

LEADER

LV 5800A / LV 5800

MULTI MONITOR

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 Caution at the Time of Standby.....	1
1.2.3 Last Memory.....	2
1.2.4 Mechanical Shock	2
1.2.5 LCD Monitor	2
1.2.6 Flickering of the LCD	2
1.2.7 About the Cabinet.....	2
1.3 About Abandonment	3
2. ABOUT THIS MANUAL.....	4
3. SPECIFICATIONS	5
3.1 General.....	5
3.2 Features	5
3.3 Specifications.....	6
3.3.1 Slot	6
3.3.2 LCD Display	6
3.3.3 Screen Capture	6
3.3.4 Presets	6
3.3.5 External Reference Input.....	6
3.3.6 External Control Connector	7
3.3.7 Headphone Output	7
3.3.8 General Specifications.....	7
4. PANEL DESCRIPTION	9
4.1 Front Panel	9
4.1.1 INPUT Group.....	9
4.1.2 DISPLAY Group.....	10
4.1.3 MODE Group.....	11
4.1.4 PRESET Group	12
4.1.5 Miscellaneous.....	13
4.2 Rear Panel.....	14
4.2.1 Rear Panel Description.....	14
4.2.2 LV 58SER01A (SDI INPUT) Rear Panel	16
4.2.3 LV 58SER02 (EYE PATTERN Unit) Rear Panel	16
4.2.4 LV 58SER40A (DIGITAL AUDIO) Rear Panel	16
4.2.5 LV 58SER20 (DVI-I OUTPUT unit) Rear Panel	17
4.3 Display Screen	17

5. INSTALLING THE UNITS.....	19
5.1 Removing the Units	20
5.2 Installing the Units	21
5.2.1 Installing the LV 58SER01A (SDI INPUT).....	22
5.2.2 Installing the LV 58SER02 (EYE PATTERN unit).....	22
5.2.3 Installing the LV 58SER03A (TRI SYNC/COMPOSITE)	27
5.2.4 Installing the LV 58SER04 (MPEG DECODER).....	27
5.2.5 Installing the LV 58SER06 (3G-SDI INPUT).....	27
5.2.6 Installing the LV 58SER07 (EYE PATTERN)	28
5.2.7 Installing the LV 58SER20 (DVI OUTPUT unit).....	28
5.2.8 Installing the LV 58SER21 (ANALOG COMPONENT OUTPUT).....	28
5.2.9 Installing the LV 58SER40A (DIGITAL AUDIO).....	28
5.3 Vent Holes	30
6. OPERATION OVERVIEW	31
6.1 Differences in the Operation by Unit Type	31
6.1.1 Input Units	31
6.1.2 Output Units.....	31
6.1.3 Function Units.....	31
6.1.4 Multipurpose Units.....	31
6.2 Panel Control Basics	32
6.2.1 Selecting the Display Area.....	32
6.2.2 Selecting the Display Format.....	34
6.2.3 Selecting the Input Signal.....	34
6.2.4 Selecting the Display Mode	34
6.3 Using the Tab Menu.....	35
6.4 Video Signal Waveform Display.....	36
6.5 Vector Waveform Display.....	36
6.6 Picture Display.....	37
6.7 Audio Display.....	37
6.7.1 Displaying the Embedded Audio.....	37
6.7.2 Displaying the External Audio	38
6.8 Status Display.....	38
6.8.1 Status Display of SDI Signals	38
6.8.2 Status Display of Audio	39
6.9 Eye Pattern Display	39
6.9.1 LV 58SER02's Eye Pattern Display	39
6.9.2 LV 58SER07's Eye Pattern Display	40
6.10 Menu Structure	41
6.10.1 Capture Menu.....	41
6.10.2 System Menu.....	42
6.10.3 Preset Menu	44
7. SYSTEM SETUP	45
7.1 System Setting of the Unit	46
7.2 Setting the LV 5800(A) System.....	46

7.2.1	LV 5800(A) General Settings	46
7.2.2	Ethernet Parameters Setup	50
7.2.3	Remote Connector Setting	53
7.2.4	Date and Time Settings	59
7.2.5	Displaying the Installed Units.....	61
7.2.6	Shutoff of LCD Backlight	61
7.2.7	Initialization.....	62
8.	CAPTURE FUNCTION	63
8.1	Screen Capture	64
8.1.1	Screen Capture Procedure.....	64
8.1.2	Selecting the Screen Capture File	65
8.1.3	Saving the Screen Capture File.....	66
8.1.4	Loading a Screen Capture File.....	66
8.1.5	Deleting a Screen Capture File	67
8.2	Frame Capture	67
9.	PRESET FUNCTION	68
9.1	Registration of Preset and File Operation of Preset	69
9.1.1	Comment Entry.....	70
9.1.2	Saving the Presets	71
9.1.3	Deleting the Presets	71
9.1.4	Copying All Presets Data.....	71
9.2	Recalling the Presets.....	72
10.	PREVENTING POWER CORD DESCRIPTION	73
10.1	Connecting the Power Cord.....	73
10.2	Disconnecting the Power Cord	74
11.	MAINTENANCE	75
12.	FIRMWARE REVISION HISTORY	76

GENERAL SAFETY SUMMARY

■ To Avoid Personal Injury

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

This instrument is not designed and manufactured for consumers.




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

■ Note about Reading This Manual

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

■ Symbols and Terms

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

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

GENERAL SAFETY SUMMARY

Review the following safety precautions to avoid operator's injury and loss of life and prevent damage and deterioration to this instrument.

To avoid potential hazards, use this product as specified.



WARNING

■ Warnings about the Case and Panels

Operator should not remove any cases or panel of the product other than the time of exchange of the unit.

Be sure to unplug the LV 5800(A) from the wall socket before you change the installed units. If you touch inside the instrument while connecting a power plug to the outlet, it could result personal shock or fire hazard.

Refrain from spilling any liquid on or inserting anything flammables or piece of metal into the ventilation of the instrument. Such actions could cause fire, shock, malfunction and be an accident hazard while the power is on.

■ Warnings about the Power Source

Make sure to connect only to the rated power line voltage. Excess voltage may cause fire.

Confirm the voltage of the commercial power line before connecting the AC power cord.

The voltage range is indicated on the rear panel.

The power frequency of the power line should be 50/60 Hz.

Use a power cord that is appropriate for the voltage of the power source. Also, use a power cord that meets the safety standards of the country that you are using it in. Using a power cord that does not meet the standards could lead to fire.

If the attached cord is damaged, stop using it and contact your local LEADER agent. Should you use a damaged cord, it could cause a shock or create a fire hazard. When you pull out the cord be sure to hold it by plug and pull from the socket not by holding the cord wire.

GENERAL SAFETY SUMMARY

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To avoid potential hazards, use this product as specified.



WARNING

■ Warnings about the Installation Environment

● Operating Temperature Range

Operate the instrument between the temperature range of 0 to 40 °C.

Operating the instrument at higher temperatures could cause a fire hazard.

Be sure not to obstruct air circulation.

Rapid changes of temperatures from cold to warm can create internal moisture or condensation and could damage the instrument.

If there is a possibility of moisture condensation, allows the instrument to sit for 30 minutes without the power on.

● Operating Humidity Range

Operating humidity range is ≤ 85 % RH. without condensation

Do not operate the instrument with wet hands. This could cause a shock and fire hazard.

● Operation in the Presence of Gasses

Operating the instrument in and near the presence or storage locations of flammable, explosive gasses or fumes could create an explosion and fire hazard.

Do not operate the instrument anywhere near such environments.

● Avoid Insertions

Do not insert metals or flammable objects or drop liquid on or into the instrument.

To do so could cause fire, shock, malfunction and create a dangerous accident hazard.

■ If You Notice Something Wrong during Operation

While operating the instrument if smoke, fire, or a bad smell occurs, turn off the instrument at once for it could cause a fire hazard. When such a case occurs, turn off the power switch and pull the plug of the cord from the plug socket. Contact your local LEADER agent after confirming there is no fire.

■ Warning about Grounding

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

GENERAL SAFETY SUMMARY

Review the following safety precautions to avoid operator's injury and loss of life and prevent damage and deterioration to this instrument.

To avoid potential hazards, use this product as specified.



■ Cautions about the Output Connectors

Do not supply external power to Output terminal, this could cause the instrument to malfunction. If the cable touches DC power supply etc., there is a possibility that an internal attenuator might be damaged by a fire.

■ Caution When Not Using the Instrument for a Long Time

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

■ Routine Maintenance

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

Please conform to the above warnings and cautions for safe operation. There are cautions in each area of this instruction manual, so please conform to each caution.

If you have any questions about this manual, please feel free to contact your local LEADER agent.

1. INTRODUCTION

Thank you for purchasing LEADER's measuring instruments. Please read this instruction manual carefully to ensure correct and safe operation.

If you have any difficulties or questions on how to use the instrument after you have read this manual, please feel free to contact your local LEADER agent. After you have read the manual, keep the manual in a safe place for quick reference.

1.1 Scope of Warranty

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

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

1.2 Operating Precautions

1.2.1 Maximum Allowable Input Voltage



CAUTION

The maximum allowable input voltage to the input connectors is shown in the table below. Do not apply excessive voltage to prevent damage to the instrument.

Table 1-1 Maximum allowable input voltage

Input Connector	Maximum Allowable Input Voltage
REMOTE control connector	0 to +5 V
EXT REF connector	± 5 V

1.2.2 Caution at the Time of Standby



CAUTION

Even if LV 5800(A) turns off the power switch with the front panel, in the state where the power plug has been connected to the outlet socket, standby state is maintained.

In the state of standby, part of internal circuit is working and it may generate heat.

Therefore, make sure to disconnect the power plug from the outlet when you are not going to use the LV 5800(A).

Make sure also to disconnect the power plug from the outlet when you exchange the unit. Not to do so might cause the instrument to malfunction.

1.2.3 Last Memory

The LV 5800(A) has a last-memory feature. When you turn ON the power, the LV 5800(A) starts up with the same panel settings that were set when it was last turned OFF.

If the backup battery runs out, the last-memory feature will no longer work, and the internal clock will be reset. If this happens, contact your local LEADER agent.

To continually use the last-memory and clock features, we recommend that you replace the backup battery with a new one every five years after you purchase the LV 5800(A). You cannot replace the backup battery yourself. To have the battery replaced, contact your local LEADER agent.

1.2.4 Mechanical Shock

To prevent damage to the precise components used in this instrument, be careful not to expose the instrument to other forms of severe mechanical shock. If the LCD breaks, glass fragments may cause injury.

1.2.5 LCD Monitor

There may be pixels on the LCD monitor that do not turn ON or those that remain ON at all times. This is not a malfunction.

1.2.6 Flickering of the LCD

The LCD on the LV 5800(A) supports many types of video signals. The LCD displays the input SDI signal asynchronously and may flicker on the waveform display or picture display. The LV 5800(A) stores the input SDI signal once to the frame memory, and then reads the memory using the LCD sync signal, which is asynchronous to the input SDI signal. Therefore, flickers may occur due to frame skip, which skips over certain frame memories, or frame repeat, which reads certain frame memories twice.

1.2.7 About the Cabinet

Use a cabinet with one of the specified serial numbers.

Please be aware that you cannot attach the LV 5800(A) to any of the old cabinets with the serial numbers listed below.

LR 2404, LR 2427, LR 2427A, LR 2400-AI, LR 2400-AM, LR 2400-VI, LR 2400-VM, and LR 2700-I

1.3 About Abandonment



Figure 1-1 EU WEEE Directive

The EU WEEE Directive applies to this product and its accessories. When disposing of this product or its accessories, follow the regulations in your country or region.

(WEEE Directive: Waste Electrical and Electronic Equipment)

Follow the EU Battery Directive when discarding the batteries that you removed from this instrument.

2. ABOUT THIS MANUAL

LV 5800(A) operates as a measuring instrument only when the unit separately prepared by the option is installed to the LV 5800(A).

Moreover, the method of operating LV 5800(A) is different according to the installing situation of the unit.

In this instruction manual, about the handling of LV 5800(A) main frame, explains only the portion which operates in common regardless of the installing situation of each unit.

Please also operate the instrument after well reading and understanding the instructions manual attached to each installed unit.

In addition, this LV 5800(A) instruction manual has described assuming that the following units are installed in LV 5800(A).

- **Input Units**

Unit No.1 : LV 58SER01A (SDI INPUT)

Unit No.2 : LV 58SER01A (SDI INPUT)

Unit No.3 : LV 58SER02 (EYE PATTERN unit)

Unit No.4 : LV 58SER40A (DIGITAL AUDIO)

- **Output Units**

Unit No.5 : None

Unit No.6 : LV 58SER20 (DVI-I OUTPUT unit)

Refer to Figure 4-2, "Rear panel" for the arrangement of the unit number.

3. SPECIFICATIONS

3.1 General

The LV 5800(A) is a new concept of multi monitor that allows you freely configure various input and output units according to your application.

In the digital broadcasting system becoming complicated, you can construct a flexible system by combining separately prepared input and output units.

3.2 Features

- **Four Input Slots**

Up to four input units can be installed with arbitrary combination.

Each input unit operates independently.

- **Two Output Slots**

Up to two output units can be installed with arbitrary combination.

Each output unit operates independently.

- **Display Function**

Employs a color TFT LCD monitor with XGA resolution (1024 x 768).

The displaying function of each unit can be displayed on a full screen, or 2 or 4 screen multi display.

The multi screen display allows arbitrary combination of signals of different input units to be displayed.

- **External Synchronization Signal Input**

The video signal waveform display can be displayed matching with the phase of the external synchronized signal.

- **USB Port**

Screen captures, data recording, and content of presets can be stored by connecting a USB memory to the USB connector on the front panel.

- **Ethernet Connector**

Remote control, error monitoring, and file transfer are possible with using TELNET or FTP by connecting a PC to the Ethernet connector on the rear panel.

- **Remote Connector**

The remote connector on the rear panel allows recalling of presets, output of error alarm, and switching of input channels.

- **A Silent Sound Cooling System**

Silence FAN is adopted.

By the rotation sensor, it has the function to display the alarm on the screen when FAN stops due to the breakdown.

Moreover, the rotational speed is controlled with the temperature sensor.

3. SPECIFICATIONS

3.3 Specifications

3.3.1 Slot

Number of Slots for Input	4
Number of Slots for Output	2

3.3.2 LCD Display

LCD Screen Type	
LV 5800A	6.5-inch TFT color
LV 5800	6.3-inch TFT color
Display Format	XGA (Effective area 1,024x768 dots)
Backlight Brightness	Selects HIGH or LOW
Auto Shutoff	Sets the time for the backlight to shutoff automatically.
Display Screen	1-screen display, 2-screen display, and 4-screen display

3.3.3 Screen Capture

Function	Captures the screen
Display	Displays the captured image or superimposes the captured image over the input signal
Media	Internal memory (RAM) and USB memory Only one screen capture can be stored in the internal memory.*
Data Output	Screen captures can be saved as bitmap files or in a file format that the LV 5800(A) can load. They can be saved to USB memory or transmitted over an Ethernet and saved on a PC.
Data Input	Data saved to USB memory can be loaded and displayed on the LV 5800(A).

* When the unit that is equipped with video signal frame capture function, such as LV 58SER01A (SDI INPUT), is installed. (switch type of frame capture and screen capture)

3.3.4 Presets

Number of Presets	60
Media	Internal memory (RAM) or a USB memory
Recall Method	Through the front panel, remote connector, and Ethernet network
Copy	Copies all content of presets to the USB memory or from the USB memory to the LV 5800(A).

* Switches between 4 points, 6 points, 8 points, 15 points, and 60 points for recalling through the remote connector.

3.3.5 External Reference Input

Input Signal	Tri-level sync signal or NTSC/PAL black burst
Input Connector	BNC connector (1 system 2 connectors)

3. SPECIFICATIONS

	Input Impedance	15 k Ω (Passive Loop-through)
	Input Return Loss	≥ 30 dB 50 kHz to 30 MHz (when power is ON. ≥ 25 dB when power is OFF)
	Maximum Input Voltage	± 5 V (DC + peak AC)
3.3.6	External Control Connector	
	USB Connector	
	Specifications	USB 2.0
	Device	Only a USB memory device is supported.
	Ethernet Connector	
	Standard Supported	IEEE802.3
	Input/Output Connector	RJ-45
	Function	Remote control and errors monitoring, etc. from an external computer
	Type	10Base-T/100Base-TX
	Remote Connector	
	Function	Recalling of presets, monitoring of errors
	Control Signal	LV-TTL level (LOW active)
	Control Connector	25-pin D-sub (female)
3.3.7	Headphone Output	
	Output Connector	3.5 mm miniature jack 1 connector (stereo)
	Function	Like LV 58SER40A (DIGITAL AUDIO), it is effective when the unit that has audio decoding function is inserted.
	Output Power	120 mWrms
	Impedance	8 Ω
3.3.8	General Specifications	
	Environmental Conditions	
	Operating Temperature	0 to 40 $^{\circ}$ C
	Operating Humidity	$\leq 85\%$ RH (without condensation)
	Spec-Guaranteed Temperature	10 $^{\circ}$ to 30 $^{\circ}$ C
	Spec-Guaranteed Humidity	$\leq 85\%$ RH (without condensation)
	Operating Environment	Indoor use
	Operating Altitude	Up to 2,000 m
	Overvoltage Category	II
	Pollution Degree	2
	Power Requirements	AC 90 V to 250 V, 50Hz/60Hz, 150 W max.
	Dimensions	215 (W) x 133 (H) x 449 (D) mm
	Weight	5 kg
	Accessories	Instruction manual 1 Power cord 1 Cover/Inlet stopper 1 Screws for rack mounting (inch specification) 2 D-sub, 25-pin connector 1

3. SPECIFICATIONS

D-sub, 25-pin connector cover	1
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4. PANEL DESCRIPTION

4.1 Front Panel

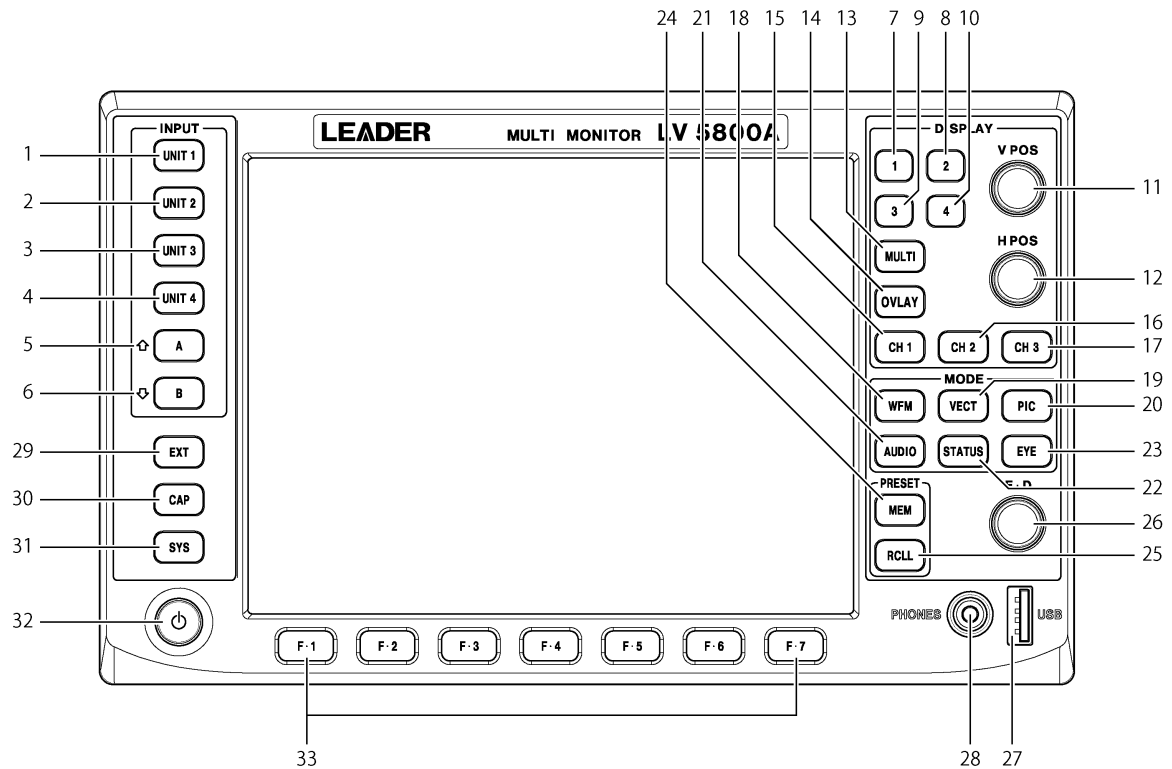


Figure 4-1 Front panel

4.1.1 INPUT Group

(1) UNIT 1 key

Displays the input signal of unit 1 in the selected area.

→ Refer to section 6.2.3, "Selecting the Input Signal"

(2) UNIT 2 key

Displays the input signal of unit 2 in the selected area.

→ Refer to section 6.2.3, "Selecting the Input Signal"

(3) UNIT 3 key

Displays the input signal of unit 3 in the selected area.

→ Refer to section 6.2.3, "Selecting the Input Signal"

(4) UNIT 4 key

Displays the input signal of unit 4 in the selected area.

→ Refer to section 6.2.3, "Selecting the Input Signal"

(5) A Key (A Input Key)

Displays the A input signal of the selected unit in the selected area.

This key is valid for units that have two inputs (A and B) such as on the LV 58SER01A (SDI INPUT).

If a unit has three or more input connectors or multiple channels, this key is used as a channel selection key. In this case, press this key to decrement the channel number.

→ Refer to section 6.2.3, "Selecting the Input Signal"

(6) B Key (B Input Key)

Displays the B input signal of the selected unit in the selected area.

This key is valid for units that have two inputs (A and B) such as on the LV 58SER01A (SDI INPUT).

If a unit has three or more input connectors or multiple channels, this key is used as a channel selection key. In this case, press this key to increment the channel number.

→ Refer to section 6.2.3, "Selecting the Input Signal"

4.1.2 DISPLAY Group

(7) 1 Key (First Area Selection Key)

Press this key on the 4 screen multi display to select the first area at the top left.

Press this key on the 2 screen multi display to show the first area at the top left of the 4 screen multi display expanded in the left half of the screen.

Press this key on the 1 screen display to show the first area at the top left of the 4 screen multi display expanded to full screen.

→ Refer to section 6.2.1, "Selecting the Display Area"

(8) 2 Key (Second Area Selection Key)

Press this key on the 4 screen multi display to select the second area at the top right.

Press this key on the 2 screen multi display to show the second area at the top right of the 4 screen multi display expanded in the right half of the screen.

Press this key on the 1 screen display to show the second area at the top right of the 4 screen multi display expanded to full screen.

→ Refer to section 6.2.1, "Selecting the Display Area"

(9) 3 Key (Third Area Selection Key)

Press this key on the 4 screen multi display to select the third area at the top right.

Press this key on the 2 screen multi display to show the third area at the bottom left of the 4 screen multi display expanded in the left half of the screen.

Press this key on the 1 screen display to show the third area at the bottom left of the 4 screen multi display expanded to full screen.

→ Refer to section 6.2.1, "Selecting the Display Area"

(10) 4 Key (Fourth Area Selection Key)

Press this key on the 4 screen multi display to select the fourth area at the bottom right.

Press this key on the 2 screen multi display to show the fourth area at the bottom right of the 4 screen multi display expanded in the right half of the screen.

Press this key on the 1 screen display to show the fourth area at the bottom right of the 4 screen multi display expanded to full screen.

→ Refer to section 6.2.1, "Selecting the Display Area"

(11) V POS (Vertical Position Control)

Adjusts the vertical display position on the video signal waveform display, eye pattern display, and other displays.

Press the control to reset the vertical position to the reference.

(12) H POS (Horizontal Position Control)

Adjusts the horizontal display position on the video signal waveform display, eye pattern display, and other displays.

Press the control to reset the horizontal position to the reference.

(13) MULTI Key (Multi Display Key)

Switches between 4 or 2 screen multi display and 1 screen display.

The key LED turns on/off each time you press the key. When the key LED is illuminated, the multi screen display is enabled. Otherwise, 1 screen display is enabled.

→ Refer to section 6.2.2, "Selecting the Display Format"

(14) OVLAY Key (Overlay Display Key)

Switches between overlay and parade display when showing the component video signal waveforms in the selected area.

The key LED turns on/off each time you press the key. When the key LED is illuminated, the overlay display is enabled. Otherwise, the parade display is enabled.

You can switch each area on the 4 screen multi display using OVLAY key.

(15) CH1 Key (Channel 1 Selection Key)

Shows or hides the signal assigned to CH1 when displaying the component video signal waveforms in the selected area.

The key LED turns on/off each time you press the key. When the key LED is illuminated, the signal assigned to CH1 is shown. Otherwise, the signal is hidden.

You can switch each area on the 4 screen multi display using CH1 key.

(16) CH2 Key (Channel 2 Selection Key)

Shows or hides the signal assigned to CH2 when displaying the component video signal waveforms in the selected area.

The key LED turns on/off each time you press the key. When the key LED is illuminated, the signal assigned to CH2 is shown. Otherwise, the signal is hidden.

You can switch each area on the 4 screen multi display using CH2 key.

(17) CH3 Key (Channel 3 Selection Key)

Shows or hides the signal assigned to CH3 when displaying the component video signal waveforms in the selected area.

The key LED turns on/off each time you press the key. When the key LED is illuminated, the signal assigned to CH3 is shown. Otherwise, the signal is hidden.

You can switch each area on the 4 screen multi display using CH3 key.

4.1.3 MODE Group

(18) WFM Key (Video Signal Waveform Display Key)

Displays the video signal waveform in the selected area.

You can set the video signal waveform display independently for each area in the 4 screen multi display. A unit with a video signal input is required such as the LV 58SER01A (SDI INPUT).

→ Refer to section 6.4, "Video Signal Waveform Display"

(19) VECT Key (Vector Waveform Display Key)

Displays the vector signal waveform in the selected area.

You can set the vector signal waveform display independently for each area in the 4 screen multi display.

A unit with a video signal input is required such as the LV 58SER01A (SDI INPUT).

→ Refer to section 6.5, "Vector Waveform Display"

(20) PIC Key (Picture Display Key)

Displays the picture in the selected area.

You can set the picture display independently for each area in the 4 screen multi display.

A unit with a video signal input is required such as the LV 58SER01A (SDI INPUT).

→ Refer to section 6.6, "Picture Display"

(21) AUDIO Key (Audio Display Key)

Displays the audio in the selected area.

The audio display can be shown in any area on the 4 screen multi display, but there is a limitation to the simultaneous display function.

The LV 58SER40A (DIGITAL AUDIO) that has the audio display function is required.

→ Refer to section 6.7, "Audio Display"

(22) STATUS Key (Status Display Key)

Displays errors and analysis results of the input signal in the selected area.

You can set the status display independently for each area in the 4 screen multi display.

A unit with a digital signal analysis function is required such as the LV 58SER01A (SDI INPUT).

→ Refer to section 6.8, "Status Display"

* Errors and analysis results of the audio signal or the eye pattern display are shown in the audio display or eye pattern display.

(23) EYE Key (Eye Pattern Display Key)

Displays the eye pattern in the selected area.

The eye pattern can be shown in any area on the 4 screen multi display, but there is a limitation to the simultaneous display function.

You need the LV 58SER02 (EYE PATTERN Unit) or LV 58SER07 (EYE PATTERN), both of which have the eye pattern display feature.

→ Refer to section 6.9, "Eye Pattern Display"

4.1.4 PRESET Group

(24) MEM Key (Memory Key)

Stores the key settings and menu settings of the LV 5800(A).

→ Refer to section 9.1, "Registration of Preset and File Operation of Preset"

(25) RCLL Key (Recall Key)

Recalls key settings and menu settings that are stored in the LV 5800(A).

→ Refer to section 9.2, "Recalling the Presets"

4.1.5 Miscellaneous

(26) F·D (Function Dial)

Sets values or moves the cursor in the menu operation.
Press the dial to reset the value to the reference.

(27) USB (USB Port)

Connect the USB memory to this port. The USB memory can be used to save various data including analysis data and capture data. The port supports USB 2.0.

(28) PHONES (Headphone Jack)

A miniature jack for connecting a headphone.
The LV 58SER40A (DIGITAL AUDIO) that has the audio function is required.

(29) EXT Key (External Synchronization Setting Key)

Switches the display reference synchronization signal to an external signal or the synchronization signal of the signal whose waveform is being displayed in the video signal waveform display shown in the selected area.

The key LED turns on/off each time you press the key. When the key LED is illuminated, the external synchronization signal is used. Otherwise, the synchronization signal of the signal whose waveform is being displayed is used.

You can specify the external signal setting independently for each area in the 4 screen multi display.

A unit with a video signal input is required such as the LV 58SER01A (SDI INPUT).

(30) CAP Key (Capture Key)

Executes a screen capture. The screen capture data can be stored as a bitmap file in a USB memory. If you save the screen capture data as a BSG file to a USB memory, you can display the screen image again by loading the file into the LV 5800(A).

If the LV 58SER01A (SDI INPUT) or LV 58SER06 (3G-SDI INPUT) is installed, you can store a frame of video data in the internal memory and display it in the video signal waveform, vector, and picture displays. In addition, the data can be stored to a USB memory and loaded into the LV 5800(A) later to be displayed.

→ Refer to chapter 8, "CAPTURE FUNCTION"

(31) SYS Key (System Key)

Specifies system settings and error settings of the LV 5800(A) main frame or each unit.

→ Refer to chapter 7, "SYSTEM SETUP"

(32) Power Switch

An electronic switch that keeps track of the power on/off state.

* The LV 5800(A) is maintained in standby mode even if the power switch is turned off. In the state of standby, it consumes approximately 15 W of power and may generate heat. If you are not going to use the LV 5800(A) for an extended time, remove the power plug from the outlet.

(33) F·1 to F·7 (Function Keys)

Used to operate the menu.

4.2 Rear Panel

Figure 4-2 is an example in which the following units are installed to the LV 5800(A).

- **Input Units**
 - Unit No.1 : LV 58SER01A (SDI INPUT)
 - Unit No.2 : LV 58SER01A (SDI INPUT)
 - Unit No.3 : LV 58SER02 (EYE PATTERN unit)
 - Unit No.4 : LV 58SER40A (DIGITAL AUDIO)
- **Output Units**
 - Unit No.5 : None
 - Unit No.6 : LV 58SER20 (DVI-I OUTPUT unit)

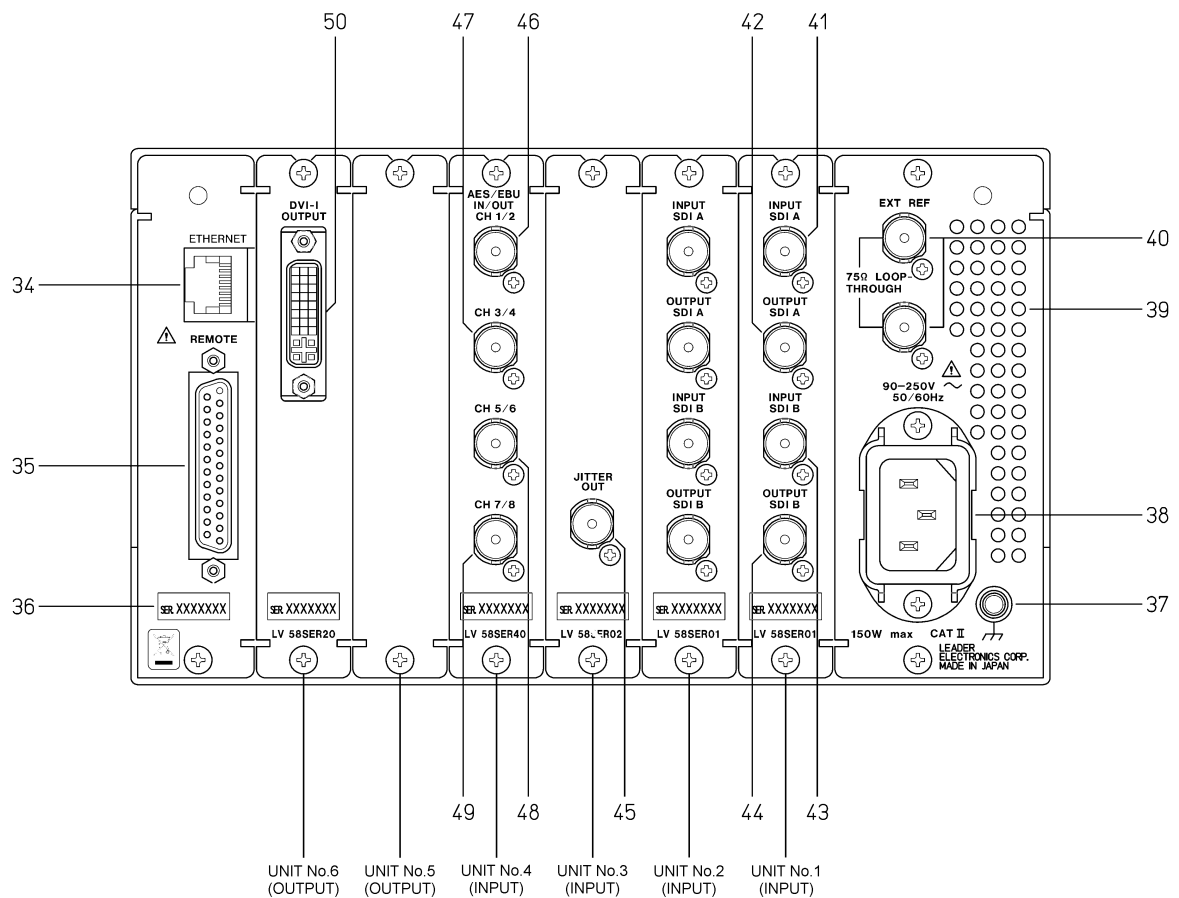


Figure 4-2 Rear panel

4.2.1 Rear Panel Description

(34) ETHERNET (Ethernet Connector)

Ethernet connector applicable to 100BASE-TX/10BASE-T.

When connecting to the network via a hub, use a straight cable; when directly connecting to a PC (one-to-one connection), use a cross cable.

→ Refer to section 7.2.2, "Ethernet Parameters Setup"

(35) REMOTE (Remote Connector)

A D-sub, 25-pin remote connector.

Recalls up to 8 or 60 sets of presets.

It can also be used to output errors or switch the input A/B channel.

→ Refer to section 7.2.3, "Remote Connector Setting"

(36) Serial Number

Provide this number when contacting LEADER.

(37) Ground terminal

This terminal is connected to the chassis and is used for grounding.



CAUTION

To prevent electric shock, be sure to ground the LV 5800(A).

(38) Power Input Terminal

An AC power input connector.



CAUTION

Be sure to use the LV 5800(A) in the 90 V to 250 V range.

(39) Vent Holes

Vent holes for cooling the LV 5800(A).



WARNING

Smoke or fire may result if you use the LV 5800(A) with the vent holes blocked.

Do not block the vent holes.

→ Refer to section 5.3, "Vent Holes"

(40) EXT REF (External Synchronization Input Connector)

The external synchronization signal input connector for the video signal waveform display.

The input configuration is loop-through. Terminate the end of the cascade connection at 75 Ω . HDTV tri-level sync signals and NTSC/PAL black burst signals are supported for the input signal.



CAUTION

Applying excessive input voltage to the connector can cause damage to the instrument.

Pay attention to the maximum input voltage range when applying signals.

The maximum input voltage range of the external synchronization input connector is ± 5 V.

4.2.2 LV 58SER01A (SDI INPUT) Rear Panel

(41) INPUT SDI A (SDI Signal Input A Connector)

(43) INPUT SDI B (SDI Signal Input B Connector)

Input connectors for serial digital signals (SDI).

Each input connector is terminated internally at 75 Ω . Therefore, you do not need to connect a terminator. Use a cable with a characteristic impedance of 75 Ω for the connection.



CAUTION

Applying excessive input voltage to the connector can cause damage to the instrument.

Pay attention to the maximum input voltage range when applying signals.

The maximum input voltage range of the SDI input connector is -2 V to +2 V.

(42) OUTPUT SDI A/B (SDI Signal Output A/B Connector)

(44) OUTPUT SDI B (SDI Signal Output B Connector)

Reclocked output of the serial digital signals. The serial digital video signal (SDI) that is applied to the SDI signal input connectors is output in the state of serial reclocking from these connectors. Connect the output to an external instrument such as a picture monitor supporting SDI input. A 75- Ω termination is required at the receiving end. OUTPUT SDI A/B is the output of INPUT SDI A/B, and OUTPUT SDI B is the output of INPUT SDI B.

4.2.3 LV 58SER02 (EYE PATTERN Unit) Rear Panel

(45) JITTER OUT (Jitter Output)

Converts the amount of jitter in the serial digital signal (SDI) monitored on the LV 58SER02 to voltage and outputs the voltage.

4.2.4 LV 58SER40A (DIGITAL AUDIO) Rear Panel

(46) AES/EBU IN/OUT CH 1/2 (Digital Audio I/O Connector CH 1/2)

(47) AES/EBU IN/OUT CH 3/4 (Digital Audio I/O Connector CH 3/4)

(48) AES/EBU IN/OUT CH 5/6 (Digital Audio I/O Connector CH 5/6)

(49) AES/EBU IN/OUT CH 7/8 (Digital Audio I/O Connector CH 7/8)

I/O connectors for AES/EBU (digital audio) signals. Switch between input and output using the system menu.

If the LV 58SER01A (SDI INPUT) or LV 58SER06 (3G-SDI INPUT) is installed and the LV 58SER40A (DIGITAL AUDIO) is set to output, the embedded audio is extracted from the selected SDI signal and output as AES/EBU signals.

**CAUTION**

Applying an external signal with the digital audio I/O connector set to output may cause malfunction. Be sure to check the I/O setting before applying an AES/EBU signal.

Applying excessive input voltage to the connector can cause damage to the instrument. Pay attention to the maximum input voltage range when applying signals.

The maximum input voltage range of the digital audio I/O connector is -5 V to +5 V.

4.2.5 LV 58SER20 (DVI-I OUTPUT unit) Rear Panel

(50) DVI-I OUTPUT (DVI-I Output Connector)

An output connector that supports both TMDS serial digital output and analog RGB output. The image displayed on the LV 5800(A) front panel is delivered in DVI-I format. Connect the output to external equipment such as an external LCD.

4.3 Display Screen

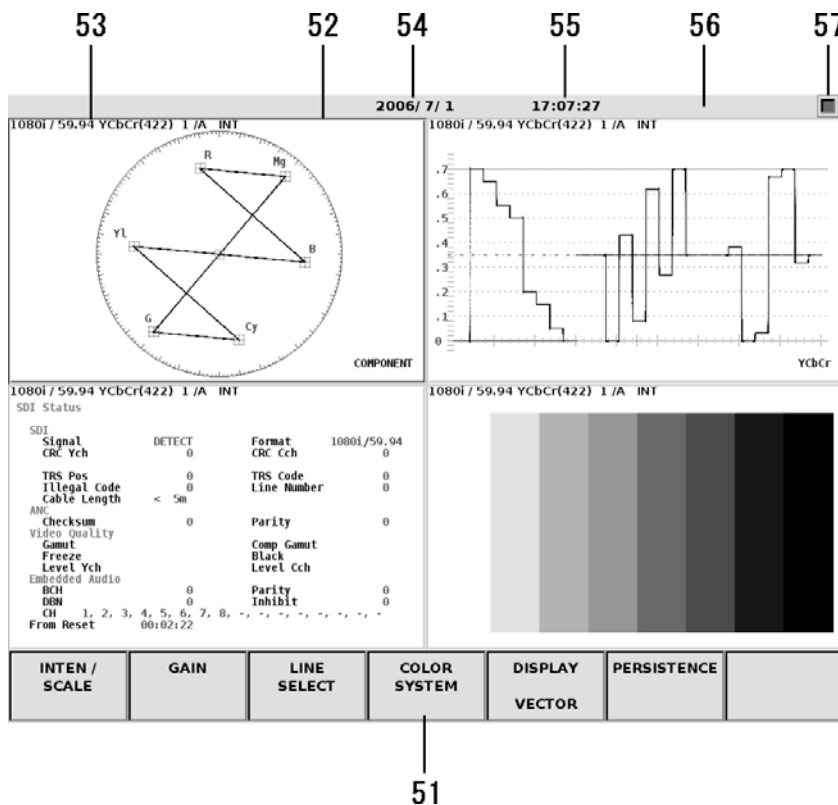


Figure 4-3 Display screen

(51) Function Menu

Displays a menu used to carry out various settings. Operate the menu using the F·1 to F·7 keys or the F·D (function dial).

→ Refer to section 7.2.1, “LV 5800(A) General Settings”.

(52) Selected Area

Displays the selected area in a blue frame. You can set the frame color by pressing the SYS key to show the system menu and selecting F·2 (PLATFORM SETUP). Select an area using the 1 to 4 keys.

(53) Input Signal Status

Indicates the input signal status.

The display varies depending on whether an SDI signal is selected or an audio signal is selected. For details, see the user’s manual for each unit.

(54) Date

Displays the date. You can set the date by pressing the SYS key to show the system menu and selecting F·3 (DATE & TIME).

→ Refer to section 7.2.4, “Date and Time Settings”

(55) Time

Displays the current time. You can set the time by pressing the SYS key to show the system menu and selecting F·3 (DATE & TIME).

→ Refer to section 7.2.4, “Date and Time Settings”

(56) Alarm

Displays alarms. When set to 1 screen display, errors are displayed.

If an error occurs in the internal cooling fan, FAN ALARM is indicated.

If this happens, turn off the power and request repairs.

(57) USB Memory Status

Displays an icon if a USB memory is connected to the USB port.

It is normally green. It turns red while the USB memory is being accessed.



CAUTION

Do not remove the USB memory when the icon is red. It can damage the data or USB memory.

5. INSTALLING THE UNITS

It is the customer's responsibility to install and remove the units appropriately. Damages caused by the customer's inadequate handling of the product will be repaired for a fee even if it is within the warranty period.



The LV 5800(A) is in standby mode even if the power switch is turned off, and electricity is applied to the internal circuit. Be sure to remove the power plug from the outlet before installing or removing units. Otherwise, electric shock or malfunction may result. If the power plug is connected to an outlet and the power switch on the front panel is OFF, the standby lamp shown in Figure 5-3 blinks.

In case you handle the unit, please wear gloves etc. and do not treat bare-handed. Otherwise, it may be injured with parts.



Electrostatic discharge may damage the units or the electronic parts of the LV 5800(A). Follow the precautions below when installing or removing units.

- Do not perform work in electrically charged locations.
- Wear an antistatic wrist band and gloves to perform work.
- Avoid touching the parts in the units as much as possible.

5.1 Removing the Units

Remove the top cover to install or remove a unit.

As shown in Figure 5-1, unfastens the 17 screws and removes the top cover.

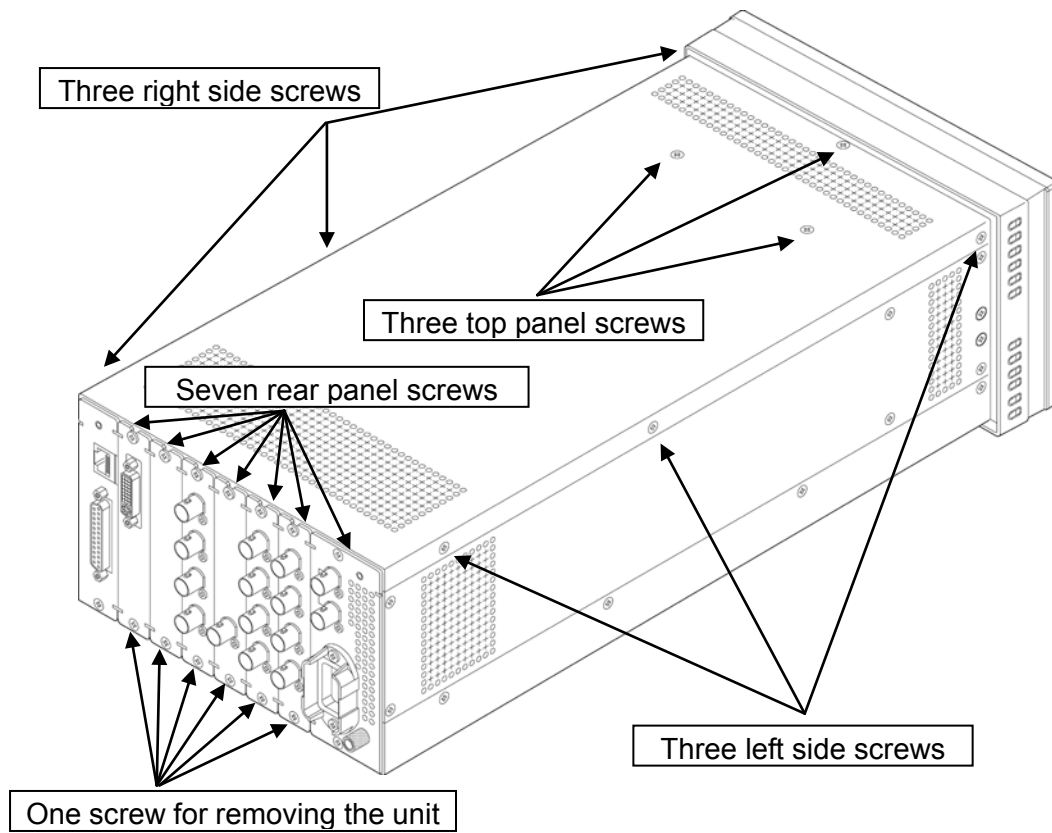


Figure 5-1 Removing the top cover

Next, gently pull up the red ejector on the front panel of the unit as shown in Figure 5-2. Using your other hand, pull up on the back side of the unit. Then, slowly pull the unit out.



Figure 5-2 Removing the unit

5.2 Installing the Units

The units that can be installed in the LV 5800(A) can be divided into input units and output units. Input units can be installed in the slots marked Unit No. 1 to 4 (input) in Figure 5-3. Likewise, output units can be installed in the slots marked Unit No. 5 and 6 (output).



CAUTION

Installing a unit in a wrong position can cause malfunction.

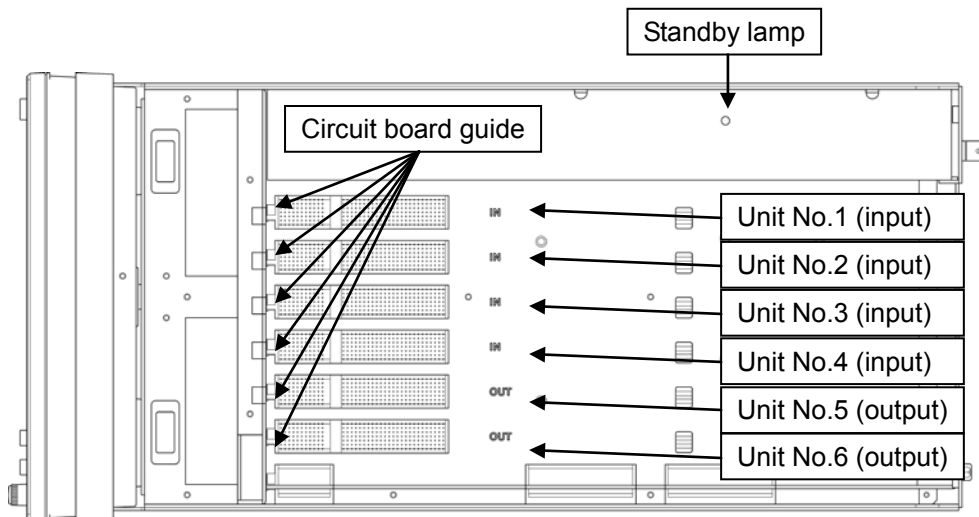


Figure 5-3 Installation position of units

First, check that the circuit board connector pins where the unit is to be connected are not bent or broken.

Next, slowly slide the unit along the circuit board guide. As shown in Figure 5-4, check that the circuit board connector of the unit and the circuit board connector of the LV 5800(A) are aligned before inserting the unit into the connector.

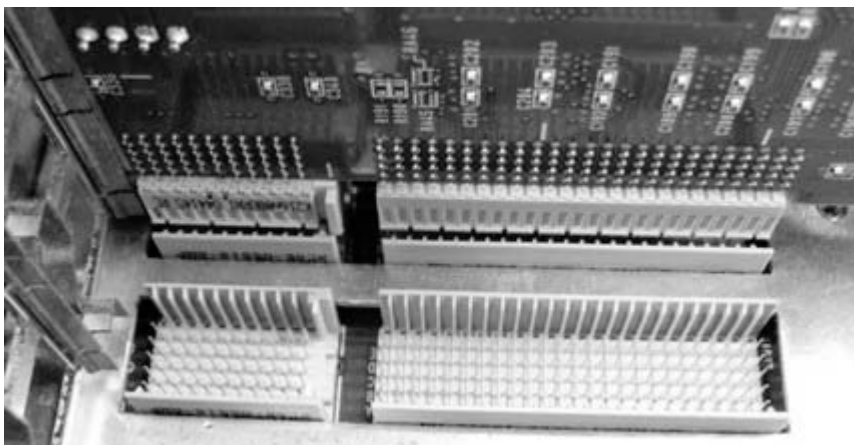


Figure 5-4 Alignment of the Unit

5. INSTALLING THE UNITS

After alignment, press both edges of the unit from above as shown in Figure 5-5.

If you feel that the unit is not going in smoothly, pull the unit out and check that the circuit board connector pins are not bent. Then, install it again.



Figure 5-5 Inserting the unit



Please be careful of the connector on the LV 5800(A) when inserting or removing a unit. Inserting or removing a unit at an angle may cause the connector pins to bend which may require the motherboard to be replaced.

5.2.1 Installing the LV 58SER01A (SDI INPUT)

Install the LV 58SER01A into Units No. 1 to 4 (input) of the LV 5800(A). The unit will not work if it is installed in Unit No. 5 or 6 (output).

If you are installing one LV 58SER01A, install it in Unit No. 1 (input). If you are installing multiple units, install them in order from Unit No. 1 (input) to Unit No. 4 (input). Up to four units can be installed.

5.2.2 Installing the LV 58SER02 (EYE PATTERN unit)

The LV 58SER02 (EYE PATTERN unit) supports the eye pattern displays up to three of the LV 58SER01A (SDI INPUT) and LV 58SER04 (MPEG RECODER). To display the eye pattern, you must connect each other using cables.

Only a single LV 58SER02 can be installed. You cannot install multiple LV 58SER02s. In addition, you cannot install both the LV 58SER02 and the LV 58SER07 (EYE PATTERN) on the same LV 5800(A).

It is preferable that the LV 58SER02 be installed in the next Unit No. (input) after the last LV 58SER01A.

The installation procedure of the LV 58SER02 is given below.

5. INSTALLING THE UNITS

1. Prepare the LV 58SER02 (EYE PATTERN unit) in a factory default condition as shown in Figure 5-6. By factory default, a coaxial cable is connected to J2 SDI (ST).

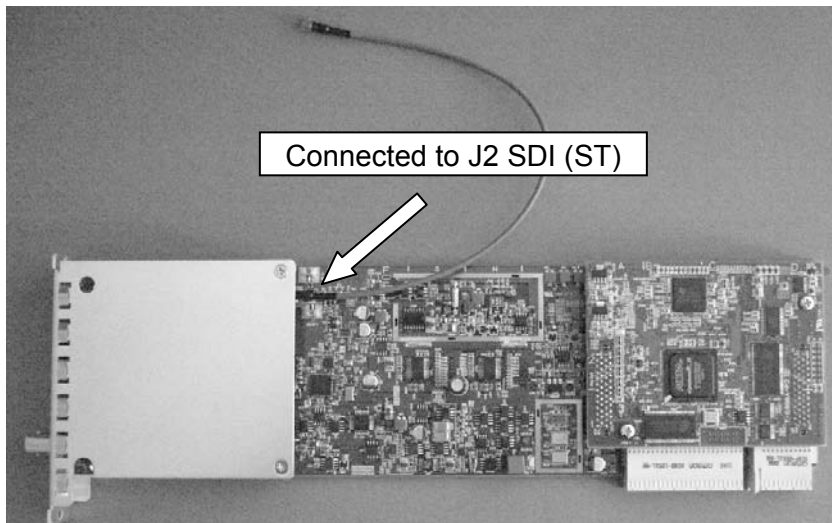


Figure 5-6 LV 58SER02 (EYE PATTERN Unit) in factory default condition

2. To install up to two of the LV 58SER01A and LV 58SER04, connect a cable sold separately to J3 (OP1) on the LV 58SER02 as shown in Figure 5-7.

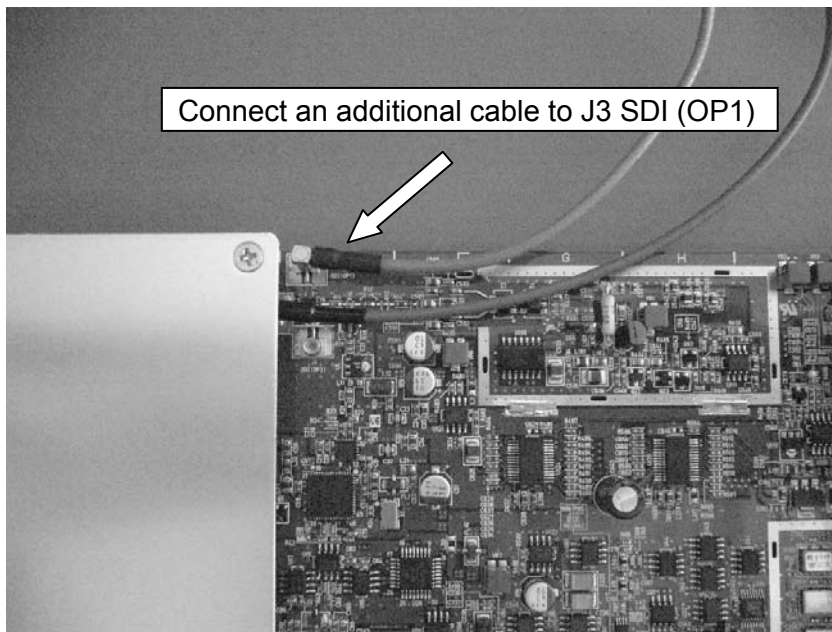


Figure 5-7 To install up to two of the LV 58SER01A and LV 58SER04

5. INSTALLING THE UNITS

3. To install up to three of the LV 58SER01A and LV 58SER04, connect cables sold separately to J1 (OP2) on the LV 58SER02 as shown in Figure 5-8.

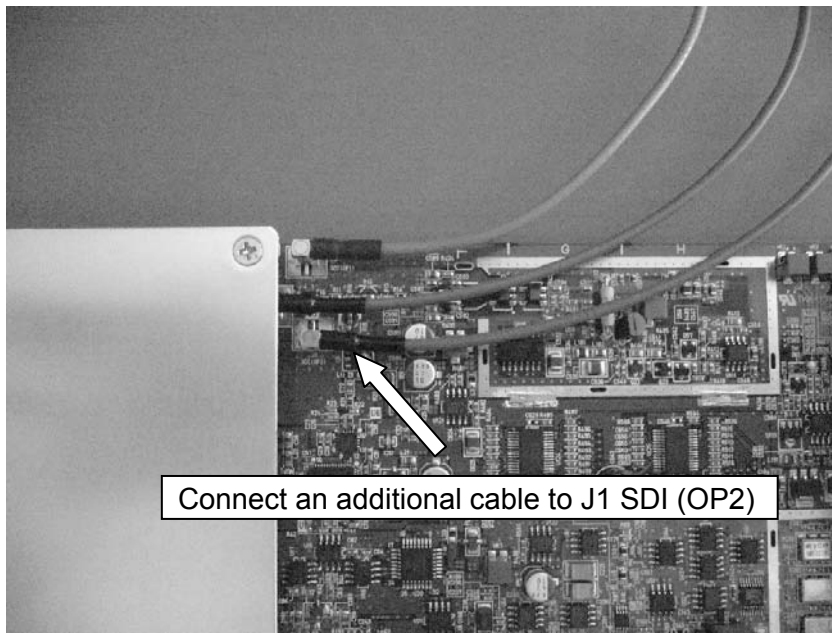


Figure 5-8 To install up to three of the LV 58SER01A and LV 58SER04

4. Install the LV 58SER02 to the LV 5800(A).

If you have installed one of the LV 58SER01A or LV 58SER04, install the LV 58SER02 to input Unit 2.

If you have installed up to two of the LV 58SER01A and LV 58SER04 together, install the LV 58SER02 to input Unit 3.

If you have installed up to three of the LV 58SER01A and LV 58SER04 together, install the LV 58SER02 to input Unit 4.

5. INSTALLING THE UNITS

5. Remove the LV 58SER01A and LV 58SER04 from the LV 5800(A), and remove the terminator.

When the LV 58SER01A is installed, remove the terminator that is attached to J5.

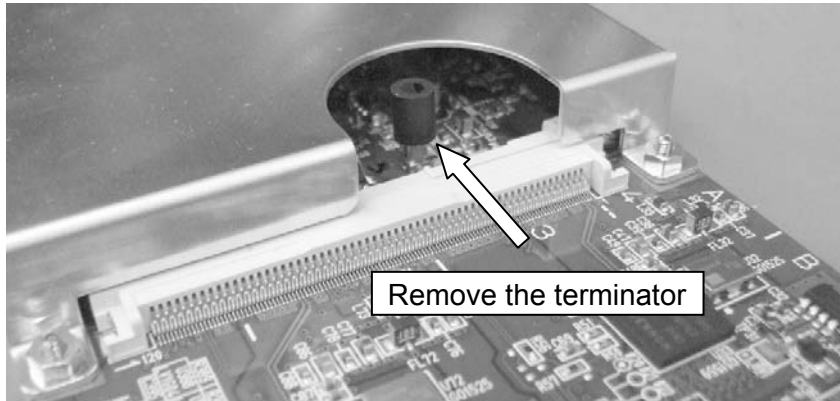


Figure 5-9 Terminator attached to the LV 58SER01A

When the LV 58SER04 is installed, remove the terminator that is attached to J4.

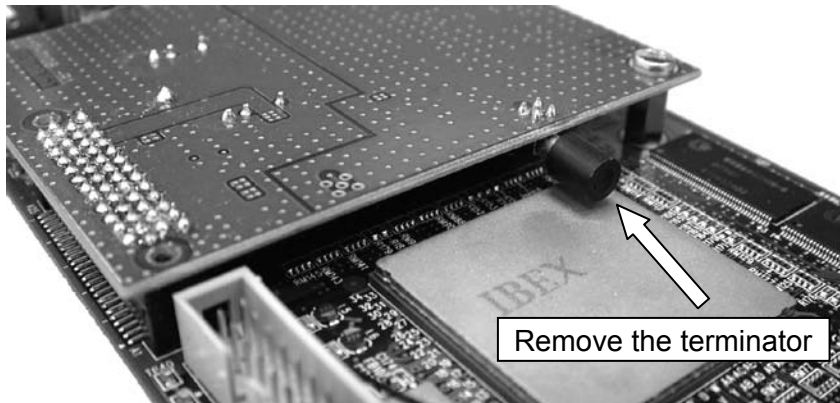


Figure 5-10 Terminator attached to the LV 58SER04

5. INSTALLING THE UNITS

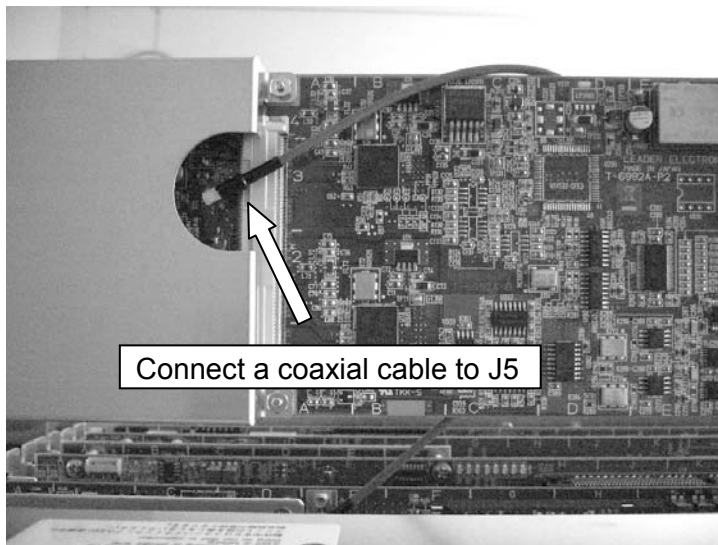
6. Connect a coaxial cable to the LV 58SER01A and LV 58SER04.

If you are installing one of the LV 58SER01A or LV 58SER04, connect the connector (*) of circuit board that is to be installed to Unit 1 to the J2 SDI (ST) on the LV 58SER02.

If you are installing up to two of the LV 58SER01A and LV 58SER04 together, connect the connector (*) of circuit board that is to be installed to Unit 2 to J3 (OP1) on the LV 58SER02.

If you are installing up to three of the LV 58SER01A and LV 58SER04 together, connect the connector (*) of circuit board that is to be installed to Unit 3 to J1 (OP2) on the LV 58SER02.

* J5 connector for the LV 58SER01A or J4 connector for the LV 58SER04.



When connecting the coaxial cable, be sure to insert the connector until it clicks in place.

Figure 5-11 Connect a coaxial cable to the LV 58SER01A

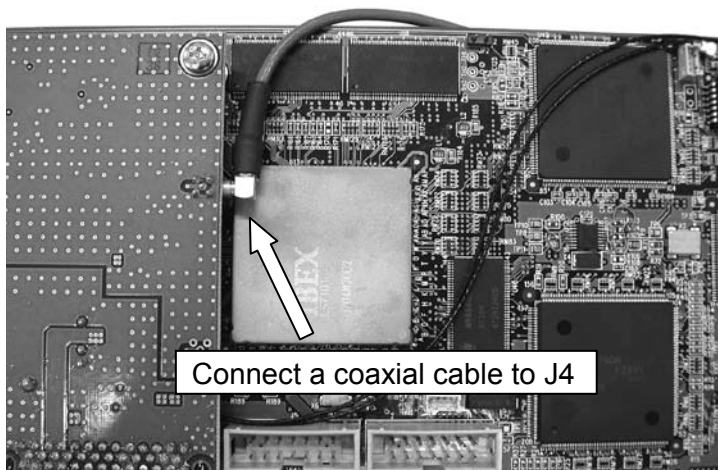


Figure 5-12 Connect a coaxial cable to the LV 58SER04

5. INSTALLING THE UNITS

7. Install the LV 58SER01A and LV 58SER04 to the LV 5800(A), and you are done.

The figure below is the example which installed the LV 58SER01A to Unit No.1 and No.2, and installed the LV 58SER02 to Unit No.3.

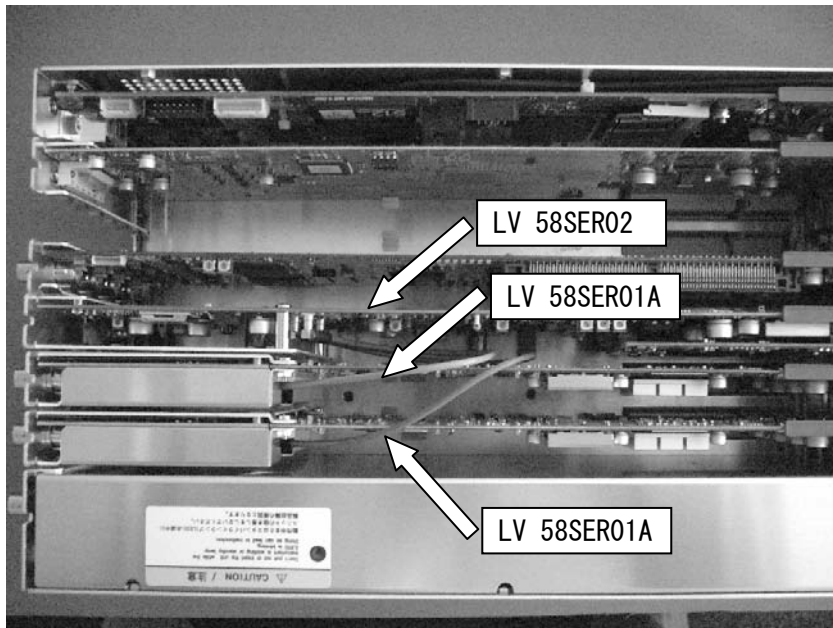


Figure 5-13 Install the LV 58SER02 to the LV 5800(A)

5.2.3 Installing the LV 58SER03A (TRI SYNC/COMPOSITE)

Install the LV 58SER03A into input slots (from Unit No.1 to 4) of the LV 5800(A). The unit will not work if it is installed to Unit No. 5 or 6 (output).

When installing one LV 58SER03A, install it to Unit No.1 (input).

When installing in sequence with 2, 3 and 4 pieces, install them to Unit No.2 (input), Unit No.3 (input) and Unit No.4 (input) in order.

It can install it up to four.

5.2.4 Installing the LV 58SER04 (MPEG DECODER)

Install the LV 58SER04 into input slots (from Unit No.1 to 4) of the LV 5800(A). The unit will not work if it is installed to Unit No. 5 or 6 (output).

When installing one LV 58SER04, install it to Unit No.1 (input).

In addition, when installing in sequence with 2, 3 and 4 pieces, install them to Unit No.2 (input), Unit No.3 (input) and Unit No.4 (input) in order.

It can install it up to four.

5.2.5 Installing the LV 58SER06 (3G-SDI INPUT)

Install the LV 58SER06 into input slots (from Unit No.1 to 4) of the LV 5800(A). The unit will not work if it is installed to Unit No. 5 or 6 (output).

When installing one LV 58SER06, install it to Unit No.1 (input).

In addition, when installing in sequence with 2, 3 and 4 pieces, install them to Unit No.2 (input), Unit No.3 (input) and Unit No.4 (input) in order.

It can install it up to four.

5.2.6 Installing the LV 58SER07 (EYE PATTERN)

Install the LV 58SER07 into input slots (from Unit No.1 to 4) of the LV 5800(A). The unit will not work if it is installed to Unit No. 5 or 6 (output).

Because the LV 58SER07 and LV 58SER06 (3G-SDI INPUT) are used together, we recommend that you install the LV 58SER07 next to the LV 58SER06.

Only a single LV 58SER07 can be installed. You cannot install multiple LV 58SER07s. In addition, you cannot install both the LV 58SER02 (EYE PATTERN unit) and the LV 58SER07 on the same LV 5800(A).

5.2.7 Installing the LV 58SER20 (DVI OUTPUT unit)

Install the LV 58SER20 to Unit No. 5 or 6 (output) of the LV 5800(A). The unit will not work if it is installed into input slots (from Unit No.1 to 4).

5.2.8 Installing the LV 58SER21 (ANALOG COMPONENT OUTPUT)

Install LV 58SER21 units into slot number 5 or 6 (the output slots) of the LV 5800(A). If you install an LV 58SER21 into a slot from slot number 1 to 4 (the input slots), it will not work.

5.2.9 Installing the LV 58SER40A (DIGITAL AUDIO)

When installing one LV 58SER40A, install it into input slots (from Unit No.1 to 4).

In addition, when installing two LV 58SER40As, you can install only one of them into input slots (from Unit No.1 to 4) and install other one to Unit No.5 or 6 (output).

When installing three LV 58SER40As, you can install only one of them into input slots (from Unit No.1 to 4) and install other two to Unit No.5 and 6 (output) respectively.

- * You cannot install two or more of LV 58SER40As into input slots (from Unit No.1 to 4).
- * Audio signals are not transmitted If the LV 58SER40A is installed only to the Unit 5 or 6 (output).
- * If both the LV 58SER40A and the LV 58SER40 are available, install the LV 58SER40A into input slots (from Unit No.1 to 4).

When the unit installed to the input slots (from Unit No.1 to 4) is LV 58SER40A, LV 5800(A) and LV 58SER40A connect by using the analog audio cable of accessories of the LV 58SER40A. Connect according to the following procedures.

In the case of LV 58SER40, this work is unnecessary.

An analog audio signal cannot be measured in LV 58SER40.

5. INSTALLING THE UNITS

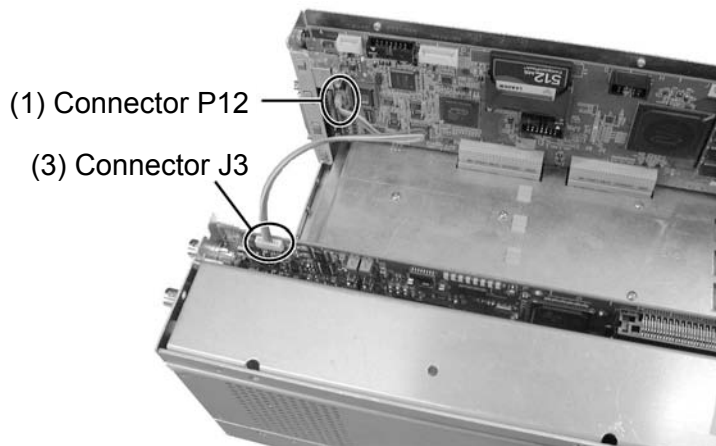


Figure 5-14 Connection with LV 5800(A) and LV 58SER40A

1. Connects the cable for analog audio (4 pin-terminal side) to the connector (P12) of a CPU board.

A CPU board is next to input slot No.6.

When it seems that the situation of Units installed to the input/output slots (from Unit No.1 to 6) interferes with this work, you can work easy if you remove its Unit once.

Connect so that 1 Pin (brown) of the cable will be the underside. The mark on 1 Pin is shown to the upper surface of the connector.

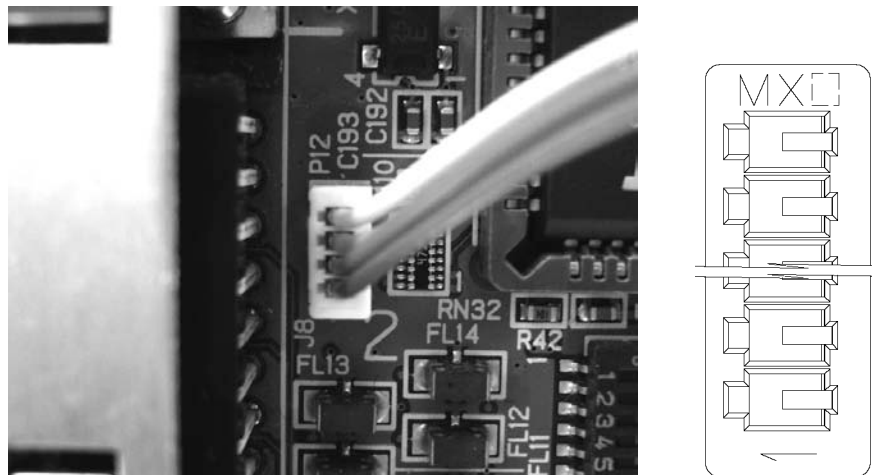


Figure 5-15 Connecting the cable to the LV 5800(A)

2. When the Unit installed in the input/output slots (from Unit No.1 to 6) is removed in step (1), you should return them to the original position again.
3. Connects the cable for analog audio (8 pin-terminal side) to the connector (J3) of the LV 58SER40A.

Connect so that 1 Pin (brown) will become on this side when it views from the front panel side.

A cable should pass upper side of the input/output slots (from unit No.1 to 6).

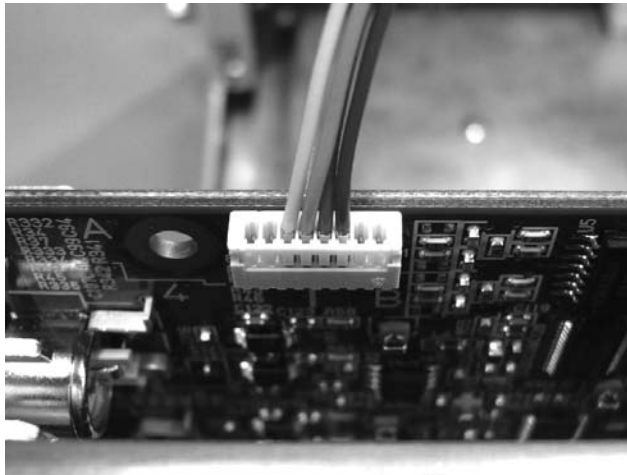


Figure 5-16 Connecting the cable to the LV 58SER40A

5.3 Vent Holes



As shown in Figure 5-17, there are vent holes on the top cover and side and rear panels of the LV 5800(A). Do not install the LV 5800(A) in a way that blocks these vent holes. Otherwise, malfunction, smoke, or fire may result.

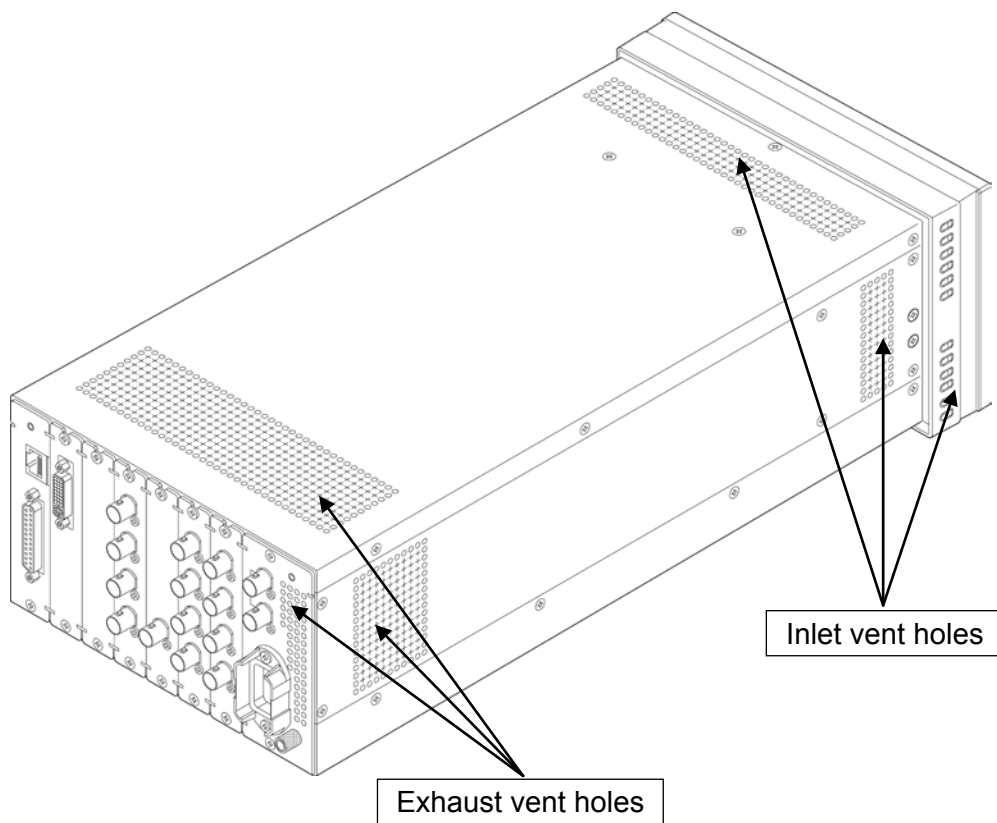


Figure 5-17 Vent holes

6. OPERATION OVERVIEW

6.1 Differences in the Operation by Unit Type

This section covers the concepts concerning the operation of each unit of the LV 5800(A).

The LV 5800(A) allows the units to be configured freely, but some units have limitations in the installation or require special operations.

Understanding the concepts concerning the operation will allow you to operate the LV 5800(A) smoothly if multiple units are installed.

6.1.1 Input Units

The LV 58SER01A (SDI INPUT) is classified as an input unit. The unit has input connectors that allow you to monitor the input signals.

To monitor the input signal of a unit, select the unit key corresponding to the unit number in which the unit is installed.

6.1.2 Output Units

The LV 58SER20 (DVI-I OUTPUT unit) is classified as an output unit. Units that only have output connectors are classified as output units.

There are no unit selection keys for the output units. The output units are configured from the system menu.

6.1.3 Function Units

The LV 58SER02 (EYE PATTERN unit) is classified as a function unit. The unit does not have input or output connectors.* The signals needed for monitoring are supplied by other units. The LV 58SER02 (EYE PATTERN unit) is internally connected to the LV 58SER01A (SDI INPUT).

Pressing the unit selection key for the unit number in which a function unit is installed produces no effect. Press the unit selection key of the unit number of the signal source (unit selection key for the LV 58SER01A), and then press the EYE key.

* The unit outputs the results of jitter measured, but it does not have input or output for the measured signal.

6.1.4 Multipurpose Units

The LV 58SER40A (DIGITAL AUDIO) is classified as a multipurpose unit. The unit has input and output connectors as well as an internal connection with the LV 58SER01A (SDI INPUT) for displaying embedded audio.

On the LV 58SER40A (DIGITAL AUDIO), you can select input or output of the rear BNC connector using the system menu. If you select input, you can apply AES/EBU signals to the BNC connector. If you select output, the BNC connector switches to an output connector. You switch between input unit and output unit by switching the input/output setting of the rear BNC connector.

If the rear BNC connector is set to input (if the unit is operating as an input unit), the unit selection key of the unit number in which the LV 58SER40A (DIGITAL AUDIO) is installed is enabled. Otherwise, the unit selection key is disabled. The audio signal being displayed is output as AES/EBU from the rear BNC connector.

To display the embedded audio, press the unit select key of the unit number in which the LV 58SER01A (SDI INPUT) is installed, and then press the AUDIO key. In this case, it does not matter if the rear BNC connector setting in the system menu is set to input or output.

6.2 Panel Control Basics

This section gives an overview of the LV 5800(A) panel control.

We recommend that you follow the basic procedures given in this section until you understand the concept concerning the LV 5800(A) operation and its limitations.

The LV 5800(A) may not operate in the same manner as described in this basic procedure depending on the installation conditions of the units and the system settings of the units. For details, see the user's manual for each unit.

6.2.1 Selecting the Display Area

The LV 5800(A) is basically designed to be used in 4 screen multi display. To start the LV 5800(A) operation, first select the display area you want to control within the 4 screen multi display. Select a display area using the 1 to 4 keys.

Figure 6-1 shows the relationship between the keys and the display areas in 4 screen multi display.

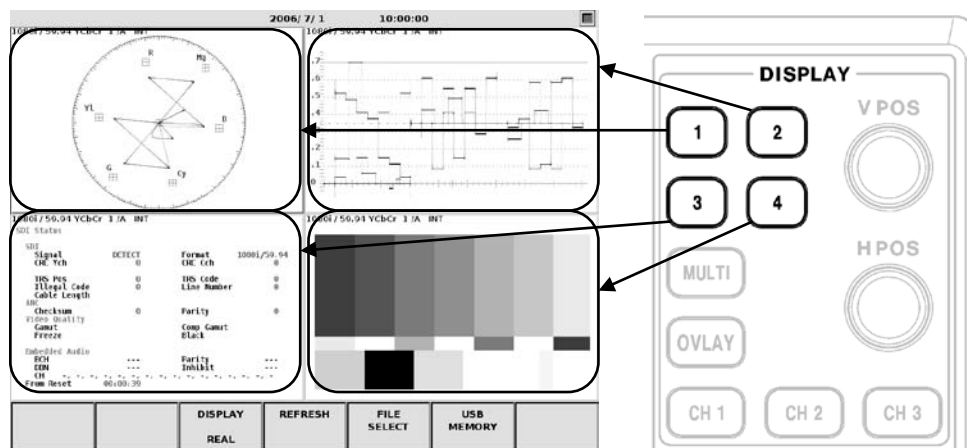


Figure 6-1 Relationship between the area selection keys and the areas in the 4 screen multi display

Figure 6-2 shows the relationship between the keys and the display areas in 2 screen multi display.

Press the 1 or 2 key to show the first and second areas of the 4 screen multi display in the 2 screen multi display.

Press the 3 or 4 key to show the third and fourth areas of the 4 screen multi display in the 2 screen multi display.

The selected area is displayed expanded also in the 1 screen display.

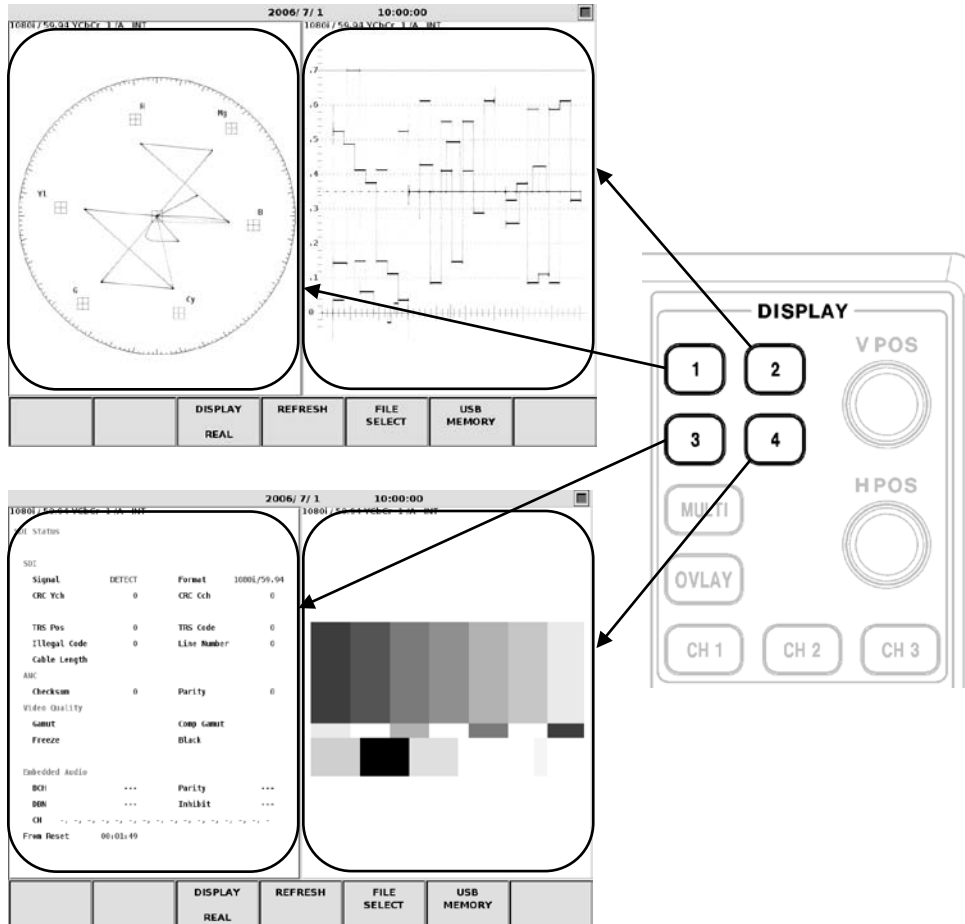


Figure 6-2 Relationship between the area selection keys and the areas in the 2 screen multi display

6.2.2 Selecting the Display Format

The LV 5800(A) has two display formats: multi screen display and 1 screen display. The multi screen display and 1 screen display switch each time you press the MULTI key. The MULTI key LED illuminates brightly when multi screen display is enabled.

In addition, multi screen display mode (as shown in Figure 6-3) consists of the 4 screen multi display and 2 screen multi display.

In case of multi screen display, the switching between 4 screen multi display and 2 screen multi display can be performed on section 7.2.1, "LV 5800(A) General Settings".

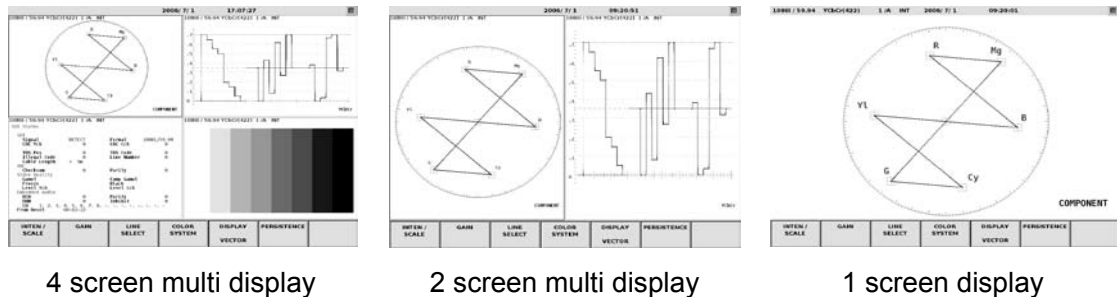


Figure 6-3 LV 5800(A) display formats

6.2.3 Selecting the Input Signal

After selecting the display area, select the input signal. To select the input signal, press the unit selection key of the unit number to which the signal is being applied. For a unit that has multiple input connectors such as the LV 58SER01A (SDI INPUT), press the A or B key to switch the input signal.

6.2.4 Selecting the Display Mode

After selecting the input signal, select the display mode. Select the display mode from the MODE group. To display the video signal waveform, press the WFM key. Likewise, you can select vector display, picture display, audio display, eye pattern display, and status display. If you select a unit that does not support the current display mode, the display mode automatically changes to WFM. For example, if the current display mode is AUD and you select a unit that contains the LV 58SER03A(TRI SYNC/COMPOSITE), the display mode changes to WFM.

To enter detailed settings of each display, follow the function key menu. For details, see the user's manual for each unit.

6.3 Using the Tab Menu

In addition to the normal pop-up menus, the LV 5800(A) has tab menus for complex settings as shown in Figure 6-4. The procedure to operate the tab menu is given below.

GENERAL SETUP	ERROR SETUP1	ERROR SETUP2	ERROR SETUP3	ERROR SETUP4	ERROR SETUP5
---------------	--------------	--------------	--------------	--------------	--------------

UNIT3 : LV58SER01A SDI Input Unit

Ancillary Data Error Setup

Parity Error ☒ ON ☐ OFF

Checksum Error ☒ ON ☐ OFF

Embedded Audio Error Setup

BCH Error ☒ ON ☐ OFF

DBN Error ☒ ON ☐ OFF

Parity Error ☒ ON ☐ OFF

Inhibit Line Error ☒ ON ☐ OFF

COMPLETE	PREV	NEXT				CANCEL
----------	------	------	--	--	--	--------

Figure 6-4 Tab menu

a) Selecting Items

Turn the F·D to move the cursor indicated by a square. Move the cursor to the item you want to select and press the F·D to select the check box.

The cursor may not move to certain items in the tab menu depending on the settings of other items.

b) Setting Values

Some items in the tab menu require a value to be entered such as the error detection level. Carry out the procedure below to enter values.

Turn the F·D to move the cursor to the item in which a value is to be entered. (You may not be able to move to the item depending on the setting of other items. If this happens, check the status of the items above the relevant item.

If you move the cursor to an item in which a value is to be entered, the cursor is filled in blue.

Press the F·D. The cursor changes from blue to green.

Turn the F·D to select the desired value.

Then, press the F·D to confirm.

c) Moving between Tabs

Normally, you enter settings on multiple tabs in a tab menu. To move between tabs, press F·2 (PREV) or F·3 (NEXT).

d) Confirming and Completing the Settings

To confirm and complete the items set in the tab menu, press F·1 (COMPLETE). The settings are applied, the tab menu closes, and the function menu returns to a higher level.

e) Canceling and Completing the Settings

To cancel and complete the items set in the tab menu, press F·7 (CANCEL). The settings are not applied, the tab menu closes, and the function menu returns to a higher level.

6.4 Video Signal Waveform Display

Carry out the procedure below to display the SDI video signal waveform that is applied to the LV 58SER01A (SDI INPUT).

a) Selecting the Display Area

Press the MULTI key to select multi screen display or 1 screen display. If you select multi screen display, press any of the 1 to 4 keys to select which area in the multi display to show the video signal waveform.

b) Selecting the Input Signal

Press any of the UNIT 1 to 4 keys to select the unit number in which the LV 58SER01A (SDI INPUT) is installed. Because the LV 58SER01A (SDI INPUT) has two SDI input connectors, press the A or B key to select the A or B input.

c) Selecting WFM

Press the WFM key to display the video signal waveform.

The OVLAY key and the CH 1 to 3 keys are enabled in the video signal waveform display.

6.5 Vector Waveform Display

Carry out the procedure below to display the vector waveform of the SDI video signal that is applied to the LV 58SER01A (SDI INPUT).

a) Selecting the Display Area

Press the MULTI key to select multi screen display or 1 screen display. If you select multi screen display, press any of the 1 to 4 keys to select which area in the multi display to show the vector waveform.

b) Selecting the Input Signal

Press any of the UNIT 1 to 4 keys to select the unit number in which the LV 58SER01A (SDI INPUT) is installed. Because the LV 58SER01A (SDI INPUT) has two SDI input connectors, press the A or B key to select the A or B input.

c) Selecting VECT

Press the VECT key to display the vector waveform.

If you do not need to change the display area or the input signal, you can simply press the VECT key to show the vector waveform display.

6.6 Picture Display

Carry out the procedure below to display the picture of the SDI video signal that is applied to the LV 58SER01A (SDI INPUT).

a) Selecting the Display Area

Press the MULTI key to select multi screen display or 1 screen display. If you select multi screen display, press any of the 1 to 4 keys to select which area in the multi display to show the picture.

b) Selecting the Input Signal

Press any of the UNIT 1 to 4 keys to select the unit number in which the LV 58SER01A (SDI INPUT) is installed. Because the LV 58SER01A (SDI INPUT) has two SDI input connectors, press the A or B key to select the A or B input.

c) Selecting PIC

Press the PIC key to display the picture.

If you do not need to change the display area or the input signal, you can simply press the PIC key to show the picture display.

6.7 Audio Display

This section explains how to display the audio using the LV 58SER40A (DIGITAL AUDIO).

The audio display is divided into the embedded audio display of the LV 58SER01A (SDI INPUT) and the display of the external audio applied to the digital audio I/O connector on the rear panel. The procedure to select the input signal is different for each display.

6.7.1 Displaying the Embedded Audio

If the LV 58SER01A (SDI INPUT) and LV 58SER40A (DIGITAL AUDIO) are installed, the audio embedded in the SDI signal can be displayed.

Carry out the procedure below to display the embedded audio.

a) Selecting the Display Area

Press the MULTI key to select multi screen display or 1 screen display. If you select multi screen display, press any of the 1 to 4 keys to select which area in the multi display to show the audio.

b) Selecting the Input Signal

Press any of the UNIT 1 to 4 keys to select the unit number in which the LV 58SER01A (SDI INPUT) is installed. Because the LV 58SER01A (SDI INPUT) has two SDI input connectors, press the A or B key to select the A or B input. *

* Do not select the unit number in which the LV 58SER40A (DIGITAL AUDIO) is installed.

c) Selecting AUDIO

Press the AUDIO key to display the audio.

If you are monitoring an SDI signal and you do not need to change the display area or the input signal, you can simply press the AUDIO key to show the embedded audio display.

The audio display cannot be shown simultaneously in multiple areas.

6.7.2 Displaying the External Audio

In addition to displaying the embedded audio, the LV 58SER40A (DIGITAL AUDIO) can also display an external digital audio signal applied to the rear BNC connector.

Carry out the procedure below to display the external digital audio.

a) Selecting the Input System

To display the external digital audio, you must switch the input/output of the digital audio I/O connector on the rear panel.

The input/output is switched using the system menu.

First, press the SYS key to display the system menu.

Next, press F·1 (UNIT SETUP) and press the UNIT SETUP function key of the unit number in which the LV 58SER40A (DIGITAL AUDIO) is installed. The system setup tab menu of the LV 58SER40A appears.

Turn the F·D to move the cursor to INPUT of External BNC Select in the tab menu. Press the F·D to select the check box, and press F·1 (COMPLETE) to confirm.

b) Selecting the Display Area

Press the MULTI key to select multi screen display or 1 screen display. If you select multi screen display, press any of the 1 to 4 keys to select which area in the multi display to show the audio.

c) Selecting the Input Signal

Press any of the UNIT 1 to 4 keys to select the unit number in which the LV 58SER40A (DIGITAL AUDIO) is installed. You do not have to press the AUDIO key for the external digital audio display.

The audio display cannot be shown simultaneously in multiple areas.

6.8 Status Display

This section explains how to show the status display of the various errors that the LV 5800(A) detects and analysis results. The procedure varies depending on the items that the LV 58SER01A (SDI INPUT) detects and the items that the LV 58SER40A (DIGITAL AUDIO) detects.

6.8.1 Status Display of SDI Signals

Carry out the procedure below to display the status of the SDI signal that is applied to the LV 58SER01A (SDI INPUT).

a) Selecting the Display Area

Press the MULTI key to select multi screen display or 1 screen display. If you select multi screen display, press any of the 1 to 4 keys to select which area in the multi display to show the status.

b) Selecting the Input Signal

Press any of the UNIT 1 to 4 keys to select the unit number in which the LV 58SER01A (SDI INPUT) is installed. Because the LV 58SER01A (SDI INPUT) has two SDI input connectors, press the A or B key to select the A or B input.

c) **Selecting STATUS**

Press the STATUS key to display the status.

6.8.2 Status Display of Audio

Carry out the procedure below to display the status detected on the LV 58SER40A (DIGITAL AUDIO).

a) **Selecting the Display Area**

Press the MULTI key to select multi screen display or 1 screen display. If you select multi screen display, press any of the 1 to 4 keys to select which area in the multi display to show the status.

b) **Selecting the Input Signal**

To display the status of the digital audio that is separated from the embedded audio, press any of the UNIT 1 to 4 keys to select the unit number in which the LV 58SER01A (SDI INPUT) is installed.

To display the status of the external digital audio that is applied to the rear BNC connector of the LV 58SER40A (DIGITAL AUDIO), select the unit number in which the LV 58SER40A (DIGITAL AUDIO) is installed.

For the LV 58SER01A (SDI INPUT), press the A or B key to select the A or B input, because the unit has two SDI input connectors.

c) **Selecting STATUS**

Press the AUDIO key, and press F·2 (DISPLAY MODE) to select STATUS.

6.9 Eye Pattern Display

6.9.1 LV 58SER02's Eye Pattern Display

Carry out the procedure below to display the eye pattern of the SDI signal that is being measured by the LV 58SER01A (SDI INPUT).

a) **Selecting the Display Area**

Press the MULTI key to select multi screen display or 1 screen display. If you select multi screen display, press any of the 1 to 4 keys to select which area in the multi display to show the eye pattern.

b) **Selecting the Input Signal**

Press any of the UNIT 1 to 4 keys to select the unit number in which the LV 58SER01A is installed. Because the LV 58SER01A has two SDI input connectors, press the A or B key to select the A or B input.

c) **Selecting EYE**

Press the EYE key to display the eye pattern.

6.9.2 LV 58SER07's Eye Pattern Display

Carry out the procedure below to display the eye pattern of the SDI signal that is being measured by the LV 58SER06 (3G-SDI INPUT).

a) Applying the SDI Signal

Apply the SDI signal to an LV 58SER07 INPUT connector.

b) Connecting the Cable between the LV 58SER07 and LV 58SER06

Using the supplied cable, connect the LV 58SER07 OUTPUT A connector to the LV 58SER06 INPUT A connector or the LV 58SER07 OUTPUT B connector to the LV 58SER06 INPUT B connector. Connect one LV 58SER07 to one LV 58SER06. Do not connect one LV 58SER07 to multiple LV 58SER06s.

c) Selecting the Display Area

Press the MULTI key to select multi screen display or 1 screen display. If you select multi screen display, press any of the 1 to 4 keys to select which area in the multi display to show the eye pattern.

d) Selecting the Input Signal

Use the UNIT 1 to 4 keys to select the unit number where the LV 58SER06 (the one that is connected to the LV 58SER07) is installed. Because the LV 58SER06 has two SDI input connectors, press the A or B key to select the A or B input.

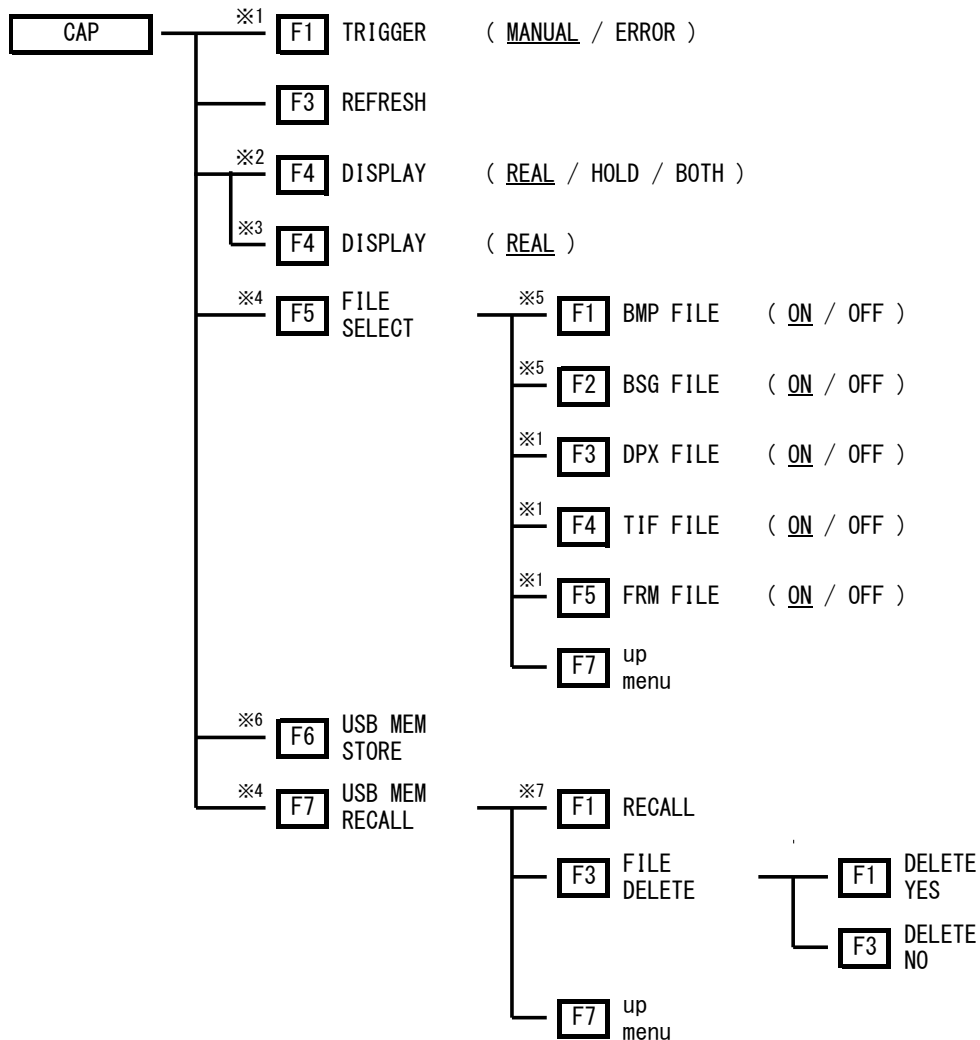
e) Selecting EYE

Press the EYE key to display the eye pattern.

6.10 Menu Structure

The structure of the menu is shown below.
Underlined sections indicate initial settings.

6.10.1 Capture Menu



*1 Appears when SYS-PLATFORM SETUP-GENERAL SETUP-Capture Mode is set to Video Frame.

*2 Appears when there is screen capture data.

*3 Appears when there is no screen capture data.

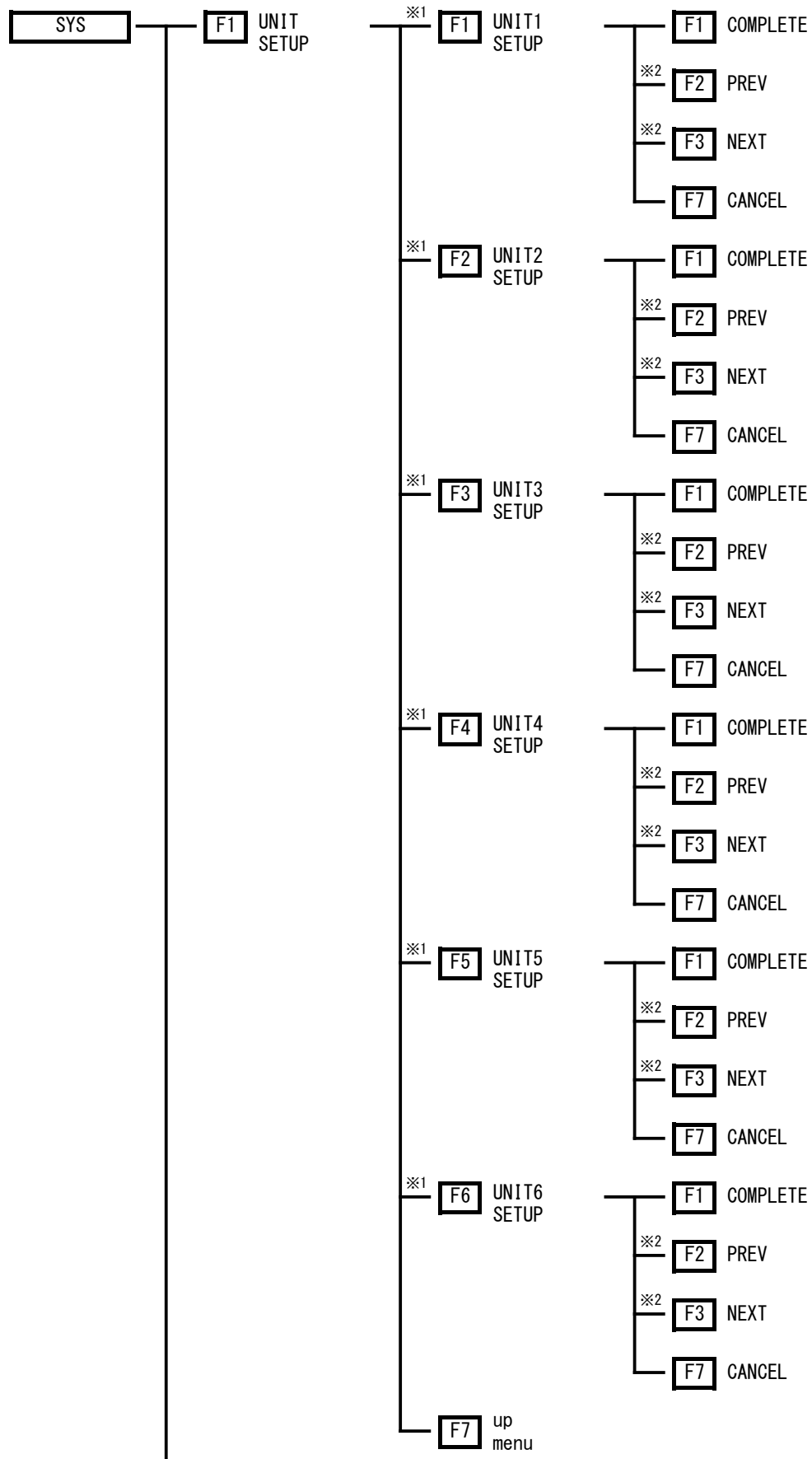
*4 Appears when USB memory is connected to the USB port.

*5 Appears when SYS-PLATFORM SETUP-GENERAL SETUP-Capture Mode is set to Screen.

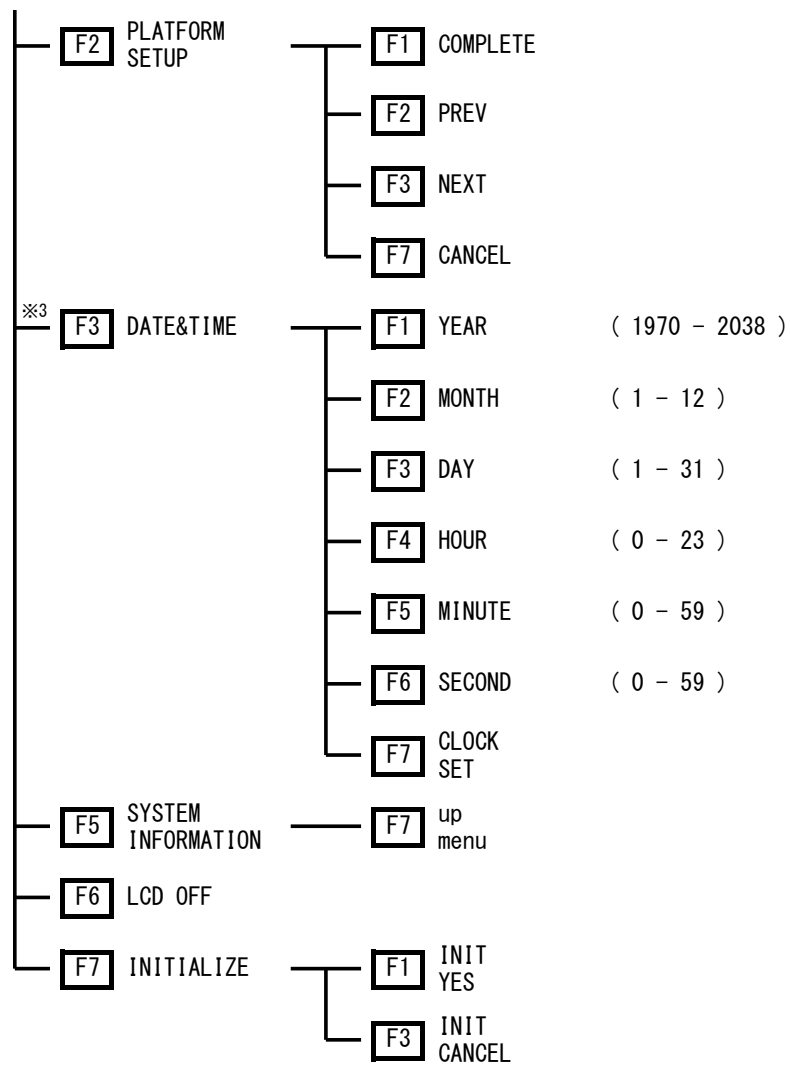
*6 Appears when USB memory is connected to the USB port, there is screen capture data, and one of the FILE SELECT options is set to ON.

*7 Appears when a BSG or FRM file has been selected.

6.10.2 System Menu



6. OPERATION OVERVIEW

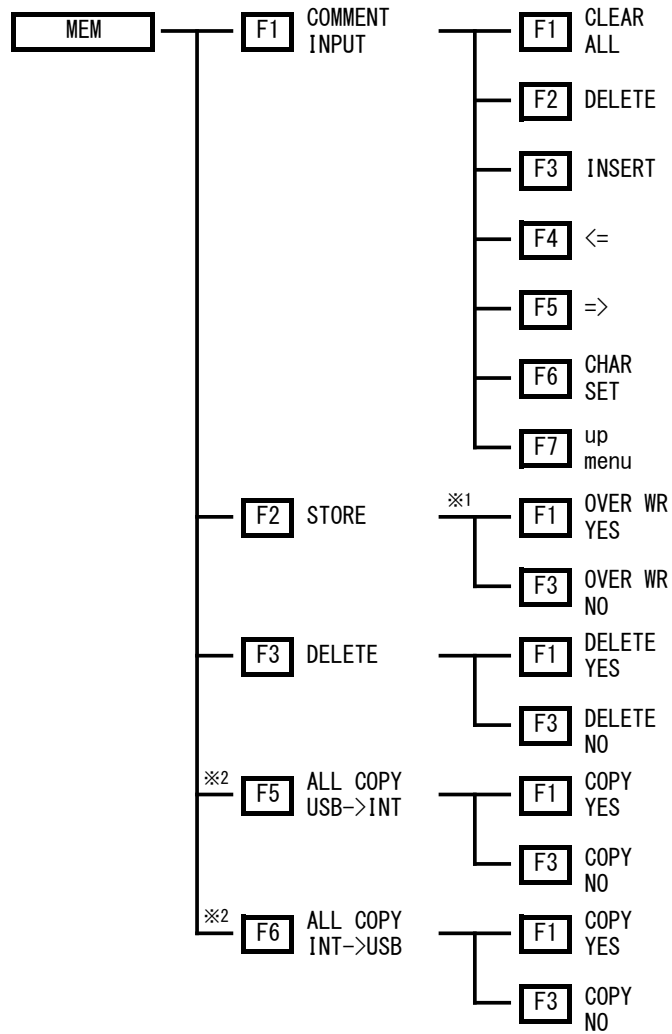


*1 Menu shown when the unit is installed to the LV 5800(A).

*2 Menu shown when there are multiple tabs.

*3 Appears when PLATFORM SETUP-ETHERNET-Time Server Select is set to OFF.

6.10.3 Preset Menu



*1 Menu shown when the preset data is in selected No.

*2 Menu shown when a USB memory is connected to the USB port.

7. SYSTEM SETUP

Settings related to the operation of the entire system are configured from the system menu by pressing the SYS key.

A system menu can be divided roughly into two as the system setting about LV 5800(A) main frame, and the system setting about each unit.



Figure 7-1 SYS key

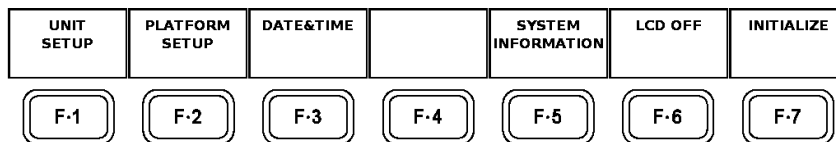


Figure 7-2 SYSTEM menu

Table 7-1 System menu description

Function Menu	Function
F·1 UNIT SETUP	Carries out the system setting of each installed unit. → Refer to section 7.1, "System Setting of the Unit"
F·2 PLATFORM SETUP	Carries out the system setting of LV 5800(A) main frame. → Refer to section 7.2.1, "LV 5800(A) General Settings".
F·3 DATE&TIME	Sets the date and time of LV 5800(A) main frame. → Refer to section 7.2.4, "Date and Time Settings"
F·5 SYSTEM INFORMATION	Displays the installing situation of LV 5800(A) main frame and each unit, and version information. → Refer to section 7.2.5, "Displaying the Installed Units."
F·6 LCD OFF	The LCD backlight is shutoff and power consumption is lowered. → Refer to section 7.2.6, "Shutoff of LCD Backlight"
F·7 INITIALIZE	Initializes the menu operation. → Refer to section 7.2.7, "Initialization."

7.1 System Setting of the Unit

Press the SYS key to display the system menu. Then, press F·1 (UNIT SETUP) to display each unit setup menu. Each unit can be set up in this screen.

For details, see the user's manual for each unit.

7.2 Setting the LV 5800(A) System

Press the SYS key to display the system menu. Then, press F·2 (PLATFORM SETUP) to display the tab menu to set up the LV 5800(A).

From this tab menu, you can set the LV 5800(A) system setting, Ethernet, remote control, etc. Each tab menu setting is switched using F·2 (PREV) or F·3 (NEXT).

7.2.1 LV 5800(A) General Settings

Press the SYS key to display the system menu. Then, press F·2 (PLATFORM SETUP) to display the tab menu (LV 5800 GENERAL SETUP) to set up the LV 5800(A).

GENERAL SETUP		ETHERNET	REMOTE
LV5800 GENERAL SETUP			
Source Mode	<input type="checkbox"/> Single Input	<input checked="" type="checkbox"/> Multi Input	<input type="checkbox"/> Multi Input and Line Number
Multi Display	<input type="checkbox"/> 2Multi	<input checked="" type="checkbox"/> 4Multi	
Window Marker	<input type="checkbox"/> OFF	<input checked="" type="checkbox"/> Blue	<input type="checkbox"/> White
Capture Mode	<input checked="" type="checkbox"/> Screen	<input type="checkbox"/> Video Frame (SDI Only)	
Information Display			
Format	<input checked="" type="checkbox"/> ON	<input type="checkbox"/> OFF	
Date	<input type="checkbox"/> OFF	<input checked="" type="checkbox"/> y/m/d	<input type="checkbox"/> m/d/y <input type="checkbox"/> d/m/y
Time	<input checked="" type="checkbox"/> ON	<input type="checkbox"/> OFF	
Color System	<input checked="" type="checkbox"/> ON	<input type="checkbox"/> OFF	
Input	<input checked="" type="checkbox"/> ON	<input type="checkbox"/> OFF	
LCD Setup			
Backlight	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Low	
Auto Off	<input checked="" type="checkbox"/> OFF	<input type="checkbox"/> 5min	<input type="checkbox"/> 30min <input type="checkbox"/> 60min
COMPLETE	PREV	NEXT	CANCEL

Figure 7-3 GENERAL SETUP tab menu

a) Setting the Source Mode and Line Select (Source Mode)

Source Mode in LV 5800 GENERAL SETUP sets whether the input signal displayed in areas 1 to 4 will be the same (Single Input mode) or different (Multi Input mode). In Single Input mode, if you change the input unit or input channel in one area, the input signal will change in all areas.

In addition, the line select function can be synchronized. The selected line is synchronized between WFM, VECT, PIC, and STATUS (DATA DUMP) display modes.

Single Input	Selects Single Input mode. The line select function is synchronized between display modes and display areas. If you select a unit that does not support the current display mode, the display mode automatically changes to WFM.
Multi Input	Selects Multi Input mode. The line select function is not synchronized.
Multi Input and Line Number	Selects Multi Input mode. The line select function is synchronized between display modes in the same area.

b) Selecting the Number of Multi Display

The item of Multi Display in the LV 5800 GENERAL SETUP tab allows selecting the display format of the multi screen display.

The display format of the multi screen display of LV 5800(A) has two screen multi display and four screen multi display.

2Multi Show the 2 screen multi display when multi display is enabled.

4Multi Show the 4 screen multi display when multi display is enabled.

To switch between multi screen display and 1 screen display use the MULTI key.

→ Refer to section 6.2.2, "Selecting the Display Format"

c) Displaying the Frame of Selected Area (Window Marker)

The Window Marker of LV 5800 GENERAL SETUP can set the frame display of selected area by using 1 to 4 keys.

OFF Does not display the frame of the selected area.

Blue Displays the frame of the selected area in blue.

White Displays the frame of the selected area in white.

d) Selection of Screen Capture or Frame Capture

The item of Capture Mode in the LV 5800 GENERAL SETUP tab allows selecting the operation mode of the capture function.

Screen Press CAP key for screen capture mode.

Video Frame Press CAP key for frame capture mode

The capture function of the LV 5800(A) has a screen capture and a frame capture.

The screen capture function retrieves the contents displayed on the LV 5800(A) as image data.

Since the capture is carried out as image data, it cannot process after the capture.

On the other hand, the frame capture is the function which carries out the capture of the data for one frame of SDI signal.

Since the capture is carried out as frame data, it is possible to process some extent after the capture.

The frame capture function is enabled when the LV 58SER01A (SDI INPUT) or LV 58SER06 (3G-SDI INPUT) is installed.

Moreover, the screen capture function and the frame capture function cannot be performed simultaneously.

For details of the screen capture, refer to section 8.1, "Screen Capture".

For details about the frame capture function, see the user's manual of the appropriate unit.

If the WFM, VECT, PIC, AUD, or EYE key is pressed when the frame capture function has been selected, the entire screen will blink once.

e) Displaying the Format

The item of Format in the LV 5800 GENERAL SETUP tab allows selecting whether to display the format of the video signal at the top section of the screen or not to display it.

When having not displayed on the screen about the video signal, it is not displayed even if the format is set to ON.

f) Displaying the Date

The item of Date in the LV 5800 GENERAL SETUP tab allows setting the date display of the top section of the screen.

OFF	The date is not displayed.
y/m/d	The date is displayed in order of the year / month / day.
m/d/y	The date is displayed in order of the month / day / year.
d/m/y	The date is displayed in order of the day / month / year.

g) Displaying the Time

The item of Time in the LV 5800 GENERAL SETUP tab allows setting the time display of the top section of the screen.

If the time display is set to OFF and it is made 1 screen display, the time code which can be displayed by LV 58SER01A (SDI INPUT) etc. will also no longer be displayed.

ON	The time is displayed.
OFF	The time is not displayed.

h) Displaying the Color System

The item of Color System in the LV 5800 GENERAL SETUP tab allows setting the color system (YCbCr or RGB, etc.) display of the top section of the screen.

ON	The Color System is displayed.
OFF	The Color System is not displayed.

The display of the color system shows the type of the inputted video signal.

For example, YCbCr, RGB, etc. are displayed.

Moreover, when the input signal is the video signal, the display of the color system is displayed.

When external audio is input by the LV 58SER40A (DIGITAL AUDIO), it is not displayed.

i) **Number Display of Input unit and Display of Input Channel**

The item of Input in the LV5800 GENERAL SETUP tab allows setting the display (number display of input unit and display of input channel) of the top section of the screen.

Input channel is displayed for units that have two inputs (A and B) such as the LV 58SER01A (SDI INPUT).

ON	Number of input unit and input channel are displayed.
OFF	Number of input unit and input channel are not displayed.

j) **Adjusting the Brightness of the Backlight**

The item of Backlight in the LV 5800 GENERAL SETUP tab allows selecting the brightness of the LCD backlight.

High	The LCD back light is made a bright setting.
Low	The LCD back light is made a dark setting. Use the low setting if you are using the LV 5800(A) in a dark location and the LCD appears to be too bright.

k) **Automatic Shutoff of the Backlight**

The item of Auto Off in the LV 5800 GENERAL SETUP tab allows setting the automatic shutoff of the LCD backlight.

OFF	The backlight does not automatically shut off.
5min	The backlight is shut off 5 minutes after pressing the last key.
30min	The backlight is shut off 30 minutes after pressing the last key.
60min	The backlight is shut off 60 minutes after pressing the last key.

If you operate a key while the backlight is OFF, the backlight turns back ON.

* Allow the backlight to turn off and on only a few times per day. Repeating the action frequently shortens the backlight life.

7.2.2 Ethernet Parameters Setup

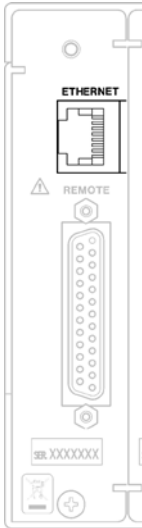


Figure 7-4 Ethernet connector

To connect to the Ethernet network, connects a 100BASE-TX STP cable to the Ethernet connector.

When connecting to the network via a hub, use a straight cable; when directly connecting to a PC (one-to-one connection), use a cross cable.

To set up concerning the connection for the Ethernet network, you select the F·2 (PLATFORM SETUP) from the system menu displayed when the SYS key has been pressed, and display the tab menu (GENERAL SETUP).

Next, pressing the F·3 (NEXT), the LV 5800 ETHERNET SETUP tab menu is displayed, and Ethernet connection can be set up on this tab.

GENERAL SETUP		ETHERNET		REMOTE	
LV5800 ETHERNET SETUP					
Network Select <input type="checkbox"/> DHCP <input checked="" type="checkbox"/> IP			Time Server Select <input checked="" type="checkbox"/> ON <input type="checkbox"/> OFF		
TCP / IP <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> IP Address <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; width: 20px; text-align: center;">0</div> <div style="border: 1px solid black; width: 20px; text-align: center;">.</div> <div style="border: 1px solid black; width: 20px; text-align: center;">0</div> <div style="border: 1px solid black; width: 20px; text-align: center;">.</div> <div style="border: 1px solid black; width: 20px; text-align: center;">0</div> <div style="border: 1px solid black; width: 20px; text-align: center;">.</div> <div style="border: 1px solid black; width: 20px; text-align: center;">0</div> </div> </div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> Subnet Mask <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; width: 20px; text-align: center;">0</div> <div style="border: 1px solid black; width: 20px; text-align: center;">.</div> <div style="border: 1px solid black; width: 20px; text-align: center;">0</div> <div style="border: 1px solid black; width: 20px; text-align: center;">.</div> <div style="border: 1px solid black; width: 20px; text-align: center;">0</div> <div style="border: 1px solid black; width: 20px; text-align: center;">.</div> <div style="border: 1px solid black; width: 20px; text-align: center;">0</div> </div> </div> <div style="border: 1px solid black; padding: 2px;"> Default Gateway <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; width: 20px; text-align: center;">0</div> <div style="border: 1px solid black; width: 20px; text-align: center;">.</div> <div style="border: 1px solid black; width: 20px; text-align: center;">0</div> <div style="border: 1px solid black; width: 20px; text-align: center;">.</div> <div style="border: 1px solid black; width: 20px; text-align: center;">0</div> <div style="border: 1px solid black; width: 20px; text-align: center;">.</div> <div style="border: 1px solid black; width: 20px; text-align: center;">0</div> </div> </div>			Time Server <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> IP Address <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; width: 20px; text-align: center;">0</div> <div style="border: 1px solid black; width: 20px; text-align: center;">.</div> <div style="border: 1px solid black; width: 20px; text-align: center;">0</div> <div style="border: 1px solid black; width: 20px; text-align: center;">.</div> <div style="border: 1px solid black; width: 20px; text-align: center;">0</div> <div style="border: 1px solid black; width: 20px; text-align: center;">.</div> <div style="border: 1px solid black; width: 20px; text-align: center;">0</div> </div> </div> <div style="border: 1px solid black; padding: 2px;"> TimeZone Adjust <div style="border: 1px solid black; padding: 2px; text-align: center;">+9:00</div> </div>		
HAC ADDRESS <div style="text-align: center;">00:00:00:00:00:00</div>					
COMPLETE	PREV	NEXT			CANCEL

Figure 7-5 ETHERNET setup tab menu

a) **DHCP/IP Selection**

The item of Network Select in the LV 5800 ETHERNET SETUP tab allows selecting the method of the Ethernet connection.

If DHCP is selected in an environment in which a DHCP server is running, the IP address, subnet mask, and default gateway settings are automatically assigned.

To find out if you can use DHCP, check with your network administrator.

DHCP	Set up automatically using DHCP.
------	----------------------------------

IP	Set up the IP address by manual operation.
----	--

After setting the parameters, power cycle the LV 5800(A).

b) **IP Address Setting**

The item of IP Address in the LV 5800 ETHERNET SETUP tab allows setting by manual the IP address to be assigned to the LV 5800(A).

At this time, the IP address can be specified when IP is selected in "DHCP/IP Selection".

The IP address must be a unique number on the network.

For details on obtaining the IP address for the LV 5800(A), check with your network administrator.

After setting the IP Address, power cycle the LV 5800(A).

c) **Subnet Mask Setting**

The item of Subnet Mask in the LV 5800 ETHERNET SETUP tab allows setting by manual the Subnet Mask to be assigned to the LV 5800(A).

At this time, the Subnet Mask can be specified when IP is selected in "DHCP/IP Selection".

For details on the subnet mask, check with your network administrator.

After setting the subnet mask, power cycle the LV 5800(A).

d) **Default Gateway Setting**

The item of Default Gateway in the LV 5800 ETHERNET SETUP tab allows setting by manual the Default Gateway to be assigned to the LV 5800(A).

At this time, the Default Gateway can be specified when IP is selected in "DHCP/IP Selection".

For details on the default gateway, check with your network administrator.

After setting the default gateway, power cycle the LV 5800(A).

e) **Time Server Select Setting**

The Time Server Select item in the LV5800 ETHERNET SETUP tab allows you to set how the date and time are displayed.

7. SYSTEM SETUP

ON	The date and time obtained from the time server are displayed. The protocol used is SNTP.
OFF	The date and time that have been set using F·3 (DATE&TIME) in the system menu are displayed.

F·3 (DATE&TIME) does not appear in the system menu when Time Server Select is set to ON. If Time Server Select is set to ON but an appropriate connection cannot be established, "NTP ERROR" is displayed, and the date and time immediately before Time Server Select was set to ON are displayed. When this happens, the date and time in screen capture and other files are based on the date and time immediately before Time Server Select was set to ON.

f) IP Address Setting

The IP Address item in the LV5800 ETHERNET SETUP tab allows you to set the time server IP address.

IP Address does not appear when Time Server Select is set to OFF.

g) Setting the Time Adjustment Value

TimeZone Adjust of LV5800 ETHERNET SETUP is for setting the time adjustment value that is used to display time synchronized with a time server. Because the time information exchanged with an NTP (SNTP) is UTC (Coordinated Universal Time), the time must be adjusted according to the country or region.

TimeZone Adjust does not appear when Time Server Select is set to OFF.

Table 7-2 Time adjustment values

Time Zone Adjust	Country or region
-12:00	Eniwetok, Kwajalein
-11:00	Midway Island, Samoa
-10:00	Hawaii
-9:00	Alaska
-8:00	Pacific Time (US & Canada), Tijuana
-7:00	Mountain Time (US & Canada), Arizona
-6:00	Central Time (US & Canada), Central America, Saskatchewan, Mexico City
-5:00	Eastern Time (US & Canada), Indiana (East), Bogota, Lima, Quito
-4:00	Atlantic Time (Canada), La Paz, Santiago
-3:00	Greenland, Buenos Aires, Georgetown, Brasilia
-2:00	Mid-Atlantic
-1:00	Azores, Cape Verde Is.
+0:00	Greenwich Mean Time (Dublin, Edinburgh, Lisbon, London), Casablanca, Monrovia
+1:00	Amsterdam, Berlin, Bern, Rome, Stockholm, Sarajevo, Skopje, Sofija, Vilnius, Warsaw, Zagreb, Brussels, Madrid, Copenhagen, Paris, Belgrade, Bratislava, Budapest, Ljubljana, Prague, West Central Africa
+2:00	Athens, Istanbul, Minsk, Jerusalem, Cairo, Harare, Pretoria, Bucharest, Helsinki, Riga, Tallinn
+3:00	Kuwait, Riyadh, Nairobi, Baghdad, Moscow, Volgograd, St. Petersburg
+4:00	Abu Dhabi, Muscat, Baku, Tbilisi, Yerevan
+5:00	Islamabad, Karachi, Tashkent, Ekaterinburg

7. SYSTEM SETUP

Time Zone Adjust	Country or region
+6:00	Astana, Dhaka, Almaty, Novosibirsk
+7:00	Krasnoyarsk, Bangkok, Hanoi, Jakarta
+8:00	Irkutsk, Ulaan Bataar, Kuala Lumpur, Singapore, Perth, Taipei, Beijing, Chongqing, Hong Kong SAR, Urumqi
+9:00	Seoul, Yakutsk, Osaka, Sapporo, Tokyo
+10:00	Vladivostok, Canberra, Melbourne, Sydney, Guam, Port Moresby, Brisbane, Hobart
+11:00	Magadan, Solomon Is., New Caledonia
+12:00	Auckland, Wellington, Fiji Islands, Kamchatka, Marshall Is.

7.2.3 Remote Connector Setting

D-sub, 25-pin connector for remote control

Recalls up to 60 points of presets.

The output of an error, and the switch of the input channel and the input unit can also be performed.

Do not apply external voltage to the output pins.

All input pins are pulled up to +3.3 V.

Do not apply voltage exceeding +5 V or negative voltage when externally controlling the LV 5800(A).

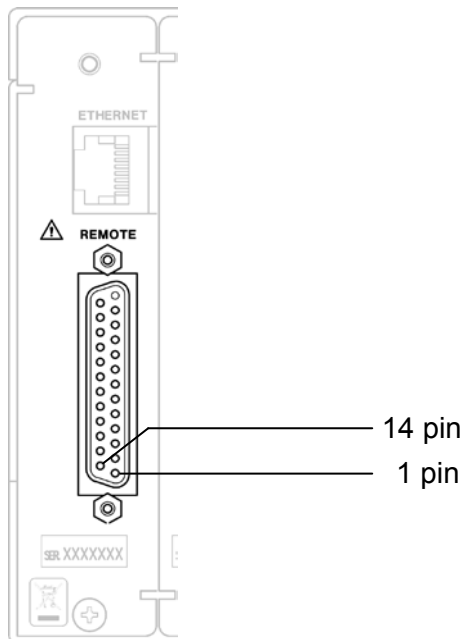


Figure 7-6 Rear remote connector

Table 7-3 Remote connector pin assignments

Pin Number	Name	Input/Output	Function		
			Remote Select		
			Recall	Recall and Loudness	Unit Select
1	ALARM1	Output	Becomes active when an error is detected.		
2	GND	GND	Ground terminal. It connects when recalling preset.		
3	/CH_A	Input	Input A is selected. It holds by HIGH.		
4	/CH_B	Input	Input B is selected. It holds by HIGH.		
5	N.C.		No connection		
6	N.C.		No connection		
7	N.C.		No connection		
8	N.C.		No connection		
9	N.C.		No connection		
10	LCH+ (*1)	Input	Analog audio signal (Lch+) is applied.		
11	LCH- (*1)	Input	Analog audio signal (Lch-) is applied.		
12	RCH+ (*1)	Input	Analog audio signal (Rch+) is applied.		
13	RCH- (*1)	Input	Analog audio signal (Rch-) is applied.		
14	GND	GND	Ground terminal. It connects when recalling preset.		
15	ALARM2	Output	Becomes active when an error is detected.		
16	ALARM3	Output	Becomes active when an error is detected.		
17	/P1	Input	Preset 1 (recalling bit 1).		
18	/P2	Input	Preset 2 (recalling bit 2).		
19	/P3	Input	Preset 3 (recalling bit 3).		
20	/P4	Input	Preset 4 (recalling bit 4).		
21	/P5	Input	Preset 5 (recalling bit 5).		Unit 1 is selected.
22	/P6	Input	Preset 6 (recalling bit 6).		Unit 2 is selected.
23	/P7 (*1)	Input	Preset 7 (recalling bit 7).	Clears the loudness measurement.	Unit 3 is selected.
24	/P8 (*1)	Input	Preset 8 (recalling bit 8).	Starts and stops the loudness measurement.	Unit 4 is selected.
25	ALARM4	Output	Becomes active when an error is detected.		

*1 LV 58SER40A is required for the measurement of an analog audio signal and loudness.

● Controlling the Input Connector

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.

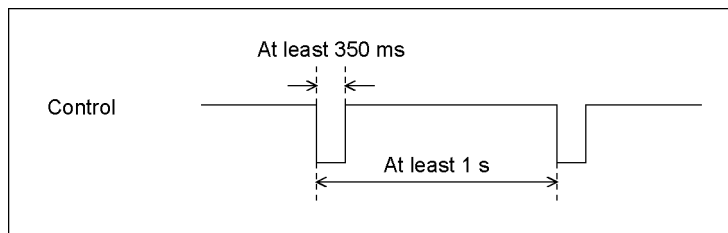


Figure 7-7 Control timing 1

7. SYSTEM SETUP

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

(In the following example, control 2 will be discarded.)

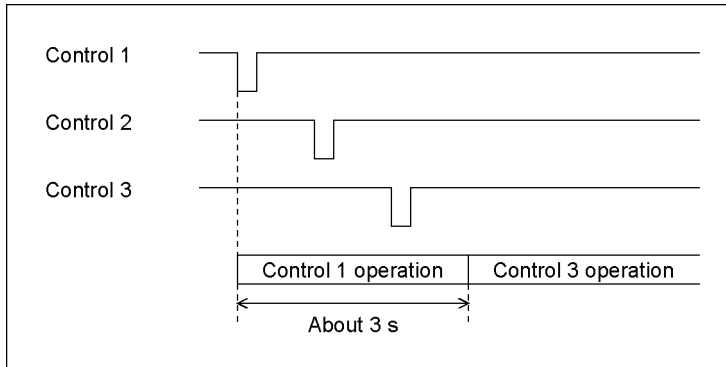


Figure 7-8 Control timing 2

● Recalling Presets

The assignments of /P1 to /P8 to presets are shown below.

Table 7-4 Recalling presets (BIT)

Preset No.	24p /P8	23p /P7	22p /P6	21p /P5	20p /P4	19p /P3	18p /P2	17p /P1
1	H	H	H	H	H	H	H	L
2	H	H	H	H	H	H	L	H
3	H	H	H	H	H	L	H	H
4	H	H	H	H	L	H	H	H
5	H	H	H	L	H	H	H	H
6	H	H	L	H	H	H	H	H
7	H	L	H	H	H	H	H	H
8	L	H	H	H	H	H	H	H

7. SYSTEM SETUP

Table 7-5 Recalling presets (BINARY)

Preset No.	22p	21p	20p	19p	18p	17p
	/P6	/P5	/P4	/P3	/P2	/P1
1	H	H	H	H	H	L
2	H	H	H	H	L	H
3	H	H	H	H	L	L
4	H	H	H	L	H	H
5	H	H	H	L	H	L
6	H	H	H	L	L	H
7	H	H	H	L	L	L
8	H	H	L	H	H	H
9	H	H	L	H	H	L
10	H	H	L	H	L	H
11	H	H	L	H	L	L
12	H	H	L	L	H	H
13	H	H	L	L	H	L
14	H	H	L	L	L	H
15	H	H	L	L	L	L
16	H	L	H	H	H	H
17	H	L	H	H	H	L
18	H	L	H	H	L	H
19	H	L	H	H	L	L
20	H	L	H	L	H	H
21	H	L	H	L	H	L
22	H	L	H	L	L	H
23	H	L	H	L	L	L
24	H	L	L	H	H	H
25	H	L	L	H	H	L
26	H	L	L	H	L	H
27	H	L	L	H	L	L
28	H	L	L	L	H	H
29	H	L	L	L	H	L
30	H	L	L	L	L	H
31	H	L	L	L	L	L
32	L	H	H	H	H	H
33	L	H	H	H	H	L
34	L	H	H	H	L	H
35	L	H	H	H	L	L
36	L	H	H	L	H	H
37	L	H	H	L	H	L
38	L	H	H	L	L	H
39	L	H	H	L	L	L
40	L	H	L	H	H	H
41	L	H	L	H	H	L
42	L	H	L	H	L	H
43	L	H	L	H	L	L

7. SYSTEM SETUP

Preset No.	22p /P6	21p /P5	20p /P4	19p /P3	18p /P2	17p /P1
44	L	H	L	L	H	H
45	L	H	L	L	H	L
46	L	H	L	L	L	H
47	L	H	L	L	L	L
48	L	L	H	H	H	H
49	L	L	H	H	H	L
50	L	L	H	H	L	H
51	L	L	H	H	L	L
52	L	L	H	L	H	H
53	L	L	H	L	H	L
54	L	L	H	L	L	H
55	L	L	H	L	L	L
56	L	L	L	H	H	H
57	L	L	L	H	H	L
58	L	L	L	H	L	H
59	L	L	L	H	L	L
60	L	L	L	L	H	H

• Configuring the LV 5800(A)

To set up the remote connector, you select the F·2 (PLATFORM SETUP) from the system menu displayed when the SYS key has been pressed, and display the GENERAL SETUP tab menu.

Next, the LV 5800 REMOTE SETUP tab menu is displayed pressing the F·3 (NEXT) twice, and remote connector can be set up on this tab.

GENERAL SETUP	ETHERNET	REMOTE
LV5800 REMOTE SETUP		
Remote Mode <input checked="" type="checkbox"/> BIT <input type="checkbox"/> BINARY		
Remote Select <input checked="" type="checkbox"/> Recall <input type="checkbox"/> Unit Select <input type="checkbox"/> Recall and Loudness		
Alarm Polarity <input checked="" type="checkbox"/> Positive <input type="checkbox"/> Negative		
Alarm1 Select <input checked="" type="checkbox"/> UNIT1 <input type="checkbox"/> UNIT2 <input type="checkbox"/> UNIT3 <input type="checkbox"/> UNIT4 <input type="checkbox"/> ALL UNIT <input type="checkbox"/> A <input type="checkbox"/> B <input checked="" type="checkbox"/> A/B		
Alarm2 Select <input type="checkbox"/> UNIT1 <input checked="" type="checkbox"/> UNIT2 <input type="checkbox"/> UNIT3 <input type="checkbox"/> UNIT4 <input type="checkbox"/> ALL UNIT <input type="checkbox"/> A <input type="checkbox"/> B <input checked="" type="checkbox"/> A/B		
Alarm3 Select <input type="checkbox"/> UNIT1 <input type="checkbox"/> UNIT2 <input checked="" type="checkbox"/> UNIT3 <input type="checkbox"/> UNIT4 <input type="checkbox"/> ALL UNIT <input type="checkbox"/> A <input type="checkbox"/> B <input checked="" type="checkbox"/> A/B		
Alarm4 Select <input type="checkbox"/> UNIT1 <input type="checkbox"/> UNIT2 <input type="checkbox"/> UNIT3 <input checked="" type="checkbox"/> UNIT4 <input type="checkbox"/> ALL UNIT <input type="checkbox"/> A <input type="checkbox"/> B <input checked="" type="checkbox"/> A/B		
Error Beep <input type="checkbox"/> ON <input checked="" type="checkbox"/> OFF		
COMPLETE	PREV	NEXT
		CANCEL

Figure 7-9 Remote connector setting tab menu

a) Selecting the Preset Recall Mode (Remote Mode)

Remote Mode in LV 5800 REMOTE SETUP is used to select the preset recall mode. There are two ways to recall a preset. One way is to specify /P1 through /P8 that are assigned to preset numbers 1 to 8. The other way is to specify a binary number using /P1 (LSB) through /P6 (MSB) that are assigned to preset numbers 1 to 60.

BIT	<p>Recalls a preset number from 1 to 8 that corresponds to /P1 to /P8 (when Remote Select is set to Recall).</p> <p>Recalls a preset number from 1 to 4 that corresponds to /P1 to /P4 (when Remote Select is set to Unit Select).</p> <p>Recalls a preset number from 1 to 6 that corresponds to /P1 to /P6 (when Remote Select is set to Recall and Loudness).</p>
BINARY	<p>Recalls a preset number from 1 to 60 that is specified in binary code using /P1 to /P6 (when Remote Select is set to Recall or Recall and Loudness).</p> <p>Recalls a preset number from 1 to 15 that is specified in binary code using /P1 to /P4 (when Remote Select is set to Unit Select).</p>

The /P1 to /P8 terminals are low-active logic for both BIT and BINARY modes. To set a terminal, connect it to ground.

* Once you set the terminals, wait at least 1 second before setting them again.

b) Selecting the Remote Function (Remote Select)

Remote Select in LV 5800 REMOTE SETUP is used to select the function that will be assigned to /P1 to /P8.

Recall	Assigns /P1 to /P8 to be used for recalling presets. Up to 60 presets can be recalled.
Unit Select	Assigns /P1 to /P4 to be used for recalling presets and /P5 to /P8 to be used for selecting input units. Up to 15 presets can be recalled.
Recall and Loudness	<p>Assigns /P1 to /P6 to be used for recalling presets, /P7 to be used for clearing loudness measurements, and /P8 to be used for starting and stopping loudness measurements. Up to 60 presets can be recalled. You need an LV 58SER40A (DIGITAL AUDIO) unit to measure loudness.</p>

c) Alarm Polarity

The item of Alarm Polarity in the LV 5800 REMOTE SETUP tab allows selecting the polarity of the signal outputted as an alarm signal when error is detected.

When an error is detected by LV 58SER01A (SDI INPUT) etc., the alarm signal is outputted as a pulse from alarm pin.

POSITIVE	HIGH is outputted at the time of error detection.
NEGATIVE	LOW is outputted at the time of error detection.

For the pin number of the alarm output connector, refer to table 7-2, "Remote connector pin assignments."

d) Alarm Select

The items of Alarm Select from 1 to 4 in the LV 5800 REMOTE SETUP tab allow selecting whether to output as an alarm the error of which input signal into four alarm output pins respectively.

An input signal is specified by the unit number and, in the case of the unit with two input of A/B such as LV 58SER01A (SDI INPUT), selection of A, B, and A/B also becomes effective.

UNIT1	Outputs the error of unit No.1 as an alarm.
UNIT2	Outputs the error of unit No.2 as an alarm.
UNIT3	Outputs the error of unit No.3 as an alarm.
UNIT4	Outputs the error of unit No.4 as an alarm.
ALL UNIT	Outputs the error that occurred on any unit from No. 1 to No. 4 as an alarm.
A	Outputs the error of A channel of the selected unit as an alarm.
B	Outputs the error of B channel of the selected unit as an alarm.
A/B	Outputs the error of A/B channels of selected unit as an alarm.

* When the unit without two inputs is selected, the setting of A, B, and A/B become invalid.

e) BEEP Select

The item of Error Beep in the LV 5800 REMOTE SETUP tab allows selecting whether to sound Beep Alarm when error is detected.

ON	Sounds the Beep Alarm when error is detected.
OFF	Does not sound the Beep Alarm when error is detected.

7.2.4 Date and Time Settings

The LV 5800(A) has a calendar and time function. Thus, date/time can be displayed and event logs can be taken with time information.

You can set up the date and time by pressing the SYS key to show the system menu and selecting F·3 (DATE&TIME).

YEAR	MONTH	DAY	HOUR	MINUTE	SECOND	CLOCK SET
2009	11	12	9	14	29	
F·1	F·2	F·3	F·4	F·5	F·6	F·7

Figure 7-10 Date and time setup menu

Table 7-6 Description of date and time setup menu

Function Menu	Function
F·1 YEAR	Adjusting the year
F·2 MONTH	Adjusting the month
F·3 DAY	Adjusting the date
F·4 HOUR	Adjusting the hour
F·5 MINUTE	Adjusting the minute
F·6 SECOND	Adjusting the second
F·7 CLOCK SET	Date and time confirmation

a) Adjusting the Year

[SYS → F·3 (DATE&TIME) → F·1 (YEAR)]

You can set the year from 1970 to 2038.

From the menu, select the F·1 (YEAR) and then adjust the year using the function dial (F·D).

b) Adjusting the Month

[SYS → F·3 (DATE&TIME) → F·2 (MONTH)]

You can set the month from January to December.

From the menu, select the F·2 (MONTH) and then adjust the month using the function dial (F·D).

c) Adjusting the Date

[SYS → F·3 (DATE&TIME) → F·3 (DAY)]

You can set the date from 1st to 31st.

From the menu, select the F·3 (DAY) and then adjust the date using the function dial (F·D).

d) Adjusting the Hour

[SYS → F·3 (DATE&TIME) → F·4 (HOUR)]

You can set the hour from 1 to 24.

From the menu, select the F·4 (HOUR) and then adjust the hour using the function dial (F·D).

e) Adjusting the Minute

[SYS → F·3 (DATE&TIME) → F·5 (MINUTE)]

You can set the minute from 0 to 59.

From the menu, select the F·5 (MINUTE) and then adjust the minute using the function dial (F·D).

f) Adjusting the Second

[SYS → F·3 (DATE&TIME) → F·6 (SECOND)]

You can set the second from 0 to 59.

From the menu, select the F·6 (SECOND) and then adjust the second using the function dial (F·D).

g) Date and Time Confirmation

[SYS → F·3 (DATE&TIME) → F·7 (CLOCK SET)]

When you are done adjusting the date and time, press the F·7 (CLOCK SET) to write to the calendar function of the LV 5800(A).

The date/time setup menu is closed as the date/time is written, and the screen returns to the system menu.

To cancel the writing, press the SYS key.

7.2.5 Displaying the Installed Units

LV 5800(A) can constitute the unit to install freely. Therefore, in order to use LV 5800(A) correctly, it becomes important to understand a setup of the unit installed and each unit.

LV 5800(A) can confirm the installed unit by confirming the rear panel.

However, because it is built in the Rack etc. and the confirmation is difficult, it can confirm it from the screen display.

The confirm method from the screen of the installed unit, selects the F·5 (SYSTEM INFORMATION) from the system menu displayed when the SYS key is pressed.

Then, it becomes the following displays, and information about the firmware version of the LV 5800(A) main frame and the installed unit will be displayed.

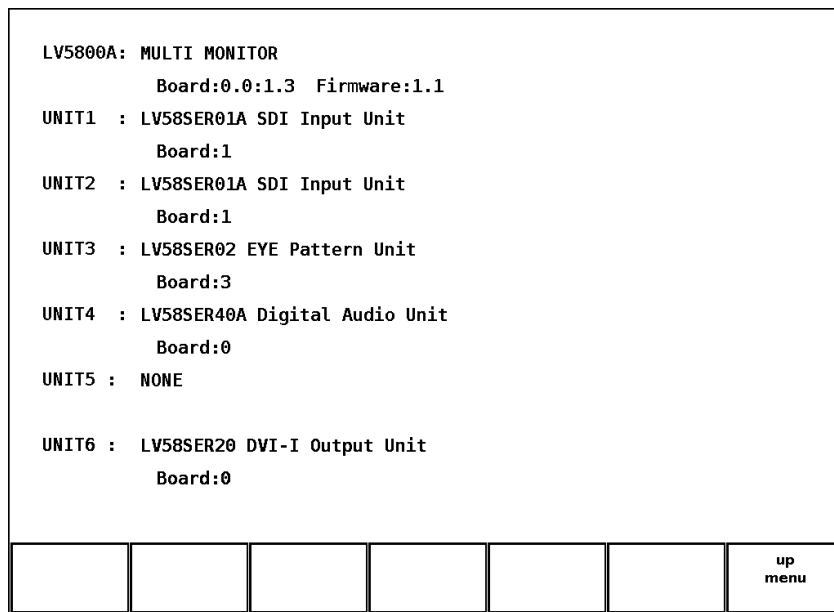


Figure 7-11 Displaying the installed units

7.2.6 Shutoff of LCD Backlight

You can shut off the LCD backlight by pressing the SYS key to show the system menu and selecting F·6 (LCD OFF).

If you operate a key while the backlight is OFF, the backlight turns back ON.

- * Allow the backlight to turn off and on only a few times per day. Repeating the action frequently shortens the backlight life.

7.2.7 Initialization

The LV 5800(A) stores the last operation before the power is turned off, and starts with the previous condition when the power is turned on the next time.

To initialize these settings, selects the F·7 (INITIALIZE) from the system menu displayed when the SYS key has been pressed.

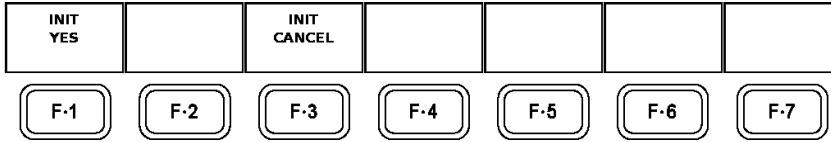


Figure 7-12 Initialization menu

Table 7-7 Initialization menu description

Function Menu	Function
F·1 INIT YES	Initializes the setting
F·3 INIT CANCEL	Cancels the initialization of the setting.

When INIT YES is selected, it is initialized.

If INIT CANCEL has been selected, returns to the system setup menu without initializing.

This initialization procedure does not initialize the date and time, Ethernet settings, content of presets, settings of remote connector (except for Error Beep), and input/output settings of BNC connector of LV 58SER40A (DIGITAL AUDIO)

8. CAPTURE FUNCTION

The LV 5800(A) has a capture function that records the screen once as image data in the internal memory. In addition to simply displaying the image data, this capture function allows overlapping with the input signal, saving to a USB memory and reloading into the LV 5800(A) later, and can view the captured data as bitmap data on a computer.

If the LV 58SER01A (SDI INPUT) or LV 58SER06 (3G-SDI INPUT) is installed, one frame of video data from the SDI signal can be recorded for each input channel. After capturing the frame data, it can be shown in different display modes such as video signal waveform display, vector display, and picture display.

The function that captures the LCD screen as image data is called screen capture on the LV 5800(A). The function that captures the video data of one frame of the SDI signal is called frame capture.*



Figure 8-1 CAP key

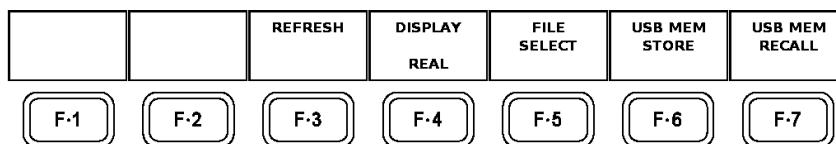


Figure 8-2 Capture menu

Table 8-1 Capture menu description

Function Menu	Function
F·3 REFRESH	Acquires new screen capture data. → Refer to section 8.1.1, "Screen Capture Procedure."
F·4 DISPLAY	Press to select the captured data display format. → Refer to section 8.1.1, "Screen Capture Procedure."
F·5 FILE SELECT	Selects the file to be saved in the USB memory. → Refer to section 8.1.2, "Selecting the Screen Capture File."
F·6 USB MEM STORE	Saves captured data to USB memory. → Refer to section 8.1.3, "Saving the Screen Capture File."
F·7 USB MEM RECALL	Press to load or delete screen capture data that has been stored to USB memory. → Refer to section 8.1.3, "Saving the Screen Capture File."

8.1 Screen Capture

The screen capture function retrieves the contents displayed on the LV 5800(A) as image data. The captured data can be saved to a USB memory or displayed overlapped with the input signal.

The capture data is cleared if you press a key other than A, B, EXT, OVLAY, and CH1 to 3 keys or if you change the display mode such as from the video signal waveform display to the vector display.

Tab menu, setting screens of preset, and file operation of preset cannot be captured.

8.1.1 Screen Capture Procedure

Carry out the procedure below to capture the screen.

1) Selecting the screen capture function

[SYS→F·2 (PLATFORM SETUP)]

You select the F·2 (PLATFORM SETUP) from the system menu displayed when the SYS key has been pressed, and display the GENERAL SETUP tab menu.

Then, selects Screen in the item of Capture Mode on GENERAL SETUP tab.

→Refer to section 7.2.1, "LV 5800(A) General Settings".

2) Capture Preparation

Show the display you want to capture and press the CAP key.

3) Starting the Capture Operation

[CAP → F·3 (REFRESH)]

If the CAP key is pressed, at this time the LV 5800(A) screen has been captured to the internal memory. However, when you want to capture the screen again, push the F·3 (REFRESH) key.

4) Selecting the Display

[CAP → F·4 (DISPLAY) → REAL / HOLD / BOTH]

To view the screen capture, press F·4 (DISPLAY) to select HOLD. Select BOTH to display the input signal and the screen capture overlapped. *1

REAL Continues to update the input signal display.

HOLD Displays the screen capture. *2

BOTH Displays the input signal and the still-image data of the screen capture on top of each other with their intensities halved. *2

*1 In the captured still-image data, video signal waveforms, vector waveforms, audio waveforms, and eye pattern waveforms are displayed in cyan (except when the waveform color is set to GREEN or MULTI).

*2 When you specify HOLD or BOTH to check the still-image data, items such as scales, read-outs, and the 5 bars are not displayed. The draw data is saved as image data if you save the capture data as a bitmap file to a USB memory.

8.1.2 Selecting the Screen Capture File

The screen capture is cleared if you change the display mode or turn the power OFF. However, you can save the screen capture to a USB memory to be displayed even after the power is turned OFF. You can also view the bitmap data on your computer.

You cannot display the same screen capture file on both the LV 5800(A) and a PC, because the file type that can be displayed by the LV 5800(A) is different than the file type that can be displayed by a PC. Save screen capture files to the appropriate format depending on your needs.

The file size of both bitmap and BSG files is approximately 2.4 MB.

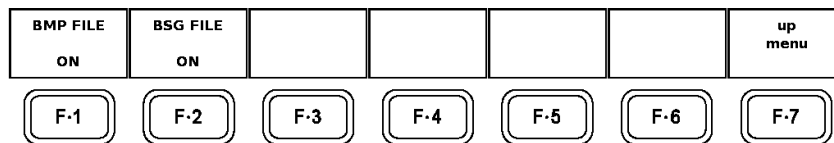


Figure 8-3 File selection menu

Table 8-2 File selection menu description

Function Menu	Function
F·1 BMP FILE	Selects whether to save the bitmap file to the USB memory.
F·2 BSG FILE	Selects whether to save the BSG file to the USB memory.

a) Selecting the Bitmap File

[CAP → F·5 (FILE SELECT) → F·1 (BMP FILE) → ON / OFF]

By saving the screen capture data as a bitmap file to a USB memory, you can view the data on your computer.*

Bitmap files cannot be used to redraw the data on the LV 5800(A). Use BSG files.

To save the bitmap file to the USB memory, press F·5 (FILE SELECT) from the capture menu and press F·1 (BMP FILE) to select ON.

If you select OFF, the bitmap file is not saved to the USB memory.

* The draw data such as the scale, readout, and audio level waveform are also saved to the bitmap file in the condition when the screen is captured.

b) Selecting the BSG File

[CAP → F·5 (FILE SELECT) → F·2 (BSG FILE) → ON / OFF]

You must save the data as a BSG file to save the screen capture data to a USB memory once and redraw the data on the LV 5800(A) later.*

To save the BSG file to a USB memory, press F·5 (FILE SELECT) from the capture menu and press F·2 (BSG FILE) to select ON.

If you select OFF, the BSG file is not saved to the USB memory.

* Bitmap files cannot be redrawn on the LV 5800(A). If the data saved as a BSG file is redrawn on the LV 5800(A), draw data such as the scale, readout, and audio level waveform is not reproduced. The settings and values that are present when the data is redrawn are used for the draw data.

8.1.3 Saving the Screen Capture File

[CAP → F·6 (USB MEM STORE)]

To save screen capture data to USB memory, connect a USB memory device to the USB port,* and press F·6 (USB MEM STORE) in the capture menu.

F·6 (USB MEM STORE) will not appear if USB memory is not connected or if all of the options for F·5 (FILE SELECT) are set to OFF.

Captured data is saved to the USB memory “BMP” folder using the following naming format: yyyymmddhhmmss (The order is: year, month, day, hour, minute, second. You can set the date and time in the system settings.)

While screen capture data is being saved to USB memory, the USB mark in the upper right of the screen changes from green to red, and the message “Saving file” appears at the top of the screen. Do not remove the USB memory or turn off the power while data is being saved. It takes approximately five seconds to save a file.

* After USB memory has been connected, it takes the LV 5800(A) approximately five seconds to recognize it.

8.1.4 Loading a Screen Capture File

[CAP → F·7 (USB MEM RECALL) → F·1 (RECALL)]

BSG files stored in a USB memory can be loaded into the LV 5800(A) to be redrawn. Connect a USB memory containing BSG files, (*1) and turn the F·D from the capture menu to move the cursor to the BSG file you want to load. (*2) Then, press F·1 (RECALL) to load the capture file from the USB memory.

To draw the capture data, press F·4 (DISPLAY) from the capture menu to select HOLD or BOTH.

→ Refer to section 8.1.1, “Screen Capture Procedure.”

*1 It takes approximately 5 seconds for the LV 5800(A) to automatically detect the USB memory after it is connected.

*2 Bitmap files and BSG files that have been saved on different models cannot be redrawn on the LV 5800(A).

8. CAPTURE FUNCTION

No.	FileName	Date	Time	Size(Byte)
1	20081022143056.bmp	2008/10/22	14:30:56	2350350
2	20081022143056.bsg	2008/10/22	14:30:56	2379390

MAX SIZE: 251906 kB
FREE SIZE: 97968 kB

RECALL		FILE DELETE				up menu
--------	--	----------------	--	--	--	------------

F-1	F-2	F-3	F-4	F-5	F-6	F-7
-----	-----	-----	-----	-----	-----	-----

Figure 8-4 Capture file list display and capture file operation menu

Table 8-3 Capture file operation menu description

Function Menu	Function
F·1 RECALL	Loads a screen capture file that has been saved to USB memory. F·1 RECALL only appears when the cursor is on a file that can be loaded.
F·3 FILE DELETE	Deletes a screen capture file. → Refer to section 8.1.5. “Deleting a Screen Capture File”

8.1.5 Deleting a Screen Capture File

[CAP → F·7 (USB MEM RECALL) → F·3 (FILE DELETE)]

To delete a capture file stored in a USB memory, connect the USB memory containing the capture file, and turn the F·D from the capture menu to move the cursor to the file you want to delete. Next, press F·3 (FILE DELETE) to display F·1 (DELETE YES) and F·3 (DELETE NO). Press F·1 (DELETE YES) to delete the file. Press F·3 (DELETE NO) to cancel the delete operation.

8.2 Frame Capture

The frame capture function captures the data of one frame of an SDI signal that is applied to the LV 58SER01A (SDI INPUT) or LV 58SER06 (3G-SDI INPUT). The data can be stored to a USB memory or displayed overlapped with the input signal. The memory data is not cleared even if you change the display mode such as from the video signal waveform display to vector or picture display, and each display can be shown as image data.

However, the frame capture function cannot show the audio display, status display, and eye pattern display using the capture data.

For details, see the user's manual of the appropriate unit.

9. PRESET FUNCTION

You can register up to 60 sets of settings on the LV 5800(A) and recall them later.

The recalling method of stored data can perform operation from the remote connector of the rear panel besides operation by the front panel.

Since the entire stored presets data can copy collectively to the USB memory, two or more LV 5800(A) can be used as the same setting.

The LV 5800(A) cannot register the date and time, Ethernet connection settings, remote control settings, LV 58SER01A (SDI INPUT) or LV 58SER06 (3G-SDI INPUT) frame capture mode, or input and output settings for the LV 58SER40A (DIGITAL AUDIO) BNC connector.

If you change the installation configuration of the units in the preset condition, the settings on the units that have been changed are reset to default values.



Figure 9-1 MEM key and RCLL key

9.1 Registration of Preset and File Operation of Preset

As a registration procedure of preset, it sets as the state where you want to register LV 5800(A) first. Next, since a preset entry menu will be displayed if the MEM key is pressed, performs in the following procedure.

Internal Memory FILE LIST

No.	FileComment	Date	Time	Size(Byte)
1	DEFAULT	2006/ 7/ 1	16:57:56	20040
2	MULTI WFM/VECT	2006/ 7/ 1	17:03:36	20040
3	MULTI	2006/ 7/ 1	17:01:21	20040
4	Audio	2006/ 7/ 1	17:04:23	20040
5	-----	----/--/--	--:--:--	
6	-----	----/--/--	--:--:--	
7	-----	----/--/--	--:--:--	
8	-----	----/--/--	--:--:--	
9	-----	----/--/--	--:--:--	
10	-----	----/--/--	--:--:--	
11	-----	----/--/--	--:--:--	
12	-----	----/--/--	--:--:--	
13	-----	----/--/--	--:--:--	
14	-----	----/--/--	--:--:--	
15	-----	----/--/--	--:--:--	
16	-----	----/--/--	--:--:--	

COMMENT
INPUT

STORE

DELETE

ALL COPY
USB->INT

ALL COPY
INT->USB

F·1

F·2

F·3

F·4

F·5

F·6

F·7

Figure 9-2 Entry Screen of Preset and Entry Menu of Preset

Table 9-1 Preset entry menu description

Function Menu	Function
F·1 COMMENT INPUT	Enters comments for presets data. → Refer to section 9.1.1 “Comment Entry”
F·2 STORE	Stores the presets data. → Refer to section 9.1.2 “Saving the Presets”
F·3 DELETE	Clears the presets data. → Refer to section 9.1.3 “Deleting the Presets”
F·5 ALL COPY USB->INT	Copies all the presets data to the USB memory. → Refer to section 9.1.4 “Copying All Presets Data”
F·6 ALL COPY INT->USB	Copies all the presets data stored on the USB memory to the LV 5800(A). → Refer to section 9.1.4 “Copying All Presets Data”

9.1.1 Comment Entry

[MEM → F·1 (COMMENT INPUT)]

A comment can be entered into presets data to 20 characters for each preset number.

To enter a comment, press the F·1 (COMMENT INPUT) from the memory menu to display the comment entry screen.

Since the file name entry screen as shown in Figure 9-3 is displayed, enter the file name using the function dial (F.D) and the function key.

When the function dial (F.D) has been turned, the character selection cursor moves.

Then, pressing the F·D, the character shown with the character selection cursor is applied to the file name.

After the comment has been entered, press the F·7 (up menu) to return to the preset entry menu.

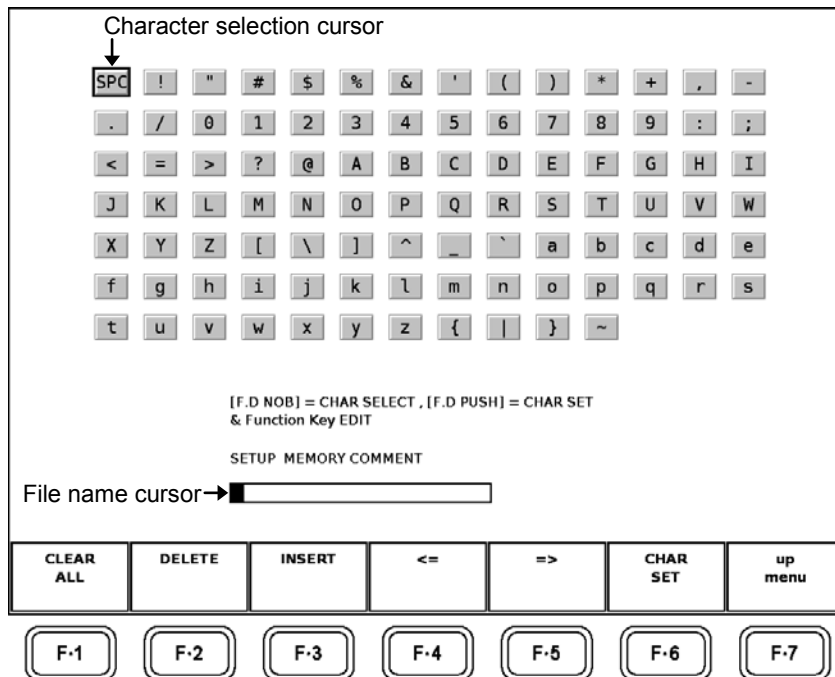


Figure 9-3 Comment entry screen of preset and comment entry menu of preset

Table 9-2 Comment entry menu description

Function Menu	Function
F·1 CLEAR ALL	Deletes the entire displayed file name.
F·2 DELETE	Deletes a character from the file name.
F·3 INSERT	Inserts a single space to the file name.
F·4 <=	Moves the file name cursor to the left by a character.
F·5 =>	Moves the file name cursor to the right by a character.
F·6 CHAR SET	Applies the character indicated by the character selection cursor to the file name.

You can copy the name of an existing file. To copy a file name, move the cursor to the file name you want to copy on the entry screen of preset file list screen shown in Figure 9-2, and press F·D.

9.1.2 Saving the Presets

[MEM → F·2 (STORE)]

Turns the function dial (F.D) and selects the number to which you want to register the presets. Then, press the F·2 (STORE) to register the presets.

The date, time and file size which were registered are displayed together with a comment.

9.1.3 Deleting the Presets

[MEM → F·3 (DELETE) → F·1 (DELETE YES)]

To delete data that have been registered as a preset, turns the function dial (F.D) on the entry menu of preset to select the preset data you wish to delete.

Then, press the F·3 (DELETE).

If the confirming screen is displayed, press the F·1 (DELETE YES). When canceling, press the F·3 (DELETE NO).

9.1.4 Copying All Presets Data

If you wish to make the same presets data on multiple LV 5800(A) monitors, you can copy entire presets data using the USB memory (*).

The unit installation configuration of the LV 5800(A)s between which the preset data is to be copied must be the same. If the unit configuration is different, the preset data is copied only among the same units installed to the same unit numbers.

* Use FAT16 for the file system on the USB memory.

The one formatted by other file systems cannot be recognized.

a) Copying from USB to LV 5800(A)

[MEM → F·5 (ALL COPY USB->INT) → F·1 (COPY YES)]

To copy the presets data recorded in the USB memory to the LV 5800(A), press the F·5 (ALL COPY USB -> INT) from the preset entry menu.

Copies them pressing the F·1 (COPY YES) on the confirming screen.

When canceling, press the F·3 (COPY NO).

b) Copying from LV 5800(A) to USB memory

[MEM → F·6 (ALL COPY INT->USB) → F·1 (COPY YES)]

To copy the presets data recorded in the LV 5800(A) to the USB memory, press the F·6 (ALL COPY INT -> USB) from the preset entry menu.

Copies them pressing the F·1 (COPY YES) on the confirming screen.

When canceling, press the F·3 (COPY NO).

9.2 Recalling the Presets

NO. 1 DEFAULT	NO. 2 2 MULTI WF M/VECT	NO. 3 4 MULTI	NO. 4 Audio	NO. 5	NO. 6	more
F·1	F·2	F·3	F·4	F·5	F·6	F·7

Figure 9-4 Menu of recalling presets

Press the RCLL key to display the recall menu. You can recall stored presets data from this menu.

Since the registration number and the comment are displayed on the function menu, press each function key.

If there are more than six sets of stored settings, press F·7 (more) to display following seven data.

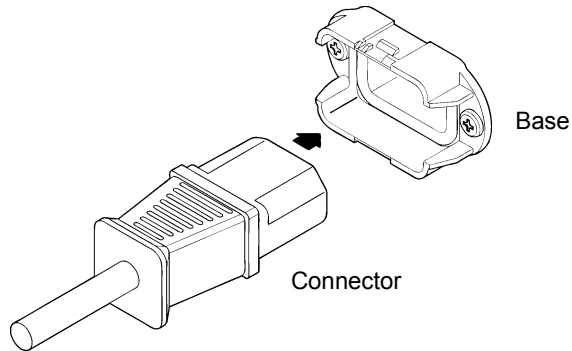
Also can move the preset number by turning the function dial (F·D).

10. PREVENTING POWER CORD DESCRIPTION

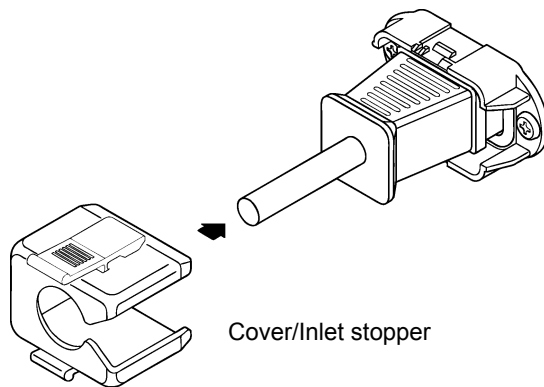
To prevent power cord disconnection from the AC inlet, the Cover/Inlet stopper is supplied with the instrument. Refer to the procedure below.

10.1 Connecting the Power Cord

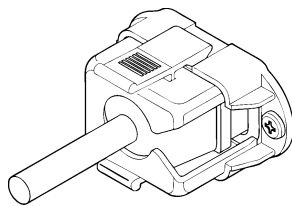
- (1) Insert the power cord connector into the AC inlet.



- (2) Place the Cover/Inlet stopper on top of the connector as shown below.



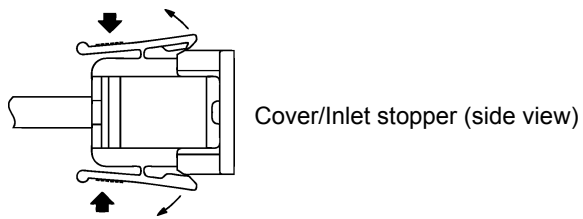
- (3) Press the cover until it clicks into place.



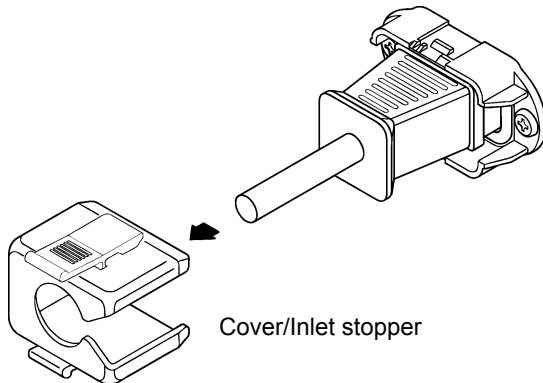
- (4) Confirm that the Cover/Inlet stopper is locked to the base.

10.2 Disconnecting the Power Cord

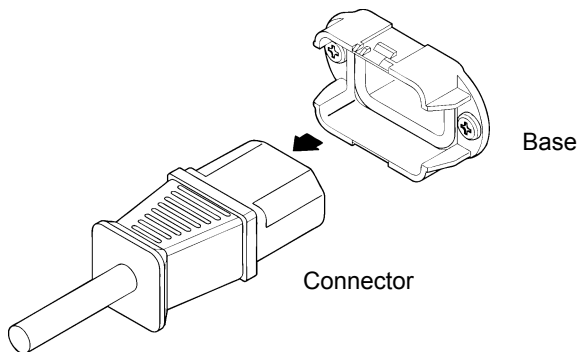
- (1) Press the levers on the Cover/Inlet stopper with your fingers to release the lock.



- (2) Remove the Cover/Inlet stopper from the base.



- (3) Disconnect the power cord connector from the AC inlet.



11. MAINTENANCE

This instrument is produced under the strictest quality controls at the factory, but accuracy may gradually deteriorate due to worn components.

Therefore, periodic calibration should be performed.

Moreover, if troubles etc. are found in operation, the repair is needed.

When service or calibration is required, contact your local LEADER agent.

12. FIRMWARE REVISION HISTORY

This manual was written for the following firmware version:

- Ver 1.2 on the LV 5800A
- Ver 11.1 on the LV 5800

To confirm the version, press a key in order of **[SYS]** => **[F.5]** SYSTEM INFORMATION.

- **Ver 4.8 on the LV 5800**
 - The LV 5800 now supports SNTP and can display the date and time obtained from a time server.
- **Ver 4.7 on the LV 5800**
 - Improvements have been made so that screen capture data can be saved to USB memory with two actions. File names are now automatically generated combinations of the date and time.
- **Ver. 3.7 on the LV 5800**
 - The beeper on the LV 5800 sounds if an error occurs.
- **Ver. 3.4 on the LV 5800**
 - The single input mode is added to the LV 5800.
 - The input unit of the LV 5800 can be remotely controlled via the remote connector on the rear panel.
- **Ver. 3.1 on the LV 5800**
 - The window frame color can be changed.
- **Ver. 1.6 on the LV 5800**
 - The frame capture function is added.
 - The current COLOR SYSTEM can be displayed in the WAVEFORM display mode.
 - The display on/off function is added for the time, input information, and so on.
 - The frame can be erased in the single screen mode.
 - The PLATFORM TAB menu is added to the SYSTEM.
 - The MULTI menu is moved to the SYSTEM menu.

Index

—A—

ALL COPY INT->USB	71
ALL COPY USB->INT	71
AUDIO	12

—B—

BMP FILE.....	65
BSG FILE.....	65

—C—

CAP	13
COMMENT INPUT.....	70

—D—

DATE&TIME.....	59
DELETE	71
DISPLAY	64
DVI-I OUTPUT	17

—E—

ETHERNET.....	14
EYE.....	12

—G—

GENERAL SETUP.....	46
--------------------	----

—I—

INITIALIZE	62
------------------	----

—L—

LCD OFF	61
---------------	----

—M—

MULTI.....	11
------------	----

—P—

PIC	12
PLATFORM SETUP	46

—R—

RCLL	12
RECALL	66
REFRESH	64
REMOTE	15

—S—

STATUS.....	12
STORE	71
SYS	13
SYSTEM INFORMATION.....	61

—U—

USB MEM RECALL.....	66
USB MEM STORE	66

—V—

VECT.....	12
-----------	----

—W—

WFM.....	11
----------	----

Following information is for Chinese RoHS only

所含有毒有害物质信息

部件号码：LV 5800A



此标志适用于在中国销售的电子信息产品, 依据2006年2月28日公布的《电子信息产品污染控制管理办法》以及SJ/T11364-2006《电子信息产品污染控制标识要求》，表示该产品在使用完结后可再利用。数字表示的是环境保护使用期限，只要遵守与本产品有关的安全和使用上的注意事项，从制造日算起在数字所表示的年限内，产品不会产生环境污染和对人体、财产的影响。产品适当使用后报废的方法请遵从电子信息产品的回收、再利用相关法令。详细请咨询各级政府主管部门。

产品中有毒有害物质或元素的名称及含量

部件名称 Parts	有毒有害物质或元素 Hazardous Substances in each Part					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
实装基板	×	○	○	○	○	○
主体部	×	○	○	○	○	○
液晶显示模组	×	○	○	○	○	○
开关电源	×	○	○	○	○	○
风扇	×	○	○	○	○	○
外筐	○	○	○	○	○	○
线材料一套	×	○	○	○	○	○
附件	○	○	○	○	○	○
包装材	○	○	○	○	○	○
电池	○	○	○	○	○	○
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。						

所含有毒有害物质信息

部件号码: LV 5800



此标志适用于在中国销售的电子信息产品, 依据2006年2月28日公布的《电子信息产品污染控制管理办法》以及SJ/T11364-2006《电子信息产品污染控制标识要求》, 表示该产品在使用完结后可再利用。数字表示的是环境保护使用期限, 只要遵守与本产品有关的安全和使用上的注意事项, 从制造日算起在数字所表示的年限内, 产品不会产生环境污染和对人体、财产的影响。产品适当使用后报废的方法请遵从电子信息产品的回收、再利用相关法令。详细请咨询各级政府主管部门。

产品中有毒有害物质或元素的名称及含量

部件名称 Parts	有毒有害物质或元素 Hazardous Substances in each Part					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
实装基板	×	○	○	○	○	○
主体部	×	○	○	○	○	○
液晶显示模组	○	×	○	○	○	○
开关电源	×	○	○	○	○	○
风扇	×	○	○	○	○	○
外筐	○	○	○	○	○	○
线材料一套	○	○	○	○	○	○
附件	○	○	○	○	○	○
包装材	○	○	○	○	○	○
电池	○	○	○	○	○	○
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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