

LV 5330SER02

LV 7330SER02

GAMUT & LEVEL ERROR

INSTRUCTION MANUAL

TABLE OF CONTENTS

1.	INTRODUCTION	1
1.1	Scope of Warranty	1
1.2	Notations Used in This Manual	1
2.	SPECIFICATIONS	2
2.1	General	2
2.2	Features	2
2.3	Specifications	2
2.3.1	Gamut Error	2
2.3.2	Level Error	2
2.3.3	General Specifications	2
3.	PREPARATION	3
3.1	Viewing the Firmware Version	3
3.2	Installation	3
4.	PROCEDURE	5
4.1	Gamut Error	5
4.1.1	Specifying the Gamut Error Area	5
4.1.2	Specifying the Gamut Error Time	5
4.1.3	Specifying the Composite Gamut Error Area	5
4.1.4	Specifying the Composite Gamut Error Time	6
4.2	Level Error	6
4.2.1	Detecting Luminance Signal Errors	7
4.2.2	Detecting Chrominance Signal Errors	7
4.2.3	Luminance Signal Error Detection Level (Upper limit)	7
4.2.4	Luminance Signal Error Detection Level (Lower limit)	8
4.2.5	Chrominance Signal Error Detection Level (Upper limit)	8
4.2.6	Chrominance Signal Error Detection Level (Lower limit)	8
4.2.7	Displaying Level Errors	9
4.3	Remote Control	10
4.4	Menu Structure	12
5.	CHANGE HISTORY OF THE SOFTWARE	14

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 Notations Used in This Manual

The key and other operations explained in this manual apply to the LV 5330, but you can also perform similar operations on the LV 7330.

2. SPECIFICATIONS

2.1 General

This option adds the following features to the LV 5330/7330:

- Area and time specification in gamut error detection
- Detection of luminance and chrominance signal level errors

A dedicated license key is necessary for the installation of this option.

2.2 Features

- **Gamut Error**

The gamut error area (proportional) and time can be specified.

- **Level Error**

The LV 5330/7330 detects an error when the luminance or chrominance signal goes beyond its specified upper or lower limit.

2.3 Specifications

2.3.1 Gamut Error

Error Detection	Detect by specifying area and time
Area Specification	0.0 to 5.0 % (specifying 0.0 % is equivalent to not specifying an area)
Time Specification	1 to 50 consecutive frames

2.3.2 Level Error

Error Detection	Level errors in the luminance and chrominance signals are detected (not available in dual link mode)
Detection Level	
Luminance Signal	-7.2 to 109.4 %, -50.4 to 765.8 mV (for both upper and lower limits)
Chrominance Signal	-57.0 to 57.0 %, -399.0 to 399.0 mV (for both upper and lower limits)

2.3.3 General Specifications

Environmental Conditions	Same as the LV 5330/7330
Contents	License key1 Instruction manual.....1

3. PREPARATION

3.1 Viewing the Firmware Version

This option can only be installed to an LV 5330/7330 whose firmware version is as indicated below.

Table 3-1 LV 5330/7330 versions

Model	Firmware Version
LV 5330	2.6 or later
LV 7330	2.1 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 5330/7330 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 5330/7330. Each LV 5330/7330 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•4 LICENSE SETUP.

The license display appears.

MAC Address : 00-00-00-00-00-00
Ver=3,50

LICENSE LIST :

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

0
123456789

[F,D_NOB] = CHAR SELECT , [F,D_PUSH] = CHAR SET
& Function Key EDIT

OPTION LICENSE KEY

[]

CLEAR ALL

CLEAR LICENSE

←

→

CHAR SET

REGISTER

up menu

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.

MAC Address : 00-00-00-00-00-00					Ver=3.50				
LICENSE LIST : 1. LV5330SER02 GAMUT & LEVEL ERROR 2. 3. 4. 5. 6. 7. 8. 9. 10.									
0	1	2	3	4	5	6	7	8	9
[F.D_NOB] = CHAR SELECT , [F.D_PUSH] = CHAR SET & Function Key EDIT									
OPTION LICENSE KEY					ACCEPTED				
[0123456789]									
CLEAR ALL	CLEAR LICENSE	←	→	CHAR SET	REGISTER	up menu			

Figure 3-2 License display (after installation)

4. PROCEDURE

4.1 Gamut Error

With this option, you can specify the area and time of detected gamut errors and composite gamut errors. These settings are valid when error detection is enabled in the status menu.

4.1.1 Specifying the Gamut Error Area

To specify the percentage of the active picture area over which errors must occur to be recognized, follow the procedure below.

- Procedure

STATUS → F•5 ERROR CONFIG → F•4 ERROR LEVEL → F•1 GAMUT → F•3 GAMUT AREA %

- Settings

Range: 0.0 to 5.0 (The default setting is 0.0.)

4.1.2 Specifying the Gamut Error Time

To set the number of consecutive frames over which errors must occur to be recognized, follow the procedure below.

- Procedure

STATUS → F•5 ERROR CONFIG → F•4 ERROR LEVEL → F•1 GAMUT → F•4 GAMUT DURATION

- Settings

Range: 1 to 50 (The default setting is 1.)

4.1.3 Specifying the Composite Gamut Error Area

To specify the percentage of the active picture area over which errors must occur to be recognized, follow the procedure below.

- Procedure

STATUS → F•5 ERROR CONFIG → F•4 ERROR LEVEL → F•2 COMPOSIT GAMUT → F•3 C.GAMUT AREA %

- Settings

Range: 0.0 to 5.0 (The default setting is 0.0.)

4.1.4 Specifying the Composite Gamut Error Time

To set the number of consecutive frames over which errors must occur to be recognized, follow the procedure below.

• Procedure

STATUS → F.5 ERROR CONFIG → F.4 ERROR LEVEL → F.2 COMPOSIT GAMUT → F.4 C.GAMUT DURATION

• Settings

Range: 1 to 50 (The default setting is 1.)

4.2 Level Error

You can use this option to detect level errors in the luminance and chrominance signals. LUMA and CHROMA appear next to VIDEO in the status display, and errors are detected when error detection is enabled.

Level errors can only be detected in single link mode. Proper operation in dual link mode is not guaranteed.

SDI	SIGNAL TRS LINE NUMBER CRC LUMA	DETECT NORMAL NORMAL NORMAL	FORMAT CRC CHROMA	NORMAL NORMAL		
VIDEO	GAMUT LUMA	NORMAL NORMAL	COMP.GAMUT CHROMA	NORMAL NORMAL		
ANC	PARITY CHECKSUM	NORMAL NORMAL				
AUDIO	BCH	NORMAL				
	CRC CHANNEL	NORMAL 1 , 2 , 3 , 4 , 5 , 6 , 7 , 8 , - , - , - , - , - , - , - , -				
ETC	ERROR COUNT LOG MODE	0 LOG STOPPED	FROM RESET	00:07:54		
LOG	DATA DUMP	AUDIO	ANC PACKET	ERROR CONFIG	ERROR RESET	

Figure 4-1 Status display

4.2.1 Detecting Luminance Signal Errors

To detect level errors in the luminance signal, follow the procedure below. If you set this setting to ON, error information appears next to LUMA in the status display.

• Procedure

STATUS → F.5 ERROR CONFIG → F.3 ERROR DETECT → F.6 next menu →
F.6 next menu → F.1 Y ERROR

• Settings

ON: The LV 5330/7330 detects level errors in the luminance signal.
OFF: The LV 5330/7330 does not detect level errors in the luminance signal. This is the default setting.

4.2.2 Detecting Chrominance Signal Errors

To detect level errors in the chrominance signal, follow the procedure below. If you set this setting to ON, error information appears next to CHROMA in the status display.

• Procedure

STATUS → F.5 ERROR CONFIG → F.3 ERROR DETECT → F.6 next menu →
F.6 next menu → F.2 CbCr ERROR

• Settings

ON: The LV 5330/7330 detects level errors in the chrominance signal.
OFF: The LV 5330/7330 does not detect level errors in the chrominance signal. This is the default setting.

4.2.3 Luminance Signal Error Detection Level (Upper limit)

To set the upper limit for luminance signal error detection, follow the procedure below. An error is detected when the luminance signal level exceeds the specified value. Also, the part of a signal that exceeds the set value is displayed in red on the Y bar of the 5 bar display.

If you press F.D, the upper limit will return to its default value of 109.4 % or 765.8 mV.

• Procedure

STATUS → F.5 ERROR CONFIG → F.4 ERROR LEVEL → F.4 LUMA
→ F.1 LUMA UPPER % (when F.6 UNIT is set to %)
→ F.1 LUMA UPPER mV (when F.6 UNIT is set to mV)

• Settings

Range: -7.2 to 109.4 % (The default setting is 109.4 %.)
-50.4 to 765.8 mV (The default setting is 765.8 mV.)

4.2.4 Luminance Signal Error Detection Level (Lower limit)

To set the lower limit for luminance signal error detection, follow the procedure below. An error is detected when the luminance signal level goes below the specified value. Also, the part of a signal that exceeds the set value is displayed in red on the Y bar of the 5 bar display.

If you press **F•D**, the lower limit will return to its default value of -7.2 % or -50.4 mV.

• Procedure

STATUS → **F•5** ERROR CONFIG → **F•4** ERROR LEVEL → **F•4** LUMA
 → **F•2** LUMA LOWER % (when **F•6** UNIT is set to %)
 → **F•2** LUMA LOWER mV (when **F•6** UNIT is set to mV)

• Settings

Range: -7.2 to 109.4 % (The default setting is -7.2 %.)
 -50.4 to 765.8 mV (The default setting is -50.4 mV.)

4.2.5 Chrominance Signal Error Detection Level (Upper limit)

To set the upper limit for chrominance signal error detection, follow the procedure below. An error is detected when the chrominance signal level exceeds the specified value.

If you press **F•D**, the upper limit will return to its default value of 57.0 % or 399.0 mV.

• Procedure

STATUS → **F•5** ERROR CONFIG → **F•4** ERROR LEVEL → **F•5** CHROMA
 → **F•1** CHROMA UPPER % (when **F•6** UNIT is set to %)
 → **F•1** CHROMA UPPER mV (when **F•6** UNIT is set to mV)

• Settings

Range: -57.0 to 57.0 % (The default setting is 57.0 %.)
 -399.0 to 399.0 mV (The default setting is 399.0 mV.)

4.2.6 Chrominance Signal Error Detection Level (Lower limit)

To set the lower limit for chrominance signal error detection, follow the procedure below. An error is detected when the chrominance signal level goes below the specified value.

If you press **F•D**, the lower limit will return to its default value of -57.0 % or -399.0 mV.

• Procedure

STATUS → **F•5** ERROR CONFIG → **F•4** ERROR LEVEL → **F•5** CHROMA
 → **F•2** CHROMA LOWER % (when **F•6** UNIT is set to %)
 → **F•2** CHROMA LOWER mV (when **F•6** UNIT is set to mV)

• Settings

Range: -57.0 to 57.0 % (The default setting is -57.0 %.)
 -399.0 to 399.0 mV (The default setting is -399.0 mV.)

4.2.7 Displaying Level Errors

To display the locations on the picture where level errors are occurring in the luminance and chrominance signals, follow the procedure below. If the detected value is greater than the upper limit, a red mesh pattern indicates the error location. If the detected value is less than the lower limit, a black mesh pattern indicates the error location.

The following errors are displayed when their detection is enabled in the status menu: luminance signal level errors, chrominance signal level errors, gamut errors, and composite gamut errors.

- Procedure

PICTURE → F•3 ETC → F•4 GAMUT ERROR

- Settings

DISP ON: Errors are displayed.

DISP OFF: Errors are not displayed. This is the default setting.

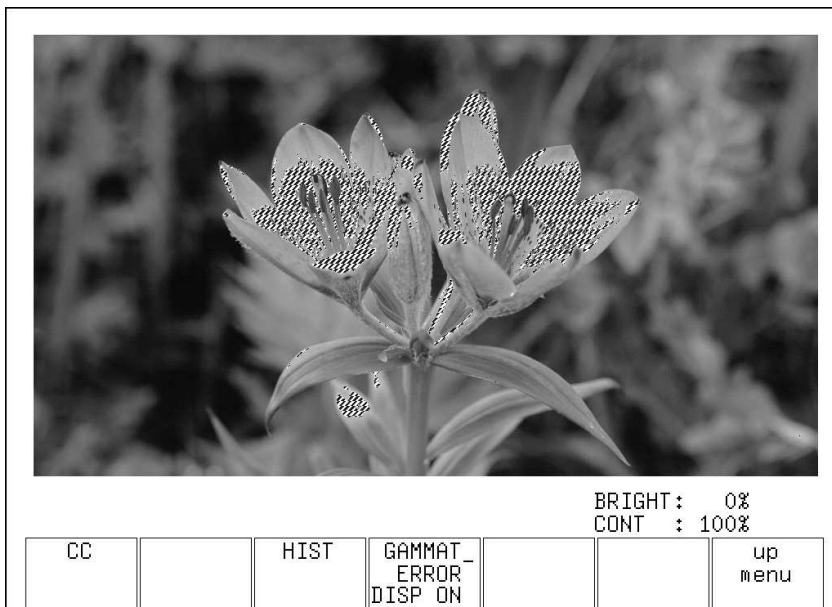


Figure 4-2 Level error display

4.3 Remote Control

The TELNET commands and SNMP enterprise MIB traps for controlling the LV 5330/7330 remotely are indicated below.

For details about controlling the LV 5330/7330 remotely, see the instruction manuals for the LV 5330/7330.

Table 4-1 TELNET commands

Command	Parameters
STATUS:ERROR:DETECT:Y	ON/OFF/?
STATUS:ERROR:DETECT:CbCr	ON/OFF/?
STATUS:ERROR:LEVEL:GAMUT:AREA	0.0 to 5.0/?
STATUS:ERROR:LEVEL:GAMUT:DURATION	1 to 50/?
STATUS:ERROR:LEVEL:C.GAMUT:AREA	0.0 to 5.0/?
STATUS:ERROR:LEVEL:C.GAMUT:DURATION	1 to 50/?
STATUS:ERROR:LEVEL:LUMA:UPPER	-7.2 to 109.4/? (when UNIT is %) -50.4 to 765.8/? (when UNIT is mV)
STATUS:ERROR:LEVEL:LUMA:LOWER	-7.2 to 109.4/? (when UNIT is %) -50.4 to 765.8/? (when UNIT is mV)
STATUS:ERROR:LEVEL:CHROMA:UPPER	-57.0 to 57.0/? (when UNIT is %) -399.0 to 399.0/? (when UNIT is mV)
STATUS:ERROR:LEVEL:CHROMA:LOWER	-57.0 to 57.0/? (when UNIT is %) -399.0 to 399.0/? (when UNIT is mV)

Table 4-2 LV 5330SER02 enterprise MIB

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
I15staErrTBL	I15statusTBL.6	Aggregate	-	-
I15staErrDetectTBL	I15staErrTBL.3	Aggregate	-	-
I15staErrDetectY	I15staErrDetectTBL.11	INTEGER	R/W	0=off 1=on
I15staErrDetectCBCR	I15staErrDetectTBL.12	INTEGER	R/W	0=off 1=on
I15staErrLevTBL	I15staErrTBL.4	Aggregate	-	-
I15staErrLevGamutTBL	I15staErrLevTBL.1	Aggregate	-	-
I15staErrLevGamutArea	I15staErrLevGamutTBL.3	DisplayString	R/W	0.0 - 5.0
I15staErrLevGamutDuration	I15staErrLevGamutTBL.4	INTEGER	R/W	1 - 50
I15staErrLevCGamutTBL	I15staErrLevTBL.2	Aggregate	-	-
I15staErrLevCGamutArea	I15staErrLevCGamutTBL.3	DisplayString	R/W	0.0 - 5.0
I15staErrLevCGamutDuration	I15staErrLevCGamutTBL.4	INTEGER	R/W	1 - 50
I15staErrLevLumaTBL	I15staErrLevTBL.4	Aggregate	-	-
I15staErrLevLumaUpper	I15staErrLevLumaTBL.1	DisplayString	R/W	-7.2 - 109.4 (%) -50.4 - 765.8 (mV)
I15staErrLevLumaLower	I15staErrLevLumaTBL.2	DisplayString	R/W	-7.2 - 109.4 (%) -50.4 - 765.8 (mV)
I15staErrLevChromaTBL	I15staErrLevTBL.5	Aggregate	-	-
I15staErrLevChromaUpper	I15staErrLevChromaTBL.1	DisplayString	R/W	-57.0 - 57.0 (%) -399.0 - 399.0 (mV)

4. PROCEDURE

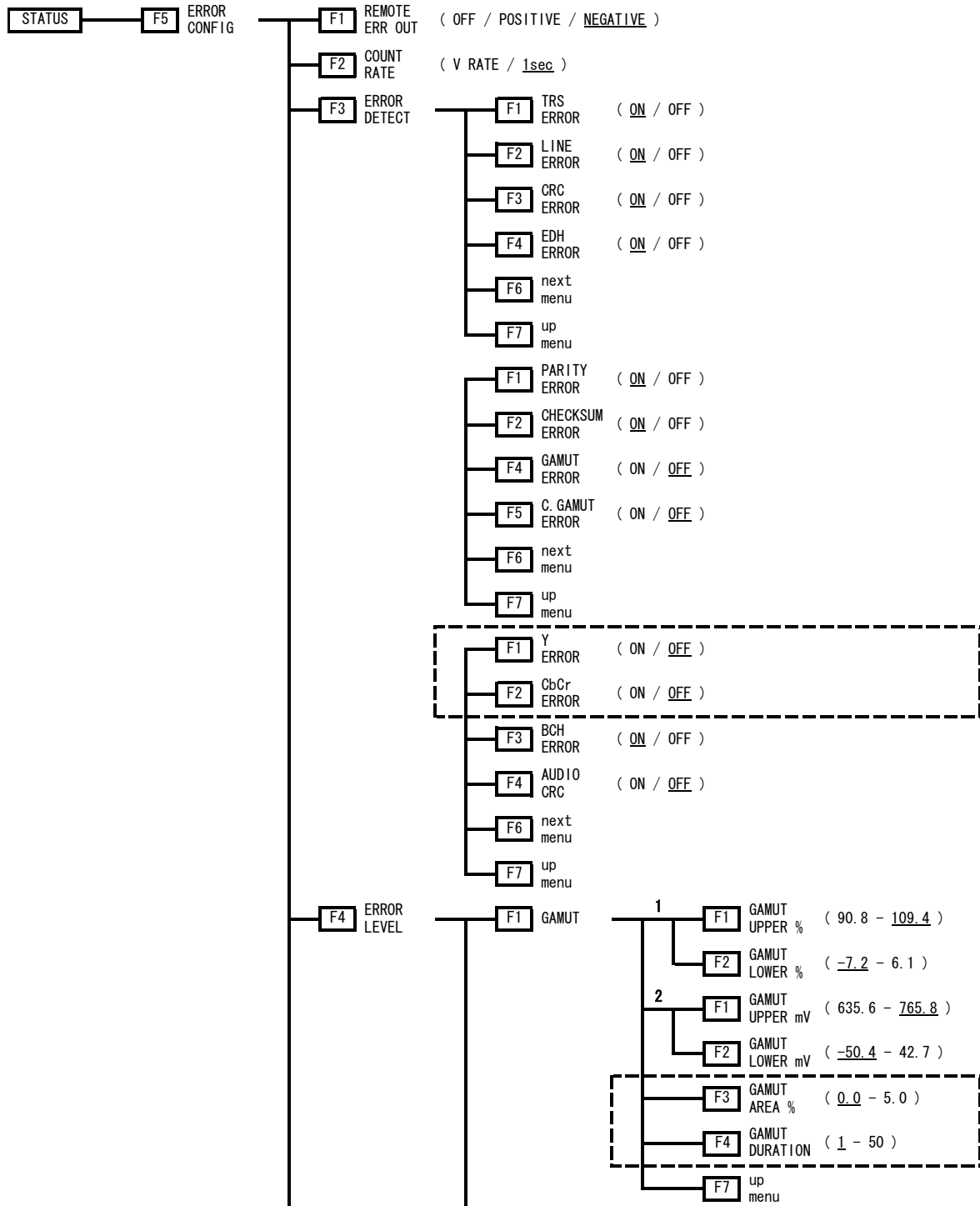
MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
I15staErrLevChromaLower	I15staErrLevChromaTBL.2	DisplayString	R/W	-57.0 - 57.0 (%) -399.0 - 399.0 (mV)

Table 4-3 LV 7330SER02 enterprise MIB

MIB	OID	SYNTAX	ACCESS	VALUE/RANGE
I16staErrTBL	I16statusTBL.6	Aggregate	-	-
I16staErrDetectTBL	I16staErrTBL.3	Aggregate	-	-
I16staErrDetectY	I16staErrDetectTBL.11	INTEGER	R/W	0=off 1=on
I16staErrDetectCBCR	I16staErrDetectTBL.12	INTEGER	R/W	0=off 1=on
I16staErrLevTBL	I16staErrTBL.4	Aggregate	-	-
I16staErrLevGamutTBL	I16staErrLevTBL.1	Aggregate	-	-
I16staErrLevGamutArea	I16staErrLevGamutTBL.3	DisplayString	R/W	0.0 - 5.0
I16staErrLevGamutDuration	I16staErrLevGamutTBL.4	INTEGER	R/W	1 - 50
I16staErrLevCGamutTBL	I16staErrLevTBL.2	Aggregate	-	-
I16staErrLevCGamutArea	I16staErrLevCGamutTBL.3	DisplayString	R/W	0.0 - 5.0
I16staErrLevCGamutDuration	I16staErrLevCGamutTBL.4	INTEGER	R/W	1 - 50
I16staErrLevLumaTBL	I16staErrLevTBL.4	Aggregate	-	-
I16staErrLevLumaUpper	I16staErrLevLumaTBL.1	DisplayString	R/W	-7.2 - 109.4 (%) -50.4 - 765.8 (mV)
I16staErrLevLumaLower	I16staErrLevLumaTBL.2	DisplayString	R/W	-7.2 - 109.4 (%) -50.4 - 765.8 (mV)
I16staErrLevChromaTBL	I16staErrLevTBL.5	Aggregate	-	-
I16staErrLevChromaUpper	I16staErrLevChromaTBL.1	DisplayString	R/W	-57.0 - 57.0 (%) -399.0 - 399.0 (mV)
I16staErrLevChromaLower	I16staErrLevChromaTBL.2	DisplayString	R/W	-57.0 - 57.0 (%) -399.0 - 399.0 (mV)

4.4 Menu Structure

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



4. PROCEDURE

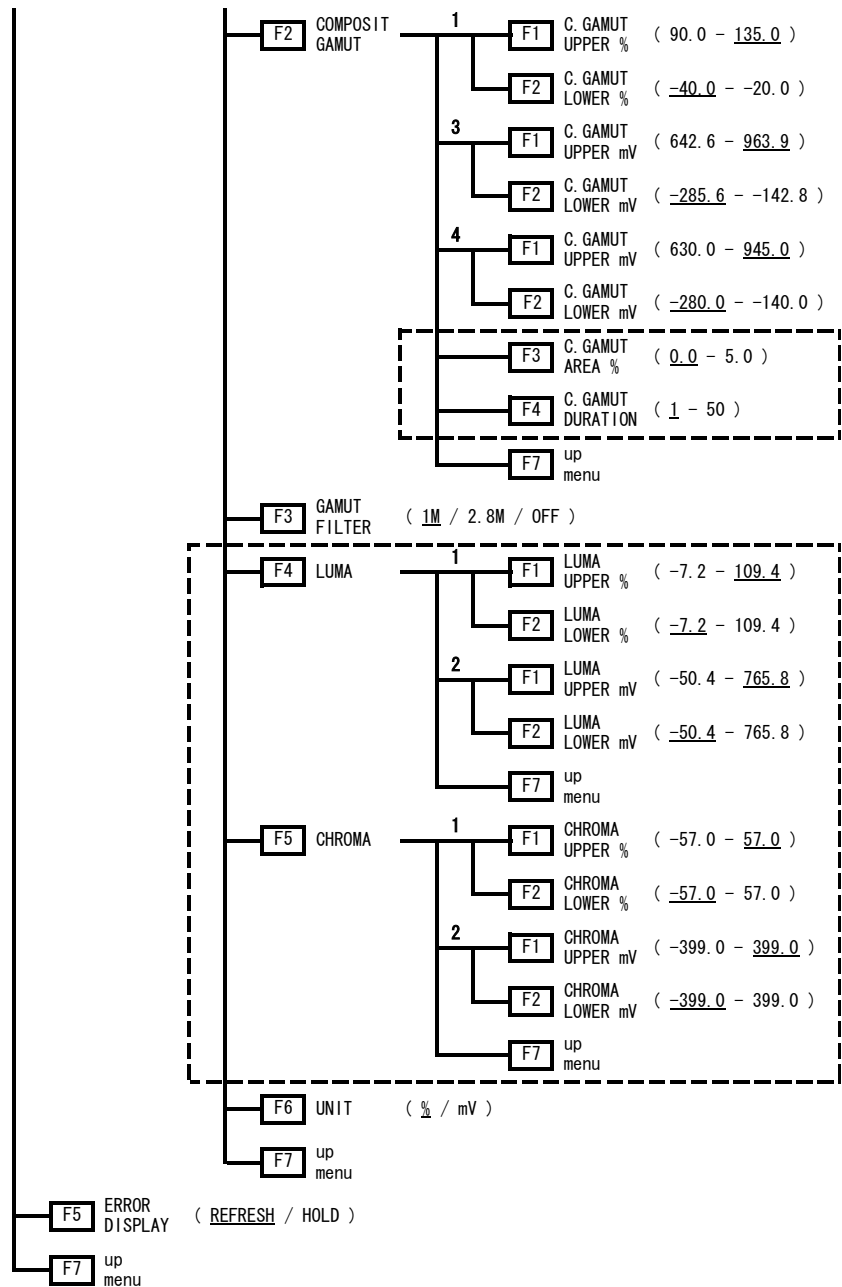


Figure 4-3 Status menu

- *1 Appears when UNIT is set to %.
- *2 Appears when UNIT is set to mV.
- *3 Appears when UNIT is set to mV and the composite display format is NTSC.
- *4 Appears when UNIT is set to mV and the composite display format is PAL.

5. CHANGE HISTORY OF THE SOFTWARE

This manual was written for the following firmware versions:

- Ver 3.5 (LV 5330)
- Ver 3.0 (LV 7330)

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

Ver. 2.6 on the LV 5330 and Ver 2.1 on the LV 7330

- Support for LV 5330SER02/LV 7330SER02 (GAMUT & LEVEL ERROR) was added.

所含有毒有害物质信息

部件号码: LV 5330 SER02



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

产品中有毒有害物质或元素的名称及含量

部件名称 Parts	有毒有害物质或元素 Hazardous Substances in each Part					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
本体部	×	○	○	○	○	○
备注) ○：表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006 规定的限量要求以下。 ×：表示该有毒有害物质或元素至少在该部件的某一均质材料中的含量超出SJ/T11363-2006 标准规定的限量要求。						

所含有毒有害物质信息

部件号码: LV 7330 SER02



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

产品中有毒有害物质或元素的名称及含量

部件名称 Parts	有毒有害物质或元素 Hazardous Substances in each Part					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
本体部	×	○	○	○	○	○
备注) ○：表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006 规定的限量要求以下。 ×：表示该有毒有害物质或元素至少在该部件的某一均质材料中的含量超出SJ/T11363-2006 标准规定的限量要求。						

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