LV 5838

AUDIO MONITOR

INSTRUCTION MANUAL

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GENERAL SAFETY SUMMARY

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

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

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

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

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

GENERAL SAFETY SUMMARY

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

⚠ WARNING

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

■ **Installation Environment**
● Operating Temperature Range
Use this instrument in a 0 to 40 °C environment. Using the instrument with its vents blocked or in a high temperature environment could lead to fire.
Drastic changes in temperature, such as might be caused by moving the instrument between two rooms with different temperatures, can damage the instrument by causing condensation to form within it. If there is a possibility that the instrument has condensation within it, wait for approximately 30 minutes before turning on the power.

● Operating Humidity Range
Use this instrument in an environment whose relative humidity is 85 % or less where there is no threat of condensation forming.
Also, do not operate this instrument with wet hands. Doing so could lead to electric shock or fire.

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

● Do Not Insert Foreign Materials
If foreign materials, such as metal, flammable objects, or liquid are allowed into the instrument (through the vents for example), fire, electric shock, damage to the instrument, or some other accident may result.

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

GENERAL SAFETY SUMMARY

⚠ WARNING

- **Warnings Concerning the Power Source**
  Do not use a power source with a voltage other than the rated power source voltage for the instrument. Doing so could lead to fire.

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

⚠ CAUTION

- **Cautions Concerning the Input and Output Connectors**
  To avoid damaging the instrument, only apply signals to the input connectors that conform to the specifications in this instruction manual. Do not short or apply external voltage to the output connectors.
  Doing so could damage the instrument.

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

- **If You Will Not Use the Instrument for an Extended Period of Time**
  If you will not use the instrument for an extended period of time, remove the power plug from the outlet.

GENERAL SAFETY SUMMARY

■ Calibration and Repairs

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

■ Routine Maintenance

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

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

■ About the European WEEE Directive

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

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

(WEEE stands for Waste Electrical and Electronic Equipment.)

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

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

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1. INTRODUCTION

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

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

1.1 Scope of Warranty

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

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

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

1.2 Operating Precautions

1.2.1 Maximum Allowable Input Voltage

⚠ CAUTION

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

Table 1-1   Maximum allowable input voltage

Input Connector	Maximum Allowable Input Voltage
DIGITAL AUDIO	±5 V (DC + peak AC)
SDI INPUT	±2 V (DC + peak AC)
EXT REF INPUT	±5 V (DC + peak AC)
REMOTE	+5 V

1.2.2 Mechanical Shock

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

1.2.3 Electrostatic Damage

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

1.2.4 Warming Up

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

1.2.5 Backup Battery

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

To continually use these features, we recommend that you replace the backup battery with a new one every five years after you purchase the instrument. You cannot replace the backup battery yourself. For more information, contact your nearest LEADER agent.

1.3 Trademark Acknowledgments

- The company and product names in this document are trademarks or registered trademarks of their respective holders.
- The MD5 algorithm, which is used by this instrument, was developed by RSA Security Inc. in the United States. This algorithm is available on a license-free and patent-free basis.

1.4　　Notations Used in This Manual

This section explains the terminology used in this manual.

● **Measurement Screen**

Refers to a screen showing a meter, Lissajous curve, loudness, or status.

● **1-Screen Display**

Refers to the condition in which a measurement screen is shown on one screen.
You can switch between this display and 2-screen display using the SINGLE/MULTI key.

● **2-Screen Display**

Refers to the condition in which two measurement screens are shown top and bottom.
You can switch between this display and 1-screen display using the SINGLE/MULTI key.

● **External Audio Signals**

Refers to digital audio signals received through the DIGITAL AUDIO connector on the rear panel.
To measure these signals, press INPUT to select AES.

● **Embedded Audio Signals**

Refers to audio signals extracted from SDI signals received through the SDI connector on the rear panel.
To measure these signals, press INPUT to select SDI.

● **When Measuring AES**

Refers to the conditions in which AES is selected through the INPUT key.

● **When Measuring SDI**

Refers to the conditions in which SDI is selected through the INPUT key.

● **When Measuring Dolby (option)**

Refers to the condition in which, on the DOLBY tab in the system settings, Module is set to Dolby-E, Dolby-Digital, or Dolby-Digital-Plus.

● **Underlining**

In function menus and menu trees, the default settings are underlined.

2.   SPECIFICATIONS

2.1   General

The LV 5838 is an audio monitor that can be used as an audio console or a master monitor. It supports external audio signals and audio signals embedded in 3G/HD/SD-SDI signals. On the basis of received signals, the LV 5838 can show a Lissajous display, surround display, audio status display, level meter display, or loudness measurement display, or a combination of these displays.

All errors and events can be logged with timestamps. Logs can be stored in external storage media.

2.2   Features

- **8 External Audio Signal I/O Connectors (16 channels)**

  Equipped with 8 BNC connectors (16 channels) that can be switched between input and output. When the connectors are configured to function as inputs, the LV 5838 measures external audio signals received through these connectors.

  When the connectors are configured to function as outputs, the LV 5838 can convert the audio signals embedded in SDI signals to AES/EBU signals and output them.

- **Headphone Output**

  Equipped with a 3.5 mm mini headphone output jack.

- **Support for LPCM, Dolby E, Dolby Digital, and Dolby Digital Plus**

  LPCM is supported as standard. Dolby E, Dolby Digital, and Dolby Digital Plus can be supported with a Dolby option.

- **Support for Audio Signals Embedded in SDI Signals**

  Audio signals embedded in SDI signals can be extracted and measured.

- **Downmixed Signal Generation**

  The LV 5838 can generate downmixed signals of 5.1-channel surround sound. Downmix coefficient and gain can be changed.

- **Level Meter Measurement Function**

  The LV 5838 can display simultaneously level meters and peak hold meters for up to 16 channels. The level meter supports dBFS, Nordic, DIN, and BBC scales. For Nordic, DIN, and BBC scales, you can set test levels. The level meter for loudness measurements can display both absolute values and relative values in reference to a target level.

- **Lissajous Display**

  The LV 5838 can display Lissajous curves and correlation meters of any two channels.

● **Surround Display**

The LV 5838 supports surround display that shows sound field images based on L, R, C, Ls, and Rs channels. It can also simultaneously show Lissajous curves of adjacent channels and surround waveforms.

● **Status Display**

Transmission status and audio status of digital audio signals can be displayed for 16 channels simultaneously.
Meta data of Dolby E and Dolby Digital can also be analyzed and displayed.

● **Loudness Measurement**

Momentary, short-term, and integrated loudness measurements can be performed on any two signals from mono, stereo, 5.1 channel, and 5.1 channel downmix. The changes in the measured loudness values can also be displayed in chart form.

● **Event Log, Loudness Log, and dBTP Log**

Logs can be recorded with time codes and time server information.

● **Relative Frequency Measurement between External Reference Signals and Audio Signals**

Input audio signal frequency error can be measured relative to a tri-level signal, black burst signal, 10 MHz sinusoid signal, or 48 kHz word clock signal received through the EXT REF INPUT connector.

● **Amplitude Measurement of External Audio Signals**

Simplified amplitude measurement can be performed on external audio signals.

● **LTC Input**

The LTC input terminal can be used to manage logs in sync with time codes.

● **Switching Loudness Measurement On/Off through the Remote Connector**

Loudness measurement can be started, stopped, and cleared through the remote connector.

● **Frame Location Measurement**

Installation of the Dolby option enables the measurement of embedded header positions when the embedded audio signal is Non-PCM (Dolby E only).

● **Dolby Option**

Dolby E, Dolby Digital, and Dolby Digital Plus (*1) can be decoded and measured. Audio decoding can be performed on external audio signals and audio signals embedded in SDI signals.

*1   The LV 5838 supports up to 5.1 channel audio decoding.
     Information such as metadata will not be displayed.

2.3   Specifications

2.3.1   SDI Video Signal Formats and Standards

Bitrate
   3G-SDI   2.970 Gbps or 2.970/1.001 Gbps
   HD-SDI   1.485 Gbps or 1.485/1.001 Gbps
   SD-SDI   270 Mbps
Ancillary Data Standard   SMPTE ST 291
Format Setting   Auto setup (manual setup only for i/sF)
   3G-SDI   Detects the format information within the payload ID (SMPTE ST 352) and automatically sets the format
    HD-SDI, SD-SDI   Determines the format from the input signal's synchronization information and automatically sets the format.

Table 2-1   SD-SDI video signal formats and standards

Color System	Quantization	Scanning	Frame (Field) Rates	Corresponding Standard
YC$_B$C$_R$ 4:2:2	10 bits	525i	59.94	SMPTE ST 259
		625i	50	

Table 2-2   HD-SDI video signal formats and standards

Color System	Quantization	Scanning	Frame (Field) Rates	Corresponding Standard
YC$_B$C$_R$ 4:2:2	10 bits	1080i	60/59.94/50	SMPTE ST 274
		1080p	30/29.97/25/24/23.98	SMPTE ST 292
		1080PsF	30/29.97/25/24/23.98	
		720p	60/59.94/50/30/29.97/25/24/23.98	SMPTE ST 296 SMPTE ST 292

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

Color System	Quantization	Scanning	Frame (Field) Rates	Corresponding Standard
YC$_B$C$_R$ 4:2:2	10 bits	1080p	60/59.94/50	SMPTE ST 424 SMPTE ST 425
	12 bits	1080p	30/29.97/25/24/23.98	
		1080PsF	30/29.97/25/24/23.98	
		1080i	60/59.94/50	
YC$_B$C$_R$ 4:4:4	10 bits	1080p	30/29.97/25/24/23.98	
		1080PsF	30/29.97/25/24/23.98	
		1080i	60/59.94/50	
		720p	60/59.94/50/30/29.97/25/24/23.98	
	12 bits	1080p	30/29.97/25/24/23.98	
		1080PsF	30/29.97/25/24/23.98	
		1080i	60/59.94/50	
RGB 4:4:4	10 bits	1080p	30/29.97/25/24/23.98	
		1080PsF	30/29.97/25/24/23.98	
		1080i	60/59.94/50	
		720p	60/59.94/50/30/29.97/25/24/23.98	
	12 bits	1080p	30/29.97/25/24/23.98	
		1080PsF	30/29.97/25/24/23.98	
		1080i	60/59.94/50	
		1080p	24/23.98	(2048×1080)
		1080PsF	24/23.98	

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

Color System	Quantization	Scanning	Frame (Field) Rates	Corresponding Standard
YC$_B$C$_R$ 4:2:2	10 bits	1080p	60/59.94/50	SMPTE ST 424 SMPTE ST 425
	12 bits	1080p	30/29.97/25/24/23.98	
		1080PsF	30/29.97/25/24/23.98	
		1080i	60/59.94/50	
YC$_B$C$_R$ 4:4:4	10 bits	1080p	30/29.97/25/24/23.98	
		1080PsF	30/29.97/25/24/23.98	
		1080i	60/59.94/50	
	12 bits	1080p	30/29.97/25/24/23.98	
		1080PsF	30/29.97/25/24/23.98	
		1080i	60/59.94/50	
RGB 4:4:4	10 bits	1080p	30/29.97/25/24/23.98	
		1080PsF	30/29.97/25/24/23.98	
		1080i	60/59.94/50	
	12 bits	1080p	30/29.97/25/24/23.98	
		1080PsF	30/29.97/25/24/23.98	
		1080i	60/59.94/50	
		1080p	24/23.98	(2048×1080)
		1080PsF	24/23.98	

2.3.2　　　Embedded Audio Playback Method

Compliant Standards
  3G-SDI, HD-SDI　　　　SMPTE ST 299
  SD-SDI　　　　　　　　SMPTE ST 272
Format　　　　　　　　　LPCM, Dolby E (option), Dolby Digital (option), and Dolby Digital Plus (option)
Quantization　　　　　　24 bits
Clock Generation　　　　Generated from the video clock
Synchronization　　　　 All audio signals must be synchronized to the video clock.

2.3.3　　　I/O Connectors

SDI Signal I/O Connectors
  Input Connector　　　　　2 BNC connectors
  Input Impedance　　　　　75 Ω
  Input Return Loss
    5 M to 1.485 GHz　　　15 dB or more
    1.485 to 2.97 GHz　　 10 dB or more
  Maximum Input Voltage　 ±2 V (DC + peak AC)

SDI Signal Output Connector
  Output Connector　　　　1 BNC connector
  Output Signal　　　　　　Transmits a serial reclocked signal of the signal received through the SDI signal input connector
  Output Impedance　　　　75 Ω
  Output Return Loss
    5 M to 1.485 GHz　　　15 dB or more
    1.485 G to 2.97 GHz　 10 dB or more

Audio Signal Input/Output Connectors
  I/O Connectors　　　　　8 BNC connectors, 16 channels
  I/O Impedance　　　　　 75 Ω
  Supported Formats　　　 LPCM, Dolby E (option), Dolby Digital (option), and Dolby Digital Plus (option)
  Sampling Frequency　　　32 k to 192 kHz
  Quantization　　　　　　24 bits
  Maximum Input Voltage　 ±5 V (DC + peak AC)
  Output Voltage　　　　　1.0 Vp-p ± 10 % (into 75 Ω)

Headphone Jack
  Output Connector　　　　One 3.5 mm mini jack
  Output Signal　　　　　　Two channels out of all the input audio signals
  Volume Adjustment　　　 VOLUME knob
  Output Voltage　　　　　100 mW maximum (into 8 Ω load resistance)

Video Output Connector

Output Connector	One DVI-D connector
Output Signal	Digital signal of the LCD display
Resolution	VGA (640×480 dots)
Aspect Ratio	4:3
Signal Format	Single Link T.M.D.S
DDC	Not supported
Hot Plug Detection	Not supported

EXT REF INPUT Connector

Input Connector	1 BNC connector
Input Signal	Tri-level sync, NTSC/PAL black burst signal, 10 MHz sinusoid signal, or 48 kHz word clock signal
Input Impedance	
Tri-level sync or NTSC/PAL black burst signal	
	75 Ω
10 MHz sinusoidal signal	75 Ω
48 kHz word-clock signal	75 Ω, 20 kΩ
Maximum Input Voltage	±5 V (DC + peak AC)

LTC INPUT Connector

Compliant Standards	SMPTE ST 12
Input Connector	1 BNC connector
Input Signal	LTC signal
Input Impedance	≤ 20 kΩ
Maximum Input Voltage	±5 V (DC + peak AC)

2.3.4 LCD

Type	6.3-inch color TFT
Resolution	VGA (640×480 dots)

2.3.5 Control Connectors

USB Port

Compliant Standard	USB 2.0
Supported Media	USB memory devices
Function	Event log and loudness log output

Ethernet Port

Compliant Standard	IEEE802.3
Supported Protocol	TELNET, SNMP
Port	RJ-45
Function	Used to monitor the LV 5838 from a PC and to monitor errors
Type	10Base-T/100Base-TX

Remote Connector

Connector	15-pin D-sub (female)
Locking Screws	Inch screws (No.4-40UNC)
Function	Used to recall presets, control loudness measurement, and output alarms
Control Signal	LVTTL level (low active)
Input Voltage Range	0 to 5 V

2.3.6   Display Indication

Function	Switch between the 1-screen and 2-screen displays
1-Screen Display	Displays a single, large screen
2-Screen Display	Displays two screens, top and bottom

2.3.7   Level Meter Display

Display Modes	Assign up to 16 audio channels to level meters

Audio Level Meter

Numeric Display	Numeric display based on the specified scale
Response Model	True-Peak, PPM-TypeI, PPM-TypeII, VU
Reference Level Range	-40 to 0 dBFS (1 dBFS steps)
Warning Level Range	-40 to 0 dBFS (1 dBFS steps)
Color	
Reference Level or Less	Green
Between the Reference Level and Warning Level	Yellow
Warning Level or Higher	Red

Peak Hold Meter

Response Model	True-Peak, PPM-TypeI, PPM-TypeII, OFF
Peak Hold Time	0.0 to 5.0 s; HOLD (0.5/1.0 s steps)

Meter Scale

Compliant Standard	dBFS, Nordic, DIN, BBC (For Nordic, DIN, and BBC, measured values are converted in reference to a test level, and the results are displayed on the respective level meter.)
Dynamic Range	
dBFS	-60 to 0 dBFS
Nordic	-42 to 12 dB
DIN	-50 to 5 dB
BBC	1 to 7 dB
Dynamic Range Expansion	Reference ± 5 dB is displayed expanded.

2.3.8   Lissajous Display

Display Modes	Displays an audio Lissajous waveform of the two channels that you select
Channel Mapping	Select 2 channels from among 16 channels
AGC Setting	ON or OFF
AGC Operating Range	-45 to 0 dBFS
Correlation Meter	Displays the correlation coefficient between the pair of signals assigned to the Lissajous display using a value between -1 and 1

2.3.9   Surround Display

Display Modes	Displays a graphical representation of a sound field
Surround Formats	Stereo, 5.1ch
Channel Mapping	Assign channels to L, R, C, Ls, and Rs as you like
Center Channel Format	Normal, phantom center
AGC Setting	ON or OFF
AGC Operating Range	-45 to 0 dBFS

2.3.10   Loudness Display

Measurement Mode	Mono, stereo, 5.1, downmix, custom
Channel Mapping	Assign channels to L, R, C, LFE, Ls, and Rs as you like
Level Meter Display Format	Momentary loudness, short-term loudness, integrated loudness
Chart Display	Displays changes of momentary loudness, short-term loudness, and integrated loudness over time on a graph
Display Time	1min, 4min, 10min, 30min, 1hour, 2hour, 4hour, 6hour, 12hour, 24hour (Only group 1 is measured when 24hour is specified)
Dynamic Range	-70 to 0 (LKFS/LUFS)
Dynamic Range Expansion	Expands the range -36 to 18 (LK/LU) or -18 to 9 (LK/LU) in reference to the reference level
Operation mode	BS1770-2, ARIB, EBU, ATSC, CUSTOM
CUSTOM Mode Settings	
Target Level	-99 to 0 LKFS
LFE Gain	0.0 to 10.0
BlockSize	200 ms to 30 s
OverlapSize	0 to 99%
UpperThres	0 to 5
LowerThres	-5 to 0
Absolute Level	-99 to 0 LKFS
Relative Level	-99 to 0 LKFS
Control Method	START/PAUSE key, remote connector, time code, CM submission data reference trigger, real time

2.3.11   Audio Status Display

Error Detection

Level Over	Counted as an error when a value exceeding the specified level is received
Level Range	-40 to 0 dBFS
Clipping	Counted as an error when a maximum signal is received for longer than the specified duration
Duration Range	1 to 100 samples
Mute	Counted as an error when a value below the specified level is received for longer than the specified duration
Level Range	-99 to -60 dBFS
Duration Range	1 to 100 samples
Silence	Counted as an error when a mute signal is received for longer than the specified duration
Duration Range	1 to 5000 ms
Parity	Counted as an error when the parity bit of the external audio signal and the value calculated on the LV 5838 are different.
Validity	Displays the validity bit status of the external audio signal
CRC	Counted as an error when the CRC value of the external audio signal and the value calculated on the LV 5838 are different.
Dolby CRC (option)	Counted as an error when the CRC value of the Dolby E or Dolby Digital signal and the value calculated by the Dolby module are different

Frame Location (option)	Displays the embedded header position and mode when the embedded audio signal is Non-PCM (Dolby E only)
Elapsed Time	Displays the amount of time that has elapsed since an error was reset

Channel Status Bits

Display Formats	Binary display, text display
Analysis Display Information	Format, AudioData, Emphasis, SignalLock, SampleFrequency, Reference, ChannelMode, Resolution, Alignment, Origin, Destination, TimeCode, CRC

User Bits

Display Formats	Binary display

Dolby E Metadata (option)
 Compliant Standard
  External Audio Signals AES3id
  SDI Signal SMPTE ST 2020、RDD 6
 Display Formats Text display
 Displayed Contents Dolby-E CommonMetadataStatus, AC-3 MetadataStatus, AC-3 ExtendedBitstreamInfo

Dolby Digital Metadata (option)
 Compliant Standard
  External Audio Signals AES3id
  SDI Signal SMPTE ST 2020、RDD 6
 Display Formats Text display
 Displayed Contents AC-3 MetadataStatus, AC-3 ExtendedBitstreamInfo

2.3.12 SDI Status Display

Signal Detection	Detects the presence of an SDI signal
Format Display	Displays the video signal input format
Error Count	Up to 999,999 for each error type
Count Period	1 field
Embedded Audio Channel Display	
	Displays the embedded audio channel numbers

Embedded Audio Ancillary Data Packet Error Detection

BCH	Detects audio data packet transmission errors
Parity	Detects audio data packet parity errors
DBN	Detects audio data packet continuity errors
Embedded Position	Detects the presence of audio in lines where it should not be embedded
Sample Count	Detects audio sample count errors

2.3.13 PHY Display

Relative Frequency Measurement

Function	Measures the audio signal frequency error relative to the reference signal (external reference signal or external audio signal)
Reference Signal	Tri-level sync, NTSC/PAL black burst signal,10 MHz sinusoid signal, 48 kHz word clock signal, external audio signal

Simplified Amplitude Measurement

Function	Measures the amplitude of the external audio signal
Measurement Range	0.2 to 6.0 V (DC + peak AC)
Accuracy	±50 mV (for a 1 V signal whose rise or fall time is 30 ns to 44 ns)

Sampling Frequency Display
    PHY FREQ   Detects and displays the physical sampling frequency of input signals
    STATUS FREQ   Displays sampling frequency information in channel status

2.3.14   Various Features

Measurement Signal Selection
    Function   Switches between the audio signal embedded in SDI signals and the external audio signal
    Selection Method   INPUT key on the panel or through the Ethernet port

Preset Settings
    Presets   Stores panel settings (excluding power on/off, date/time, Ethernet, and remote settings)
    Number of Presets   5
    Preset Loading Method   From the panel or through the Ethernet port or remote connector

Logging Feature
    Function   Records events, loudness, and dBTP measurements with timestamps
    Logging Method   From the panel or through the Ethernet port or remote connector

Time Display
    Time   Current time, time code
    Current Time Display   Displays time based on the internal clock
    Time Code   LTC (ATC), VITC(ATC) , D-VITC, AESEBU, LTC (EXT)

Alarm Output
    Display Indication   Displays a warning when the fan stops
    Remote Connector   Outputs a signal when an error occurs

2.3.15   General Specifications

    Environmental Conditions

Operating Temperature	0 to 40°C
Operating Humidity Range	85 %RH or less (no condensation)
Optimal Temperature	10 to 30°C
Operating Environment	Indoors
Elevation	Up to 2,000 m
Overvoltage Category	II
Pollution Degree	2

    Power Requirements

Voltage	10 to 18 VDC
Power Consumption	30 W max.
Dimensions	215 (W) × 128 (H) × 88 (D) mm (excluding protrusions)
Weight	1.7 kg
Accessories	AC adapter (SPU40-105) 1
	Power cord 1
	Instruction manual 1
	15-pin D-sub connector 1
	15-pin D-sub connector cover 1

2.3.16   AC adapter (SPU40-105)

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

3. PANEL DESCRIPTION

3.1 Front Panel
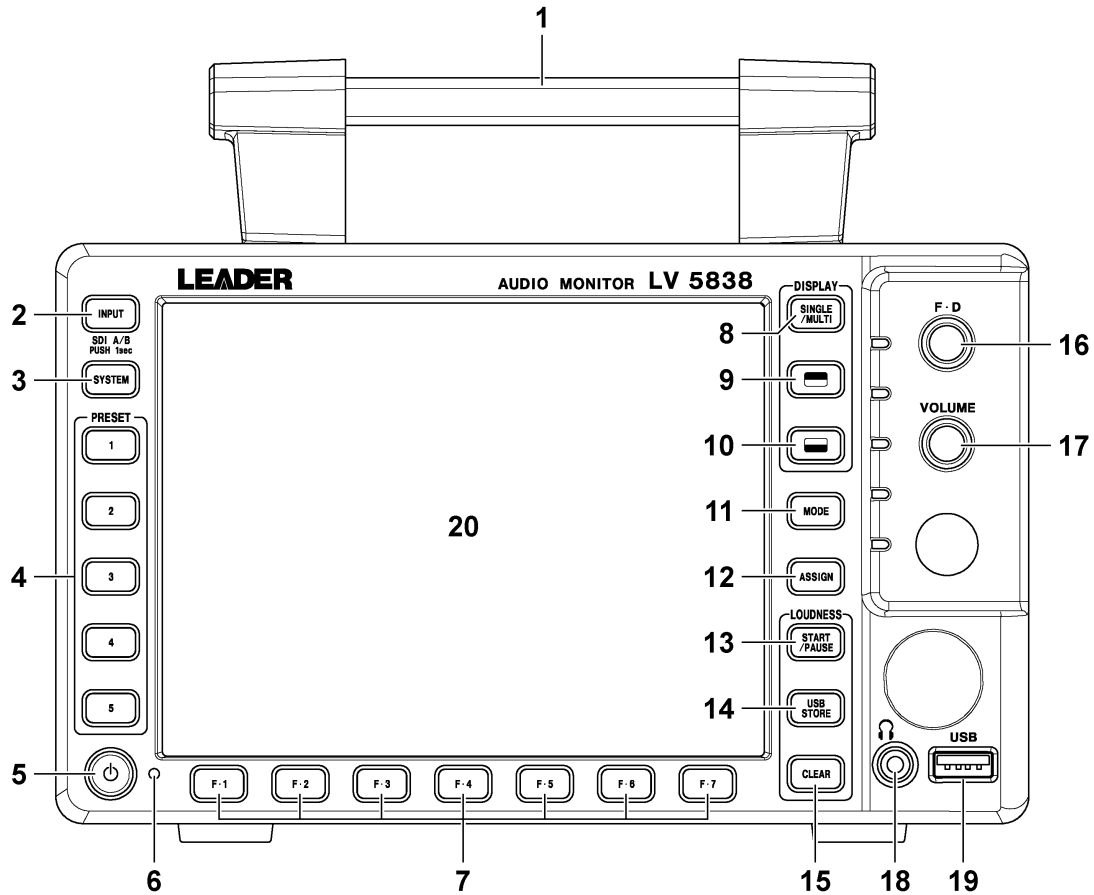
Figure 3-1   Front panel

Table 3-1   Front panel description

No.	Name	Description	Reference
1	Handle	A handle for carrying the LV 5838.	-
2	INPUT	Press the key to switch the measurement signal (SDI or AES). When the measurement signal is SDI, hold the key down to switch the measurement channel (A or B).	4.4.4
3	SYSTEM	Press the key to configure the LV 5838. Hold the key down to enable and disable the key lock.	5
4	PRESET	Hold the key down to register the panel settings. Press the key to recall a panel setting preset.	4.4.9
5	Power switch	Press the key to turn the power on. Hold the key down to turn the power off.	4.1
6	Power LED	Lights when the power is on.	-
7	Function keys	Use these keys to operate the menus.	4.4.2
8	SINGLE/MULTI	Switches between the 1-screen and 2-screen displays.	4.4.6
9		Selects the top screen during 2-screen display.	4.4.6
10		Selects the bottom screen during 2-screen display.	4.4.6
11	MODE	Shows the measurement screen and measurement menu.	4.4.5
12	ASSIGN	Assigns measurement channels.	4.4.7

No.	Name	Description	Reference
13	START/PAUSE	Starts and pauses loudness measurement.	9.2
14	USB STORE	Saves the loudness log to a USB memory device.	9.2
15	CLEAR	Hold the key down to clear loudness measurement.	9.2
16	F•D	A function dial for configuring various settings.	-
17	VOLUME	Adjusts the headphone output volume.	4.2.5
18	Headphone	Outputs the audio of the selected channel. Connect a headphone (mini plug).	4.2.5
19	USB	Saves event logs and loudness logs. Connect a USB memory device.	9.2 / 10.3.2
20	LCD	Displays various screens.	-

3.2 Rear Panel
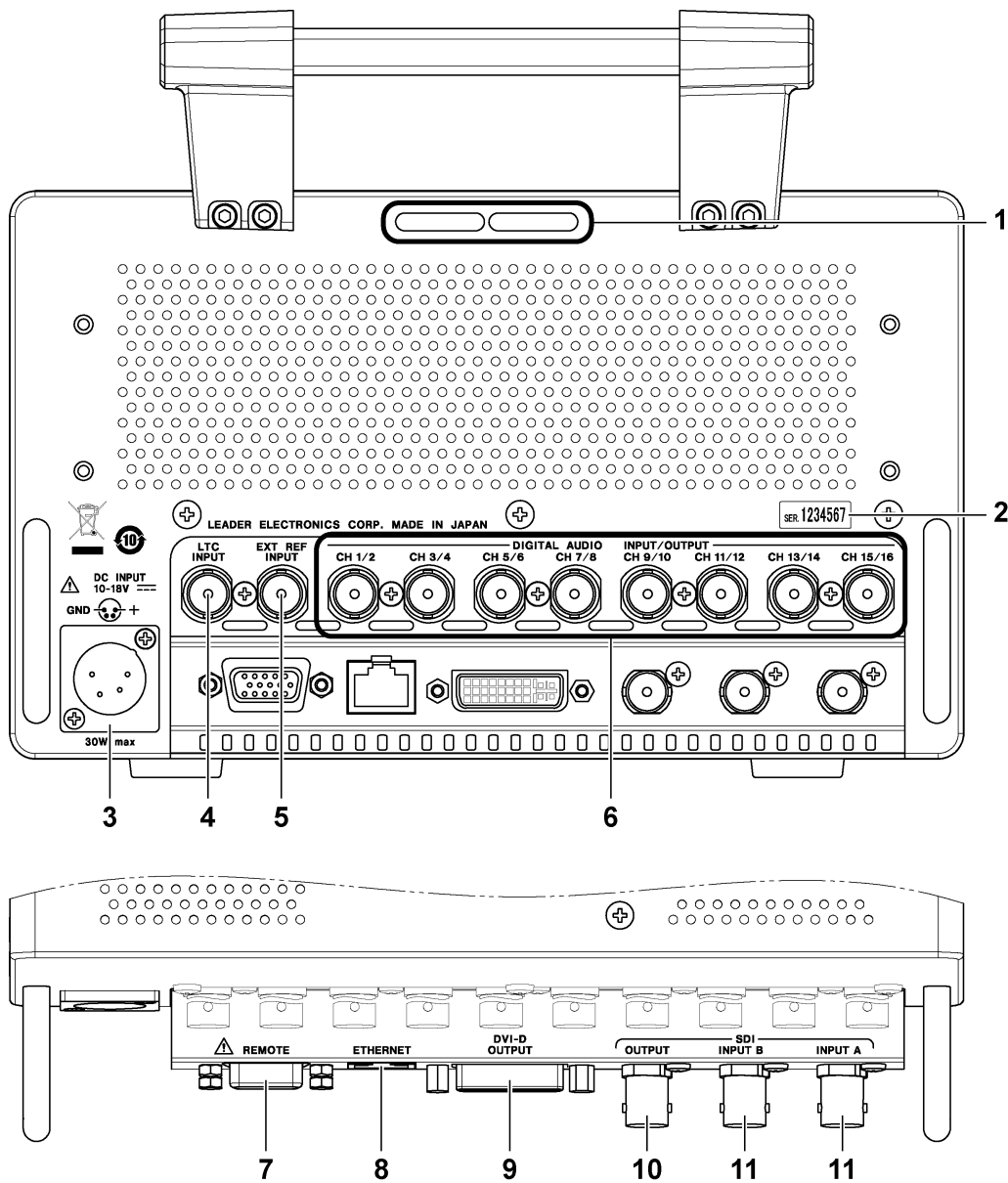
Figure 3-2 Rear panel

Table 3-2   Rear panel description

No.	Name	Description	Reference
1	Fan	Cooling fan.	-
2	Serial Label	The serial number is printed on this label.	-
3	DC power inlet	Connect the supplied AC adapter to this inlet.	4.1
4	LTC INPUT	Time code input connector.	4.2.3
5	EXT REF INPUT	External reference input connector. Apply a tri-level sync, NTSC/PAL black burst signal,10 MHz sinusoid signal, or 48 kHz word clock signal.	4.2.4
6	DIGITAL AUDIO	External audio signal I/O connectors.	4.2.1
7	REMOTE	15-pin D-sub remote control connector. This can be used to execute actions such as loading presets.	11
8	ETHERNET	Ethernet port. TELNET, SNMP, and time server functions can be used through this port.	12
9	DVI-D OUTPUT	DVI-D output connector. Outputs the display screen.	4.2.6
10	OUTPUT	Reclocks and outputs the selected channel, either the SDI signal applied to INPUT A or B.	4.2.2
11	INPUT A INPUT B	SDI signal input connectors.	4.2.2

4. BEFORE YOU BEGIN MEASURING

4.1 Turning the Instrument On and Off

● **Connecting the AC Adapter**
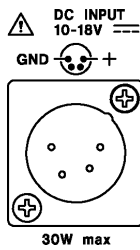
Figure 4-1   DC INPUT

Connect the included AC adapter to DC INPUT on the rear panel.
When the LV 5838 is connected to the AC adapter, some power is consumed even if the power switch is turned off. If you do not intend to use the LV 5838 for an extended period of time, disconnect the AC adapter.

● **Turning the Power On**

To turn on the power, press the power switch. The power LED lights, and the instrument turns ON. When you turn ON the power, the LV 5838 starts up with the same panel settings that were set when it was last turned OFF.

● **Turning the Power Off**

To turn off the power, hold down the power switch. The power LED and the instrument turn OFF.

4.2 Signal I/O

4.2.1 External Audio Signal Input/Output
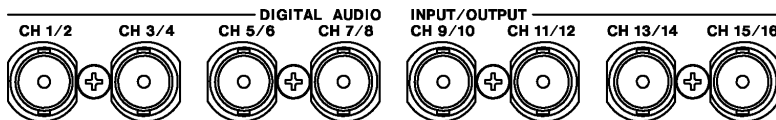
Figure 4-2   DIGITAL AUDIO

Apply external audio signals to the DIGITAL AUDIO connectors on the rear panel.
To measure external audio signals, press INPUT on the front panel to select AES.

You can switch the DIGITAL AUDIO connectors between input and output on the GENERAL tab in the system settings. Before you apply signals, check that the function of the connectors has been set to input. Failing to do so could damage the instrument. Use output signals for monitoring purposes.

[Reference]   GENERAL tab → See section 5.1, "General Settings."

Table 4-1   External audio signal input/output

	System Settings		CH 1/2 to CH 7/8	CH 9/10 to CH 15/16
During SDI measurement	Ext AES at SDI-INPUT	Input	Input connector	Input connector
		Output	Output connector (*1)	Output connector (*1)
During AES measurement	Ext AES Ch9-16 at AES-INPUT	Input	Input connector	Input connector
		Output	Input connector	Output connector (*2)

*1   Outputs embedded audio signals.
*2   Outputs the signal received through CH 1/2 to CH 7/8.

4.2.2   SDI Signal Input/Output
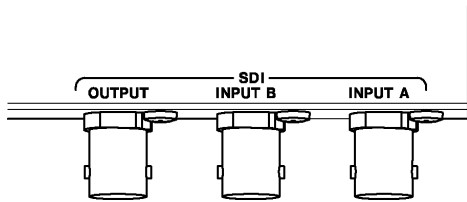
Figure 4-3   SDI

Apply an SDI signal to INPUT A or INPUT B on the rear panel.
The input connectors are terminated internally at 75 Ω, so there is no need to connect terminators to them.

To measure embedded audio signals, press INPUT on the front panel to select SDI. You can switch measurement channels by holding down the INPUT key.

The OUTPUT connector transmits a reclocked signal of the selected channel, either the SDI signal applied to INPUT A or B. Use the signals for monitoring.

4.2.3   Time Code Input
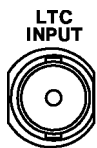
Figure 4-4   LTC INPUT

Apply a time code signal to the LTC INPUT connector on the rear panel.
To use the input time code for measurements and logging, on the GENERAL tab in the system settings, set TIMECODE SETTING to LTC(EXT).

[Reference]   GENERAL tab → See section 5.1, "General Settings."

4.2.4   External Reference Signal Input
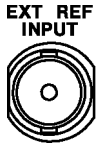
Figure 4-5   EXT REF INPUT

Apply a tri-level sync, NTSC/PAL black burst signal,10 MHz sinusoid signal, or 48 kHz word clock signal to the EXT REF INPUT connector on the rear panel. This will be the reference signal for relative frequency measurements.
On the GENERAL tab in the system settings, specify EXT-REF INPUT FORMAT SETTING.
[Reference]   Relative frequency measurements → See section 10.5, "PHY Display."
                    GENERAL tab → See section 5.1, "PHY Display."

4.2.5   Headphone Output

● **Selecting the Channels to Output**

Select the channels using PHONES on the assign menu. The selected channels are indicated in the upper right of the display.
[Reference]   PHONES → See section 4.4.7, "Mapping Measurement Channels."

● **Adjusting the Volume**

Use the VOLUME knob on the front panel to adjust the speaker output volume. Pressing the knob returns the volume to its normal setting.
The current volume is indicated in the upper right of the display.

Low volume		Normal volume		High volume
	. . .		. . .	

● **Connecting a Headphone**

Connect a headphone (mini plug) to the headphone jack on the front panel.
Check the volume before you put the headphones on.

4.2.6   DVI-D Output
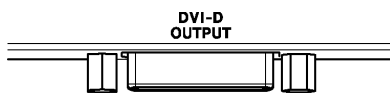
Figure 4-6   DVI-D OUTPUT

The DVI-D output connector on the rear panel transmits the LV 5838 screen image. Using a DVI-D cable sold in the market, connect the LV 5838 to an VGA (640 × 480) display.

4.3 General Display Explanation

This section explains the common elements in all displays.
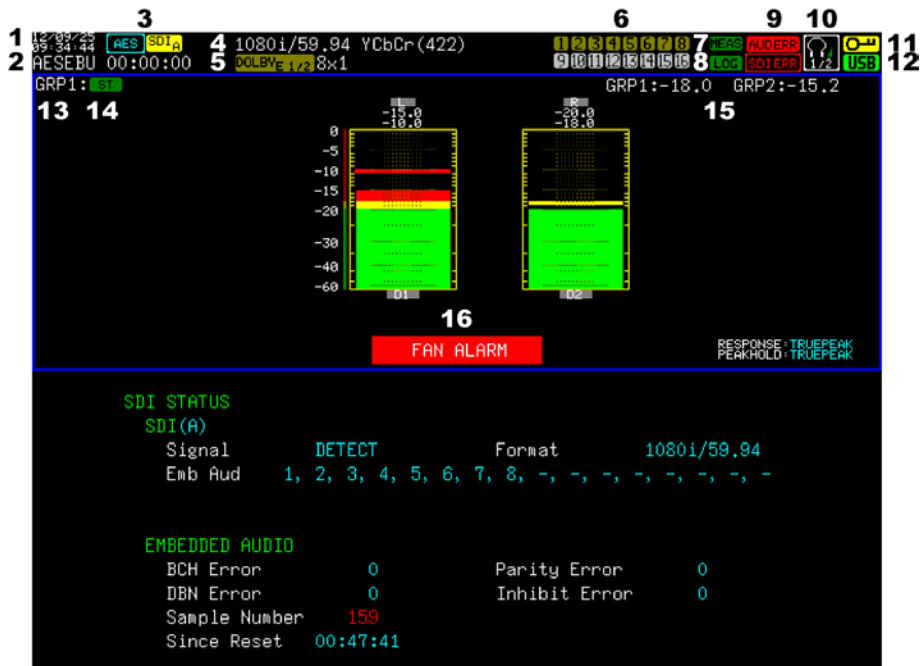
Figure 4-7　General display explanation

1   Date and time

Displays the date and time based on the TIME SETUP settings in the system settings or the date and time based on a time server. You can use Date and Time on the GENERAL tab to turn the display on and off.

[Reference]　TIME SETUP → See section 5.11, "Setting the Date and Time."

　　　　　　　Time server → See section 12.3, "Time Server Function."

　　　　　　　GENERAL tab → See section 5.1, "General Settings."

2   Time code

Displays the time code when TIMECODE SETTING on the GENERAL tab in the system settings is not set to OFF.

[Reference]　GENERAL tab → See section 5.1, "General Settings."

3   Measurement signal

Displays the measurement signal selected with the INPUT key as "AES," "SDI A," or "SDI B."

[Reference]　INPUT key → See section 4.4.4, "Selecting the Measurement Signal."

4   Format

During SDI measurement, the input signal format is indicated here. You can use Video Format on the GENERAL tab to turn the display on and off.

[Reference]　GENERAL tab → See section 5.1, "General Settings."

5   Dolby indication (option)

Displays DOLBY-E when Module is set to Dolby-E, DOLBY-D when Module is set to Dolby-Digital, and DD+ when Module is set to Dolby-Digital-Plus on the DOLBY tab in the system settings. In addition, input groups and program configuration are displayed.

[Reference]   DOLBY tab → See section 5.5, "Configuring the Dolby Settings (Option)."

6   Channel

Displays channels that are receiving input in white (ocher during Dolby measurement) and those that are not in gray.

7   MEAS, CALC, RMT, TC-P, TC, TCWP, TCW, CM-P, CM, FILE, RT-P, RT

Displays loudness measurement information.

[Reference]   See section 9.3, "Loudness Measurement."

MEAS: Appears when loudness measurement is in progress
CALC: Appears for a given period of time after loudness measurement is stopped
RMT: Appears when the remote measurement is in standby mode.
TC-P: Appears when the time code measurement is paused.
TC: Appears when the time code measurement is in standby mode.
TCWP: Appears when the overwriting of measured values is paused.
TCW: Appears when the overwriting of measured values is in standby mode.
CM-P: Appears when the CM measurement is paused.
CM: Appears when the CM measurement is in standby mode.
FILE: Appears when the file measurement is in standby mode.
RT-P: Appears when the real-time measurement is paused.
RT: Appears when the real-time measurement is in standby mode.

8   LOG

Appears when events are being logged. To turn event logging on and off, use LOG in the status menu.

[Reference]   LOG → Section 10.3.2, "Configuring the Event Log"

9   AUDERR, SDIERR

Appears when an error occurs in one of the detection items that have been enabled on the AUDIO ERROR tab or SDI ERROR tab in the system settings.
Errors that are currently occurring and errors that have occurred in the past are distinguished as follows:

[Reference]   AUDIO ERROR tab → See section 5.10, "Configuring Audio Error Detection Settings."
                       SDI ERROR tab → See section 5.11, "Configuring SDI Error Detection Settings."

10 Headphone

Displays the volume set with the VOLUME knob and the output channel set with PHONES L and PHONES R in the assign menu.

[Reference]   See section 4.2.2, "Headphone Output."

11 Key lock

Appears when the key lock is enabled. You can turn the key lock on and off by holding down the SYSTEM key.

[Reference]   See section 4.4.8, "Setting the Key Lock."

12 USB

Appears when a USB memory device is connected to the USB port. This indicator is normally green, but it changes to red when the USB memory device is being accessed. Do not turn the power off or remove the USB memory device when the indicator is red.

13 Group (excluding the status)

Displays the display group selected under GROUP in the system settings as "GRP1," "GRP2," "ALL," "1-8," or "9-16."

[Reference]   GROUP → See section 6.2, "Configuring the Meter Display, 7.2, "Configuring the Lissajous Display," 8.2, "Configuring the Surround Display," and 9.2, "Configuring the Loudness Display."

14 Audio mode (excluding the status)

Displays the audio mode selected under GROUP1 and GROUP2 in the assign menu as "MONO," "ST," "ALL," "5.1," "5.1DM," or "CUST." The audio mode is not displayed when GROUP in each mode menu is set to "ALL," "1-8," or "9-16."

[Reference]   GROUP1, GROUP2 → See section 4.4.7, "Mapping Measurement Channels."

15 Loudness

Displays the integrated loudness value for each measurement group.

16 FAN ALARM

Appears when a fan error occurs. If this appears, turn off the LV 5838 immediately, and contact your local LEADER agent.

4.4   Panel Operation Basics

4.4.1   Displaying the Function Menu

● **Displaying the System Menu**

Press SYSTEM to display the system menu; press it again to clear it.

● **Displaying the Assign Menu**

Press ASSIGN to display the assign menu; press it again to clear it.

● **Displaying the Mode Menu**

Press MODE to display the mode menu; press it again to clear it.
The mode menu automatically disappears after 5 seconds of user inactivity. If this occurs, you can press a function key to display it again. You can change the length of time before the menu disappears on the ETC tab in the system settings.

[Reference]   ETC tab → See section 5.3, "Other Settings."

4.4.2 Function Menu Operations
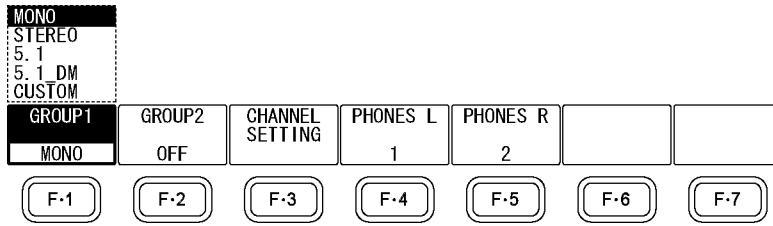
Figure 4-8　Assign menu

To select a setting from a list, as with F•1 of the assign menu, press F•1 repeatedly to select the setting you want. The setting changes each time you press F•1. After you stop pressing F•1, the setting is confirmed, and the pop-up menu disappears.

4.4.3 Tab Menu Operations

In the system settings and other settings, tab menus are used as shown below.
This section explains how to operate the tab menu, using the METER 1 tab menu as an example.
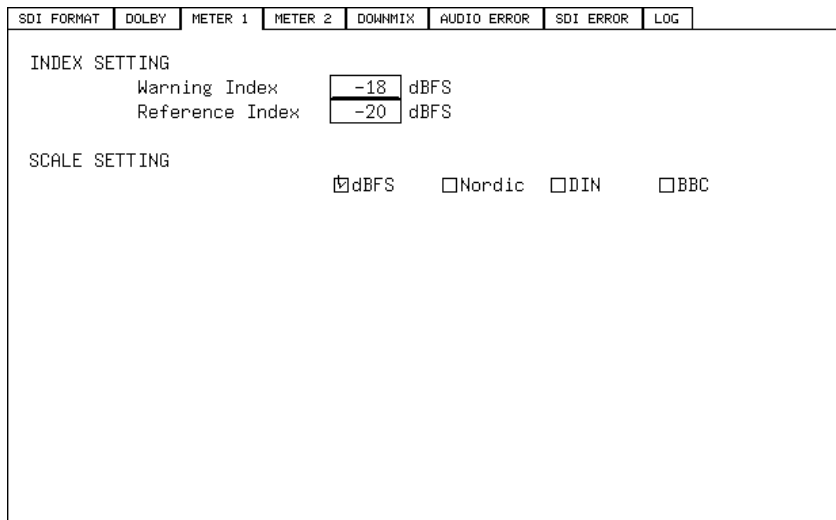
Figure 4-9　METER 1 tab

● **Moving Cursors**

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

● **Switching Tabs**

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

● **Selecting Check Boxes**

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

● **Entering Values**

Move the cursor to the item that you want to enter the value for, and press the function dial (F•D). When the cursor changes from light blue to yellow, turn the function dial (F•D) to set the value. After setting the value, press the function dial (F•D).

● **Confirming Settings**

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

● **Canceling Settings**

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

4.4.4   Selecting the Measurement Signal

External audio signals and embedded audio signals cannot be measured simultaneously. To switch the measurement signal, press the INPUT key on the front panel. During SDI measurement, hold down the INPUT key to switch the measurement channel.
The signal that is currently being measured is displayed in the upper left of the screen as follows.

SDI channel A   SDI channel B   AES

Figure 4-10   Selecting the measurement signal

4.4.5   Selecting the Display Mode

The measurement spring has several display modes. To switch the mode, press F•1 DISPLAY on the mode menu. In 2-screen display mode, you can select the display mode of each screen separately.

Table 4-2   Selecting the display mode

Display Mode	Description	Reference
METER	Meters are displayed.	6
LISSAJOU	The Lissajous curves and meters are displayed.	7
SURROUND	Surround waveforms and meters are displayed.	8
LOUDNESS	Loudness meters and charts are displayed.	9
STATUS	Audio status, SDI status, event log, and PHY are displayed.	10

4.4.6   1-Screen Display and 2-Screen Display

The LV 5838 can display one measurement screen (1-screen display) or two measurement screens top and bottom (2-screen display).

In 1-screen display, press SINGLE/MULTI to switch to 2-screen display.
In 2-screen display, press ⬛ to select the top screen, ⬛ to select the bottom screen, and SINGLE/MULTI to show the selected screen in 1-screen display.

1-screen display   2-screen display
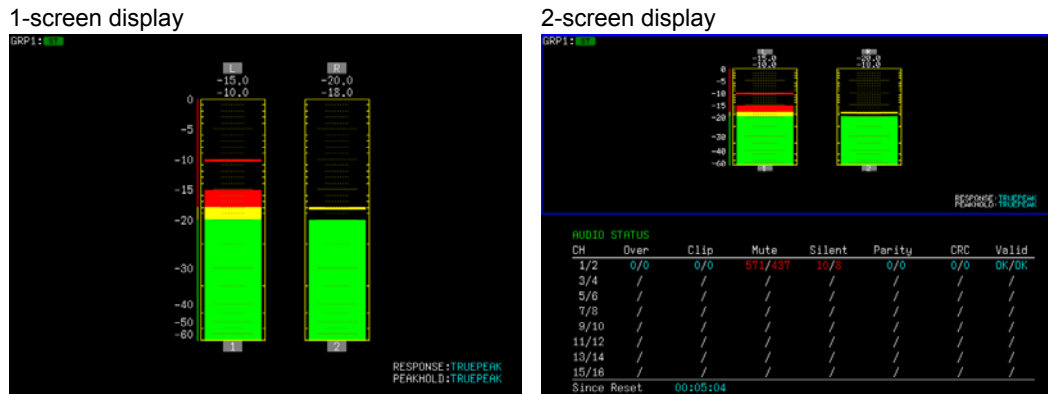
Figure 4-11   1-screen display and 2-screen display

4.4.7   Mapping Measurement Channels

You can assign measurement channels on the assign menu.
The LV 5838 enables you to set up two audio groups and switch between them.
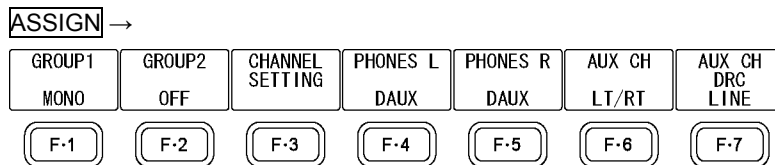
ASSIGN →

Figure 4-12   Assign menu

- **F·1** **GROUP1: <u>MONO</u> / STEREO / 5.1 / 5.1_DM / CUSTOM**

- **F·2** **GROUP2: <u>OFF</u> / MONO / STEREO / 5.1 / 5.1_DM / CUSTOM**

  Select the audio mode of audio groups 1 and 2.

  OFF: Audio group 2 is disabled.
  MONO: The channel assigned to LRch is measured.
               It is used to measure mono programs conforming to ARIB TR-B32.
  STEREO: The channels assigned to L and Rch are measured.
  5.1:   The channels assigned to L, R, C, LFE, Ls, and Rsch are measured.
  5.1_DM: The channels assigned to L, R, C, LFE, Ls, and Rsch as well as Lt and Rt
               are measured.
  CUSTOM: The channels assigned to L, R, C, LFE, Ls, and Rsch are measured.
               You can turn off certain channels.

- $\boxed{\text{F·3}}$ **CHANNEL SETTING**

  Assign channels to audio groups 1 and 2. During Dolby measurement, this menu item is not displayed.

  Channels set to Non Connect will not be measured.

```
GROUP1 CHANNEL SETTING   GROUP2 CHANNEL SETTING

     Lch   ☑CH1  ☐CH2 ☐CH3  ☐CH4  ☐CH5  ☐CH6  ☐CH7  ☐CH8
           ☐CH9  ☐CH10☐CH11☐CH12☐CH13☐CH14☐CH15☐CH16☐Non Connect

     Rch   ☐CH1  ☑CH2 ☐CH3  ☐CH4  ☐CH5  ☐CH6  ☐CH7  ☐CH8
           ☐CH9  ☐CH10☐CH11☐CH12☐CH13☐CH14☐CH15☐CH16☐Non Connect

     Cch   ☐CH1  ☐CH2 ☑CH3  ☐CH4  ☐CH5  ☐CH6  ☐CH7  ☐CH8
           ☐CH9  ☐CH10☐CH11☐CH12☐CH13☐CH14☐CH15☐CH16☐Non Connect

     LFEch ☐CH1  ☐CH2 ☐CH3  ☑CH4  ☐CH5  ☐CH6  ☐CH7  ☐CH8
           ☐CH9  ☐CH10☐CH11☐CH12☐CH13☐CH14☐CH15☐CH16☐Non Connect

     Lsch  ☐CH1  ☐CH2 ☐CH3  ☐CH4  ☑CH5  ☐CH6  ☐CH7  ☐CH8
           ☐CH9  ☐CH10☐CH11☐CH12☐CH13☐CH14☐CH15☐CH16☐Non Connect

     Rsch  ☐CH1  ☐CH2 ☐CH3  ☐CH4  ☐CH5  ☑CH6  ☐CH7  ☐CH8
           ☐CH9  ☐CH10☐CH11☐CH12☐CH13☐CH14☐CH15☐CH16☐Non Connect
```

Figure 4-13   GROUP1 CHANNEL SETTING tab

- $\boxed{\text{F·4}}$ **PHONES L: 1 - 16 / D1 - D8 / DAUX**

- $\boxed{\text{F·5}}$ **PHONES R: 1 - 2 - 16 / D1 - D8 / DAUX**

  Assign the headphone output channels.

  The selected channels are indicated in the upper right of the display.

- $\boxed{\text{F·6}}$ **AUX CH: LT/RT / LO/RO / MONO / MUTE**

- $\boxed{\text{F·7}}$ **AUX CH DRC: LINE / RF**

  When $\boxed{\text{F·4}}$ PHONES L or $\boxed{\text{F·5}}$ PHONES R is set to DAUX, set the AUX channel.

4.4.8   Setting the Key Lock

You can prevent unintentional operations on the LV 5838 by enabling the key lock. The key lock disables all LV 5838 keys except for the power switch.

● **Enabling the Key Lock**

Hold down SYSTEM until the message "KEYLOCK" appears on the screen. While the key lock is enabled, a key symbol appears in the upper right of the screen.

● **Releasing the Key Lock**

Hold down SYSTEM until the message "KEYLOCK Canceled." appears on the screen.

4.4.9   Preset Settings

You can register up to five panel setting presets. Registered presets are not initialized when you press SYSTEM and then F•7 INITIALIZE.

● **Registering a Preset**

Hold down a PRESET key (1 to 5). When the message "Completion of data storage." disappears, the registration is complete. If there is already a preset registered at the selected number, it will be overwritten.

The following items are not stored in preset settings.
• Ethernet and remote settings (ETHER&REMOTE tab)
• Backlight settings (ETC tab)
• Date and time settings (TIME tab)

● **Recalling a Preset**

Press a PRESET key (1 to 5). If there is no preset at the selected number, the message "No recall data." will appear.

5. SYSTEM SETTINGS

You can configure general LV 5838 settings on the system menu.
To display the system menu, press SYSTEM.

SYSTEM →

SYSTEM SETUP	BEHAVIOR SETUP	TIME SETUP			SYSTEM INFO	INITIAL-IZE
F·1	F·2	F·3	F·4	F·5	F·6	F·7
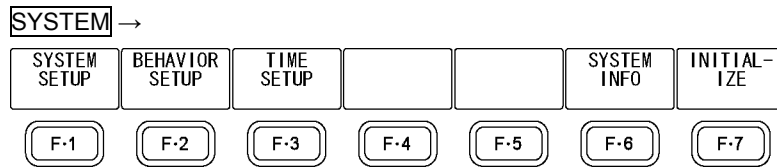
Figure 5-1   System menu

5.1   General Settings

To configure general settings, use the GENERAL tab.

SYSTEM → F•1 SYSTEM SETUP →

```
┌GENERAL┬ETHER&REMOTE┬ETC┐
│                                                              │
│  INFORMATION DISPLAY                                         │
│          Date     ☑Y/M/D □M/D/Y □D/M/Y □OFF                 │
│          Time     ☑ON     □OFF      Video Format  ☑ON   □OFF │
│                                                              │
│  EXTERNAL AES-I/O SETTING                                   │
│        Ext AES at SDI-INPUT          ☑Input □Output         │
│        Ext AES Ch9-16 at AES-INPUT   ☑Input □Output         │
│                                                              │
│  TIMECODE SETTING      ☑OFF       □LTC(ATC)   □VITC(ATC)    │
│                        □D_VITC    □AESEBU     □LTC(EXT)     │
│                                                              │
│  SRC SOURCE SETTING    ☑ON        □OFF                      │
│                        ☑Ch1/2     □Ch3/4    □Ch5/6   □Ch7/8 │
│                        □Ch9/10  □Ch11/12 □Ch13/14 □Ch15/16 □Internal │
│                                                              │
│  EXT-REF INPUT FORMAT SETTING                               │
│        INPUT SIGNAL  ☑Video Sync□CW      □WordClock         │
│        CLOCK         ☑48kHz     □44.1kHz  □32kHz            │
│        TERMINATION   ☑75Ω        □20kΩ                      │
│                                                              │
└──────────────────────────────────────────────────────────────┘
```

Figure 5-2   GENERAL tab

● **Date: Y/M/D / M/D/Y / D/M/Y / OFF**

Select the display format for the date that is shown in the upper left of the screen. Select off to hide the date.

● **Time: ON / OFF**

Turn the time display in the upper left of the screen on or off.

● **Video Format: ON / OFF**

Turn the format display in the upper part of the screen on or off.

● **Ext AES at SDI-INPUT: Input / Output**

Switch the DIGITAL AUDIO connectors between input and output for SDI measurement.

Input: The connectors are set to input.
Output: The connectors are set to output. Embedded audio signals, channels 1 to 16, will be transmitted.

● **Ext AES Ch9-16 at AES-INPUT: <u>Input</u> / Output**

Switch the DIGITAL AUDIO connector CH 9/10 through CH 15/16 between input and output for AES measurement. CH 1/2 through CH 7/8 are fixed as input connectors.

Input: The connectors are set to input.
Output: The connectors are set to output. The signal received through CH 1/2 to
                CH 7/8 are transmitted.

● **TIMECODE SETTING: <u>OFF</u> / LTC(ATC) / VITC(ATC) / D_VITC / AESEBU / LTC(EXT)**

Select the display format for the time code that is shown in the upper left of the screen. This also applies to various types of log data.

● **SRC SOURCE SETTING: <u>ON</u> / OFF**
            <u>Ch1/2</u> - Ch15/16 / Internal

Turn the sampling frequency conversion on or off.
Normally, set this to ON, and select a reference signal. If you select Internal, the frequency generated by the LV 5838 is used. If the input signal sampling frequency is not 48 kHz, select Internal.

● **INPUT SIGNAL: <u>Video Sync</u> / CW / WordClock**

Select the format of the external reference signal.

● **CLOCK: <u>48kHz</u> / 44.1kHz / 32kHz**

When INPUT SIGNAL is set to Video Sync or CW, select the clock frequency of the external reference signal.

● **TERMINATION: <u>75Ω</u> / 20kΩ**

When INPUT SIGNAL is set to WordClock, select the input impedance of the external reference signal.

5.2   Configuring the Ethernet and Remote Settings

To configure the Ethernet and remote settings, use the ETHER&REMOTE tab.
These settings are not initialized when you press SYSTEM and then F•7 INITIALIZE.
[Reference]   See section 11, "REMOTE CONTROL" and section 12, "ETHERNET CONTROL."

SYSTEM → F•1 SYSTEM SETUP → F•3 NEXT TAB →

```
┌─────────┬─────────────┬─────┐
│ GENERAL │ ETHER&REMOTE │ ETC │
└─────────┴─────────────┴─────┘

ETHERNET SETTING
        Ethernet          □DHCP ☑IP
        IP Address        │192│168│ 0 │ 1 │    MAC ADDRESS
        Subnet Mask       │255│255│255│ 0 │      00:00:00:00:00:00
        Gateway           │ 0 │ 0 │ 0 │ 0 │

TIME SERVER SETTING
        Time Server       □ON    ☑OFF          Time Zone
        IP Address        │ 0 │ 0 │ 0 │ 0 │     │ +09:00 │

SNMP SETTING
        SNMP              □ON    ☑OFF
        ACCESS            ☑RO    □RW
        SNMP Trap         ☑OFF   □ON

REMOTE SETTING
        Alarm Polarity    ☑Positive □Negative
        Select            ☑Recall   □Recall and 5838_02
                                    □5838_01+02
```

Figure 5-3   ETHER&REMOTE tab

● **Ethernet: DHCP ∕ IP**

Select how to set the IP address.
If you select IP, set the IP address, subnet mask, and gateway below.
If you select DHCP, these are set automatically.
This setting is enabled after you restart the LV 5838.

● **Time Server: ON ∕ OFF**

Select whether to enable the time server function.
When set to ON, set to the IP address of the time server in IP Address and the appropriate clock adjustment value in Time Zone.

● **SNMP: ON ∕ OFF**

Select whether to enable the SNMP function.

● **ACCESS: RO ∕ RW**

Select the SNMP access mode.
RO enables you to only read the settings; RW enables you to read and write the settings.

● **SNMP Trap: OFF ∕ ON**

Select whether to enable trap output.

● **Alarm Polarity: Positive ∕ Negative**

Select the polarity of the alarm signal that is transmitted from the remote connector.

● **Select: Recall ∕ Recall and 5838_02 ∕ 5838_01+02**

Select the remote connector operation mode.

5.3   Other Settings

To configure other settings, use the ETC tab.

SYSTEM → F•1 SYSTEM SETUP → F•2 PREV TAB →

```
GENERAL   ETHER&REMOTE   ETC

 LCD BACKLIGHT            [   7 ]

 MENU Auto Off            [   5 ] sec

 LOUDNESS TIME LIMIT      ☑12H  ☐24H
```
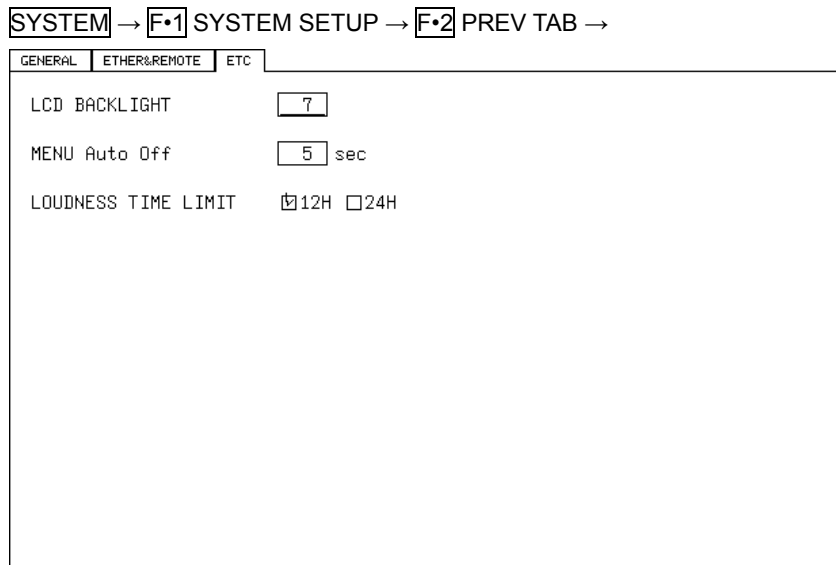
Figure 5-4   ETC tab

● **LCD BACKLIGHT: 0 - 7 - 15**

Set the backlight brightness. The larger the number, the darker the backlight.
When you change the value, the brightness changes for verification, but it will not be
applied until you press F•1 COMPLETE.

● **MENU Auto Off: 5 - 60 (sec)**

Set the time until the mode menu automatically turns off. You can set the time in units of 5
seconds.

● **LOUDNESS TIME LIMIT: 12H / 24H**

Set the duration of loudness measurements. If you select 24H, you will not be able to
measure the loudness of audio group 2.

5.4 Setting the SDI Format

To set the SDI format, use the SDI FORMAT tab.

SYSTEM → F•2 BEHAVIOR SETUP →

| SDI FORMAT | DOLBY | METER 1 | METER 2 | METER 3 | DOWNMIX | AUDIO ERROR | SDI ERROR | LOG |

```
         i/PsF Select
                        ☑Interlace  ☐Segmented Frame(PsF)
```
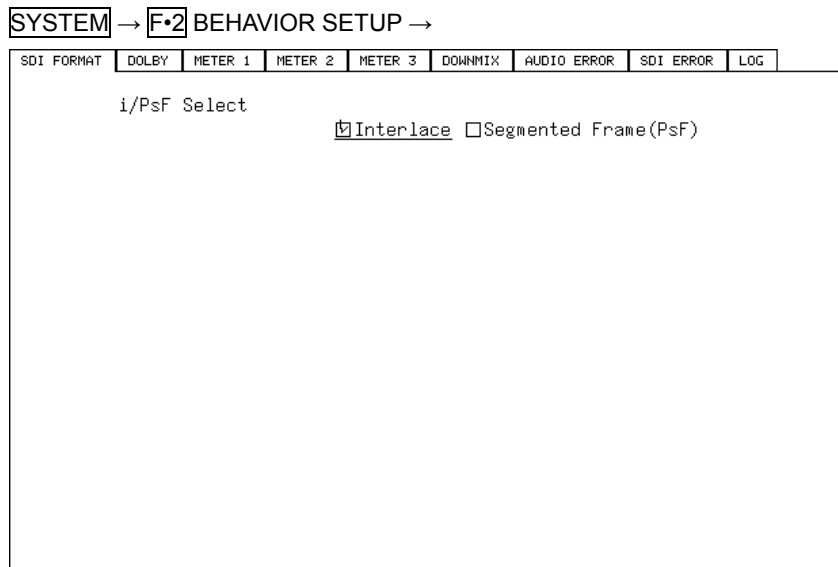
Figure 5-5   SDI FORMAT tab

● **i/PsF Select: <u>Interlace</u> / Segmented Frame**

Select the display format that is shown at the top of the screen.

5.5   Configuring the Dolby Settings (Option)

To configure the Dolby settings, use the DOLBY tab.
The DOLBY tab appears when the Dolby option is installed.

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

```
┌──────────┬───────┬─────────┬─────────┬─────────┬──────────┬─────────────┬───────────┬─────┐
│ SDI FORMAT│ DOLBY │ METER 1 │ METER 2 │ METER 3 │ DOWNMIX  │ AUDIO ERROR │ SDI ERROR │ LOG │
└──────────┴───────┴─────────┴─────────┴─────────┴──────────┴─────────────┴───────────┴─────┘

  MODULE SETTING
          Module              ☑OFF      □Dolby-E □Dolby-Digital
                              □Dolby-Digital-Plus ( Sound Only 5.1ch MAX )
          Input Group         ☑Ch1/2    □Ch3/4    □Ch5/6    □Ch7/8
                              □Ch9/10  □Ch11/12 □Ch13/14 □Ch15/16

  Dolby-E SETTING
          Dialonorm           ☑OFF      □ON
          Pulldown            ☑OFF      □ON

  Dolby-Digital SETTING
          Listening           ☑Full     □EX        □3stereo □Phantom
                              □Stereo   □Mono
          Prologic            ☑OFF      □ON
          DRC                 ☑Bypass   □Line      □RF
```

Figure 5-6   DOLBY tab

- **Module: <u>OFF</u> / Dolby-E / Dolby-Digital / Dolby-Digital-Plus**

  Set the measurement signal. If you select OFF, Dolby signals will not be measured.

- **Input Group: <u>Ch1/2</u> / Ch3/4 / Ch5/6 / Ch7/8 / Ch9/10 / Ch11/12 / Ch13/14 / Ch15/16**

  If Module is not set to OFF, select the channel to decode.

- **Dialnorm: <u>OFF</u> / ON**

  Turn the dialog normalization of Dolby E on or off.

- **Pulldown: <u>OFF</u> / ON**

  Turn the Dolby E pull-down feature on or off.

- **Listening: <u>Full</u> / EX / 3stereo / Phantom / Stereo / Mono**

  Select the Dolby Digital listening mode.

- **Prologic: <u>OFF</u> / ON**

  Turn the Dolby Digital Pro Logic on or off.

- **DRC: <u>Bypass</u> / Line / RF**

  Select the Dolby Digital DRC (Dynamic Range Control).

5.6　Configuring the Meter Settings

To configure the meter settings, use the METER 1 tab.
These settings apply to the meters shown in the meter display, Lissajous display, and surround display.

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

```
┌──────────┬───────┬─────────┬─────────┬─────────┬──────────┬─────────────┬───────────┬──────┐
│SDI FORMAT│ DOLBY │ METER 1 │ METER 2 │ METER 3 │ DOWNMIX  │ AUDIO ERROR │ SDI ERROR │ LOG  │
└──────────┴───────┴─────────┴─────────┴─────────┴──────────┴─────────────┴───────────┴──────┘

  INDEX SETTING
          Warning Index      ┌─────┐ dBFS
                             │ -18 │
          Reference Index    ├─────┤ dBFS
                             │ -20 │
                             └─────┘
  SCALE SETTING
                         ☑dBFS    ☐Nordic  ☐DIN      ☐BBC
```
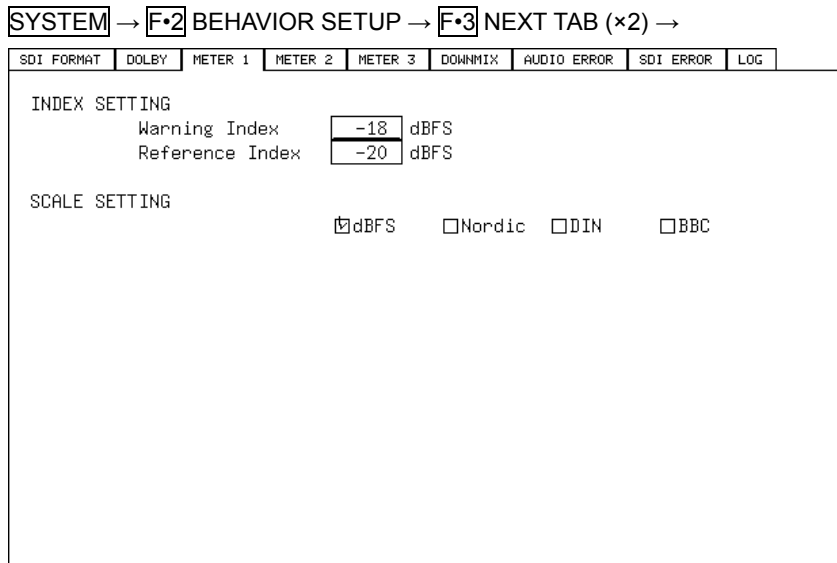
Figure 5-7　METER 1 tab

● **Warning Index: -40 - -18 - 0 (dBFS)**

Set the warning level. Meters are normally displayed in green, but they are displayed in red if this value is exceeded.

● **Reference Index: -40 - -20 - 0 (dBFS)**

Set the reference level. Meters are normally displayed in green, but they are displayed in yellow when levels are between the Reference Index and Warning Index.

● **SCALE SETTING: dBFS / Nordic / DIN / BBC**

Select the scale type.

[Reference]　SCALE MAG → See section 6.2, "Configuring the Meter Display"

Table 5-1　Selecting the scale

		SCALE MAG	
		OFF	ON
SCALE SETTING	dBFS	-60 to 0 dBFS	Reference Index ± 5 dB
	Nordic	-42 to 12 dB	Reference Index ± 5 dB
	DIN	-50 to 5 dB	Reference Index ± 5 dB
	BBC	1 to 7 dB	Reference Index ± 1.25 dB

5.7　Configuring Loudness Settings 1

The METER 2 and METER 3 tabs are used to set the loudness. Here we explain the METER 2 tab.

The settings that you specify here apply to the loudness display.

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

```
┌──────┬─────┬───────┬───────┬───────┬─────────┬───────────┬───────────┬─────┐
│SDI FORMAT│DOLBY│METER 1│METER 2│METER 3│DOWNMIX│AUDIO ERROR│SDI ERROR│LOG│
└──────────────────────────────────────────────────────────────────────────┘

 LOUDNESS SETTING 1
      INTEGRATED LOUDNESS
        Measure Mode     □BS1770-2 ☑ARIB    □EBU      □ATSC     □CUSTOM
        Target Level     │ -24 │ LKFS    LFE Gain            │ 0.0 │
        BlockSize        │ 400 │ ms      OverlapSize         │ 75 │ %
        UpperThres       │  1  │         LowerThres          │ -1 │
        AbsoluteGating   ☑ON       □OFF    Absolute Level    │ -70 │ LKFS
        RelativeGating   ☑ON       □OFF    Relative Level    │ -10 │ LKFS

      SHORTTERM LOUDNESS              MOMENTARY LOUDNESS
        AverageTime      │ 3000 │ ms         AverageTime     │ 400 │ ms



      CHART SETTING           ☑INTEGRATED  ☑MOMENTARY   ☑SHORTTERM

        dBTP OVER MARK         ☑ON    □OFF
        RELATIVE GATING LAMP   ☑ON    □OFF
```

Figure 5-8　METER 2 tab

● **Measure Mode: BS1770-2 / ARIB / EBU / ATSC / CUSTOM**

Select the integrated loudness measurement mode. The settings of each mode are shown below. If you select CUSTOM, you can specify the values.

Table 5-2　Selecting the measurement mode

	Measure Mode				
	BS1770-2	ARIB	EBU	ATSC	CUSTOM
Target Level	-24 (LKFS)	-24 (LKFS)	-23 (LUFS)	-24 (LKFS)	-99 to 0 (LKFS)
LFE Gain	0.0	0.0	0.0	0.0	0.0 to 10.0
BlockSize (ms)	400	400	400	400	200 to 30000
OverlapSize (%)	75	75	75	0	0 to 99
UpperThres	0	1	1	2	0 to 5
LowerThres	0	-1	-1	-2	-5 to 0
AbsoluteGating	ON	ON	ON	OFF	ON / OFF
Absolute Level	-70 (LKFS)	-70 (LKFS)	-70 (LUFS)	-	-99 to 0 (LKFS)
RelativeGating	ON	ON	ON	OFF	ON / OFF
Relative Level	-10 (LKFS)	-10 (LKFS)	-10 (LUFS)	-	-99 to 0 (LKFS)

● **SHORTTERM LOUDNESS: 200 - <u>3000</u> - 30000(ms)**

If Measure Mode is set to CUSTOM, set the duration for calculating short-term loudness. For all other modes, the duration is fixed at 3000.

● **MOMENTARY LOUDNESS: 100 - <u>400</u> - 1000(ms)**

If Measure Mode is set to CUSTOM, set the duration for calculating momentary loudness. For all other modes, the duration is fixed at 400.

● **CHART SETTING**

Select which loudness to display on the chart. Measurement is performed even if the check box is not selected.

● **dBTP OVER MARK: <u>ON</u> / OFF**

Select whether to enable the detection of peak levels of each channel that exceed the threshold. When set to ON, appropriate marks are indicated on the chart, "OVER" indications are displayed and recorded in the dBTP log.
The threshold is the LevelOver value specified on the AUDIO ERROR tab.

This cannot be selected when LevelOver is set to OFF. This feature does not work when the audio mode is 5.1 DM.

● **RELATIVE GATING LAMP: <u>ON</u> / OFF**

Select whether to display "RELATIVE" when the input signal is applicable for relative gating.

5.8 Configuring Loudness Settings 2

The METER 2 and METER 3 tabs are used to set the loudness. Here we explain the METER 3 tab.

The settings that you specify here apply to the loudness display.

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

```
┌─────────┬───────┬─────────┬─────────┬─────────┬─────────┬─────────────┬───────────┬─────┐
│SDI FORMAT│ DOLBY │ METER 1 │ METER 2 │ METER 3 │ DOWNMIX │ AUDIO ERROR │ SDI ERROR │ LOG │
└─────────┴───────┴─────────┴─────────┴─────────┴─────────┴─────────────┴───────────┴─────┘

   LOUDNESS SETTING 2
        LOUDNESS AUTO MEASURE
        Trigger          ☑OFF      □Remote   □Timecode
                         □CM       □FILE     □RealTime
        Trigger Time     │ 0 │ 0 │ 0 │ - │ 0 │ 0 │ 1 │   StopTime  │ 3 │ s
```

Figure 5-9   METER 3 tab

● **Trigger: OFF / Remote / Timecode / CM / FILE / RealTime**

Set the automatic loudness measurement.

[Reference]   See section 9.3, "Loudness Measurement."

OFF:	Automatic measurement is disabled. Use the START/PAUSE key to start and stop a measurement. Use the CLEAR key to clear a measurement.
Remote:	Measurement start, stop, and clear are executed through the remote control connector. On the ETHER&REMOTE tab in the system settings, you must set Select to Recall and 5838_02 or 5838_01+02.
Timicode:	Measurement start and stop are executed on the basis of the time codes embedded in the input signals. Enter a value for Trigger Time. You must set TIMECODE SETTING on the GENERAL tab in the system settings to some setting other than OFF.
CM:	Measurement start, stop, and clear and storage to USB memory are executed through audio input. For StopTime, enter how long loudness measurement will continue after the audio (active) stops.
FILE:	Measurement is performed every approximately 20 seconds. Measured values are stored to USB memory. Use the START/PAUSE key to start and stop a measurement. Use the CLEAR key to clear a measurement.
RealTime:	Measurement start and stop are executed according to the times specified on the LV 5838. Enter a value for Trigger Time.

5.9   Configuring Downmix Settings

To configure the downmix settings, use the DOWNMIX tab.
These settings are valid when GROUP1 or GROUP2 is set to 5.1_DM on the assign menu.

SYSTEM → F•2 BEHAVIOR SETUP → F•2 PREV TAB (×4) →

```
┌──────────┬───────┬─────────┬─────────┬─────────┬──────────┬─────────────┬───────────┬─────┐
│SDI FORMAT│ DOLBY │ METER 1 │ METER 2 │ METER 3 │ DOWNMIX  │ AUDIO ERROR │ SDI ERROR │ LOG │
└──────────┴───────┴─────────┴─────────┴─────────┴──────────┴─────────────┴───────────┴─────┘

         DOWNMIX Coefficient
                          ☑1/√2   □1/2    □1/2√2 □0

         DOWNMIX Gain        │  0.0 │ dB
```

Figure 5-10   DOWNMIX tab

● **DOWNMIX Coefficient: 1/√2 / 1/2 / 1/2√2 / 0**

Select the downmix coefficient.

● **DOWNMIX Gain: -3.0 - 0.0 - 3.0 (dB)**

Select the downmix gain.

5.10　Configuring Audio Error Detection Settings

To configure the audio error detection settings, use the AUDIO ERROR tab.
The error counts for the items that are enabled on this tab will be displayed on the audio section display. They are also logged on the event log display.

[Reference]　See section 10.1, "Audio Section Display" and section 10.2, "Event Log Display."

SYSTEM → ⟦F•2⟧ BEHAVIOR SETUP → ⟦F•2⟧ PREV TAB (×3) →

```
┌──────────┬───────┬─────────┬─────────┬─────────┬──────────┬─────────────┬───────────┬─────┐
│SDI FORMAT│ DOLBY │ METER 1 │ METER 2 │ METER 3 │ DOWNMIX  │ AUDIO ERROR │ SDI ERROR │ LOG │
└──────────┴───────┴─────────┴─────────┴─────────┴──────────┴─────────────┴───────────┴─────┘

  AUDIO ERROR ACQUISITION SETTING
          ☑CH1  ☑CH2  ☑CH3   ☑CH4   ☑CH5   ☑CH6   ☑CH7   ☑CH8
          ☑CH9  ☑CH10 ☑CH11  ☑CH12  ☑CH13  ☑CH14  ☑CH15  ☑CH16
  AUDIO ERROR SETTING
        LevelOver     ☑ON    □OFF
          Level       │ -1  │ dBFS
        Clip          ☑ON    □OFF      METER INDICATION
          Duration    │ 10  │ sample       Clip           □ON    ☑OFF
        Mute          □ON    ☑OFF          Mute           □ON    ☑OFF
          Duration    │ 10  │ sample       Silence        □ON    ☑OFF
          Level       │ -60 │ dBFS
        Silence       □ON    ☑OFF
          Duration    │1000 │ ms




        Parity        ☑ON    □OFF          Validity       ☑ON    □OFF
        CRC           ☑ON    □OFF          Dolby CRC      ☑ON    □OFF
```

Figure 5-11　AUDIO ERROR tab

● **AUDIO ERROR ACQUISITION SETTING**

　Select the channels for detecting errors.

● **LevelOver: <u>ON</u> ∕ OFF**
　Level: -40 - <u>-1</u> - 0 (dBFS)

　Turn the level-over error detection on or off.
　If you select ON, enter the level. An error is detected when a signal exceeding the specified level is received.

● **Clip: <u>ON</u> ∕ OFF**
　Duration: 1 - <u>10</u> - 100 (sample)

　Turn the clip error detection on or off.
　If you select ON, enter the duration. An error is detected when a maximum signal is received for longer than the specified duration.

● **Mute: ON ∕ <u>OFF</u>**
　Duration: 1 - <u>10</u> - 100 (sample)
　Level: -99 - <u>-60</u> (dBFS)

　Turn the mute error detection on or off.
　If you select ON, enter the duration and level. An error is detected when a value below the specified level is received for longer than the specified duration.

- **Silence: ON / <u>OFF</u>**
  Duration: 1 - <u>1000</u> - 5000 (ms)

  Turn the silence error detection on or off.
  If you select ON, enter the duration. An error is detected when a mute signal is received for longer than the specified duration.

- **METER INDICATION: ON / <u>OFF</u>**

  Turn the error display on or off.
  If you select ON, errors are displayed on the meter when a clip error, mute error, or silence error is detected.

- **Parity: <u>ON</u> / OFF**

  Turn the parity error detection on or off.
  An error is detected when the parity bit of the input signal and the value calculated on the LV 5838 are different.

- **Validity: <u>ON</u> / OFF**

  Turn the validity error detection on or off.
  An error is detected when the validity bit of the input signal is inactive.

- **CRC: <u>ON</u> / OFF**

  Turn the CRC error detection on or off.
  An error is detected when the CRC of the channel status bits of the input signal and the value calculated on the LV 5838 are different.

- **Dolby CRC: <u>ON</u> / OFF (option)**

  Turn the Dolby CRC error detection on or off. This item appears during Dolby measurement. (This is invalid during Dolby Digital Plus measurement.)
  An error is detected when the CRC value of the Dolby signal and the value calculated on the Dolby module are different.

5.11   Configuring SDI Error Detection Settings

To configure the SDI error detection settings, use the SDI ERROR tab.
The error counts for the items that are enabled on this tab will be displayed on the SDI section display. They are also logged on the event log display.

[Reference]   See section 10.2, "SDI Section Display" and section 10.3, "Event Log Display."

SYSTEM → F•2 BEHAVIOR SETUP → F•2 PREV TAB (×2) →

```
┌─────────┬───────┬─────────┬─────────┬─────────┬──────────┬─────────────┬───────────┬─────┐
│SDI FORMAT│ DOLBY │ METER 1 │ METER 2 │ METER 3 │ DOWNMIX │ AUDIO ERROR │ SDI ERROR │ LOG │
└─────────┴───────┴─────────┴─────────┴─────────┴──────────┴─────────────┴───────────┴─────┘

   SDI ERROR SETTING
         Embedded Audio
         BCH Error             ☑ON   ☐OFF
         Parity Error          ☑ON   ☐OFF
         DBN Error             ☑ON   ☐OFF
         Inhibit Error         ☑ON   ☐OFF
         Sample Number Error ☑ON   ☐OFF
```
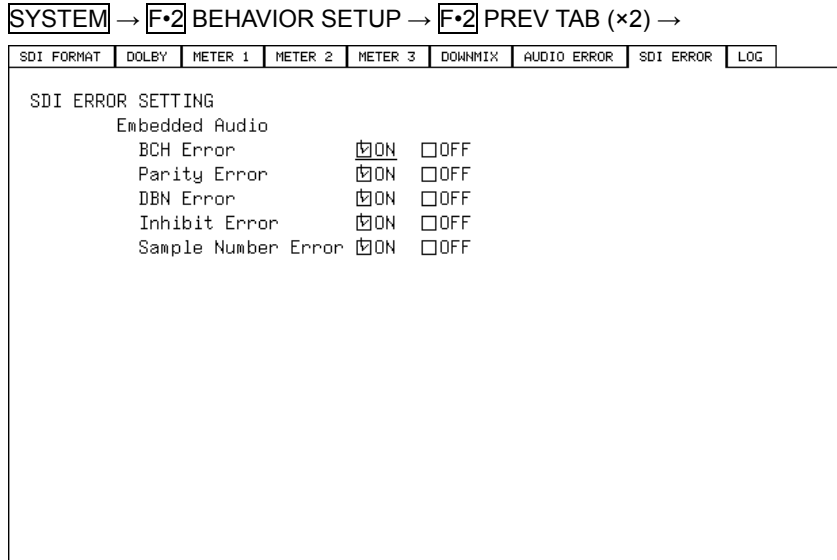
Figure 5-12   SDI ERROR tab

5.12   Configuring Event Log Settings

To configure the event log settings, use the LOG tab.

SYSTEM → F•2 BEHAVIOR SETUP → F•2 PREV TAB →

```
┌─────────┬───────┬─────────┬─────────┬─────────┬──────────┬─────────────┬───────────┬─────┐
│SDI FORMAT│ DOLBY │ METER 1 │ METER 2 │ METER 3 │ DOWNMIX │ AUDIO ERROR │ SDI ERROR │ LOG │
└─────────┴───────┴─────────┴─────────┴─────────┴──────────┴─────────────┴───────────┴─────┘

   LOGMODE SETTING
                   ☑OverWrite ☐Stop
```
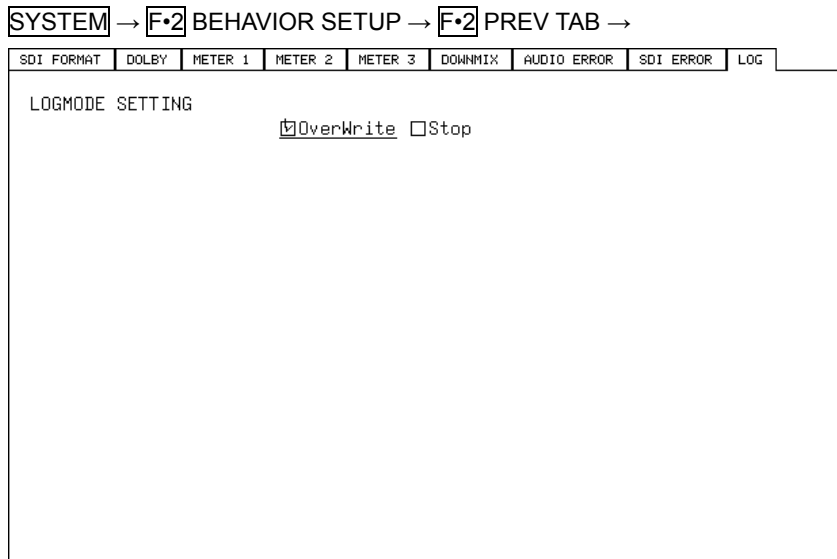
Figure 5-13   LOG tab

● **LOGMODE SETTING: <u>OverWrite</u> / Stop**

The event log can hold 1000 entries. Select whether to overwrite the log or stop logging when the 1001st error occurs.

5.13   Setting the Date and Time

To set the date and time, use the TIME tab.
Enter the date and time that are shown in the upper left of the screen.

SYSTEM → F•3 TIME SETUP →

```
┌─────┐
│TIME │
└─────┴──────────────────────────────────────────────┐

  DATE & TIME SETTING
          Year            ┌────────┐
                          │  2012  │
          Month           ├────────┤
                          │     9  │
          Day             ├────────┤
                          │    21  │
                          └────────┘
          Hour            ┌────────┐
                          │    13  │
          Minute          ├────────┤
                          │    54  │
          Second          ├────────┤
                          │    11  │
                          └────────┘
```

Figure 5-14   TIME tab

5.14   Displaying System Information

You can view system information on the INFORMATION tab.
You can check the software version and other information.

SYSTEM → F•6 SYSTEM INFO →

```
┌───────────┐
│INFORMATION│
└───────────┴──────────────────────────────────────┐

   LV5838:AUDIO MONITOR
      BOARD: 6: 0.1: 0.2:     FIRMWARE: 1.1
```

Figure 5-15   INFORMATION tab

5.15   Initialization

There are two ways to initialize the LV 5838. One is configuration initialization, and the other is factory default initialization. For details on initialization, see section 13.1, "Menu Trees."

Table 5-3   Initialized items

	Configuration Initialization	Factory Default
Ethernet and remote settings (ETHER&REMOTE tab)	No	Yes
Preset contents	No	Yes
Date and time settings (TIME tab)	No	No

Yes: Initialized; No: Not initialized

● **Configuration Initialization**

To perform configuration initialization, use F•7 INITIALIZE in the system menu. Press F•1 INIT YES.

SYSTEM → F•7 INITIALIZE →
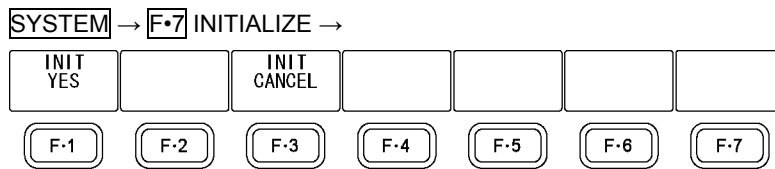
Figure 5-16   INITIALIZE menu

● **Factory Default Initialization**

To perform factory default initialization, turn on the power while holding down the function dial (F•D) and VOLUME.
When the message "SRAM/FLASH INITIALIZE" appears, press F•1 YES.

6. METER DISPLAY

To display meters, set F•1 DISPLAY on the mode menu to METER.

6.1 Meter Display Description

The meter display shows the level meters of the channels assigned on the assign menu. Up to 16 channels of meters can be displayed.
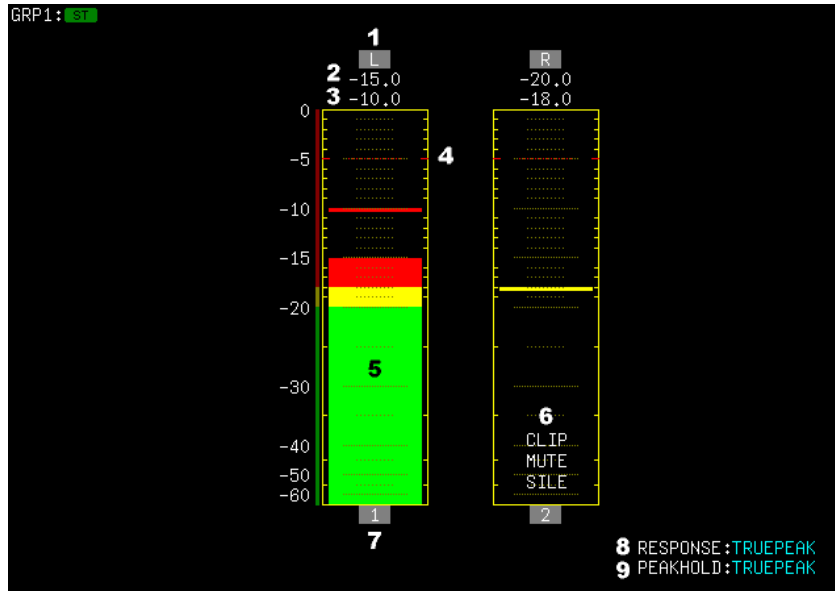
Figure 6-1 Meter display

1 Channel name display

The channel name (L, R, C, LFE, Ls, Rs, etc.) is displayed.
This is not displayed when 16 channels are displayed.

2 Level display

The current level is displayed.

3 Peak Display

The peak value is displayed when F•2 PEAKHOLD is not set to OFF.

4 Error Level Display

The error level that you specified on the AUDIO ERROR tab in the system settings is displayed.
[Reference]   AUDIO ERROR tab → See section 5.10, "Configuring Audio Error Detection Settings."

5 Meter display

Meters are displayed using the index colors specified on the METER 1 tab in the system settings.
[Reference]   METER 1 tab → See section 5.4, "Configuring the Meter Settings."

6 **Error display**

Errors are displayed when a clip error, mute error, or silence error is detected.
They are displayed when METER INDICATION on the AUDIO ERROR tab in the system
settings is set to ON.

[Reference]   AUDIO ERROR tab → See section 5.10, "Configuring Audio Error Detection Settings."

7 **Channel display**

The channel (1 to 16) is displayed. "X" is displayed for channels whose CHANNEL
SETTING on the assign menu has been set to Non Connect.

[Reference]   CHANNEL SETTING → See section 4.4.7, "Mapping Measurement Channels."

8 **RESPONSE**

The response model that you selected with F•1 RESPONSE is displayed.

9 **PEAKHOLD**

The response model that you selected with F•2 PEAKHOLD is displayed.

6.2   Configuring Meter Display Settings

To configure the meter display settings, use F•2 METER SETUP on the mode menu and the
METER 1 tab in the system settings. This section explains F•2 METER SETUP. For details
on the METER 1 tab, see section 5.4, "Configuring the Meter Settings."

MODE → F•1 DISPLAY to METER → F•2 METER SETUP →

RESPONSE	PEAKHOLD	PEAKHOLD TIME	PEAKHOLD RESET	SCALE MAG	GROUP	UP MENU
TRUEPEAK	TRUEPEAK	0. 0		OFF	GROUP1	
F·1	F·2	F·3	F·4	F·5	F·6	F·7

Figure 6-2   METER SETUP menu

- **F•1 RESPONSE: TRUEPEAK ∕ PPM(I) ∕ PPM(II) ∕ VU**

Select the meter response model. The selected response model is indicated in the lower
right of the screen.

Table 6-1   Selecting the response model

		Attack Time	Return Time	Average Time
RESPONSE	TRUEPEAK	0 s	1.7 s	-
	PPM(I)	10 ms	1.7 s	-
	PPM(II)	10 ms	2.8 s	-
	VU	-	-	300 ms

- **F•2 PEAKHOLD: OFF ∕ TRUEPEAK ∕ PPM(I) ∕ PPM(II)**

Select the response model of the peak hold meter. The selected response model is
indicated in the lower right of the screen.

- $\boxed{\text{F·3}}$ **PEAKHOLD TIME:** <u>0.0</u> / 0.5 / 1.0 / 2.0 / 3.0 / 4.0 / 5.0 / **HOLD**

  If $\boxed{\text{F·2}}$ PEAKHOLD is not set to OFF, select the peak value hold time in seconds.

- $\boxed{\text{F·4}}$ **PEAKHOLD RESET**

  If $\boxed{\text{F·2}}$ PEAKHOLD is not set to OFF, press this key to reset the peak value.

- $\boxed{\text{F·5}}$ **SCALE MAG:** <u>OFF</u> / **ON**

  Turn the expanded scale display on or off.

  [Reference]   SCALE SETTING, Reference Index → See section 5.4, "Configuring the Meter Display"

  Figure 6-2   Turning the expanded display on and off

		SCALE MAG	
		OFF	ON
SCALE SETTING	dBFS	-60 to 0 dBFS	Reference Index ± 5 dB
	Nordic	-42 to 12 dB	Reference Index ± 5 dB
	DIN	-50 to 5 dB	Reference Index ± 5 dB
	BBC	1 to 7 dB	Reference Index ± 1.25 dB

- $\boxed{\text{F·6}}$ **GROUP:** <u>GROUP1</u> / **GROUP2** / **ALL** / **1-8** / **9-16**

  Select the display channels.

  [Reference]   GROUP1, GROUP2 → See section 4.4.7, "Mapping Measurement Channels."

  GROUP1:   Channels that were selected using GROUP1 on the assign menu are displayed.
  GROUP2:   Channels that were selected using GROUP2 on the assign menu are displayed.
  This cannot be selected when GROUP2 is OFF.
  ALL: All channels are displayed.
  1-8:   Channels 1 to 8 are displayed. This cannot be selected during Dolby measurement.
  9-16:   Channels 9 to 16 are displayed. This cannot be selected during Dolby measurement.

7.   LISSAJOUS DISPLAY

To display Lissajous curves, set F•1 DISPLAY on the mode menu to LISSAJOU.

7.1   Lissajous Display Description

In the meter display, a Lissajous curve is displayed on the left half of the screen, and level meters are displayed on the right half of the screen. Lissajous waveform channels are assigned using F•2 LCH and F•3 RCH. Meter channels are assigned on the assign menu.
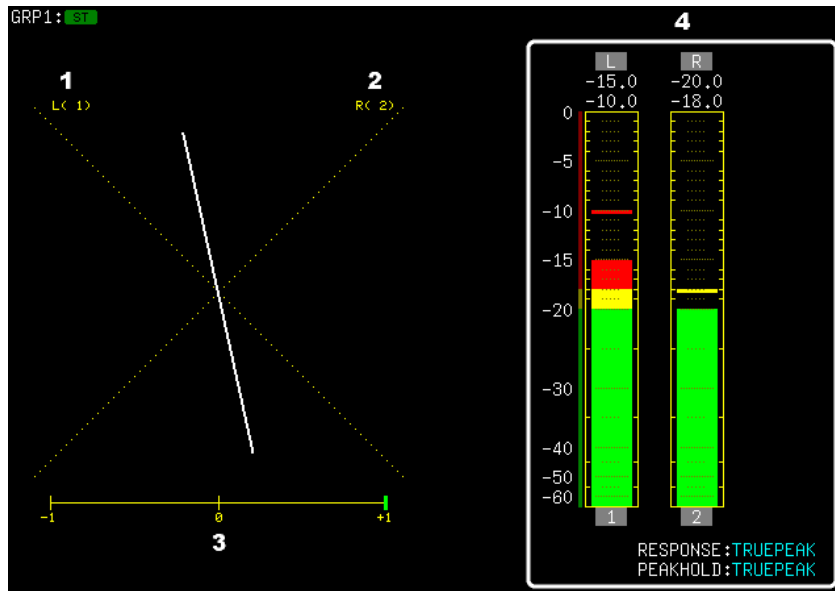
Figure 7-1   Lissajous display

1   L

The channel assigned using F•2 LCH is displayed.

2   R

The channel assigned using F•3 RCH is displayed.

3   Correlation meter

The correlation meter indicates the phase difference between the two signals. A reading of +1 indicates that the signals are in-phase, a reading of -1 indicates that the signals are 180 ° out of phase, and a reading of 0 indicates that the signals are not correlated.

4   Meter display

Level meters are displayed. See section 6.1, "Meter Display Description."

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7.2   Configuring the Lissajous Settings

To configure the Lissajous display settings, press ☐F•2 LISSAJOU SETUP in the mode menu.

☐MODE → ☐F•1 DISPLAY to LISSAJOU → ☐F•2 LISSAJOU SETUP →

	LCH CH 1	RCH CH 1	METER SETUP	AUTOGAIN ON	GROUP GROUP1	UP MENU
F·1	F·2	F·3	F·4	F·5	F·6	F·7
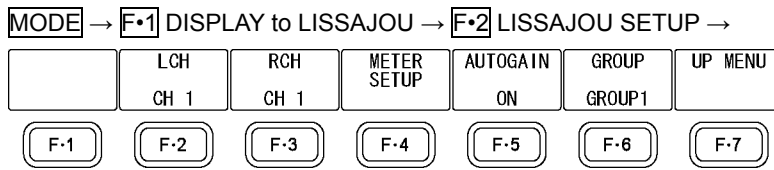
Figure 7-2   LISSAJOU SETUP menu

● ☐F•2 **LCH: <u>CH 1</u> - CH 16 / D1 - D8 / Lt**

● ☐F•3 **RCH: <u>CH 1</u> - CH 16 / D1 - D8 / Rt**

Select the channels to assign to Lch and Rch of the Lissajous display. The channels that you can select varies depending on the ☐F•6 GROUP setting.

● ☐F•4 **METER SETUP**

Configure the meter settings. For a description of the settings, see section 6.2, "Configuring the Meter Display Settings." However, ☐F•6 GROUP is not displayed.

● ☐F•5 **AUTOGAIN: <u>ON</u> / OFF**

Turn the AGC on or off. When set to ON, the gain is automatically adjusted so that the Lissajous curves fit within the scale. This is valid when the input signal is in the range of -45 to 0 dBFS.

● ☐F•6 **GROUP: <u>GROUP1</u> / GROUP2 / ALL / 1-8 / 9-16**

Select the display channels.
[Reference]   GROUP1, GROUP2 → See section 4.4.7, "Mapping Measurement Channels."

GROUP1:   In the meter display, channels that were selected using GROUP1 on the assign menu are displayed. In the Lissajous display, two channels that you select from this group are displayed.

GROUP2:   In the meter display, channels that were selected using GROUP2 on the assign menu are displayed. In the Lissajous display, two channels that you select from this group are displayed.
This cannot be selected when GROUP2 is OFF.

ALL: In the meter display, all channels are displayed. In the Lissajous display, two channels that you select from all channels are displayed.

1-8:   In the meter display, channels 1 to 8 are displayed. In the Lissajous display, two channels that you select from all channels are displayed. This cannot be selected during Dolby measurement.

9-16:   In the meter display, channels 9 to 16 are displayed. In the Lissajous display, two channels that you select from all channels are displayed. This cannot be selected during Dolby measurement.

8. SURROUND DISPLAY

To show the surround display, set F•1 DISPLAY on the mode menu to SURROUND.

8.1 Surround Display Description

In the surround display, a surround waveform is displayed on the left half of the screen, and level meters are displayed on the right half of the screen. Channels are assigned on the assign menu.
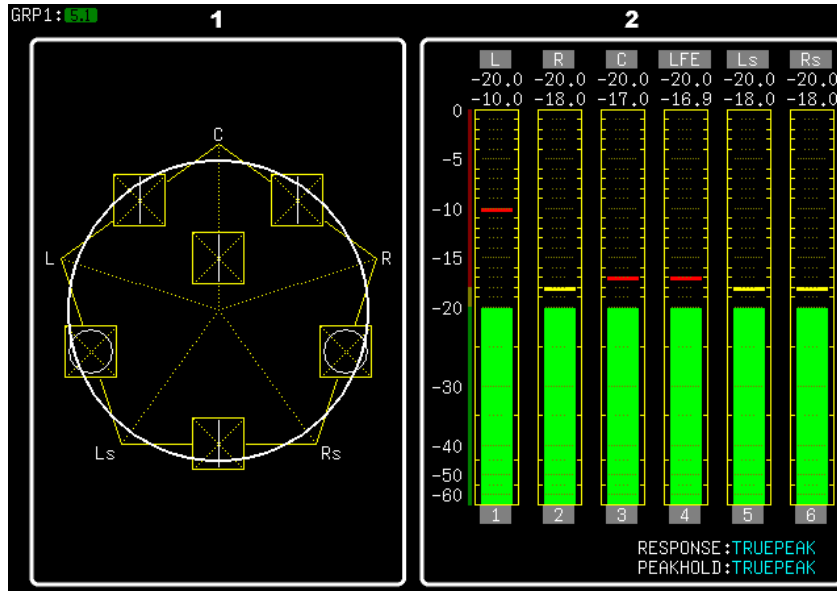
Figure 8-1   Surround display

1   Surround display

A surround waveform and Lissajous curves of adjacent channels are displayed. You can also display only one of the displays.

2   Meter display

The level meters of the channels assigned on the assign menu are displayed. See section 6.1, " Meter Display Description."

8.2   Configuring Surround Display Settings

To configure the surround display settings, press $\boxed{\text{F•2}}$ SURROUND SETUP on the mode menu.

$\boxed{\text{MODE}}$ → $\boxed{\text{F•1}}$ DISPLAY to SURROUND → $\boxed{\text{F•2}}$ SURROUND SETUP →

DISPLAY	SURROUND MODE		METER SETUP	AUTOGAIN	GROUP	UP MENU
BOTH	NORMAL			ON	GROUP1	

| F·1 | F·2 | F·3 | F·4 | F·5 | F·6 | F·7 |
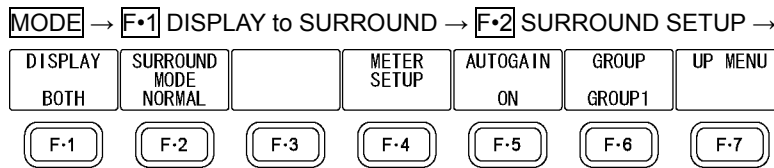
Figure 8-2   SURROUND SETUP menu

- $\boxed{\text{F•1}}$ **DISPLAY: BOTH ∕ LISSAJOU ∕ SURROUND**

  Select whether to display both the surround waveform and Lissajous curves of adjacent channels or only one of two.

- $\boxed{\text{F•2}}$ **SURROUND MODE: NORMAL ∕ PHANTOM**

  Select the surround display format.

  NORMAL: A waveform that combines Lch, Rch, Lsch, Rsch, and Cch (hard center) is displayed.

  PHANTOM: A waveform that combines Lch, Rch, Lsch, Rsch, and phantom center and a Cch (hard center) waveform are displayed separately.

- $\boxed{\text{F•4}}$ **METER SETUP**

  Configure the meter settings. For a description of the settings, see section 6.2, "Configuring the Meter Display Settings." However, $\boxed{\text{F•6}}$ GROUP is not displayed.

- $\boxed{\text{F•5}}$ **AUTOGAIN: ON ∕ OFF**

  Turn the AGC on or off. When set to ON, the gain is automatically adjusted so that the surround waveform fit within the scale. This is valid when the input signal is in the range of -45 to 0 dBFS.

- $\boxed{\text{F•6}}$ **GROUP: GROUP1 ∕ GROUP2**

  Select the display channels.
  [Reference]   GROUP1, GROUP2 → See section 4.4.7, "Mapping Measurement Channels."

  GROUP1:   Channels that were selected using GROUP1 on the assign menu are displayed.

  GROUP2:   Channels that were selected using GROUP2 on the assign menu are displayed.
  This cannot be selected when GROUP2 is OFF.

9. LOUDNESS DISPLAY

To show the loudness display, set F•1 DISPLAY on the mode menu to LOUDNESS.

9.1 Loudness Display Description

In the loudness display, you can press F•1 DISPLAY to switch the display format between chart, bar graph, numeric, and meter. Channels are assigned on the assign menu.

F•1 DISPLAY = CHART
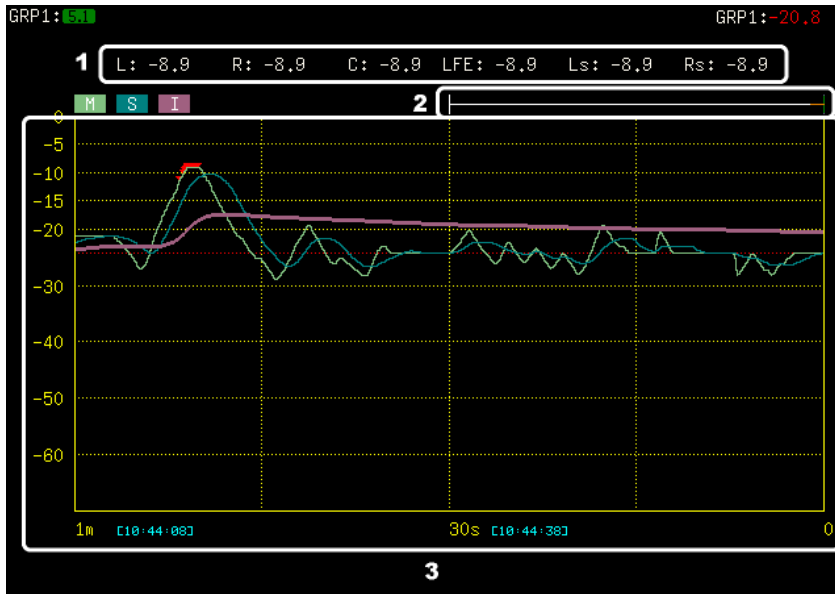
Figure 9-1　Chart display

F•1 DISPLAY = BAR
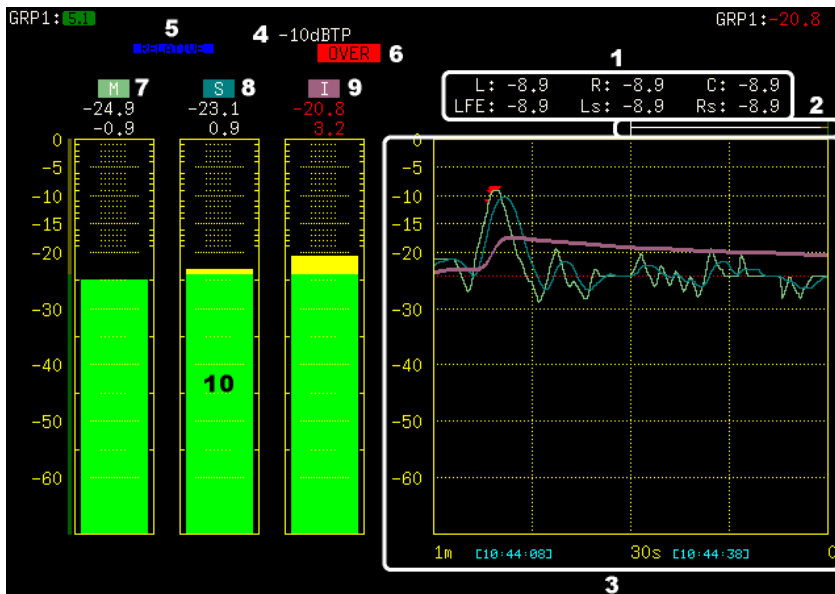
Figure 9-2　Bar graph display

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F•1 DISPLAY = NUM

Figure 9-3   Numeric display

F•1 DISPLAY = NUM ONLY
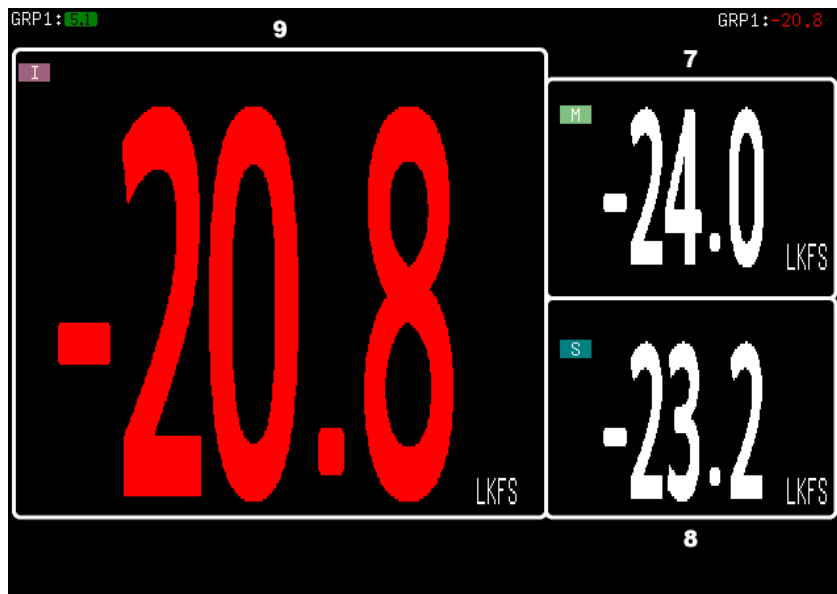
Figure 9-4   Numeric-only display

F•1 DISPLAY = METER
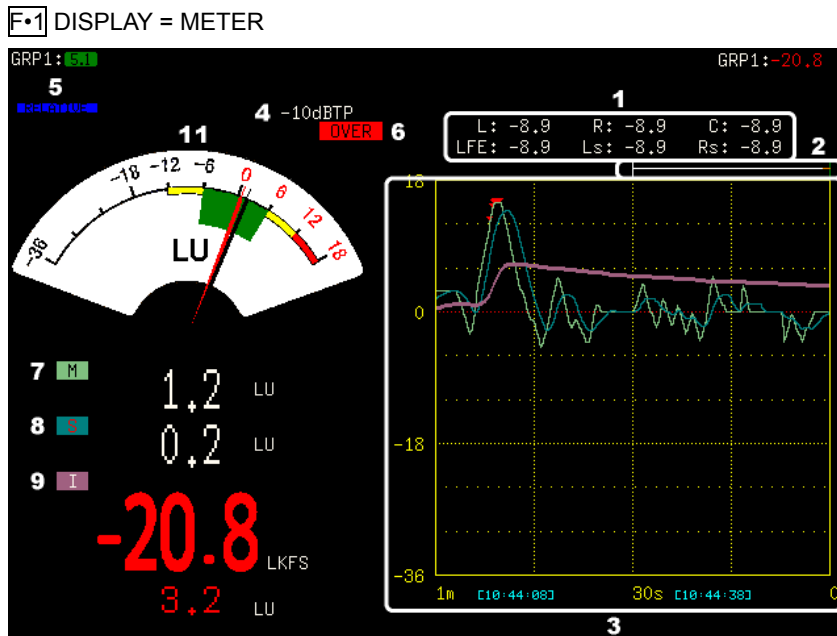
Figure 9-5   Meter display

1   Peak level display

The peak level of each channel is displayed.

2   Measurement time display

Loudness can be recorded up to 12 hours (this can be set to 24). The orange bar indicates the approximate measurement time. The green bar indicates the current display position. When you use the function dial (F•D) to move the display range, the green bar also moves.

[Reference]   See section 5.3, "Other Settings."

3   Chart display

The change in the loudness values over time is plotted on a chart. In addition, the measurement time codes are displayed next to the time values.

Loudness can be recorded up to 12 hours (this can be set to 24). Turn the function dial (F•D) to the right to view past loudness measurements. Press the function dial (F•D) to return to the current loudness measurement.

If dBTP OVER MARK is set to ON on the METER 3 tab in the system settings, when the peak level of a channel exceeds the "dBTP display" level, a red ▼ is displayed. The mark is not displayed if LevelOver is set to OFF on the AUDIO ERROR tab in the system settings or if the audio mode is set to 5.1 DM.

[Reference]   METER 3 tab → See section 5.8, "Configuring Loudness Settings 2."

AUDIO ERROR tab → See section 5.10, "Configuring Audio Error Detection Settings."

4   dBTP

If dBTP OVER MARK is set to ON on the METER 3 tab in the system settings, the LevelOver value specified on the AUDIO ERROR tab is displayed.

[Reference]   AUDIO ERROR tab → See section 5.10, "Configuring Audio Error Detection Settings."

5 RELATIVE

This indication appears when the input signal is applicable for relative gating. This is displayed when RELATIVE GATING LAMP is set to ON on the METER 3 tab in the system settings.

6 OVER

This indication is displayed, if dBTP OVER MARK is set to ON on the METER 3 tab in the system settings, when the peak level of a channel exceeds the "dBTP display" level.

7 M

The momentary loudness is displayed.
The top value is an absolute value. The bottom value is a relative value with the target level as the reference (absolute value only for numeric-only display; relative value only for meter display.)

8 S

The short-term loudness is displayed.
The top value is an absolute value. The bottom value is a relative value with the target level as the reference (absolute value only for numeric-only display; relative value only for meter display.)

9 I

The integrated loudness is displayed.
The top value is an absolute value. The bottom value is a relative value with the target level as the reference (absolute value only for numeric-only display.)

The values are displayed in white during measurement but change to different colors depending on the loudness value calculated at the end of the measurement.
When the measurement mode is ARIB, the values are displayed as follows:
- -23.0 < measured value (LKFS)　　　　　　:Red
- -25.0 ≤ measured value (LKFS) ≤ -23.0　　:White
- -28.0 ≤ measured value (LKFS) ≤ -25.1　　:Yellow
- measured value (LKFS) < -28.0　　　　　　:Red

When the measurement mode is EBU, the values are displayed in red when they exceed the target level ± 1 (LU). Otherwise, they are displayed in white.
When the measurement mode is ATSC, the values are displayed in red when they exceed the target level ± 2 (LK). Otherwise, they are displayed in white.

10 Bar graph display

Loudness values are displayed on a bar graph.
Values are normally displayed in green, but they are displayed in yellow when they exceed the target level.

11 Meter display

The momentary loudness is displayed with a black needle, and the short-term loudness is displayed with a red needle. The target level is 0 (LK/LU) on the scale.

9.2 Configuring the Loudness Display Settings

To configure the loudness display settings, use LOUDNESS on the front panel, F•2 LOUDNESS SETUP on the mode menu and the ETC (LOUDNESS TIME LIMIT), METER 2, METER 3, and AUDIO ERROR (LevelOver) tabs in the system settings. This section explains LOUDNESS on the front panel and F•2 METER SETUP. For other details, see chapter 5, "SYSTEM SETTINGS."

9.2.1 Front Panel

Figure 9-6   Front panel

● **START/PAUSE**

Press this key to start and pause loudness measurement. MEAS is displayed in the upper right of the screen when measurement is in progress. This key is valid regardless of the display mode.

● **USB STORE**

Press this key to store a loudness log to a USB memory device in CSV and text formats. This key is valid regardless of the display mode.
Loudness logs are stored in the following location.

🗋 USB memory device
└ 🗀 LV5838_USER
　└ 🗀 LOUD
　　├ 🗋 yyyymmddhhmmss.csv; Time codes, loudness values, dBTPOVR (0 for normal, 1 for over)
　　└ 🗋 yyyymmddhhmmss.txt; Loudness settings, peak levels, loudness values, check results

● **CLEAR**

Hold this key down to clear the integrated loudness, chart display, and peak level display. This key is valid regardless of the display mode.

9.2.2   LOUDNESS SETUP

MODE → F•1 DISPLAY to LOUDNESS → F•2 LOUDNESS SETUP →

DISPLAY	CHART SCALE	STYLE	INSERT SETTING	SCALE MAG	GROUP	UP MENU
BAR	1min	VERT		OFF	GROUP1	

| F·1 | F·2 | F·3 | F·4 | F·5 | F·6 | F·7 |
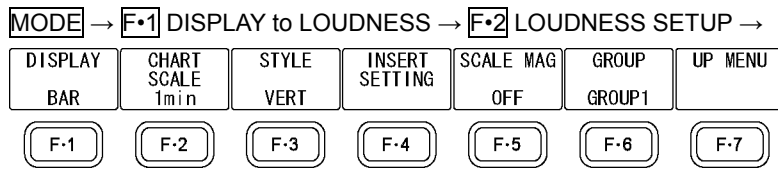
Figure 9-7   LOUDNESS SETUP menu

● F•1 DISPLAY: CHART / BAR / NUM / NUM ONLY / METER

Select the display format of loudness values.

CHART: Values are plotted on a chart.
BAR: Values are displayed on a bar graph and a chart. The chart can be hidden.
NUM: Values are displayed numerically and on a chart. The chart can be hidden.
NUM ONLY: Values are displayed numerically.
METER: Values are displayed numerically and on meters and a chart. The chart can be hidden.
                     The meter displays the momentary loudness with a black needle and the short-term loudness with a red needle.

● F•2 CHART SCALE: OFF / 1min / 4min / 10min / 30min / 1hour / 2hour / 4hour / 6hour / 12hour / 24hour

When F•1 DISPLAY is not set to NUM ONLY, select the display time (horizontal axis) of the chart display. Select OFF to hide the chart.
24hour can be selected when on the ETC tab in the system settings, LOUDNESS TIME LIMIT is set to 24H.
[Reference]   ETC tab → See section 5.3, "Other Settings."

● F•2 LOUDNESS SELECT: INTEGRATED / MOMENTARY / SHORTTERM / ALL

When F•1 DISPLAY is set to NUM ONLY, select the display format of the loudness display.

INTEGRATED: The integrated loudness is displayed.
MOMENTARY: The momentary loudness is displayed.
SHORTTERM: The short-term loudness is displayed.
ALL: The integrated loudness, momentary loudness, and short-term loudness are displayed.

● F•3 STYLE: VERT / HORI

When F•1 DISPLAY is set to BAR, select the display format of the loudness display.

VERT: Bar graph (displayed vertically) and the chart are displayed side by side.
HORI: Bar graph (displayed horizontally) and the chart are displayed top and bottom.

● F•4 INSERT SETTING

This appears after the end of a time code measurement. Use this setting to specify how to overwrite a portion of the loudness measurement results with other data.
[Reference]   See section 9.3.3, "Time Code Measurement."

● $\boxed{\text{F•5}}$ **SCALE MAG:** <u>**OFF**</u> / **WIDE** / **NARROW**

When $\boxed{\text{F•1}}$ DISPLAY is set to CHART, BAR, or METER, select the scale range.

OFF: The range of -70 to 0 (LKFS/LUFS) is displayed.
You cannot select this when $\boxed{\text{F•1}}$ DISPLAY is set to METER.
WIDE: The range of -36 to 18 (LK/LU) is displayed in reference to the target level.
NARROW: The range of -18 to 9 (LK/LU) is displayed in reference to the target level.

● $\boxed{\text{F•6}}$ **GROUP:** <u>**GROUP1**</u> / **GROUP2**

Select the display channels. Only one group is displayed, but loudness measurements are performed on both groups simultaneously.

[Reference] GROUP1, GROUP2 → See section 4.4.7, "Mapping Measurement Channels."

GROUP1: Channels that were selected using GROUP1 on the assign menu are displayed.
GROUP2: Channels that were selected using GROUP2 on the assign menu are displayed.
This cannot be selected when GROUP2 is OFF.

9.3 Loudness Measurement

On the METER 2 tab in the system settings, the loudness measurement mode can be set to one of the following six settings: OFF, Remote, Timecode, CM, FILE, and RealTime. This section explains each mode.

[Reference]   METER 2 tab → See section 5.7, "Configuring Loudness Settings 1."

9.3.1 Manual Measurement

In manual measurement, a measurement is started, stopped, and cleared from the front panel. See section 9.2.1, "Front Panel."

9.3.2 Remote Measurement

In remote measurement, a measurement is started, stopped, and cleared through the remote connector. To perform a measurement, follow the procedure below.

1. **On the ETHER&REMOTE tab in the system settings, set Select to Recall and 5838_02 or 5838_01+02.**

   [Reference]   ETHER&REMOTE tab → See section 5.2, "Configuring the Ethernet and Remote Settings."

2. **On the METER 2 tab in the system settings, set Trigger to Remote.**

   In the upper right of the display, RMT appears.

   [Reference]   METER 2 tab → See section 5.7, "Configuring Loudness Settings 1."

3. **Use pin 2 of the remote connector to start and stop a measurement and pin 4 to clear a measurement.**

   The indicator in the upper right of the display changes to MEAS during measurement and returns to RMT when measurement ends.

   During remote measurement, the START/PAUSE and CLEAR keys on the front panel are disabled.

9.3.3 Time Code Measurement

In time code measurement, measurement start and stop are executed on the basis of the time codes embedded in the input signals. To perform a measurement, follow the procedure below.

1. **On the GENERAL tab in the system settings, set TIMECODE SETTING   to some setting other than OFF.**

   [Reference]   GENERAL tab → See section 5.1, "General Settings."

2. **On the METER 2 tab in the system settings, set Trigger to Timecode, and enter the time code in Trigger Time.**

   In the top section of the display, "PUSH 'START'" appears. In the upper right, TC-P appears.
   In this condition, measurement will not start even when the specified time code is reached.

   [Reference]   METER 2 tab → See section 5.7, "Configuring Loudness Settings 1."

3. **Press START/PAUSE.**

   In the upper right of the display, TC appears. When the specified time code is reached, measurement starts or stops automatically. The indicator in the upper right of the display changes to MEAS during measurement and returns to TC when measurement ends.

● **Overwrite Mode**

When a time code measurement is complete, F•4 INSERT SETTING appears on the LOUDNESS SETUP menu. This feature automatically recalculates the total integrated loudness when a portion of the measured data is overwritten.
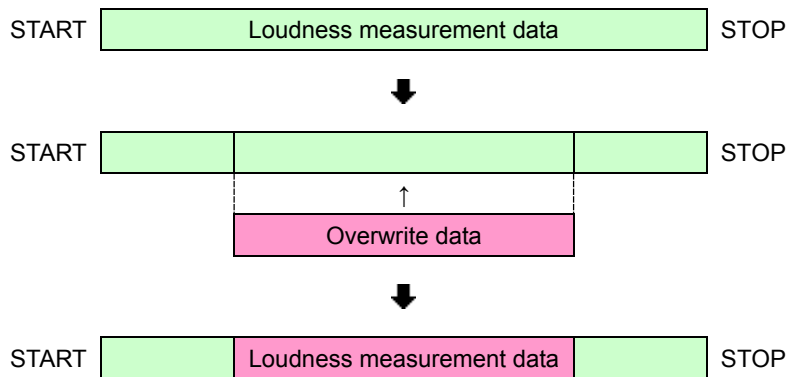
To overwrite data, follow the procedure below.

1. **On the LOUDNESS SETUP menu, press** `F•4` **INSERT SETTING.**

    The INSERT SETTING tab appears.

    ```
    ┌INSERT SETTING┐─────────────────────────────────────────────────┐
    │              └─┘                                                 │
    │                                                                  │
    │  LOUDNESS INSERT MODE SETTING                                    │
    │          Insert Mode         ☑OFF ☐ON                           │
    │          Insert Select       ☑Timecode ☐KEY                     │
    │          Insert Trigger Time   0 │ 59 │ 0   -   1 │ 0 │ 0        │
    │                                                                  │
    │                                                                  │
    │                                                                  │
    │                                                                  │
    │                                                                  │
    │                                                                  │
    │                                                                  │
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    │                                                                  │
    │                                                                  │
    │                                                                  │
    │                                                                  │
    └──────────────────────────────────────────────────────────────────┘
    ```
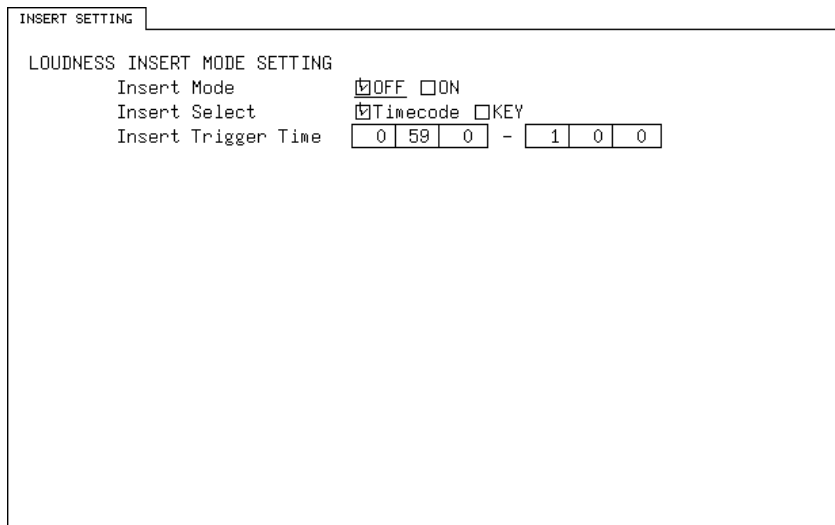
    Figure 9-8   INSERT SETTING tab

2. **Configure the overwrite settings.**

Insert Mode:	Select to turn the overwrite mode on or off.
Insert Select:	Select whether to use a time code or the keys (manual) to specify the portion of the data to overwrite.
Insert Trigger Time:	If Insert Select is set to Timecode, enter the time codes that define the range to overwrite.

    If you set Insert Mode to ON, `TCWP` appears in the upper right of the display.
    In this condition, measurement will not start even when the specified time code is reached.

3. **Depending on the Insert Select setting, perform the following procedure.**

    Timecode

    Press START/PAUSE, and then apply the audio signal. In the upper right of the display, `TCW` appears. When the specified time code is reached, measurement starts or stops automatically. The indicator in the upper right of the display changes to `MEAS` during overwriting and returns to `TCWP` when overwriting ends.

    KEY

    Apply the audio signal first, and press START/PAUSE when you want to start and stop overwriting. The indicator in the upper right of the display changes to `MEAS` during overwriting and returns to `TCWP` when overwriting ends.

● Flowchart

The following flowchart shows the procedure for overwriting a portion of the data in overwrite mode after a time code measurement.
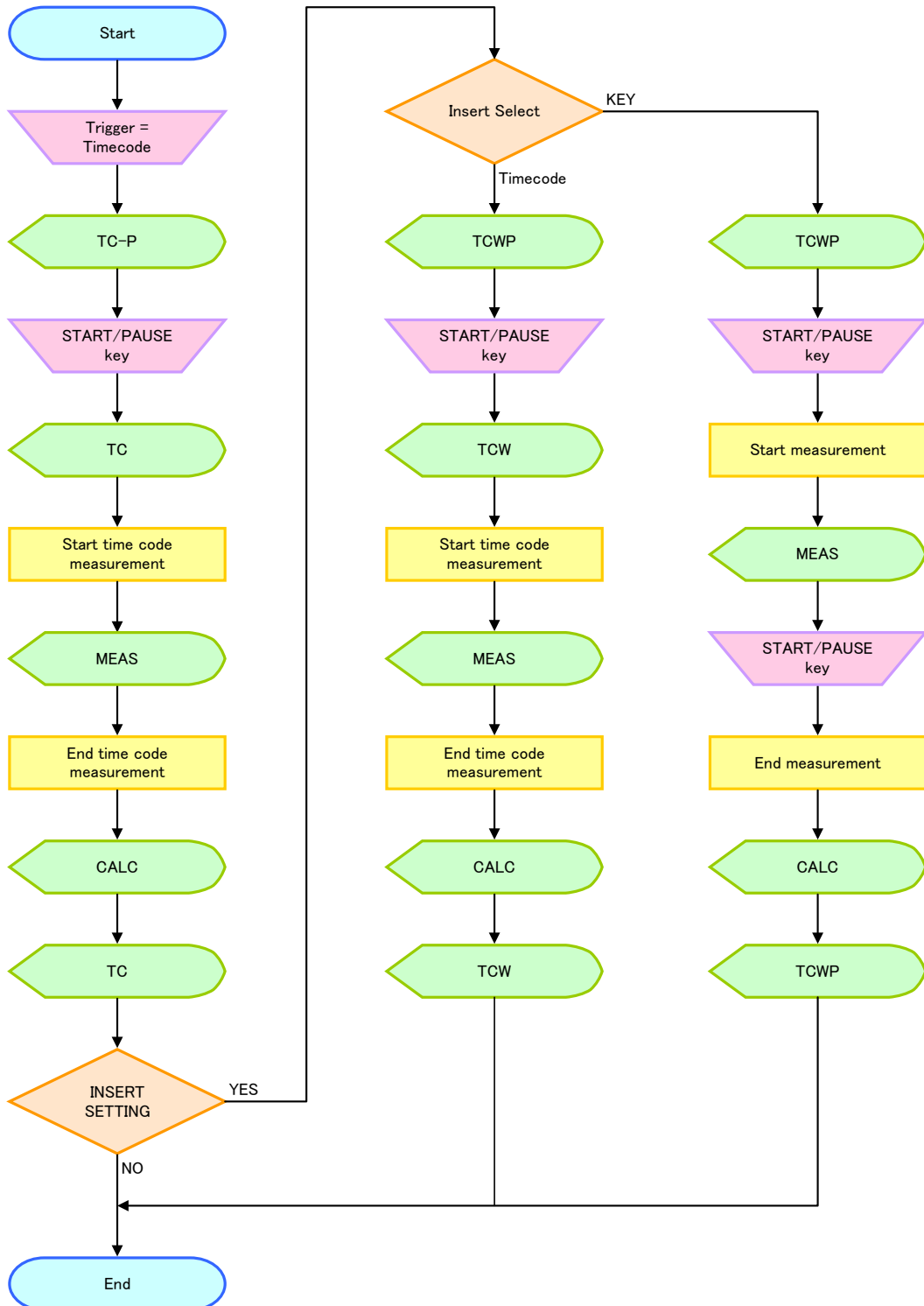
9.3.4   CM Measurement

In CM measurement, measurement start, stop, clear, and storage to a USB memory device are executed through audio input triggers. To perform a measurement, follow the procedure below.

1. **On the METER 2 tab in the system settings, set Trigger to CM. In StopTime, enter how long loudness measurement will continue after the audio (active) stops.**

    In the top section of the display, "PUSH 'START'" appears. In the upper right, `CM-P` appears.
    In this condition, measurement will not start even when an audio signal is applied.
    [Reference]   METER 2 tab → See section 5.7, "Configuring Loudness Settings 1."

2. **Press START/PAUSE.**

    In the upper right of the display, `CM` appears.

3. **Apply the audio signal.**

    Construct the input audio signal as follows:
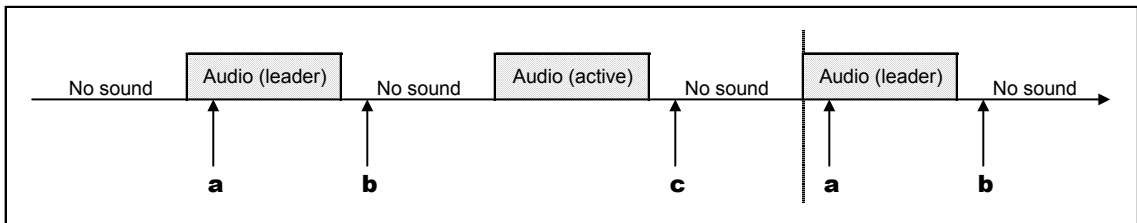
    a)   Loudness measurement is cleared 1 second after the detection of audio (1 kHz).

    b)   Loudness measurement starts 0.1 seconds after the detection of no audio.
         The indication in the upper right of the display changes to `MEAS`.

    c)   Loudness measurement stops when the time specified by StopTime elapses after the detection of no audio. If a USB memory device is connected, the loudness data is automatically saved to the device.
         The indication in the upper right of the display returns to `CM`.

    You can measure multiple materials in succession by applying subsequent materials.

9.3.5 File Measurement

In file measurement, measurement is performed while measured values are stored to a
USB memory device.
Normally, loudness measurement can be performed up to 24 hours, but file measurement
enables measurement that is longer than 24 hours. To do so, follow the procedure below.

1. **On the METER 2 tab in the system settings, set Trigger to FILE.**

   In the upper right of the display, ⌈FILE⌋ appears.

   [Reference]   METER 2 tab → See section 5.7, "Configuring Loudness Settings 1."

2. **Connect a USB memory device.**

3. **Press START/PAUSE.**

   The indication in the upper right of the display changes to ▮MEAS▮, and loudness
   measurement starts. During measurement, loudness values (gating block loudness)
   are saved to the USB memory device approximately every 20 s.

   ⛁ USB memory device
     └ ▢ LV5838_USER
         └ ▢ TRIG
             └ ▢ yyyymmddhhmmss.csv

   To stop measurement, press START/PAUSE again. The indication in the upper right of
   the display returns to ⌈FILE⌋.

   Do not turn the power off or remove the USB memory device while a file measurement
   is in progress. Doing so may damage the USB memory device.
   If you remove the USB memory device or if it becomes full, loudness measurement will
   automatically stop.

9.3.6 Real Time Measurement

In real time measurement, measurement start and stop are executed according to the
times specified on the LV 5838. To perform a measurement, follow the procedure below.

1. **On the TIME tab in the system settings, set the date and time.**

   [Reference]   TIME tab → See section 5.13, "Setting the Date and Time."

2. **On the METER 2 tab in the system settings, set Trigger to RealTime, and enter the time
   code in Trigger Time.**

   In the top section of the display, "PUSH 'START'" appears. In the upper right, ▮RT-P▮
   appears.
   In this condition, measurement will not start even when the specified time arrives.

   [Reference]   METER 2 tab → See section 5.7, "Configuring Loudness Settings 1."

3. **Press START/PAUSE.**

   In the upper right of the display, ▮RT▮ appears. When the specified time arrives,
   measurement starts or stops automatically. The indicator in the upper right of the
   display changes to ▮MEAS▮ during measurement and returns to ▮RT▮ when
   measurement ends.

10. STATUS DISPLAY

To show the status display, set $\boxed{F\cdot1}$ DISPLAY on the mode menu to STATUS.
On the status display, you can use $\boxed{F\cdot1}$ DISPLAY MODE of $\boxed{F\cdot2}$ STATUS SETUP to display the audio section, SDI section, event log, dBTP log, and PHY.

10.1 Audio Section Display

10.1.1 Audio Section Display Description

In the audio section display, you can press $\boxed{F\cdot2}$ DISPLAY to switch the display format between error count, channel status, user bit, Dolby metadata, and Dolby EBI data.

● **Error Count Display**

The LV 5838 counts errors for the items that are enabled on the AUDIO ERROR tab in the system settings (except for validity, which is always counted). Errors are counted up to 9999. You can clear the errors using $\boxed{F\cdot4}$ ERROR CLEAR.
"Since Reset" shows the time that has elapsed since the settings were initialized, since the power was turned on, or since $\boxed{F\cdot4}$ ERROR CLEAR was pressed.

[Reference]   AUDIO ERROR tab → See section 5.10, "Configuring Audio Error Detection Settings."

$\boxed{F\cdot2}$ DISPLAY = AUD-STATUS

Figure 10-1   Error Count Display

During Dolby E or Dolby Digital measurement, the LV 5838 counts Dolby CRC errors. Moreover, during Dolby E measurement, the LV 5838 measures the frame locations (header location and mode) of the embedded audio signal.

F•2 DISPLAY = AUD-STATUS

Figure 10-2   Error Count Display (Option) during Dolby Measurement

● **Channel Status Display**

The channel status display shows the status for the channels that you have selected with the function dial (F•D).
Use F•6 ALIGN to change the bit order of binary values.

F•2 DISPLAY = CH-STATUS

Figure 10-3   Channel status display

● **User Bit Display**

The user bit display shows the user bits for the channels that you have selected with the function dial (F•D).
Use F•6 ALIGN to change the bit order of binary values.

F•2 DISPLAY = USERBIT

```
AES/EBU USER BIT
DISPLAY CHANNEL   1                Byte : 01234567          01234567
MANAGEMENT    : 192-bit             00 : 00000000    12 : 00000000
                                    01 : 00000000    13 : 00000000
                                    02 : 00000000    14 : 00000000
                                    03 : 00000000    15 : 00000000
                                    04 : 00000000    16 : 00000000
                                    05 : 00000000    17 : 00000000
                                    06 : 00000000    18 : 00000000
                                    07 : 00000000    19 : 00000000
                                    08 : 00000000    20 : 00000000
                                    09 : 00000000    21 : 00000000
                                    10 : 00000000    22 : 00000000
                                    11 : 00000000    23 : 00000000
```

Figure 10-4   User bit display

● **Dolby Metadata Display (option)**

The Dolby metadata display shows meta data during Dolby E or Dolby Digital measurement.

F•2 DISPLAY = DOLBY-META

```
                                                        GRP1: *****
Dolby E Common Metadata Status
 Prog Desc Text
 Bitstrm Format   DE 20bit      SMPTE Timecode   01:00:00:01
 Prog Config      8x1           Framerate        29.97fps
AC-3 Metadata Status
 Datarate         Not Specified Lowpass Filter   off
 Bitstrm Mode     Main Complete LFE Filter       off
 Coding Mode      1/0           Srnd Phase Shift off
                                Srnd Attenuator  off
 Center Mix Lvl   -3.0dB        RF Ov Protect    off
 Srnd Mix Lvl     -3.0dB
 Dolby Srnd Mode  not indicate  Dialnorm Lvl     -27dB
 LFE Channel      off
 Mix Lvl          not exist
 Room Type        not exist
 Copyright Bit    Not Protected
 Orig Bitstrm     Original
 DC Filter        off
```

Figure 10-5   Dolby metadata display

● **Dolby EBI Data Display (option)**

The Dolby EBI data display shows EBI data during Dolby E or Dolby Digital measurement.

F•2 DISPLAY = DOLBY-EBI


```
                                                           GRP1: *****
    AC-3 Extended Bitstream Info
     Pref Stereo Dwnmix Mode   not defined
     Lt/Rt Center Mix Lvl      -inf dB
     Lt/Rt Srnd Mix Lvl        -inf dB
     Lo/Ro Center Mix Lvl      -inf dB
     Lo/Ro Srnd Mix Lvl        -inf dB

     Srnd EX Mode              not defined
     Headphone Mode            not defined
     AD Converter Type         HDCD
```

Figure 10-6   Dolby EBI data display

10.1.2　Configuring the Audio Section Display Settings

To configure the audio section display settings, use F•2 STATUS SETUP on the mode menu and the AUDIO ERROR tab in the system settings. This section explains F•2 STATUS SETUP. For details on the AUDIO ERROR tab, see section 5.10, "Configuring Audio Error Detection Settings."

MODE → F•1 DISPLAY to STATUS → F•2 STATUS SETUP → F•1 DISPLAY MODE to AUD-SEC →

DISPLAY MODE AUD-SEC	DISPLAY AUD-STATUS		ERROR CLEAR			UP MENU
F·1	F·2	F·3	F·4	F·5	F·6	F·7
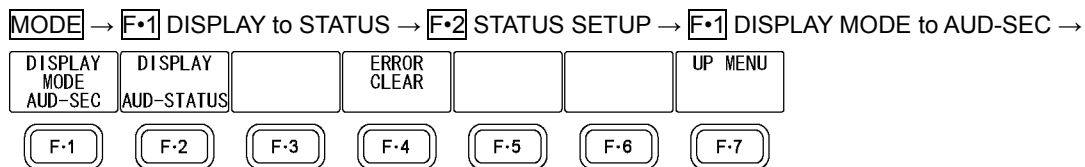
Figure 10-7　STATUS SETUP menu

- **F•2 DISPLAY: AUD-STATUS ∕ CH-STATUS ∕ USERBIT ∕ DOLBY-META ∕ DOLBY-EBI**

  Select the display format of the audio section display.

  AUD-STATUS:　　The error count is displayed.
  CH-STATUS:　　The channel status is displayed.
  USERBIT:　　User bits are displayed.
  DOLBY-META:　　The Dolby metadata is displayed. This is available during Dolby E or Dolby Digital measurement. (option).
  DOLBY-EBI:　　Dolby EBI data is displayed. This is available during Dolby E or Dolby Digital measurement. (option).

- **F•4 ERROR CLEAR**

  When F•2 DISPLAY is set to AUD-STATUS, press this key to reset the error counters to zero.

- **F•6 ALIGN: LSB 1st ∕ MSB 1st**

  When F•2 DISPLAY is set to CH-STATUS or USERBIT, press this key to select LSB first or MSB first.

10.2   SDI Section Display

10.2.1   SDI Section Display Description

The SDI section display shows the status of SDI signals. The channel that is displayed is the channel that is currently selected.

Under "SDI," the presence or absence of SDI signals, format, and embedded channels are displayed.
Under "EMBEDDED AUDIO," the error counts for the items whose detection has been enabled on the SDI ERROR tab in the system settings are displayed. Errors are counted up to 999,999. You can clear the counters using $\boxed{\text{F•4}}$ ERROR CLEAR.

[Reference]   AUDIO ERROR tab → See section 5.10, "Configuring Audio Error Detection Settings."
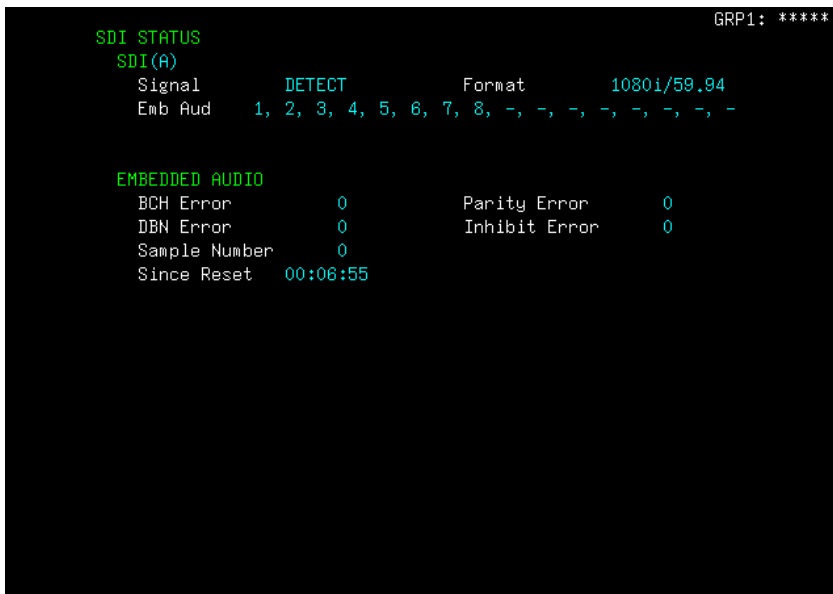
Figure 10-8   SDI section display

10.2.2   Configuring the SDI Section Display Settings

To configure the SDI section display settings, use $\boxed{\text{F•2}}$ STATUS SETUP on the mode menu and the SDI ERROR tab in the system settings. This section explains the status menu. For details on the SDI ERROR tab, see section 5.11, "Configuring SDI Error Detection Settings."

$\boxed{\text{MODE}}$ → $\boxed{\text{F•1}}$ DISPLAY to STATUS → $\boxed{\text{F•2}}$ STATUS SETUP → $\boxed{\text{F•1}}$ DISPLAY MODE to SDI-SEC →
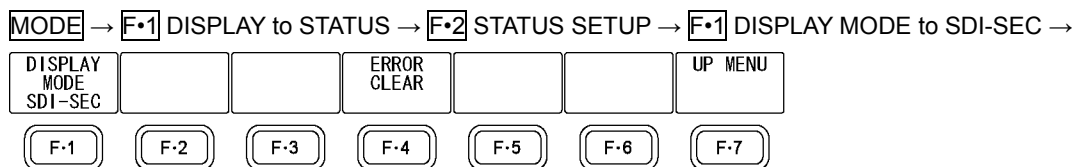
Figure 10-9   STATUS SETUP menu

● $\boxed{\text{F•4}}$ **ERROR CLEAR**

Press this key to reset the error counters to zero.

10.3 Event Log Display

10.3.1 Event Log Display Description

The event log display shows errors that have occurred in the order of their occurrence. Turning the function dial (F•D) to the right to scroll the screen and view older events in the log. Press the function dial (F•D) to display the latest events.

Figure 10-10   Event log display

- **Time Display**

On the GENERAL tab in the system settings, set TIMECODE SETTING to OFF to log events using the current time or some other setting to log events using the time codes embedded in the input signals.

[Reference]   GENERAL tab → See section 5.1, "General Settings."

- **Format Display**

For external audio signal events, "BNC" is displayed. For embedded audio signal events, the signal format is displayed.

In addition, if an embedded audio error is detected or recovers, the channel is displayed to the left of the format.

● **Error Display**

The errors that may appear on the event log display are listed below.

Only the items whose detection has been enabled on the AUDIO ERROR tab and SDI ERROR tab in the system settings are displayed.

[Reference]   AUDIO ERROR tab → See section 5.10, "Configuring Audio Error Detection Settings."

SDI ERROR tab → See section 5.11, "Configuring SDI Error Detection Settings."

Table 10-1   Error display

	Error Name	Description
AUDIO ERROR tab	OVER	LevelOver
	CLIP	Clip Error
	MUTE	Mute Error
	SIL	Silence Error
	PAR	Parity Error
	VAL	Validity Error
	CRC	CRC Error
SDI ERROR tab	A_BCH	BCH Error
	A_PRTY	Parity Error
	A_DBN	DBN Error
	A_INH	Inhibit Error
	A_SMP	Sample Number Error

Following the error name on the AUDIO ERROR tab, the channels on which the error occurred are displayed using a hexadecimal number (for example: "MUTE:000C"). Channels are displayed in order from channel 16. For example, 000C (0000000000001100) indicates that errors have occurred in channels 3 and 4.

● **Note**

The event log records events are detected for both the external audio signals and embedded audio signals. However, for embedded audio signals, only the currently selected channel is recorded.

If the same error occurs consecutively or if multiple errors occur at the same time, they are treated as a single error.

If multiple errors occur at the same time, you may not be able to view all the events on the screen. If this occurs, you can view all the errors by saving them to a USB memory device.

10.3.2   Configuring Event Log Display Settings

To configure the event log display settings, press F•2 STATUS SETUP on the mode menu.
To select the event log overwrite mode, use the GENERAL tab in the system settings.

[Reference]   GENERAL tab → See section 5.1, "General Settings."

MODE → F•1 DISPLAY to STATUS → F•2 STATUS SETUP → F•1 DISPLAY MODE to EVENTLOG →

DISPLAY MODE EVENTLOG	USBSTORE	LOG STOP	LOG CLEAR			UP MENU
F·1	F·2	F·3	F·4	F·5	F·6	F·7
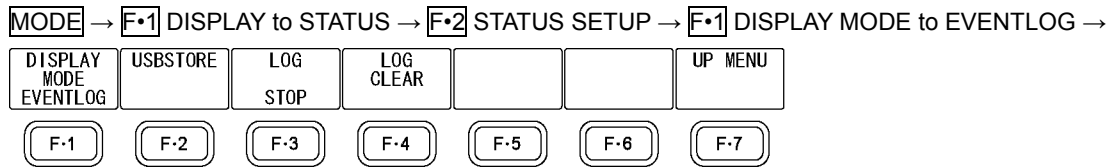
Figure 10-11   STATUS SETUP menu

- **F•2 USBSTORE**

  Save the event log as a text file to a USB memory device.
  This key appears when a USB memory device is connected to the LV 5838.

  Log files logs are stored in the following location.

  🗄 USB memory device
  └ 🗂 LV5838_USER
     └ 🗂 LOG
        └ 🗋 yyyymmddhhmmss.txt

- **F•3 LOG: STOP / START**

  Select event log start or stop.
  "LOG" is displayed in the upper right of the screen when errors are being logged.

- **F•4 LOG CLEAR**

  Clear the event log. The log is also cleared when you turn the power off.

10.4 dBTP Log Display

A dBTP log records time-series data of a channel when the peak level exceeds the threshold during loudness measurement. To enable the dBTP log, set dBTP OVER MARK to ON on the METER 3 tab in the system settings, and then start the loudness measurement. (Nothing is recorded when the loudness measurement is stopped.)

The threshold is the LevelOver value specified on the AUDIO ERROR tab in the system settings.
The dBTP log can record up to 1000 entries. When this limit is exceeded, the oldest data is overwritten.
The log cannot be recorded when the audio mode is 5.1 DM.

[Reference]   METER 3 tab → See section 5.8, "Configuring Loudness Settings 2."
　　　　　　　　AUDIO ERROR tab → See section 5.10, "Configuring Audio Error Detection Settings."

10.4.1 dBTP Log Display Description

By turning the function dial (F•D) to the right, you can scroll the screen to view older entries in the log. Press the function dial (F•D) to display the latest entries in the log.

Figure 10-12　dBTP log display

● **Level Over Display**

The LevelOver value specified on the AUDIO ERROR tab in the system settings is displayed.
[Reference]   AUDIO ERROR tab → See section 5.10, "Configuring Audio Error Detection Settings."

● **Time Display**

On the GENERAL tab in the system settings, set TIMECODE SETTING to OFF to log events using the current time or some other setting to log events using the time codes embedded in the input signals.
[Reference]   GENERAL tab → See section 5.1, "General Settings."

● **Group Display**

Audio groups in which "level over" occurs are displayed as GR1 or GR2.

● **Channel Display**

Channels in which "level over" occurs are displayed here.

10.4.2   Configuring dBTP Log Display Settings

To configure the dBTP log display settings, press F•2 STATUS SETUP on the mode menu.

MODE → F•1 DISPLAY to STATUS → F•2 STATUS SETUP → F•1 DISPLAY MODE to dBTP LOG →
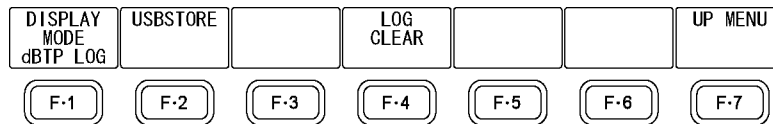
Figure 10-13   STATUS SETUP menu

● F•2 **USBSTORE**

Save the dBTP log as a text file to a USB memory device.
This key appears when a USB memory device is connected to the LV 5838.

Log files logs are stored in the following location.

⎕ USB memory device
└ ⬜ LV5838_USER
　　└ ⬜ dBTPLOG
　　　　└ ⬜ yyyymmddhhmmss.txt

● F•4 **LOG CLEAR**

Clear the dBTP log. The log is also cleared when you hold down CLEAR or turn the power off.

10.5   PHY Display

10.5.1   PHY Display Description

The PHY display shows the amplitude of the external audio signals, the audio frequency error relative to the reference signal, and the sampling frequency.
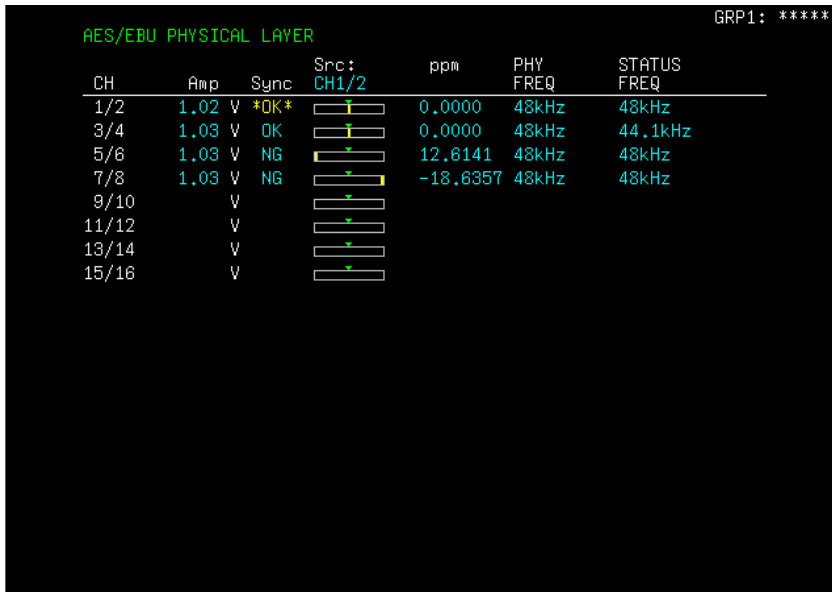
Figure 10-14   PHY display

● **Src**

The relative frequency measurement reference signal that you selected with F•2 SOURCE is displayed.

● **Amp**

Simplified amplitude measurement is performed on external audio signals and displayed in Vp-p. This does not appear during SDI measurement.

● **Sync**

The relative frequency measurement results are displayed as follows:

OK: Equal to the reference signal
OK: The relative frequency error is within ±1 ppm.
NG: The relative frequency error exceeds ±1 ppm.

● **Relative Frequency Display**

The frequency errors relative to the reference signal are displayed using indicators and numeric values (ppm).
The right side of the indicators represents -5 ppm, the left side represents +5 ppm, and the center represents 0 ppm.

● **PHY FREQ**

The physical sampling frequency of input signals is detected and displayed.

● **STATUS FREQ**

The sampling frequency information in channel status is displayed.

10.5.2　Configuring the PHY Display Settings

To configure the PHY display settings, press F•2 STATUS SETUP on the mode menu.

MODE → F•1 DISPLAY to STATUS → F•2 STATUS SETUP → F•1 DISPLAY MODE to PHY →

DISPLAY MODE PHY	SOURCE CH1/2					UP MENU
F·1	F·2	F·3	F·4	F·5	F·6	F·7
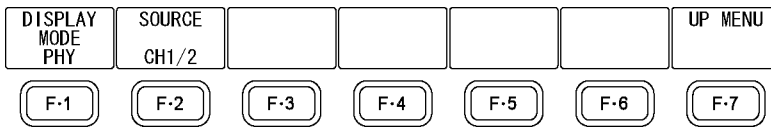
Figure 10-15　STATUS SETUP menu

● **F•2 SOURCE: <u>CH1/2</u> / CH3/4 / CH5/6 / CH7/8 / CH9/10 / CH11/12 / CH13/14 / CH15/16 / EXT-SYNC**

Select the signal to use as the frequency measurement reference. If you select EXT-SYNC, select the format on the GENERAL tab in the system settings, and apply an external reference signal to the EXT REF INPUT connector on the rear panel.

[Reference]　GENERAL tab → See section 5.1, "General Settings."

11. REMOTE CONTROL

You can use the remote control connector on the rear panel to load presets, transmit alarm signals, and perform other operations. Use the supplied 15-pin D-sub connector to control the LV 5838.

● **Pinout**

This section contains a diagram of the remote control connector, displayed as it appears on the rear panel, and a table that describes the connector's pinout.
The pinout varies depending on the Select setting on the ETHER&REMOTE tab in the system settings.
[Reference]   ETHER&REMOTE tab → See section 5.2, "Configuring the Ethernet and Remote Settings."
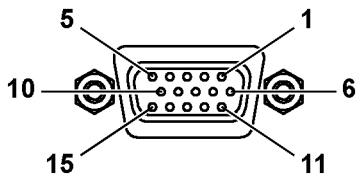
Figure 11-1   Remote control connector

Table 11-1   Remote control connector pinout

Pin No.	I/O	Select		
		Recall	Recall and 5838_02	5838_01+02
1	O	+5 V power supply (*1)	+5 V power supply (*1)	+5 V power supply (*1)
2	I	NOT USE	Start/stop loudness measurement (*2)	Start/stop loudness measurement (*2)
3	I	NOT USE	NOT USE	NOT USE
4	I	NOT USE	Clear the loudness measurement (*2)	Clear the loudness measurement (*2)
5	I	NOT USE	NOT USE	NOT USE
6	I	Recall preset 1	Recall preset 1	G1:STEREO / G2:OFF (*3)
7	I	Recall preset 2	Recall preset 2	G1:MONO / G2:OFF (*3)
8	I	Recall preset 3	Recall preset 3	G1:5.1 / G2:OFF (*3)
9	I	Recall preset 4	Recall preset 4	G1:STEREO / G2:STEREO (*3)
10	I	Recall preset 5	Recall preset 5	G1:MONO / G2:MONO (*3)
11	I	NOT USE	NOT USE	G1:STEREO / G2:MONO (*3)
12	I	NOT USE	NOT USE	G1:5.1 / G2:STEREO (*3)
13	I	NOT USE	NOT USE	NOT USE
14	O	Alarm output	Alarm output	Alarm output
15	-	Ground	Ground	Ground

*1   Used with the LV 5838-01 (REMOTE CONTROLLER) and LV 5838-02 (REMOTE CONTROLLER), which are sold separately. Do not use this for any other purpose.
*2   You must set Trigger on the METER 2 tab in the system settings to Remote.
Connect a LV 5838-02 to control these operations using buttons.
*3   G1 and G2 indicate GROUP1 and GROUP2 on the assign menu.
Connect a LV 5838-01 to control these operations using buttons.
*   Do not connect anything to the pins indicated as NOT USE.

● **Configuring the LV 5838**

To set the remote control connector, use the ETHER&REMOTE tab in the system settings.

[Reference]   ETHER&REMOTE tab → See section 5.2, "Configuring the Ethernet and Remote Settings."

SYSTEM → F•1 SYSTEM SETUP → F•3 NEXT TAB →

```
GENERAL   ETHER&REMOTE   ETC

ETHERNET SETTING
        Ethernet        □DHCP ☑IP
        IP Address      192  168   0    1     MAC ADDRESS
        Subnet Mask     255  255  255   0        00:00:00:00:00:00
        Gateway          0    0    0    0

TIME SERVER SETTING
        Time Server     □ON    ☑OFF          Time Zone
        IP Address       0    0    0    0        +09:00

SNMP SETTING
        SNMP            □ON    ☑OFF
        ACCESS          ☑RO    □RW
        SNMP Trap       ☑OFF   □ON

REMOTE SETTING
        Alarm Polarity  ☑Positive □Negative
        Select          ☑Recall    □Recall and 5838_02
                                   □5838_01+02
```

Figure 11-2   ETHER&REMOTE tab

● **Control**

The input connectors respond to active-low signals. Do not apply negative voltages or voltages that exceed +5 V. The active-low signal must be stable for at least 350 ms. After that, wait at least 1 second before applying the next signal.
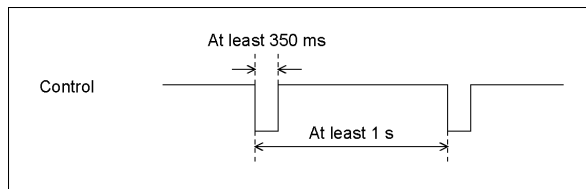
Figure 11-3   Remote control timing 1

After a setting is made, it may take about 3 seconds for the operation to finish. If you configure subsequent settings before the initial operation finishes, only the last setting will take effect. All settings in between will be discarded. (In the following example, control 2 will be discarded.)
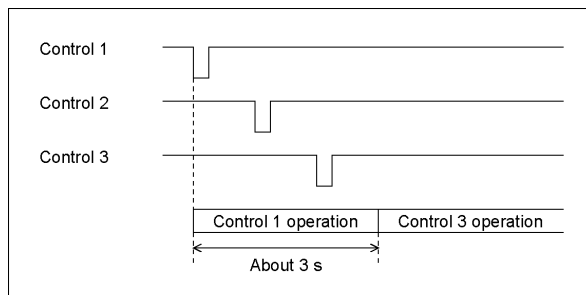
Figure 11-4   Remote control timing 2

12. ETHERNET CONTROL

The LV 5838 can be remotely controlled through its Ethernet port on the rear panel.
Controlling an LV 5838 remotely through its Ethernet interface has only been confirmed to work
in a local network environment. LEADER does not guarantee that this feature will work in any
network environment.

12.1 TELNET

From a PC connected to the same network as the LV 5838, you can remotely control most of
the operations that can be controlled from the panel.

12.1.1 Procedure

1. **On the ETHER&REMOTE tab, set the IP address.**

   [Reference]   See section 5.2, "Configuring the Ethernet and Remote Settings."

   SYSTEM → F•1 SYSTEM SETUP → F•3 NEXT TAB →

   ```
   ┌─────────┬────────────┬─────┐
   │ GENERAL │ ETHER&REMOTE│ ETC │
   └─────────┴────────────┴─────┘
   ┌──────────────────────────────────────────────────────────────┐
   │ ETHERNET SETTING                                               │
   │     Ethernet         □DHCP ☑IP                                 │
   │     IP Address       │ 192 │ 168 │  0  │  1  │  MAC ADDRESS    │
   │     Subnet Mask      │ 255 │ 255 │ 255 │  0  │  00:00:00:00:00:00 │
   │     Gateway          │  0  │  0  │  0  │  0  │                  │
   │                                                                │
   │ TIME SERVER SETTING                                            │
   │     Time Server      □ON    ☑OFF        Time Zone              │
   │     IP Address       │  0  │  0  │  0  │  0  │  │ +09:00 │      │
   │                                                                │
   │ SNMP SETTING                                                   │
   │     SNMP             □ON    ☑OFF                               │
   │     ACCESS           ☑RO    □RW                                │
   │     SNMP Trap        ☑OFF   □ON                                │
   │                                                                │
   │ REMOTE SETTING                                                 │
   │     Alarm Polarity   ☑Positive □Negative                      │
   │     Select           ☑Recall   □Recall and 5838_02            │
   │                                □5838_01+02                     │
   └──────────────────────────────────────────────────────────────┘
   ```

   Figure 12-1   ETHER&REMOTE tab

2. **Press F•1 COMPLETE.**

3. **Restart the LV 5838.**

   If you didn't make any changes, you do not have to restart.

4. **Connect the LV 5838's Ethernet port to the network.**

   Use a UTP cable (category 5).

5. **On the PC, start a TELNET client.**

   On Windows 7, on the taskbar, click Start, and then click Run. Type "TELNET " and the
   IP address that you set in step 1. Then, click OK.
   (To use TELNET, open Control Panel, click Turn Windows features on or off under
   Program and Features, and select the Telnet Client check box.)

6. Type the login name and password.

The login name and password are "LV5838". Use uppercase for all characters.
When the login name and password are entered correctly, "LV5838>" appears.

```
login: LV5838
Password: ******
LV5838>
```

7. Enter TELNET commands.

Enter commands by referring to sections 12.1.2, "How to Enter Commands," and
12.1.3, "TELNET Commands."
To end a TELNET session, type "bye" in lowercase letters.

```
LV5838> bye
```

12.1.2   How to Enter Commands

The command syntax is explained below. (Some commands do not have parameters.)
To query a current setting, use a question mark as the parameter.

```
LV5838> [Command] + [Space] + [Parameter]
```

Examples of how to enter commands are shown below.

```
LV5838> LOUD_CLEAR.......................... Clear the loudness measurement.


LV5838> MODE:DISPLAY STATUS ......... Set the display mode to status.


LV5838> SYSTEM:TIMECODE ?............. Query the time code type.
OFF ........................................................ Return value
LV5838>
```

*   You can enter commands using uppercase or lowercase letters.
*   Commands that begin with "MODE" only apply to the area (1 or 2) that is specified by the WIN
        command.
*   When using TELNET, enable flow control.
        If your Telnet client does not support flow control, the LV 5838 may not operate properly when
        commands are transferred at a high speed. In such case, allow about 1 second between command
        transmissions.

12.1.3   TELNET Commands

TELNET commands follow the LV 5838 menu structure. For explanations of each item, see the LV 5838 instruction manual. Depending on the current settings, some of the items that are described in this manual may be invalid.

Table 12-1   LV 5838 commands

Command	Parameter
INPUT	A / B / ?
AES	SDI / EXT / ?
WIN	1 / 2 / ?
MULTI	-
LOUDNESS	START / PAUSE / ?
LOUD_STORE	-
LOUD_CLEAR	-
RECALL	1 to 5
DATE	YEAR MONTH DAY HOUR MINUTE SECOND / ?
VOLUME	0 to 127 / ?

Table 12-2   Assign commands

Command	Parameter
ASSIGN:MODE:GROUP1	MONO / STEREO / 5.1 / 5.1_DM / CUSTOM / ?
ASSIGN:MODE:GROUP2	OFF / MONO / STEREO / 5.1 / 5.1_DM / CUSTOM / ?
ASSIGN:PHONES_L	CH1 to CH16 / DOLBY1 to DOLBY8 / DOLBY_AUX / ?
ASSIGN:PHONES_R	CH1 to CH16 / DOLBY1 to DOLBY8 / DOLBY_AUX / ?
ASSIGN:AUX_CH	LT/RT / LO/RO / MONO / MUTE / ?
ASSIGN:AUX_CH_DRC	LINE / RF / ?
ASSIGN:GROUP1:L	CH1 to CH16 / NON_CONNECT / ?
ASSIGN:GROUP1:R	CH1 to CH16 / NON_CONNECT / ?
ASSIGN:GROUP1:C	CH1 to CH16 / NON_CONNECT / ?
ASSIGN:GROUP1:LFE	CH1 to CH16 / NON_CONNECT / ?
ASSIGN:GROUP1:LS	CH1 to CH16 / NON_CONNECT / ?
ASSIGN:GROUP1:RS	CH1 to CH16 / NON_CONNECT / ?
ASSIGN:GROUP2:L	CH1 to CH16 / NON_CONNECT / ?
ASSIGN:GROUP2:R	CH1 to CH16 / NON_CONNECT / ?
ASSIGN:GROUP2:C	CH1 to CH16 / NON_CONNECT / ?
ASSIGN:GROUP2:LFE	CH1 to CH16 / NON_CONNECT / ?
ASSIGN:GROUP2:LS	CH1 to CH16 / NON_CONNECT / ?
ASSIGN:GROUP2:RS	CH1 to CH16 / NON_CONNECT / ?

Table 12-3   Mode commands

Command	Parameter
MODE:DISPLAY	METER / LISSAJOU / SURROUND / LOUDNESS / STATUS / ?
MODE:METER:RESPONSE	TRUEPEAK / PPM(I) / PPM(II) / VU / ?
MODE:METER:PEAKHOLD	OFF / TRUEPEAK / PPM(I) / PPM(II) / ?

Command	Parameter
MODE:METER:PEAKHOLD_TIME	0.0 / 0.5 / 1.0 / 2.0 / 3.0 / 4.0 / 5.0 / HOLD / ?
MODE:METER:SCALE_MAG	OFF / ON / ?
MODE:METER:GROUP	GROUP1 / GROUP2 / ALL / 1-8 / 9-16 / ?
MODE:LISSAJOU:MONO	CH1 to CH16 / ?
MODE:LISSAJOU:L	CH1 to CH16 / ?
MODE:LISSAJOU:R	CH1 to CH16 / ?
MODE:LISSAJOU:AUTOGAIN	ON / OFF / ?
MODE:LISSAJOU:GROUP	GROUP1 / GROUP2 / ALL / 1-8 / 9-16 / ?
MODE:SURROUND:DISPLAY	BOTH / LISSAJOU / SURROUND / ?
MODE:SURROUND:MODE	NORMAL / PHANTOM / ?
MODE:SURROUND:AUTOGAIN	ON / OFF / ?
MODE:SURROUND:GROUP	GROUP1 / GROUP2 / ?
MODE:LOUDNESS:DISPLAY	CHART / BAR / NUM / NUM_ONLY / METER / ?
MODE:LOUDNESS:SCALE	OFF / 1MIN / 4MIN / 10MIN / 30MIN / 1HOUR / 2HOUR / 4HOUR / 6HOUR / 12HOUR / 24HOUR / ?
MODE:LOUDNESS:SCALE_CHART	1MIN / 4MIN / 10MIN / 30MIN / 1HOUR / 2HOUR / 4HOUR / 6HOUR / 12HOUR / 24HOUR / ?
MODE:LOUDNESS:SELECT	INTEGRATED / MOMENTARY / SHORTTERM / ALL / ?
MODE:LOUDNESS:STYLE	VERT / HORI / ?
MODE:LOUDNESS:SCALE_MAG_BAR	OFF / WIDE / NARROW / ?
MODE:LOUDNESS:SCALE_MAG_METER	WIDE / NARROW / ?
MODE:LOUDNESS:GROUP	GROUP1 / GROUP2 / ?
MODE:STATUS:MODE	AUD-SEC / SDI-SEC / EVENTLOG / LOUD_LOG / PHY / ?
MODE:STATUS:DISPLAY	AUD-STATUS / CH-STATUS / USERBIT / DOLBY-META / DOLBY-EBI / ?
MODE:STATUS:SCALE	50MS / 100MS / 500MS / 1.0S / 2.5S / ?
MODE:STATUS:SOURCE	AESEBU / SDI-ANC / ?
MODE:STATUS:CH-STATUS:CH	1 to 16 / ?
MODE:STATUS:CH-STATUS:ALIGN	LSB / MSB / ?
MODE:STATUS:USERBIT:CH	1 to 16 / ?
MODE:STATUS:USERBIT:ALIGN	LSB / MSB / ?
MODE:STATUS:META:PROGRAM	PRM1 / PRM2 / PRM3 / PRM4 / PRM5 / PRM6 / PRM7 / PRM8 / ?
MODE:STATUS:EBI:PROGRAM	PRM1 / PRM2 / PRM3 / PRM4 / PRM5 / PRM6 / PRM7 / PRM8 / ?
MODE:STATUS:EVENTLOG	STOP / START / ?
MODE:STATUS:PHY:SOURCE	CH1/2 / CH3/4 / CH5/6 / CH7/8 / CH9/10 / CH11/12 / CH13/14 / CH15/16 / EXT-SYNC / ?

Table 12-4　System commands

Command	Parameter
SYSTEM:EXTERNAL:SDI	INPUT / OUTPUT / ?
SYSTEM:EXTERNAL:AES	INPUT / OUTPUT / ?
SYSTEM:TIMECODE	OFF / LTC / VITC / D_VITC / AESEBU / LTC-EXT / ?

Command	Parameter
SYSTEM:SRC:FLAG	ON / OFF / ?
SYSTEM:SRC:CH	CH1_2 / CH3_4 / CH5_6 / CH7_8 / CH9_10 / CH11_12 / CH13_14 / CH15_16 / INTERNAL / ?
SYSTEM:EXTREF:INPUT	VIDEO_SYNC / WORDCLOCK / CW / ?
SYSTEM:EXTREF:CLOCK	48KHZ / 44.1KHZ / 32KHZ / ?
SYSTEM:EXTREF:TERMINATION	75 / 20K / ?
SYSTEM:LOGMODE	OVERWRITE / STOP / ?
SYSTEM:SETTING:WARNING	-40 to 0 / ?
SYSTEM:SETTING:REFERENCE	-40 to 0 / ?
SYSTEM:SCALE	DBFS / NORDIC / DIN / BBC / ?
SYSTEM:LOUD:MEASURE	BS1770-2 / ARIB / EBU / ATSC / CUSTOM / ?
SYSTEM:LOUD:TARGET:LEVEL	-99 to 0 / ?
SYSTEM:LOUD:LFE_GAIN	0 to 10 (in steps of 0.5) / ?
SYSTEM:LOUD:BLOCKSIZE	200 to 30000 (in steps of 50) / ?
SYSTEM:LOUD:OVERLAPSIZE	0 to 99 / ?
SYSTEM:LOUD:ABSOLUTE:FLAG	ON / OFF / ?
SYSTEM:LOUD:ABSOLUTE:LEVEL	-99 to 0 / ?
SYSTEM:LOUD:RELATIVE:FLAG	ON / OFF / ?
SYSTEM:LOUD:RELATIVE:LEVEL	-99 to 0 / ?
SYSTEM:LOUD:SHORTTERM:AVERAGE	200 to 30000 (in steps of 50) / ?
SYSTEM:LOUD:MOMENTARY:AVERAGE	100 to 1000 (in steps of 25) / ?
SYSTEM:LOUD:RANGE:AVERAGE (to be supported in the future)	200 to 30000 (in steps of 50) / ?
SYSTEM:LOUD:RANGE:OVERLAP (to be supported in the future)	0 to 99 / ?
SYSTEM:LOUD:MARK:OVER	ON / OFF / ?
SYSTEM:LOUD:MARK:RELATIVE	ON / OFF / ?
SYSTEM:ERROR:OVER:FLAG	ON / OFF / ?
SYSTEM:ERROR:OVER:LEVEL	-40 to 0 / ?
SYSTEM:ERROR:CLIP:FLAG	ON / OFF / ?
SYSTEM:ERROR:CLIP:DURATION	1 to 100 / ?
SYSTEM:ERROR:MUTE:FLAG	ON / OFF / ?
SYSTEM:ERROR:MUTE:DURATION	1 to 100 (in steps of 10) / ?
SYSTEM:ERROR:MUTE:LEVEL	-99 to -60 / ?
SYSTEM:ERROR:SILENT:FLAG	ON / OFF / ?
SYSTEM:ERROR:SILENT:DURATION	1 to 5000 (in steps of 10) / ?
SYSTEM:ERROR:FRAME:FLAG (to be supported in the future)	ON / OFF / ?
SYSTEM:ERROR:FRAME:GUARDBAND (to be supported in the future)	RDD6 / CUSTOM / ?
SYSTEM:ERROR:FRAME:SD_MIN (to be supported in the future)	8 to 30 / ?
SYSTEM:ERROR:FRAME:SD_MAX (to be supported in the future)	8 to 30 / ?
SYSTEM:ERROR:FRAME:HD_MIN	8 to 30 / ?

Command	Parameter
(to be supported in the future)	
SYSTEM:ERROR:FRAME:HD_MAX	8 to 30 / ?
(to be supported in the future)	
SYSTEM:ERROR:PARITY	ON / OFF / ?
SYSTEM:ERROR:VALIDITY	ON / OFF / ?
SYSTEM:ERROR:CRC	ON / OFF / ?
SYSTEM:ERROR:DOLBY_CRC	ON / OFF / ?
SYSTEM:ERROR:AUDIO:BCH	ON / OFF / ?
SYSTEM:ERROR:AUDIO:PARITY	ON / OFF / ?
SYSTEM:ERROR:AUDIO:DBN	ON / OFF / ?
SYSTEM:ERROR:AUDIO:INHIBIT	ON / OFF / ?
SYSTEM:ERROR:AUDIO:SAMPLE	ON / OFF / ?
SYSTEM:DOLBY:MODULE	OFF / DOLBY-E / DOLBY-DIGITAL / DOLBY-DIGITAL-PLUS / ?
SYSTEM:DOLBY:INPUT	CH1_2 / CH3_4 / CH5_6 / CH7_8 / CH9_10 / CH11_12 / CH13_14 / CH15_16 / ?
SYSTEM:DOLBY:E:DIALONORM	OFF / ON / ?
SYSTEM:DOLBY:E:PULLDOWN	OFF / ON / ?
SYSTEM:DOLBY:DIGITAL:LISTENING	FULL / EX / 3STEREO / PHANTOM / STEREO / MONO / ?
SYSTEM:DOLBY:DIGITAL:PROLOGIC	OFF / ON / ?
SYSTEM:DOLBY:DIGITAL:DRC	BYPASS / LINE / RF / ?

12.2 SNMP

By using SNMP (Simple Network Management Protocol), you can control an LV 5838 from SNMP managers. Additionally, you can notify the SNMP managers of errors that the LV 5838 generates.
The LV 5838 supports SNMPv1.

12.2.1 SMI Definitions

IMPORTS
MODULE-IDENTITY, OBJECT-TYPE, NOTIFICATION-TYPE, enterprises
FROM SNMPv2-SMI
DisplayString
FROM SNMPv2-TC
OBJECT-GROUP, MODULE-COMPLIANCE
FROM SNMPv2-CONF;

12.2.2 Procedure

1. **Configure the Ethernet settings on the ETHER&REMOTE tab of the LV 5838.**

   Set the IP Address, set SNMP to ON, ACCESS to RW, and SNMP Trap to ON.

   [Reference] See section 5.2, "Configuring the Ethernet and Remote Settings."

   SYSTEM → F•1 SYSTEM SETUP → F•3 NEXT TAB →

   ```
   GENERAL   ETHER&REMOTE   ETC

   ETHERNET SETTING
       Ethernet        □DHCP  ☑IP
       IP Address      192  168    0    1      MAC ADDRESS
       Subnet Mask     255  255  255    0         00:00:00:00:00:00
       Gateway           0    0    0    0

   TIME SERVER SETTING
       Time Server     □ON    ☑OFF           Time Zone
       IP Address        0    0    0    0       +09:00

   SNMP SETTING
       SNMP            ☑ON    □OFF
       ACCESS          □RO    ☑RW
       SNMP Trap       □OFF   ☑ON

   REMOTE SETTING
       Alarm Polarity  ☑Positive □Negative
       Select          ☑Recall   □Recall and 5838_02
                                 □5838_01+02
   ```

   Figure 12-2   ETHER&REMOTE tab

2. **Press F•1 COMPLETE.**

3. **Restart the LV 5838.**

   If you didn't make any changes, you do not have to restart.

4. **Connect the LV 5838's Ethernet port to the network.**

   Use a UTP cable (category 5).

5. **On the PC, start an SNMP manager.**

   You must provide the SNMP manager yourself.
   The community name is shown below.

   Read community: LDRUser
   Write community: LDRAdm
   TRAP community: LDRUser

6. **Check that the SNMP managers can perform GET and SET operations.**

7. **From the SNMP manager, set the following MIB items to the SNMP managers' IP addresses.**

   Up to four locations can be set.

   [IP address of TRAP transmission destination 1]
   1.3.6.1.4.1.leader(20111).lv5838(25).lv5838ST1(1).l25trapTBL(5).l25trapIpTBL(2).l25trapIp1TBL(1).l25trapManagerIp1(1).0

   [IP address of TRAP transmission destination 2]
   1.3.6.1.4.1.leader(20111).lv5838(25).lv5838ST1(1).l25trapTBL(5).l25trapIpTBL(2).l25trapIp2TBL(2).l25trapManagerIp2(1).0

   [IP address of TRAP transmission destination 3]
   1.3.6.1.4.1.leader(20111).lv5838(25).lv5838ST1(1).l25trapTBL(5).l25trapIpTBL(2).l25trapIp3TBL(3).l25trapManagerIp3(1).0

   [IP address of TRAP transmission destination 4]
   1.3.6.1.4.1.leader(20111).lv5838(25).lv5838ST1(1).l25trapTBL(5).l25trapIpTBL(2).l25trapIp4TBL(4).l25trapManagerIp4(1).0

8. **Enable the TRAP transmission destinations.**

   To alleviate communication load, disable the transmission destinations that you are not using. This setting is disabled by factory default.

   [Enable (2) or disable (1) TRAP transmission destination 1]
   1.3.6.1.4.1.leader(20111).lv5838(25).lv5838ST1(1).l25trapTBL(5).l25trapIpTBL(2).l25trapIp1TBL(1).l25trapManagerIp1Act(2).0

   [Enable (2) or disable (1) TRAP transmission destination 2]
   1.3.6.1.4.1.leader(20111).lv5838(25).lv5838ST1(1).l25trapTBL(5).l25trapIpTBL(2).l25trapIp2TBL(2).l25trapManagerIp2Act(2).0

   [Enable (2) or disable (1) TRAP transmission destination 3]
   1.3.6.1.4.1.leader(20111).lv5838(25).lv5838ST1(1).l25trapTBL(5).l25trapIpTBL(2).l25trapIp3TBL(3).l25trapManagerIp3Act(2).0

   [Enable (2) or disable (1) TRAP transmission destination 4]
   1.3.6.1.4.1.leader(20111).lv5838(25).lv5838ST1(1).l25trapTBL(5).l25trapIpTBL(2).l25trapIp4TBL(4).l25trapManagerIp4Act(2).0

9. **Restart the LV 5838.**

10. **When the LV 5838 starts, it transmits the standard TRAP "coldStart(0)." Check that this is received by the SNMP managers.**

12.2.3　Standard MIB

The LV 5838 uses the following standard MIBs:
• RFC1213 (MIB-II)
• RFC1354 (IP Forwarding Table MIB)

In the tables, "ACCESS" and "SUPPORT" indicate the following:

	Indication	Description
ACCESS	R/O	Information that can be read from the SNMP managers.
	R/W	Information that can be read and written from the SNMP managers.
SUPPORT	○	Supports the MIB object as defined by the standard.
	△	Reading and writing are possible according to the standard, but the LV 5838 only supports reading.
	×	Not supported.

Table 12-5　system group

MIB	OID	SYNTAX	ACCESS	SUPPORT
sysDescr	system.1	DisplayString	R/O	○
sysObjectID	system.2	ObjectID	R/O	○
sysUpTime	system.3	TimeTicks	R/O	○
sysContact (*1)	system.4	DisplayString	R/W	○
sysName (*1)	system.5	DisplayString	R/W	○
sysLocation (*1)	system.6	DisplayString	R/W	○
sysServices	system.7	INTEGER	R/O	○

*1　Set using up to 40 bytes.

Table 12-6　interface group

MIB	OID	SYNTAX	ACCESS	SUPPORT
ifNumber	interfaces.1	INTEGER	R/O	○
ifTable	interfaces.2	Aggregate	-	○
ifEntry	ifTable.1	Aggregate	-	○
ifIndex	ifEntry.1	INTEGER	R/O	○
ifDescr	ifEntry.2	DisplayString	R/O	○
ifType	ifEntry.3	INTEGER	R/O	○
ifMtu	ifEntry.4	INTEGER	R/O	○
ifSpeed	ifEntry.5	Gauge	R/O	○
ifPhysAddress	ifEntry.6	DisplayString	R/O	○
ifAdminStatus	ifEntry.7	INTEGER	R/O	△
ifOperStatus	ifEntry.8	INTEGER	R/O	△
ifLastChange	ifEntry.9	TimeTicks	R/O	○
ifInOctets	ifEntry.10	Counter	R/O	○
ifInUcastPkts	ifEntry.11	Counter	R/O	○
ifInNUcastPkts	ifEntry.12	Counter	R/O	○
ifInDiscards	ifEntry.13	Counter	R/O	○
ifInErrors	ifEntry.14	Counter	R/O	○

MIB	OID	SYNTAX	ACCESS	SUPPORT
ifInUnknownProtos	ifEntry.15	Counter	R/O	○
ifOutOctets	ifEntry.16	Counter	R/O	○
ifOutUcastPkts	ifEntry.17	Counter	R/O	○
ifOutNUcastPkts	ifEntry.18	Counter	R/O	○
ifOutDiscards	ifEntry.19	Counter	R/O	○
ifOutErrors	ifEntry.20	Counter	R/O	○
ifOutQLen	ifEntry.21	Gauge	R/O	○
ifSpecific	ifEntry.22	ObjectID	R/O	○

Table 12-7　ip group

MIB	OID	SYNTAX	ACCESS	SUPPORT
ipForwarding	ip.1	INTEGER	R/O	○
ipDefaultTTL	ip.2	INTEGER	R/O	○
ipInReceives	ip.3	Counter	R/O	○
ipInHdrErrors	ip.4	Counter	R/O	○
ipInAddrErrors	ip.5	Counter	R/O	○
ipForwDatagrams	ip.6	Counter	R/O	○
ipInUnknownProtos	ip.7	Counter	R/O	○
ipInDiscards	ip.8	Counter	R/O	○
ipInDelivers	ip.9	Counter	R/O	○
ipOutRequests	ip.10	Counter	R/O	○
ipOutDiscards	ip.11	Counter	R/O	○
ipOutNoRoutes	ip.12	Counter	R/O	○
ipReasmTimeout	ip.13	INTEGER	R/O	○
ipReasmReqds	ip.14	Counter	R/O	○
ipReasmOKs	ip.15	Counter	R/O	○
ipReasmFails	ip.16	Counter	R/O	○
ipFragOKs	ip.17	Counter	R/O	○
ipFragFails	ip.18	Counter	R/O	○
ipFragCreates	ip.19	Counter	R/O	○
ipAddrTable	ip.20	Aggregate	-	○
ipAddrEntry	ipAddrTable.1	Aggregate	-	○
ipAdEntAddr	ipAddrEntry.1	IpAddress	R/O	○
ipAdEntIfIndex	ipAddrEntry.2	INTEGER	R/O	○
ipAdEntNetMask	ipAddrEntry.3	IpAddress	R/O	○
ipAdEntBcastAddr	ipAddrEntry.4	INTEGER	R/O	○
ipAdEntReasmMaxSize	ipAddrEntry.5	INTEGER	R/O	○
ipNetToMediaTable	ip.22	Aggregate	-	○
ipNetToMediaEntry	ipNetToMediaTable.1	Aggregate	-	○
ipNetToMediaIfIndex	ipNetToMediaEntry.1	INTEGER	R/O	△
ipNetToMediaPhysAddress	ipNetToMediaEntry.2	DisplayString	R/O	△
ipNetToMediaNetAddress	ipNetToMediaEntry.3	IpAddress	R/O	△
ipNetToMediaType	ipNetToMediaEntry.4	INTEGER	R/O	△
ipRoutingDiscards	ip.23	Counter	R/O	○
ipForward	ip.24	Aggregate	-	○

MIB	OID	SYNTAX	ACCESS	SUPPORT
ipForwardNumber	ipForward .1	Gauge	R/O	○
ipForwardTable	ipForward .2	Aggregate	-	○
ipForwardDest	ipForwardTable.1	IpAddress	R/O	○
ipForwardMask	ipForwardTable.1	IpAddress	R/O	○
ipForwardPolicy	ipForwardTable.1	INTEGER	R/O	×
ipForwardNextHop	ipForwardTable.1	IpAddress	R/O	○
ipForwardIfIndex	ipForwardTable.1	INTEGER	R/O	○
ipForwardType	ipForwardTable.1	INTEGER	R/O	×
ipForwardProto	ipForwardTable.1	INTEGER	R/O	×
ipForwardAge	ipForwardTable.1	INTEGER	R/O	×
ipForwardInfo	ipForwardTable.1	ObjectID	R/O	×
ipForwardNextHopAS	ipForwardTable.1	INTEGER	R/O	×
ipForwardMetric1	ipForwardTable.1	INTEGER	R/O	×
ipForwardMetric2	ipForwardTable.1	INTEGER	R/O	×
ipForwardMetric3	ipForwardTable.1	INTEGER	R/O	×
ipForwardMetric4	ipForwardTable.1	INTEGER	R/O	×
ipForwardMetric5	ipForwardTable.1	INTEGER	R/O	×

Table 12-8   icmp group

MIB	OID	SYNTAX	ACCESS	SUPPORT
icmpInMsgs	icmp.1	Counter	R/O	○
icmpInErrors	icmp.2	Counter	R/O	○
icmpInDestUnreachs	icmp.3	Counter	R/O	○
icmpInTimeExcds	icmp.4	Counter	R/O	○
icmpInParmProbs	icmp.5	Counter	R/O	○
icmpInSrcQuenchs	icmp.6	Counter	R/O	○
icmpInRedirects	icmp.7	Counter	R/O	○
icmpInEchos	icmp.8	Counter	R/O	○
icmpInEchoReps	icmp.9	Counter	R/O	○
icmpInTimestamps	icmp.10	Counter	R/O	○
icmpInTimestampReps	icmp.11	Counter	R/O	○
icmpInAddrMasks	icmp.12	Counter	R/O	○
icmpInAddrMaskReps	icmp.13	Counter	R/O	○
icmpOutMsgs	icmp.14	Counter	R/O	○
icmpOutErrors	icmp.15	Counter	R/O	○
icmpOutDestUnreachs	icmp.16	Counter	R/O	○
icmpOutTimeExcds	icmp.17	Counter	R/O	○
icmpOutParmProbs	icmp.18	Counter	R/O	○
icmpOutSrcQuenchs	icmp.19	Counter	R/O	○
icmpOutRedirects	icmp.20	Counter	R/O	○
icmpOutEchos	icmp.21	Counter	R/O	○
icmpOutEchoReps	icmp.22	Counter	R/O	○
icmpOutTimestamps	icmp.23	Counter	R/O	○
icmpOutTimestampReps	icmp.24	Counter	R/O	○
icmpOutAddrMasks	icmp.25	Counter	R/O	○

MIB	OID	SYNTAX	ACCESS	SUPPORT
icmpOutAddrMaskReps	icmp.26	Counter	R/O	○

Table 12-9　tcp group

MIB	OID	SYNTAX	ACCESS	SUPPORT
tcpRtoAlgorithm	tcp.1	INTEGER	R/O	○
tcpRtoMin	tcp.2	INTEGER	R/O	○
tcpRtoMax	tcp.3	INTEGER	R/O	○
tcpMaxConn	tcp.4	INTEGER	R/O	○
tcpActiveOpens	tcp.5	Counter	R/O	○
tcpPassiveOpens	tcp.6	Counter	R/O	○
tcpAttemptFails	tcp.7	Counter	R/O	○
tcpEstabResets	tcp.8	Counter	R/O	○
tcpCurrEstab	tcp.9	Gauge	R/O	○
tcpInSegs	tcp.10	Counter	R/O	○
tcpOutSegs	tcp.11	Counter	R/O	○
tcpRetransSegs	tcp.12	Counter	R/O	○
tcpConnTable	tcp.13	Aggregate	-	○
tcpConnEntry	tcpConnTable.1	Aggregate	-	○
tcpConnState	tcpConnEntry.1	INTEGER	R/O	△
tcpConnLocalAddress	tcpConnEntry.2	IpAddress	R/O	○
tcpConnLocalPort	tcpConnEntry.3	INTEGER	R/O	○
tcpConnRemAddress	tcpConnEntry.4	IpAddress	R/O	○
tcpConnRemPort	tcpConnEntry.5	INTEGER	R/O	○
tcpInErrs	tcp.14	Counter	R/O	○
tcpOutRsts	tcp.15	Counter	R/O	○

Table 12-10　udp group

MIB	OID	SYNTAX	ACCESS	SUPPORT
udpInDatagrams	udp.1	Counter	R/O	○
udpNoPorts	udp.2	Counter	R/O	○
udpInErrors	udp.3	Counter	R/O	○
udpOutDatagrams	udp.4	Counter	R/O	○
udpTable	udp.5	Aggregate	-	○
udpEntry	udpTable.1	Aggregate	-	○
udpLocalAddress	udpEntry.1	IpAddress	R/O	○
udpLocalPort	udpEntry.2	INTEGER	R/O	○

Table 12-11　snmp group

MIB	OID	SYNTAX	ACCESS	SUPPORT
snmpInPkts	snmp.1	Counter	R/O	○
snmpOutPkts	snmp.2	Counter	R/O	○
snmpInBadVersions	snmp.3	Counter	R/O	○
snmpInBadCommunityNames	snmp.4	Counter	R/O	○
snmpInBadCommunityUses	snmp.5	Counter	R/O	○

MIB	OID	SYNTAX	ACCESS	SUPPORT
snmpInASNParseErrs	snmp.6	Counter	R/O	○
snmpInTooBigs	snmp.8	Counter	R/O	○
snmpInNoSuchNames	snmp.9	Counter	R/O	○
snmpInBadValues	snmp.10	Counter	R/O	○
snmpInReadOnlys	snmp.11	Counter	R/O	○
snmpInGenErrs	snmp.12	Counter	R/O	○
snmpInTotalReqVars	snmp.13	Counter	R/O	○
snmpInTotalSetVars	snmp.14	Counter	R/O	○
snmpInGetRequests	snmp.15	Counter	R/O	○
snmpInGetNexts	snmp.16	Counter	R/O	○
snmpInSetRequests	snmp.17	Counter	R/O	○
snmpInGetResponses	snmp.18	Counter	R/O	○
snmpInTraps	snmp.19	Counter	R/O	○
snmpOutTooBigs	snmp.20	Counter	R/O	○
snmpOutNoSuchNames	snmp.21	Counter	R/O	○
snmpOutBadValues	snmp.22	Counter	R/O	○
snmpOutGenErrs	snmp.24	Counter	R/O	○
snmpOutGetRequests	snmp.25	Counter	R/O	○
snmpOutGetNexts	snmp.26	Counter	R/O	○
snmpOutSetRequests	snmp.27	Counter	R/O	○
snmpOutGetResponses	snmp.28	Counter	R/O	○
snmpOutTraps	snmp.29	Counter	R/O	○
snmpEnableAuthenTraps	snmp.30	IpAddress	R/W	○

12.2.4   Enterprise MIB

● **Enterprise Number**

The Enterprise Number of LEADER ELECTRONICS CORP. is 20111.
iso(1).org(3).dod(6).internet(1).private(4).enterprises(1).leader(20111)

● **Enterprise MIB File**

Obtain the enterprise MIB file using your PC Web browser.
Connect the LV 5838 to your PC, open a Web browser, and enter "http://IP address assigned to the LV 5838" in the address bar. The following web browsers have been confirmed to work.

• Internet Explorer Ver.8.0
• Mozilla Firefox Ver.15.0
• Google Chrome Ver.21.0
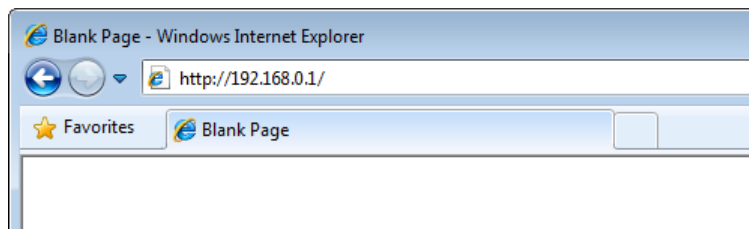
Figure 12-3   Entering the IP address

When the following page appears, right-click "DOWNLOAD," and click "Save Link As." Check that the extension is ".my." If it is set to any other extension, specify ".my."
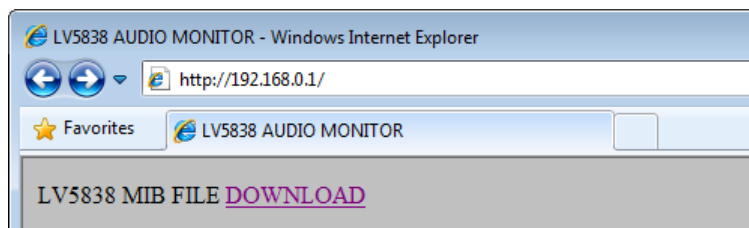
Figure 12-4   Saving the enterprise MIB file

● **Enterprise MIB Structure**

The enterprise MIB structure is shown below.

leader OBJECT IDENTIFIER ::= { enterprises 20111 }
lv5838 OBJECT IDENTIFIER ::= { leader 25 }
lv5838ST1 OBJECT IDENTIFIER ::= { lv5838 1 }
l25panelTBL OBJECT IDENTIFIER ::= { lv5838ST1 1 }   <-- Panel key
l25assignTBL OBJECT IDENTIFIER ::= { lv5838ST1 2 }   <-- Assign menu
l25modeTBL OBJECT IDENTIFIER ::= { lv5838ST1 3 }   <-- Mode menu
l25sysTBL OBJECT IDENTIFIER ::= { lv5838ST1 4 }   <-- System menu
l25trapTBL OBJECT IDENTIFIER ::= { lv5838ST1 5 }   <-- Trap information

● **ACCESS**

In the tables, "ACCESS" indicates the following:

	Indication	Description
ACCESS	R/W	Information that can be read and written from the SNMP managers.

Table 12-12　l25panelTBL(1) group

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l25plInput	l25panelTBL.1	INTEGER	R/W	1 = a 2 = b
l25plAes	l25panelTBL.2	INTEGER	R/W	1 = sdi 2 = ext
l25plWin	l25panelTBL.3	INTEGER	R/W	1 = win1 2 = win2
l25plMulti	l25panelTBL.4	INTEGER	R/W	1 = single 2 = multi
l25plLoudness	l25panelTBL.5	INTEGER	R/W	1 = start 2 = pause

Table 12-13　l25assignTBL(2) group

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l25assignModeGroup1	l25assignTBL.1	INTEGER	R/W	2 = mono 3 = stereo 4 = 5.1 5 = 5.1_dm 6 = custom
l25assignModeGroup2	l25assignTBL.2	INTEGER	R/W	1 = off 2 = mono 3 = stereo 4 = 5.1 5 = 5.1_dm 6 = custom
l25assignPhonesL	l25assignTBL.3	INTEGER	R/W	1 = ch1 (Omitted) 16 = ch16 17 = dolby1 (Omitted) 24 = dolby8 25 = dolby_aux
l25assignPhonesR	l25assignTBL.4	INTEGER	R/W	1 = ch1 (Omitted) 16 = ch16 17 = dolby1 (Omitted) 24 = dolby8 25 = dolby_aux

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l25assignAuxCh	l25assignTBL.5	INTEGER	R/W	1 = lt_rt 2 = lo_ro 3 = mono 4 = mute
l25assignAuxChDrc	l25assignTBL.6	INTEGER	R/W	1 = line 2 = rf
l25assignGroup1TBL	l25assignTBL.7	Aggregate	-	-
l25assignGroup1L	l25assignGroup1TBL.1	INTEGER	R/W	1 = ch1 (Omitted) 16 = ch16 17 = non_connect
l25assignGroup1R	l25assignGroup1TBL.2	INTEGER	R/W	1 = ch1 (Omitted) 16 = ch16 17 = non_connect
l25assignGroup1C	l25assignGroup1TBL.3	INTEGER	R/W	1 = ch1 (Omitted) 16 = ch16 17 = non_connect
l25assignGroup1Lfe	l25assignGroup1TBL.4	INTEGER	R/W	1 = ch1 (Omitted) 16 = ch16 17 = non_connect
l25assignGroup1Ls	l25assignGroup1TBL.5	INTEGER	R/W	1 = ch1 (Omitted) 16 = ch16 17 = non_connect
l25assignGroup1Rs	l25assignGroup1TBL.6	INTEGER	R/W	1 = ch1 (Omitted) 16 = ch16 17 = non_connect
l25assignGroup2TBL	l25assignTBL.8	Aggregate	-	-
l25assignGroup2L	l25assignGroup2TBL.1	INTEGER	R/W	1 = ch1 (Omitted) 16 = ch16 17 = non_connect
l25assignGroup2R	l25assignGroup2TBL.2	INTEGER	R/W	1 = ch1 (Omitted) 16 = ch16 17 = non_connect
l25assignGroup2C	l25assignGroup2TBL.3	INTEGER	R/W	1 = ch1 (Omitted) 16 = ch16 17 = non_connect
l25assignGroup2Lfe	l25assignGroup2TBL.4	INTEGER	R/W	1 = ch1 (Omitted)

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				16 = ch16
				17 = non_connect
l25assignGroup2Ls	l25assignGroup2TBL.5	INTEGER	R/W	1 = ch1
				(Omitted)
				16 = ch16
				17 = non_connect
l25assignGroup2Rs	l25assignGroup2TBL.6	INTEGER	R/W	1 = ch1
				(Omitted)
				16 = ch16
				17 = non_connect

Table 12-14   l25modeTBL(3) group

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l25modeDisplay	l25modeTBL.1	INTEGER	R/W	1 = meter
				2 = lissajou
				3 = surround
				4 = loudness
				5 = status
l25modeMeterTBL	l25modeTBL.2	Aggregate	-	-
l25modeMeterResponse	l25modeMeterTBL.1	INTEGER	R/W	1 = truepeak
				2 = ppm1
				3 = ppm2
				4 = vu
l25modeMeterPeakHold	l25modeMeterTBL.2	INTEGER	R/W	1 = off
				2 = truepeak
				3 = ppm1
				4 = ppm2
l25modeMeterPeakHold_time	l25modeMeterTBL.3	INTEGER	R/W	1 = 0.0
				2 = 0.5
				3 = 1.0
				4 = 2.0
				5 = 3.0
				6 = 4.0
				7 = 5.0
				8 = hold
l25modeMeterScaleMag	l25modeMeterTBL.4	INTEGER	R/W	1 = off
				2 = on
l25modeMeterGroup	l25modeMeterTBL.5	INTEGER	R/W	1 = group1
				2 = group2
				3 = all
				4 = 1-8
				5 = 9-16
l25modeLissaTBL	l25modeTBL.3	Aggregate	-	-
l25modeLissaMono	l25modeLissaTBL.1	INTEGER	R/W	1 = ch1
				(Omitted)
				16 = ch16

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MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l25modeLissaL	l25modeLissaTBL.2	INTEGER	R/W	1 = ch1 (Omitted) 16 = ch16
l25modeLissaR	l25modeLissaTBL.3	INTEGER	R/W	1 = ch1 (Omitted) 16 = ch16
l25modeLissaAutoGain	l25modeLissaTBL.4	INTEGER	R/W	1 = on 2 = off
l25modeLissaGroup	l25modeLissaTBL.5	INTEGER	R/W	1 = group1 2 = group2 3 = all 4 = 1-8 5 = 9-16
l25modeSurrTBL	l25modeTBL.4	Aggregate	-	-
l25modeSurrDisplay	l25modeSurrTBL.1	INTEGER	R/W	1 = both 2 = lissajou 3 = surround
l25modeSurrMode	l25modeSurrTBL.2	INTEGER	R/W	1 = normal 2 = phantom
l25modeSurrAutoGain	l25modeSurrTBL.3	INTEGER	R/W	1 = on 2 = off
l25modeSurrGroup	l25modeSurrTBL.4	INTEGER	R/W	1 = group1 2 = group2
l25modeLoudTBL	l25modeTBL.5	Aggregate	-	-
l25modeLoudDisplay	l25modeLoudTBL.1	INTEGER	R/W	1 = chart 2 = bar 3 = num 4 = meter 5 = num_only
l25modeLoudScale	l25modeLoudTBL.2	INTEGER	R/W	1 = off 2 = 1min 3 = 4min 4 = 10min 5 = 30min 6 = 1hour 7 = 2hour 8 = 4hour 9 = 6hour 10 = 12hour 11 = 24hour
l25modeLoudScaleChart	l25modeLoudTBL.3	INTEGER	R/W	2 = 1min 3 = 4min 4 = 10min 5 = 30min 6 = 1hour 7 = 2hour

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				8 = 4hour
				9 = 6hour
				10 = 12hour
				11 = 24hour
l25modeLoudStyle	l25modeLoudTBL.4	INTEGER	R/W	1 = vert
				2 = hori
l25modeLoudScaleMagBar	l25modeLoudTBL.5	INTEGER	R/W	1 = off
				2 = wide
				3 = narrow
l25modeLoudScaleMagMeter	l25modeLoudTBL.6	INTEGER	R/W	2 = wide
				3 = narrow
l25modeLoudGroup	l25modeLoudTBL.7	INTEGER	R/W	1 = group1
				2 = group2
l25modeLoudSelect	l25modeLoudTBL.8	INTEGER	R/W	1 = momentary
				2 = shortterm
				3 = integrated
				4 = all
l25modeStatusTBL	l25modeTBL.6	Aggregate	-	-
l25modeStatusMode	l25modeStatusTBL.1	INTEGER	R/W	1 = aud_sec
				2 = sdi-sec
				3 = eventlog
				4 = phy
				6 = loud_log
l25modeStatusDisplay	l25modeStatusTBL.2	INTEGER	R/W	1 = aud_status
				2 = ch_status
				3 = userbit
				4 = dolby_meta
				5 = dolby_ebi
l25modeStatusScale	l25modeStatusTBL.3	INTEGER	R/W	1 = 50ms
				2 = 100ms
				3 = 500ms
				4 = 1.0s
				5 = 2.5s
l25modeStatusSource	l25modeStatusTBL.4	INTEGER	R/W	1 = aesebu
				2 = sdi_anc
l25modeStatusChStatusTBL	l25modeStatusTBL.5	Aggregate	-	-
l25modeStatusChStatusCh	l25modeStatusChStatusTBL.1	STRING	R/W	1 to 16
l25modeStatusChStatusAlign	l25modeStatusChStatusTBL.2	INTEGER	R/W	1 = lsb
				2 = msb
l25modeStatusUsrBitTBL	l25modeStatusTBL.6	Aggregate	-	-
l25modeStatusUserBitCh	l25modeStatusUserBitTBL.1	STRING	R/W	1 to 16
l25modeStatusUserBitAlign	l25modeStatusUserBitTBL.2	INTEGER	R/W	1 = lsb
				2 = msb
l25modeStatusEventlog	l25modeStatusTBL.7	INTEGER	R/W	1 = stop
				2 = start
l25modeStatusPhySource	l25modeStatusTBL.8	INTEGER	R/W	1 = ch1/2

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				2 = ch3/4
				3 = ch5/6
				4 = ch7/8
				5 = ch9/10
				6 = ch11/12
				7 = ch13/14
				8 = ch15/16
				9 = ext-sync
l25modeStatusMetaProgram	l25modeStatusTBL.9	INTEGER	R/W	1 = prm1
				2 = prm2
				3 = prm3
				4 = prm4
				5 = prm5
				6 = prm6
				7 = prm7
				8 = prm8
l25modeStatusEbiProgram	l25modeStatusTBL.10	INTEGER	R/W	1 = prm1
				2 = prm2
				3 = prm3
				4 = prm4
				5 = prm5
				6 = prm6
				7 = prm7
				8 = prm8

Table 12-15　l25sysTBL(4) group

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l25sysExternalTBL	l25sysTBL.1	Aggregate	-	-
l25sysExternalSdi	l25sysExternalTBL.1	INTEGER	R/W	1 = input
				2 = output
l25sysExternalAes	l25sysExternalTBL.2	INTEGER	R/W	1 = input
				2 = output
l25sysTimecode	l25sysTBL.2	INTEGER	R/W	1 = off
				2 = ltc
				3 = vitc
				4 = d_vitc
				5 = aesebu
				6 = ltc_ext
l25sysSrcTBL	l25sysTBL.3	Aggregate	-	-
l25sysSrcFlag	l25sysSrcTBL.1	INTEGER	R/W	1 = on
				2 = off
l25sysSrcCh	l25sysSrcTBL.2	INTEGER	R/W	1 = ch1_2
				2 = ch3_4
				3 = ch5_6
				4 = ch7_8
				5 = ch9_10

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				6 = ch11_12
				7 = ch13_14
				8 = ch15_16
				9 = internal
l25sysExtref	l25sysTBL.4	INTEGER	R/W	1 = video_sync
				2 = wordclock
				3 = cw
l25sysExtrefClock	l25sysTBL.5	INTEGER	R/W	1 = 48khz
				2 = 44.1khz
				3 = 32khz
l25sysExtrefTermination	l25sysTBL.6	STRING	R/W	1 = 75
				2 = 20k
l25sysLogMode	l25sysTBL.7	INTEGER	R/W	1 = overwrite
				2 = stop
l25sysSettingWarning	l25sysTBL.8	STRING	R/W	-40 to 0
l25sysSettingRefrence	l25sysTBL.9	STRING	R/W	-40 to 0
l25sysScale	l25sysTBL.10	INTEGER	R/W	1 = dbfs
				2 = nordic
				3 = din4 = bbc
l25sysLoudTBL	l25sysTBL.11	Aggregate	-	-
l25sysLoudMeasure	l25sysLoudTBL.1	INTEGER	R/W	1 = bs1770-2
				2 = arib
				3 = ebu
				4 = atsc
				5 = custom
l25sysLoudTargetLevel	l25sysLoudTBL.2	STRING	R/W	-99 to 0
l25sysLoudLfeGain	l25sysLoudTBL.3	STRING	R/W	0 to 10 (in steps of 0.5)
l25sysLoudBlockSize	l25sysLoudTBL.4	STRING	R/W	200 to 30000 (in steps of 50)
l25sysLoudOverlapSize	l25sysLoudTBL.5	STRING	R/W	0 to 99
l25sysLoudAbsolute	l25sysLoudTBL.6	INTEGER	R/W	1 = on 2 = off
l25sysLoudAbsoluteLevel	l25sysLoudTBL.7	STRING	R/W	-99 to 0
l25sysLoudRelative	l25sysLoudTBL.8	INTEGER	R/W	1 = on 2 = off
l25sysLoudRelativeLevel	l25sysLoudTBL.9	STRING	R/W	-99 to 0
l25sysLoudShorttermAverage	l25sysLoudTBL.10	STRING	R/W	200 to 30000 (in steps of 50)
l25sysLoudMomentaryAverage	l25sysLoudTBL.11	STRING	R/W	100 to 1000 (in steps of 25)
l25sysLoudRangeAverage (to be supported in the future)	l25sysLoudTBL.12	STRING	R/W	200 to 30000 (in steps of 50)
l25sysLoudRangeOverlap (to be supported in the future)	l25sysLoudTBL.13	STRING	R/W	0 to 99

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l25sysLoudMarkOver	l25sysLoudTBL.14	INTEGER	R/W	1 = on 2 = off
l25sysLoudMarkRelative	l25sysLoudTBL.15	INTEGER	R/W	1 = on 2 = off
l25sysErrorTBL	l25sysTBL.12	Aggregate	-	-
l25sysErrorOver	l25sysErrorTBL.1	INTEGER	R/W	1 = on 2 = off
l25sysErrorOverLevel	l25sysErrorTBL.2	STRING	R/W	0 to 99
l25sysErrorClip	l25sysErrorTBL.3	INTEGER	R/W	1 = on 2 = off
l25sysErrorClipDuration	l25sysErrorTBL.4	STRING	R/W	1 to 100
l25sysErrorMute	l25sysErrorTBL.5	INTEGER	R/W	1 = on 2 = off
l25sysErrorMuteDuration	l25sysErrorTBL.6	STRING	R/W	1 to 100 (in steps of 10)
l25sysErrorMuteLevel	l25sysErrorTBL.7	STRING	R/W	-99 to -60
l25sysErrorSilent	l25sysErrorTBL.8	INTEGER	R/W	1 = on 2 = off
l25sysErrorSilentDuration	l25sysErrorTBL.9	STRING	R/W	1 to 5000 (in steps of 10)
l25sysErrorFrame (to be supported in the future)	l25sysErrorTBL.10	INTEGER	R/W	1 = on 2 = off
l25sysErrorFrameGuardband (to be supported in the future)	l25sysErrorTBL.11	INTEGER	R/W	1 = rdd6 2 = custom
l25sysErrorFrameSdMin (to be supported in the future)	l25sysErrorTBL.12	STRING	R/W	8 to 30
l25sysErrorFrameSdMax (to be supported in the future)	l25sysErrorTBL.13	STRING	R/W	8 to 30
l25sysErrorFrameHdMin (to be supported in the future)	l25sysErrorTBL.14	STRING	R/W	8 to 30
l25sysErrorFrameHdMax (to be supported in the future)	l25sysErrorTBL.15	STRING	R/W	8 to 30
l25sysErrorParity	l25sysErrorTBL.16	INTEGER	R/W	1 = on 2 = off
l25sysErrorValildity	l25sysErrorTBL.17	INTEGER	R/W	1 = on 2 = off
l25sysErrorCrc	l25sysErrorTBL.18	INTEGER	R/W	1 = on 2 = off
l25sysErrorDolbyCrc	l25sysErrorTBL.19	INTEGER	R/W	1 = on 2 = off
l25sysErrorAudioBch	l25sysErrorTBL.20	INTEGER	R/W	1 = on 2 = off
l25sysErrorAudioParity	l25sysErrorTBL.21	INTEGER	R/W	1 = on 2 = off
l25sysErrorAudioDbn	l25sysErrorTBL.22	INTEGER	R/W	1 = on

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
				2 = off
l25sysErrorAudioInhibit	l25sysErrorTBL.23	INTEGER	R/W	1 = on 2 = off
l25sysErrorAudioSample	l25sysErrorTBL.24	INTEGER	R/W	1 = on 2 = off
l25sysDolbyTBL	l25sysTBL.13	Aggregate	-	-
l25sysDolbyModule	l25sysDolbyTBL.1	INTEGER	R/W	1 = off 2 = dolby-e 3 = dolby-digital 4 = dolby-digital-plus
l25sysDolbyInput	l25sysDolbyTBL.2	INTEGER	R/W	1 = ch1_2 2 = ch3_4 3 = ch5_6 4 = ch7_8 5 = ch9_10 6 = ch11_12 7 = ch13_14 8 = ch15_16
l25sysDolbyE_Dialonorm	l25sysDolbyTBL.3	INTEGER	R/W	1 = off 2 = on
l25sysDolbyE_Pulldown	l25sysDolbyTBL.4	INTEGER	R/W	1 = off 2 = on
l25sysDolbyDigitalListening	l25sysDolbyTBL.5	INTEGER	R/W	1 = full 2 = ex 3 = 3stereo 4 = phantom 5 = stereo 6 = mono
l25sysDolbyDigitalPrologic	l25sysDolbyTBL.6	INTEGER	R/W	1 = off 2 = on
l25sysDolbyDigitalDrc	l25sysDolbyTBL.7	INTEGER	R/W	1 = bypass 2 = line 3 = rf

Table 12-16   l25trapTBL(5) group

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l25trapStrTBL	l25trapTBL.1	Aggregate	-	- (Variable BindingList)
l25trapIpTBL	l25trapTBL.2	Aggregate	-	-
l25trapIp1TBL	l25trapIpTBL 1	Aggregate	-	-
l25trapManagerIp1	l25trapIp1TBL 1	IpAddress	R/W	Trap transmission destination manager IP address 1
l25trapManagerIp1Act	l25trapIp1TBL 2	IpAddress	R/W	1 = disable 2 = enable
l25trapIp2TBL	l25trapIpTBL 2	Aggregate	-	-

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
l25trapManagerIp2	l25trapIp2TBL 1	IpAddress	R/W	Trap transmission destination manager IP address 2
l25trapManagerIp2Act	l25trapIp2TBL 2	IpAddress	R/W	1 = disable 2 = enable
l25trapIp3TBL	l25trapIpTBL 3	Aggregate	-	-
l25trapManagerIp3	l25trapIp3TBL 1	IpAddress	R/W	Trap transmission destination manager IP address 3
l25trapManagerIp3Act	l25trapIp3TBL 2	IpAddress	R/W	1 = disable 2 = enable
l25trapIp4TBL	l25trapIpTBL 4	Aggregate	-	-
l25trapManagerIp4	l25trapIp4TBL 1	IpAddress	R/W	Trap transmission destination manager IP address 4
l25trapManagerIp4Act	l25trapIp4TBL 2	IpAddress	R/W	1 = disable 2 = enable

12.2.5 Extended TRAP (Variable Binding List)

● **index 1**

OID: leader(20111).lv5838(25).lv5838ST1(1).trapTBL(5).trapStrTBL(1).1.0
Syntax: Counter
Range: 1 to 4294967295 (overflow occurs if this range is exceeded)
Description: The total number of enterprise traps sent after starting up

● **index 2**

OID: leader(20111).lv5838(25).lv5838ST1(1).trapTBL(5).trapStrTBL(1).2.0
Syntax: Octet String
Range: Up to 40 characters
Description: Date and time of error occurrence and line information
YYYY/MM/DD hh:mm:ss input channel (A/B)
Example: 2012/05/01 10:08:59 A

● **index 3**

OID: leader(20111).lv5838(25).lv5838ST1(1).trapTBL(5).trapStrTBL(1).3.0
Syntax: Octet String
Range: Up to 40 characters
Description: Format information
Example: 1080sF/30

● **index 4**

OID: leader(20111).lv5838(25).lv5838ST1(1).trapTBL(5).trapStrTBL(1).4.0
Syntax: Octet String
Range: Up to 40 characters
Description: Error information (see the table below)
Example: BCH_ERR

Table 12-17   Error information

Specific Trap Type	Indication	Description
1	FAN_STOP	Fan stop detection
2	NO_SIGNAL	No signal
3	UNKNOWN	Format error detection
4	None	No error (at error recovery)
10	BCH_ERR	(SDI) BCH error detection
11	PRTY_ERR	(SDI) Parity error detection
12	DBN_ERR	(SDI) DBN error detection
13	INH_ERR	(SDI) Inhibit error detection
14	SAMPLE_ERR	(SDI) Sample Number error detection
20	AUD_OVER_ERR	(AUDIO) LevelOver error detection
21	AUD_CLIP_ERR	(AUDIO) Clip error detection
22	AUD_MUTE_ERR	(AUDIO) Mute error detection
23	AUD_SILENT_ERR	(AUDIO) Silence error detection
24	AUD_PARITY_ERR	(AUDIO) Parity error detection
25	AUD_CRC_ERR	(AUDIO) CRC error detection
26	AUD_VALIDITY_ERR	(AUDIO) Validity error detection

12.3 Time Server Function

You can configure the LV 5838 so that it periodically connects to a time server on the network and queries the time.

12.3.1 Procedure

1. **Configure the Ethernet settings on the ETHER&REMOTE tab.**

   Set Time Server to ON. Set the ETHERNET SETTING IP Address, TIME SERVER SETTING IP Address, and Time Zone. For details on Time Zone, see the next section.

   [Reference]   See section 5.2, "Configuring the Ethernet and Remote Settings."

   SYSTEM → F•1 SYSTEM SETUP → F•3 NEXT TAB →

   ```
   GENERAL   ETHER&REMOTE   ETC

   ETHERNET SETTING
           Ethernet          □DHCP  ☑IP
           IP Address        │ 192 │ 168 │  0  │  1  │   MAC ADDRESS
           Subnet Mask       │ 255 │ 255 │ 255 │  0  │      00:00:00:00:00:00
           Gateway           │  0  │  0  │  0  │  0  │

   TIME SERVER SETTING
           Time Server       ☑ON    □OFF            Time Zone
           IP Address        │ 192 │ 168 │  0  │  2  │    │ +09:00 │

   SNMP SETTING
           SNMP              □ON    ☑OFF
           ACCESS            ☑RO    □RW
           SNMP Trap         ☑OFF   □ON

   REMOTE SETTING
           Alarm Polarity    ☑Positive □Negative
           Select            ☑Recall   □Recall and 5838_02
                                       □5838_01+02
   ```

   Figure 12-5   ETHER&REMOTE tab

2. **Press F•1 COMPLETE.**

3. **Restart the LV 5838.**

   If you didn't make any changes, you do not have to restart.

4. **Connect the Ethernet port on the rear panel to the network.**

   Use a UTP cable (category 5).

   The LV 5838 connects to the NTP server at the following times.
   • When you press F•1 COMPLETE in SYSTEM SETUP
   • Once every approximately 10 minutes

   When the LV 5838 connects normally to a time server, the date and time are displayed at the upper left of the screen.
   Otherwise, "SNTP:ERR" appears in the top row, and the time that was set up to that point appears in the bottom row.

   Normal connection   Connection error

   ```
   12/09/24                 SNTP:ERR
   16:03:51                 16:04:18
   ```
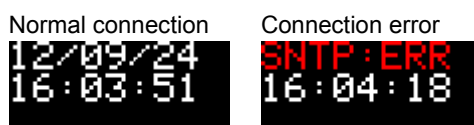
12.3.2   Time Adjustment Value

The date and time information exchanged with a time server is Coordinated Universal Time (UTC). Therefore, the time must be adjusted in accordance with the country or region where the device is used in. On the ETHER&REMOTE tab, set Time Zone to one of the following values.

Table 12-18   Time adjustment values

Country or region	Time Zone
Baker Island, Howland Island	-12:00
American Samoa, Niue	-11:00
Hawaii, Western part of Aleutian Islands	-10:00
French Polynesia, Marquesas Islands	-09:30
Alaska	-09:00
United States, Canada, Mexico (Pacific Time Zone)	-08:00
United States, Canada, Mexico (Mountain Time Zone)	-07:00
United States, Canada, Mexico (Central Time Zone)	-06:00
United States, Canada (Eastern Time Zone), Cuba, Peru	-05:00
Venezuela	-04:30
Canada (Atlantic Time Zone), most of Lesser Antilles, Brazil (Amazon Time), Chile	-04:00
Canada (Newfoundland)	-03:30
Brazil (Brazilian Time), Argentina, Greenland	-03:00
Brazil (Fernando de Noronha)	-02:00
Azores, Cape Verde	-01:00
United Kingdom, Ireland, Portugal, Iceland, Morocco (East Africa), Ghana, etc.	00:00
Central European Time (France, Germany, etc.), West Africa Time (Nigeria, Congo, etc.)	+01:00
Eastern European Time (Finland, Greece, etc.), Central Africa Time, South Africa	+02:00
Russia (Kaliningrad Oblast), Ukraine, Belarus, Saudi Arabia, Eastern Africa Time	+03:00
Iran	+03:30
Russia (Moscow), Azerbaijan, Georgia, United Arab Emirates, Mauritius	+04:00
Afghanistan	+04:30
Pakistan	+05:00
India	+05:30
Nepal	+05:45
Russia (Yekaterinburg), Kazakhstan, Bangladesh	+06:00
Myanmar, Cocos Islands	+06:30
Russia (Omsk), Mongolia, Thailand, Vietnam, Djakarta	+07:00
Russia (Krasnoyarsk), China, Mongolia, Malaysia, Australia (Western Australia)	+08:00
Australia (Eucla)	+08:45
Russia (Irkutsk), Korea, Japan, Palau	+09:00
Australia (Northern Territory, South Australia)	+09:30
Russia (Yakutsk), Guam, Eastern Australia Time	+10:00
Australia (Lord Howe)	+10:30
Russia (Vladivostok), Solomon Islands, New Caledonia	+11:00
Russia (Magadan), New Zealand, Fiji, Kiribati (Gilbert Islands)	+12:00
New Zealand (Chatham Islands)	+12:45
Tonga, Kiribati (Phoenix Islands), Samoa	+13:00

Country or region	Time Zone
Kiribati (Line Islands), Tokelau	+14:00

13. REFERENCE MATERIAL

13.1 Menu Tree

The menus that are displayed vary depending on the LV 5838 settings and whether a USB memory device is connected to the LV 5838.

13.1.1 Mode Menu

```
MODE ─┬─ F1  DISPLAY        ( METER / LISSAJOU / SURROUND / LOUDNESS / STATUS )
      │
      ├─ F2  METER    ─┬─ F1  RESPONSE       ( TRUEPEAK / PPM(I) / PPM(II) / VU )
      │     SETUP      │
      │                ├─ F2  PEAKHOLD       ( OFF / TRUEPEAK / PPM(I) / PPM(II) )
      │                │
      │                ├─ F3  PEAKHOLD       ( 0.0 / 0.5 / 1.0 / 2.0 / 3.0 / 4.0 / 5.0 / HOLD )
      │                │      TIME
      │                ├─ F4  PEAKHOLD
      │                │      RESET
      │                ├─ F5  SCALE MAG      ( OFF / ON )
      │                │
      │                ├─ F6  GROUP          ( GROUP1 / GROUP2 / ALL / 1-8 / 9-16 )
      │                │
      │                └─ F7  UP MENU
      │
      ├─ F2  LISSAJOU ─┬─ F2  LCH            ( CH 1 - CH16 / D1 - D8 / Lt )
      │     SETUP      │
      │                ├─ F3  RCH            ( CH 1 - CH16 / D1 - D8 / Rt )
      │                │
      │                ├─ F4  METER
      │                │      SETUP
      │                ├─ F5  AUTOGAIN       ( ON / OFF )
      │                │
      │                ├─ F6  GROUP          ( GROUP1 / GROUP2 / ALL / 1-8 / 9-16 )
      │                │
      │                └─ F7  UP MENU
      │
      ├─ F3  SURROUND ─┬─ F1  DISPLAY        ( BOTH / LISSAJOU / SURROUND )
      │     SETUP      │
      │                ├─ F2  SURROUND       ( NORMAL / PHANTOM )
      │                │      MODE
      │                ├─ F4  METER
      │                │      SETUP
      │                ├─ F5  AUTOGAIN       ( ON / OFF )
      │                │
      │                ├─ F6  GROUP          ( GROUP1 / GROUP2 )
      │                │
      │                └─ F7  UP MENU
      │
      └─ F4  LOUDNESS ─┬─ F1  DISPLAY        ( CHART / BAR / NUM / NUM ONLY / METER )
            SETUP      │
                       ├─ F2  CHART          ( OFF / 1min / 4min / 10min / 30min / 1hour /
                       │      SCALE            2hour / 4hour / 6hour / 12hour / 24hour )
                       ├─ F2  LOUDNESS       ( INTEGRATED / MOMENTARY / SHORTTERM / ALL )
                       │      SELECT
                       ├─ F3  STYLE          ( VERT / HORI )
                       │
                       ├─ F4  INSERT   ─┬─ F1  COMPLETE
                       │      SETTING   │
                       │                ├─ F2  PREV
                       │                │      TAB
                       │                ├─ F3  NEXT
                       │                │      TAB
                       │                └─ F7  UP MENU
                       │
                       ├─ F5  SCALE MAG      ( OFF / WIDE / NARROW )
                       │
                       ├─ F6  GROUP          ( GROUP1 / GROUP2 )
                       │
                       └─ F7  UP MENU
```

```
└─[F4] STATUS      ─┬─[F1] DISPLAY    ( AUD-SEC / SDI-SEC / EVENTLOG / dBTP LOG / PHY )
        SETUP       │         MODE
                    │
                    ├─[F2] DISPLAY    ( AUD-STATUS / CH-STATUS / USERBIT / DOLBY-META / DOLBY-EBI )
                    │
                    ├─[F2] USBSTORE
                    │
                    ├─[F2] SOURCE     ( CH1/2 / CH3/4 / CH5/6 / CH7/8 / CH9/10 /
                    │                   CH11/12 / CH13/14 / CH15/16 / EXT-SYNC )
                    │
                    ├─[F3] LOG        ( STOP / START )
                    │
                    ├─[F4] ERROR
                    │         CLEAR
                    │
                    ├─[F4] LOG
                    │         CLEAR
                    │
                    ├─[F6] ALIGN      ( LSB 1st / MSB 1st )
                    │
                    └─[F7] UP MENU
```

13.1.2   System Menu

```
[SYSTEM] ─┬─[F1] SYSTEM    ─┬─[F1] COMPLETE
          │        SETUP     ├─[F2] PREV
          │                  │         TAB
          │                  ├─[F3] NEXT
          │                  │         TAB
          │                  └─[F7] UP MENU
          │
          ├─[F2] BEHAVIOR  ─┬─[F1] COMPLETE
          │        SETUP     ├─[F2] PREV
          │                  │         TAB
          │                  ├─[F3] NEXT
          │                  │         TAB
          │                  └─[F7] UP MENU
          │
          ├─[F3] TIME      ─┬─[F1] COMPLETE
          │        SETUP     └─[F7] UP MENU
          │
          ├─[F6] SYSTEM    ───[F7] UP MENU
          │        INFO
          │
          └─[F7] INITIAL- ─┬─[F1] INIT
                   IZE      │         YES
                            └─[F3] INIT
                                      CANCEL
```

13.1.3   Assign Menu

```
┌────────┐      ┌──┐
│ ASSIGN │──────│F1│ GROUP1    ( MONO / STEREO / 5.1 / 5.1_DM / CUSTOM )
└────────┘      └──┘
                ┌──┐
          ──────│F2│ GROUP2    ( OFF / MONO / STEREO / 5.1 / 5.1_DM / CUSTOM )
                └──┘
                ┌──┐ CHANNEL          ┌──┐
          ──────│F3│ SETTING ─────────│F1│ COMPLETE
                └──┘                  └──┘
                                      ┌──┐ PREV
                                 ─────│F2│ TAB
                                      └──┘
                                      ┌──┐ NEXT
                                 ─────│F3│ TAB
                                      └──┘
                                      ┌──┐
                                 ─────│F7│ UP MENU
                                      └──┘
                ┌──┐
          ──────│F4│ PHONES L  ( 1 - 16 / D1 - D8 / DAUX )
                └──┘
                ┌──┐
          ──────│F5│ PHONES R  ( 1 - 2 - 16 / D1 - D8 / DAUX )
                └──┘
                ┌──┐
          ──────│F6│ AUX CH    ( LT/RT / LO/RO / MONO / MUTE )
                └──┘
                ┌──┐ AUX CH
          ──────│F7│ DRC       ( LINE / RF )
                └──┘
```

13.2 Firmware Update History

This manual was written for firmware version 2.1.
You can view the firmware version by pressing F•6 SYSTEM INFO on the system menu.

● **Ver. 2.1**

• The Dolby option is now supported.

● **Ver. 2.0**

• A feature that displays clip, mute, and silence errors has been added.

● **Ver. 1.7**

• On the PHY status display, a feature that displays physical sampling frequencies has been added.

● **Ver. 1.5**

• On the loudness display, a display mode that shows only the measured values with large characters have been added.
• On the loudness display, a feature that overwrites a portion of the measured results and recalculates the entire data has been added.
• On the loudness display, a feature that indicates true peaks that exceed the threshold has been added. (5.1 DM will be supported in the future.)
• On the loudness display, a display for recording true peaks that exceed the threshold to the log has been added.
• On the loudness display, a feature that indicates relative gating that is less than or equal to the threshold has been added.
• On the loudness display, a feature that records loudness data sequentially to a USB memory device has been added.
• On the loudness display, the duration of the log when only one input is used has been expanded to 24 hours (12 hours for two inputs).

● **Ver. 1.3**

• The meter on the loudness display now displays a larger green target level range for easier viewing.

● **Ver. 1.2**

• LTC INPUT is now supported.
• Real time has been added as one of the loudness display measurement triggers.

所含有毒有害物质信息

部件号码: LV 5837/LV 5838

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

产品中有毒有害物质或元素的名称及含量

部件名称 Parts	有毒有害物质或元素　Hazardous Substances in each Part					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
实装基板	✕	○	○	○	○	○
主体部	✕	○	○	○	○	○
液晶显示模组	○	○	○	○	○	○
风扇	✕	○	○	○	○	○
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。

Ver.2