

**LV 7770**

MULTI RASTERIZER

(Digital Audio Unit)

**LV 7770 OP70**

16CH DIGITAL AUDIO ADAPTER

**LV 5770SER42**

ANALOG AUDIO

## FUNCTION MENU EXPLANATIONS

# TABLE OF CONTENTS

1.	INTRODUCTION .....	1
1.1	About This Manual .....	1
1.2	About Terminology Used in this Manual .....	1
2.	AUDIO DISPLAY .....	2
2.1	Configuring Measurement Signal Settings .....	3
2.1.1	Selecting the Signal to Measure .....	3
2.1.2	Selecting the Channels to Measure .....	4
2.1.3	Selecting the Number of Measurement Channels .....	4
2.1.4	Selecting the Stream .....	5
2.2	Selecting the Display Mode .....	5
2.3	Configuring the Dolby Settings (Option) .....	6
2.3.1	Selecting the Signal to Measure .....	6
2.3.2	Selecting the Channel to Decode .....	7
2.3.3	Turning Dialog Normalization On and Off .....	9
2.3.4	Turning Pulldown On and Off .....	9
2.3.5	Frame Location Indicator Display .....	10
2.3.6	Selecting the Listening Mode .....	12
2.3.7	Turning Prologic On and Off .....	12
2.3.8	Selecting the DRC .....	12
2.3.9	Turning Mix Mode On and Off .....	12
3.	METER DISPLAY .....	13
3.1	Selecting the Scale .....	13
3.2	Setting the Response Model .....	13
3.3	Setting the Peak Hold .....	14
3.4	Setting the Reference Level .....	14
3.5	Mapping Channels .....	15
4.	LISSAJOUS DISPLAY .....	16
4.1	Adjusting the Lissajous Curve Intensity .....	16
4.2	Adjusting the Scale Intensity .....	16
4.3	Selecting the Lissajous Curve Display Format .....	17
4.4	Selecting the Scale Display Format .....	18
4.5	Setting the Lissajous Curve Gain .....	18
4.6	Mapping Channels .....	19
5.	SURROUND DISPLAY .....	22
5.1	Adjusting the Surround Waveform Intensity .....	22
5.2	Adjusting the Scale Intensity .....	22
5.3	Selecting the Surround Display Format .....	22
5.4	Setting the Surround Waveform Gain .....	23

5.5	Mapping Channels .....	24
6.	AUDIO STATUS DISPLAY .....	25
6.1	Audio Status Display Explanation .....	25
6.2	Event Log Display .....	27
6.2.1	Event Log Explanation .....	28
6.2.2	Starting Event Logging .....	30
6.2.3	Deleting the Event Log .....	30
6.2.4	Selecting the Overwrite Mode .....	30
6.2.5	Saving to a USB Memory Device .....	31
6.3	Metadata Display (Option) .....	33
6.3.1	Dolby E Metadata Display .....	33
6.3.2	Dolby E EBI Metadata Display .....	33
6.3.3	Dolby Digital Metadata Display .....	34
6.3.4	Dolby Digital EBI Metadata Display .....	35
6.4	Displaying the Channel Status .....	35
6.5	Displaying User Bits .....	36
6.6	Configuring Error Detection Settings .....	37
6.7	Resetting Errors .....	37
7.	LOUDNESS DISPLAY .....	38
7.1	Loudness Display Explanation .....	38
7.2	Selecting the Measurement Time .....	41
7.3	Clearing the Loudness Measurement .....	41
7.4	Starting and Stopping Measurements .....	42
7.5	Selecting the Scale .....	42
7.6	Configuring Loudness Settings .....	43
7.7	Saving to a USB Memory Device .....	47
7.8	Remote Control .....	50
8.	CONFIGURING THE HEADPHONE SETTING .....	52
8.1	Adjusting the Volume .....	52
8.2	Selecting the Channels to Output .....	53
8.3	Setting the AUX Channel (Option) .....	53
9.	MENU TREE .....	54

## 1. INTRODUCTION

### 1.1 About This Manual

This manual explains the audio menus that are available on an LV 7770 when the LV 7770 OP70 (16CH DIGITAL AUDIO ADAPTER), LV 5770SER42 (ANALOG AUDIO), or Dolby option is installed. For details on how to operate the LV 7770, see the LV 7770 (MULTI RASTERIZER) Instruction Manual.

### 1.2 About Terminology Used in this Manual

- **Single Input Mode**

This refers to the mode in which the SIM key is off. Press the A and B keys to switch between measuring the signal that is being applied to SDI INPUT A and the signal that is being applied to SDI INPUT B, respectively.

- **Simul mode**

This refers to the mode in which the SIM key is on. The signals that are being applied to SDI INPUT A and SDI INPUT B are measured simultaneously.

- **About the Input Format**

The input formats are written in this manual as shown below.

Table 1-1 Input format

Name	Description
HD dual link	HD-SDI dual link
3G-B (2map)	3G-SDI level B 2mapping

- **Underline ( \_ )**

Underlined options indicate the default values.

## 2. AUDIO DISPLAY

To display audio waveforms, press AUDIO.

You can measure the audio signals that are embedded in SDI signals or the audio signals that are applied to the audio I/O connectors.

For HD dual link signals, only the audio signal embedded in link A is measured.

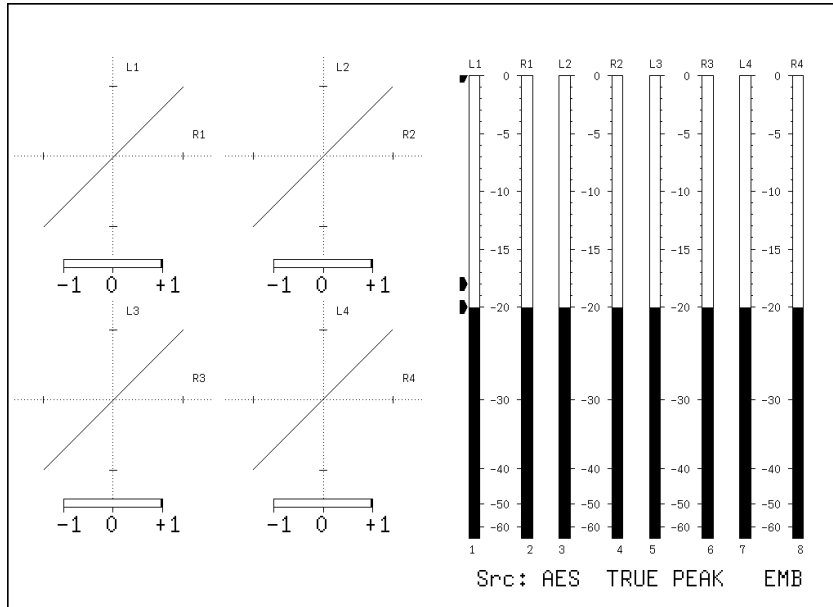


Figure 2-1 Audio display

- **Src**

"Src" (in the lower right of the screen) displays the following items in order from the left.

Table 2-1 Explanation of Src

	Display Indication	Explanation	See
1. Dolby	AES	Dolby off	2.3.1
	DE	Dolby E	
	DD	Dolby Digital	
	AES/ DE	Dolby E mix mode	2.3.9
	AES/ DD	Dolby Digital mix mode	
2. Meter response model	TRUE PEAK, PPM(I), PPM(II), VU+PPM(I), VU+PPM(II)	-	3.2
3. Measured signal	EMB	Embedded audio	2.1.1
	AES	External digital audio	
	ANA	Analog audio	

- **Menu**

Use the audio menu—which is displayed when you press the AUDIO key—to configure the audio display settings.

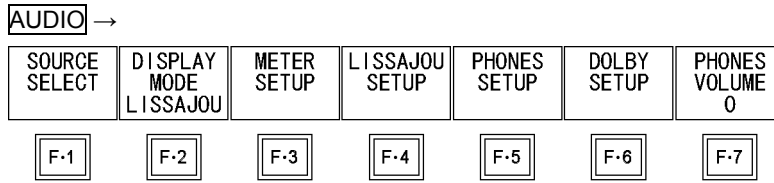


Figure 2-2 Audio menu

## 2.1 Configuring Measurement Signal Settings

To configure measurement signal settings, press **F·1** SOURCE SELECT on the audio menu. You can use this menu to set the signal to measure and the channels to measure.

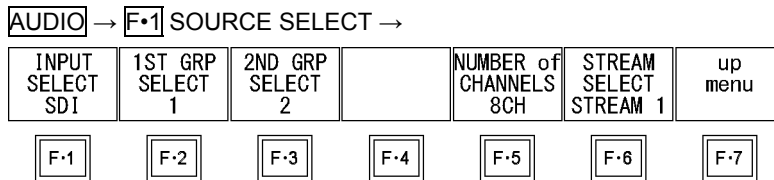


Figure 2-3 SOURCE SELECT menu

### 2.1.1 Selecting the Signal to Measure

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

#### Procedure

AUDIO → **F·1** SOURCE SELECT → **F·1** INPUT SELECT: SDI / EXT DIGI / EXT ANA

#### Settings

- |           |  |
|-----------|--|
| SDI:      | The audio signal embedded in the SDI signal is measured. “EMB” is displayed in the lower right of the screen.  |
| EXT DIGI: | <p>The digital audio signal that is applied to a DIGITAL AUDIO IN/OUT connector on the rear panel is measured. “AES” is displayed in the lower right of the screen.</p> <p>This option cannot be selected if GROUP A and GROUP B (OP70) under REAR PANEL SETUP in the system settings have both been set to OUTPUT. Simul mode is not supported. Perform this measurement with the SIM key LED turned off.</p>             |
| EXT ANA:  | <p>The analog audio signal that is applied to an ANALOG AUDIO connector on the rear panel is measured. “ANA” is displayed in the lower right of the screen. This option can be selected when an LV 5770SER42 is installed in the LV 7770 and ANALOG AUDIO under REAR PANEL SETUP in the system settings is set to INPUT.</p> <p>Simul mode is not supported. Perform this measurement with the SIM key LED turned off.</p> |

## 2.1.2 Selecting the Channels to Measure

To select the channels to measure, follow the procedure below.

## Procedure

---

AUDIO → F•1 SOURCE SELECT → F•2 1ST GRP SELECT / F•3 2ND GRP SELECT  
 → F•2 ACH GRP SELECT / F•3 BCH GRP SELECT  
 → F•2 1ST GRP PCM / F•3 2ND GRP PCM  
 → F•2 CHANNEL SELECT  
 → F•2 PCM SELECT  
 → F•5 NUMBER of CHANNELS

---

The channels that you can select vary depending on the F•1 INPUT SELECT, input mode, and F•5 NUMBER of CHANNELS settings as shown in the following table.

Table 2-2 Selecting the channels to measure

INPUT SELECT	Input Mode	NUMBER of CHANNELS	Measurement Channels	Notes
SDI	Single input mode	8CH	F•2 1ST GRP SELECT ( <u>1</u> / 2 / 3 / 4 ) F•3 2ND GRP SELECT ( 1 / <u>2</u> / 3 / 4 )	1: Ch 1 to 4 2: Ch 5 to 8
		16CH	Ch 1 to 16	3: Ch 9 to 12
	Simul mode	8CH	F•2 ACH GRP SELECT ( <u>1</u> / 2 / 3 / 4 ) F•3 BCH GRP SELECT ( 1 / 2 / <u>3</u> / 4 )	4: Ch 13 to 16
		16CH		
SDI (Dolby)	-	8CH	Ch D1 to D8	-
	Mix mode	16CH	Ch 1 to 8, ch D1 to D8	-
EXT DIGI	-	8CH	F•2 CHANNEL SELECT ( <u>GROUP A</u> / GROUP B(OP70) )	GROUP A: Ch A1 to A8 GROUP B: Ch B1 to B8
	-	16CH (OP70)	Ch A1 to A8, ch B1 to B8	-
EXT DIGI (Dolby)	-	8CH	Ch D1 to D8	-
	Mix mode	16CH	F•2 PCM SELECT ( <u>GROUP A</u> / GROUP B(OP70) ), ch D1 to D8	GROUP A: Ch A1 to A8 GROUP B: Ch B1 to B8
EXT ANA	-	8CH	Ch 1 to 8	-

## 2.1.3 Selecting the Number of Measurement Channels

In one input mode, if F•1 INPUT SELECT is set to SDI or EXT DIGI and DECODE MODE is set to OFF, to select the number of measurement channels, follow the procedure below. For other settings, the number of measurement channels are fixed as shown in the above table, and you cannot change it.

It may take up to approximately 7 seconds to switch the number of measurement channels. For information on the DECODE MODE setting, see section 2.3.1, "Selecting the Signal to Measure."

## Procedure

---

AUDIO → F•1 SOURCE SELECT → F•5 NUMBER of CHANNELS: 8CH / 16CH

---

## 2.1.4 Selecting the Stream

When the input signal is 3G-B (2map), to select the stream to measure, follow the procedure below.

Procedure

**AUDIO** → **F.1** SOURCE SELECT → **F.6** STREAM SELECT: STREAM 1 / STREAM 2

## 2.2 Selecting the Display Mode

To select the display mode, follow the procedure below.

It may take up to approximately 7 seconds to switch the display mode.

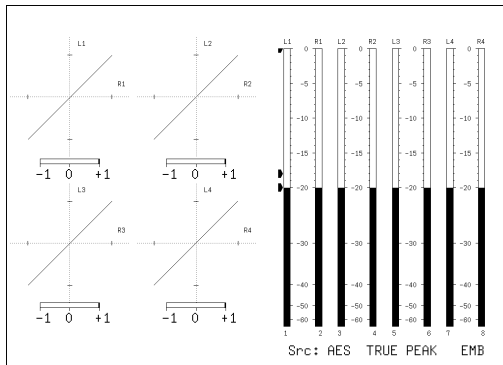
Procedure

**AUDIO** → **F.2** DISPLAY MODE: LISSAJOU / METER / SURROUND / STATUS /  
LOUDNESS

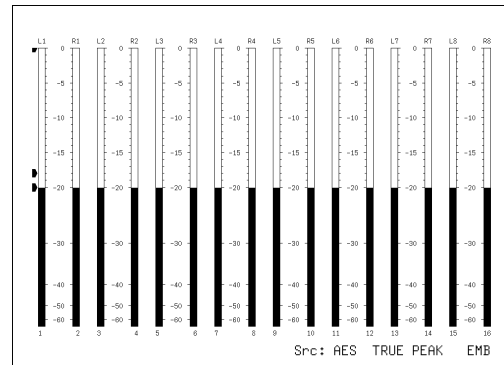
Settings

- LISSAJOU:** The Lissajous curves are displayed. During 8-channel measurement, audio meters are also displayed. During 16-channel external digital audio measurement, channels B1 to B8 are displayed as CH9 to CH16.
- METER:** The audio meters are displayed. This option cannot be selected during 8-channel measurement. During digital audio measurement, channels B1 to B8 are displayed as CH9 to CH16.
- SURROUND:** The surround display is shown on the left side of the screen, and the audio meter is displayed on the right side of the screen.  
This option cannot be selected in simul mode or 16-channel measurement.
- STATUS:** The status is displayed. During 8-channel measurement, audio meters are also displayed. During 16-channel external digital audio measurement, channels B1 to B8 are displayed as CH9 to CH16.
- LOUDNESS:** The loudness values are displayed on a chart, on a meter, and as values.  
This option cannot be selected in simul mode or 16-channel measurement.

DISPLAY MODE = LISSAJOU



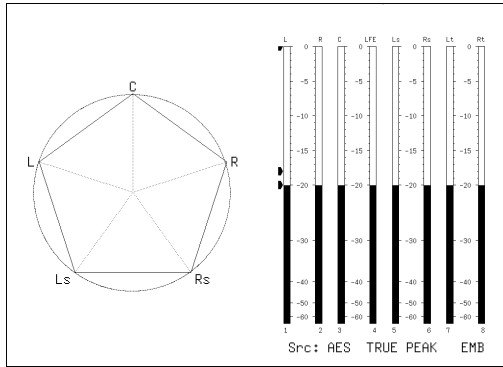
DISPLAY MODE = METER



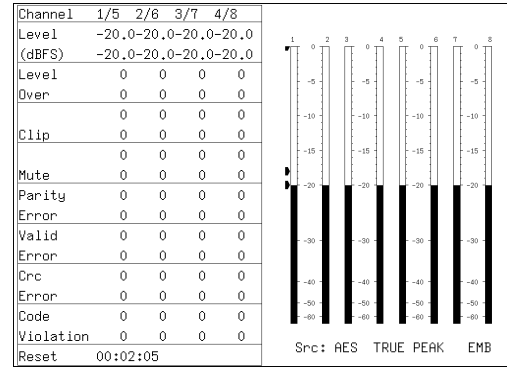


## 2. AUDIO DISPLAY

DISPLAY MODE = SURROUND



DISPLAY MODE = STATUS



DISPLAY MODE = LOUDNESS

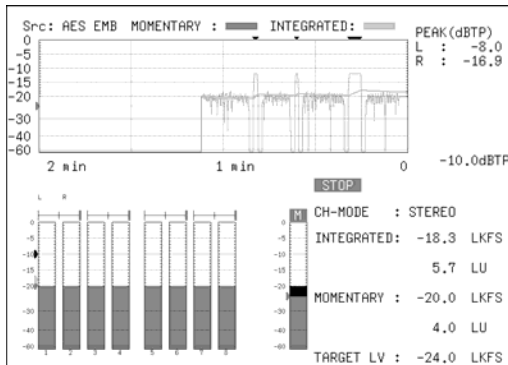


Figure 2-4 Selecting the display mode

### 2.3 Configuring the Dolby Settings (Option)

To configure Dolby settings, press **F•6** DOLBY SETUP on the audio menu.

This menu is displayed when the Dolby option is installed in the LV 7770 and INPUT SELECT is set to SDI or EXT DIGI.

For information on the INPUT SELECT setting, see section 2.1.1, "Selecting the Signal to Measure."

**AUDIO** → **F•6** DOLBY SETUP →

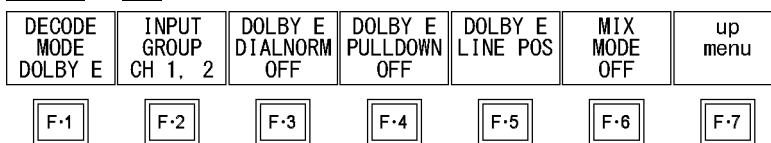


Figure 2-5 DOLBY SETUP menu

#### 2.3.1 Selecting the Signal to Measure

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

Procedure

**AUDIO** → **F•6** DOLBY SETUP → **F•1** DECODE MODE: OFF / DOLBY E / DOLBY D

Settings

OFF: Dolby signals are not measured.

DOLBY E: Dolby E signals are measured. This option cannot be selected in simul mode.

DOLBY D: Dolby Digital signals are measured. This option cannot be selected in simul mode.

## 2.3.2 Selecting the Channel to Decode

When **[F•1]** DECODE MODE is set to DOLBY E or DOLBY D, to select the channel to decode, follow the procedure below.

CH 9,10 to CH15,16 can be selected when **[F•6]** MIX MODE is set to ON.

## Procedure

---

**AUDIO** → **[F•6]** DOLBY SETUP → **[F•2]** INPUT GROUP: CH 1, 2 / CH 3, 4 / CH 5, 6 / CH 7, 8 / CH 9,10 / CH11,12 / CH13,14 / CH15,16

---

- When INPUT SELECT Is Set to SDI and MIX MODE Is Set to OFF

Channels selected using **[F•2]** INPUT GROUP are decoded and displayed as channels D1 to D8.

The channels that you can select with **[F•2]** INPUT GROUP are the channels in the group selected with 1ST GRP SELECT and 2ND GRP SELECT.

For information on the 1ST GRP SELECT and 2ND GRP SELECT setting, see section 2.1.2, “Selecting the Channels to Measure.”

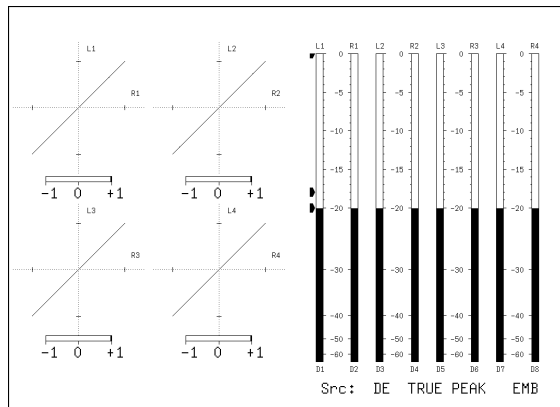


Figure 2-6 EMB Dolby display

## 2. AUDIO DISPLAY

- When **INPUT SELECT** Is Set to **SDI** and **MIX MODE** Is Set to **ON**

The left half of the display shows the embedded audio signals selected with 1ST GRP PCM and 2ND GRP PCM.

The right half shows channels D1 to D8, which are the decoded signals of the channels selected using **F•2** INPUT GROUP.

In the meter display, cyan ■ marks are displayed above non-PCM signals.

For information on the 1ST GRP PCM and the 2ND GRP PCM setting, see section 2.1.2, “Selecting the Channels to Measure.”

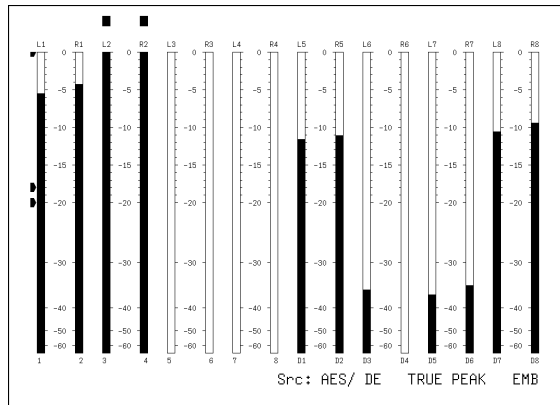


Figure 2-7 EMB Dolby display (mix mode)

- When **INPUT SELECT** Is Set to **EXT DIGI** and **MIX MODE** Is Set to **OFF**

Channels selected using **CHANNEL SELECT** and **F•2** INPUT GROUP are decoded and displayed as channels D1 to D8.

For information on the **CHANNEL SELECT** setting, see section 2.1.2, “Selecting the Channels to Measure.”

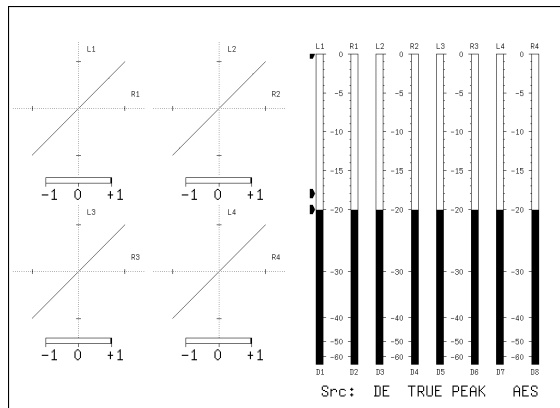


Figure 2-8 AES Dolby display

## 2. AUDIO DISPLAY

- When INPUT SELECT Is Set to EXT DIGI and MIX MODE Is Set to ON

The left half shows external audio channels selected with PCM SELECT.

The right half shows channels D1 to D8, which are the decoded signals of the channels selected using **F•2** INPUT GROUP. Here **F•2** INPUT GROUP CH 1, 2 to CH 7, 8 correspond to channels A1 to A8; and CH 9,10 to CH15,16 correspond to channels B1 to B8.

In the meter display, cyan ■ marks are displayed above non-PCM signals.

For information on the PCM SELECT setting, see section 2.1.2, “Selecting the Channels to Measure.”

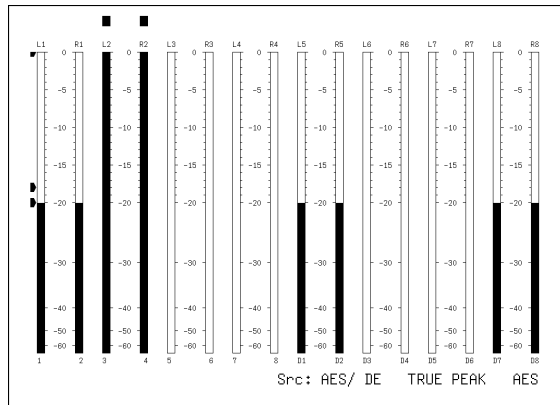


Figure 2-9 AES Dolby display (mix mode)

### 2.3.3 Turning Dialog Normalization On and Off

When **F•1** DECODE MODE is set to DOLBY E, to turn the dialog normalization on and off, follow the procedure below.

#### Procedure

---

**AUDIO** → **F•6** DOLBY SETUP → **F•3** DOLBY E DIALNORM: ON / OFF

---

### 2.3.4 Turning Pulldown On and Off

When **F•1** DECODE MODE is set to DOLBY E, to turn the pulldown on and off, follow the procedure below.

#### Procedure

---

**AUDIO** → **F•6** DOLBY SETUP → **F•4** DOLBY E PULLDOWN: ON / OFF

---

## 2.3.5 Frame Location Indicator Display

When INPUT SELECT is set to SDI and **F•1** DECODE MODE is set to DOLBY E, the frame location value can be displayed with an indicator.

The indicator is shown in the lower left of the screen, and the value is indicated with a bar and ▲ mark. These are normally shown in cyan, but when the value exceeds the specified threshold, they turn red.

For information on the INPUT SELECT setting, see section 2.1.1, “Selecting the Signal to Measure.”

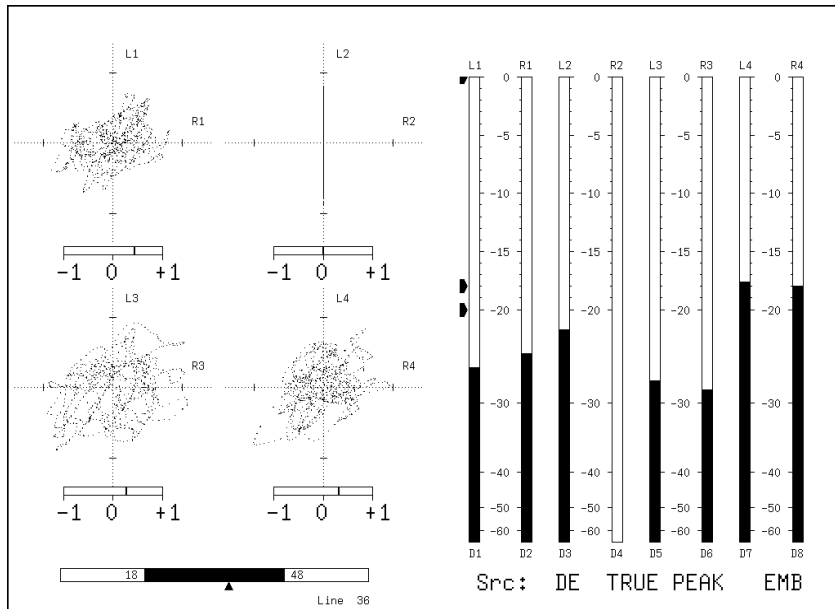


Figure 2-10 Frame location indicator display

To show the indicator, follow the procedure below to set INDICATE to ON.

## Procedure

**AUDIO** → **F•6** DOLBY SETUP → **F•5** DOLBY E LINE POS

DOLBY E LINE POS

DOLBY E LINE POS

INDICATE ☒ OFF ☐ ON

SELECT ☒ VALID ☐ IDEAL ☐ CUSTOM

EARLIEST

LATEST

Figure 2-11 DOLBY E LINE POS tab

- **INDICATE**

Turns the frame location indicator display on and off.

- **SELECT**

Set the frame location threshold value.

The threshold value when VALID or IDEAL is selected varies depending on the format as shown below.

If you select CUSTOM, you can specify a value between 8 and 105.

Table 2-3 Frame location threshold value

Format	VALID		IDEAL	
	Lower limit	Upper limit	Lower limit	Upper limit
625i/50	8	30	11	13
525i/59.94	12	26	13	16
1080i/60	18	52	21	26
1080i/59.94	18	48	21	26
1080i/50	13	53	19	23
1080p/60	35	104	42	52
1080p/59.94	35	95	42	52
1080p/50	26	105	37	46
1080p/30	18	52	21	26
1080p/29.97	18	48	21	26
1080p/25	13	53	19	23
1080p/24	11	98	25	29
1080p/23.98	11	98	25	29
720p/60	23	69	28	35
720p/59.94	23	63	28	35
720p/50	17	70	25	31
720p/30	12	35	14	18
720p/29.97	12	32	14	18
720p/25	9	35	13	16
720p/24	8	65	17	19
720p/23.98	8	65	17	19

## 2.3.6 Selecting the Listening Mode

When **[F•1]** DECODE MODE is set to DOLBY D, to select the listening mode, follow the procedure below.

## Procedure

---

**AUDIO** → **[F•6]** DOLBY SETUP → **[F•3]** DOLBY D LISTENIN: FULL / EX / 3stereo / PHANTOM / STEREO / MONO

---

## 2.3.7 Turning Prologic On and Off

When **[F•1]** DECODE MODE is set to DOLBY D, to turn the prologic on and off, follow the procedure below.

## Procedure

---

**AUDIO** → **[F•6]** DOLBY SETUP → **[F•4]** DOLBY D PROLOGIC: ON / OFF

---

## 2.3.8 Selecting the DRC

When **[F•1]** DECODE MODE is set to DOLBY D, to select the DRC (Dynamic Range Control), follow the procedure below.

## Procedure

---

**AUDIO** → **[F•6]** DOLBY SETUP → **[F•5]** DOLBY D DRC: BYPASS / LINE / RF

---

## 2.3.9 Turning Mix Mode On and Off

When **[F•1]** DECODE MODE is set to DOLBY E or DOLBY D, to turn the mix mode on and off, follow the procedure below.

Mix mode is a feature that simultaneously displays the audio signal before decoding and the Dolby signal after decoding. For details, see section 2.3.2, "Selecting the Channel to Decode."

## Procedure

---

**AUDIO** → **[F•6]** DOLBY SETUP → **[F•6]** MIX MODE: OFF / ON

---

### 3. METER DISPLAY

To configure meter display settings, press **F•3** METER SETUP on the audio menu. You can set the meter's scale, the response model, and the reference level.

**AUDIO** → **F•3** METER SETUP →

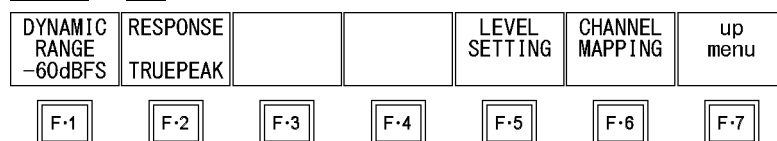


Figure 3-1 METER SETUP menu

#### 3.1 Selecting the Scale

To select the meter's scale, follow the procedure below.

When MAG on the LOUDNESS SETUP menu is set to ON, the scale of the loudness chart is set to -18 to 9 (LK/LU) in reference to the target level, regardless of the setting specified here.

##### Procedure

**AUDIO** → **F•3** METER SETUP → **F•1** DYNAMIC RANGE: -60dBFS / -90dBFS / MAG

##### Settings

- 60dBFS: The scale of the meter, loudness chart, and loudness meter is set to -60 to 0 (dBFS/LKFS/LUFS).
- 90dBFS: The scale of the meter, loudness chart, and loudness meter is set to -90 to 0 (dBFS/LKFS/LUFS).
- MAG: The scale of the meter is set to the level specified by **F•3** REF dBFS  $\pm$  3 dB. The scale of the loudness chart and loudness meter is set to -60 to 0 (LKFS/LUFS).

#### 3.2 Setting the Response Model

To select the meter's response model, follow the procedure below. The selected response model is indicated in the lower right of the display.

##### Procedure

**AUDIO** → **F•3** METER SETUP

→ **F•2** RESPONSE: TRUEPEAK / PPM / VU

→ **F•3** PPM MODE: PPM(I) / PPM(II) (when RESPONSE is set to PPM)

→ **F•3** PEAK METER: TRUE / PPM(I) / PPM(II) (when RESPONSE is set to VU)



The response model details are shown in the following table.

Table 3-1 Response model settings

<b>F•2</b> RESPONSE	<b>F•3</b>	Display Indication	Delay Time(*1)	Return Time(*2)	Average Time
TRUEPEAK	-	TRUE PEAK	0 msec	1.7 sec	-
PPM	PPM(I)	PPM(I)	10 msec	1.7 sec	-
	PPM(II)	PPM(II)	10 msec	2.8 sec	-
VU	TRUE	VU+TRUE	-	-	300 msec
	PPM(I)	VU+PPM(I)	-	-	300 msec
	PPM(II)	VU+PPM(II)	-	-	300 msec

\*1 The amount of time it takes for the meter to show -20 dBFS when a -20 dBFS/1 kHz sine-wave signal is applied with no input preceding it.

\*2 The amount of time it takes for the meter to show -40 dBFS when a -20 dBFS/1 kHz sine-wave signal is removed from the input.

### 3.3 Setting the Peak Hold

When **F•2** RESPONSE is set to VU, to set the peak hold time, follow the procedure below.

The unit is seconds. You can set the value in 0.5-second steps.

Press the function dial (F•D) to return the setting to its default value (0.5).

Procedure

---

**AUDIO** → **F•3** METER SETUP → **F•4** PEAK HOLD: 0.0 to 0.5 to 5.0 / HOLD

---

### 3.4 Setting the Reference Level

To set the meter reference level, follow the procedure below.

- **OVER**

The value that you set here is displayed as a red arrow at the corresponding level on the meter. If the audio level is greater than or equal to this value, a Level Over is counted on the audio status screen.

- **WARNING**

The value that you set here is displayed as a yellow arrow at the corresponding level on the meter. The levels above the yellow arrow are displayed in red. The levels below the arrow are displayed in yellow.

- **REF**

The value that you set here is displayed as a green arrow at the corresponding level on the meter. The levels above the green arrow are displayed in yellow. The levels below the arrow are displayed in green.

Procedure

---

**AUDIO** → **F•3** METER SETUP → **F•5** LEVEL SETTING  
 → **F•1** OVER dBFS: -40.0 to 0.0  
 → **F•2** WARNING dBFS: -40.0 to -18.0 to 0.0  
 → **F•3** REF dBFS: -40.0 to -20.0 to 0.0

---

### 3.5 Mapping Channels

When DISPLAY MODE is set to METER, to select the channels to assign to the L and R axes of the audio meter and Lissajous display, follow the procedure below. For details, see section 4.6, “Mapping Channels.”

For information on the DISPLAY MODE setting, see section 2.2, “Selecting the Display Mode.”

#### Procedure

---

**AUDIO** → **F•3** METER SETUP → **F•6** CHANNEL MAPPING

---

## 4. LISSAJOUS DISPLAY

To configure Lissajous settings, press **F•4** LISSAJOU SETUP on the audio menu.

You can configure Lissajous curve and scale settings.

This setting is available when **F•2** DISPLAY MODE is set to LISSAJOU.

**AUDIO** → **F•2** DISPLAY MODE to select LISSAJOU → **F•4** LISSAJOU SETUP →

LISSAJOU INTEN 0	SCALE INTEN 4	DISPLAY MULTI	FORM X-Y	AUTO GAIN ON	CHANNEL MAPPING	up menu
<b>F•1</b>	<b>F•2</b>	<b>F•3</b>	<b>F•4</b>	<b>F•5</b>	<b>F•6</b>	<b>F•7</b>

Figure 4-1 LISSAJOU SETUP menu

### 4.1 Adjusting the Lissajous Curve Intensity

To adjust the Lissajous curve intensity, follow the procedure below.

Press the function dial (F•D) to return the setting to its default value (0).

Procedure

---

**AUDIO** → **F•4** LISSAJOU SETUP → **F•1** LISSAJOU INTEN: -8 to 0 to 7

---

### 4.2 Adjusting the Scale Intensity

To adjust the intensity of the Lissajous and meter scales, follow the procedure below.

Press the function dial (F•D) to return the setting to its default value (4).

Procedure

---

**AUDIO** → **F•4** LISSAJOU SETUP → **F•2** SCALE INTEN: -8 to 4 to 7

---

### 4.3 Selecting the Lissajous Curve Display Format

To select the Lissajous curve display format, follow the procedure below.

Regardless of the display format that you select, the channels set with **F•6** CHANNEL MAPPING are displayed.

The correlation meter shown below the Lissajous waveform 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.

#### Procedure

**AUDIO** → **F•4** LISSAJOU SETUP → **F•3** DISPLAY: MULTI / SINGLE

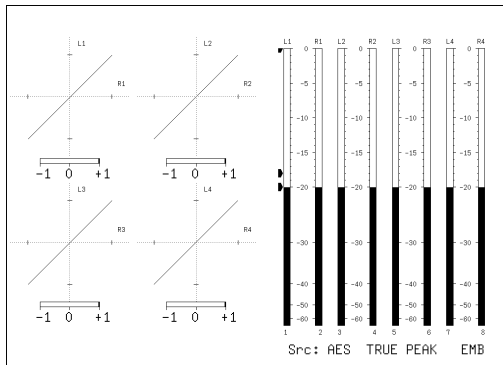
#### Settings

**MULTI:** Eight channels of Lissajous waveforms and eight channels of audio meters are displayed or 16 channels of Lissajous waveforms are displayed.

**SINGLE:** Two channels of Lissajous waveforms and eight channels of audio meters are displayed.

This option cannot be selected in simul mode.

DISPLAY = MULTI



DISPLAY = SINGLE

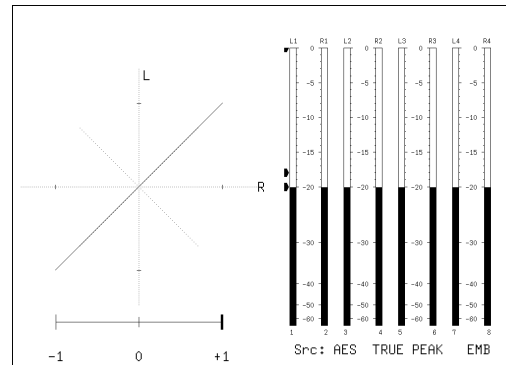


Figure 4-2 Selecting the Lissajous curve display format

#### 4.4 Selecting the Scale Display Format

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

##### Procedure

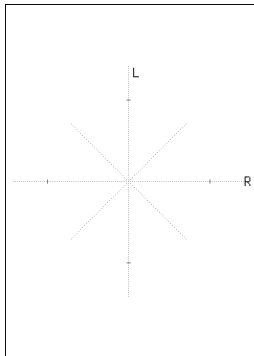
**AUDIO** → **F•4** LISSAJOU SETUP → **F•4** FORM: X-Y / MATRIX

##### Settings

**X-Y:** R is assigned to the X-axis (horizontal), and L is assigned to the Y-axis (vertical).

**MATRIX:** The R and L axes are positioned at 45 ° angles to the X and Y axes.

FORM = X-Y



FORM = MATRIX

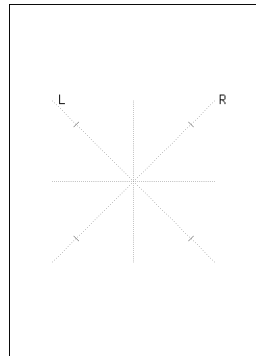


Figure 4-3 Selecting the scale display format

#### 4.5 Setting the Lissajous Curve Gain

To select the Lissajous curve gain, follow the procedure below.

##### Procedure

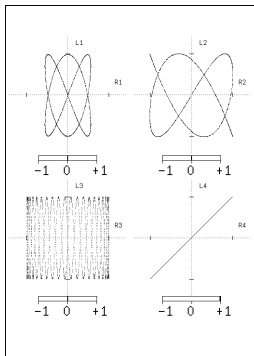
**AUDIO** → **F•5** LISSAJOU SETUP → **F•5** AUTO GAIN: ON / OFF

##### Settings

**ON:** The Lissajous curves are displayed with a gain that ensures that they appear within the limits of the scale.

**OFF:** The Lissajous curves are displayed with a fixed gain.

AUTO GAIN = ON



AUTO GAIN = OFF

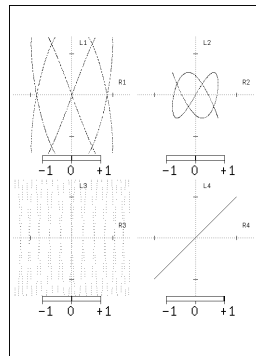


Figure 4-4 Setting the Lissajous curve gain

## 4.6 Mapping Channels

To select the channels that you want to map to the Lissajous display's L and R axes and to the audio meter, follow the procedure below.

### Procedure

**AUDIO** → **F•4** LISSAJOU SETUP → **F•6** CHANNEL MAPPING

The channels that you can select vary depending on the input mode and SOURCE SELECT settings as shown in the following table. The Single Lissajou Lt and Rt are calculated from the channels that are mapped on the surround display.

The audio thumbnail that is displayed when an LV 5770SER03A, LV 5770SER08, or LV 5770SER09A is installed in the LV 7770 shows an audio meter that contains the channels that you select here.

For information on the SOURCE SELECT setting, see section 2.1, “Configuring Measurement Signal Settings.”

For information on the channels that are mapped on the surround display, see section 5.5, “Mapping Channels.”

Table 4-1 Mapping channels

INPUT SELECT	Input Mode	NUMBER of CHANNELS	Multi/Siml Lissajou		Single Lissajou
			L1, R1, L2, R2	L3, R3, L4, R4	L, R
SDI	Single input mode	8CH	1ST GRP SELECT	2ND GRP SELECT	1ST GRP SELECT + 2ND GRP SELECT + Lt + Rt
		16CH	CH1 to CH16 (L1 to R8)		CH1 to CH16 + Lt + Rt
	Simul mode	8CH	ACH GRP SELECT	BCH GRP SELECT	-
SDI (Dolby)	-	8CH	D1 to D8	D1 to D8	CH1 to CH8 + Lt + Rt
	Mix mode	16CH	1ST GRP PCM + 2ND GRP PCM (L1 to R4), D1 to D8 (L5 to R8)		1ST GRP PCM + 2ND GRP PCM + D1 to D8 + Lt + Rt
EXT DIGI	-	8CH	CH1 to CH8	CH1 to CH8	CH1 to CH8 + Lt + Rt
	-	16CH(OP70)	CH1 to CH16 (L1 to R8)		CH1 to CH16 + Lt + Rt
EXT DIGI (Dolby)	-	8CH	D1 to D8		D1 to D8 + Lt + Rt
	Mix mode	16CH	CH1 to CH8 (L1 to R4) D1 to D8 (L5 to R8)		CH1 to CH8 + D1 to D8 + Lt + Rt
EXT ANA	-	8CH	CH1 to CH8	CH1 to CH8	CH1 to CH8 + Lt + Rt

## 4. LISSAJOUS DISPLAY

### Single Lissajou

Single Lissajou | Multi Lissajou 1 | Multi Lissajou 2

L

☒CH1 ☐CH2 ☐CH3 ☐CH4 ☐CH5 ☐CH6 ☐CH7 ☐CH8  
☐CH9 ☐CH10 ☐CH11 ☐CH12 ☐CH13 ☐CH14 ☐CH15 ☐CH16  
☐Lt

R

☐CH1 ☒CH2 ☐CH3 ☐CH4 ☐CH5 ☐CH6 ☐CH7 ☐CH8  
☐CH9 ☐CH10 ☐CH11 ☐CH12 ☐CH13 ☐CH14 ☐CH15 ☐CH16  
☐Rt

Lt,Rt is mapped by surround channel mapping.

### Multi Lissajou 1

Single Lissajou | Multi Lissajou 1 | Multi Lissajou 2

Channel Mapping

L1

☒CH1 ☐CH2 ☐CH3 ☐CH4 ☐CH5 ☐CH6 ☐CH7 ☐CH8  
☐CH9 ☐CH10 ☐CH11 ☐CH12 ☐CH13 ☐CH14 ☐CH15 ☐CH16

R1

☐CH1 ☒CH2 ☐CH3 ☐CH4 ☐CH5 ☐CH6 ☐CH7 ☐CH8  
☐CH9 ☐CH10 ☐CH11 ☐CH12 ☐CH13 ☐CH14 ☐CH15 ☐CH16

L2

☐CH1 ☐CH2 ☒CH3 ☐CH4 ☐CH5 ☐CH6 ☐CH7 ☐CH8  
☐CH9 ☐CH10 ☐CH11 ☐CH12 ☐CH13 ☐CH14 ☐CH15 ☐CH16

R2

☐CH1 ☐CH2 ☐CH3 ☒CH4 ☐CH5 ☐CH6 ☐CH7 ☐CH8  
☐CH9 ☐CH10 ☐CH11 ☐CH12 ☐CH13 ☐CH14 ☐CH15 ☐CH16

L3

☐CH1 ☐CH2 ☐CH3 ☐CH4 ☒CH5 ☐CH6 ☐CH7 ☐CH8  
☐CH9 ☐CH10 ☐CH11 ☐CH12 ☐CH13 ☐CH14 ☐CH15 ☐CH16

R3

☐CH1 ☐CH2 ☐CH3 ☐CH4 ☐CH5 ☒CH6 ☐CH7 ☐CH8  
☐CH9 ☐CH10 ☐CH11 ☐CH12 ☐CH13 ☐CH14 ☐CH15 ☐CH16

L4

☐CH1 ☐CH2 ☐CH3 ☐CH4 ☐CH5 ☐CH6 ☒CH7 ☐CH8  
☐CH9 ☐CH10 ☐CH11 ☐CH12 ☐CH13 ☐CH14 ☐CH15 ☐CH16

R4

☐CH1 ☐CH2 ☐CH3 ☐CH4 ☐CH5 ☐CH6 ☐CH7 ☒CH8  
☐CH9 ☐CH10 ☐CH11 ☐CH12 ☐CH13 ☐CH14 ☐CH15 ☐CH16

### Multi Lissajou 2

Single Lissajou | Multi Lissajou 1 | Multi Lissajou 2

Channel Mapping

L5

☐CH1 ☒CH2 ☐CH3 ☐CH4 ☐CH5 ☐CH6 ☐CH7 ☐CH8  
☒CH9 ☐CH10 ☐CH11 ☐CH12 ☐CH13 ☐CH14 ☐CH15 ☐CH16

R5

☐CH1 ☐CH2 ☐CH3 ☐CH4 ☐CH5 ☐CH6 ☐CH7 ☐CH8  
☒CH9 ☐CH10 ☐CH11 ☐CH12 ☐CH13 ☐CH14 ☐CH15 ☐CH16

L6

☐CH1 ☐CH2 ☐CH3 ☐CH4 ☐CH5 ☐CH6 ☐CH7 ☐CH8  
☐CH9 ☐CH10 ☒CH11 ☐CH12 ☐CH13 ☐CH14 ☐CH15 ☐CH16

R6

☐CH1 ☐CH2 ☐CH3 ☐CH4 ☐CH5 ☐CH6 ☐CH7 ☐CH8  
☐CH9 ☐CH10 ☐CH11 ☒CH12 ☐CH13 ☐CH14 ☐CH15 ☐CH16

L7

☐CH1 ☐CH2 ☐CH3 ☐CH4 ☐CH5 ☐CH6 ☐CH7 ☐CH8  
☐CH9 ☐CH10 ☐CH11 ☐CH12 ☒CH13 ☐CH14 ☐CH15 ☐CH16

R7

☐CH1 ☐CH2 ☐CH3 ☐CH4 ☐CH5 ☐CH6 ☐CH7 ☐CH8  
☐CH9 ☐CH10 ☐CH11 ☐CH12 ☐CH13 ☒CH14 ☐CH15 ☐CH16

L8

☐CH1 ☐CH2 ☐CH3 ☐CH4 ☐CH5 ☐CH6 ☐CH7 ☐CH8  
☐CH9 ☐CH10 ☐CH11 ☐CH12 ☐CH13 ☐CH14 ☒CH15 ☐CH16

R8

☐CH1 ☐CH2 ☐CH3 ☐CH4 ☐CH5 ☐CH6 ☐CH7 ☐CH8  
☐CH9 ☐CH10 ☐CH11 ☐CH12 ☐CH13 ☐CH14 ☐CH15 ☒CH16

## 4. LISSAJOUS DISPLAY

### Siml Lissajou

Channel Mapping																
L1	<input checked="" type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8	(SDI A)							
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								
R1	<input type="checkbox"/> CH1	<input checked="" type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8								
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								
L2	<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input checked="" type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8								
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								
R2	<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input checked="" type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8								
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								
L3	<input checked="" type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8	(SDI B)							
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								
R3	<input type="checkbox"/> CH1	<input checked="" type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8								
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								
L4	<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input checked="" type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8								
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								
R4	<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input checked="" type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8								
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								

Figure 4-5 Mapping channels



## 5. SURROUND DISPLAY

To configure surround display settings, press **F•4** SURROUND SETUP on the audio menu.

You can configure surround waveform and scale settings.

This setting is available when **F•2** DISPLAY MODE is set to SURROUND.

**AUDIO** → **F•2** DISPLAY MODE to select SURROUND → **F•4** SURROUND SETUP →

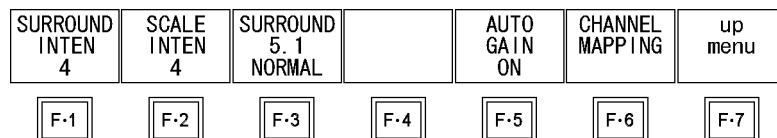


Figure 5-1 SURROUND SETUP menu

### 5.1 Adjusting the Surround Waveform Intensity

To adjust the surround waveform intensity, follow the procedure below.

Press the function dial (F•D) to return the setting to its default value (4).

Procedure

---

**AUDIO** → **F•4** SURROUND SETUP → **F•1** SURROUND INTEN: -8 to 4 to 7

---

### 5.2 Adjusting the Scale Intensity

To adjust the intensity of the surround and meter scales, follow the procedure below.

Press the function dial (F•D) to return the setting to its default value (4).

Procedure

---

**AUDIO** → **F•4** SURROUND SETUP → **F•2** SCALE INTEN: -8 to 4 to 7

---

### 5.3 Selecting the Surround Display Format

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

If adjacent channels (including Lch and Rch for PHANTOM) are of opposite phases, the scale between the channels is displayed in red.

Procedure

---

**AUDIO** → **F•4** SURROUND SETUP → **F•3** SURROUND 5.1: NORMAL / PHANTOM

---

Settings

---

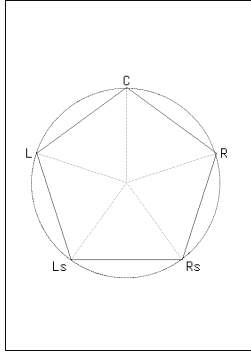
**NORMAL:** A waveform that combines Lch, Rch, Lsch, Rsch, and Cch (hard center) is displayed.

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

---

## 5. SURROUND DISPLAY

SURROUND 5.1 = NORMAL



SURROUND 5.1 = PHANTOM

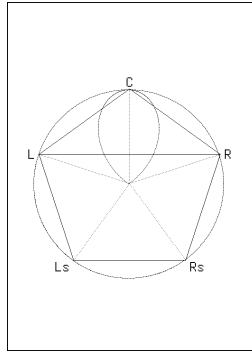


Figure 5-2 Selecting the surround display format

### 5.4 Setting the Surround Waveform Gain

To select the surround waveform gain, follow the procedure below.

#### Procedure

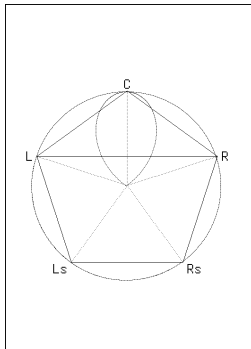
**AUDIO** → **F•4** SURROUND SETUP → **F•5** AUTO GAIN: ON / OFF

#### Settings

**ON:** The surround waveform is displayed with a gain that ensures that the waveform appears within the limits of the scale.

**OFF:** The surround waveform is displayed with a fixed gain.

AUTO GAIN = ON



AUTO GAIN = OFF

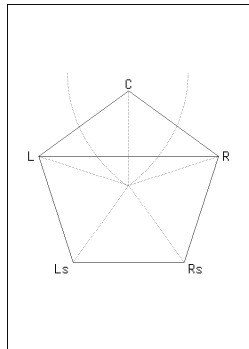


Figure 5-3 Setting the surround waveform gain

## 5.5 Mapping Channels

To select the channels that you want to map to the axes of the surround display and to the audio meter, follow the procedure below. The channels that you can select vary depending on the INPUT SELECT setting as shown in the following table.

For information on the INPUT SELECT setting, see section 2.1.1, “Selecting the Signal to Measure.”

Table 5-1 Mapping channels

INPUT SELECT	L, R, C, LFE	Ls, Rs, Lt/Lo (LL), Rt/Ro (RR)
SDI	1ST GRP SELECT	2ND GRP SELECT
SDI (Dolby)	D1 to D8	D1 to D8
EXT DIGI	CH1 to CH8	CH1 to CH8
EXT DIGI (Dolby)	D1 to D8	D1 to D8
EXT ANA	CH1 to CH8	CH1 to CH8

### Procedure

**AUDIO** → **F•4** SURROUND SETUP → **F•6** CHANNEL MAPPING

Surround

Channel Mapping

L	<input checked="" type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16
R	<input type="checkbox"/> CH1	<input checked="" type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16
C	<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input checked="" type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16
LFE	<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input checked="" type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16
Ls	<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input checked="" type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16
Rs	<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input checked="" type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16
Lt/Lo (LL)	<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input checked="" type="checkbox"/> CH7	<input type="checkbox"/> CH8
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16
Rt/Ro (RR)	<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input checked="" type="checkbox"/> CH8
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16

Figure 5-4 Mapping channels

## 6. AUDIO STATUS DISPLAY

To configure audio status display settings, press **F•4** STATUS SETUP on the audio menu. You can view the event log, metadata (option), channel status, and user data and configure error detection settings.

This setting is available when **F•2** DISPLAY MODE is set to STATUS.

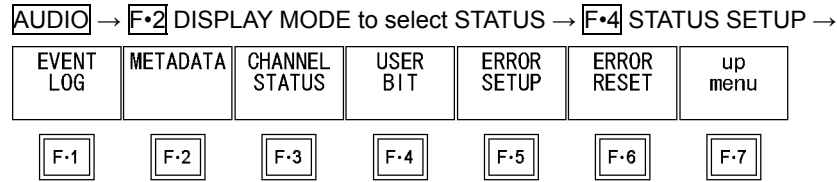


Figure 6-1 STATUS SETUP menu

### 6.1 Audio Status Display Explanation

On the audio status display, the levels and the number of detected errors are displayed for the channels that you selected in section 2.1.2, “Selecting the Channels to Measure.”

Errors are only detected for the items that have been set to ON with **F•5** ERROR SETUP.

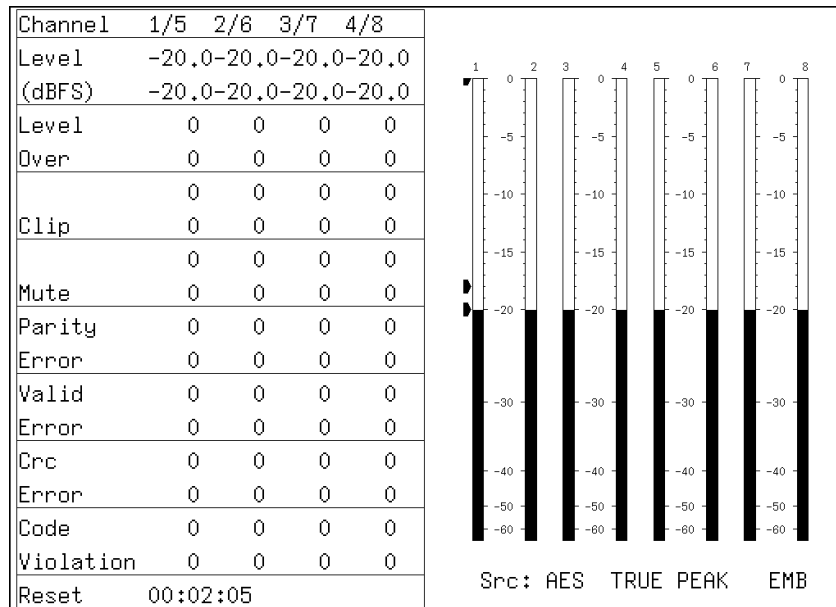


Figure 6-2 Audio status display

- **Channel**

Displays audio channels.

Each item below this item is displayed in two lines. The top line corresponds to the channel to the left of the slash, and the bottom line corresponds to the channel to the right of the slash.

- **Level**

Display audio levels numerically.

- **Level Over**

Counts the number of times that the level of the input signal is greater than or equal to the set value.

- **Clip**

Counts the number of times that a received signal exceeds the maximum signal value specified by **F•5** ERROR SETUP for the specified number of consecutive samples.

- **Mute**

Counts the number of times that the length of a received mute signal exceeds the period specified by **F•5** ERROR SETUP.

- **Parity Error**

Counts the number of times that the input signal's parity bit and the recalculated parity bit differ.

- **Valid Error**

Counts the number of times that the input signal's validity bit is 1.

- **Crc Error**

Counts the number of times that the CRC of the channel status bits and the calculated CRC are different.

- **Code Violation**

Counts the number of times that the state of the input signal's biphase modulation is abnormal.

- **Reset**

The time that has elapsed since **F•6** ERROR RESET was pressed is displayed here.

## 6. AUDIO STATUS DISPLAY

In Dolby signal measurements, Frame Location (header position (H, V) and mode) is displayed in addition to the number of detected errors. During external digital audio measurements, H and mode are not displayed.

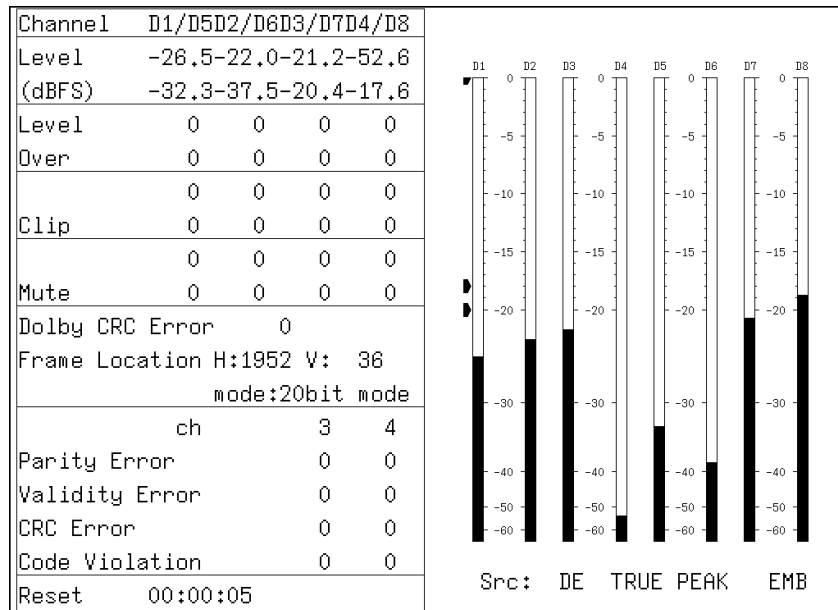


Figure 6-3 Audio status display (Dolby E)

## 6.2 Event Log Display

To view the event log, follow the procedure below.

The event log displays a list of the events that have occurred.

### Procedure

**AUDIO** → **F.4** STATUS SETUP → **F.1** EVENT LOG

EVENT LOG LIST		SAMPLE No.=	24	<< NOW LOGGING >>		
21:	2011/10/20 15:08:59 A	1080i/59.94				
20:	2011/10/20 15:08:59 A	1080i/59.94	A_SMP,			
19:	2011/10/20 15:08:59 -	1080p/59.94				
18:	2011/10/20 15:08:59 -	1080i/59.94	MUTE:0F,			
17:	2011/10/20 15:08:59 A	1080i/59.94				
16:	2011/10/20 15:08:59 -	1080i/59.94	MUTE:FF,			
15:	2011/10/20 15:08:58 -	NO_SIGNAL				
14:	2011/10/20 15:08:58 A	NO_SIGNAL				
13:	2011/10/20 15:07:37 -	1080i/59.94	MUTE:FF,			
12:	2011/10/20 15:07:36 -	1080i/59.94				
11:	2011/10/20 15:07:36 -	1080i/59.94	OVER:FF,			
10:	2011/10/20 15:07:36 -	1080i/59.94				
9:	2011/10/20 15:07:36 -	1080i/59.94	PAR:FF, CODE:FF,			
8:	2011/10/20 15:07:35 -	1080i/59.94				
7:	2011/10/20 15:07:31 -	ANALOG				
6:	2011/10/20 15:07:31 -	ANALOG	OVER:FF,			
5:	2011/10/20 15:07:29 -	1080i/59.94	OVER:03,			
4:	2011/10/20 15:07:21 -	BNC	OVER:FF,			
3:	2011/10/20 15:06:46 B	1080p/59.94				
2:	2011/10/20 15:06:46 -	BNC				
1:	2011/10/20 15:06:46 A	1080i/59.94				

LOG	CLEAR	LOG			USB	up
START		MODE			MEMORY	menu
		OVER WR				

Figure 6-4 Event log

### 6.2.1 Event Log Explanation

Events are listed in the event log in the order that they occur.

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

#### Precautions

- When the same event occurs successively and when multiple events occur at the same time, they are treated as a single event.
- When multiple events occur at the same time, you may not be able to check all the events on the screen. When this happens, you can view all the events by saving them to a USB memory device.
- The event display is cleared when turn the power off.
- Switching video formats or input channels may cause disturbances in the signal that will cause errors to be displayed.
- Events that have occurred on other units are also displayed on the same screen.

#### Time

The time is displayed in the format specified by Time that you select by pressing **[SYS]** and then **[F•2]** SYSTEM SETUP. (The LV 5770SER08 or LV 5770SER09A is required to display timecodes.)

#### Channel

For audio events, the channel is displayed as “-.”

In single input mode, events that occur on channels A and B cannot be recorded at the same time. Only the events that occur on the currently selected channel are recorded.

#### Format

During embedded audio measurements, the format is displayed. During external digital audio measurements, “BNC” is displayed. During analog audio measurements, “ANALOG” is displayed.

#### Event

The events that are displayed in the event log are listed below.

Of the events listed below, only the events whose detection has been set to ON as described in section 6.6, “Configuring Error Detection Settings,” are displayed.

Table 6-1 Events

Event Name	Description
OVER	Level Over
CLIP	Clip
MUTE	Mute
PAR	Parity Error
VAL	Validity Error
CRC	Crc Error
CODE	Code Violation

### Event Channels

After the event name, the channels on which the event occurred are displayed using a hexadecimal number (for example: “PAR:48” or “OVER:1248”).

- **8-Channel Measurement**

The 8 bits expressed by the hexadecimal number correspond to the following input channels.

INPUT SELECT	b8	b7	b6	b5	b4	b3	b2	b1
SDI (*1)	2ND	2ND	2ND	2ND	1ST	1ST	1ST	1ST
(Single input mode)	4	3	2	1	4	3	2	1
SDI (*2)	BCH	BCH	BCH	BCH	ACH	ACH	ACH	ACH
(Simul mode)	4	3	2	1	4	3	2	1
EXT DIGI (*3)	A/B	A/B	A/B	A/B	A/B	A/B	A/B	A/B
	8	7	6	5	4	3	2	1

- \*1 Corresponds to the channels selected using 1ST GRP SELECT (1 to 4) and 2ND GRP SELECT (1 to 4)
- \*2 Corresponds to the channels selected using ACH GRP SELECT (1 to 4) and BCH GRP SELECT (1 to 4)
- \*3 Corresponds to the channels selected using CHANNEL SELECT (A/B)

For example, in single input mode when INPUT SELECT is set to SDI, 1ST GRP SELECT is set to 1, and 2ND GRP SELECT is set to 2, “48” indicates that events have occurred on channels 4 and 7.

4				8			
0	1	0	0	1	0	0	0
8ch	7ch	6ch	5ch	4ch	3ch	2ch	1ch

- **16-Channel Measurement**

The 16 bits expressed by the hexadecimal number correspond to the following input channels.

INPUT SELECT	b16	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1
SDI	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
EXT DIGI	B8	B7	B6	B5	B4	B3	B2	B1	A8	A7	A6	A5	A4	A3	A2	A1

For example, when INPUT SELECT is set to EXT DIGI, “1248” indicates that events have occurred on channels A4, A7, B2, and B5.

1				2				4				8			
0	0	0	1	0	0	1	0	0	1	0	0	1	0	0	0
B8 ch	B7 ch	B6 ch	B5 ch	B4 ch	B3 ch	B2 ch	B1 ch	A8 ch	A7 ch	A6 ch	A5 ch	A4 ch	A3 ch	A2 ch	A1 ch



## 6.2.2 Starting Event Logging

To start the event log, follow the procedure below.

## Procedure

---

AUDIO → F•4 STATUS SETUP → F•1 EVENT LOG → F•1 LOG: START / STOP

---

## Settings

---

START: Event logging is started. "NOW LOGGING" appears in the upper right of the event log.

STOP: Event logging is stopped. "LOGGING STOPPED" appears in the upper right of the event log.

---

## 6.2.3 Deleting the Event Log

To delete the event log, follow the procedure below.

## Procedure

---

AUDIO → F•4 STATUS SETUP → F•1 EVENT LOG → F•2 CLEAR

---

## 6.2.4 Selecting the Overwrite Mode

Up to 1000 events can be displayed. To select the action to perform when more than 1000 events occur, follow the procedure below.

## Procedure

---

AUDIO → F•4 STATUS SETUP → F•1 EVENT LOG → F•3 LOG MODE: OVER WR / STOP

---

## Settings

---

OVER WR: When more than 1000 events occur, the LV 7770 writes over older events.

STOP: When more than 1000 events occur, the LV 7770 stops logging events.

---

## 6.2.5 Saving to a USB Memory Device

You can save the event log to a USB memory device as a text file.

To save a file with a name that you specify, follow the procedure below.

1. Connect a USB memory device to the instrument.
2. Press **F•6** USB MEMORY.

The file list display appears.

This setting appears when a USB memory device is connected to the LV 7770.

External		USB FLASH DRIVE		LOG	FILE LIST
No.	File Name	Date	Time	Size(BYTE)	
1	20110623111602.TXT	11/06/23	11:16	197	
2	20110623111804.TXT	11/06/23	11:18	728	
SIZE: 4,001,894,400byte FREE: 3,984,289,312byte					
LOG      STORE FILE NAME .TXT					
AUTO FILENAME ON		STORE	FILE DELETE		up menu

Figure 6-5 File list display

3. Set **F•1** AUTO FILENAME to OFF.
4. Press **F•2** NAME INPUT.

The file name input display appears.

0	1	2	3	4	5	6	7	8	9
A	B	C	D	E	F	G	H	I	J
K	L	M	N	O	P	Q	R	S	T
U	V	W	X	Y	Z	-			
[F,D_NOB] = CHAR SELECT , [F,D_PUSH] = CHAR SET & Function Key EDIT									
LOG      STORE FILE NAME .TXT									
CLEAR ALL	DELETE		<=	=>	CHAR SET		up menu		

Figure 6-6 File name input display

**5. Enter a file name using up to 14 characters.**

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

<b>F•1</b>	<b>CLEAR ALL:</b>	Deletes all characters
<b>F•2</b>	<b>DELETE:</b>	Deletes the character at the cursor
<b>F•4</b>	<b>&lt;=:</b>	Moves the cursor to the left
<b>F•5</b>	<b>=&gt;:</b>	Moves the cursor to the right
<b>F•6</b>	<b>CHAR SET:</b>	Enters the character
<b>F•D:</b>		Turn to select a character, and press to enter the character.

You can copy the file name of an already saved file. To copy a file name, move the cursor to the file in the file list whose name you want to copy, and then press the function dial (F•D).

**6. Press **F•7** up menu.**

**7. Press **F•3** STORE.**

When the message “Saving file - Please wait.” disappears, the file has been successfully saved.

If a file with the same name already exists on the USB memory device, an overwrite confirmation menu appears. To overwrite the current file, press **F•1** OVER WR YES. To cancel the save operation, press **F•3** OVER WR NO.

- Deleting an Event Log**

To delete an event log that has been saved to the USB memory device, select the log file on the file list display, and then press **F•4** FILE DELETE. To delete the file, press **F•1** DELETE YES. To cancel the delete operation, press **F•3** DELETE NO.

- Automatic File Name Generation**

If you set **F•1** AUTO FILENAME to ON, the file name will be generated automatically in the format “YYYYMMDDHHMMSS” when you save the file. In this situation, **F•2** NAME INPUT is not displayed.

- USB Memory Device Folder Structure**

Event logs are saved in the LOG folder.

```

└─ USB memory device
   └─ LV7770_USER
      └─ LOG
         └─ *****.txt

```

### 6.3 Metadata Display (Option)

#### 6.3.1 Dolby E Metadata Display

When DECODE MODE is DOLBY E, to view the metadata of the selected program number, follow the procedure below. To select the program number, press **[F•1]** DOLBY PROGRAM. For information on the DECODE MODE setting, see section 2.3.1, “Selecting the Signal to Measure.”

##### Procedure

**[AUDIO]** → **[F•4]** STATUS SETUP → **[F•2]** METADATA → **[F•1]** DOLBY E METADATA

Dolby E Common Metadata Status			
Prog Desc Text			
Bitstrm Format	DE 20bit	SMPTE Timecode	01:00:00:01
Prog Config	8x1	Framerate	25fps
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	Src: DE TRUE PEAK	AES

Figure 6-7 Dolby E metadata display

#### 6.3.2 Dolby E EBI Metadata Display

When DECODE MODE is DOLBY E, to view the EBI (Extended Bitstream Info) metadata of the selected program number, follow the procedure below. To select the program number, press **[F•1]** DOLBY PROGRAM.

For information on the DECODE MODE setting, see section 2.3.1, “Selecting the Signal to Measure.”

##### Procedure

**[AUDIO]** → **[F•4]** STATUS SETUP → **[F•2]** METADATA → **[F•2]** EBI METADATA

## 6. AUDIO STATUS DISPLAY

AC-3 Extended Bitstream Info	
Pref Stereo Dwnmix Mode	not exist
Lt/Rt Center Mix Lvl	not exist
Lt/Rt Srnd Mix Lvl	not exist
Lo/Ro Center Mix Lvl	not exist
Lo/Ro Srnd Mix Lvl	not exist
Srnd EX Mode	not exist
Headphone Mode	not exist
AD Converter Type	not exist
Src: DE TRUE PEAK AES	

Figure 6-8 EBI metadata display

### 6.3.3 Dolby Digital Metadata Display

When DECODE MODE is DOLBY D, to view the metadata, follow the procedure below.  
For information on the DECODE MODE setting, see section 2.3.1, "Selecting the Signal to Measure."

#### Procedure

**AUDIO** → **F•4** STATUS SETUP → **F•2** METADATA → **F•1** DOLBY D METADATA

AC-3 Metadata Status			
Bitstrm ID	8		
Bitstrm Format	DD 32bit		
Samplerate	48kHz		
Datarate	448kbps	Dialnorm Lvl	-27dB
Bitstrm Mode	Main Complete		
Coding Mode	3/2		
Center Mix Lvl	-3.0dB		
Srnd Mix Lvl	-3.0dB		
Dolby Srnd Mode	not indicate		
LFE Channel	on		
Mix Lvl	105dB		
Room Type	Small Room		
Copyright Bit	Protected		
Orig Bitstrm	Original		
Src: DD TRUE PEAK AES			

Figure 6-9 Dolby Digital metadata display

### 6.3.4 Dolby Digital EBI Metadata Display

When DECODE MODE is DOLBY D, to view the EBI (Extended Bitstream Info) metadata, follow the procedure below.

For information on the DECODE MODE setting, see section 2.3.1, “Selecting the Signal to Measure.”

#### Procedure

---

**AUDIO** → **F•4** STATUS SETUP → **F•2** METADATA → **F•2** EBI METADATA

---

AC-3 Extended Bitstream Info	
Pref Stereo Dwnmix Mode	not exist
Lt/Rt Center Mix Lvl	not exist
Lt/Rt Srnd Mix Lvl	not exist
Lo/Ro Center Mix Lvl	not exist
Lo/Ro Srnd Mix Lvl	not exist
Srnd EX Mode	not exist
Headphone Mode	not exist
AD Converter Type	not exist
Src: DD TRUE PEAK AES	

Figure 6-10 EBI metadata display

### 6.4 Displaying the Channel Status

When INPUT SELECT is set to SDI or EXT DIGI, to display the status of the selected channel, follow the procedure below.

Use **F•1** DISPLAY CHANNEL to select the channel. You can also use **F•2** ALIGN to select the bit order.

For information on the INPUT SELECT setting, see section 2.1.1, “Selecting the Signal to Measure.”

#### Procedure

---

**AUDIO** → **F•4** STATUS SETUP → **F•3** CHANNEL STATUS

---

## 6. AUDIO STATUS DISPLAY

AES/EBU CHANNEL STATUS DISPLAY				
FORMAT	: Professional	Byte	: 01234567	01234567
AUDIO DATA	: PCM	00	: 10100001	12 : 00000000
EMPHASIS	: No emphasis	01	: 00010000	13 : 00000000
SIGNAL LOCK	: Locked	02	: 00100000	14 : 00000000
SAMPLING FREQ	: 48kHz	03	: 00000000	15 : 00000000
REFERENCE	: Not reference	04	: 00000000	16 : 00000000
CH MODE	: Two-channel	05	: 00000000	17 : 00000000
		06	: 00000000	18 : 00000000
RESOLUTION	: Not indicated	07	: 00000000	19 : 00000000
ALIGNMENT	: Not indicated	08	: 00000000	20 : 00000000
ORIGIN	:	09	: 00000000	21 : 00000000
DESTINATION	:	10	: 00000000	22 : 00000000
TIME-OF-DAY	: 00:00:00	11	: 00000000	23 : 11101110
CRC	: NORMAL			

Figure 6-11 Channel status display

### 6.5 Displaying User Bits

When INPUT SELECT is set to SDI or EXT DIGI, to display the user bits of the selected channel, follow the procedure below.

Use **[F•1]** DISPLAY CHANNEL to select the channel. You can also use **[F•2]** ALIGN to select the bit order.

For information on the INPUT SELECT setting, see section 2.1.1, "Selecting the Signal to Measure."

#### Procedure

**[AUDIO]** → **[F•4]** STATUS SETUP → **[F•4]** USER BIT

AES/EBU USER BIT DISPLAY				
MANAGEMENT	: Not indicated	Byte	: 01234567	01234567
		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 6-12 User bit display

## 6.6 Configuring Error Detection Settings

To configure the error detection settings, follow the procedure below.

On the audio status display, error detection will be performed for the items that you set to ON.

### Procedure

**AUDIO** → **F•4** STATUS SETUP → **F•5** ERROR SETUP

The screenshot shows the 'ERROR SETUP' screen with the following settings:

Setting	Value	Unit/Range
Level Over	<input checked="" type="checkbox"/> ON	<input type="checkbox"/> OFF
Clip	<input checked="" type="checkbox"/> ON	<input type="checkbox"/> OFF
Duration	<input type="text" value="1"/>	sample(1 - 100)
Mute	<input checked="" type="checkbox"/> ON	<input type="checkbox"/> OFF
Duration	<input type="text" value="1000"/>	ms(1 - 5000)
Parity Error	<input checked="" type="checkbox"/> ON	<input type="checkbox"/> OFF
Validity Error	<input checked="" type="checkbox"/> ON	<input type="checkbox"/> OFF
Crc Error	<input checked="" type="checkbox"/> ON	<input type="checkbox"/> OFF
Code Violation	<input checked="" type="checkbox"/> ON	<input type="checkbox"/> OFF

Figure 6-13 Configuring error detection settings

## 6.7 Resetting Errors

To reset the error counts that appear on the audio status display to 0, follow the procedure below. Also, the Reset indication at the lower left of the screen will be reset to 00:00:00.

### Procedure

**AUDIO** → **F•4** STATUS SETUP → **F•6** ERROR RESET



## 7. LOUDNESS DISPLAY

To configure loudness display settings, press **F•4** LOUDNESS SETUP on the audio menu. This setting is available when **F•2** DISPLAY MODE is set to LOUDNESS.

**AUDIO** → **F•2** DISPLAY MODE to select LOUDNESS → **F•4** LOUDNESS SETUP →

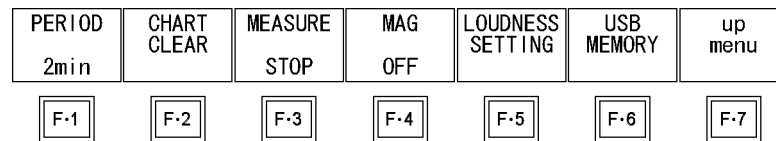


Figure 7-1 LOUDNESS SETUP menu

### 7.1 Loudness Display Explanation

The loudness screen is shown below.

You can measure the loudness of one input or two inputs on the loudness display. To switch between one input and two inputs, press **F•5** LOUDNESS SETTING, and use the CHANNEL SUB tab.

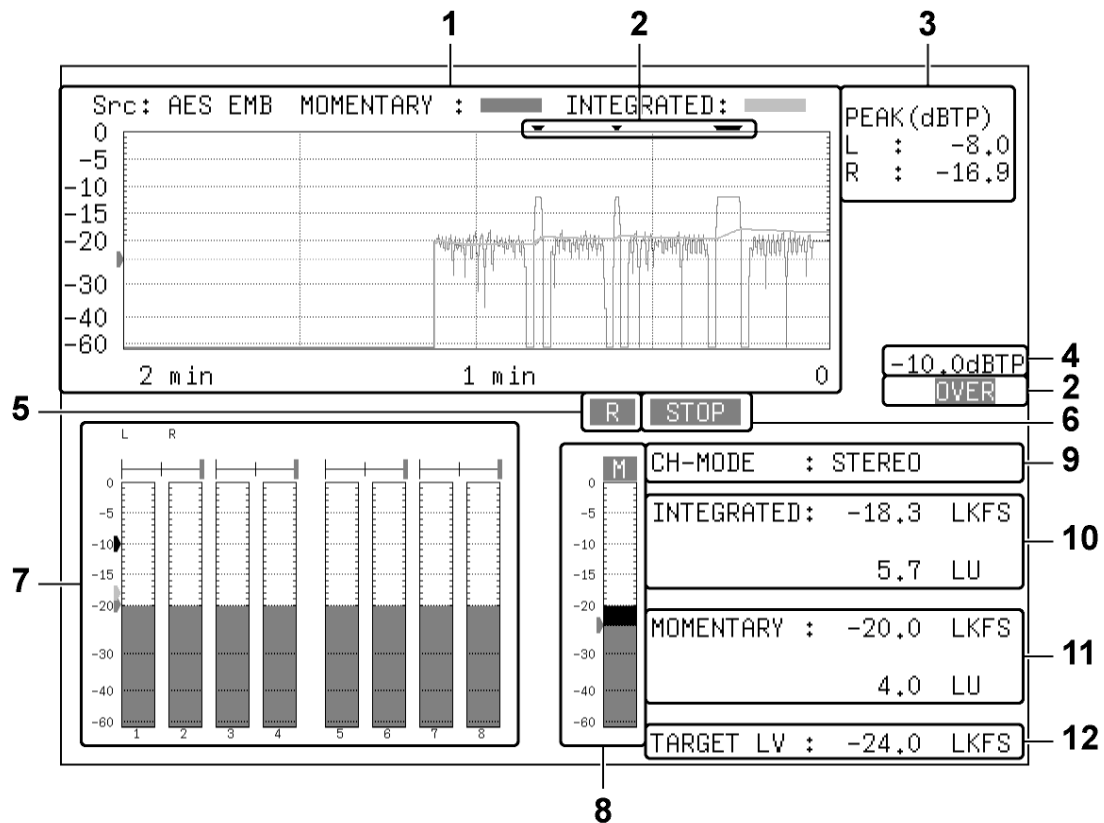


Figure 7-2 One input (MAIN) loudness display

## 7. LOUDNESS DISPLAY

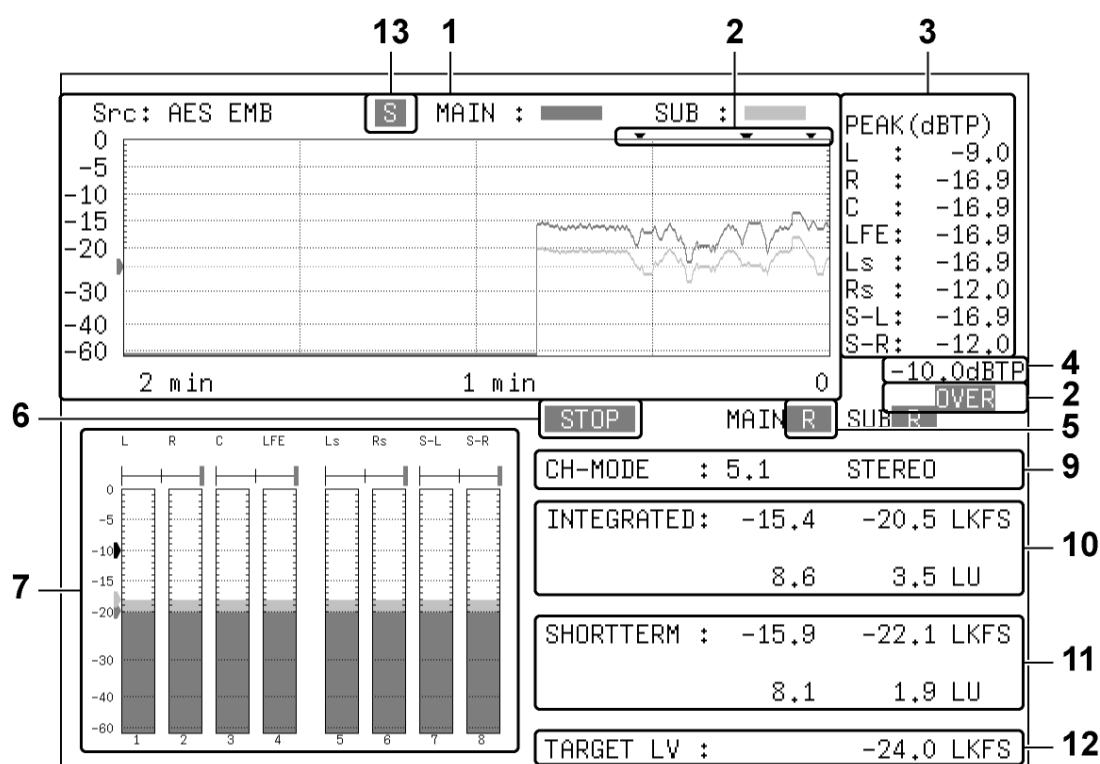


Figure 7-3 Two input (MAIN and SUB) loudness display

### 1 Loudness Chart Display

One of the following values that you specified with **[F•5]** LOUDNESS SETTING is displayed on a time-based chart.

- Integrated loudness and momentary loudness of one input (MAIN)
- Integrated loudness and short-term loudness of one input (MAIN)
- Integrated loudness of two inputs (MAIN and SUB)
- Momentary loudness of two inputs (MAIN and SUB)
- Short-term loudness of two inputs (MAIN and SUB)

You can press **[F•1]** PERIOD to change the measurement time. You can press **[F•4]** MAG to expand the level scale. The green line indicates the target level.

To start measuring, set **[F•3]** MEASURE to START. You can also use pin 9 (/P8) of the remote connector or a time code.

To clear the loudness chart, press **[F•2]** CHART CLEAR. You can also use pin 8 (/P7) of the remote connector.

See section 7.6, "Configuring Loudness Settings" and section 7.8, "Remote Control."

### 2 OVER

If dBTP Over Mark is set to ON on the LOUDNESS SETTING tab that appears when you press **[F•5]** LOUDNESS SETTING and the peak level of a channel is greater than or equal to the level specified by OVER dBFS, a red ▼ is displayed at the top of the chart. An OVER mark is also displayed.

Neither mark is displayed when Level Over under ERROR SETUP is set to OFF.

For information on the OVER dBFS setting, see section 3.4, "Setting the Reference Level."

For information on the ERROR SETUP setting, see section 6.6, "Configuring Error Detection Settings."

**3 PEAK(dBTP)**

This displays the peak levels of the channels that have been assigned on the CHANNEL tab that appears when you press **F•5** LOUDNESS SETTING. You can press **F•2** CHART CLEAR to clear the peak levels.

The values are normally displayed in white, but when a value is greater than or equal to the value specified by OVER dBFS, it is displayed in red.

For information on the OVER dBFS setting, see section 3.4, "Setting the Reference Level."

**4 dBTP**

The level specified by OVER dBFS is displayed when Level Over under ERROR SETUP is set to ON and dBTP Over Mark is set to ON on the LOUDNESS SETTING tab that appears when you press **F•5** LOUDNESS SETTING.

For information on the ERROR SETUP setting, see section 6.6, "Configuring Error Detection Settings."

For information on the OVER dBFS setting, see section 3.4, "Setting the Reference Level."

**5 R**

This indication appears when the input signal is applicable for relative gating. This is displayed when Relative Gating Lamp is set to ON on the LOUDNESS SETTING tab that appears when you press **F•5** LOUDNESS SETTING.

**6 MEAS / STOP**

"MEAS" is displayed during loudness measurement, and "STOP" is displayed when measurement is stopped.

**7 Meter Display**

The levels of the channels that you selected in section 2.1.2, "Selecting the Channels to Measure" are displayed on a meter. In addition, correlation meters of adjacent channels are displayed at the top area of the meter. The correlation meter indicates the phase difference between the two signals. The right edge indicates in-phase, the left edge indicates 180 ° out of phase, and the center indicates no correlation.

**8 Loudness Meter Display (only for one input measurement)**

The short-term loudness or the momentary loudness is displayed using meters. Press **F•5** LOUDNESS SETTING and use the LOUDNESS SETTING tab to switch between short-term loudness and momentary loudness. The level is normally displayed in green, but it is displayed in red if it exceeds the target level.

**9 CH-MODE**

This displays the channel mode that was selected on the CHANNEL tab that appears when you press **F•5** LOUDNESS SETTING.

**10 INTEGRATED**

The integrated loudness is displayed as values. The top value is an absolute value. The bottom value is a relative value with the target level as the reference. These values are normally displayed in white, but they are displayed in red when:

- The measurement mode is ARIB or EBU and the loudness level is outside the range defined by the target level  $\pm 1$  (LU).
- The measurement mode is ATSC and the loudness level is outside the range defined by the target level  $\pm 2$  (LK).

**11 SHORTTERM / MOMENTARY**

The short-term loudness or the momentary loudness is displayed as values. Press **[F•5]** LOUDNESS SETTING and use the LOUDNESS SETTING tab to switch between short-term loudness and momentary loudness.

The top value is an absolute value. The bottom value is a relative value with the target level as the reference. These values are normally displayed in white, but they are displayed in red when they exceed the target level.

**12 TARGET LV**

This displays the target level. The target level varies according to the measurement mode as shown below.

- When the measurement mode is not EBU: -24.0 (LKFS)
- When the measurement mode is EBU: -23.0 (LUFS)

**13 I / M / S (only for two input measurement)**

This displays the loudness type that was selected on the LOUDNESS SETTING tab that appears when you press **[F•5]** LOUDNESS SETTING. The integrated loudness is displayed as "I," the momentary loudness is displayed as "M," and the short-term loudness is displayed as "S."

**7.2 Selecting the Measurement Time**

To select the measurement time, follow the procedure below.

**Procedure**


---

**AUDIO** → **[F•4]** LOUDNESS SETUP → **[F•1]** PERIOD:  
2min / 10min / 30min / 1hour / 2hour (standard model)  
 6hour / 12hour / 24hour / 32hour (option)(\*1)

---

\*1 Available on an option that can be purchased. For details, contact your nearest LEADER agent.  
 These values cannot be selected when Memory Store Mode is set to Loudness 2h on the GENERAL SETUP tab in the system settings.

**7.3 Clearing the Loudness Measurement**

To clear the loudness chart, peak level, and numeric displays, follow the procedure below.

**Procedure**


---

**AUDIO** → **[F•4]** LOUDNESS SETUP → **[F•2]** CHART CLEAR

---

## 7.4 Starting and Stopping Measurements

To start and stop measurements, follow the procedure below. When measurements are being performed, “MEAS” is displayed in the center of the screen. When measurements are stopped, “STOP” is displayed. When the LV 7770 is standing by, “WAIT” is displayed. This menu appears when you press **F•5** LOUDNESS SETTING and set Trigger to OFF or Mute on the LOUDNESS SETTING tab.

### Procedure

**AUDIO** → **F•4** LOUDNESS SETUP → **F•3** MEASURE: STOP / START

## 7.5 Selecting the Scale

To select the loudness chart display scale, follow the procedure below.

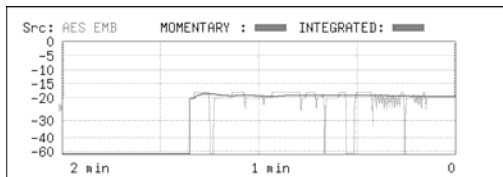
### Procedure

**AUDIO** → **F•4** LOUDNESS SETUP → **F•4** MAG: OFF / ON

### Settings

- OFF:** The target level is displayed on the scale that you selected with DYNAMIC RANGE on the METER SETUP menu.
- ON:** The target level is displayed on a scale that has a full scale ranging from -18 to +9 (LK/LU).

MAG = OFF



MAG = ON

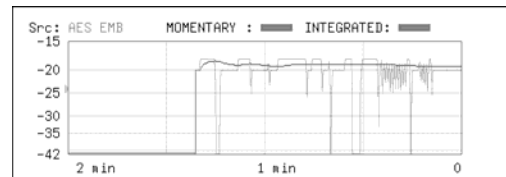


Figure 7-4 Selecting the scale

## 7.6 Configuring Loudness Settings

To configure loudness settings, follow the procedure below.

### Procedure

**AUDIO** → **F•4** LOUDNESS SETUP → **F•5** LOUDNESS SETTING

LOUDNESS SETTING | CHANNEL MAIN | CHANNEL SUB

Integrated Loudness

Measure Mode: ☐ BS1770-2 ☒ ARIB ☐ EBU ☐ ATSC

Target Level: -24.0 LKFS (-25.0 - -23.0)

Block Size: 400 ms Absolute Gating: -70 LKFS

Overlap Size: 75 % Relative Gating: -10 LKFS

LFE Gain: ☐ ON ☒ OFF

ShortTerm Loudness

Average Time:  ms

Momentary Loudness

Average Time:  ms

Loudness Response: ☐ ShortTerm ☒ Momentary

Chart Setting: ☒ Integrated ☐ ShortTerm ☒ Momentary

Loudness Auto Measure

Trigger: ☐ OFF ☐ REMOTE ☒ Timecode ☐ Mute

Start Time:  H  M  S

End Time:  H  M  S

dBTP Over Mark: ☐ ON ☒ OFF

Relative Gating Lamp: ☐ ON ☒ OFF

Figure 7-5 LOUDNESS SETTING tab

- Measure Mode**

Select the measurement mode. Depending on the measurement mode, the parameters vary as shown below.

Table 7-1 Selecting the measurement mode

	Measure Mode			
	BS1770-2	ARIB	EBU	ATSC
Corresponding Standard	ITU-R BS.1770-2	ARIB TR-B32	EBU R128	ATSC A/85
Target Level	-24.0 (LKFS)	-24.0 (LKFS)	-23.0 (LUFS)	-24.0 (LKFS)
Block Size (ms)	400	400	400	400
Overlap Size (%)	75	75	75	0
Absolute Gating	-70 (LKFS)	-70 (LKFS)	-70 (LUFS)	-
Relative Gating	-10 (LKFS)	-10 (LKFS)	-10 (LUFS)	-

- LFE Gain**

When MODE is set to 5.1 or CUSTOM on the CHANNEL MAIN tab, select whether to measure LFEch. When this is set to ON, you can set the LFEch gain to a value from 0 to 10.

- ShortTerm Loudness**

Set the time that is used to calculate the short-term loudness to a value from 200 to 10000 (ms).

- Momentary Loudness**

Set the time that is used to calculate the momentary loudness to a value from 200 to 10000 (ms).

- **Loudness Response**

Set the response model to Short Term or Momentary.

This cannot be selected when SUB is set to MONO or STEREO on the CHANNEL SUB tab.

- **Chart Setting**

Select the type of loudness to display on the loudness chart.

This cannot be selected when SUB is set to OFF on the CHANNEL SUB tab.

- **Loudness Auto Measure**

Select the automatic loudness measurement mode from the available settings below.

**OFF:** Automatic measurement is disabled. You must set the loudness measurement on the LOUDNESS SETUP menu.

**REMOTE:** Measurement start, stop, and clear are executed through the remote control connector.

You have to press **[SYS]** > **[F•2]** SYSTEM SETUP, and then set Remote Select to Recall and Loudness on the REMOTE SETUP tab.

**Timecode:** Measurement start and stop are executed on the basis of the time codes embedded in the SDI signals. Set the Start Time and End Time values. An LV 5770SER08 or LV 5770SER09A must be installed, and you must select the time code by pressing **[SYS]**, **[F•2]** SYSTEM SETUP, and then Time.

**Mute:** Measurement start, stop, and clear and storage to USB memory are executed through input signals as described below.

If you select Mute, on the LOUDNESS SETUP menu, press **[F•3]** MEASURE to select START, and then apply the material to measure. "WAIT" appears in the center of the display.

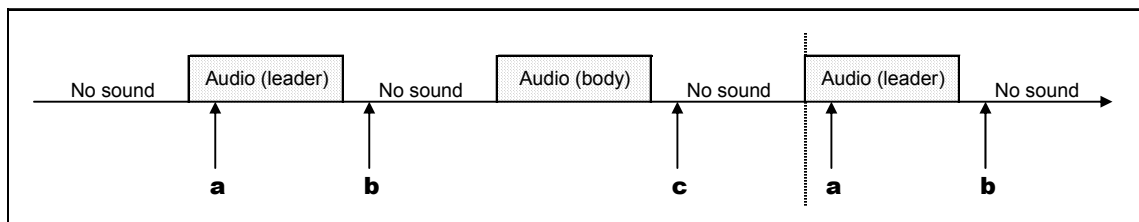


Figure 7-6 Mute explanation

- When audio (leader) is received, loudness measurement is cleared.
- Loudness measurement starts 1 second after the detection of no sound. "MEAS" appears in the center of the display.
- Loudness measurement stops 3 seconds after the detection of no sound. If a USB memory device is connected, the loudness data is automatically saved to the device. "WAIT" appears in the center of the display.

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

## 7. LOUDNESS DISPLAY

- **dBTP Over Mark**

Select whether to display a ▼ mark and the “OVER” mark when the peak level of a channel is greater than or equal to the level specified by OVER dBFS.

Neither mark is displayed when Level Over under ERROR SETUP is set to OFF.

For information on the OVER dBFS setting, see section 3.4, “Setting the Reference Level.”

For information on the ERROR SETUP setting, see section 6.6, “Configuring Error Detection Settings.”

- **Relative Gating Lamp**

Select whether to display “R” when the input signal is applicable for relative gating.

LOUDNESS SETTING		CHANNEL MAIN		CHANNEL SUB	
Channel Main					
MODE		<input checked="" type="checkbox"/> MONO	<input type="checkbox"/> STEREO	<input type="checkbox"/> 5.1	<input checked="" type="checkbox"/> CUSTOM
L		<input checked="" type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4
		<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8
		<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12
		<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16
		<input type="checkbox"/> N.C.			
R		<input checked="" type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4
		<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8
		<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12
		<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16
		<input type="checkbox"/> N.C.			
C		<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input checked="" type="checkbox"/> CH3	<input type="checkbox"/> CH4
		<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8
		<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12
		<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16
		<input type="checkbox"/> N.C.			
LFE		<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input checked="" type="checkbox"/> CH4
		<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8
		<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12
		<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16
		<input type="checkbox"/> N.C.			
Ls		<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4
		<input type="checkbox"/> CH5	<input checked="" type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8
		<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12
		<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16
		<input type="checkbox"/> N.C.			
Rs		<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4
		<input type="checkbox"/> CH5	<input checked="" type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8
		<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12
		<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16
		<input type="checkbox"/> N.C.			

Figure 7-7 CHANNEL MAIN tab

- **MODE**

Select the main loudness measurement channel from the available settings below.

**MONO:** The channel that you select for L-Rch is measured.

**STEREO:** The channels that you select for Lch and Rch are measured.

**5.1:** The channels that you select for Lch, Rch, Cch, LFEch, Lsch, and Rsch are measured.

**CUSTOM:** The channels that you select for Lch, Rch, Cch, LFEch, Lsch, and Rsch are measured.

Channels set to N.C. will not be measured.



## 7. LOUDNESS DISPLAY

LOUDNESS SETTING		CHANNEL MAIN		CHANNEL SUB				
Channel Sub								
SUB	<input checked="" type="checkbox"/> OFF	<input type="checkbox"/> MONO		<input checked="" type="checkbox"/> STEREO				
L	<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input checked="" type="checkbox"/> CH7	<input type="checkbox"/> CH8
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16
R	<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input checked="" type="checkbox"/> CH8
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16

Figure 7-8 CHANNEL SUB tab

- **SUB**

Select the sub loudness measurement channel from the available settings below.

OFF: Sub loudness is not measured.

MONO: The channel that you select for L-Rch is measured.

STEREO: The channels that you select for Lch and Rch are measured.

## 7.7 Saving to a USB Memory Device

You can save the loudness data to a USB memory device as a .csv file and as a text file. To save a file with a name that you specify, follow the procedure below.

1. Connect a USB memory device to the instrument.
2. Press **F•6** USB MEMORY.

The file list display appears.

This setting appears when a USB memory device is connected to the LV 7770.

External USB FLASH DRIVE LOUDNESS FILE LIST					
No.	File Name	Date	Time	Size(BYTE)	
1	20120607153439.csv	12/06/07	15:34	2,321	
2	20120607153439.txt	12/06/07	15:34	747	
SIZE: 4,001,894,400byte FREE: 3,854,082,048byte					
LOUDNESS STORE FILE NAME .CSV					
AUTO FILENAME ON		STORE	FILE DELETE		up menu

Figure 7-9 File list display

3. Set **F•1** AUTO FILENAME to OFF.
4. Press **F•2** NAME INPUT.

The file name input display appears.

<div> <div>0</div> <div>1</div> <div>2</div> <div>3</div> <div>4</div> <div>5</div> <div>6</div> <div>7</div> <div>8</div> <div>9</div> </div> <div> <div>A</div> <div>B</div> <div>C</div> <div>D</div> <div>E</div> <div>F</div> <div>G</div> <div>H</div> <div>I</div> <div>J</div> </div> <div> <div>K</div> <div>L</div> <div>M</div> <div>N</div> <div>O</div> <div>P</div> <div>Q</div> <div>R</div> <div>S</div> <div>T</div> </div> <div> <div>U</div> <div>V</div> <div>W</div> <div>X</div> <div>Y</div> <div>Z</div> <div>-</div> </div>									
[F,D_NOB] = CHAR SELECT , [F,D_PUSH] = CHAR SET & Function Key EDIT									
LOUDNESS STORE FILE NAME _ .CSV									
CLEAR ALL	DELETE		<=	=>	CHAR SET	up menu			

Figure 7-10 File name input display

5. Enter a file name using up to 14 characters.

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

<b>F•1</b> CLEAR ALL:	Deletes all characters
<b>F•2</b> DELETE:	Deletes the character at the cursor
<b>F•4</b> <=:	Moves the cursor to the left
<b>F•5</b> >=:	Moves the cursor to the right
<b>F•6</b> CHAR SET:	Enters the character
<b>F•D</b> :	Turn to select a character, and press to enter the character.

You can copy the file name of an already saved file. To copy a file name, move the cursor to the file in the file list whose name you want to copy, and then press the function dial (**F•D**).

6. Press **F•7** up menu.

7. Press **F•3** STORE.

When the message "Saving file - Please wait." disappears, the file has been successfully saved.

If a file with the same name already exists on the USB memory device, an overwrite confirmation menu appears. To overwrite the current file, press **F•1** OVER WR YES. To cancel the save operation, press **F•3** OVER WR NO.

- **Deleting a Loudness Data**

To delete a loudness data that has been saved to the USB memory device, select the log file on the file list display, and then press **F•4** FILE DELETE. To delete the file, press **F•1** DELETE YES. To cancel the delete operation, press **F•3** DELETE NO.

- **Automatic File Name Generation**

If you set **F•1** AUTO FILENAME to ON, the file name will be generated automatically in the format "YYYYMMDDHHMMSS" when you save the file. In this situation, **F•2** NAME INPUT is not displayed.

- **USB Memory Device Folder Structure**

Loudness data is saved in the LOUDNESS folder.

```

└─ USB memory device
   └─ LV7770_USER
      └─ LOUDNESS
         └─ *****.txt

```

- **Loudness Data Explanation**

In txt data, the contents set using **F•5** LOUDNESS SETTING and integrated loudness values are stored. Judgment ([OK] or [NG]) on the basis of THRESHOLD is also stored.

In csv data, the current time, timecodes, main loudness values, and sub loudness values are stored. Data values of about 10 points are stored per second.

txt data example

```

2012/07/12 10:32:31
<< SETTING DATA and RESULT >>

-----
LOUDNESS SETTING
-----

MEASURE MODE   : ARIB

TARGET LEVEL   : -24.0 LKFS
THRESHOLD      : -25.0 ~ -23.0 LKFS

BLOCK SIZE    : 400 msec
OVERLAP SIZE   : 75 %
ABS GATING LV  : -70.0 LKFS
REL GATING LV  : -10.0 LKFS

LFE GAIN       : OFF

-----
LOUDNESS RESPONSE
-----

RESPONSE       : MOMENTARY
AVERAGE TIME   : 400 (msec)

```

csv data example

```

2012/7/12 10:32
10:30:29 0:09:34 -22.6 -27.2
10:30:29 0:09:34 -18.9 -23.6
10:30:30 0:09:35 -17 -21.6
10:30:30 0:09:35 -15.6 -20.3
10:30:30 0:09:35 -15.4 -20
10:30:30 0:09:35 -15.4 -20
10:30:30 0:09:35 -15.4 -20
10:30:30 0:09:35 -15.4 -20
10:30:30 0:09:35 -14.9 -19.5
10:30:30 0:09:35 -14.4 -19
10:30:30 0:09:35 -13.9 -18.5
10:30:31 0:09:36 -13.5 -18.1
10:30:31 0:09:36 -13.4 -18
10:30:31 0:09:36 -13.6 -18.3
10:30:31 0:09:36 -15 -19.6
10:30:31 0:09:36 -16.9 -21.6
10:30:31 0:09:36 -20.6 -25.2
10:30:31 0:09:36 -100 -100
10:30:31 0:09:36 -100 -100
10:30:31 0:09:36 -22.6 -27.3
10:30:31 0:09:36 -18.9 -23.6
10:30:31 0:09:36 -17 -21.6
10:30:32 0:09:37 -15.5 -20.1
10:30:32 0:09:37 -14.6 -19.3

```

⋮

⋮

```

SUB   MODE   : STEREO

SUB - L   : CH 7
SUB - R   : CH 8

```

-----  
PEAK HOLD ( dBTP )  
-----

```

L       : -16.9
R       : -16.9
C       : -16.9
LFE     : -16.9
Ls      : -16.9
Rs      : -16.9
S - L   : -16.9
S - R   : -16.9

```

-----  
RESULT  
-----

```

MAIN LOUDNESS : -15.8 (LKFS) / 8.2 (LU) [NG]
SUB LOUDNESS  : -20.4 (LKFS) / 3.6 (LU) [NG]

```

```

10:30:33 0:09:38 -20.6 -25.2
10:30:33 0:09:38 -100 -100
10:30:34 0:09:39 -22.6 -27.3
10:30:34 0:09:39 -19 -23.6
10:30:34 0:09:39 -17 -21.6
10:30:34 0:09:39 -15.6 -20.3
10:30:34 0:09:39 -14.9 -19.5
10:30:34 0:09:39 -14.4 -19
10:30:34 0:09:39 -13.9 -18.5
10:30:34 0:09:39 -13.7 -18.4
10:30:34 0:09:39 -15 -19.6
10:30:34 0:09:39 -16.9 -21.6
10:30:34 0:09:39 -20.6 -25.2
10:30:35 0:09:40 -22.6 -27.3
10:30:35 0:09:40 -19 -23.6
10:30:35 0:09:40 -17 -21.6
10:30:35 0:09:40 -15.2 -19.8
10:30:35 0:09:40 -14.4 -19
10:30:35 0:09:40 -14.2 -18.8
10:30:35 0:09:40 -15.1 -19.8
10:30:35 0:09:40 -16.9 -21.6
10:30:35 0:09:40 -19.8 -24.4
10:30:35 0:09:40 -20.4 -25
10:30:36 0:09:41 -17.9 -22.5
10:30:36 0:09:41 -16.1 -20.7

```

## 7.8 Remote Control

This section explains how to use the remote control connector on the rear panel to start, stop, and clear loudness measurements. Refer to the LV 7770 instruction manual as you read this chapter.

1. On the **REMOTE SETUP** tab in the system settings, set Remote Select to “Recall and Loudness.”

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

GENERAL SETUP		ETHERNET SETUP		REMOTE SETUP		DATE&TIME	
Remote Setup							
Remote Mode	<input checked="" type="checkbox"/> BIT <input type="checkbox"/> BINARY						
Remote Select	<input type="checkbox"/> Recall <input checked="" type="checkbox"/> Recall and Loudness						
Alarm Polarity	<input checked="" type="checkbox"/> POSITIVE <input type="checkbox"/> NEGATIVE						
Alarm Select	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> AB						

Figure 7-11 REMOTE SETUP tab

2. Press **F•1** COMPLETE.
3. On the **LOUDNESS SETTING** tab of the loudness display, set Trigger to REMOTE.

**AUDIO** → **F•4** LOUDNESS SETUP → **F•5** LOUDNESS SETTING →

LOUDNESS SETTING		CHANNEL MAIN		CHANNEL SUB	
Integrated Loudness					
Measure Mode	<input type="checkbox"/> BS1770-2	<input checked="" type="checkbox"/> ARIB	<input type="checkbox"/> EBU	<input type="checkbox"/> ATSC	
Target Level	-24.0 LKFS	(-25.0 - -23.0)			
Block Size	400 ms	Absolute Gating		-70 LKFS	
Overlap Size	75 %	Relative Gating		-10 LKFS	
LFE Gain	<input type="checkbox"/> ON	<input checked="" type="checkbox"/> OFF	<input type="text" value="0"/>		
ShortTerm Loudness					
Average Time	<input type="text" value="3000"/> ms				
Momentary Loudness					
Average Time	<input type="text" value="400"/> ms				
Loudness Response	<input type="checkbox"/> ShortTerm	<input checked="" type="checkbox"/> Momentary			
Chart Setting	<input checked="" type="checkbox"/> Integrated	<input type="checkbox"/> ShortTerm	<input checked="" type="checkbox"/> Momentary		
Loudness Auto Measure					
Trigger	<input type="checkbox"/> OFF	<input checked="" type="checkbox"/> REMOTE	<input type="checkbox"/> Timecode	<input type="checkbox"/> Mute	
dBTP Over Mark	<input type="checkbox"/> ON	<input checked="" type="checkbox"/> OFF			
Relative Gating Lamp	<input type="checkbox"/> ON	<input checked="" type="checkbox"/> OFF			

Figure 7-12 LOUDNESS SETTING tab

4. Press **F•1** COMPLETE.

5. You can use pin 8 (/P7) and pin 9 (/P8) of the remote control connector to control loudness measurements.

**To start loudness measurements**

Set pin 9 (/P8) of the remote connector to low (GND).

**To stop loudness measurements**

Set pin 9 (/P8) of the remote connector to high (open).

**To clear loudness measurements**

Set pin 8 (/P7) of the remote connector to low (GND).

## 8. CONFIGURING THE HEADPHONE SETTING

To configure the headphone settings, press **F•5** PHONES SETUP in the audio menu. You can set the headphone volume and the output channels.

**AUDIO** → **F•5** PHONES SETUP →

PHONES VOLUME 0	PHONES Lch 1	PHONES Rch DAUX		DAUX CH LtRt	DAUX DRC LINE	up menu
<b>F•1</b>	<b>F•2</b>	<b>F•3</b>	<b>F•4</b>	<b>F•5</b>	<b>F•6</b>	<b>F•7</b>

Figure 8-1 PHONES SETUP menu

### 8.1 Adjusting the Volume

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

If you assign the adjustment of the volume to the SHORTCUT key in the system settings, you can adjust the volume even when a display mode other than the audio mode is in use.

#### Procedure

---

**AUDIO** → **F•5** PHONES SETUP → **F•1** PHONES VOLUME: 0 to 63

or

**AUDIO** → **F•7** PHONES VOLUME: 0 to 63

---

## 8.2 Selecting the Channels to Output

To select the left and right headphone jack output channels separately, follow the procedure below.

### Procedure

---

AUDIO → F•5 PHONES SETUP → F•2 PHONES Lch  
 → F•3 PHONES Rch

---

The channels that you can select vary depending on the input mode and SOURCE SELECT settings as shown in the following table.

For information on the SOURCE SELECT setting, see section 2.1, “Configuring Measurement Signal Settings.”

Table 8-1 Selecting the channels to output

INPUT SELECT	Input Mode	NUMBER of CHANNELS	F•2 PHONES Lch	F•3 PHONES Rch
SDI	Single input mode	8CH	1ST GRP SELECT + 2ND GRP SELECT + Lt	1ST GRP SELECT + 2ND GRP SELECT + Rt
		16CH	1 to 16	1 to 16
	Simul mode	8CH	ACH GRP SELECT + BCH GRP SELECT	ACH GRP SELECT + BCH GRP SELECT
SDI (Dolby)	-	8CH	D1 to D8 + DAUX	D1 to D8 + DAUX
	Mix mode	16CH	1ST GRP PCM + 2ND GRP PCM + Lt + D1 to D8 + DAUX	1ST GRP PCM + 2ND GRP PCM + Rt + D1 to D8 + DAUX
EXT DIGI	-	8CH	1 to 8 + Lt	1 to 8 + Rt
	-	16CH(OP70)	1 to 16	1 to 16
EXT DIGI (Dolby)	-	8CH	D1 to D8 + DAUX	D1 to D8 + DAUX
	Mix mode	16CH	1 to 8 + Lt + D1 to D8 + DAUX	1 to 8 + Rt + D1 to D8 + DAUX
EXT ANA	-	8CH	1 to 8 + Lt	1 to 8 + Rt

## 8.3 Setting the AUX Channel (Option)

When F•2 PHONES Lch or F•3 PHONES Rch is set to DAUX, to set the AUX channel, follow the procedure below.

### Procedure

---

AUDIO → F•5 PHONES SETUP → F•5 DAUX CH: LtRt / LoRo / MONO / MUTE  
 → F•6 DAUX DRC: LINE / RF

---

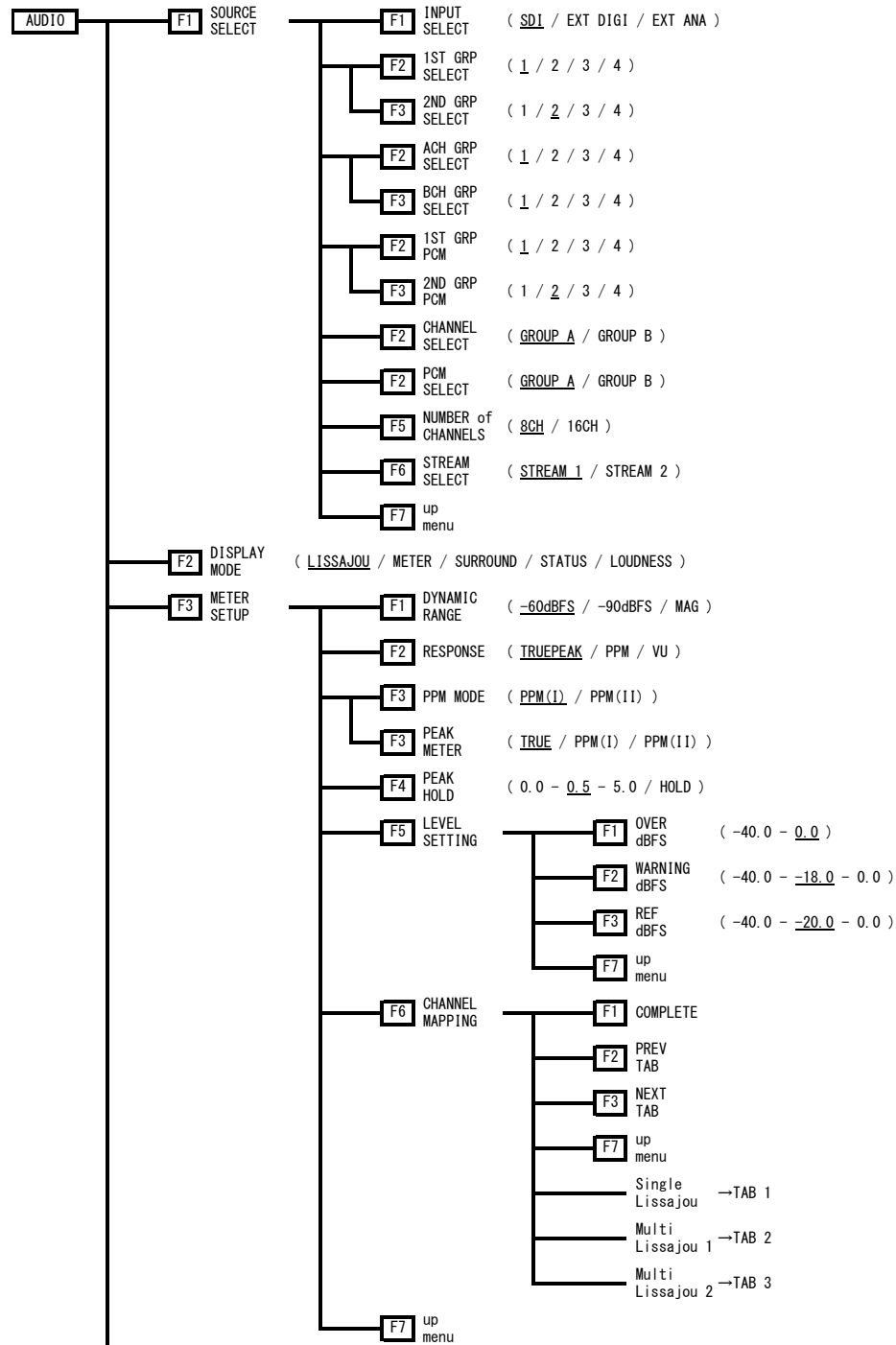


## 9. MENU TREE

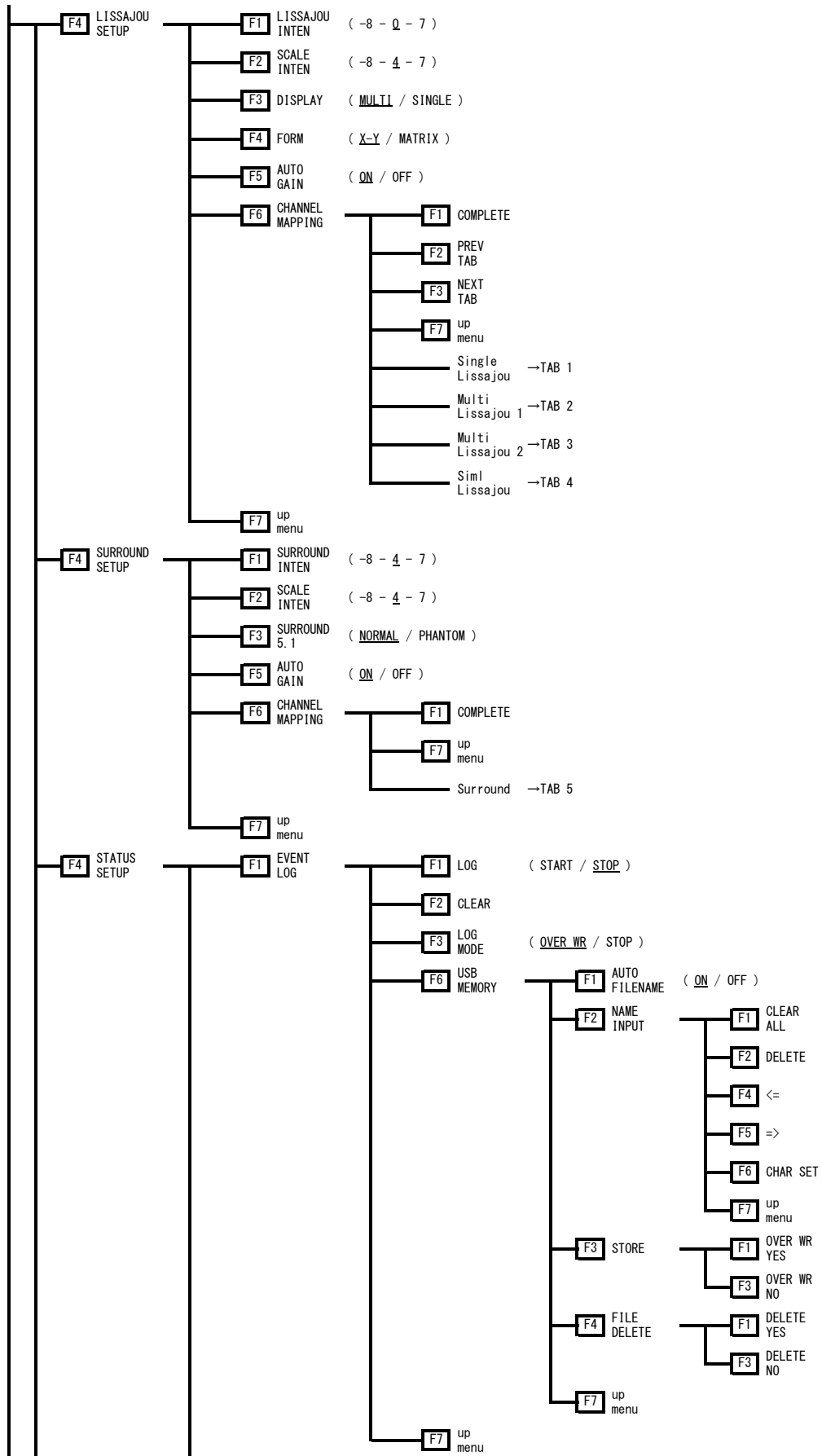
This chapter shows the menu tree that corresponds to the AUDIO key.

The default settings are underlined. The settings selected in the tab menu displays are also default settings.

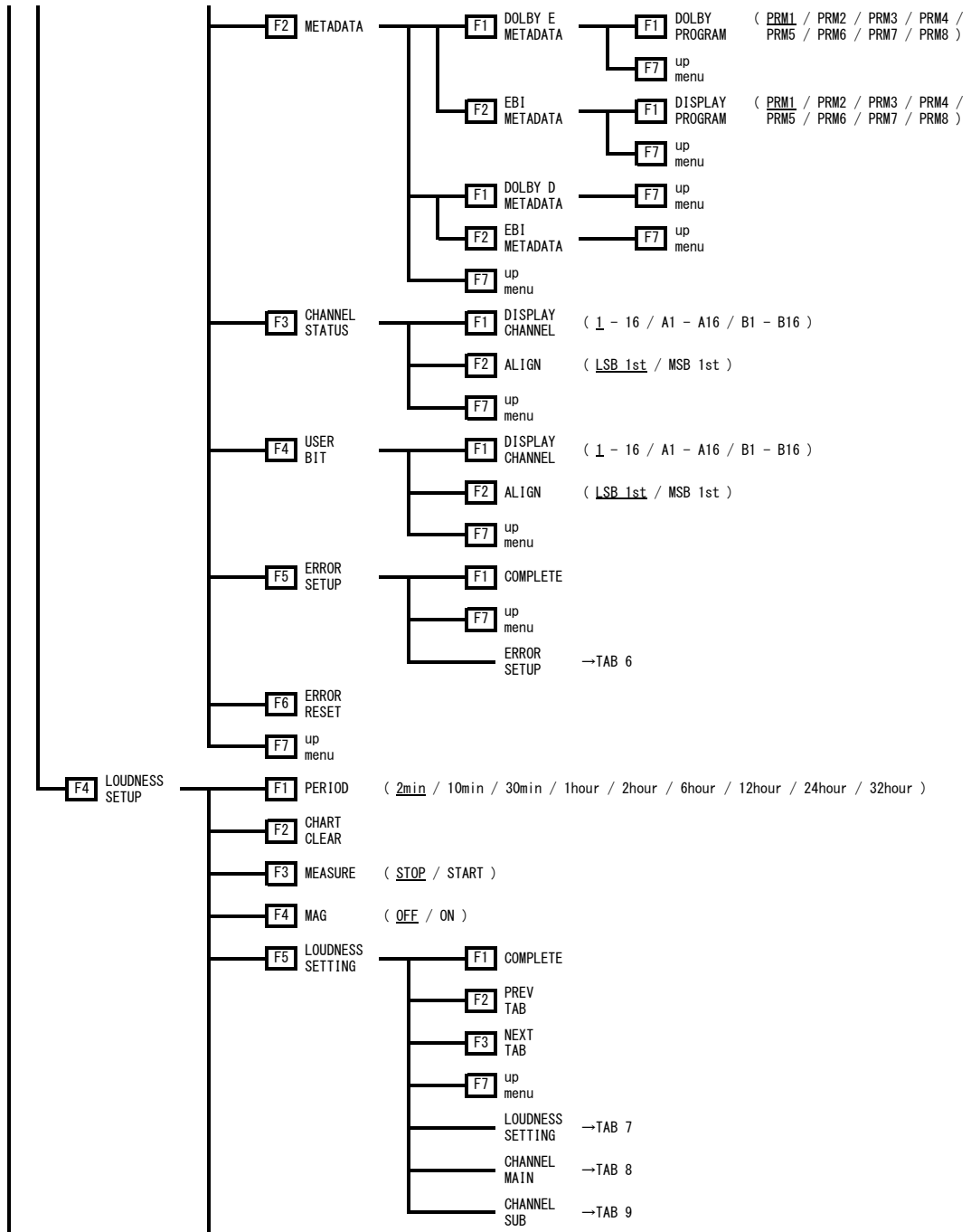
The menus that are displayed vary depending on the LV 7770 settings and whether a USB memory device is connected to the LV 7770.



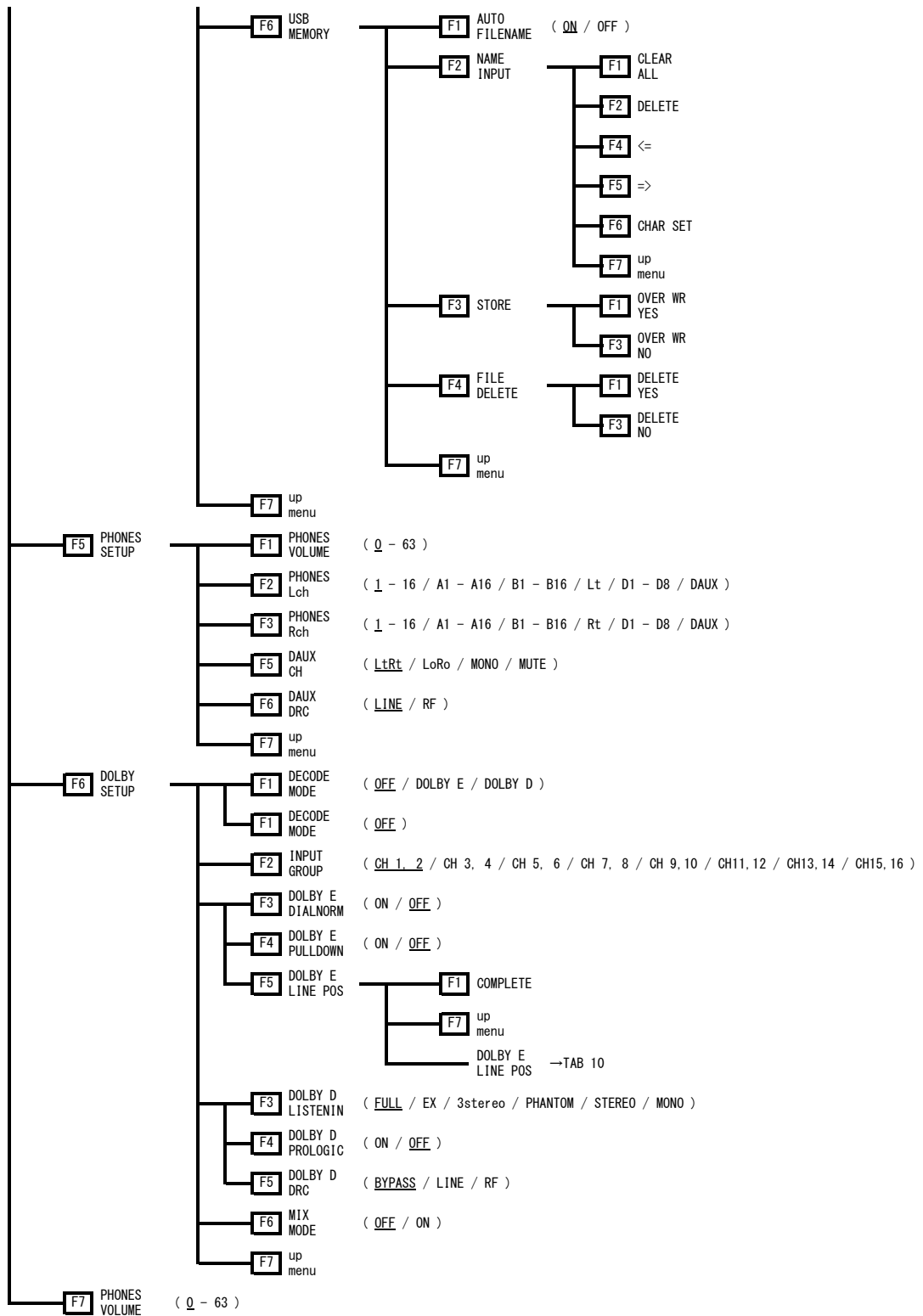
## 9. MENU TREE



## 9. MENU TREE



## 9. MENU TREE



## 9. MENU TREE

### TAB 1 (Single Lissajou)

Single Lissajou Multi Lissajou 1 Multi Lissajou 2

L ☒ CH1 ☐ CH2 ☐ CH3 ☐ CH4 ☐ CH5 ☐ CH6 ☐ CH7 ☐ CH8  
☐ CH9 ☐ CH10 ☐ CH11 ☐ CH12 ☐ CH13 ☐ CH14 ☐ CH15 ☐ CH16  
☐ Lt

R ☐ CH1 ☒ CH2 ☐ CH3 ☐ CH4 ☐ CH5 ☐ CH6 ☐ CH7 ☐ CH8  
☐ CH9 ☐ CH10 ☐ CH11 ☐ CH12 ☐ CH13 ☐ CH14 ☐ CH15 ☐ CH16  
☐ Rt

Lt,Rt is mapped by surround channel mapping.

### TAB 2 (Multi Lissajou 1)

Single Lissajou Multi Lissajou 1 Multi Lissajou 2

Channel Mapping

L1 ☒ CH1 ☐ CH2 ☐ CH3 ☐ CH4 ☐ CH5 ☐ CH6 ☐ CH7 ☐ CH8  
☐ CH9 ☐ CH10 ☐ CH11 ☐ CH12 ☐ CH13 ☐ CH14 ☐ CH15 ☐ CH16

R1 ☐ CH1 ☒ CH2 ☐ CH3 ☐ CH4 ☐ CH5 ☐ CH6 ☐ CH7 ☐ CH8  
☐ CH9 ☐ CH10 ☐ CH11 ☐ CH12 ☐ CH13 ☐ CH14 ☐ CH15 ☐ CH16

L2 ☐ CH1 ☐ CH2 ☒ CH3 ☐ CH4 ☐ CH5 ☐ CH6 ☐ CH7 ☐ CH8  
☐ CH9 ☐ CH10 ☐ CH11 ☐ CH12 ☐ CH13 ☐ CH14 ☐ CH15 ☐ CH16

R2 ☐ CH1 ☐ CH2 ☐ CH3 ☒ CH4 ☐ CH5 ☐ CH6 ☐ CH7 ☐ CH8  
☐ CH9 ☐ CH10 ☐ CH11 ☐ CH12 ☐ CH13 ☐ CH14 ☐ CH15 ☐ CH16

L3 ☐ CH1 ☐ CH2 ☐ CH3 ☐ CH4 ☒ CH5 ☐ CH6 ☐ CH7 ☐ CH8  
☐ CH9 ☐ CH10 ☐ CH11 ☐ CH12 ☐ CH13 ☐ CH14 ☐ CH15 ☐ CH16

R3 ☐ CH1 ☐ CH2 ☐ CH3 ☐ CH4 ☐ CH5 ☒ CH6 ☐ CH7 ☐ CH8  
☐ CH9 ☐ CH10 ☐ CH11 ☐ CH12 ☐ CH13 ☐ CH14 ☐ CH15 ☐ CH16

L4 ☐ CH1 ☐ CH2 ☐ CH3 ☐ CH4 ☐ CH5 ☐ CH6 ☒ CH7 ☐ CH8  
☐ CH9 ☐ CH10 ☐ CH11 ☐ CH12 ☐ CH13 ☐ CH14 ☐ CH15 ☐ CH16

R4 ☐ CH1 ☐ CH2 ☐ CH3 ☐ CH4 ☐ CH5 ☐ CH6 ☐ CH7 ☒ CH8  
☐ CH9 ☐ CH10 ☐ CH11 ☐ CH12 ☐ CH13 ☐ CH14 ☐ CH15 ☐ CH16

### TAB 3 (Multi Lissajou 2)

Single Lissajou Multi Lissajou 1 Multi Lissajou 2

Channel Mapping

L5 ☐ CH1 ☐ CH2 ☐ CH3 ☐ CH4 ☐ CH5 ☐ CH6 ☐ CH7 ☐ CH8  
☒ CH9 ☐ CH10 ☐ CH11 ☐ CH12 ☐ CH13 ☐ CH14 ☐ CH15 ☐ CH16

R5 ☐ CH1 ☐ CH2 ☐ CH3 ☐ CH4 ☐ CH5 ☐ CH6 ☐ CH7 ☐ CH8  
☒ CH9 ☐ CH10 ☐ CH11 ☐ CH12 ☐ CH13 ☐ CH14 ☐ CH15 ☐ CH16

L6 ☐ CH1 ☐ CH2 ☐ CH3 ☐ CH4 ☐ CH5 ☐ CH6 ☐ CH7 ☐ CH8  
☐ CH9 ☐ CH10 ☒ CH11 ☐ CH12 ☐ CH13 ☐ CH14 ☐ CH15 ☐ CH16

R6 ☐ CH1 ☐ CH2 ☐ CH3 ☐ CH4 ☐ CH5 ☐ CH6 ☐ CH7 ☐ CH8  
☐ CH9 ☐ CH10 ☐ CH11 ☒ CH12 ☐ CH13 ☐ CH14 ☐ CH15 ☐ CH16

L7 ☐ CH1 ☐ CH2 ☐ CH3 ☐ CH4 ☐ CH5 ☐ CH6 ☐ CH7 ☐ CH8  
☐ CH9 ☐ CH10 ☐ CH11 ☐ CH12 ☒ CH13 ☐ CH14 ☐ CH15 ☐ CH16

R7 ☐ CH1 ☐ CH2 ☐ CH3 ☐ CH4 ☐ CH5 ☐ CH6 ☐ CH7 ☐ CH8  
☐ CH9 ☐ CH10 ☐ CH11 ☐ CH12 ☐ CH13 ☒ CH14 ☐ CH15 ☐ CH16

L8 ☐ CH1 ☐ CH2 ☐ CH3 ☐ CH4 ☐ CH5 ☐ CH6 ☐ CH7 ☐ CH8  
☐ CH9 ☐ CH10 ☐ CH11 ☐ CH12 ☐ CH13 ☐ CH14 ☒ CH15 ☐ CH16

R8 ☐ CH1 ☐ CH2 ☐ CH3 ☐ CH4 ☐ CH5 ☐ CH6 ☐ CH7 ☐ CH8  
☐ CH9 ☐ CH10 ☐ CH11 ☐ CH12 ☐ CH13 ☐ CH14 ☐ CH15 ☒ CH16

## 9. MENU TREE

TAB 4 (Siml Lissajou)

Siml Lissajou																
Channel Mapping																
L1	<input checked="" type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8	(SDI A)							
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								
R1	<input type="checkbox"/> CH1	<input checked="" type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8	(SDI B)							
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								
L2	<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input checked="" type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8	(SDI A)							
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								
R2	<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input checked="" type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8	(SDI B)							
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								
L3	<input checked="" type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8	(SDI A)							
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								
R3	<input type="checkbox"/> CH1	<input checked="" type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8	(SDI B)							
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								
L4	<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input checked="" type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8	(SDI A)							
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								
R4	<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input checked="" type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8	(SDI B)							
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								

TAB 5 (Surround)

Surround																
Channel Mapping																
L	<input checked="" type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8								
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								
R	<input type="checkbox"/> CH1	<input checked="" type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8								
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								
C	<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input checked="" type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8								
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								
LFE	<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input checked="" type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8								
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								
Ls	<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input checked="" type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8								
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								
Rs	<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input checked="" type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input type="checkbox"/> CH8								
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								
Lt/Lo(LL)	<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input checked="" type="checkbox"/> CH7	<input type="checkbox"/> CH8								
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								
Rt/Ro(RR)	<input type="checkbox"/> CH1	<input type="checkbox"/> CH2	<input type="checkbox"/> CH3	<input type="checkbox"/> CH4	<input type="checkbox"/> CH5	<input type="checkbox"/> CH6	<input type="checkbox"/> CH7	<input checked="" type="checkbox"/> CH8								
	<input type="checkbox"/> CH9	<input type="checkbox"/> CH10	<input type="checkbox"/> CH11	<input type="checkbox"/> CH12	<input type="checkbox"/> CH13	<input type="checkbox"/> CH14	<input type="checkbox"/> CH15	<input type="checkbox"/> CH16								

TAB 6 (ERROR SETUP)

ERROR SETUP		
Error Setup		
Level Over	<input checked="" type="checkbox"/> ON	<input type="checkbox"/> OFF
Clip	<input checked="" type="checkbox"/> ON	<input type="checkbox"/> OFF
Duration	<input type="text" value="1"/>	sample(1 - 100)
Mute	<input checked="" type="checkbox"/> ON	<input type="checkbox"/> OFF
Duration	<input type="text" value="1000"/>	ms(1 - 5000)
Parity Error	<input checked="" type="checkbox"/> ON	<input type="checkbox"/> OFF
Validity Error	<input checked="" type="checkbox"/> ON	<input type="checkbox"/> OFF
Crc Error	<input checked="" type="checkbox"/> ON	<input type="checkbox"/> OFF
Code Violation	<input checked="" type="checkbox"/> ON	<input type="checkbox"/> OFF

## 9. MENU TREE

### TAB 7 (LOUDNESS SETTING)

LOUDNESS SETTING CHANNEL MAIN CHANNEL SUB			
Integrated Loudness			
Measure Mode	<input type="checkbox"/> BS1770-2	<input checked="" type="checkbox"/> ARIB	<input type="checkbox"/> EBU <input type="checkbox"/> ATSC
Target Level	-24.0 LKFS	(-25.0 - -23.0)	
Block Size	400 ms	Absolute Gating	-70 LKFS
Overlap Size	75 %	Relative Gating	-10 LKFS
LFE Gain	<input type="checkbox"/> ON	<input checked="" type="checkbox"/> OFF	<input type="text" value="0"/>
ShortTerm Loudness			
Average Time	<input type="text" value="3000"/> ms		
Momentary Loudness			
Average Time	<input type="text" value="400"/> ms		
Loudness Response	<input type="checkbox"/> ShortTerm	<input checked="" type="checkbox"/> Momentary	
Chart Setting	<input checked="" type="checkbox"/> Integrated	<input type="checkbox"/> ShortTerm	<input checked="" type="checkbox"/> Momentary
Loudness Auto Measure			
Trigger	<input checked="" type="checkbox"/> OFF	<input type="checkbox"/> REMOTE	<input type="checkbox"/> Timecode <input type="checkbox"/> Mute
dBTP Over Mark	<input type="checkbox"/> ON	<input checked="" type="checkbox"/> OFF	
Relative Gating Lamp	<input type="checkbox"/> ON	<input checked="" type="checkbox"/> OFF	

### TAB 8 (CHANNEL MAIN)

LOUDNESS SETTING CHANNEL MAIN CHANNEL SUB			
Channel Main			
MODE	<input checked="" type="checkbox"/> MONO	<input checked="" type="checkbox"/> STEREO	<input type="checkbox"/> 5.1 <input type="checkbox"/> CUSTOM
L	<input checked="" type="checkbox"/> CH1 <input type="checkbox"/> CH2 <input type="checkbox"/> CH3 <input type="checkbox"/> CH4 <input type="checkbox"/> CH5 <input type="checkbox"/> CH6 <input type="checkbox"/> CH7 <input type="checkbox"/> CH8		
	<input type="checkbox"/> CH9 <input type="checkbox"/> CH10 <input type="checkbox"/> CH11 <input type="checkbox"/> CH12 <input type="checkbox"/> CH13 <input type="checkbox"/> CH14 <input type="checkbox"/> CH15 <input type="checkbox"/> CH16 <input type="checkbox"/> N.C.		
R	<input type="checkbox"/> CH1 <input checked="" type="checkbox"/> CH2 <input type="checkbox"/> CH3 <input type="checkbox"/> CH4 <input type="checkbox"/> CH5 <input type="checkbox"/> CH6 <input type="checkbox"/> CH7 <input type="checkbox"/> CH8		
	<input type="checkbox"/> CH9 <input type="checkbox"/> CH10 <input type="checkbox"/> CH11 <input type="checkbox"/> CH12 <input type="checkbox"/> CH13 <input type="checkbox"/> CH14 <input type="checkbox"/> CH15 <input type="checkbox"/> CH16 <input type="checkbox"/> N.C.		

### TAB 9 (CHANNEL SUB)

LOUDNESS SETTING CHANNEL MAIN CHANNEL SUB			
Channel Sub			
SUB	<input checked="" type="checkbox"/> OFF	<input type="checkbox"/> MONO	<input type="checkbox"/> STEREO

TAB 10 (DOLBY E LINE POS)

DOLBY E LINE POS

INDICATE

☒OFF

☐ON

SELECT

☒VALID

☐IDEAL

☐CUSTOM

EARLIEST

LATEST



# INDEX

## 1

1ST GRP SELECT ..... 4

## 2

2ND GRP SELECT ..... 4

## A

ACH GRP SELECT ..... 4

ALIGN ..... 35, 36

AUTO FILENAME ..... 31, 47

AUTO GAIN ..... 18, 23

## B

BCH GRP SELECT ..... 4

## C

CHANNEL MAPPING ..... 15, 19, 24

CHANNEL SELECT ..... 4

CHANNEL STATUS ..... 35

CHART CLEAR ..... 41

CLEAR ..... 30

## D

DAUX CH ..... 53

DECODE MODE ..... 6

DISPLAY ..... 17

DISPLAY CHANNEL ..... 35, 36

DISPLAY MODE ..... 5

DOLBY D DRC ..... 12

DOLBY D LISTENIN ..... 12

DOLBY D METADATA ..... 34

DOLBY D PROLOGIC ..... 12

DOLBY E DIALNORM ..... 9

DOLBY E LINE POS ..... 10

DOLBY E METADATA ..... 33

DOLBY E PULLDOWN ..... 9

DOLBY PROGRAM ..... 33

DOLBY SETUP ..... 6

DYNAMIC RANGE ..... 13

## E

EBI METADATA ..... 33, 35

ERROR RESET ..... 37

ERROR SETUP ..... 37

EVENT LOG ..... 27

## F

FILE DELETE ..... 32, 48

FORM ..... 18

## I

INPUT GROUP ..... 7

INPUT SELECT ..... 3

## L

LEVEL SETTING ..... 14

LISSAJOU INTEN ..... 16

LISSAJOU SETUP ..... 16

LOG ..... 30

LOG MODE ..... 30

LOUDNESS MODE ..... 13

LOUDNESS SETTING ..... 43

LOUDNESS SETUP ..... 38

## M

MAG ..... 42

MEASURE ..... 42

METADATA ..... 33

METER SETUP ..... 13

MIX MODE ..... 12

## N

NAME INPUT ..... 31, 47

NUMBER of CHANNELS ..... 4

## P

PEAK HOLD .....	14
PEAK METER .....	13
PERIOD .....	41
PHONES Lch .....	53
PHONES Rch .....	53
PHONES SETUP .....	52
PHONES VOLUME .....	52
PPM MODE .....	13

## R

RESPONSE .....	13
----------------	----

## S

SCALE INTEN .....	16, 22
SOURCE SELECT .....	3
STATUS SETUP .....	25
STORE .....	32, 48
STREAM SELECT .....	5
SURROUND 5.1 .....	22
SURROUND INTEN .....	22
SURROUND SETUP .....	22

## U

USB MEMORY .....	31, 47
USER BIT .....	36

**LEADER**

**LEADER ELECTRONICS CORP.**

2-6-33 Tsunashima-Higashi, Kohoku-ku, Yokohama 223-8505, Japan

PHONE:81-45-541-2123 FAX:81-45-541-2823 <http://www.leader.co.jp>