:	The YC _B C _R signal is converted into an RGB signal and displayed. This setting cannot be selected when the input signal is YCbCr and the format is 480p, 525p, or 625p.
COMPOSIT:	The YC _B C _R signal is converted into a pseudo-composite signal and displayed. This setting cannot be selected when the input format is 480p, 525p, or 625p.

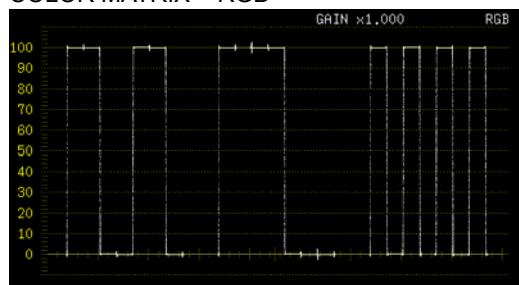
COLOR MATRIX = YCbCr



COLOR MATRIX = GBR



COLOR MATRIX = RGB



COLOR MATRIX = COMPOSIT

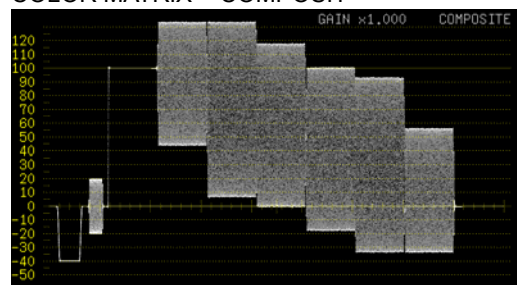


Figure 11-23 Selecting the display format

11.7.2 Displaying the Luminance and GBR Signals Simultaneously

When **[F•1]** COLOR MATRIX is set to GBR or RGB, to display the luminance signal at the same time, follow the procedure below.

The selected display format is indicated in the upper right of the display.

Procedure

[WFM] → **[F•5]** next menu → **[F•1]** COLOR SYSTEM → **[F•2]** YGBR : ON / OFF
 → **[F•2]** YRGB : ON / OFF

Settings

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

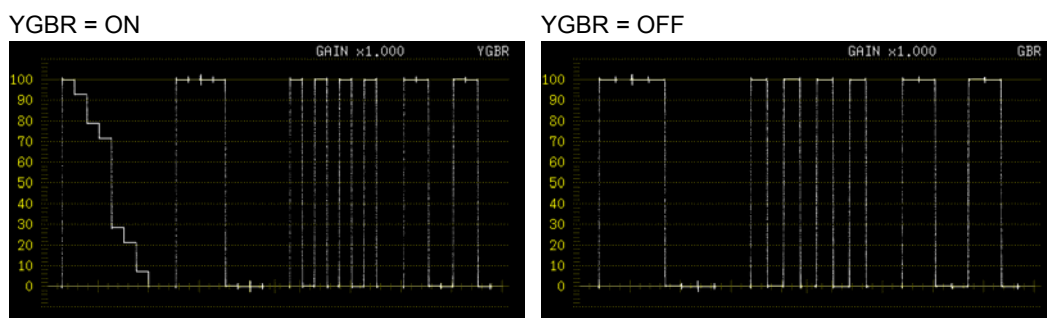


Figure 11-24 Displaying the luminance and GBR signals simultaneously

11.7.3 Selecting the Composite Display Format

When **[F.1]** COLOR MATRIX is set to COMPOSIT, to select the composite display format, follow the procedure below.

Changing this setting will also change the composite display format setting for the vector display.

[Reference] Section 12.6.2, "Selecting the Composite Display Format"

Procedure

[WFM] → **[F.5]** next menu → **[F.1]** COLOR SYSTEM → **[F.3]** COMPOSIT FORMAT : AUTO / NTSC / PAL

Settings

AUTO: When the field or frame frequency of a received signal is 50 Hz or 25 Hz, the signal is converted into a PAL pseudo-composite signal. Otherwise, the signal is converted into an NTSC pseudo-composite signal.

NTSC: All input signals are converted into NTSC pseudo-composite signals.

PAL: All input signals are converted into PAL pseudo-composite signals.

11.7.4 Selecting the Setup Level

When **[F.1]** COLOR MATRIX is set to COMPOSIT and the composite display format is NTSC, to select the setup level of the pseudo-composite display, follow the procedure below.

Procedure

[WFM] → **[F.5]** next menu → **[F.1]** COLOR SYSTEM → **[F.4]** SETUP : 0% / 7.5%

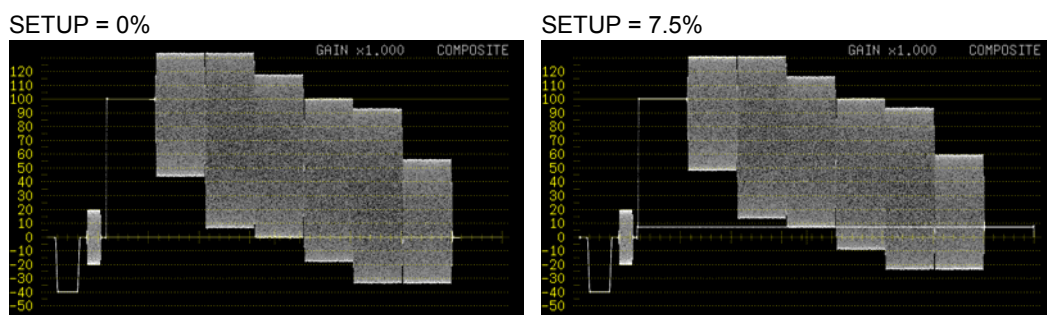


Figure 11-25 Selecting the setup level

11.8 Setting the Displayed Signals

To set the displayed signals, press **F.2** SIGNAL DISPLAY in the video signal waveform menu. This menu item is not available when COLOR MATRIX is set to COMPOSIT or when YGBR or YRGB is set to ON.

[Reference] COLOR MATRIX → Section 11.7.1, “Selecting the Display Format”

YGBR and YRGB → Section 11.7.2, “Displaying the Luminance and GBR Signals Simultaneously”

WFM → **F.5** next menu → **F.2** SIGNAL DISPLAY →

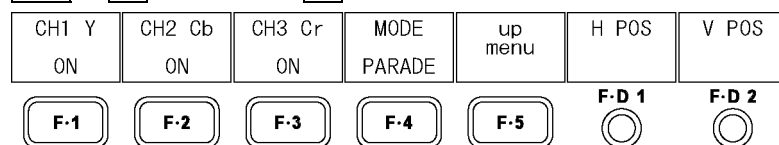


Figure 11-26 SIGNAL DISPLAY menu

11.8.1 Selecting Which Channels to Display

To turn each input signal channel on and off, follow the procedure below. You cannot set every channel to OFF.

Procedure

WFM → **F.5** next menu → **F.2** SIGNAL DISPLAY

→ **F.1** CH1 Y / **F.2** CH2 Cb / **F.3** CH3 Cr : ON / OFF (when COLOR MATRIX is set to YCbCr)

→ **F.1** CH1 G / **F.2** CH2 B / **F.3** CH3 R : ON / OFF (when COLOR MATRIX is set to GBR)

→ **F.1** CH1 R / **F.2** CH2 G / **F.3** CH3 B : ON / OFF (when COLOR MATRIX is set to RGB)

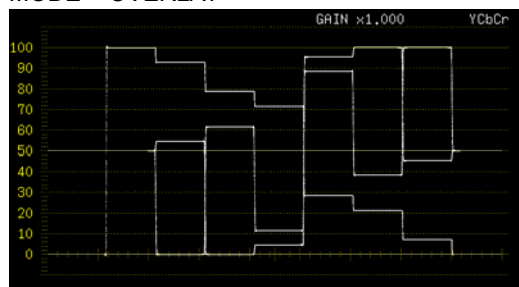
11.8.2 Switching between the Overlay and Parade Displays

To switch between the overlay and parade displays, follow the procedure below.

Procedure

WFM → **F.5** next menu → **F.2** SIGNAL DISPLAY → **F.4** MODE : OVERLAY / PARADE

MODE = OVERLAY



MODE = PARADE

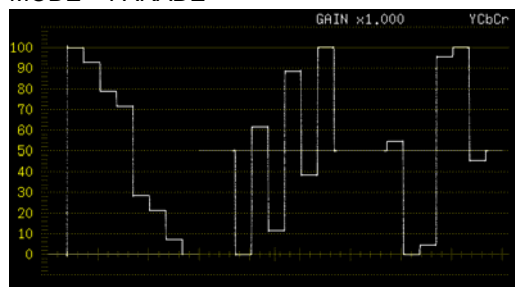


Figure 11-27 Overlay and parade displays

11.9 Configuring Cursor Settings

To configure cursor settings, press **F•3** CURSOR in the video signal waveform menu. This menu item is not available in the multi-screen display or when MARKER is set to SINGLE or DUAL.

[Reference] MARKER → Section 11.3.6, “Displaying Horizontal Markers”

WFM → **F•5** next menu → **F•3** CURSOR →

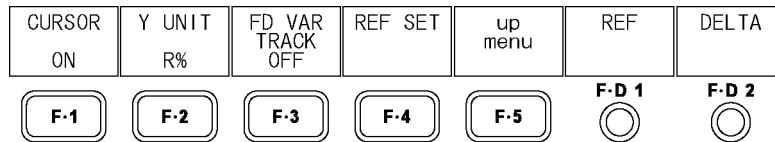


Figure 11-28 CURSOR menu

11.9.1 Displaying Cursors

To display cursors, follow the procedure shown 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. You can switch the positions of the REF and DELTA cursors by pressing **F•D 2** DELTA.

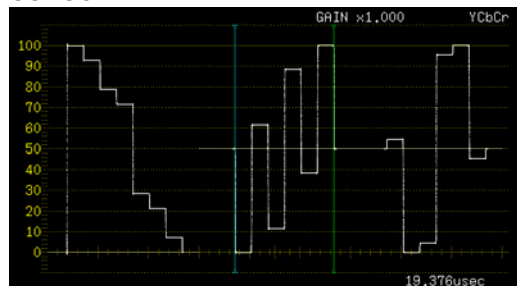
Procedure

WFM → **F•5** next menu → **F•3** CURSOR → **F•1** CURSOR : X / Y / OFF

Settings

- X: X cursors (time measurement) are displayed. This setting cannot be selected when SIMUL MODE is set to ALIGN.
- Y: Y cursors (amplitude measurement) are displayed.
- OFF: Cursors are not displayed.

CURSOR = X



CURSOR = Y

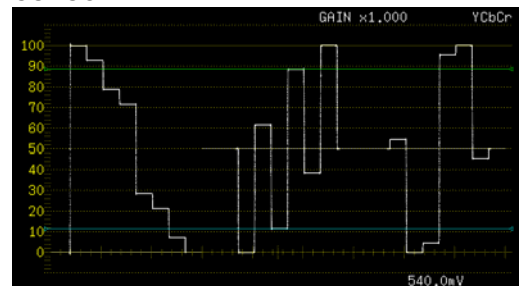


Figure 11-29 Displaying cursors

11.9.2 Moving Cursors

To move cursors, follow the procedure shown below.

You can also change the value of the **F•3** FD VAR TRACK setting by pressing **F•D 1**.

- To Move Each Cursor Separately

1. Set **F•3** FD VAR TRACK to OFF.

F•D 1 is set to REF.

2. Move the REF (blue) cursor with **F•D 1** REF, and move the DELTA (green) cursor with **F•D 2** DELTA.

You can switch the positions of the REF and DELTA cursors by pressing **F•D 2**.

- To Move Both Cursors Simultaneously

1. Set **F•3** FD VAR TRACK to ON.

F•D 1 is set to TRACK.

2. Move both cursors simultaneously with **F•D 1** TRACK.

You can move the DELTA (green) cursor individually by turning **F•D 2** DELTA. You can switch the positions of the REF and DELTA cursors by pressing **F•D 2**.

11.9.3 Selecting the Measurement Unit

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

- When CURSOR is set to X

Procedure

WFM → **F•5** next menu → **F•3** CURSOR → **F•2** X UNIT : sec / Hz

Settings

sec: Measurements are made in units of seconds.

Hz: Measurements are made in units of frequency, with the length of one period set to the distance between the two cursors.

- When CURSOR Is Set to Y

Procedure

WFM → **F•5** next menu → **F•3** CURSOR → **F•2** Y UNIT : mV / % / R%

Settings

mV: Measurements are made in units of voltage.

%; 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%: Measurements are made as percentages, with the amplitude when REF SET was pressed set to 100 %.

11.9.4 Setting the Reference Value

When **F•2** 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** next menu → **F•3** CURSOR → **F•4** REF SET

11.10 Configuring the Display Settings

To configure the display settings, press **F•4** DISPLAY in the video signal waveform menu. This menu item is not available in the multi-screen display in 2D mode (single input) or 3D mode (HF SbyS or TOP&BOTM).

WFM → **F•5** next menu → **F•4** DISPLAY →

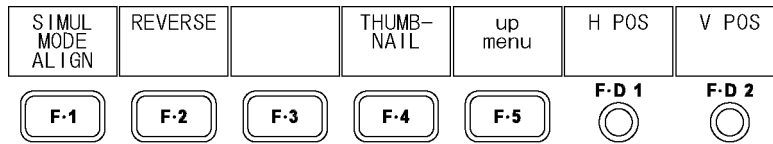


Figure 11-30 DISPLAY menu

11.10.1 Selecting the Simul Mode Display Format

In 2D mode (simul) or 3D mode (L/R DUAL or FRM PACK), to select the display format, follow the procedure below.

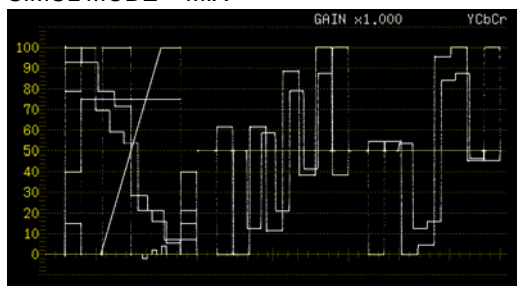
Procedure

WFM → **F•5** next menu → **F•4** DISPLAY → **F•1** SIMUL MODE : MIX / ALIGN / TILE

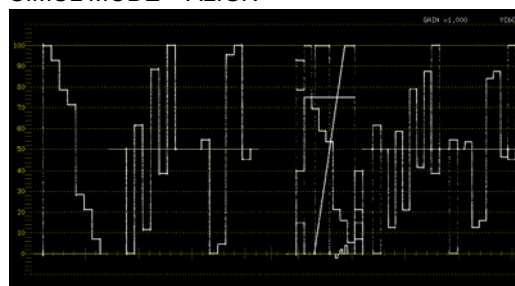
Settings

MIX:	The video signal waveforms are overlapped and displayed. (This is the default setting in 3D mode.)
ALIGN:	The video signal waveforms are displayed side by side. This setting is not available in 3D mode. (This is the default setting in 2D mode.)
TILE:	The video signal waveforms are arranged separately and displayed.

SIMUL MODE = MIX



SIMUL MODE = ALIGN



SIMUL MODE = TILE

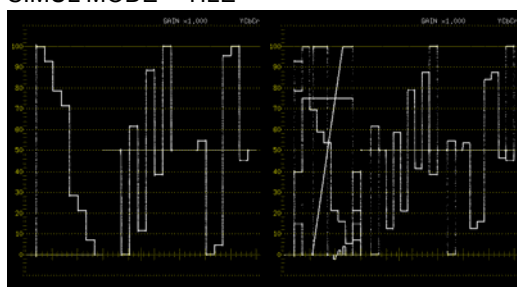


Figure 11-31 Selecting the simul mode display format

11.10.2 Configuring the Inverted Display Settings

In 3D mode (L/R DUAL or FRM PACK), to invert the video signal waveforms and pictures of each channel, follow the procedure below. Use this feature when you are measuring video that is projected using half mirrors.

Procedure

WFM → F.5 next menu → F.4 DISPLAY → F.2 REVERSE
 → F.1 LEFT : OFF / VERTICAL / HORIZONTAL / H&V
 → F.2 RIGHT : OFF / VERTICAL / HORIZONTAL / H&V

Settings

OFF: No displays are inverted.

VERTICAL: Pictures are inverted vertically.

HORIZONTAL: Pictures and video signal waveforms are inverted horizontally.(*1)

H&V: Pictures are inverted vertically and horizontally, and video signal waveforms are inverted horizontally.(*1)

*1 Horizontal inversion of the video signal waveform occurs only during the video period.

11.10.3 Configuring Thumbnail Settings

In the 1-screen display, to turn the audio meter and picture thumbnails on and off separately, follow the procedure below.

Procedure

WFM → F.5 next menu → F.4 DISPLAY → F.4 THUMBNAIL
 → F.1 AUDIO METER : ON / OFF
 → F.3 PICTURE : ON / OFF

12. VECTOR WAVEFORM DISPLAY

12.1 Vector Display Explanation

To display vectors, press VECT.

To display the vector menu, hold down VECT for 0.5 seconds or more, or use the function keys and function dials on the vector display. The vector menu will disappear when you press VECT again or after a certain period of time passes with no user activity.

You cannot display vectors when the input format is 480p, 525p, or 625p.

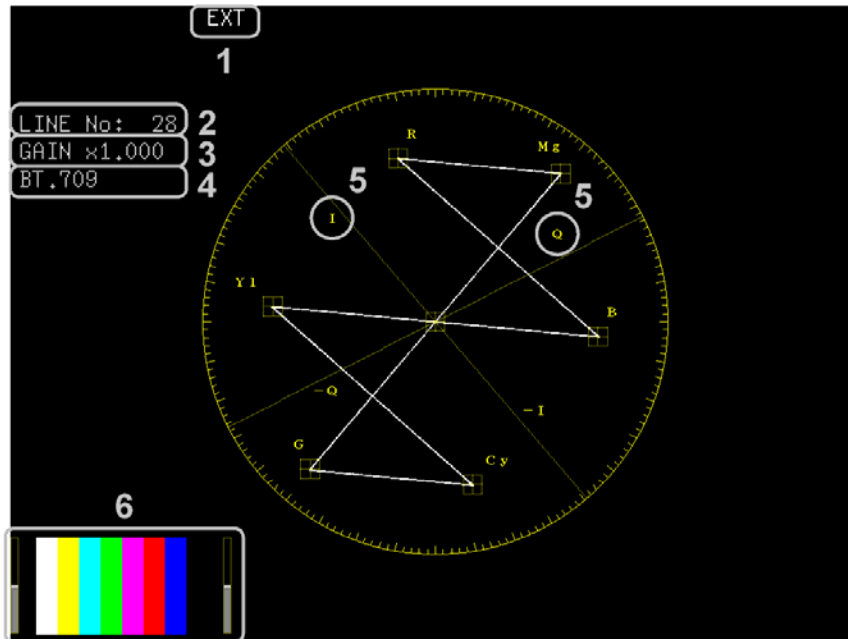


Figure 12-1 Vector display

1 Sync Signal

EXT appears here when an external sync signal is being used.

[Reference] Section 12.4.4, "Switching the Sync Signal"

2 Selected Line

The waveform of the selected line is displayed.

[Reference] Sections 12.4.1, "Turning Line Selection On and Off" and 12.4.2, "Selecting Lines."

3 Gain

The vector gain appears here. You can set the gain to a value between 0.2 and 10 by setting GAIN and GAIN VARIABLE.

[Reference] GAIN → Section 12.3.1, "Selecting the Fixed Gain"

GAIN VARIABLE → Section 12.3.2, "Setting the Variable Gain"

4 Display Format

The vector display format is indicated here as BT.601, BT.709, or COMPOSITE.

[Reference] Sections 12.2.5, "Selecting the Scale Type" and 12.6.1, "Selecting the Display Format"

5 I and Q Axes

The I and Q axes are displayed here. The I and Q axes can also be turned off.

[Reference] Section 12.2.1, "Turning the Display of the I and Q Axes On and Off"

6 Thumbnail Display

The thumbnail display shows the audio meter (fixed to channels 1 and 2) and the picture.

You can also turn each of these displays off.

[Reference] Section 12.5.3, "Setting the Thumbnail Display"

12.2 Configuring Vector and Scale Settings

To configure vector and scale settings, press **F•1** INTEN/SCALE in the vector menu.

This menu item does not appear when MODE is set to 5BAR.

[Reference] MODE → Section 12.5.1, "Switching between the Vector and 5-Bar Displays"

VECT → **F•1** INTEN/SCALE →

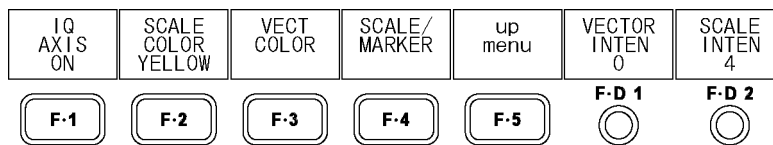


Figure 12-2 INTEN/SCALE menu

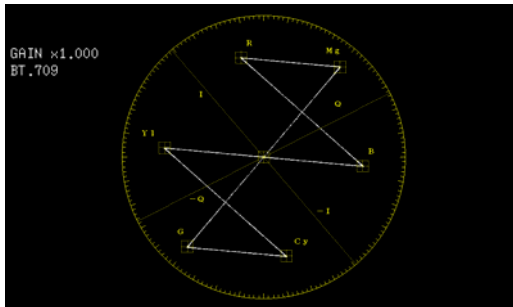
12.2.1 Turning the Display of the I and Q Axes On and Off

To turn the display of the I and Q axes on and off, follow the procedure below.

Procedure

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

IQ AXIS = ON



IQ AXIS = OFF

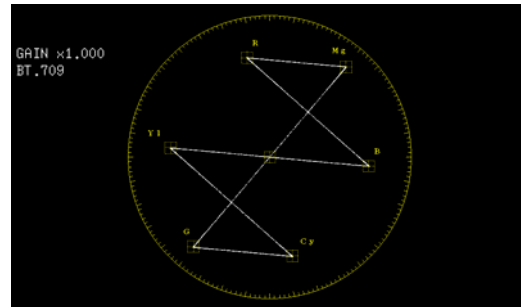


Figure 12-3 Turning the display of the I and Q axes on and off

12.2.2 Selecting the Scale Color

To select the scale color, follow the procedure below.

Procedure

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

12.2.3 Selecting the Vector Color

To configure the vector color settings, press **F•3** VECT COLOR in the vector menu.

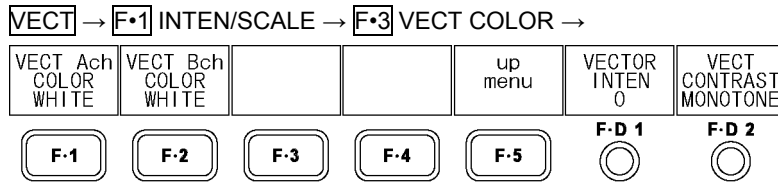


Figure 12-4 VECT COLOR menu

To select the vector color for each channel, follow the procedure shown below.
When the multi-screen display is in use, video signal waveforms are displayed in the same colors as the vectors.

Procedure

VECT → **F•1** INTEN/SCALE → **F•3** VECT COLOR
→ **F•1** VECT Ach COLOR : WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE
→ **F•2** VECT Bch COLOR : WHITE / YELLOW / CYAN / GREEN / MAGENTA / RED / BLUE

- * The menu shown above is an example of the menu that appears in the 1-screen display during SDI input in 2D mode when the link format is set to single. The menu items may vary depending on the settings.
- * In 3D mode (L/R DUAL or FRM PACK), the default setting for LEFT COLOR is RED, and the default setting RIGHT COLOR is CYAN.

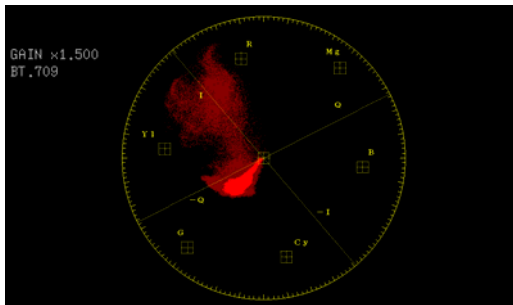
12.2.4 Selecting the Contrast

To select the vector contrast, follow the procedure below.
Vectors are usually displayed with gradations, but you can display vectors using single colors by selecting MONOTONE. This is useful for comparing overlapping vectors.
If you press **F•D 2**, the contrast will be set to its default value of MONOTONE.

Procedure

VECT → **F•1** INTEN/SCALE → **F•3** VECT COLOR → **F•D 2** VECT CONTRAST : MONOTONE / LOW / MIDDLE / HIGH

VECT CONTRAST = MONOTONE



VECT CONTRAST = HIGH

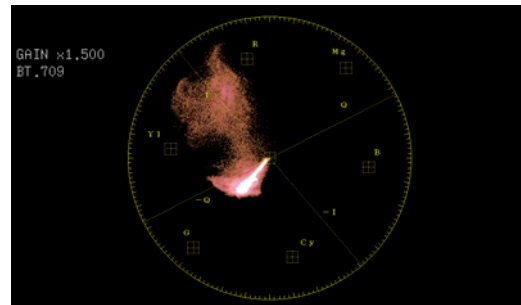


Figure 12-5 Selecting the contrast

12.2.5 Selecting the Scale Type

To select the scale type, press **F•4** SCALE/MARKER on the vector menu.

VECT → **F•1** INTEN/SCALE → **F•4** SCALE/MARKER →

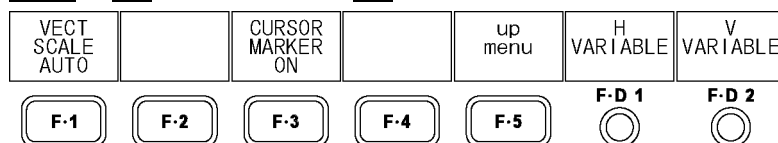


Figure 12-6 SCALE/MARKER menu

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

The selected scale type is indicated in the upper left of the display.

[Reference] COLOR MATRIX → 12.6.1, “Selecting the Display Format”

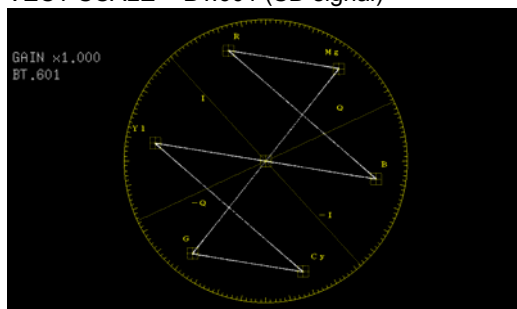
Procedure

VECT → **F•1** INTEN/SCALE → **F•4** SCALE/MARKER → **F•1** VECT SCALE : AUTO / BT.601 / BT.709

Settings

- AUTO:** When the input signal is SD, a BT.601 scale is displayed. When the input signal is HD, a BT.709 scale is displayed.
- BT.601:** A scale defined in ITU-R BT.601 is displayed. When the input signal is SD and a 100 % color bar signal is being applied, the peak levels match the ends of the scale.
- BT.709:** A scale defined in ITU-R BT.709 is displayed. When the input signal is HD and a 100 % color bar signal is being applied, the peak levels match the ends of the scale.

VECT SCALE = BT.601 (SD signal)



VECT SCALE = BT.709 (HD signal)

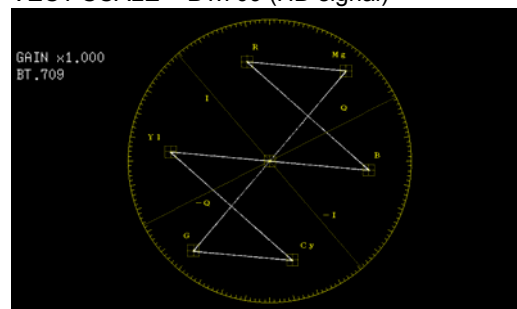


Figure 12-7 Selecting the scale type

12.2.6 Displaying the Vector Marker

In 2D mode (single input) or 3D mode (HF SbyS or TOP&BOTM), to display the vector marker (green) on the vector display, follow the procedure below.

You can move the marker horizontally using **[F•D 1]** H VARIABLE and vertically using **[F•D 2]** V VARIABLE. The measured values are displayed in the lower right of the display. Press **[F•D 1]** to move the marker to the Cb = 0.0% position. Press **[F•D 2]** to move the marker to the Cr = 0.0% position. For details on the measured values, see section 9.2, "Displaying Synchronized Markers."

Procedure

[VECT] → **[F•1]** INTEN/SCALE → **[F•4]** SCALE/MARKER → **[F•3]** CURSOR MARKER : **ON** / OFF

CURSOR MARKER = ON

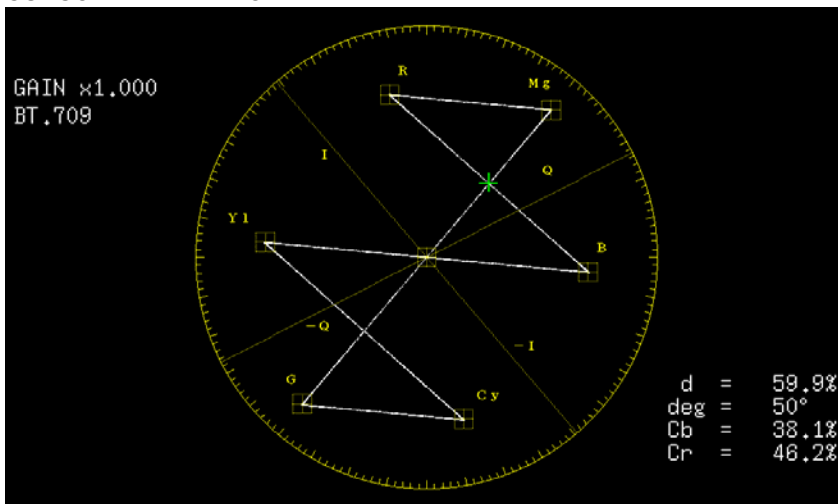


Figure 12-8 Displaying the vector marker

12.2.7 Adjusting the Vector Intensity

To adjust the vector intensity, follow the procedure below.

When the multi-screen display is in use, video signal waveforms are displayed with the same intensity as the vectors. If you press **[F•D 1]**, the intensity will be set to its default value of 0.

Procedure

[VECT] → **[F•1]** INTEN/SCALE → **[F•D 1]** VECTOR INTEN : -128 - 0 - 127

12.2.8 Adjusting the Scale Intensity

To adjust the scale intensity, follow the procedure below.

If you press **[F•D 2]**, the intensity will be set to its default value of 4.

Procedure

[VECT] → **[F•1]** INTEN/SCALE → **[F•D 2]** SCALE INTEN : -8 - 4 - 7

12.3 Setting the Gain

To configure the gain settings, use **F•2** GAIN and **F•D 1** GAIN VARIABLE in the vector menu. These menu items do not appear when MODE is set to 5BAR.

[Reference] MODE → Section 12.5.1, “Switching between the Vector and 5-Bar Displays”

VECT →

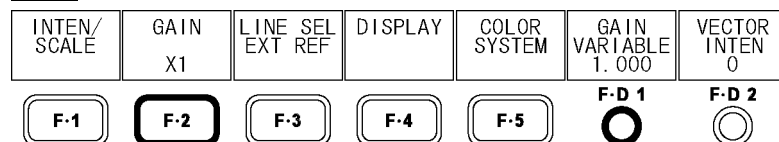


Figure 12-9 Vector menu

12.3.1 Selecting the Fixed Gain

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

Procedure

VECT → **F•2** GAIN : X1 / X5 / IQ-MAG

Settings

×1:	Vectors are displayed with a gain of ×1.
×5:	Vectors are displayed with a gain of ×5.
IQ-MAG:	Vectors are displayed using the following magnifications. ×3.120 (for HD signals during component display; magnification that causes the I signal of a multiformat colorbar to lie on the circumference of the scale) ×2.845 (for HD signals during pseudo-composite display; magnification that causes the I signal of a multiformat colorbar that has gone through pseudo-composite conversion, to lie on the circumference of the scale) ×2.920 (for SD signals during component display; magnification that causes the amplitude to lie on the circumference of the scale when the burst signal of the composite vector display is converted into a component signal) ×2.630 (for SD signals during pseudo-composite display; magnification that causes SMPTE colorbar -I and Q signals that have gone through pseudo-composite conversion to lie on the circumference of the scale)

12.3.2 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•2** GAIN and **F•D 1** GAIN VARIABLE. The gain value appears in the upper left of the screen.

Procedure

VECT → **F•D 1** GAIN VARIABLE

: 0.200 - 1.000 - 2.000 (When GAIN MAG is set to X1)

: 1.000 - 5.000 - 10.000 (When GAIN MAG is set to X5)

: 1.000 - 3.120 - 10.000 (During component display when GAIN MAG is set to IQ-MAG and the signal format is HD)

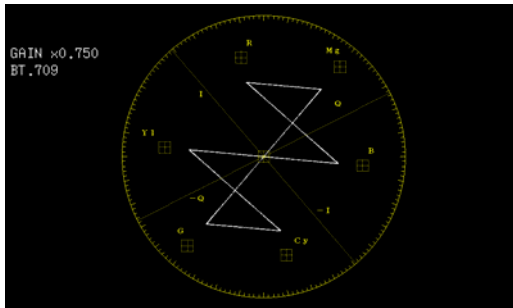
: 1.000 - 2.845 - 10.000 (During pseudo-composite display when GAIN MAG is set to IQ-MAG and the signal format is HD)

: 1.000 - 2.920 - 10.000 (During component display when GAIN MAG is set to IQ-MAG and the signal format is SD)

: 1.000 - 2.630 - 10.000 (During pseudo-composite display when GAIN MAG is set to IQ-MAG and the signal format is SD)

GAIN MAG = ×1

GAIN VARIABLE = 0.75



GAIN MAG = IQ-MAG

GAIN VARIABLE = 3.120

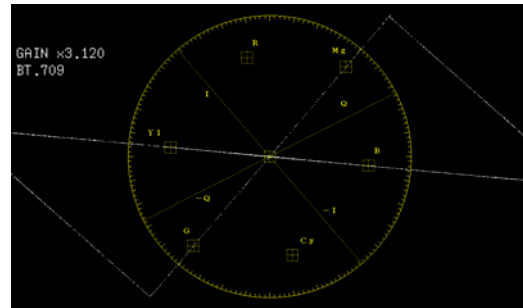


Figure 12-10 Setting the gain

12.4 Configuring the Line Selection and Sync Signal Settings

To configure line selection and sync signal settings, press **F•3** LINE SEL EXT REF in the vector menu.

VECT → **F•3** LINE SEL EXT REF →

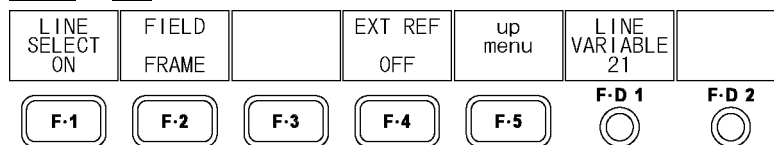


Figure 12-11 LINE SEL EXT REF menu

12.4.1 Turning Line Selection On and Off

To display the vector 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.

This setting is not available in 2D mode (simul) or 3D mode (L/R DUAL) when the input formats are different.

Procedure

VECT → **F•3** LINE SEL EXT REF → **F•1** LINE SELECT : CINELITE / ON / OFF

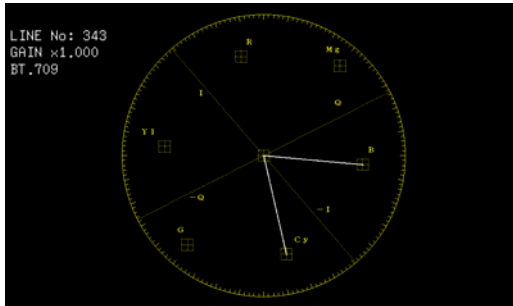
Settings

CINELITE: The vector of the line selected on the CINELITE display is displayed. You can select this option when CINELITE DISPLAY in the picture menu is set to f Stop or %DISPLAY.

ON: The vector of the line you select with **F•D 1** LINE VARIABLE is displayed.

OFF: The vectors of all lines are displayed on top of each other.

LINE SELECT = ON



LINE SELECT = OFF



Figure 12-12 Turning line selection on and off

12.4.2 Selecting Lines

When **F•1** LINE SELECT is set to ON, to select a line, follow the procedure below. The selected line is indicated in the upper left of the screen. If you press **F•D 1**, the selected line changes to the first video line.

Changing this setting will also change the selected line on the picture display, video signal waveform display, and data dump display. In 3D mode, you cannot select lines that are in the blanking interval.

Procedure

VECT → **F•3** LINE SEL EXT REF → **F•D 1** LINE VARIABLE

12.4.3 Setting the Line Selection Range

When **F•1** LINE SELECT is set to ON and the input signal format is interlaced or segmented frame, to set the line selection range, follow the procedure below. Changing this setting will also change the picture display and video signal waveform display line selection ranges.

Procedure

VECT → **F•3** LINE SEL EXT REF → **F•2** FIELD : FIELD1 / FIELD2 / FRAME

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

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

12.4.4 Switching the Sync Signal

To switch to an external sync signal, follow the procedure below.

Changing this setting will also change the video signal waveform display and status display sync signal settings.

During HDMI input and when the input signal is 1080p/60, 1080p/59.94, or 1080p/50, this setting is fixed at OFF and does not appear.

Procedure

VECT → **F.3** LINE SEL EXT REF → **F.4** EXT REF : ON / OFF

Settings

ON: An external sync signal is used.

OFF: The internal sync signal is used.

12.5 Configuring the Display Settings

To configure display settings, press **F•4** DISPLAY in the vector menu.

This menu item does not appear when the multi-screen display and the single input mode are in use.

VECT → **F•4** DISPLAY →

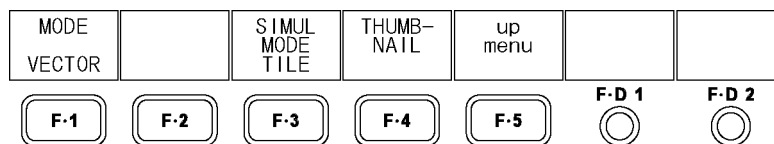


Figure 12-13 DISPLAY menu

12.5.1 Switching between the Vector and 5-Bar Displays

To switch between the vector and 5-bar displays, follow the procedure below.

This menu item does not appear when the multi-screen display is in use.

[Reference] 5 bar display → Section 12.7, “Configuring the 5 Bar Display”

Procedure

VECT → F.4 DISPLAY → F.1 MODE : VECTOR / 5BAR

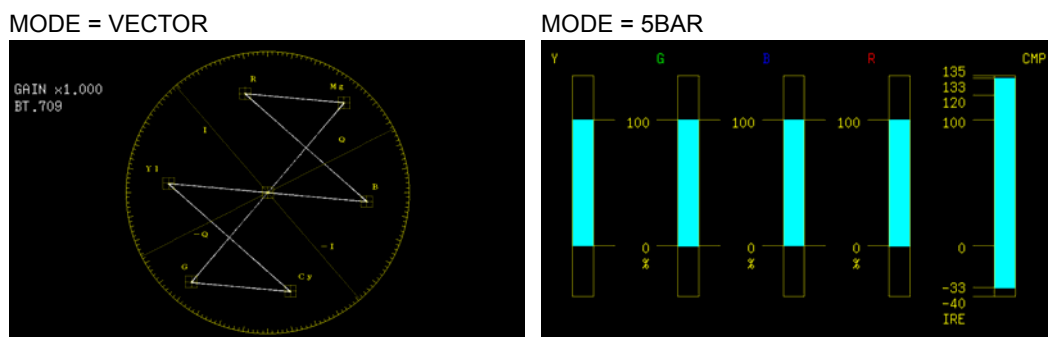


Figure 12-14 Vector and 5-bar displays

12.5.2 Selecting the Simul Mode Display Format

In 2D mode (simul) or 3D mode, follow the procedure below to select the display format. When **F.1** MODE is set to 5BAR, this setting is fixed at TILE and does not appear.

Procedure

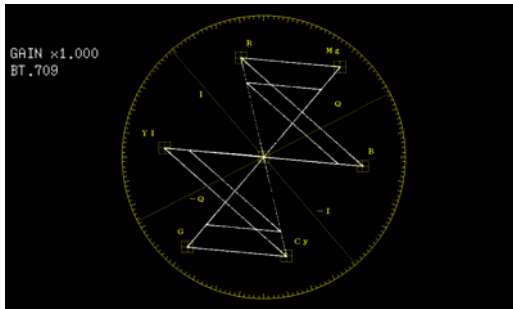
VECT → **F.4** DISPLAY → **F.3** SIMUL MODE : MIX / TILE

Settings

MIX: The vectors are overlapped and displayed. (This is the default setting in 3D mode.)

TILE: The vectors are arranged separately and displayed. (This is the default setting in 2D mode.)

SIMUL MODE = MIX



SIMUL MODE = TILE

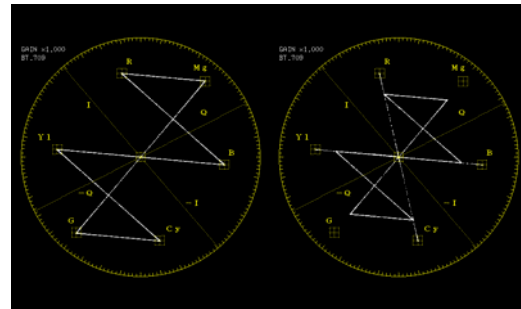


Figure 12-15 Selecting the simul mode display format

12.5.3 Configuring Thumbnail Settings

To turn the thumbnail displays of the audio meter and picture on and off separately, follow the procedure below. This setting does not appear when the multi-screen display is in use.

Procedure

VECT → **F.4** DISPLAY → **F.4** THUMBNAIL → **F.1** AUDIO METER : ON / OFF
→ **F.3** PICTURE : ON / OFF

12.6 Configuring the Display Format Settings

To configure the display format settings, press **F.5** COLOR SYSTEM in the vector menu. These settings are available when MODE is set to VECTOR.

[Reference] MODE → Section 12.5.1, "Switching between the Vector and 5-Bar Displays"

VECT → **F.5** COLOR SYSTEM →

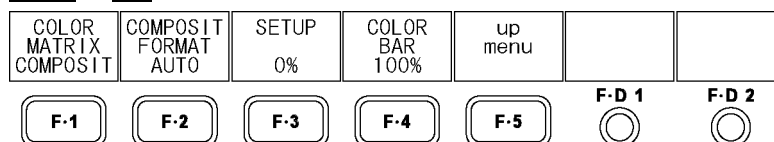


Figure 12-16 COLOR SYSTEM menu

12.6.1 Selecting the Display Format

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

Procedure

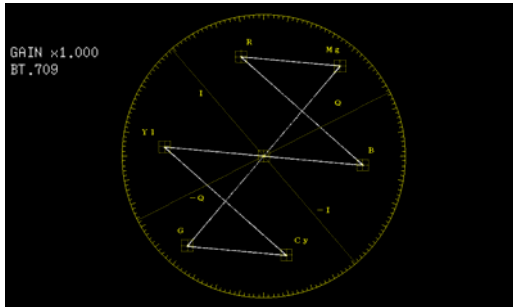
VECT → **F.5** COLOR SYSTEM → **F.1** COLOR MATRIX : COMPONEN / COMPOSIT

Settings

COMPONEN: The component chrominance signal is displayed on the X and Y axes.

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 12-17 Selecting the display format

12.6.2 Selecting the Composite Display Format

When **F.1** COLOR MATRIX is set to COMPOSIT, to select the composite display format, follow the procedure below. Changing this setting will also change the composite display format setting for the video signal waveform display.

[Reference] Section 11.7.3, "Selecting the Composite Display Format"

Procedure

VECT → **F.5** COLOR SYSTEM → **F.2** COMPOSIT FORMAT : AUTO / NTSC / PAL

Settings

AUTO: When the field or frame frequency of a received signal is 50 Hz or 25 Hz, the signal is converted into a PAL pseudo-composite signal. Otherwise, the signal is converted into an NTSC pseudo-composite signal.

NTSC: All input signals are converted into NTSC pseudo-composite signals.

PAL: All input signals are converted into PAL pseudo-composite signals.

COMPOSIT FORMAT = NTSC



COMPOSIT FORMAT = PAL



Figure 12-18 Selecting the composite display format

12.6.3 Selecting the Setup Level

When **[F•1]** COLOR MATRIX is set to COMPOSIT and the composite display format is NTSC, to select the setup level, follow the procedure below.

When the multi-screen display is in use, this setting is not available, and the value specified for the SETUP setting in the video signal waveform menu is used.

[Reference] SETUP → Section 11.7.4, “Selecting the setup level”

Procedure

[VECT] → **[F•5]** COLOR SYSTEM → **[F•3]** SETUP : 0% / 7.5%

12.6.4 Displaying a Scale for 75 % Intensity Color Bars

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

Procedure

[VECT] → **[F•5]** COLOR SYSTEM → **[F•4]** COLOR BAR : 100% / 75%

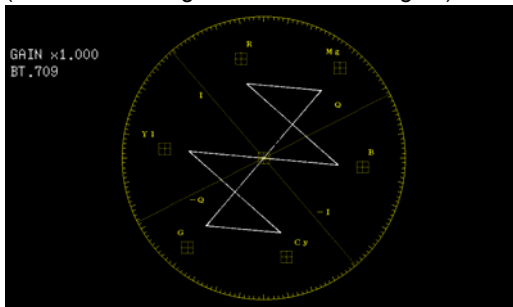
Settings

100%: A scale that matches the peak levels of 100% intensity color bars is displayed.

75%: A scale that matches the peak levels of 75% intensity color bars is displayed.

COLOR BAR = 100%

(When measuring a 75 % color bar signal)



COLOR BAR = 75%

(When measuring a 75 % color bar signal)



Figure 12-19 Displaying a scale for 75 % intensity color bars

12.7 Configuring the 5 Bar Display

To configure the 5 bar display, press **[F•5]** 5BAR SETUP in the vector menu.

These settings are available when MODE is set to 5BAR.

[Reference] MODE → Section 12.5.1, “Switching between the Vector and 5-Bar Displays”

[VECT] → **[F•5]** 5BAR SETUP →

SEQUENCE	SCALE			up menu		
GBR	%					

[F•1]
[F•2]
[F•3]
[F•4]
[F•5]
F•D 1
F•D 2

Figure 12-20 5BAR SETUP menu

12.7.1 5 Bar Display Explanation

The 5-bar display appears when you set **[F•1] MODE** to 5BAR.

On 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.

A low pass filter is set to remove transient errors. The settings for the filter that you specify in the status display are applied.

[Reference] Sections 14.7.1, “Turning the Filter ON and OFF,” and 14.7.2, “Selecting the Filter Characteristic”

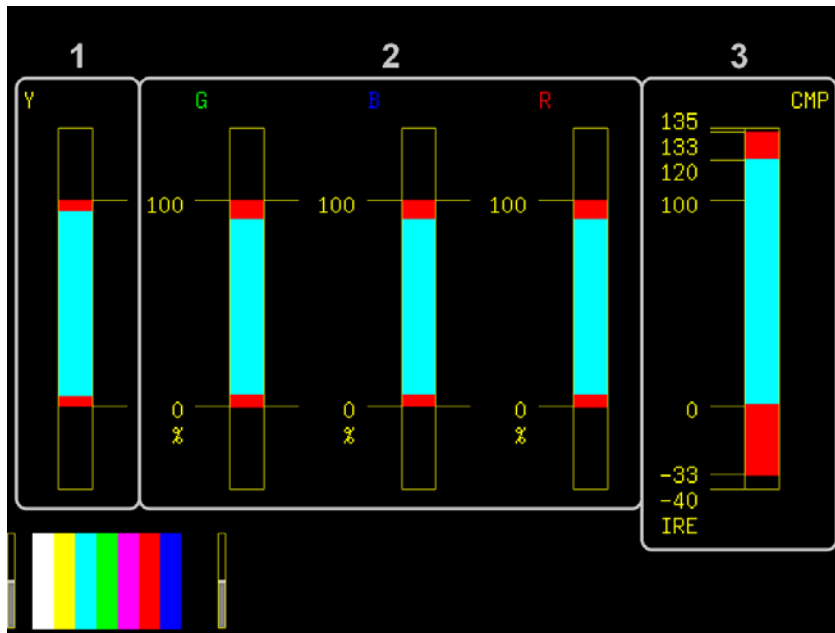


Figure 12-21 5-bar display

1 Y

The luminance signal level appears here.

The levels that fall outside of the range you set using LUMA ERROR in the status menu are displayed in red.

[Reference] LUMA ERROR → Section 14.7.8, “Setting the Luminance Error Levels”

2 G, B, R

The levels after converting the $YC_B C_R$ signal into a GBR signal appear here.

You can use **[F•1] SEQUENCE** to change the signal order to RGB. The levels that fall outside of the range that you set using GAMUT ERROR in the status menu are displayed in red.

[Reference] GAMUT ERROR → Section 14.7.4, “Setting the Gamut Error Levels”

3 CMP

The levels after converting the $YC_B C_R$ signal into a pseudo-composite signal appear here. (The blanking interval levels are not displayed.)

The levels that fall outside of the range you set using COMPOSIT GAMUT in the status menu are displayed in red.

[Reference] COMPOSIT GAMUT → Section 14.7.6, “Setting the Composite Gamut Error Levels”

12.7.2 Setting the Display Order

To select the order of the signals on the 5-bar display, follow the procedure below.

Procedure

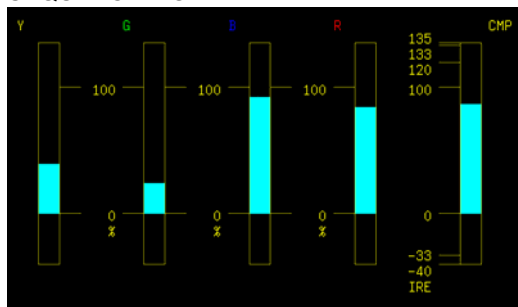
VECT → **F.5** 5BAR SETUP → **F.1** SEQUENCE : GBR / RGB

Settings

GBR: From the left, the signals are displayed in this order: Y, G, B, R, CMP.

RGB: From the left, the signals are displayed in this order: Y, R, G, B, CMP.

SEQUENCE = GBR



SEQUENCE = RGB

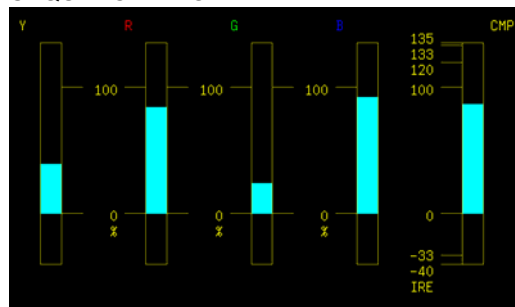


Figure 12-22 Setting the display order

12.7.3 Selecting the Scale Unit

To select the scale units on the 5-bar display, follow the procedure below.

Procedure

VECT → **F.5** 5BAR SETUP → **F.2** SCALE : % / mV

Settings

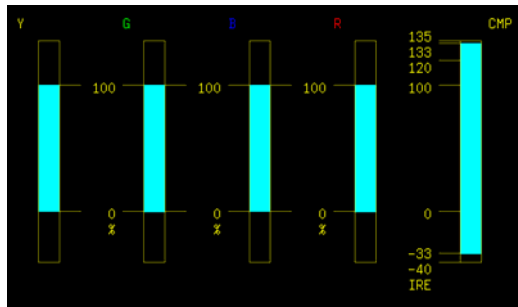
%: The scale shows % and IRE.

mV: The scale shows mV. The scale values change as follows depending on the composite display format:

100% = 700 mV, 100IRE = 714 mV (when the display format is NTSC)

100% = 700 mV, 100IRE = 700 mV (when the display format is PAL)

SCALE = %



SCALE = mV (NTSC)

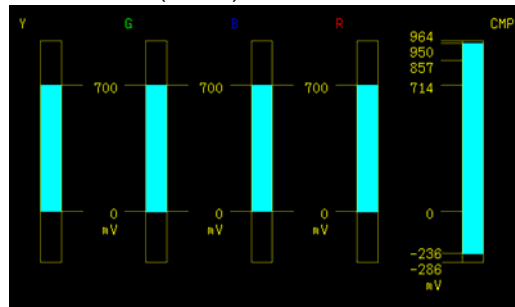


Figure 12-23 Selecting the scale unit

13. AUDIO DISPLAY

When the link format is set to dual, only the audio signal embedded in link A is measured. In 3D mode (L/R DUAL), only the audio signal embedded in channel A is measured.

13.1 Audio Display Explanation

The audio display appears when you press AUDIO.

To display the audio menu, hold down AUDIO for 0.5 seconds or more, or use the function keys and function dials on the audio display. The audio menu will disappear when you press AUDIO again or after a certain period of time passes with no user activity.

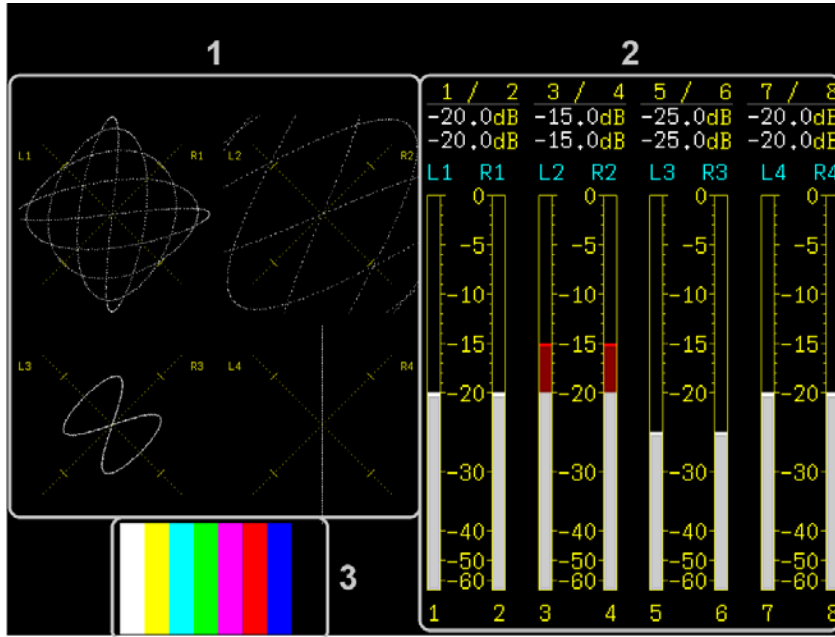


Figure 13-1 Audio display

1 Lissajous Display

The audio signals of the channels selected using DECODE GROUP (on the multi-Lissajous display) or SINGLE LISSAJOU (on the single-Lissajous display) are displayed using Lissajous curves. The lines on the scale indicate the reference level. You can change the reference level by setting REF LEVEL.

[Reference] Section 13.4, "Configuring Lissajous Settings"

2 Audio Levels

The audio levels of the channels selected using DECODE GROUP (in the multi-Lissajous display) or SINGLE LISSAJOU (in the single-Lissajous display) are displayed using meters and values.

On the meter display, levels that exceed the reference level are displayed in red, and levels that are less than the reference level are displayed in gray.

On the numerical display, the left channel levels are displayed on the top, and the right channel levels are displayed on the bottom.

[Reference] Section 13.3, "Configuring the Meter Settings"

3 Thumbnail Display

The picture appears here as a thumbnail. The I and Q axes can also be turned off.

[Reference] Section 13.5, "Setting the Thumbnail Display"

13.2 Setting the Input Channels

To set the input channels, press **F•1** CHANNEL SELECT in the audio menu.

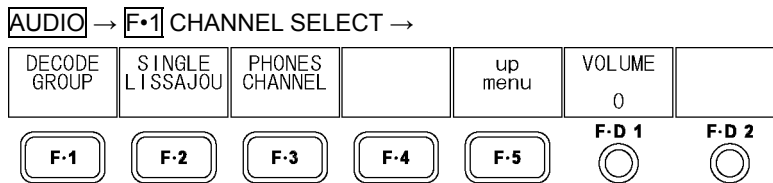


Figure 13-2 CHANNEL SELECT menu

13.2.1 Selecting Channel Groups

During SDI input, to select audio channel groups, follow the procedure below.

In 2D mode (single input) or 3D mode, the four channels selected for **F•1** 1st GROUP and the four channels selected for **F•2** 2nd GROUP are displayed, making for a total of eight channels.

In 2D mode (simul), the four channels selected for **F•1** Ach GROUP are displayed for channel A and the four channels selected for **F•2** 2nd GROUP are displayed for channel B.

During HDMI input, channels 1 to 8 are always selected, and these settings do not appear.

Procedure

AUDIO → **F•1** CHANNEL SELECT → **F•1** DECODE GROUP
 → **F•1** 1st GROUP / **F•2** 2nd GROUP : 1 / 2 / 3 / 4
 → **F•1** Ach GROUP / **F•2** Bch GROUP : 1 / 2 / 3 / 4

Settings

1:	Channels 1 to 4 are displayed.
2:	Channels 5 to 8 are displayed.
3:	Channels 9 to 12 are displayed.
4:	Channels 13 to 16 are displayed.

13.2.2 Selecting the Single-Lissajous Display Channels

To select the single-Lissajous display channels, follow the procedure below.

In 2D mode (simul), you can use **F•1** SDI SELECT to set the display channel to channel A or channel B.

Procedure

AUDIO → **F•1** CHANNEL SELECT → **F•2** SINGLE LISSAJOU → **F•2** L : CH 1 - CH 16
 → **F•3** R : CH 1 - CH 16

13.2.3 Selecting the Headphone Output Channels

To select the headphone output channels, follow the procedure below.

In 2D mode (simul), you can use **F•1** SDI SELECT to set the display channel to channel A or channel B.

Procedure

AUDIO → **F•1** CHANNEL SELECT → **F•3** PHONES CHANNEL → **F•2** L : CH 1 - CH 16
 → **F•3** R : CH 1 - CH 16

13.3 Configuring the Meter Settings

To configure the meter settings, press **F•2** METER SETUP in the audio menu.

AUDIO → **F•2** METER SETUP →

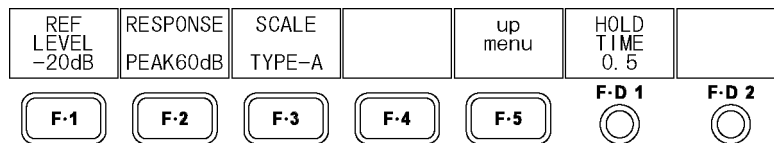


Figure 13-3 METER SETUP menu

13.3.1 Selecting the Reference Level

To select the meter reference level, follow the procedure below.

Levels that exceed the reference level are displayed in red, and levels that are less than the reference level are displayed in gray.

The reference level that you set here is also used on the Lissajous display. The lines on the scale indicate the reference level.

Procedure

AUDIO → **F•2** METER SETUP → **F•1** REF LEVEL : -20dB / -18dB / -12dB

13.3.2 Selecting the Range

To select the meter's range, follow the procedure below.

The following table shows meter response models.

Figure 13-4 Meter response models

RESPONSE	Delay Time (*1)	Return Time (*2)
PEAK60dB	Instantaneous	1.7 sec
PEAK90dB	Instantaneous	1.7 sec
AVERAGE	0.3 sec	0.3 sec

*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 is stopped.

Procedure

AUDIO → **F•2** METER SETUP → **F•2** RESPONSE : PEAK60dB / PEAK90dB / AVERAGE

Settings

PEAK60dB: The range is set to -60 to 0 dB.

PEAK90dB: The range is set to -90 to 0 dB.

AVERAGE: The reference level is set to 0 dB, and the range is set to -20 to 3 dB.

13.3.3 Selecting the Scale

When **F•2** RESPONSE is set to PEAK60dB or PEAK90dB, to select the type of meter scale to use, follow the procedure below.

Procedure

AUDIO → **F•2** METER SETUP → **F•3** SCALE : TYPE-A / TYPE-B

Settings

TYPE-A: A scale that covers the range determined by the RESPONSE setting is displayed.

TYPE-B: A scale in which the reference level specified by REF LEVEL is set to 0 dB is displayed.

13.3.4 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** RESPONSE is set to PEAK60dB or PEAK90dB.

Procedure

AUDIO → **F•2** METER SETUP → **F•D 1** HOLD TIME : 0.5 - 5.0 / HOLD

13.4 Configuring Lissajous Settings

To configure Lissajous settings, press **F•3** LISSAJOU SETUP in the audio menu.

AUDIO → **F•3** LISSAJOU SETUP →

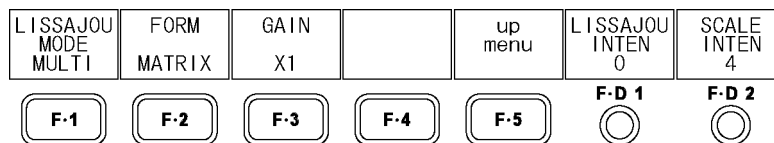


Figure 13-5 LISSAJOU SETUP menu

13.4.1 Selecting the Display Format

To select the Lissajous curve display format, follow the procedure below.

The correlation meter in single-Lissajous mode indicates the phase difference between the 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.

[Reference] Section 13.2.2, “Selecting the Single-Lissajous Display Channels”

Procedure

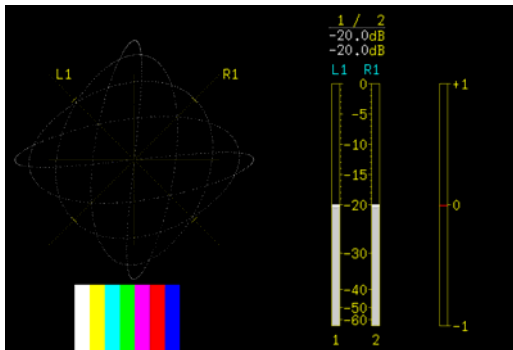
AUDIO → **F•3** LISSAJOU SETUP → **F•1** LISSAJOU MODE : SINGLE / MULTI

Settings

SINGLE: The Lissajous curves, meters, and correlation meter of two channels are displayed.

MULTI: The Lissajous curves and meters of eight channels are displayed.

LISSAJOU MODE = SINGLE



LISSAJOU MODE = MULTI

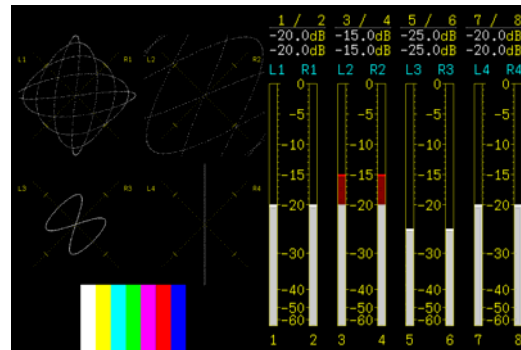


Figure 13-6 Selecting the display format

13.4.2 Selecting the Scale Display Format

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

Procedure

AUDIO → **F•3** LISSAJOU SETUP → **F•2** FORM : X-Y / MATRIX

Settings

X-Y: R is assigned to the X-axis (horizontal), and L is assigned to the Y-axis (vertical).

MATRIX: The R and L axes are positioned at 45 ° angles to the X and Y axes.

13. AUDIO DISPLAY

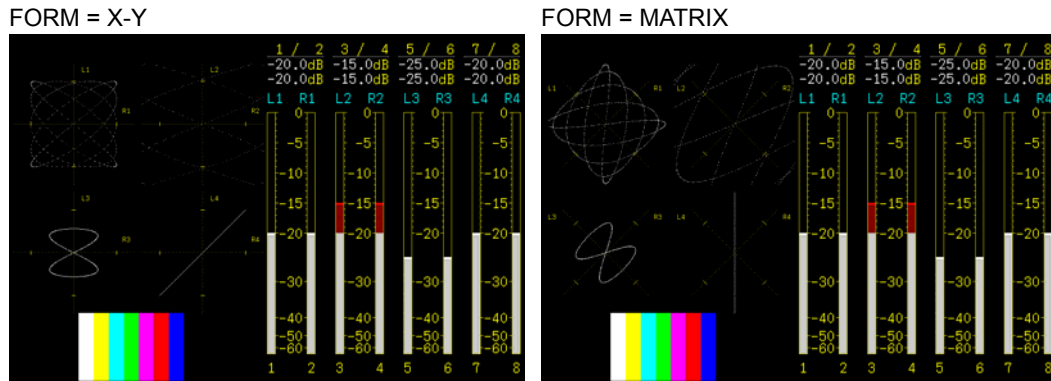


Figure 13-7 Selecting the scale display format

13.4.3 Selecting the Gain

To set the Lissajous curve gain, follow the procedure below.

Procedure

AUDIO → **F•3** LISSAJOU SETUP → **F•3** GAIN : X1 / AUTO

Settings

X1: Lissajous curves are displayed with a gain of $\times 1$.

AUTO: The gain is set so that the Lissajous curves fit within the scale.

All levels are adjusted so that the maximum level fits within the scale.

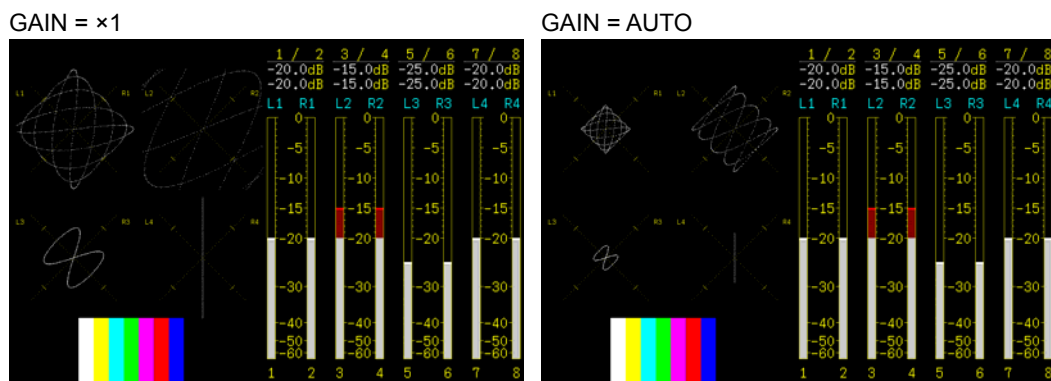


Figure 13-8 Lissajous curve gains

13.4.4 Adjusting the Lissajous Curve Intensity

To set the Lissajous curve intensity, follow the procedure below.

Procedure

AUDIO → **F•3** LISSAJOU SETUP → **F•D 1** LISSAJOU INTEN : -8 - 0 - 7

13.4.5 Adjusting the Scale Intensity

To simultaneously adjust the intensity of the scale and audio meter, follow the procedure below.

Procedure

AUDIO → F.3 LISSAJOU SETUP → F.D 2 SCALE INTEN : -8 - 4 - 7

13.5 Configuring Thumbnail Settings

To set the thumbnail display, press F.4 THUMBNAIL in the audio menu. This menu item does not appear when the multi-screen display is in use.

AUDIO → F.4 THUMBNAIL →

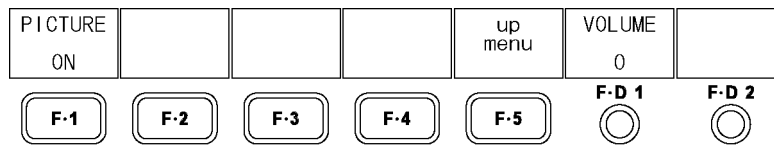


Figure 13-9 THUMBNAIL menu

To turn the thumbnail display of the picture on and off, follow the procedure below.

Procedure

AUDIO → F.4 THUMBNAIL → F.1 PICTURE : ON / OFF

13.6 Adjusting the Headphone Volume

To adjust the headphone volume, follow the procedure below. F.D 1 VOLUME appears on other levels of the audio menu and functions in the same way.

If you press F.D 1, the intensity will be set to its default value of 0.

Procedure

AUDIO → F.D 1 VOLUME : -128 - 0 - 127

14. STATUS DISPLAY

14.1 Status Screen Explanation

The status display appears when you press STATUS (DVI input is not supported).

To display the status menu, hold down STATUS for 0.5 seconds or more, or use the function keys and function dials on the status screen. The status menu will disappear when you press STATUS again or after a certain period of time passes with no user activity.

The status display is different during SDI input and HDMI input. During HDMI input, only the **F•4** ERROR CONFIG → **F•3** GAMUT ERROR settings are available.

- **Status Display during SDI Input**

Error count values are displayed beneath VIDEO, AUDIO, and GAMUT. Errors are counted by field. Only one error can be counted for a single field, no matter how many errors occur on that field. The maximum error count is 999999. Once a count of 999999 is reached, the display will continue to show 999999 even if more errors occur.



Figure 14-1 Status display

1 SDI SIGNAL

If an SDI signal is detected at the input connector, "DETECT" appears here. Otherwise, "NO SIGNAL" appears. If "NO SIGNAL" appears, the error count information below will be blank. The input format indication in the upper left of the screen will also show "NO SIGNAL."

"NO SIGNAL" may appear even when an SDI signal is being applied if the signal amplitude is small or if there is a lot of jitter.

2 VIDEO

- **CRC**

Appears when the input signal is HD.

An error is counted when the CRC embedded in the input signal is different from the CRC that the LV 5382 calculates.

This will not appear if CRC is set to OFF or if the input signal is SD.

[Reference] Section 14.5.1, "Detecting CRC Errors"

- **EDH**

Appears when the input signal is SD.

An error is counted when there is an error flag in an EDH packet in the input signal or when the CRC computed from the input signal is different from an EDH packet's CRC data.

EDH packets contain ancillary data error flags, active picture error flags, full-field error flags, full-field CRC data, and active-field CRC data.

This will not appear if EDH is set to OFF or if the input signal is HD.

[Reference] Section 14.5.2, "Detecting EDH Errors"

- **A/B Delay**

Appears when the link format is set to dual.

An error is counted when the phase difference between links A and B exceeds 100 clocks.

3 AUDIO

When the link format is set to dual, only the audio signal embedded in link A is detected.

- **BCH**

Appears when the input signal is HD.

An error is counted when the input signal's embedded audio BCH code causes an error. Errors may be counted at the instant when audio is embedded into an input signal or at the instant when the audio is removed.

This will not appear if BCH is set to OFF or if the input signal is SD.

[Reference] Section 14.6.1, "Detecting BCH Errors"

- **CRC**

An error is counted when the channel status bit of the input signal's embedded audio has a CRC error. However, an error is not counted if the channel status bit is consumer. Errors may be counted at the instant when audio is embedded into an input signal or at the instant when the audio is removed.

Errors are not displayed when CRC is set to OFF.

[Reference] Section 14.6.2, "Detecting CRC Errors"

- **CH**

The LV 5382 detects the input signal's embedded audio channels and displays them here. A hyphen appears for channels that are not detected.

If audio control packets are embedded in the input signal, the channels are detected from the audio control packet ACT bit. Otherwise, the channels are detected from the audio data packet.

4 **GAMUT**

- **LUMA**

An error is counted when a luminance error occurs.

You can set the detection levels and the detection area by pressing ERROR CONFIG and then LUMA ERROR.

Errors are not displayed when LUMA ERROR is set to OFF.

[Reference] Sections 14.7.7, "Detecting Luminance Errors," and 14.7.8, "Setting the Luminance Error Levels"

- **GAMUT**

The gamut error count is displayed here.

You can set the detection levels and the detection area by pressing ERROR CONFIG and then GAMUT ERROR.

Errors are not displayed when GAMUT ERROR is set to OFF.

[Reference] Sections 14.7.3, "Detecting Gamut Errors," and 14.7.4, "Setting the Gamut Error Levels"

- **COMP GAMUT**

An error is counted when a gamut error is detected during the conversion of the component signal to a pseudo-composite signal.

Even if the component signal is within its set levels, it may be outside of its levels when it is converted to a pseudo-composite signal.

You can set the detection levels and the detection area by pressing ERROR CONFIG and then COMPOSIT GAMUT. Errors are not displayed when COMPOSIT GAMUT is set to OFF.

[Reference] Sections 14.7.5, "Detecting Composite Gamut Errors," and 14.7.6, "Setting the Composite Gamut Error Levels"

5 **LOG MODE**

"NOW LOGGING" appears here when events are being logged. "LOGGING STOPPED" appears when logging is stopped.

You can log events by pressing EVENT LOG and setting LOG to START.

[Reference] LOG → Section 14.2.3, "Starting the Event Log"

6 Thumbnail Display

The picture appears here as a thumbnail.

- **Status Display during HDMI Input**

AVI INFO FRAME data is displayed.

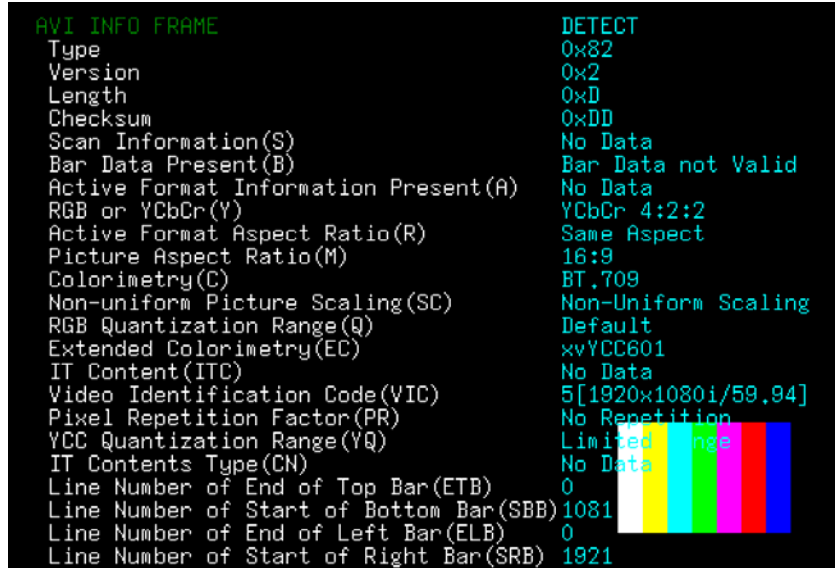


Figure 14-2 Status display

Table 14-1 Status display explanation

Item	Description	Input Data	Display Indication
AVI INFO FRAME	AVI INFO FRAME detection	-	DETECT or MISSING
Type	Packet type	-	Numerical indication of the input data
Version	Version	-	Numerical indication of the input data
Length	Packet length	-	Numerical indication of the input data
Checksum	Checksum	-	Numerical indication of the input data
Scan Information (S1:S0)	Scan information for the display	0b00	No Data
		0b01	Overscanned Display
		0b10	Underscanned Display
		0b11	Future
Bar Data Present (B1:B0)	Letterbox settings	0b00	Bar Data not Valid
		0b01	V Bar info Valid
		0b10	H Bar info Valid
		0b11	V&H Bar info Valid
Active Format Information Present (A0)	Support for AFD	0	No Data
		1	Valid
RGB or YCbCr (Y1:Y0)	Color space	0b00	RGB 4:4:4
		0b01	YCbCr 4:2:2
		0b10	YCbCr 4:4:4
		0b11	Future
Active Format Aspect Ratio	Aspect ratio for the display	0b1000	Same Aspect

14. STATUS DISPLAY

Item	Description	Input Data	Display Indication
(R3:R0)		0b1001	4:3
		0b1010	16:9
		0b1011	14:9
		others	Numerical indication of the input data
Picture Aspect Ratio (M1:M0)	Aspect ratio	0b00	No Data
		0b01	4:3
		0b10	16:9
		0b11	Future
Colorimetry (C1:C0)	Colorimetry	0b00	No Data
		0b01	BT.601
		0b10	BT.709
		0b11	Extended Colorimetry
Non-uniform Picture Scaling (SC1:SC0)	Scaling to the screen	0b00	Non-Uniform Scaling
		0b01	Scaled Horizontally
		0b10	Scaled Vertically
		0b11	Scaled H&V
RGB Quantization Range (Q1:Q0)	Quantization of the RGB input	0b00	Default
		0b01	Limited Range
		0b10	Full Range
		0b11	Reserved
Extended Colorimetry (EC2:EC0)	Other display features	0b000	xvYCC601
		0b001	xvYCC709
		0b010	sYCC601
		0b011	AdobeYCC601
		0b100	AdobeRGB
		others	Reserved
IT Content (ITC)	Support for CN1:CN0	0	No Data
		1	IT Content
Video Identification Code (VIC6:VIC0)	Video format ID	-	Numerical indication of the input data
Pixel Repetition Factor (PR3:PR0)	How many clocks a single pixel is sent in	0b0000	No Repetition
		0b0001	2 times
		:	:
		0b1001	10 times
		others	Reserved
YCC Quantization Range (YQ1:YQ0)	Quantization of the YCbCr input	0b00	Limited Range
		0b01	Full Range
		others	Reserved
IT Contents Type (CN1:CN0)	Content	0b00	Graphics (No Data when ITC = 0)
		0b01	Photo
		0b10	Cinema
		0b11	Game
Line Number of End of Top Bar	Line number of the top part of	-	Numerical indication of the input data

14. STATUS DISPLAY

Item	Description	Input Data	Display Indication
(ETB15:ETB0)	the letterbox		
Line Number of Start of Bottom Bar (SBB15:SBB0)	Line number of the bottom part of the letterbox	-	Numerical indication of the input data
Line Number of End of Left Bar (ELB15:ELB0)	Sample number of the left part of the letterbox	-	Numerical indication of the input data
Line Number of Start of Right Bar (SRB15:SRB0)	Sample number of the right part of the letterbox	-	Numerical indication of the input data

14.2 Configuring Event Log Settings

The LV 5382 can log various events. Logged events can also be saved in text format to USB memory.

To configure event log settings, press **[F•1]** EVENT LOG in the status menu.

[STATUS] → **[F•1]** EVENT LOG →

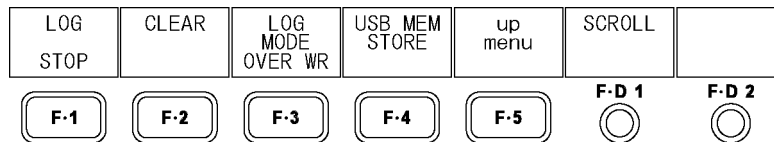


Figure 14-3 EVENT LOG menu

14.2.1 Event Log Screen Explanation

To display the event log, press **[F•1]** EVENT LOG in the status menu.

Events include signal reception, error occurrence, and error recovery.

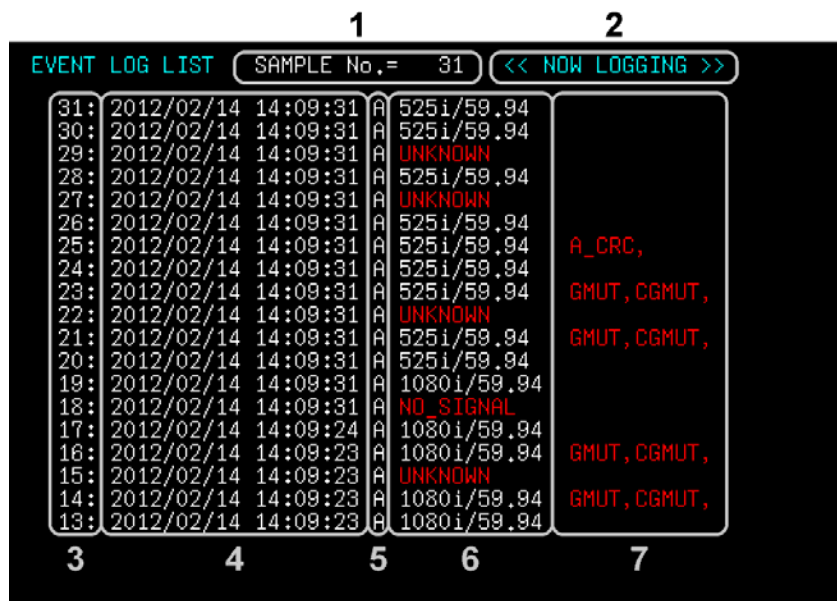


Figure 14-4 Event log

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•1** LOG.

[Reference] LOG → Section 14.2.3, “Starting the Event Log”

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 1** SCROLL 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•3** LOG MODE.

[Reference] SCROLL → Section 14.2.2, “Scrolling through the Event Log”

LOG MODE → Section 14.2.5, “Selecting the Overwrite Mode”

4 Event Occurrence Time Codes

Time codes for when the events occurred are displayed here. In the system settings, you can set the time code display format to LTC, VITC, or OFF. If you select OFF, the current date and time are displayed.

[Reference] Section 5.5.1, “Setting the Time Code Display Format”

5 Event Channels

The channels that the events occurred on (A or B) are displayed here.

6 Input Formats

The input formats when events occurred are displayed here. If no signal was being received, “NO SIGNAL” appears. If the input format cannot be determined, “UNKNOWN” appears.

7 Event Type

The types of events that occurred are displayed 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 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 5382 screen. The displayed event types are listed below. If the detection of a particular error has been disabled, the event that corresponds to that error will not be recorded.

[Reference] Section 14.2.6, “Saving the Event Log”

Table 14-2 Event types

Display Indication	Description
CRC_Y	Transmission error in the HD Y signal
CRC_C	Transmission error in the HD C _B , C _R signal
EDH	Transmission error in the SD signal
SDI_DELAY	Phase difference error between links A and B
A_BCH	BCH error in the embedded audio
A_CRC	CRC error in the embedded audio
LUMA	Luminance error
GMUT	Gamut error
CGMUT	Composite gamut error

14.2.2 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 1]** to the right. To view later events, turn it to the left. If you press **[F•D 1]**, the most recent events appear.

Procedure

[STATUS] → **[F•1]** EVENT LOG → **[F•D 1]** SCROLL

14.2.3 Starting the Event Log

To start the event log, follow the procedure below.

Procedure

[STATUS] → **[F•1]** EVENT LOG → **[F•1]** LOG : START / STOP

Settings

START: The event log is started.
 “NOW LOGGING” appears on the event log screen and the status screen.

STOP: The event log is stopped.
 “LOGGING STOPPED” appears on the event log screen and the status screen.

14.2.4 Deleting the Event Log

To delete the event log that is displayed on the screen, follow the procedure below. The log is also deleted when you initialize the LV 5382 or turn off the power.

[Reference] Section 5.8, “Initialization”

Procedure

[STATUS] → **[F•1]** EVENT LOG → **[F•2]** CLEAR

14.2.5 Selecting the Overwrite Mode

To select 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** EVENT LOG → **F•3** LOG MODE : OVER WR / STOP

Settings

OVER WR: Events after the 1000th event are written over the oldest logged events.

STOP: Events after the 1000th event are not logged.

14.2.6 Saving the Event Log

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.

This setting appears when USB memory is connected.

The file name is automatically set to the date and time that you have set using the system settings according to the procedure in section 5.7, "Setting the Date and Time."

Example: 20080425150500.txt (the order is: year, month, day, hour, minute, second)

The file structure in the USB memory is shown below.

```

└─ USB Memory
   └─ LV5382_USER
      └─ LOG
         └─ yyyyymmddhhmmss.txt
  
```

Procedure

STATUS → **F•1** EVENT LOG → **F•4** USB MEM STORE

14.3 Configuring Data Dump Settings

To configure data dump settings, press **F•1** DATA DUMP in the status menu.

This setting is not available in 2D mode (simul) or 3D mode (L/R DUAL) when the input formats are different.

STATUS → **F•2** SDI ANALYSIS → **F•1** DATA DUMP →

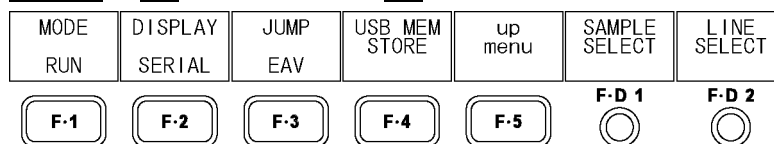


Figure 14-5 DATA DUMP menu

14.3.1 Data Dump Display Explanation

To display the data dump display, press **[F•2]** SDI ANALYSIS and then **[F•1]** DATA DUMP in the status menu.

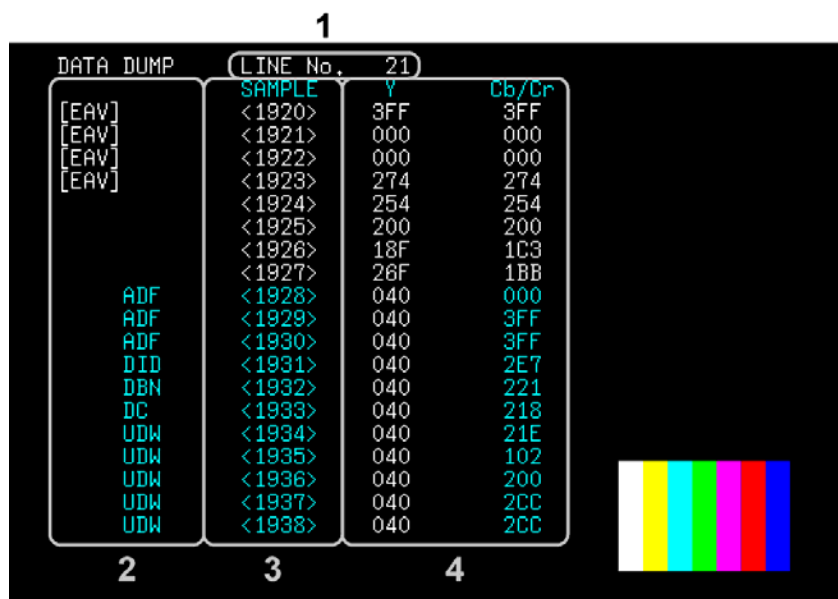


Figure 14-6 Data dump

1 LINE No.

The data dump display shows the data for a particular line. The line that you select using **[F•D 2]** LINE SELECT appears next to LINE No.

[Reference] LINE SELECT → Section 14.3.3, “Selecting the Line Number”

2 Ancillary Data

The ancillary data embedded in the SDI signal is indicated as shown in the table below.

Table 14-3 Ancillary data types

Indication	Color	Description
ADF	Cyan	Ancillary data header word
DID	Cyan	Ancillary data ID word
SDID	Cyan	Secondary format data in which DID is smaller than 80H
DBN	Cyan	Primary format data in which DID is 80H or larger
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 (start of active video) to just before the EAV (end of active video) when the selected line is within the active video area

3 SAMPLE

The sample numbers of the selected line are displayed here. You can use **F•D 1** SAMPLE SELECT to scroll through the samples.

[Reference] SAMPLE SELECT → Section 14.3.2, “Scrolling through the Data Dump”

4 Data

The data contained in the selected line and sample is displayed here. You can select the data display format by pressing **F•2** DISPLAY.

[Reference] DISPLAY → Section 14.3.5, “Selecting the Display Format”

14.3.2 Scrolling through the Data Dump

To scroll through the data dump, follow the procedure below.

To make [EAV] the display start position, press **F•D 1**.

Procedure

STATUS → **F•2** SDI ANALYSIS → **F•1** DATA DUMP → **F•D 1** SAMPLE SELECT

14.3.3 Selecting the Line Number

To select a line on the data dump display, follow the procedure below. To go to the first video line, Press **F•D 2**.

In 3D mode, you cannot select lines that are in the blanking interval.

Changing this setting will also change the picture, video-signal-waveform, and vector-display line selection settings.

Procedure

STATUS → **F•2** SDI ANALYSIS → **F•1** DATA DUMP → **F•D 2** LINE SELECT

14.3.4 Selecting the Display Mode

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

Procedure

STATUS → **F•2** SDI ANALYSIS → **F•1** DATA DUMP → **F•1** MODE : RUN / HOLD

Settings

RUN:	The input signal data is automatically updated and displayed.
HOLD:	The input signal data is retained and displayed.

14.3.5 Selecting the Display Format

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

Procedure

STATUS → **F•2** SDI ANALYSIS → **F•1** DATA DUMP → **F•2** DISPLAY

: **SERIAL** / COMPO (Single link)

: **LINK A** / LINK B / LINK AB (Dual link)

Settings

SERIAL: The data is converted from parallel to serial data and displayed.

COMPO: The data is converted from parallel to serial data, split into Y, Cb, and Cr, and then displayed.

LINK A: The parallel converted data sequences of link A are displayed.

LINK B: The parallel converted data sequences of link B are displayed.

LINK A/B: Links A and B are combined, and their parallel data sequences are displayed.

DISPLAY = SERIAL

DATA DUMP	LINE No.	21	
	SAMPLE	Y	Cb/Cr
[EAV]	<1920>	3FF	3FF
[EAV]	<1921>	000	000
[EAV]	<1922>	000	000
[EAV]	<1923>	274	274
	<1924>	254	254
	<1925>	200	200
	<1926>	18F	1C3
	<1927>	26F	1BB
ADF	<1928>	040	000
ADF	<1929>	040	3FF
ADF	<1930>	040	3FF
DID	<1931>	040	2E7
DBN	<1932>	040	221
DC	<1933>	040	218
UDW	<1934>	040	21E
UDW	<1935>	040	102
UDW	<1936>	040	200
UDW	<1937>	040	2CC
UDW	<1938>	040	2CC

DISPLAY = COMPO

DATA DUMP	LINE No.	21		
	SAMPLE	Y	Cb	Cr
[EAV]	<1920>	3FF	3FF	
[EAV]	<1921>	000		000
[EAV]	<1922>	000	000	
[EAV]	<1923>	274		274
	<1924>	254		
	<1925>	200		200
	<1926>	18F	1C3	
	<1927>	26F		1BB
ADF	<1928>	040	000	
ADF	<1929>	040		
ADF	<1930>	040	3FF	3FF
DID	<1931>	040		2E7
DBN	<1932>	040	242	
DC	<1933>	040		218
UDW	<1934>	040	2BD	
UDW	<1935>	040		205
UDW	<1936>	040	200	
UDW	<1937>	040		
UDW	<1938>	040	1C2	

Figure 14-7 Selecting the display format

14.3.6 Selecting the Display Start Position

To select the data dump display start position, follow the procedure below.

Procedure

STATUS → **F•2** SDI ANALYSIS → **F•1** DATA DUMP → **F•3** JUMP : **EAV** / SAV

JUMP = EAV

DATA DUMP	LINE No.	21	
	SAMPLE	Y	Cb/Cr
[EAV]	<1920>	3FF	3FF
[EAV]	<1921>	000	000
[EAV]	<1922>	000	000
[EAV]	<1923>	274	274
	<1924>	254	254
	<1925>	200	200
	<1926>	18F	1C3
	<1927>	26F	1BB
ADF	<1928>	040	000
ADF	<1929>	040	3FF
ADF	<1930>	040	3FF
DID	<1931>	040	2E7
DBN	<1932>	040	221
DC	<1933>	040	218
UDW	<1934>	040	21E
UDW	<1935>	040	102
UDW	<1936>	040	200
UDW	<1937>	040	2CC
UDW	<1938>	040	2CC

JUMP = SAV

DATA DUMP	LINE No.	21		
	SAMPLE	Y	Cb	Cr
[SAV]	<2196>	3FF	3FF	
[SAV]	<2197>	000		000
[SAV]	<2198>	000	000	
[SAV]	<2199>	200		200
AP AP	< 0>	040	200	
AP AP	< 1>	040	200	
AP AP	< 2>	040	200	
AP AP	< 3>	041	200	
AP AP	< 4>	0CB	200	
AP AP	< 5>	1F6	200	
AP AP	< 6>	321	200	
AP AP	< 7>	3AB	200	
AP AP	< 8>	3AC	200	
AP AP	< 9>	3AC	200	
AP AP	< 10>	3AC	200	
AP AP	< 11>	3AC	200	
AP AP	< 12>	3AC	200	
AP AP	< 13>	3AC	200	
AP AP	< 14>	3AC	200	

Figure 14-8 Selecting the display start position

14.3.7 Saving Data Dumps

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.

This setting appears when USB memory is connected.

The file name is automatically set to the date and time that you have set using the system settings according to the procedure in section 5.7, “Setting the Date and Time.”

Example: 20080425150500.txt (the order is: year, month, day, hour, minute, second, channel)

The file structure in the USB memory is shown below.

```

└─ USB Memory
  └─ LV5382_USER
    └─ DAT
      └─ yyyyymmddhhmmss.txt
  
```

Procedure

STATUS → **F•2** SDI ANALYSIS → **F•1** DATA DUMP → **F•4** USB MEM STORE

14.4 Configuring Phase Difference Measurement Settings

To configure phase difference measurement settings, press **F•2** EXT REF PHASE in the status menu.

You can use this menu to measure the phase difference between the SDI signal and the external sync signal and between channels. You can also measure the phase difference between links A and B when the link format is set to dual.

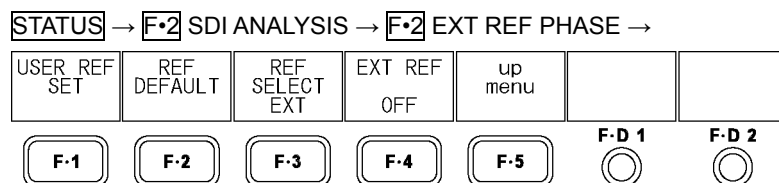


Figure 14-9 EXT REF PHASE menu

To measure the phase difference with an external sync signal, set **F•4** EXT REF to ON, and apply an external sync signal. For the supported external sync signal formats, see section 4.7, “External Sync Signal Input.”

To measure the phase difference between channels A and B, switch to 2D mode (single input) or 3D mode (HF SbyS or TOP&BOTM), select channel B, and set **F•3** REF SELECT to channel A.

[Reference] EXT SELECT → Section 14.4.4, “Measuring the Phase Difference between Channels”

To measure the phase difference between links A and B, set the link format to dual, and then set **F•3** REF SELECT to LINK A.

[Reference] REF SELECT → Section 14.4.5, “Measuring the Phase Difference between Links A and B”

14.4.1 Phase Difference Measurement Screen Explanation

To display the phase difference measurement screen, press **F•2** SDI ANALYSIS and then **F•2** EXT REF PHASE in the status menu.



Figure 14-10 Phase difference measurement display

1 V PHASE

The phase difference in lines is displayed here.

2 H PHASE

The phase difference is displayed here in microseconds (us) and sample numbers (dot).

3 TOTAL PHASE

The total of the V PHASE and H PHASE differences is displayed here in microseconds (us).

4 REF

The reference signal setting is indicated using one of the following messages:

INT:	Indicates that the internal sync signal is being used. The phase difference cannot be measured.
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 sync signal is being used with the default phase difference setting.
EXT BB USER REF:	Indicates that a BB sync signal is being used with the user-defined phase difference setting.
SDI A:	A phase difference measurement between channels A and B with channel A used as the reference.
LINK A:	A phase difference measurement between links A and B with link A used as the reference.

NO SIGNAL: Indicates that no reference signal is being applied.

[Reference] Sections 14.4.2, "Setting the User Reference of the Phase Difference," 14.4.3, "Setting the Phase Difference to the Default Value,"

14.4.4, "Measuring the Phase Difference between Channels," and 14.4.5 "Measuring the Phase Difference between Links A and B"

Section 14.4.6, "Switching the Sync Signal"

5 Graphical Representation of the Phase Differences

The vertical axis indicates the V phase difference in lines. The horizontal axis represents the H phase difference in time. 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 internal sync signal is used.

For both the V and H axes, differences of up to approximately $+1/2$ frames from the center are displayed on the Delay axis and differences of up to approximately $-1/2$ frames from the center are displayed on the Advance axis. The H axis phase difference display may fluctuate within the range of ± 1 clock in cases such as when the signal is switched.

Table 14-4 Delay and Advance axis display ranges

Format	Displayed on the Advance Axis							
				Displayed on the Delay Axis				
	V PHASE [Lines]	H PHASE [us]		V PHASE [Lines]	H PHASE [us]		V PHASE [Lines]	H PHASE [us]
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

14.4.2 Setting the User Reference of the Phase Difference

When measuring the phase difference with an external sync signal, to set the SDI signal and external sync signal phase difference to 0, follow the procedure below.

Procedure

STATUS → **F•2** SDI ANALYSIS → **F•2** EXT REF PHASE → **F•1** USER REF SET

14.4.3 Using the Phase Difference Default

When measuring the phase difference with an external sync signal, to set the SDI signal and external sync signal phase difference to the default setting, follow the procedure below. The default setting is the setting that makes a phase difference of 0 between the SDI output signal and the BB signal of a LEADER signal generator without a timing offset when both signals are connected through cables of equal length. Because of phase fluctuations when the SDI signal is switched and device inconsistencies, a display error within the range of ± 3 clocks may occur.

Procedure

STATUS → **F•2** SDI ANALYSIS → **F•2** EXT REF PHASE → **F•2** REF DEFAULT

14.4.4 Measuring the Phase Difference between Channels

In 2D mode (single input) or 3D mode (HF SbyS or TOP&BOTM), to display the phase difference between channels A and B, follow the procedure below. This menu item is not available when channel A is selected.

Procedure

STATUS → **F•2** SDI ANALYSIS → **F•2** EXT REF PHASE → **F•3** REF SELECT : EXT / Ach

Settings

EXT:	The phase difference between an SDI signal and an external sync signal is displayed.
Ach:	The phase difference between channels A and B is displayed.

14.4.5 Measuring the Phase Difference between Links A and B

To display the phase difference between links A and B when the link format is set to dual, follow the procedure below.

Procedure

STATUS → **F•2** SDI ANALYSIS → **F•2** EXT REF PHASE → **F•3** REF SELECT : EXT / LINK A

Settings

EXT:	The phase difference between an SDI signal and an external sync signal is displayed.
LINK A:	The phase difference between links A and B is displayed.

14.4.6 Switching the Sync Signal

To switch to an external sync signal, follow the procedure below.

To measure the phase difference with an external sync signal, set this setting to ON. If you set this setting to OFF, the circles that represent the phase differences will not appear.

Changing this setting will also change the sync signal setting on the video signal waveform display and vector display.

When the input signal format is 1080p/60, 1080p/59.94, or 1080p/50, this setting is fixed at OFF and does not appear.

Procedure

STATUS → **F•2** SDI ANALYSIS → **F•2** EXT REF PHASE → **F•4** EXT REF : ON / OFF

Settings

ON: An external sync signal is used.

OFF: The internal sync signal is used.

14.5 Configuring Video Error Settings

To configure video error settings, press **F•1** VIDEO ERROR in the status menu.

You can turn error detection on and off for each item. For items whose error detection is turned on, you can:

- Count errors using the error counters.
- Display error counts on the status display.
- Transmit alarms from the optional remote control connector.

STATUS → **F•4** ERROR CONFIG → **F•1** VIDEO ERROR →

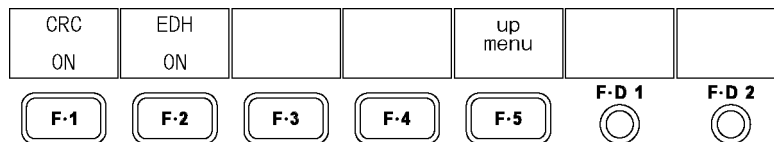


Figure 14-11 VIDEO ERROR menu

14.5.1 Detecting CRC Errors

To turn CRC error detection on and off, follow the procedure below.

This setting is valid when the input signal is HD.

Procedure

STATUS → **F•4** ERROR CONFIG → **F•1** VIDEO ERROR → **F•1** CRC : ON / OFF

14.5.2 Detecting EDH Errors

To turn EDH error detection on and off, follow the procedure below.

This setting is valid when the input signal is SD.

Procedure

STATUS → **F•4** ERROR CONFIG → **F•1** VIDEO ERROR → **F•2** EDH : ON / OFF

14.6 Configuring Audio Error Settings

To configure audio error settings, press **F•2** AUDIO ERROR in the status menu. You can turn error detection on and off for each item. For items whose error detection is turned on, you can:

- Count errors using the error counters.
- Display error counts on the status display.
- Transmit alarms from the optional remote control connector.

STATUS → **F•4** ERROR CONFIG → **F•2** AUDIO ERROR →

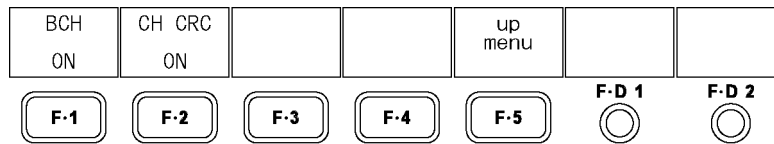


Figure 14-12 AUDIO ERROR menu

14.6.1 Detecting BCH Errors

To turn BCH error detection on and off, follow the procedure below. This setting is valid when the input signal is HD.

Procedure

STATUS → **F•4** ERROR CONFIG → **F•2** AUDIO ERROR → **F•1** BCH : ON / OFF

14.6.2 Detecting CRC Errors

To turn CRC error detection on and off, follow the procedure below.

Procedure

STATUS → **F•4** ERROR CONFIG → **F•2** AUDIO ERROR → **F•2** CH CRC : ON / OFF

14.7 Configuring Gamut Error Settings

To configure gamut error settings, press **F•3** GAMUT ERROR in the status menu. You can turn error detection on and off for each item. For items whose error detection is turned on, you can:

- Display gamut errors on the picture display.
- Count errors using the error counters.
- Display error counts on the status display.
- Transmit alarms from the optional remote control connector.

STATUS → **F•4** ERROR CONFIG → **F•3** GAMUT ERROR →

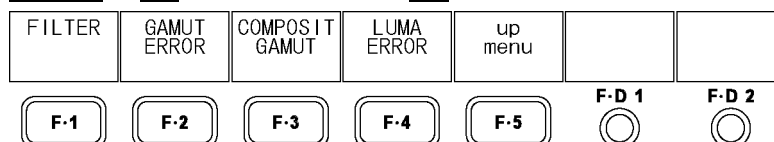


Figure 14-13 GAMUT ERROR menu

14.7.1 Turning the Filter ON and OFF

During the detection of gamut, composite gamut, or luminance errors, a low pass filter is set to remove transient errors.

To configure this filter, press **F•1** FILTER in the status menu.

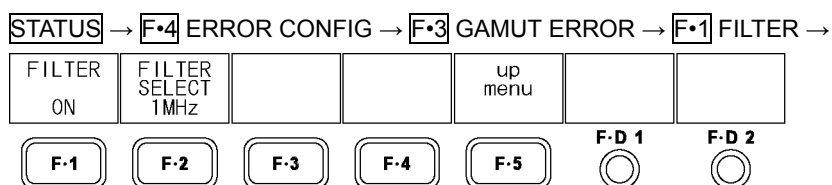


Figure 14-14 FILTER menu

To turn the filter on and off, follow the procedure below.

The settings that you specify here also apply to the 5 bar display.

[Reference] See section 12.7.1, “5-Bar Display Explanation”

Procedure

STATUS → **F•4** ERROR CONFIG → **F•3** GAMUT ERROR → **F•1** FILTER → **F•1** FILTER :
ON / OFF

14.7.2 Selecting the Filter Characteristic

When **F•1** FILTER is set to ON and the input signal is HD, to select the filter characteristic, follow the procedure below. When the input signal is SD, the filter characteristic is fixed at 1 MHz.

The settings that you specify here also apply to the 5 bar display.

[Reference] See section 12.7.1, “5-Bar Display Explanation”

Procedure

STATUS → **F•4** ERROR CONFIG → **F•3** GAMUT ERROR → **F•1** FILTER → **F•2** FILTER
SELECT : 1MHz / 2.8MHz

14.7.3 Detecting Gamut Errors

To detect gamut errors, press **F•2** GAMUT ERROR in the status menu.

STATUS → **F•4** ERROR CONFIG → **F•3** GAMUT ERROR → **F•2** GAMUT ERROR →

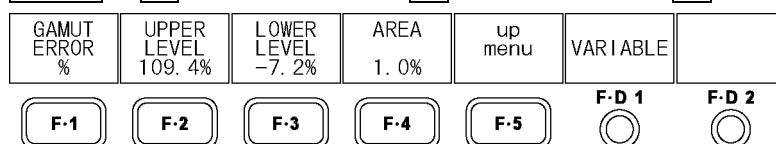


Figure 14-15 GAMUT ERROR menu

To turn gamut error detection on and off, follow the procedure below.

Procedure

[STATUS] → [F•4] ERROR CONFIG → [F•3] GAMUT ERROR → [F•2] GAMUT ERROR → [F•1]
GAMUT ERROR : % / mV / OFF

Settings

%:	Gamut errors are detected. You can set the detection levels as percentages.
mV:	Gamut errors are detected. You can set the detection levels in units of mV.
OFF:	Gamut errors are not detected.

14.7.4 Setting the Gamut Error Levels

To set the gamut error detection levels and the detection area, follow the procedures below.

These settings are available when [F•1] GAMUT ERROR is set to % or mV.

The settings that you make here also apply to the R, G, and B bars on the 5-bar display.

• Setting the Upper Error Detection Level

An error is detected when the input signal level exceeds the specified value.

If you press [F•D 1], the upper error detection level will return to its default value of 109.4 % or 765.8 mV.

Procedure

[STATUS] → [F•4] ERROR CONFIG → [F•3] GAMUT ERROR → [F•2] GAMUT ERROR → [F•2]
UPPER LEVEL → [F•D 1] VARIABLE
: 90.8% - 109.4% (When GAMUT ERROR is set to %)
: 635.6mV - 765.8mV (When GAMUT ERROR is set to mV)

• Setting the Lower Error Detection Level

An error is detected when the input signal level goes below the specified value.

If you press [F•D 1], the upper error detection level will return to its default value of -7.2 % or -50.4 mV.

Procedure

[STATUS] → [F•4] ERROR CONFIG → [F•3] GAMUT ERROR → [F•2] GAMUT ERROR → [F•3]
LOWER LEVEL → [F•D 1] VARIABLE
: -7.2% - 6.1% (When GAMUT ERROR is set to %)
: -50.4mV - 42.7mV (When GAMUT ERROR is set to mV)

• Setting the Error Detection Area

An error is detected when an error greater than or equal to the specified value occurs in the active picture. If you press [F•D 1], the error detection area will return to its default value of 1.0 %.

Procedure

[STATUS] → [F•4] ERROR CONFIG → [F•3] GAMUT ERROR → [F•2] GAMUT ERROR →
[F•4] AREA → [F•D 1] VARIABLE : 0.0% - 1.0% - 5.0%

14.7.5 Detecting Composite Gamut Errors

To detect composite gamut errors, press **F•3** COMPOSIT GAMUT in the status menu.

STATUS → **F•4** ERROR CONFIG → **F•3** GAMUT ERROR → **F•3** COMPOSIT GAMUT →

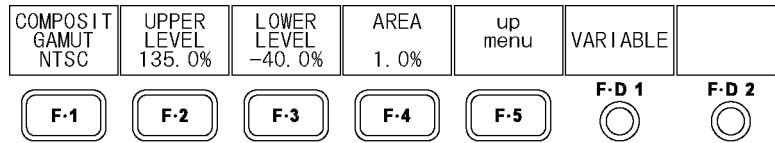


Figure 14-16 COMPOSIT GAMUT menu

To turn the detection of gamut errors in a pseudo-composite signal converted from the component signal on and off, follow the procedure below.

Procedure

STATUS → **F•4** ERROR CONFIG → **F•3** GAMUT ERROR → **F•3** COMPOSIT GAMUT → **F•1** COMPOSIT GAMUT : NTSC / PAL / OFF

Settings

NTSC:	Composite gamut errors are detected. Select this option when the composite display format is NTSC.
PAL:	Composite gamut errors are detected. Select this option when the composite display format is PAL.
OFF:	Composite gamut errors are not detected.

14.7.6 Setting the Composite Gamut Error Levels

To set the composite gamut error detection levels and the detection area, follow the procedures below.

These settings are available when **F•1** COMPOSIT GAMUT is set to NTSC or PAL.

The settings that you make here also apply to the CMP bar in the 5-bar display.

● Setting the Upper Error Detection Level

An error is detected when the input signal level exceeds the specified value.

If you press **F•D 1**, the upper error detection level will return to its default value of 135.0 % or 945.0 mV.

Procedure

STATUS → **F•4** ERROR CONFIG → **F•3** GAMUT ERROR → **F•3** COMPOSIT GAMUT → **F•2** UPPER LEVEL → **F•D 1** VARIABLE

: 90.0% - 135.0% (When COMPOSIT GAMUT is set to NTSC)

: 630.0mV - 945.0mV (When COMPOSIT GAMUT is set to PAL)

• Setting the Lower Error Detection Level

An error is detected when the input signal level goes below the specified value.

If you press **F•D 1**, the lower error detection level will return to its default value of -40.0% or -280.0mV.

Procedure

STATUS → **F•4** ERROR CONFIG → **F•3** GAMUT ERROR → **F•3** COMPOSIT GAMUT → **F•3** LOWER LEVEL → **F•D 1** VARIABLE
 : -40.0% - 20.0% (When COMPOSIT GAMUT is set to NTSC)
 : -280.0mV - 140.0mV (When COMPOSIT GAMUT is set to PAL)

• Setting the Error Detection Area

An error is detected when an error greater than or equal to the specified value occurs in the active picture. If you press **F•D 1**, the chroma gain will be set to its default value of 1.0 %.

Procedure

STATUS → **F•4** ERROR CONFIG → **F•3** GAMUT ERROR → **F•3** COMPOSIT GAMUT → **F•4** AREA → **F•D 1** VARIABLE : 0.0% - 1.0% - 5.0%

14.7.7 Detecting Luminance Errors

To detect luminance errors, press **F•4** LUMA ERROR in the status menu.

STATUS → **F•4** ERROR CONFIG → **F•3** GAMUT ERROR → **F•4** LUMA ERROR →

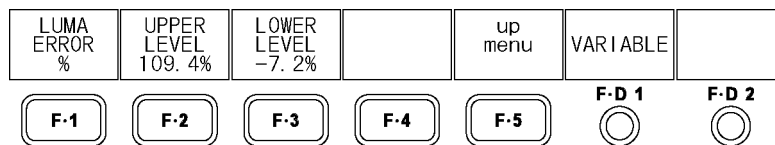


Figure 14-17 LUMA ERROR menu

To turn luminance error detection on and off, follow the procedure below.

Procedure

STATUS → **F•4** ERROR CONFIG → **F•3** GAMUT ERROR → **F•4** LUMA ERROR → **F•1**
 LUMA ERROR : % / mV / OFF

Settings

%:	Luminance errors are detected. You can set the detection levels as percentages.
mV:	Luminance errors are detected. You can set the detection levels in units of mV.
OFF:	Luminance errors are not detected.

14.7.8 Setting the Luminance Error Levels

To set the luminance error detection levels, follow the procedures below.
 These settings are available when **F•1** LUMA ERROR is set to % or mV.
 The settings that you make here also apply to the Y bar in the 5-bar display.

- **Setting the Upper Error Detection Level**

An error is detected when the input signal level exceeds the specified value.
 If you press **F•D 1**, the upper error detection level will return to its default value of 109.4 % or 765.8 mV.

Procedure

STATUS → **F•4** ERROR CONFIG → **F•3** GAMUT ERROR → **F•4** LUMA ERROR → **F•2**
 UPPER LEVEL → **F•D 1** VARIABLE
 :90.8% - 109.4% (When LUMA ERROR is set to %)
 :635.6mV - 765.8mV (When LUMA ERROR is set to mV)

- **Setting the Lower Error Detection Level**

An error is detected when the input signal level goes below the specified value.
 If you press **F•D 1**, the lower error detection level will return to its default value of -7.2 % or -50.4 mV.

Procedure

STATUS → **F•4** ERROR CONFIG → **F•3** GAMUT ERROR → **F•4** LUMA ERROR → **F•3**
 LOWER LEVEL → **F•D 1** VARIABLE
 : -7.2% - 6.1% (When LUMA ERROR is set to %)
 : -50.4mV - 42.7mV (When LUMA ERROR is set to mV)

14.8 Clearing Errors

To reset the error counts on the status display and on the error counters to zero, follow the procedure below.
 Also, the LAPSED indication at the upper left of the screen is reset to 00:00:00.

Procedure

STATUS → **F•5** ERROR CLEAR

15. MULTI-SCREEN DISPLAY FEATURE

The LV 5382 has five display modes: picture display, video signal waveform display, vector display, audio display, and status display. 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.

To switch between the multi- and single-screen displays, press MULTI.

To configure the multi-screen display, hold down MULTI for 0.5 seconds or more, or use the function keys and function dials on the multi-screen display.

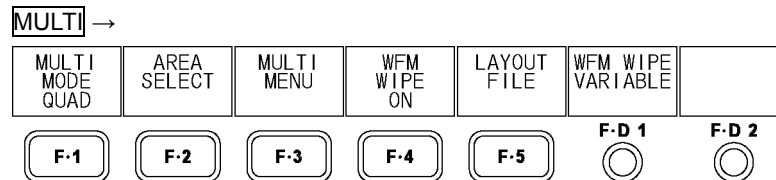


Figure 15-1 Multi-screen display menu

15.1 Switching between the Single-Screen and Multi-Screen Displays

You can switch between the single- and multi-screen displays by pressing MULTI.

Settings

ON (lit): The multi-screen display is shown.

OFF (not lit): The single-screen display is shown (this is the default value).

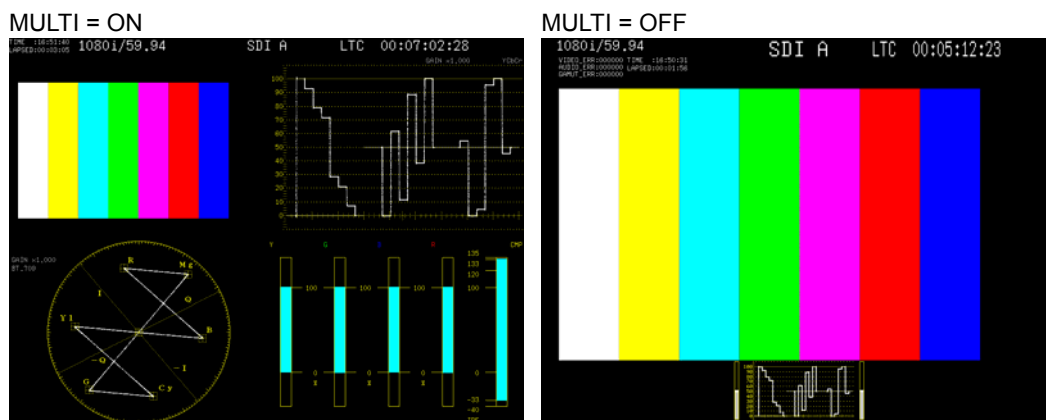


Figure 15-2 Switching between the single- and multi-screen displays

15.2 Selecting the Display Format

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

Procedure

MULTI → **F-1** MULTI MODE : DUAL / QUAD / COMPARE

Settings

DUAL: The screen is divided into two areas.

QUAD: The screen is divided into four areas. (This is the default setting in 2D mode.)

COMPARE: The picture display is shown in the upper half of the screen, and the video signal waveform or vector display is shown in the bottom half of the screen.

This setting is available in 3D mode. (This is the default setting in 3D mode.)

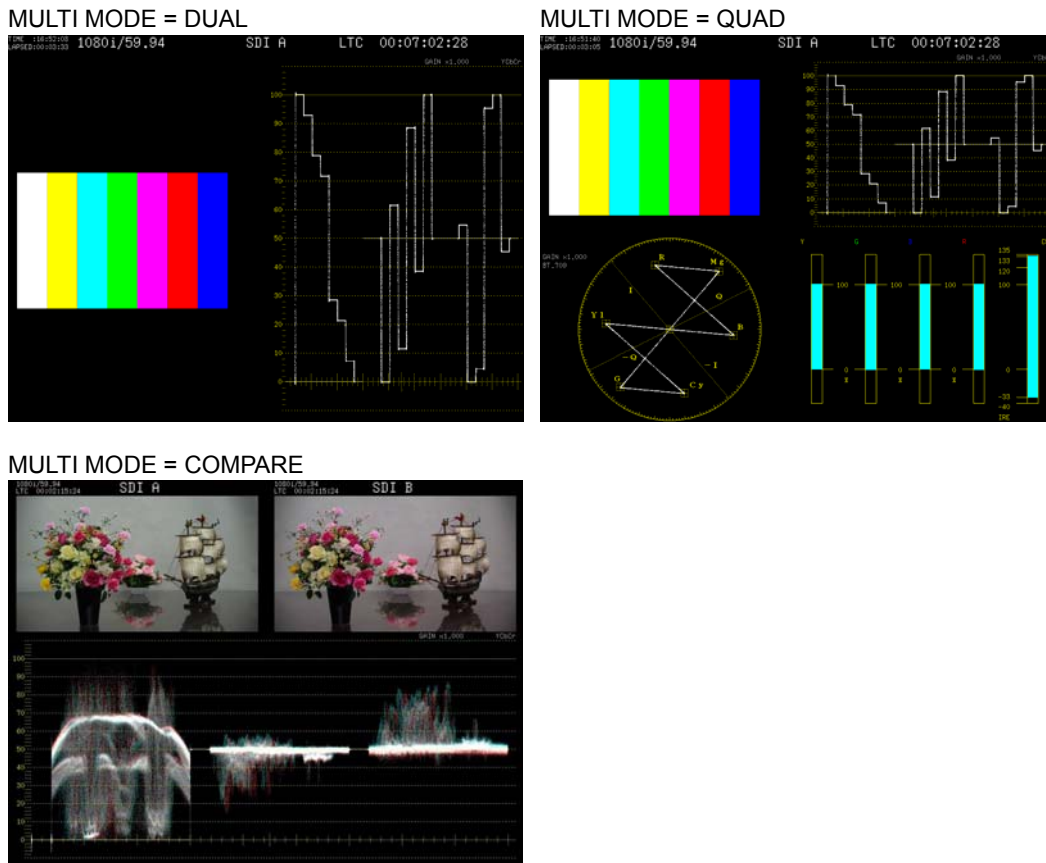


Figure 15-3 Selecting the display format

15.3 Selecting the Displays in Each Area

When **[F•1]** MULTI MODE is set to DUAL or QUAD, to assign display modes to the different areas of the screen, follow the procedure below. You cannot assign the same display mode to multiple areas.

- * The location of each area is indicated on the function keys by an apostrophe or asterisk displayed around a "+" when MULTI MODE is set to QUAD, and around a "|" when MULTI MODE is set to DUAL.

Procedure (When MULTI MODE is set to QUAD)

[MULTI] → **[F•2]** AREA SELECT
 → **[F•1]** AREA1 [**+**] : PIC / WFM / VECT / 5BAR / AUDIO / STATUS
 → **[F•2]** AREA2 [**+**] : PIC / WFM / VECT / 5BAR / AUDIO / STATUS
 → **[F•3]** AREA3 [**+**] : PIC / WFM / VECT / 5BAR / AUDIO / STATUS
 → **[F•4]** AREA4 [**+**] : PIC / WFM / VECT / 5BAR / AUDIO / STATUS

Procedure (When MULTI MODE is set to DUAL)

[MULTI] → **[F•2]** AREA SELECT
 → **[F•1]** AREA1 [*****] : PIC / WFM / VECT / 5BAR / AUDIO / STATUS
 → **[F•2]** AREA2 [*****] : PIC / WFM / VECT / 5BAR / AUDIO / STATUS

15.4 Selecting the Layout

When **F•1** MULTI MODE is set to COMPARE, to select the layout, follow the procedure below.

Procedure

MULTI → **F•2** LAYOUT SELECT : WFM+PIC / VEC+PIC

Settings

WFM+PIC: The picture is shown on the left and right sides of the upper part of the screen, and the video signal waveforms are shown on top of each other on the bottom part of the screen.

VEC+PIC: The picture is shown on the left and right sides of the upper part of the screen, and the vectors are shown on top of each other on the bottom part of the screen.

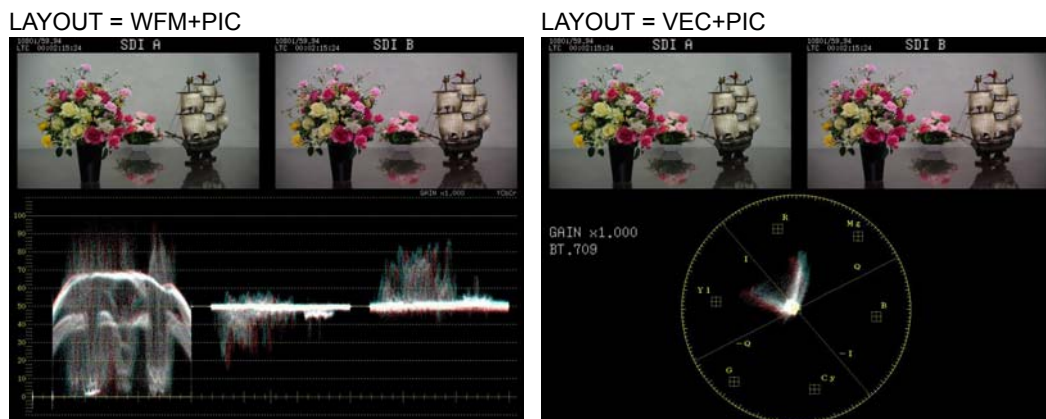


Figure 15-4 Selecting the layout

15.5 Configuring the Display Mode Settings

To set a display mode from the multi-screen display, follow the procedure below. For details about a particular display mode's menu, see the appropriate display mode explanation.

Generally, changing the settings here will also change the single-screen display settings.

Function keys (from **F•1** MULTI PIC to **F•5** MULTI STATUS) for menus of display modes that are currently hidden are not displayed.

Procedure

MULTI → F•3 MULTI MENU → F•1 MULTI PIC
→ F•2 MULTI WFM
→ F•3 MULTI VECT → F•1 VECT
→ F•2 5BAR
→ F•4 MULTI AUDIO
→ F•5 MULTI STATUS

15.6 Configuring the Wipe Display Settings

When **F•2** LAYOUT SELECT is set to WFM+PIC in 3D mode (L/R DUAL or FRM PACK) or when SIMUL MODE in the video signal waveform menu is set to MIX, to display the video signal waveforms separately on the left and right sides of the screen, follow the procedure below.

You can use **F•D 1** WFM WIPE VARIABLE to move the boundary line. Press **F•D 1** to move the boundary line to the center of the screen.

[Reference] SIMUL MODE → Section 11.10.1, “Selecting the Simul Mode Display Format”

Procedure

[MULTI] → **F•4** WFM WIPE : ON / OFF

Settings

- ON:** The left eye video signal and the right eye video signal are divided by boundary lines and displayed. The left eye video signal is displayed on the left side of the screen, and the right eye video signal is displayed on the right side of the screen.
- OFF:** The left eye video signal and right eye video signal are displayed on top of each other.

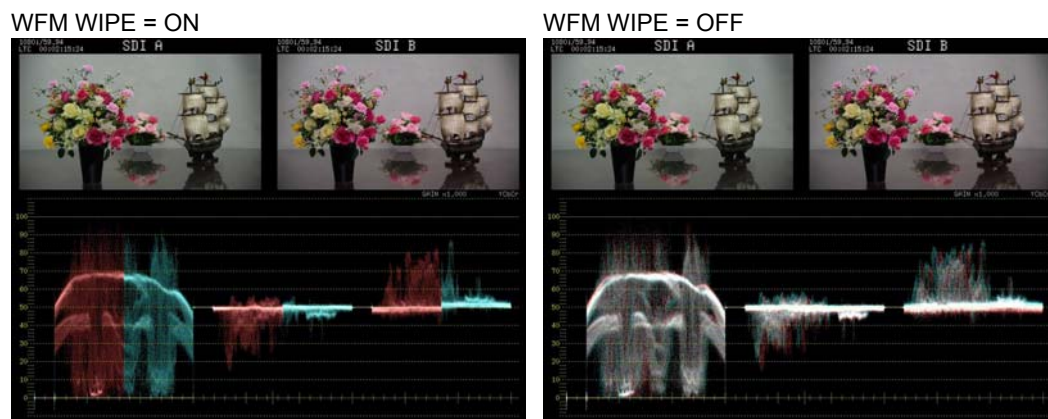


Figure 15-5 Wipe display settings

15.7 User Layout

You can use the user layout feature to select a preset display layout. To specify a layout, contact your local LEADER agent.

15.7.1 User Layout Display

To display user layouts, follow the procedure below.

1. **Connect a USB memory device that has user layout files to the LV 5382.**

Make sure that the folder structure on the USB memory device is the same as is shown below.

```

└─ USB memory device
   └─ LV5382_USER
      └─ LAYOUT
         └─ layout.txt
  
```

2. Press **MULTI** and then **F•5** LAYOUT FILE.
3. Press **F•1** ALL COPY USB -> INT and then **F•1** COPY YES.

The user layout files are copied from the USB memory device to the LV 5382.

To cancel the copy operation, press **F•3** COPY NO.

4. Set **F•1** MULTI MODE to USER.

This setting is not available in 3D mode. Use it in 2D mode.

5. Press **F•2** USER LAYOUT to select the layout to display.

In 2D mode (single input), you can select SINGLE1 or SINGLE2, in 2D mode (simul), you can select SIMUL1 or SIMUL2.

15.7.2 Copying All User Layouts

To copy all the user layouts from the LV 5382 to a USB memory device, follow the procedure below. To cancel the copy operation, press **F•3** COPY NO.

To copy all user layouts at once, you have to use a USB memory device that already has user layouts on it. Note that any existing user layouts on the USB memory device will be overwritten during the copy operation.

Procedure

MULTI → **F•5** LAYOUT FILE → **F•2** ALL COPY INT -> USB → **F•1** COPY YES

16. REMOTE FEATURE (OPTION)

The remote feature is a factory option (LV 5382 OP72; sold separately). By adding this option, you can use the remote control connector on the rear panel to load presets, transmit alarm signals, and perform other operations. Use the 15-pin D-sub connector that comes with the option.

16.1 Remote Control Connector Specifications

This section contains a diagram of the remote control connector, displayed as it appears on the rear panel.

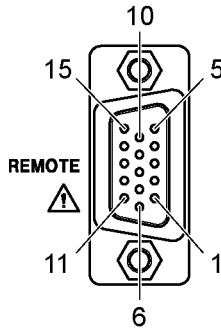


Figure 16-1 Remote control connector (15-pin D-sub female, inch screws)

The remote control connector pinout varies depending on REMOTE MODE in the system settings. The mode when REMOTE MODE is set to BIT or BINARY is called normal mode. The mode when it is set to COMMAND is called command mode.

[Reference] SIMUL MODE → Section 5.6.1, “Selecting Remote Mode”

Table 16-1 Remote control connector pinout

Pin No.	I/O	Normal Mode		Command Mode	
		Name	Description	Name	Description
1	-	GND	Grounding	GND	Grounding
2	I	/P1	Loads preset 1	/F1	Function 1
3	I	/P2	Loads preset 2	/F2	Function 2
4	I	/P3	Loads preset 3	/F3	Function 3
5	I	/P4	Loads preset 4	/F4	Function 4
6	I	/P5	Loads preset 5	/F5	Function 5
7	I	/P6	Loads preset 6	/F6	Function 6
8	I	/P7	Loads preset 7	/F7	Function 7
9	I	/P8	Loads preset 8	/F8	Function 8
10	I	/ACH	Selects SDI channel A	COMMAND1	Command 1
11	I	/BCH	Selects SDI channel B	COMMAND2	Command 2
12	I	/TALLY1	Red tally display	COMMAND3	Command 3
13	I	/TALLY2	Green tally display or SDI/HDMI switching	/STROBE	Strobe
14	O	ALARM	Alarm output	ALARM	Alarm output
15	-	GND	Grounding	GND	Grounding

In command mode, the functions that are assigned to pins 2 to 9 (/F1 to /F8) vary depending on the settings of pins 10 to 12 (COMMAND1 to COMMAND3).

Table 16-2 Command mode functions

Pin No.	Name	Function			
		Load Preset (BIT)	Load Preset (BINARY)	Switch Input Signal	Tally Indication
10	COMMAND1	H	L	L	H
11	COMMAND2	H	H	L	H
12	COMMAND3	H	H	H	L
2	/F1	Recall 1	Recall 1 (LSB)	Selects SDI channel A	Displays the channel A tally (red)
3	/F2	Recall 2	Recall 2	Selects SDI channel B	Displays the channel B tally (red)
4	/F3	Recall 3	Recall 3	SDI/HDMI switching	-
5	/F4	Recall 4	Recall 4	-	-
6	/F5	Recall 5	Recall 5 (MSB)	-	Displays the channel A tally (green)
7	/F6	Recall 6	-	-	Displays the channel B tally (green)
8	/F7	Recall 7	-	-	-
9	/F8	Recall 8	-	-	-

16.2 Control

• Normal Mode

The input connectors respond to active-low signals. To configure a setting, apply a stable signal for at least 350 ms. After configuring a setting, wait at least 1 second before configuring the next setting.

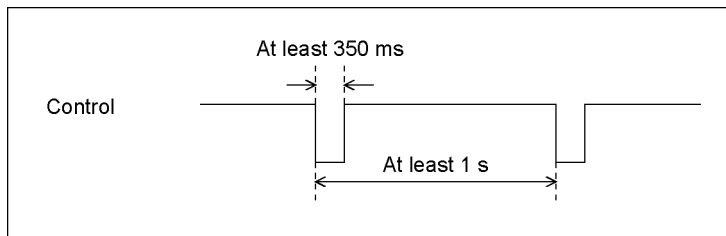


Figure 16-2 Remote control timing 1

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

16. REMOTE FEATURE (OPTION)

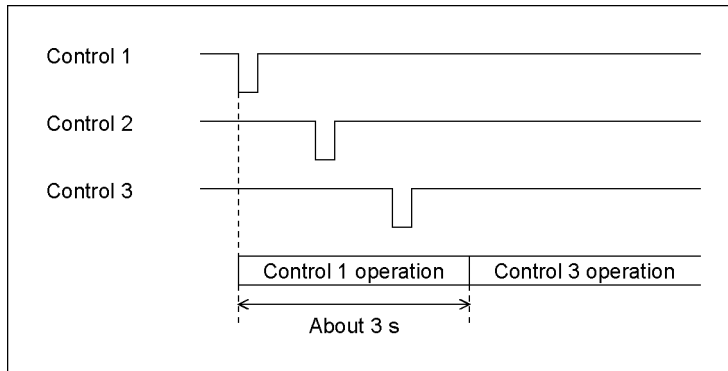


Figure 16-3 Remote control timing 2

- **Command Mode**

Strobe signals are used for command mode control. Data is retrieved when the strobe signal is at low level. Strobe signals should maintain a stable state for at least 350 ms. Be careful because changing a command or function setting while the strobe signal is at low level can result in unexpected settings. (The correct setting will return after some time.)

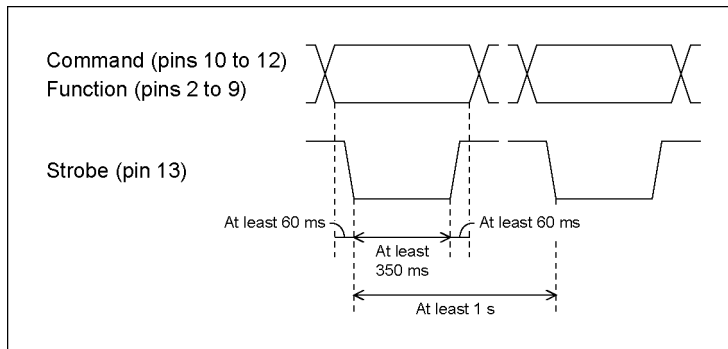


Figure 16-4 Remote control timing

16.3 Recalling Presets

You can use pins 2 through 9 of the remote control connector to load presets.

There are two methods for loading presets: BIT and BINARY. With BIT, preset numbers 1 to 8 can be loaded. With BINARY, all 30 presets can be loaded.

- **Normal Mode**

Use REMOTE MODE in the system settings to switch between BIT and BINARY.

[Reference] REMOTE MODE → Section 5.6.1, “Selecting Remote Mode”

- **Command Mode**

Set “load preset (BIT)” (pin 10=H, pin 11=H, pin 12=H) or “load preset (BINARY)” (pin 10=L, pin 11=H, pin 12=H).

16. REMOTE FEATURE (OPTION)

Table 16-3 Loading presets

BIT								BINARY					Loaded Preset No.
pin 9	pin 8	pin 7	pin 6	pin 5	pin 4	pin 3	pin 2	pin 6	pin 5	pin 4	pin 3	pin 2	
H	H	H	H	H	H	H	L	H	H	H	H	L	1
H	H	H	H	H	H	L	H	H	H	H	L	H	2
H	H	H	H	H	L	H	H	H	H	H	L	L	3
H	H	H	H	L	H	H	H	H	H	L	H	H	4
H	H	H	L	H	H	H	H	H	H	L	H	L	5
H	H	L	H	H	H	H	H	H	H	L	L	H	6
H	L	H	H	H	H	H	H	H	H	L	L	L	7
L	H	H	H	H	H	H	H	H	L	H	H	H	8
								H	L	H	H	L	9
								H	L	H	L	H	10
								H	L	H	L	L	11
								H	L	L	H	H	12
								H	L	L	H	L	13
								H	L	L	L	H	14
								H	L	L	L	L	15
								L	H	H	H	H	16
								L	H	H	H	L	17
								L	H	H	L	H	18
								L	H	H	L	L	19
								L	H	L	H	H	20
								L	H	L	H	L	21
								L	H	L	L	H	22
								L	H	L	L	L	23
								L	L	H	H	H	24
								L	L	H	H	L	25
								L	L	H	L	H	26
								L	L	H	L	L	27
								L	L	L	H	H	28
								L	L	L	H	L	29
								L	L	L	L	H	30

16.4 Input Signal Switching

• Normal Mode

Pin 10 (/ACH), pin 11 (/BCH), and pin 13 (/TALLY2) of the remote control connector are used for input signal switching

To switch between SDI and HDMI, you need to set FUNCTION SELECT in the system settings to HDMI SEL.

[Reference] FUNCTION SELECT → Section 5.6.4, “Selecting the Function to Assign to the Remote Control Connector”

• Command Mode

Set “switch input signal” (pin 10=L, pin 11=L, pin 12=H), and then use pins 2 to 4 (/F1 to /F3).

Table 16-4 Input signal switching

Pin 10 (/ACH)	Pin 11 (/BCH)	Pin 13 (/TALLY2)	Normal Mode
Pin 2 (/F1)	Pin 3 (/F2)	Pin 4 (/F3)	Command Mode
L	H	H	Selects SDI channel A
H	L	H	Selects SDI channel B
H	H	L	SDI/HDMI switching

16.5 Tally Indication

• Normal Mode

Pin 12 (/TALLY1) and pin 13 (/TALLY2) of the remote control connector are used for the display of the tally indication. To use the green tally, it is necessary to set FUNCTION SELECT in the system settings to TALLY_G.

[Reference] FUNCTION SELECT → Section 5.6.4, “Selecting the Function to Assign to the Remote Control Connector”

Table 16-5 Displaying tallies (normal mode)

Pin 12 (/TALLY1)	Pin 13 (/TALLY2)	Operation
L	H	Red tally display
H	L	Green tally display
L	L	The left half of the tally indication is red, and the right half is green.

12p = L / 13p = L



Figure 16-5 Displaying tallies

- **Command Mode**

Set “tally indication” (pin 10=H, pin 11=H, pin 12=L), and then use pin 2 (/F1), pin 3 (/F2), pin 6 (/F5), and pin 7 (/F6). If you set both red and green to on for the same channel, the right half is displayed in green, and the left half is displayed in red.

Table 16-6 Displaying tallies (command mode)

Pin 2 (/F1)	Pin 3 (/F2)	Pin 6 (/F5)	Pin 7 (/F6)	Operation
L	H	H	H	Displays the tally of channel A in red
H	L	H	H	Displays the tally of channel B in red
H	H	L	H	Displays the tally of channel A in green
H	H	H	L	Displays the tally of channel B in green

16.6 Generating Alarms

The alarm signal is transmitted from pin 14 (ALARM) of the remote control connector when the LV 5382 internal temperature reaches or exceeds a specific value, 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•4** ERROR CONFIG in the status menu.

The alarm signal is a 3.3 V LV-TTL level signal. You can select the alarm signal polarity by setting ALARM POLARITY in the system settings. You can also use ALARM SELECT to select the channel that alarms will be detected on.

[Reference] ALARM POLARITY → Section 5.6.2, “Selecting the Alarm Polarity”

ALARM SELECT → Section 5.6.3, “Selecting the Alarm Channel”

17. APPENDIX

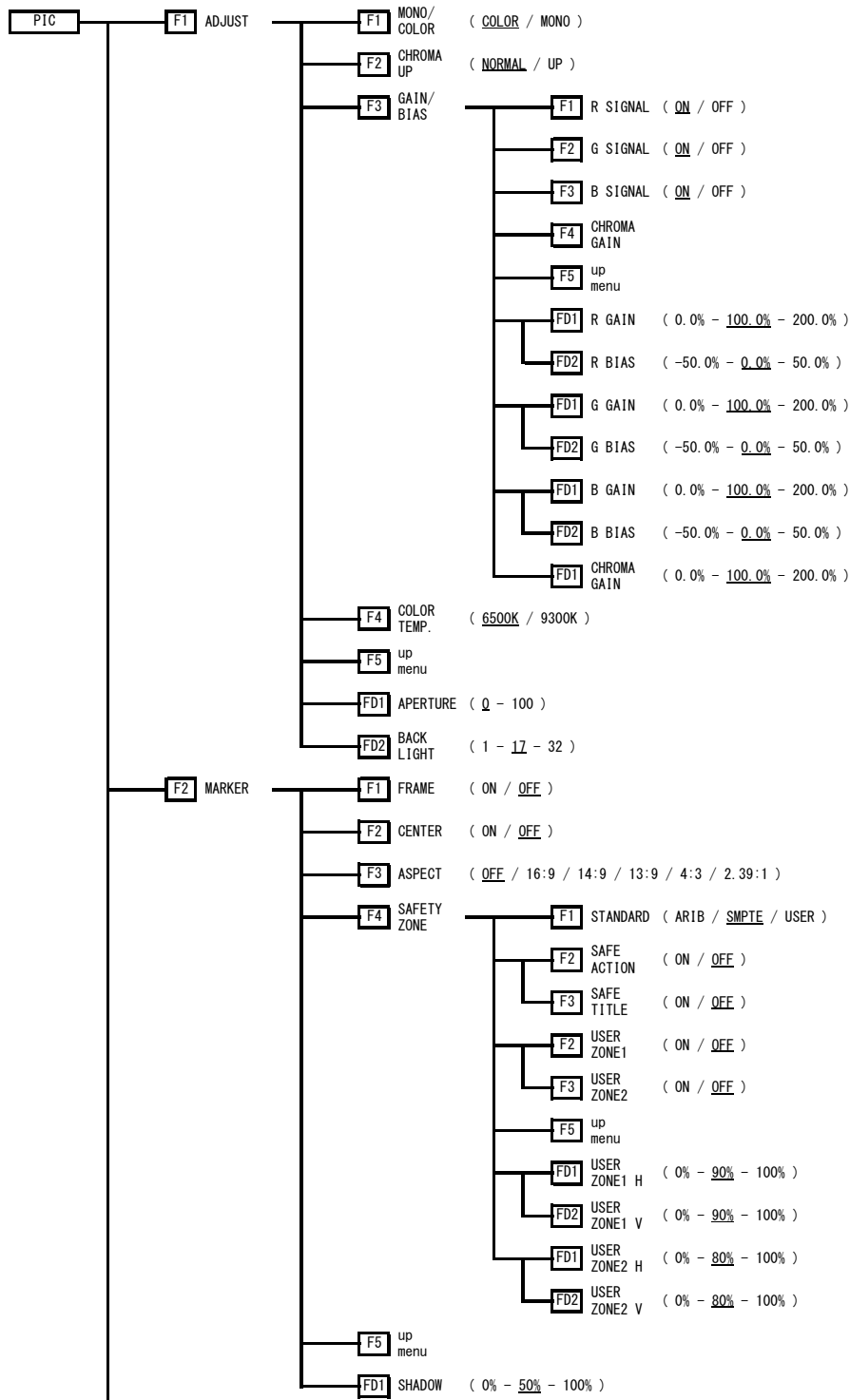
17.1 Menu Tree

This chapter shows the menu trees that correspond to each key.

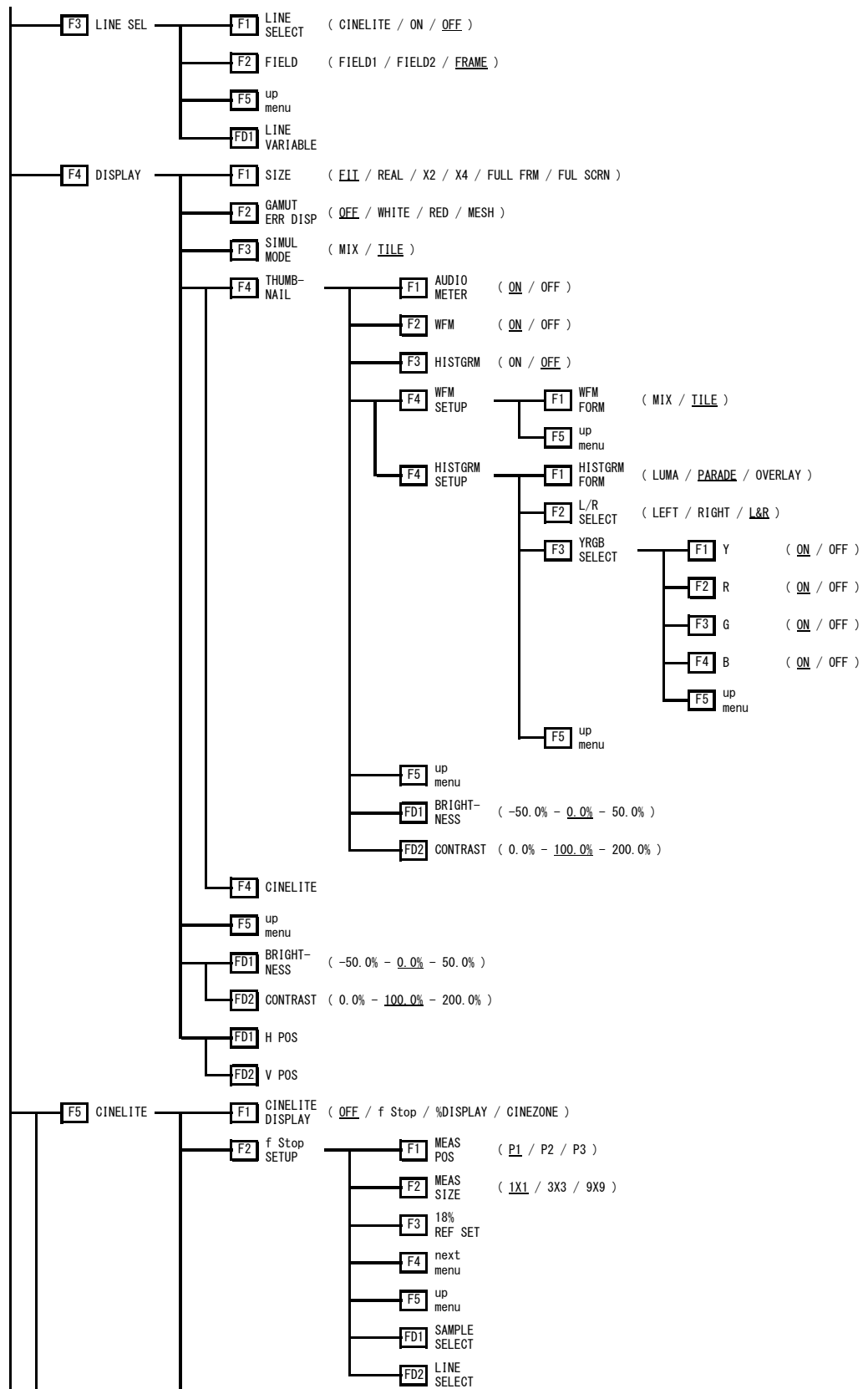
The default settings are underlined.

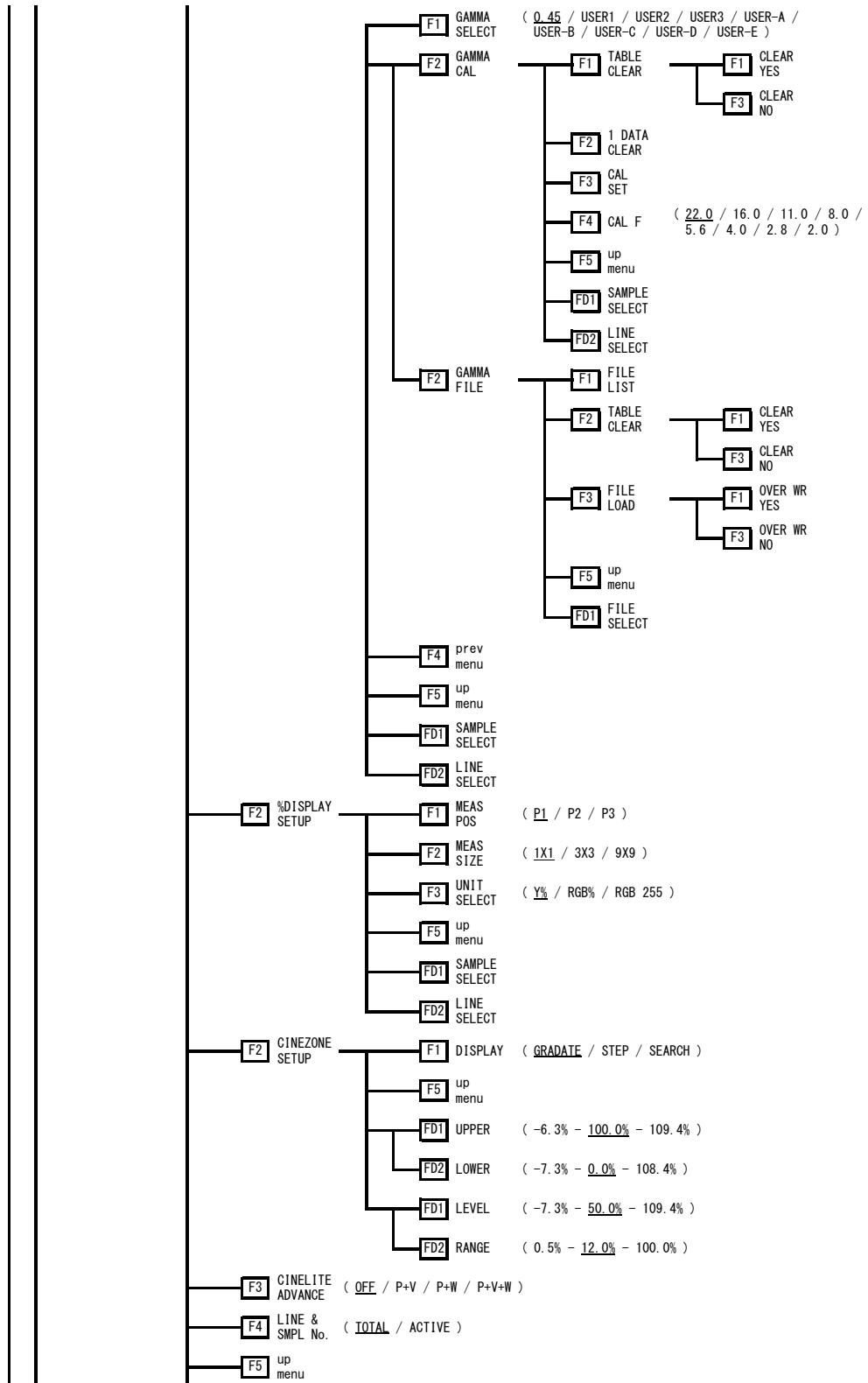
The menus that are displayed vary depending on the LV 5382 settings and whether a USB memory device is connected to the LV 5382.

17.1.1 Picture Menu

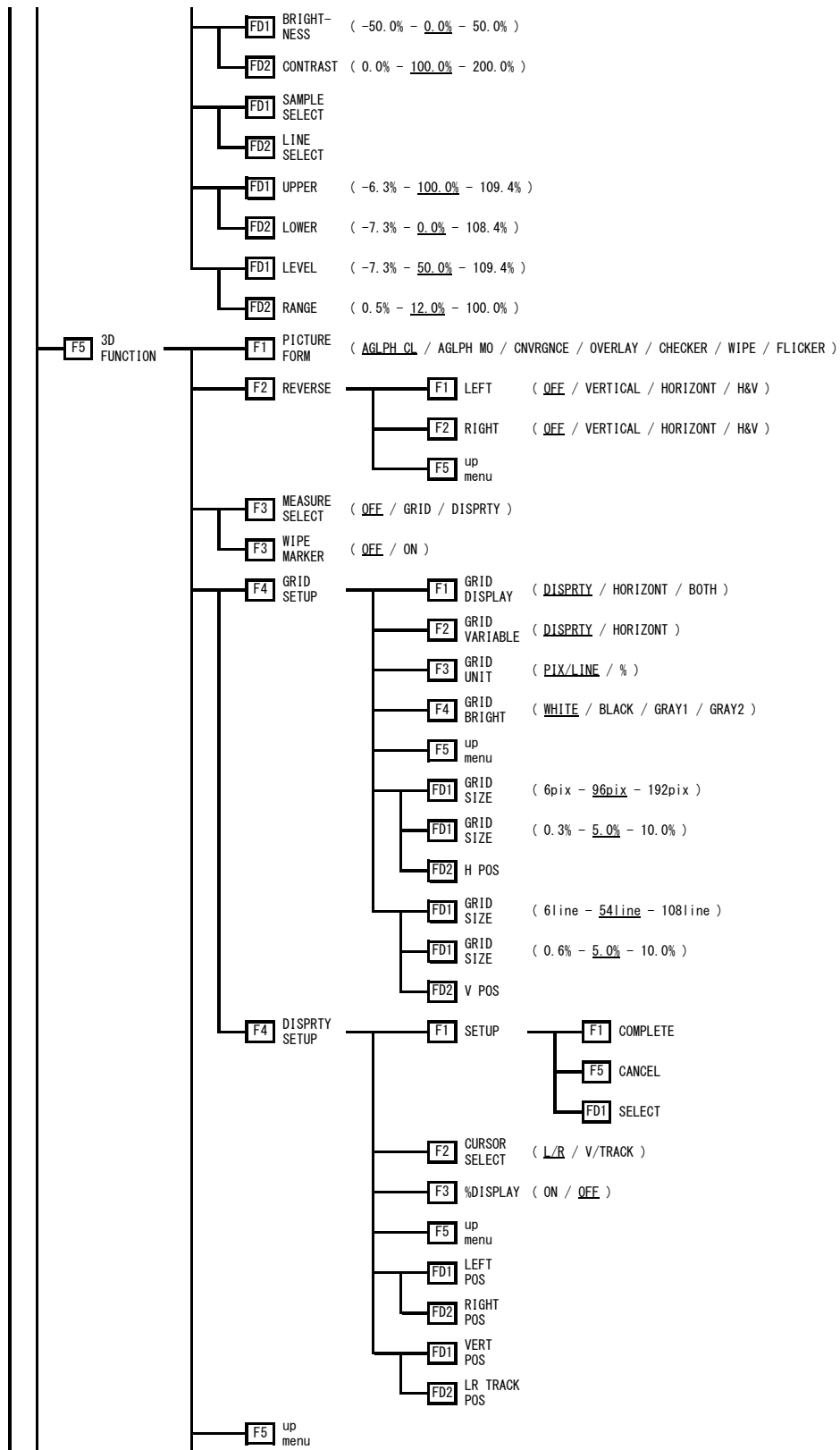


17. APPENDIX

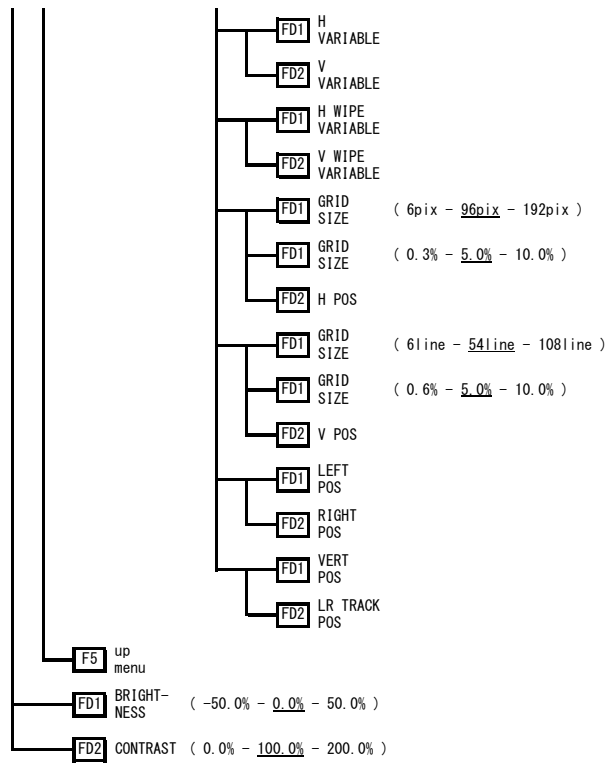




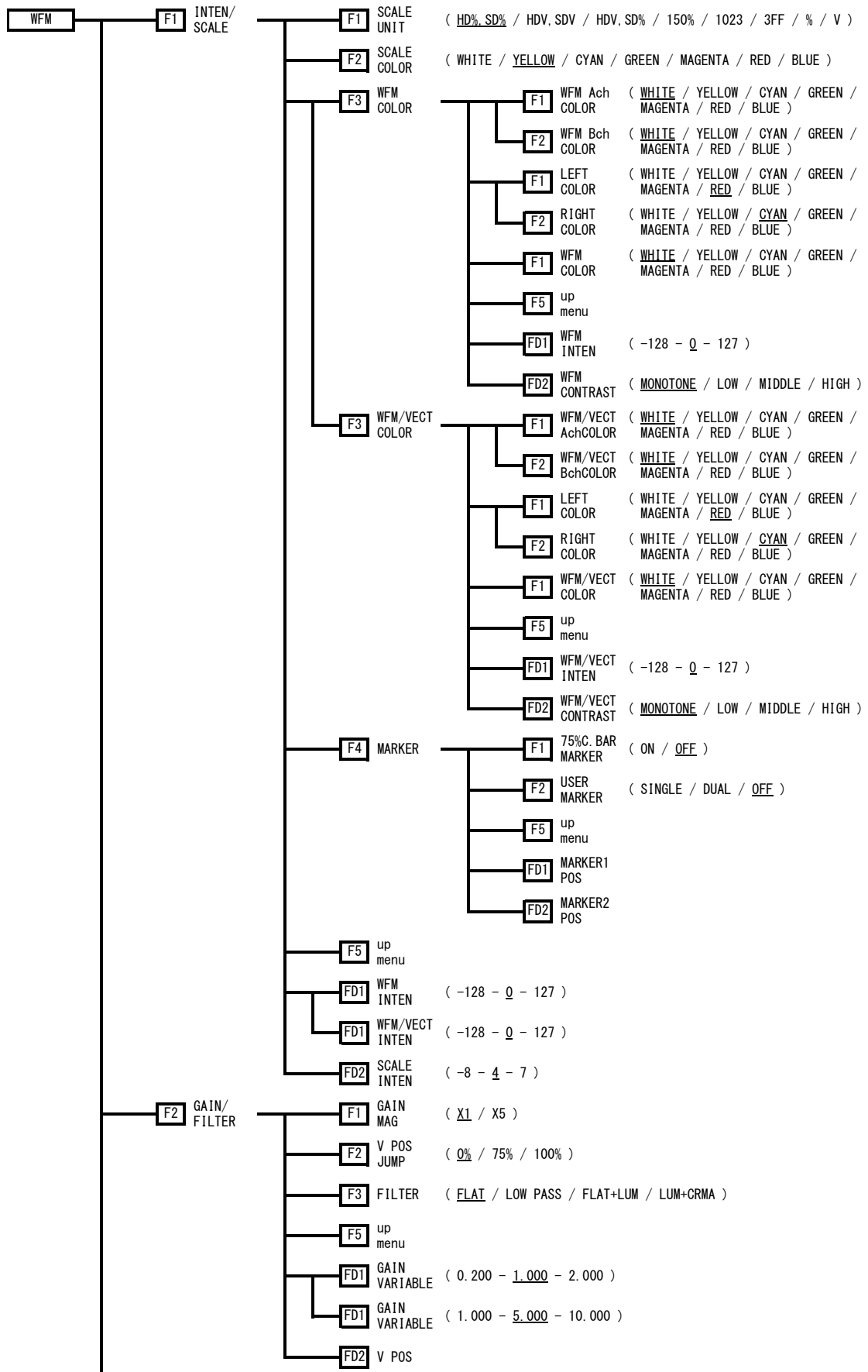
17. APPENDIX



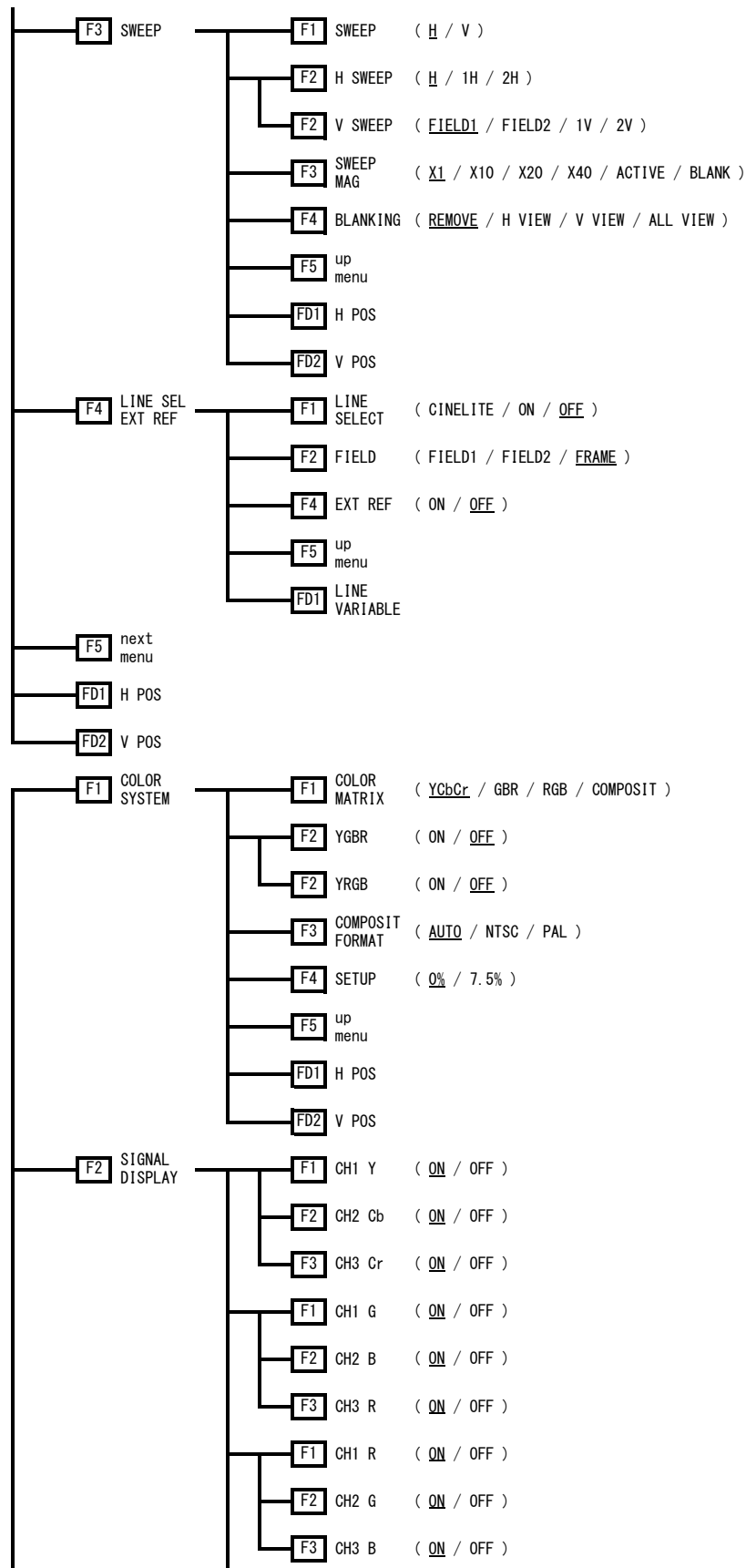
17. APPENDIX



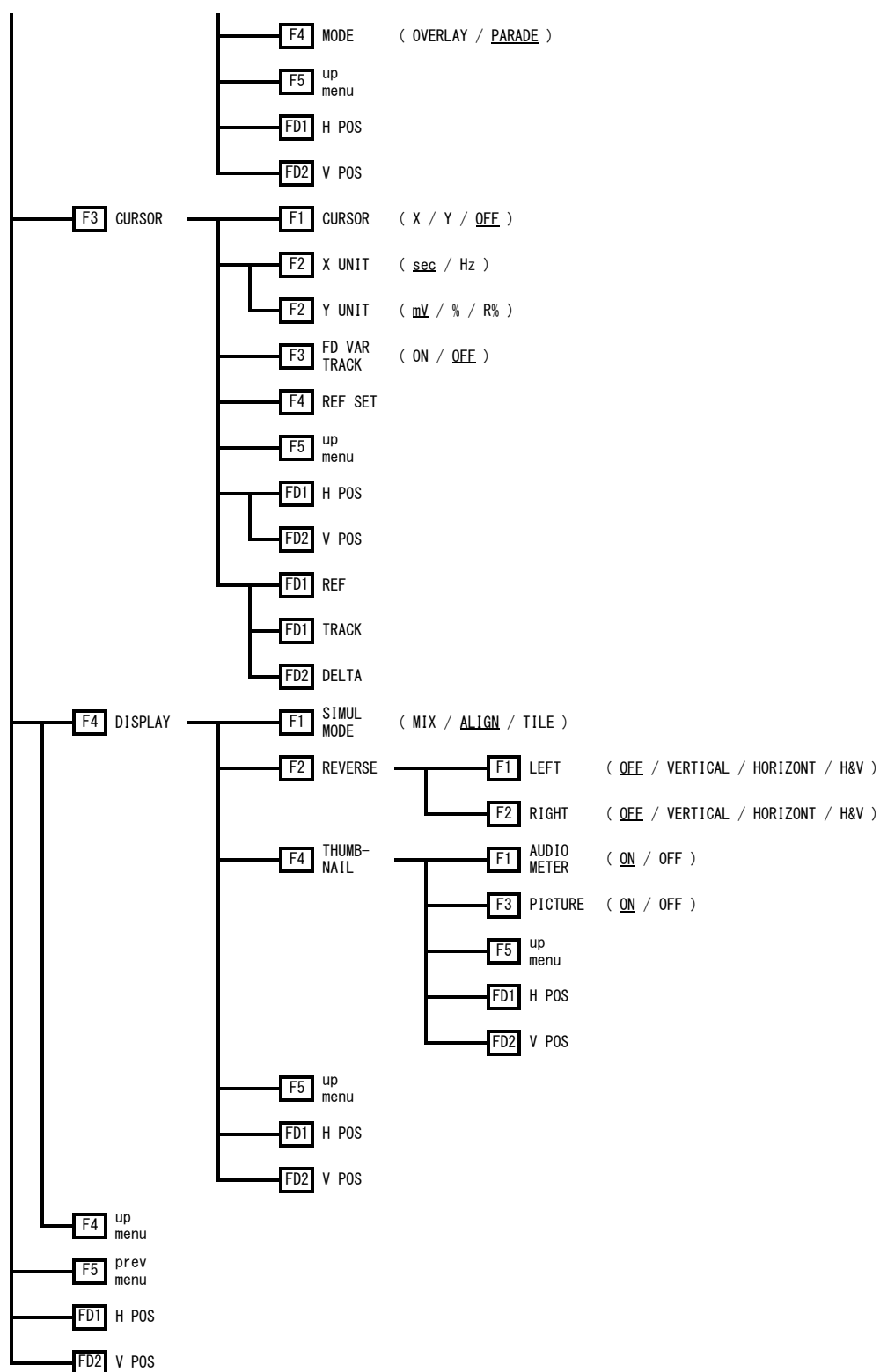
17.1.2 Video Signal Waveform Menu



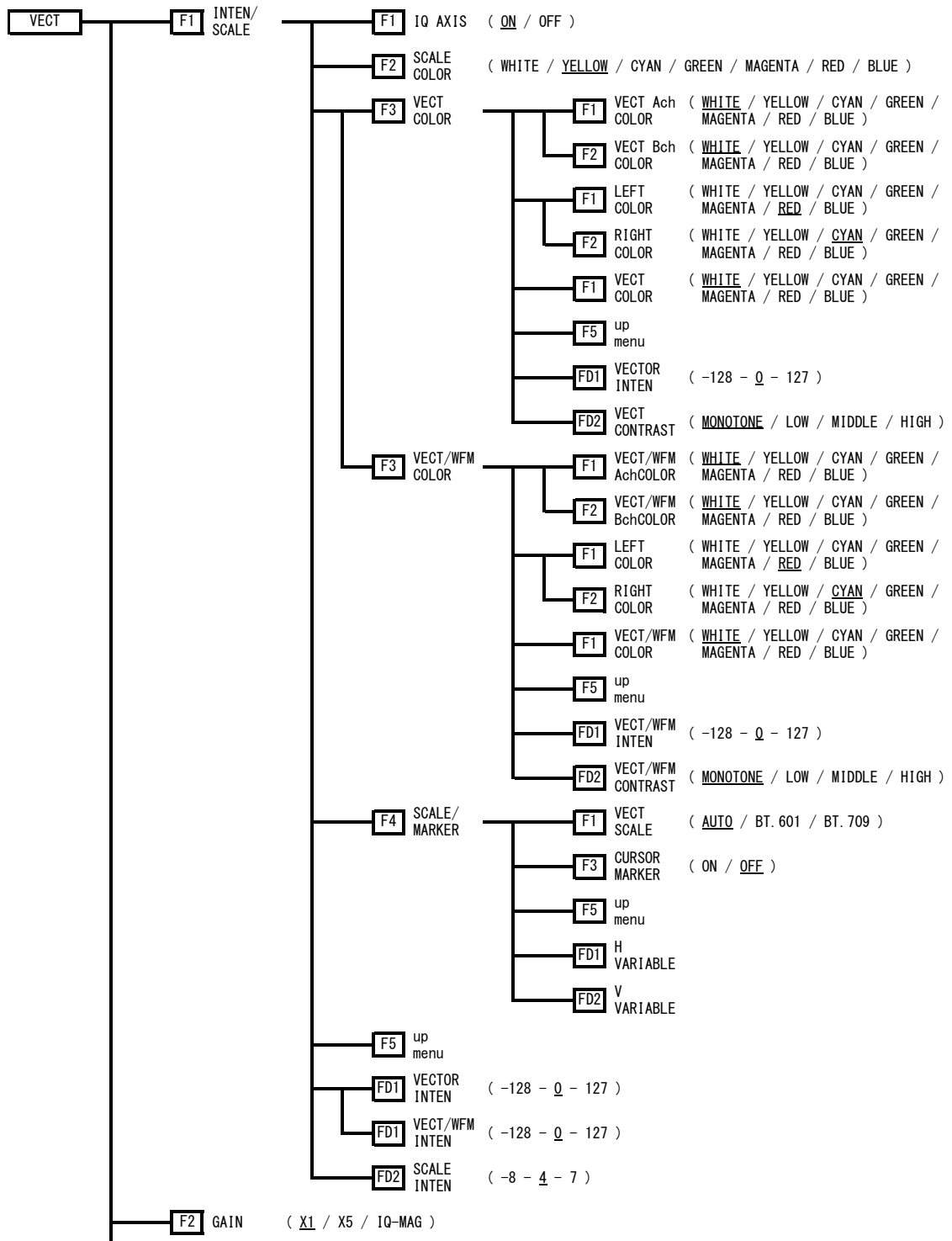
17. APPENDIX



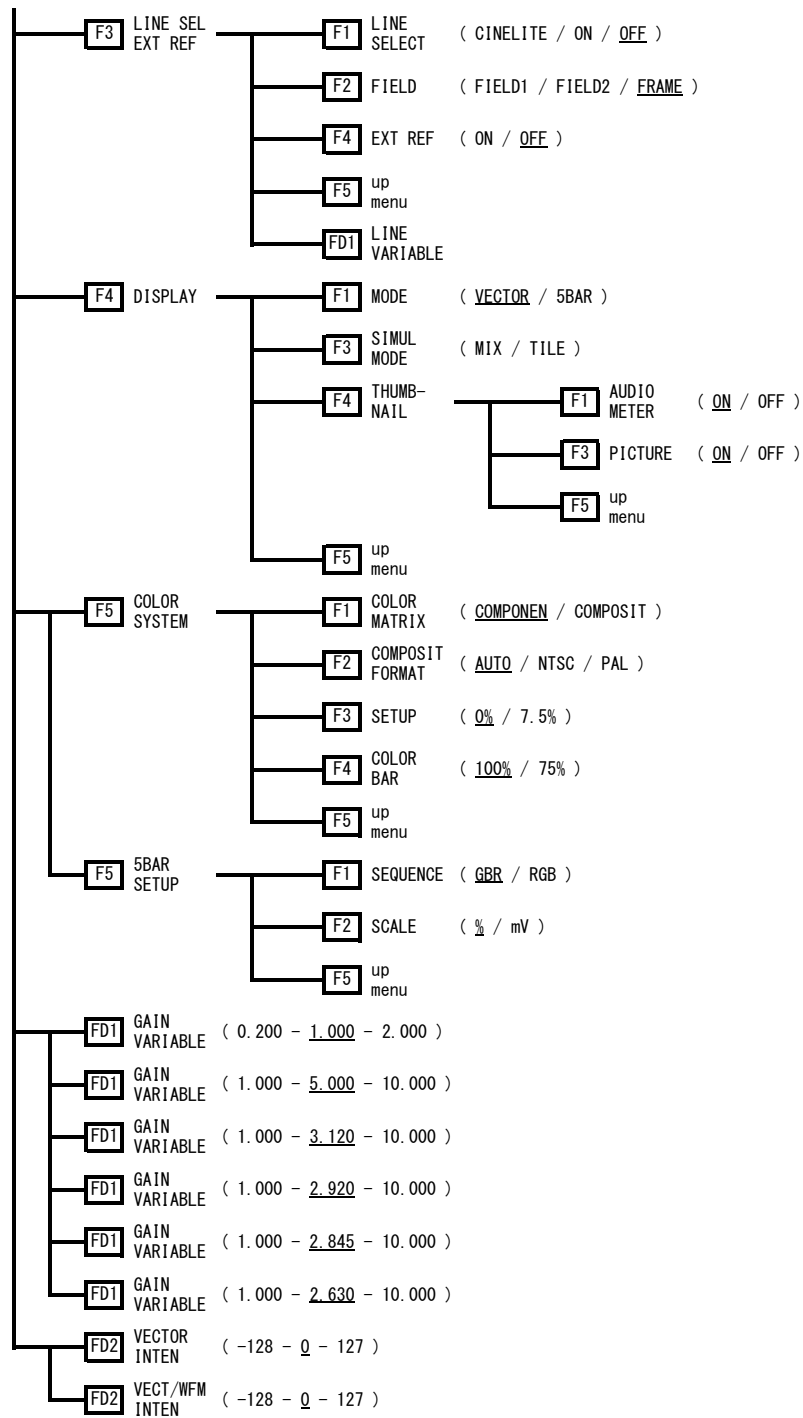
17. APPENDIX



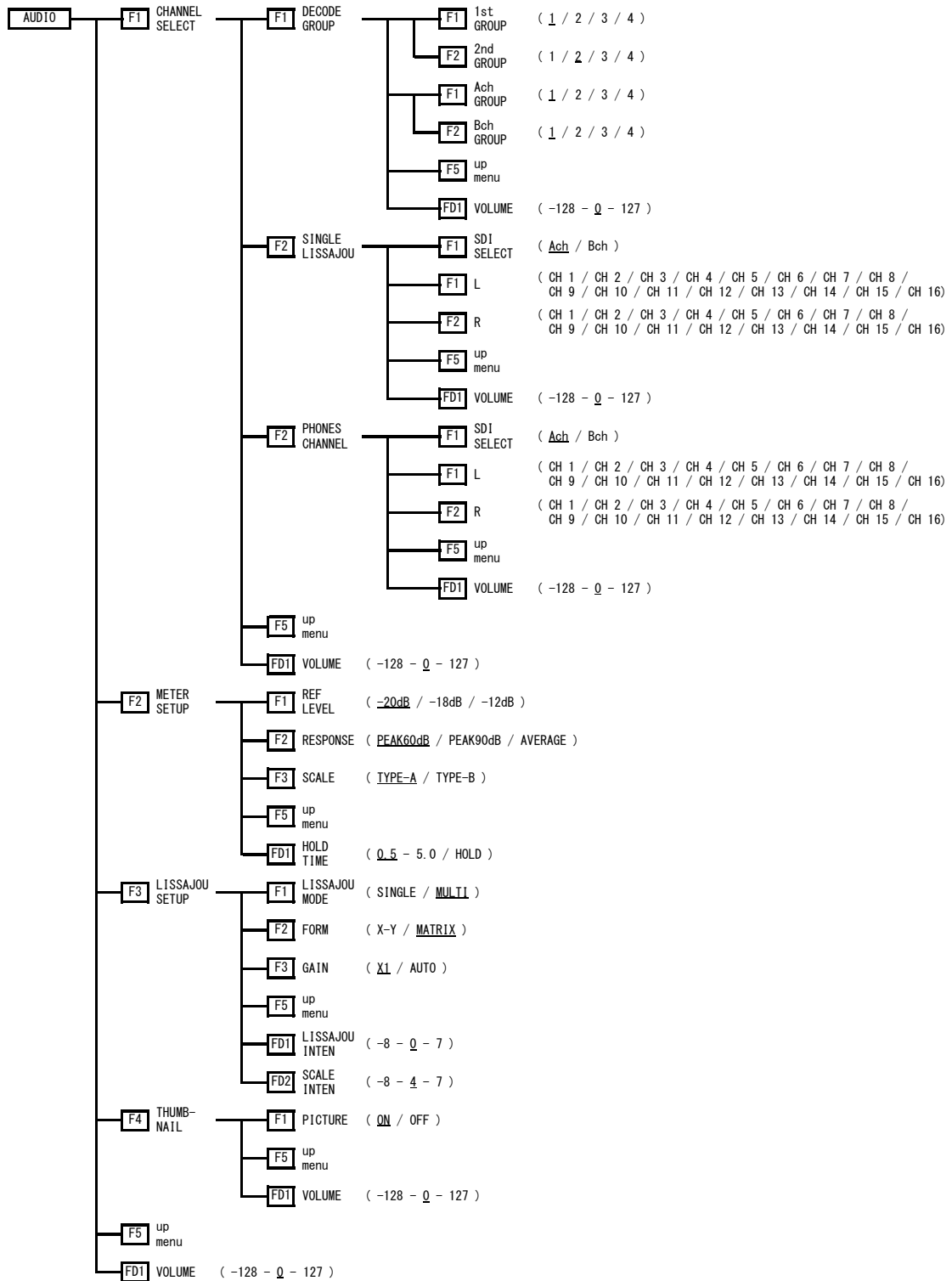
17.1.3 Vector Menu



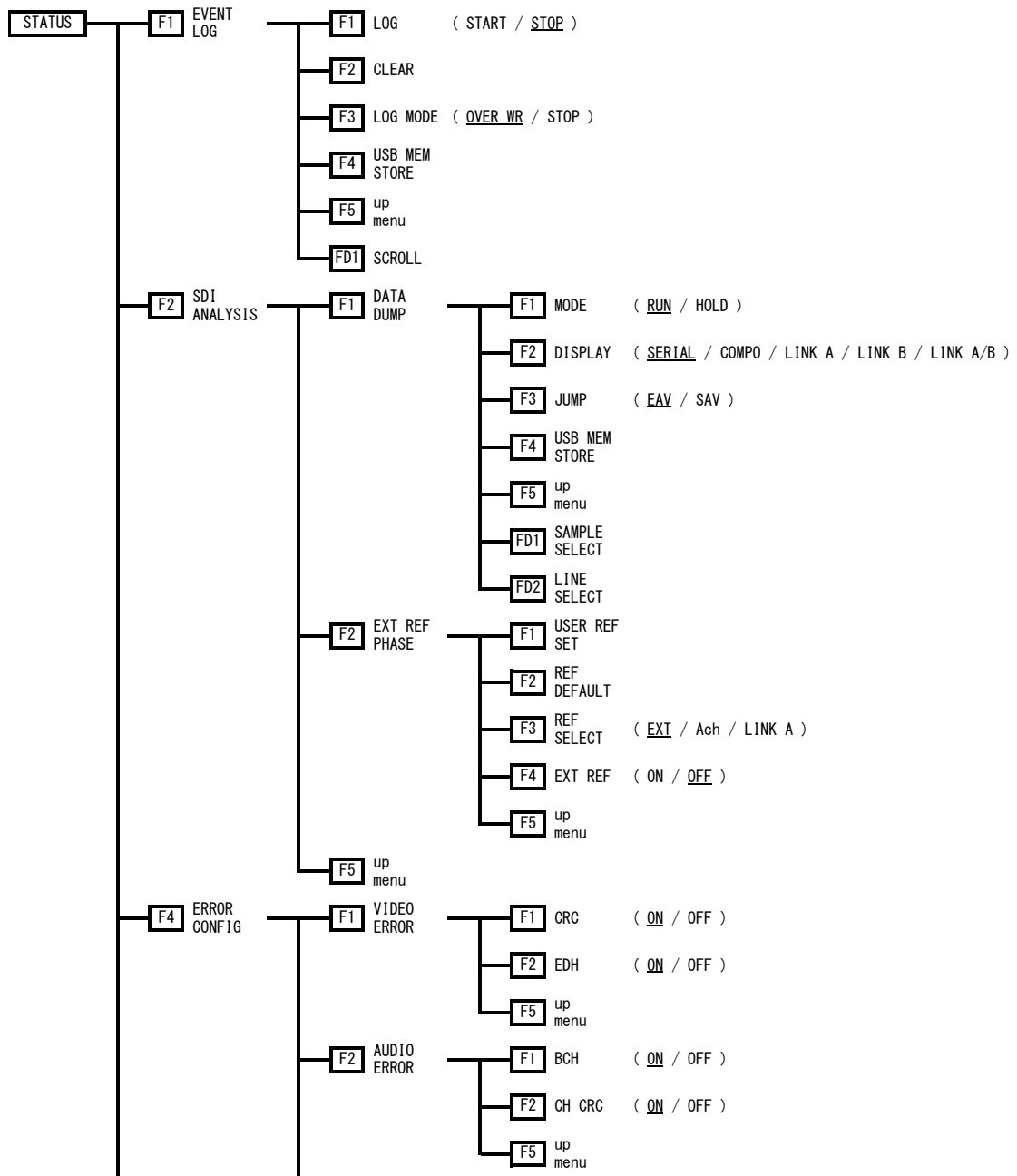
17. APPENDIX



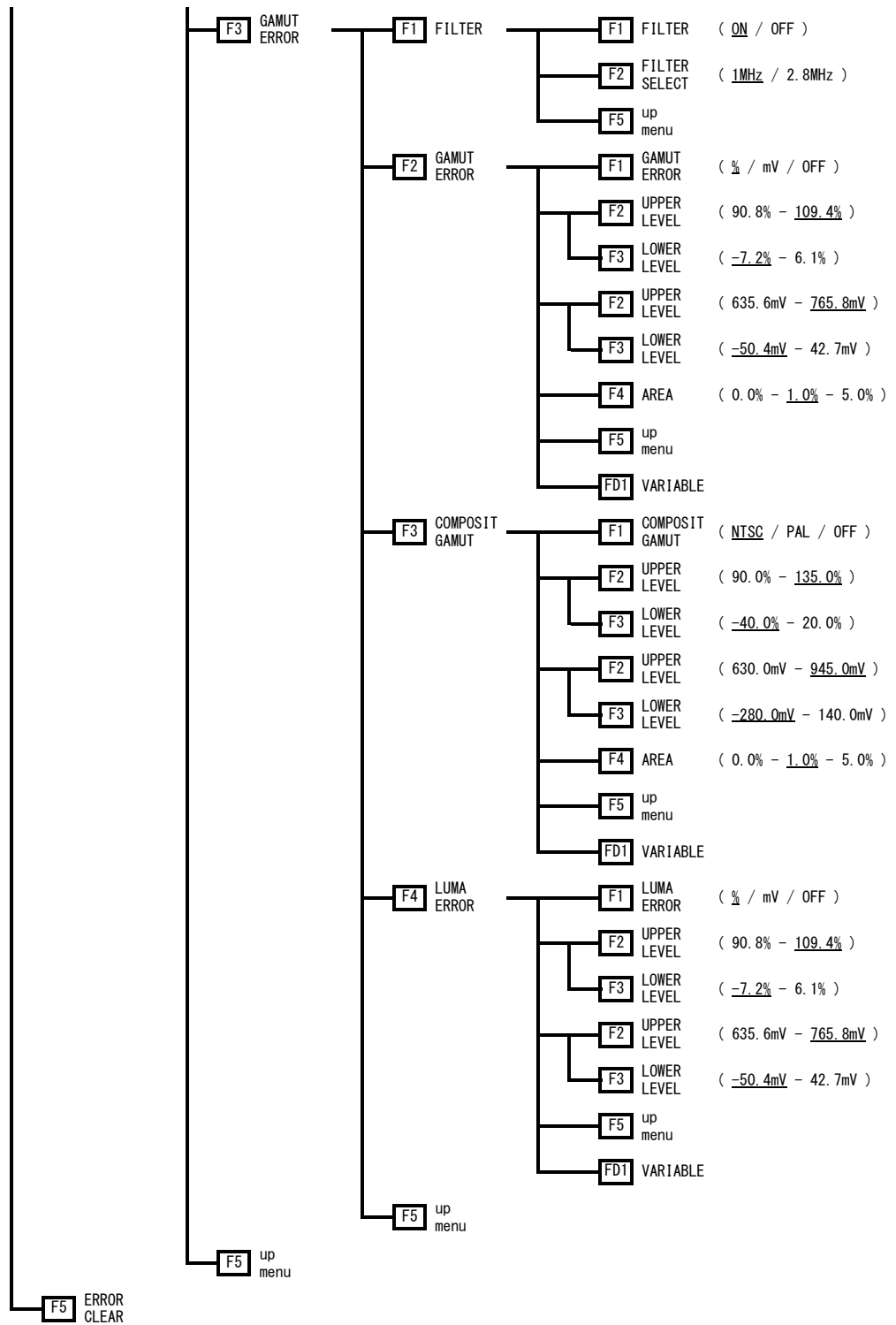
17.1.4 Audio Menu



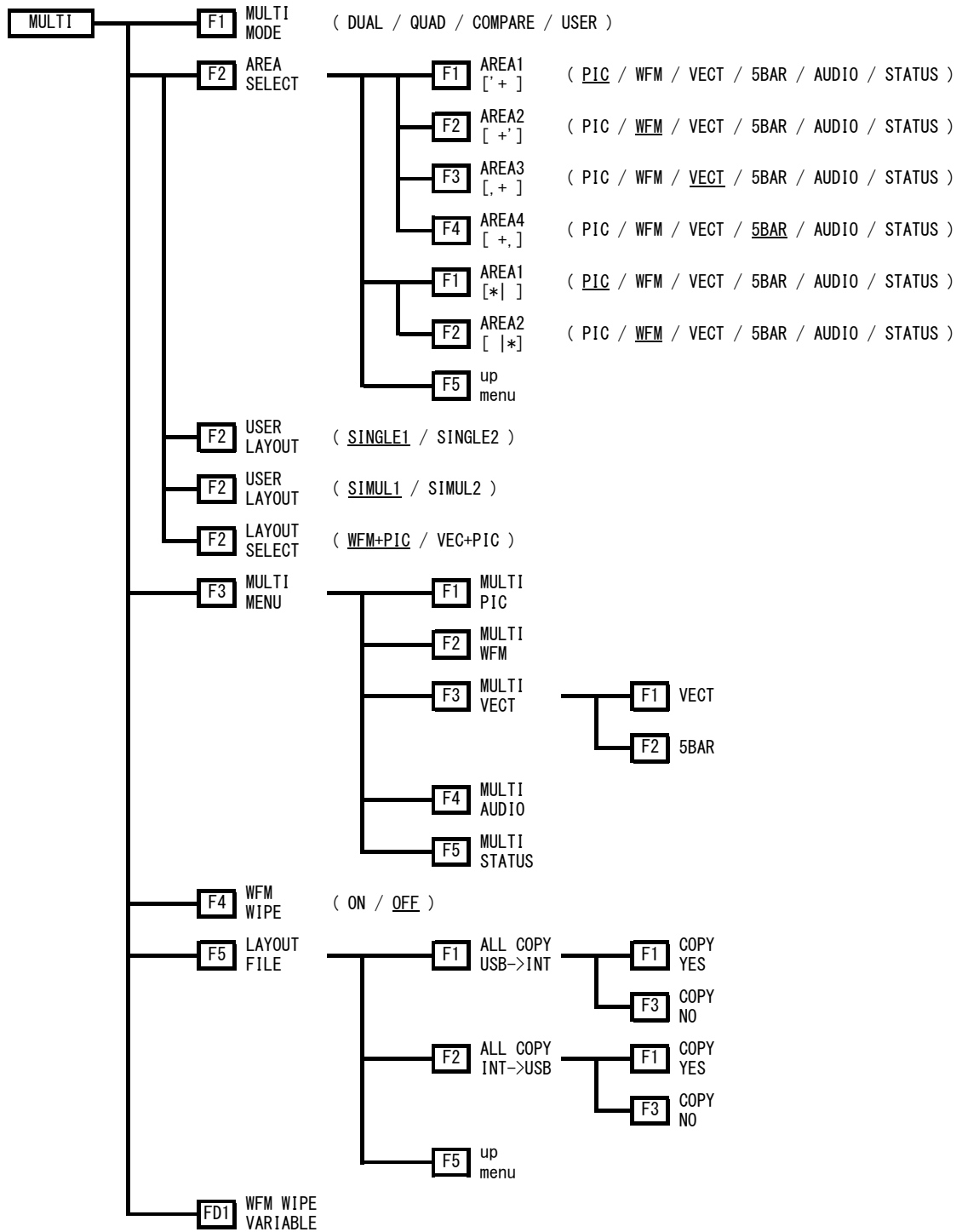
17.1.5 Status Menu



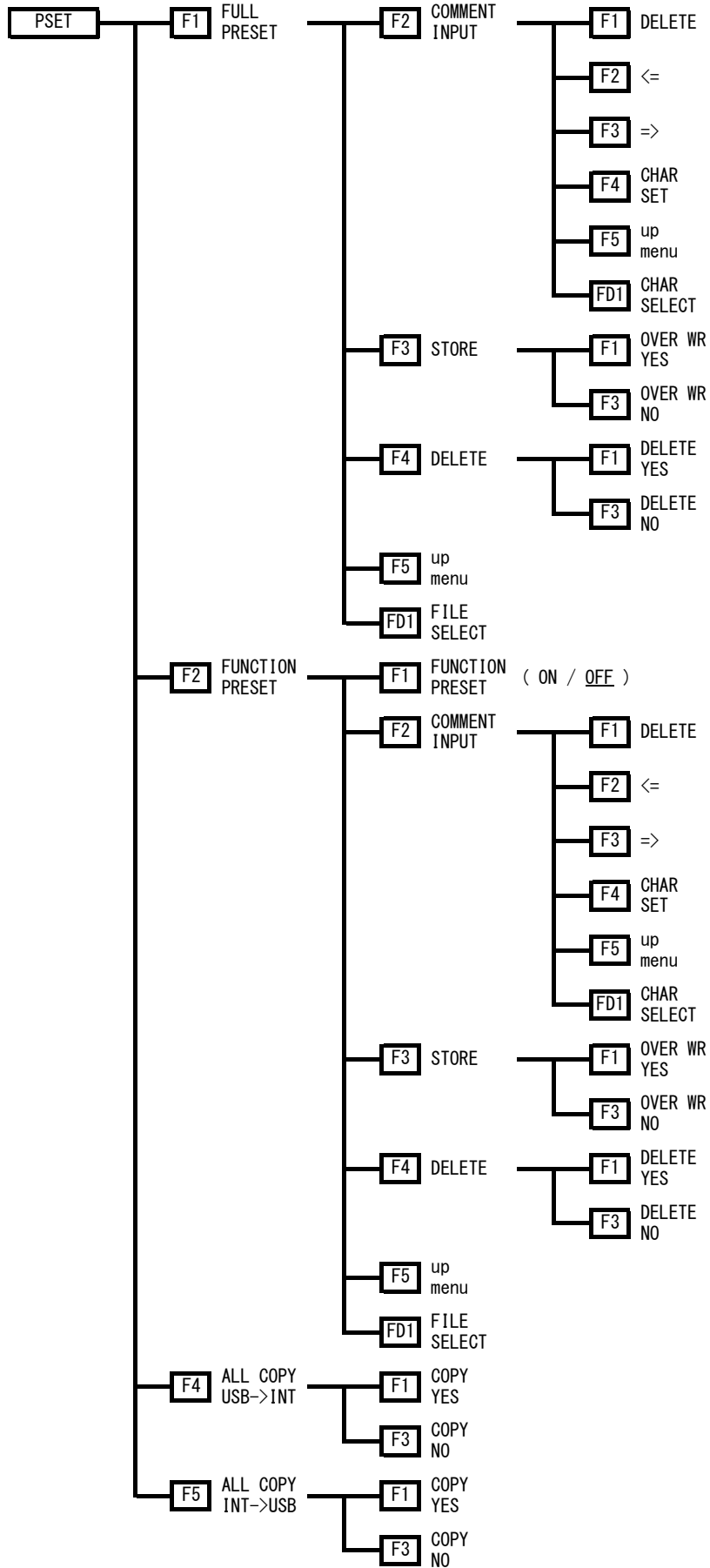
17. APPENDIX



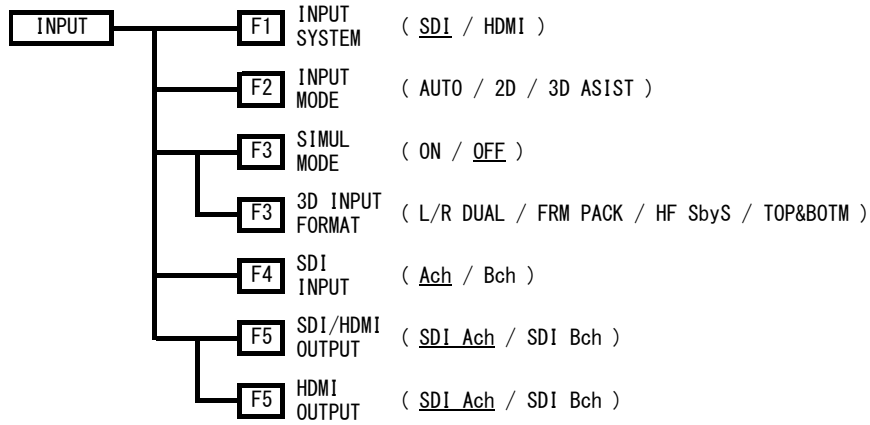
17.1.6 Multi-Screen Display Menu



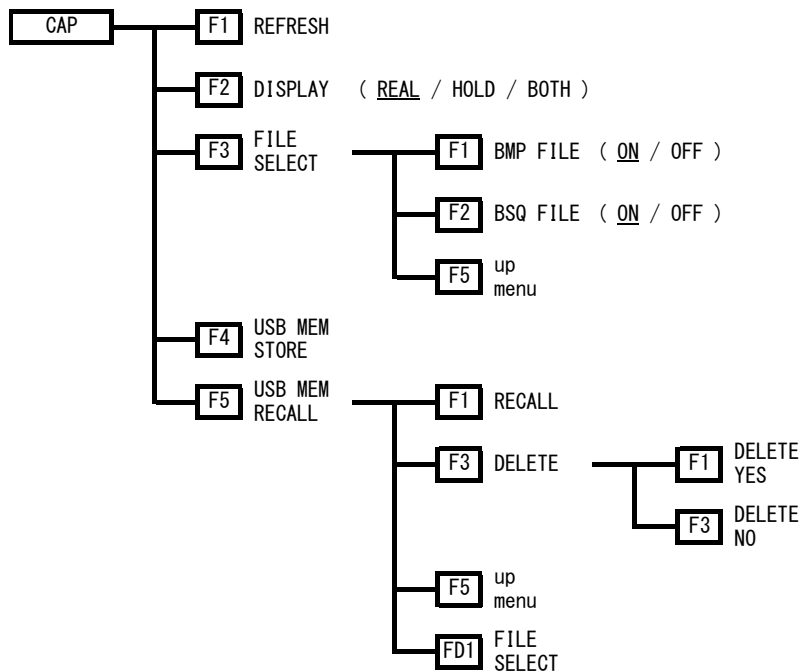
17.1.7 Preset Registration Menu



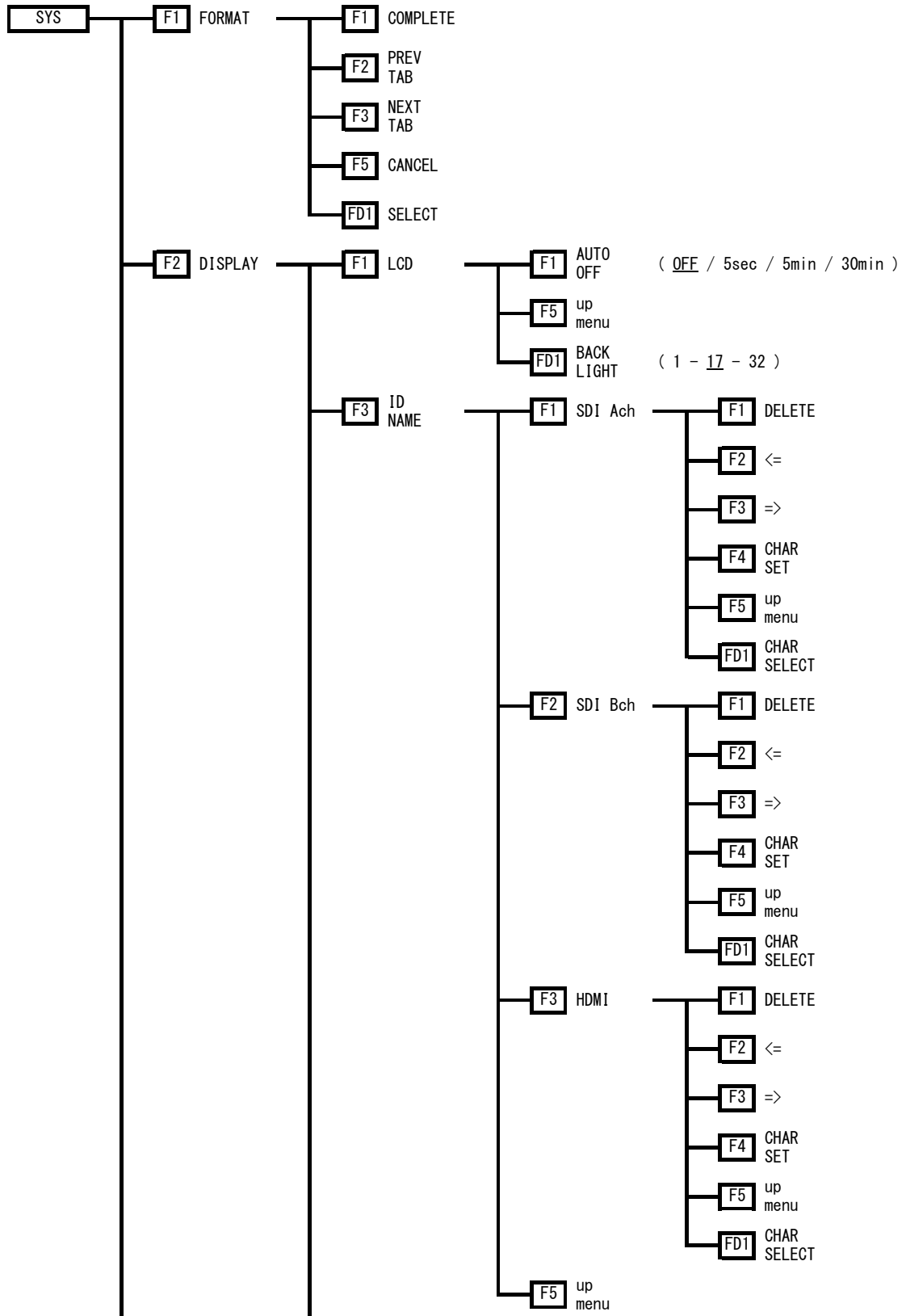
17.1.8 Input Menu



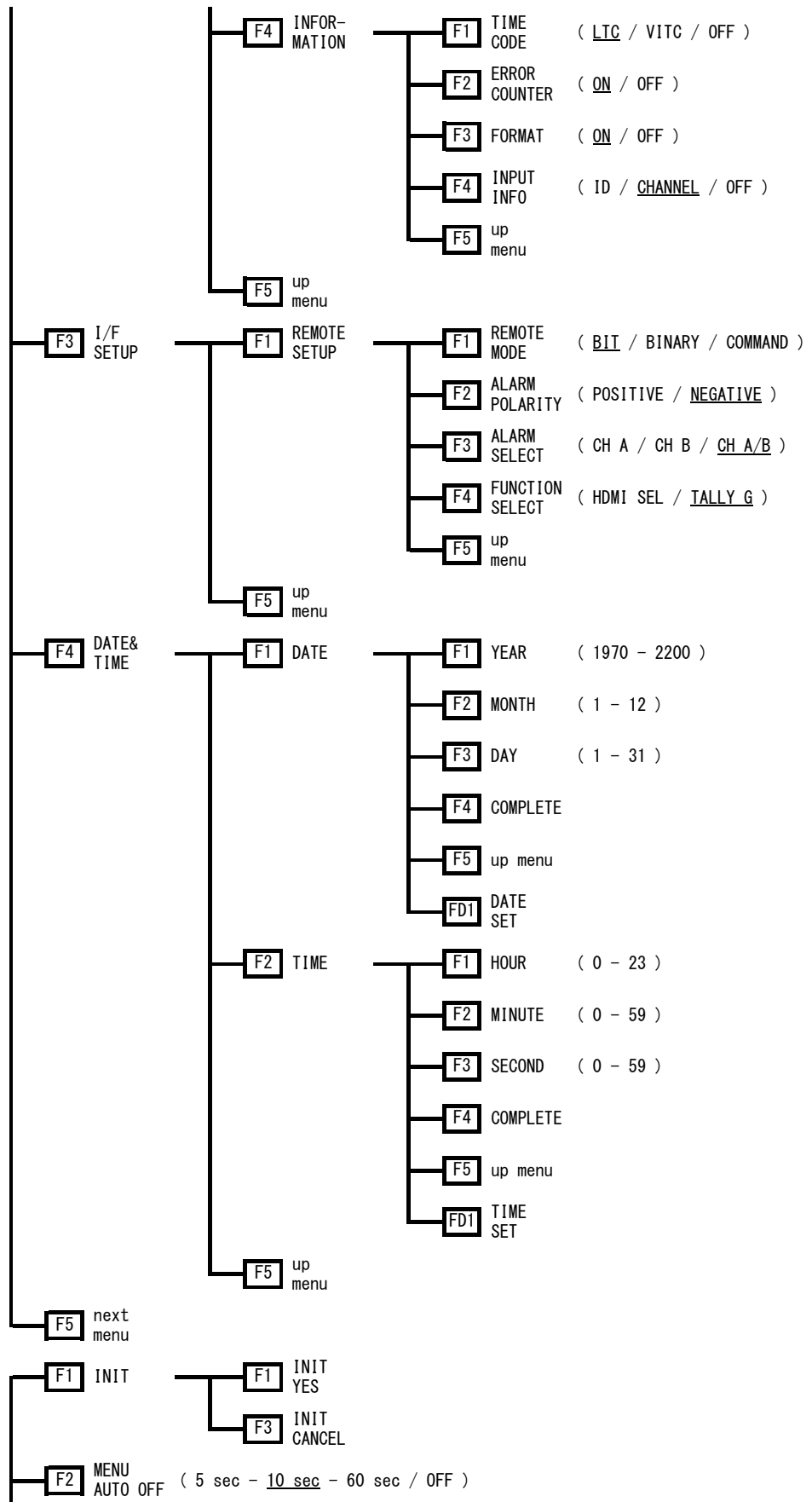
17.1.9 Capture Menu

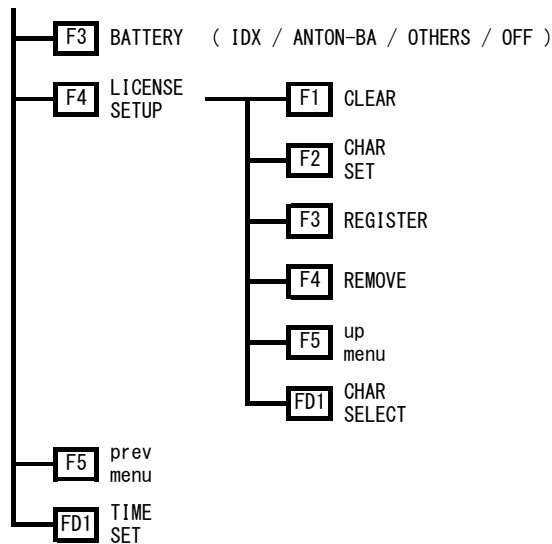


17.1.10 System Menu



17. APPENDIX





17.2 Firmware Change History

This manual was written for firmware version 1.2.

You can view the firmware version on the display that appears when you turn on the power.

• Ver. 1.2

- 1080p60, 1080p/59.94, and 1080p/50 have been added to the supported HDMI input signal video formats.
- A feature that does not automatically clear the function menu has been added.
- In the search feature of CINEZONE display, the range to assign colors has been made variable, and the colors are now displayed with gradation.
- Markers in the video signal waveform display are now also displayed in the thumbnails.
- A command setting function has been added for the LV 5382 OP72 (REMOTE&TALLY).
- Talley display response has been improved on the LV 5382 OP72 (REMOTE&TALLY).

• Ver.1.1

- The CINELITE Advanced feature has been added.
- The vector marker feature has been added.
- 16:9 (VIC: 3, 7, 18, and 22) for 525p, 525i, 625p, and 625i have been added to the supported HDMI input signal video formats.
- The SDI-HDMI conversion feature has been improved so that embedded audio channel groups can be selected.
- The CINELITE display can now be displayed in a multi-screen display.
- The maximum number of capture files that can be displayed from USB memory has been increased from 100 to 999.

Index

%		BLANKING	122
		BRIGHTNESS	66
%DISPLAY SETUP	94	C	
1		CAL F	90
18% REF SET	87	CAL SET	90
3		CAP	61
3D FUNCTION	98	CENTER.....	70
3D INPUT FORMAT	30	CH CRC	170
5		CHANNEL SELECT	147
5BAR SETUP	143	CHROMA GAIN	68
7		CHROMA UP	67
75%C.BAR MARKER	114	CINELITE	82
A		CINELITE ADVANCE	83
ADJUST	67	CINELITE DISPLAY	82
ALARM POLARITY	51	CINEZONE SETUP	96
ALARM SELECT	51	CLEAR	160
ALL COPY INT->USB	60	COLOR BAR	143
ALL COPY USB->INT	60	COLOR MATRIX	124, 142
APERTURE	68	COLOR SYSTEM.....	124, 141
AREA	172, 174	COLOR TEMP	68
AREA SELECT	177	COMPOSIT FORMAT	142
ASPECT	70	COMPOSIT GAMUT	173
AUDIO	146	CONTRAST.....	66
AUDIO ERROR	170	CRC.....	169
AUTO OFF	47	CURSOR.....	128
B		CURSOR MARKER	136
B BIAS	68	CURSOR SELECT	108
B GAIN	68	D	
B SIGNAL	67	DATA DUMP	161
BACK LIGHT	47, 69	DATE	52
BCH	170	DATE&TIME	52
		DC INPUT	27
		DECODE GROUP	147
		DELTA	129
		DISPLAY	63, 75, 96, 130, 140, 164
		DISPRTY SETUP	105
		E	
		EDH.....	169

ERROR CLEAR.....	175
ERROR CONFIG.....	169
ERROR COUNTER.....	49
EVENT LOG.....	158
EXT REF.....	33, 122, 124, 138, 140, 169
EXT REF PHASE.....	165

F

f Stop SETUP.....	85
FIELD.....	74, 124, 139
FILE LIST.....	93
FILE LOAD.....	93
FILE SELECT.....	62
FILTER.....	117, 171
FILTER SELECT.....	171
FORM.....	150
FORMAT.....	42, 49
FRAME.....	69
FULL PRESET.....	56
FUNCTION PRESET.....	58
FUNCTION SELECT.....	51

G

G BIAS.....	68
G GAIN.....	68
G SIGNAL.....	67
GAIN.....	137, 151
GAIN MAG.....	116
GAIN VARIABLE.....	116, 137
GAIN/BIAS.....	67
GAIN/FILTER.....	116
GAMMA CAL.....	89
GAMMA FILE.....	92
GAMMA SELECT.....	87, 89, 92
GAMUT ERR DISP.....	77
GAMUT ERROR.....	170
GRID BRIGHT.....	104
GRID DISPLAY.....	103
GRID SETUP.....	102
GRID SIZE.....	104
GRID UNIT.....	103
GRID VARIABLE.....	103

H

H POS.....	77, 104, 110
H SWEEP.....	119
H VARIABLE.....	100
H WIPE VARIABLE.....	101
HDMI OUTPUT.....	30
HISTGRM FORM.....	80
HOLD TIME.....	149

I

I/F SETUP.....	50
ID NAME.....	48
INFORMATION.....	49
INIT.....	53
INPUT.....	28
INPUT HDMI.....	31
INPUT INFO.....	50
INPUT MODE.....	28
INPUT SDI.....	31
INPUT SYSTEM.....	28
INTEN/SCALE.....	111, 133
IQ AXIS.....	133

J

JUMP.....	164
-----------	-----

L

L/R SELECT.....	81
LAYOUT FILE.....	180
LAYOUT SELECT.....	178
LCD.....	47
LEFT POS.....	108
LICENSE SETUP.....	54
LINE & SMPL No.....	85
LINE SEL.....	73, 122, 138
LINE SELECT.....	74, 123, 138, 163
LINE VARIABLE.....	74, 123, 139
LISSAJOU INTEN.....	151
LISSAJOU MODE.....	150
LISSAJOU SETUP.....	149
LOG.....	160
LOG MODE.....	161

LOWER LEVEL	172, 174, 175
LR TRACK POS	108

M

MARKER	69, 114
MEAS POS	88
MEAS SIZE	88
MEASURE SELECT	102
MENU AUTO OFF	53
METER SETUP	148
MODE	127, 140, 163
MONO/COLOR	67
MULTI	176
MULTI MENU	178
MULTI MODE	176

O

OUTPUT HDMI	32
OUTPUT SDI	32

P

PHONES CHANNEL	148
PIC	65
PICTURE FORM	98
PSET	55

R

R BIAS	68
R GAIN	68
R SIGNAL	67
REF	129
REF DEFAULT	168
REF LEVEL	148
REF SELECT	168
REF SET	130
REFRESH	62
REMOTE MODE	50
REMOTE SETUP	50
RESPONSE	148
REVERSE	101, 131
RIGHT POS	108

S

SAFE ACTION	72
SAFE TITLE	72
SAFETY ZONE	72
SAMPLE SELECT	163
SCALE	145, 149
SCALE COLOR	112, 133
SCALE INTEN	115, 136, 152
SCALE UNIT	111
SCROLL	160
SDI INPUT	30
SDI/HDMI OUTPUT	30
SEQUENCE	145
SETUP	107, 126, 143
SHADOW	71
SIGNAL DISPLAY	127
SIMUL MODE	29, 78, 130, 141
SINGLE LISSAJOU	147
SIZE	75
STANDARD	72
STATUS	153
SWEEP	119
SWEEP MAG	121
SYS	42

T

TABLE CLEAR	89, 93
THUMBNAI	78, 131, 141, 152
TIME	52
TIME CODE	49
TRACK	129

U

UNIT SELECT	94
UPPER LEVEL	172, 173, 175
USB MEM RECALL	64
USB MEM STORE	62, 161, 165
USER LAYOUT	180
USER MARKER	115
USER REF SET	168
USER ZONE	73

V

V POS.....	77, 104, 110
V POS JUMP.....	117
V VARIABLE.....	100
V WIPE VARIABLE.....	101
VECT.....	132
VECT COLOR.....	134
VECT CONTRAST.....	134
VECT SCALE.....	135
VECTOR INTEN.....	136
VERT POS.....	108
VIDEO ERROR.....	169
VOLUME.....	152

W

WFM.....	109
----------	-----

WFM COLOR.....	113
WFM CONTRAST.....	113
WFM FORM.....	79
WFM INTEN.....	115
WFM SETUP.....	79
WFM WIPE.....	179
WIPE MARKER.....	101

X

X UNIT.....	129
-------------	-----

Y

Y UNIT.....	129
YGBR.....	125
YRGB.....	125
YRGB SELECT.....	80

所含有毒有害物质信息

部件号码: LV 5382



此标志适用于在中国销售的电子信息产品, 依据2006年2月28日公布的《电子信息产品污染控制管理办法》以及SJ/T11364-2006《电子信息产品污染控制标识要求》, 表示该产品在使用完结后可再利用。数字表示的是环境保护使用期限, 只要遵守与本产品有关的安全和使用上的注意事项, 从制造日算起在数字所表示的年限内, 产品不会产生环境污染和对人体、财产的影响。产品适当使用后报废的方法请遵从电子信息产品的回收、再利用相关法令。详细请咨询各级政府主管部门。

产品中有毒有害物质或元素的名称及含量

部件名称 Parts	有毒有害物质或元素 Hazardous Substances in each Part					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
实装基板	×	○	○	○	○	○
主体部	×	○	○	○	○	○
液晶显示模组	×	×	○	○	○	○
风扇	×	○	○	○	○	○
线材料一套	×	○	○	○	○	○
外筐	○	○	○	○	○	○
附件	×	○	○	○	○	○
包装材	○	○	○	○	○	○
电池	○	○	○	○	○	○
选件						
5382-72	×	○	○	○	○	○
5382-73	×	○	○	○	○	○
5382-74	×	○	○	○	○	○
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。						

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