

**LEADER**

# **LV 5333SER02**

HDR

INSTRUCTION MANUAL

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## 1. INTRODUCTION

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

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

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

### 1.1 Scope of Warranty

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

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

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

### 1.2 About Terminology Used in this Manual

- **About Underlining ( \_ )**

Underlined options indicate the default values.

## 2. SPECIFICATIONS

### 2.1 General

This optional software is used to evaluate HDR video signals with the LV 5333 using picture displays and waveform displays.

On the picture display, you can color the HDR area according to the brightness in order to check the brightness distribution.

On the waveform display, you can manage video signal levels including the HDR area using HDR scaling.

A dedicated license key is used to install this option.

### 2.2 Features

- **Support for Various Standards**

This option supports HLG (Hybrid Log Gamma) and PQ (Perceptual Quantization) that comply with ITU-R BT.2100 or ARIB STD-B67, SMPTE ST 2084 and also S-Log3, C-Log, Log-C.

- **HDR Scaling**

On the video signal waveform display, you can easily view the brightness distribution in the HDR area by displaying a HDR scale.

- **Enhanced CINEZONE**

On CINEZONE display, the SDR area is displayed in monochrome, while the HDR area is displayed using colors corresponding to the brightness. This makes it easy to view the brightness distribution in the HDR area.

## 2. SPECIFICATIONS

### 2.3 Specifications

Compliant Standards (HDR)	ITU-R BT.2100-0 (07/2016) SMPTE ST 2084:2014 ARIB STD B-67 (1.0) S-Log3 C-Log Log-C
Supported Format	HD (1920×1080, 2048×1080)
Input Signal Color System	YCbCr and RGB
Input Signal Color Space	ITU-R BT.709 and ITU-R BT.2020
Video Signal Waveform Display	
Scale	Displays a brightness scale for IRE and scene linear
Display Unit	PQ:[cd/m2], HLG S-Log3, C-Log and Log-C:[%]
Display Range	Full range, limited (narrow) range
CINEZONE Display	
Display Colors	Assigns colors according to the brightness for the HDR area. The SDR area is shown in monochrome. Areas where the brightness is below the lower limit are shown in black, and areas where the brightness is above the upper limit are shown in magenta.
Values	From the lowest to the highest brightness according to the standard
General Specifications	
Environmental Conditions	Same as the LV 5333
Contents	License key .....1 Instruction manual.....1

### 3. PREPARATION

#### 3.1 Viewing the Firmware Version

This option can only be installed to an LV 5333 whose firmware version is as indicated below.

Table 3-1 LV 5333 version

Model	Firmware Version
LV 5333	1.80 or later

The firmware version is displayed in the upper right of the license screen. For the procedure to follow to display the license screen, see the next section.

You cannot install this option to an LV 5333 whose firmware version is earlier (whose firmware number is lower) than the versions listed above. In such a situation, contact your local LEADER agent.

#### 3.2 Installation

To use this option, you need to enter the license key. A license key is a code, which is supplied with this option, used to add optional features to the LV 5333. Each LV 5333 requires a unique license key. You cannot use the same key for multiple instruments.

To install this option, follow the procedure below.

**1. Press **SYSTEM**.**

The system menu appears.

**2. Press **F•4** INTERFACE&LICENSE.**

**3. Press **F•6** LICENSE SETUP.**

The license display appears.



Figure 3-1 License display (before installation)

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

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

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

**5. Press **F•6** REGISTER.**

“ACCEPTED” appears after a license key has been entered correctly, and its corresponding option becomes usable. The name of the option that has been added appears in the LICENSE LIST.

“FAILED” appears if the license key is not correct. Reenter the license key correctly.

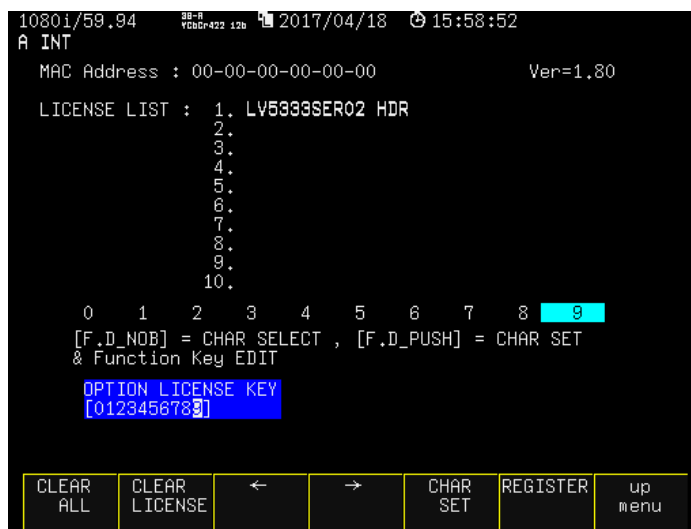


Figure 3-2 License display (after installation)

## 4. PROCEDURE

### 4.1 Selecting the Colorimetry

Select the colorimetry to use on the video-signal-waveform, vector, and CINELITE displays, follow the procedure below.

Procedure

---

**SYSTEM** → **F•1** FORMAT → **F•7** COLORIMETRY: BT.709 / BT.2020

---



## 4.2 Video Signal Waveform Display

On the video signal waveform display, scales and cursors for HDR signals can be displayed.

### 4.2.1 Scale Display

To display a scale corresponding to the HDR signal on the right side of the video signal waveform, follow the procedure below.

Note that when COLOR MATRIX is COMPOSITE, scale display cannot be operated. Also, when scale display corresponding to HDR signal is valid, COMPOSITE cannot be selected with COLOR MATRIX.

Note that the scale on the right side is not displayed when GAIN VARIABLE is set to VARIABLE.

#### Procedure

[WFM] → [F•7] next menu → [F•1] SCALE → [F•4] HDR: OFF / HLG / PQ / S-LOG3

#### Settings

OFF:	An HDR scale is not displayed.
HLG:	If [F•5] HLG SCALE is set to 1200 [%] (default value), 0 to 100 is displayed as 0 to 1200 [%]. (If the scale unit is full range, 0 to 1023 is displayed as 0 to 1200 [%]) If [F•5] HLG SCALE is set to 100 [%], 0 to 100 is displayed as 0 to 100 [%]. (If the scale unit is full range, 0 to 1023 is displayed as 0 to 100 [%])
PQ:	0 to 100 [%] is displayed as 0 to 10000 [cd/m2]. (If the scale unit is full range, 0 to 1023 is displayed as 0 to 10000 [cd/m2])
S-LOG3:	If 0 to 100 [%] is set to 64 to 940, 95 to 940 is displayed as 0 to 2055 [%].
C-LOG:	If 0 to 100 [%] is set to 64 to 940, 128 to 1016 is displayed as 0 to 800 [%].
LOG-C:	If 0 to 100 [%] is set to 64 to 940, 95 to 1023 is displayed as 0 to 100 [%].

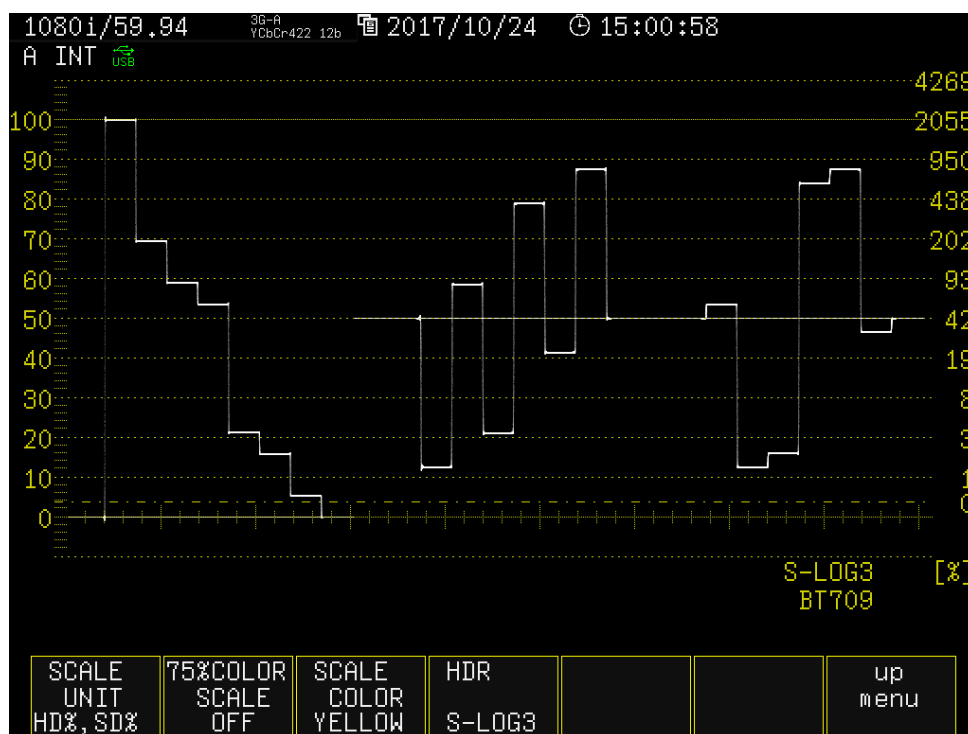


Figure 4-1 Scale Display (S-Log3)

4.2.2 Cursor Display

During cursor measurement, to display measured values for HDR signals, follow the procedure below.

The unit of measurement is percent when the scale display is set to HLG, S-Log3, C-Log, Log-C and cd/m2 when set to PQ.

If GAIN VARIABLE is set to VARIABLE or if GAIN MAG is set to X5, measured values for HDR signals will not be displayed even when HDR is selected. The display will be the same as when Y UNIT is set to mV.

Procedure

WFM → F•5 CURSOR → F•3 Y UNIT: HDR

Y UNIT = HDR

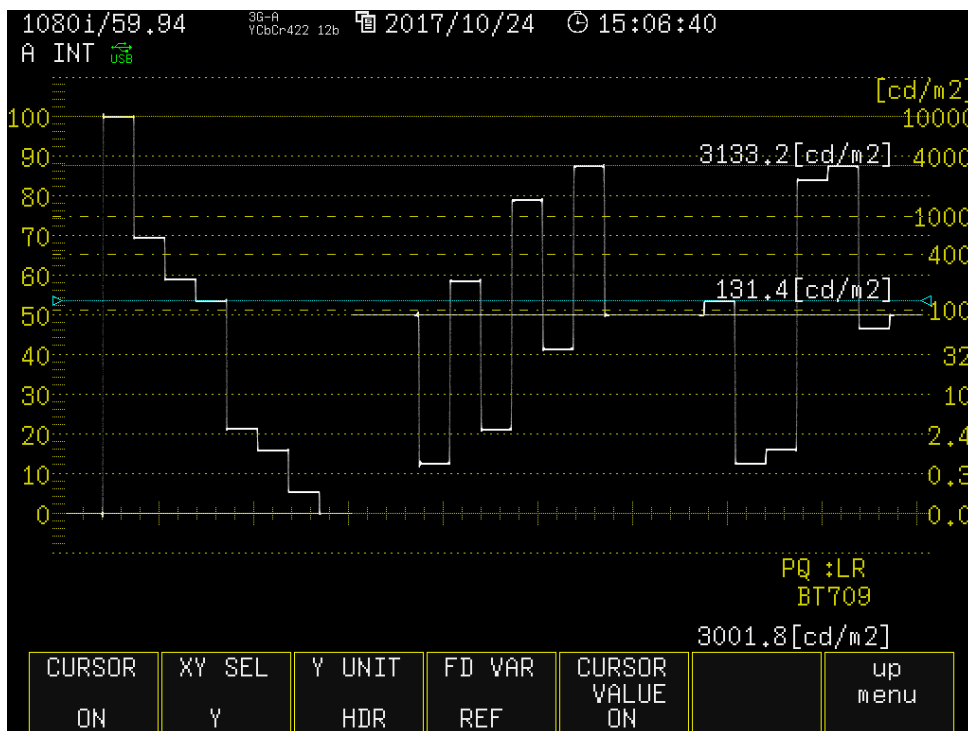


Figure 4-2 Cursor display (PQ)

### 4.3 CINEZONE Display

On the CINEZONE display of HDR signals, to display the SDR area in monochrome and HDR area in color, follow the procedure below.

#### Procedure

**CINEZONE** → **F•1** MODE: HDR

HDR = ON

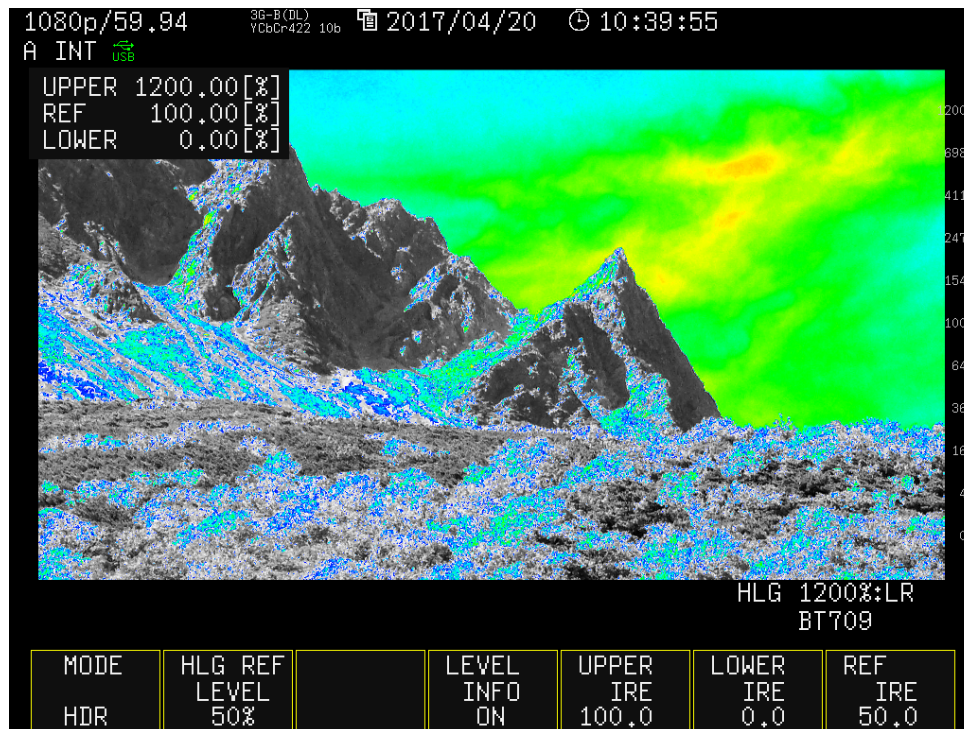


Figure 4-3 CINEZONE Display (HDR)

#### 4.3.1 Selecting the HDR Signal Standard

The HDR signal standard is selected by the scale display of the video signal waveform display.

Reference Section 4.2.1, "Scale Display"

#### 4.3.2 Turning Brightness Information On and Off

To turn the brightness information display on and off, follow the procedure below. When the brightness information display is turned on, the HDR equivalents of the display color settings are displayed in the upper left corner of the screen.

#### Procedure

**CINEZONE** → **F•4** LEVEL INFO: OFF / ON

#### Settings

OFF: Brightness information is not displayed.  
ON: Brightness information is displayed.

## 4.3.3 Selecting the Display Colors

To set the display colors, follow the procedure below. If you set REF at the boundary of the SDR area and HDR area, the SDR area can be displayed in monochrome and HDR area in color.

UPPER IRE or higher: magenta  
 REF IRE or higher, UPPER IRE or lower: Gradation from blue to red  
 LOWER IRE or higher, REF IRE or lower: monochrome  
 LOWER IRE or lower: black

## Procedure

---

**CINEZONE**

- **F•5** UPPER IRE
  - **F•6** LOWER IRE
  - **F•7** REF IRE
- 

The values vary depending on the HDR signal standard setting as follows.  
 Set the values as percentages (0.0 to 100.0%) of the input video level.

Table 4-1 Display color values

HDR signal standard	Setting range	UPPER Default	LOWER Default	REF Default
HLG 50 1200%	0.0 to 100.0	100.0	0.0	50.0
HLG 75 1200%	0.0 to 100.0	100.0	0.0	75.0
HLG 50 100%	0.0 to 100.0	100.0	0.0	50.0
HLG 75 100%	0.0 to 100.0	100.0	0.0	75.0
PQ1000	0.0 to 100.0	75.2	0.0	50.8
PQ2000	0.0 to 100.0	82.7	0.0	50.8
PQ4000	0.0 to 100.0	90.3	0.0	50.8
PQ5000	0.0 to 100.0	92.7	0.0	50.8
PQ10000	0.0 to 100.0	100.0	0.0	50.8
S-LOG3	3.5 to 109.0	109.0	3.5	61.0
C-LOG	7.3 to 108.7	108.7	7.3	62.8
LOG-C EI200	3.5 to 109.5	90.1	3.5	56.6
LOG-C EI200	3.5 to 109.5	97.4	3.5	56.6
LOG-C EI200	3.5 to 109.5	104.1	3.5	56.6
LOG-C EI200	3.5 to 109.5	109.5	3.5	56.6

#### 4.4 Remote Control

The TELNET commands and SNMP enterprise MIB traps for controlling the LV 5333 remotely are indicated below.

For details about controlling the LV 5333 remotely, see the instruction manuals for the LV 5333.

Table 4-2 TELNET commands

Command	Parameters
CINEZONE:MODE	ZONE / SEARCH / USER-A / USER-R / HDR / ?
CINEZONE:HLG_REF_LEVEL	50% / 75% / ?
CINEZONE:LEVEL_INFO	ON / OFF / ?
CINEZONE:REF	0.0 to 100.0 / ?
WFM:SCALE:HDR	OFF / HLG / PQ / S-LOG3 / C-LOG / LOG-C / ?
WFM:SCALE:HLG_SCALE	1200% / 100% / ?
WFM:SCALE:PQ_SCALE	1000 / 2000 / 4000 / 5000 / 10000 / ?
WFM:SCALE:LOG-C_EI	200 / 400 / 800 / 1600 / ?
SYSTEM:FORMAT:COLORIMETRY	BT.709 / BT.2020 / ?

4. PROCEDURE

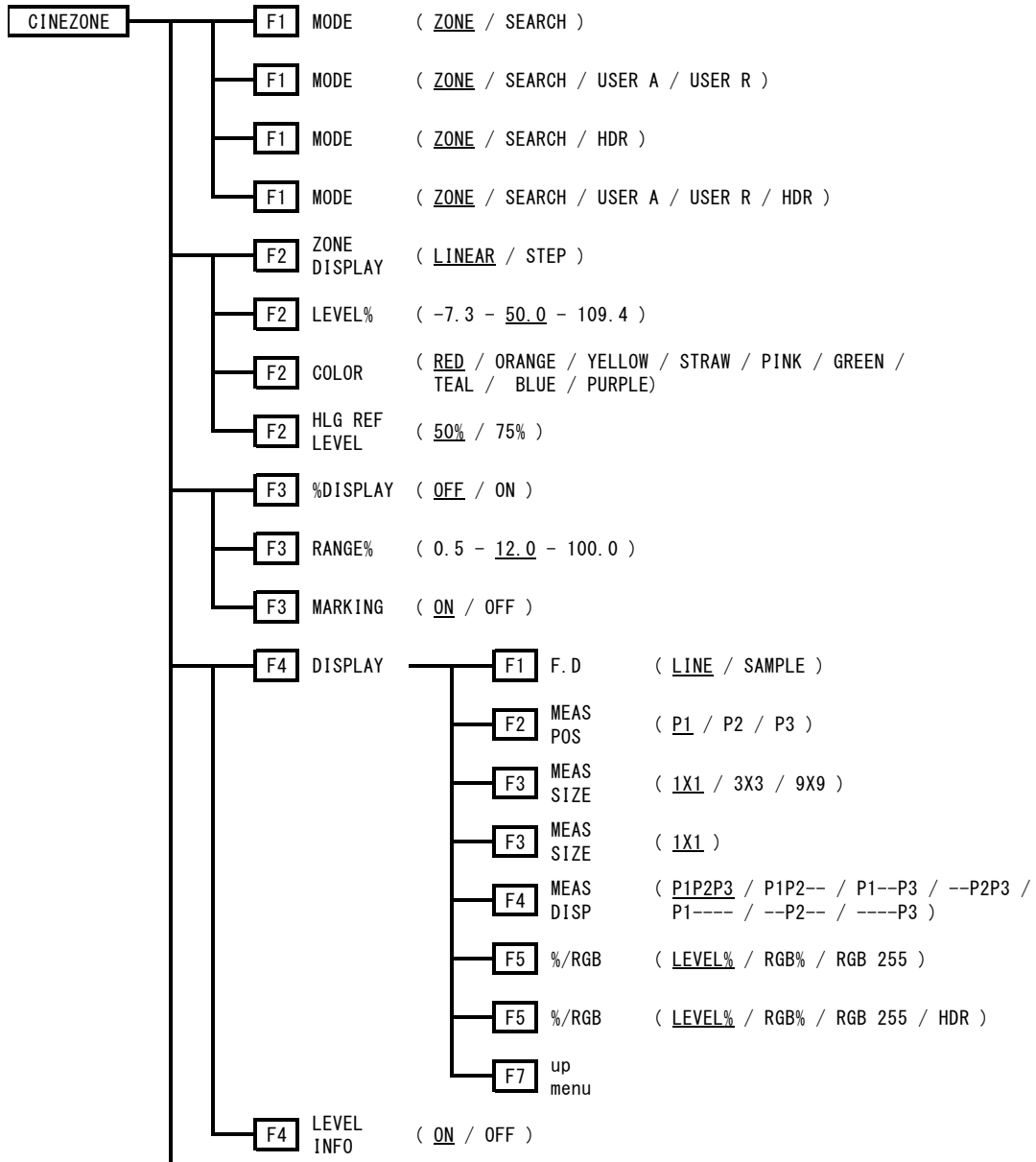
Table 4-3 LV 5333SER01 enterprise MIB

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
I34wfmScaleHDR	I34wfmScaleTBL.5	INTEGER	R/W	0=off 1=hlg 2=pq 3=s-log3 4=c-log 5=log-c
I34wfmScaleHlgScale	I34wfmScaleTBL.6	INTEGER	R/W	0=hlg1200Per 1=hlg100Per
I34wfmScalePqScale	I34wfmScaleTBL.7	INTEGER	R/W	0=pq1000 1=pq2000 2=pq4000 3=pq5000 4=pq10000
I34wfmScaleLogcEI	I34wfmScaleTBL.8	INTEGER	R/W	0=log-c200 1=log-c400 2=log-c800 3=log-c1600
I34cinezoneMode	I34cinezoneTBL.1	INTEGER	R/W	0=zone 1=search 2=user-A 3=user-R 4=hdr
I34cinezoneHlgRefLevel	I34cinezoneTBL.11	INTEGER	R/W	0=hlg-50Per 1=hlg-75Per
I34cinezoneLevelInfo	I34cinezoneTBL.12	INTEGER	R/W	0=off 1=on
I34cinezoneRef	I34cinezoneTBL.13	DisplayString	R/W	0.0 - 100.0
I34sysFormatColoriMetry	I34sysFormatTBL.9	INTEGER	R/W	0=bt709 1=bt2020

## 5. Menu Structure

The structure of the menu (excerpt) when this option is installed is shown below.  
The default settings are underlined.

### 5.1 CINEZONE Menu



## 5. Menu Structure

F5	UPPER%	( -6.3 - <u>100.0</u> - 109.4 )
F5	UPPER%	( -7.2 - 109.4 )
F5	UPPER [IRE]	( 0.0 - <u>100.0</u> )
F5	UPPER [IRE]	( -7.3 - <u>109.5</u> )
F5	UPPER [IRE]	( 0.0 - <u>100.0</u> )
F5	UPPER [IRE]	( -7.3 - <u>109.5</u> )
F5	UPPER [IRE]	( 0.0 - <u>92.7</u> - 100.0 )
F5	UPPER [IRE]	( -7.3 - <u>100.9</u> - 109.5 )
F5	UPPER [IRE]	( 0.0 - <u>90.3</u> - 100.0 )
F5	UPPER [IRE]	( -7.3 - <u>98.1</u> - 109.5 )
F5	UPPER [IRE]	( 0.0 - <u>82.7</u> - 100.0 )
F5	UPPER [IRE]	( -7.3 - <u>89.3</u> - 109.5 )
F5	UPPER [IRE]	( 0.0 - <u>75.2</u> - 100.0 )
F5	UPPER [IRE]	( -7.3 - <u>80.5</u> - 109.5 )
F5	UPPER [IRE]	( 3.5 - <u>109.0</u> )
F5	UPPER [IRE]	( 7.3 - <u>108.7</u> )
F5	UPPER [IRE]	( 3.5 - <u>90.1</u> - 109.5 )
F5	UPPER [IRE]	( 3.5 - <u>97.4</u> - 109.5 )
F5	UPPER [IRE]	( 3.5 - <u>104.1</u> - 109.5 )
F5	UPPER [IRE]	( 3.5 - <u>109.5</u> )



## 5. Menu Structure

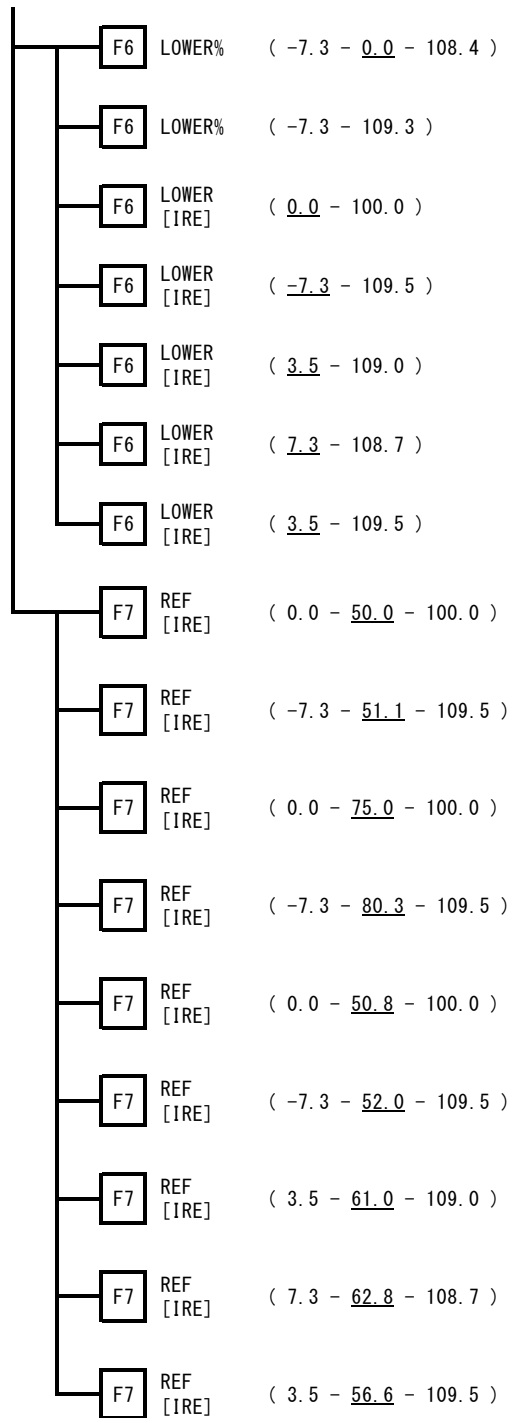
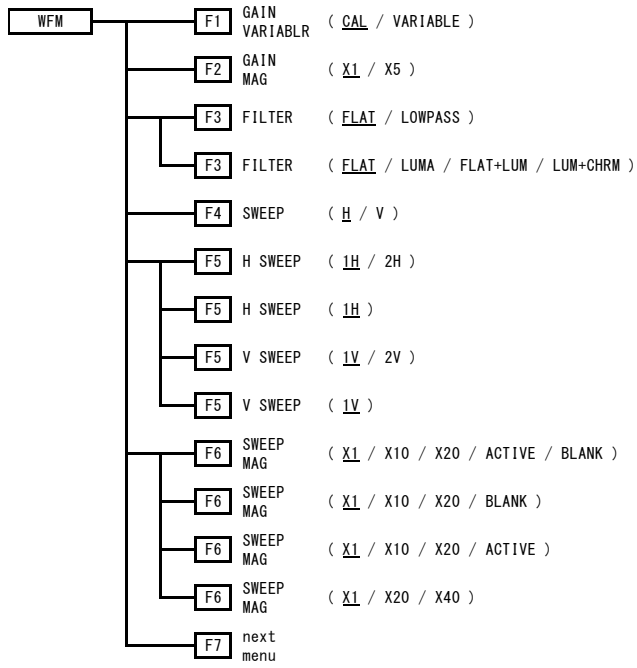
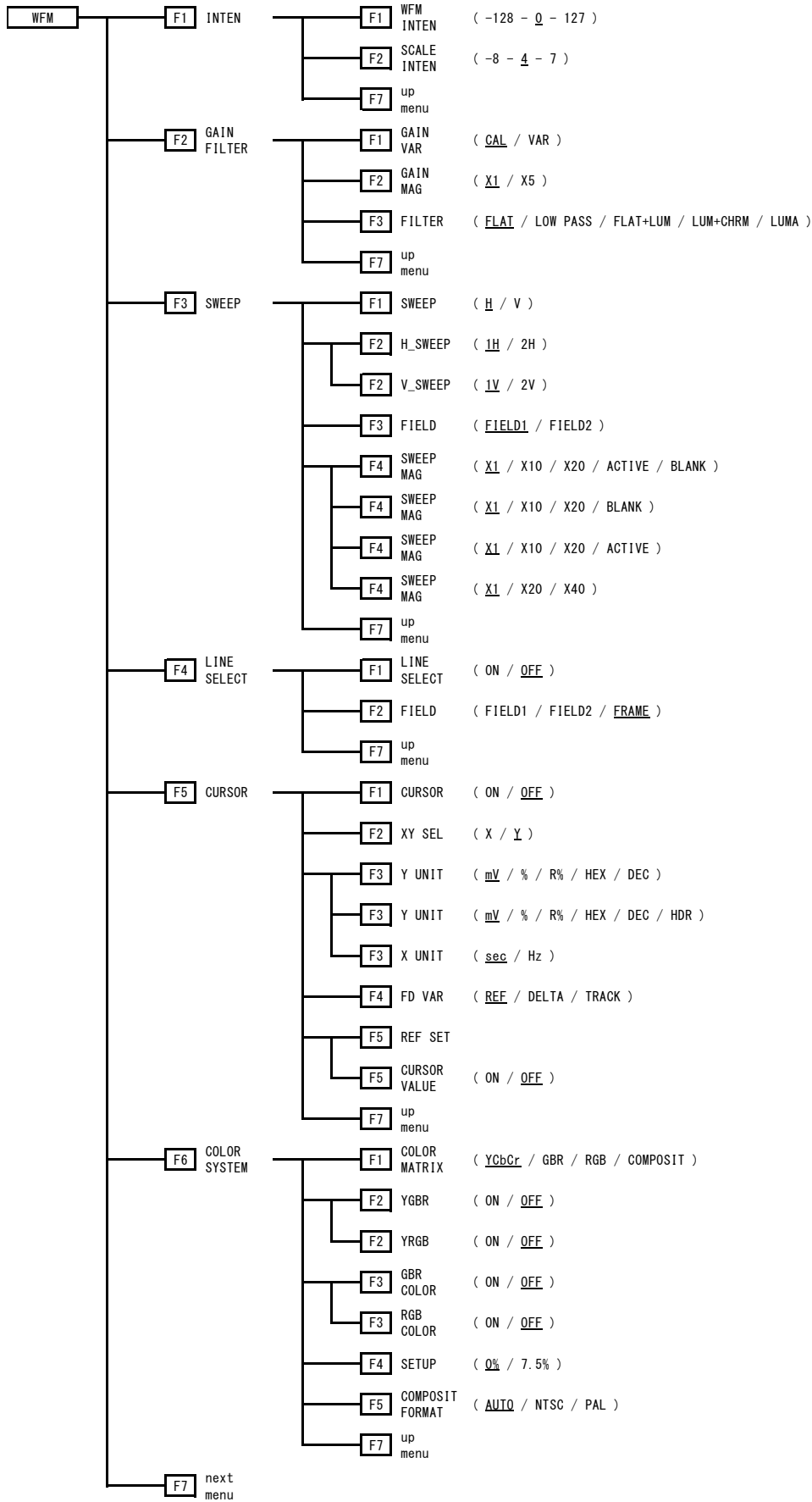


Figure 5-1 CINEZONE menu

5.2 WFM Menu



## 5. Menu Structure



## 5. Menu Structure

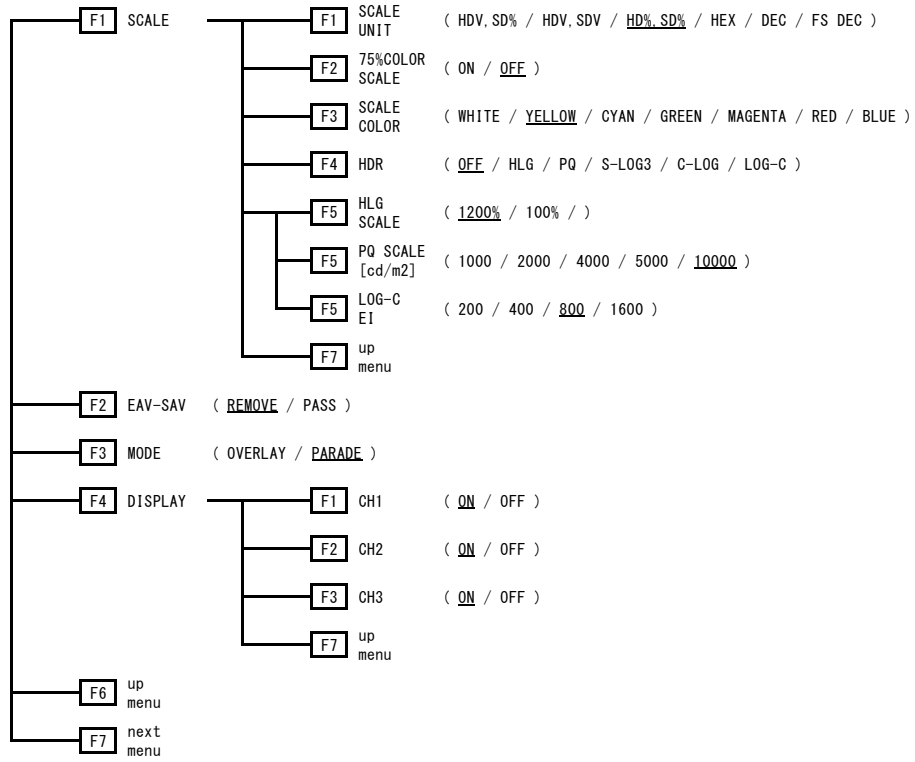
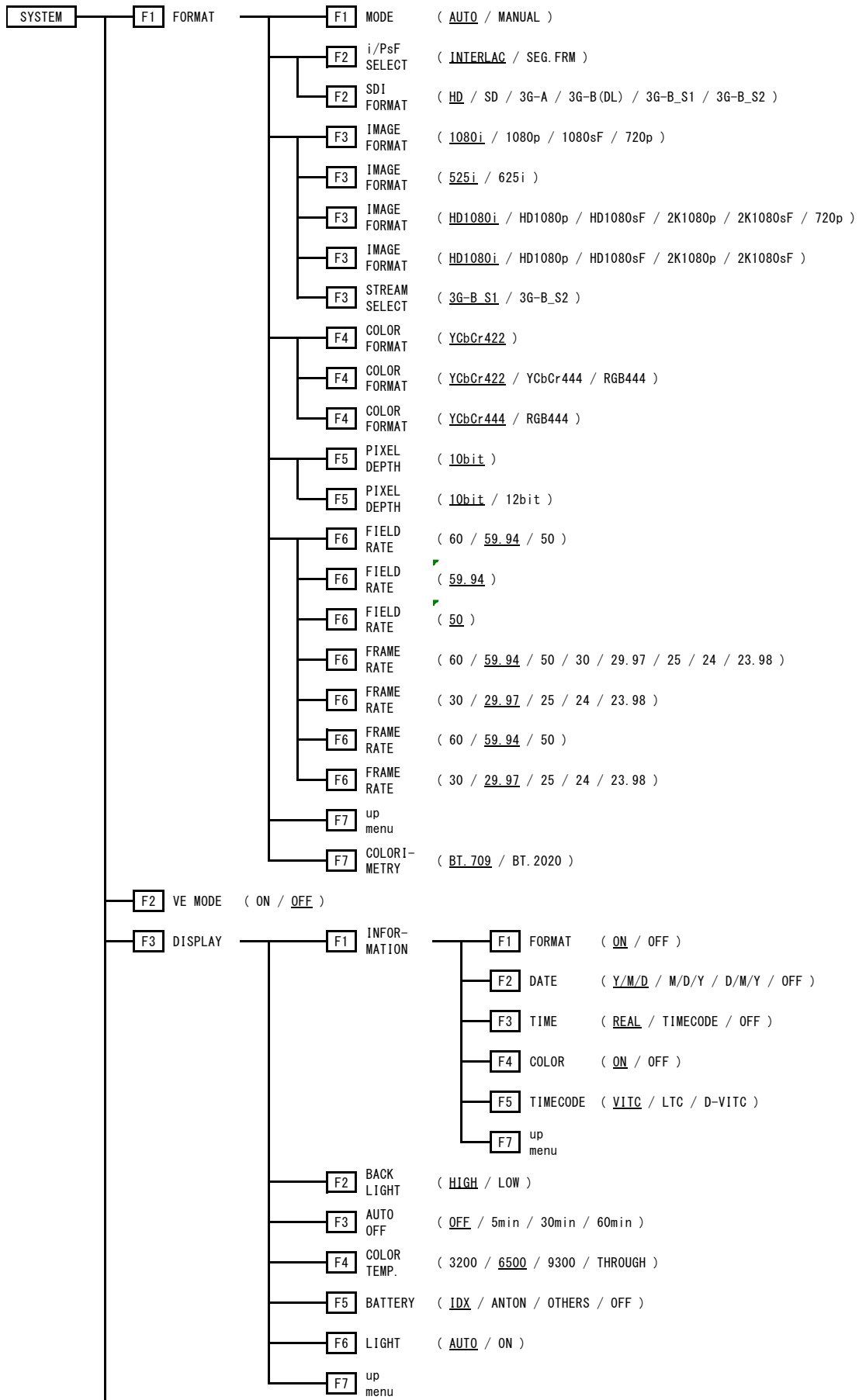


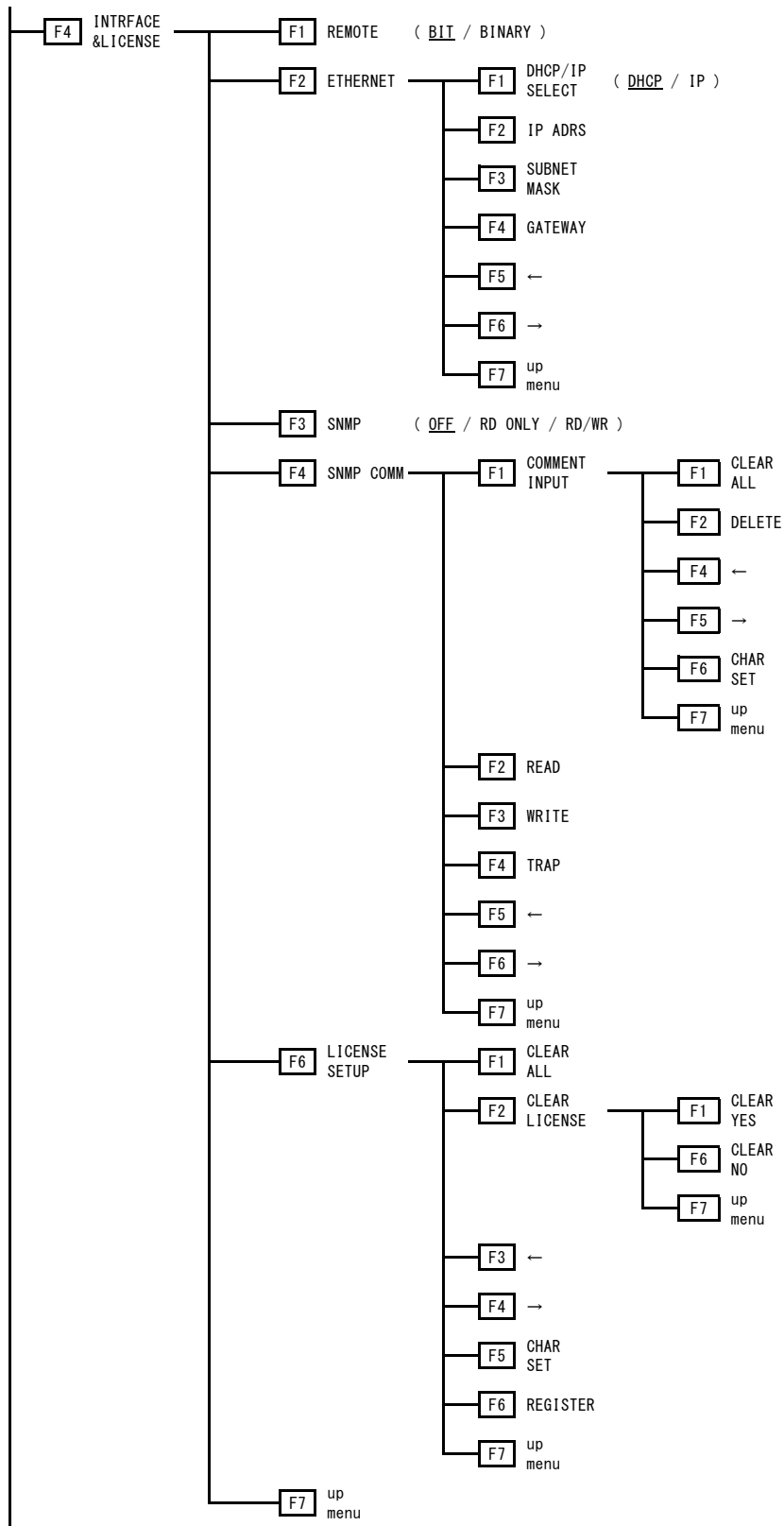
Figure 5-2 WFM menu

## 5. Menu Structure

### 5.3 SYSTEM Menu



## 5. Menu Structure



## 5. Menu Structure

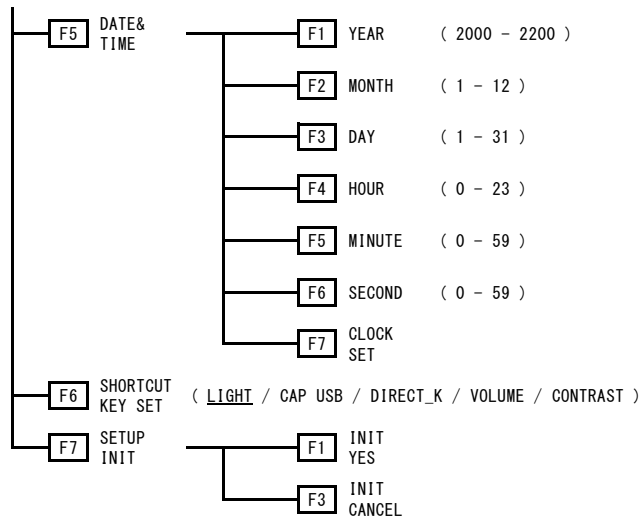


Figure 5-3 SYSTEM menu

## 6. CHANGE HISTORY OF THE SOFTWARE

This manual is written for firmware version 1.90.

To view the firmware version, press **[SYS]**, **[F•4]** INTRFACE&LICENSE, and then **[F•6]** LICENSE SETUP.

### **Ver. 1.90**

- Colorimetry ITU-R BT.2020 support has been added.
- C-Log and Log-C support has been added.



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