LMW-230 SERIES LCD MONITOR

USER MANUAL

BEIJING OSEE DIGITAL TECHNOLOGY LTD.

PRODUCT INFORMATION

MODEL: LMW-230 SERIES LCD MONITOR
Version: V010002
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COMPANY NAME

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About The USER MANUAL

The user manual applies to the following device types:

- LMW-230H
- LMW-230S
- LMW-230V

The images of LMW-230H are adopted in the following descriptions. Any of the different specifications between the device types are elaborated. Before reading the manual, please confirm the device type.

Note: These products are the commercial equipments and are not recommended being used in the household environment.

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Chapter 1 Product Overview

Overview

The LMW-230 is a cost-effective 23 inch LCD monitor that can be used for post production rooms, broadcasters and mobile units, monitoring multi-format high definition video and audio.

The LMW-230 is equipped with 1920×1080 high resolution panel and capable of displaying multiple formats high definition signal at native resolution. Advanced digital video processing technology such as precise 3D de-interlace, scaling, Gamma and color correction is used to ensure high display quality.

The LMW-230 can accept Video, S-video, component, SDI and HDMI format SD/HD video signal as well as VGA or DVI PC signal.

It has various On-Screen Display feature, can display 8 channels of audio meter, time code, UMD and tally on the LCD panel. Other features like H/V delay, NATIVE, blue/mono display, area marker and safety marker are standard for the monitor.

FCC Caution:

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules.
Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guaran-tee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.
Increase the separation between the equipment and receiver.
Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
Consult the dealer or an experienced radio/TV technician for help.

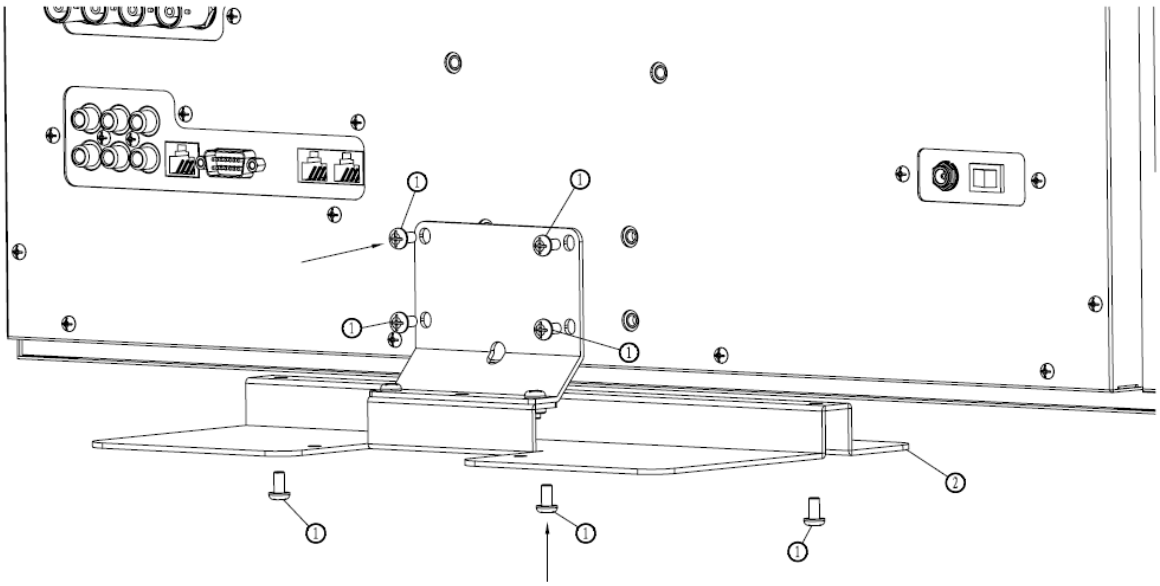
Features

- 1920×1080 Native Resolution Panel
- High Quality Color Reproduction
- Various Area, Safety and Center Marker
- H/V Delay, NATIVE, Blue/Mono Display
- 8 Channel Audio Meters, Time code， UMD, Tri-color Tally
- Field upgradeable
- Audio De-embedding for SDI Input
- Build-in Speaker and Audio Line Output

Chapter 2 Unpacking and Installation

Unpack the LMW-230 Monitor and inspect for any apparent physical damage that may have occurred in transit. In addition to the monitor, the packaging should contain a power cord, warranty card, a power adapter (AC to DC) and table stand. There are also seven M4 x 8mm screws for table stand attaching.
We recommend you retain the shipping carton for future use.

1. When installing the table stand, please assure a soft and non-scratch surfaced is used to place the monitor on.
2. Place the monitor on the soft surface screen face down for installation of table stand.
3. Use the included screws to attach the table stand.
   The table stand attaches on the rear bottom of the nonitor. Please refer to Chapter 3 for further reference.

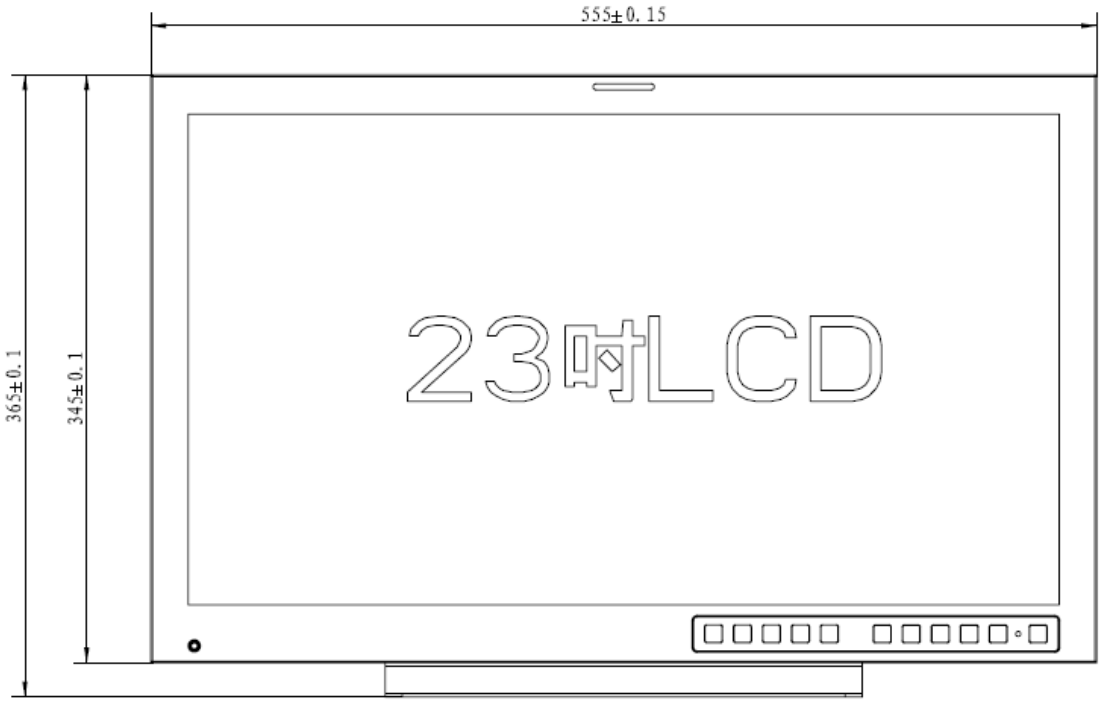


Attaching the table stand

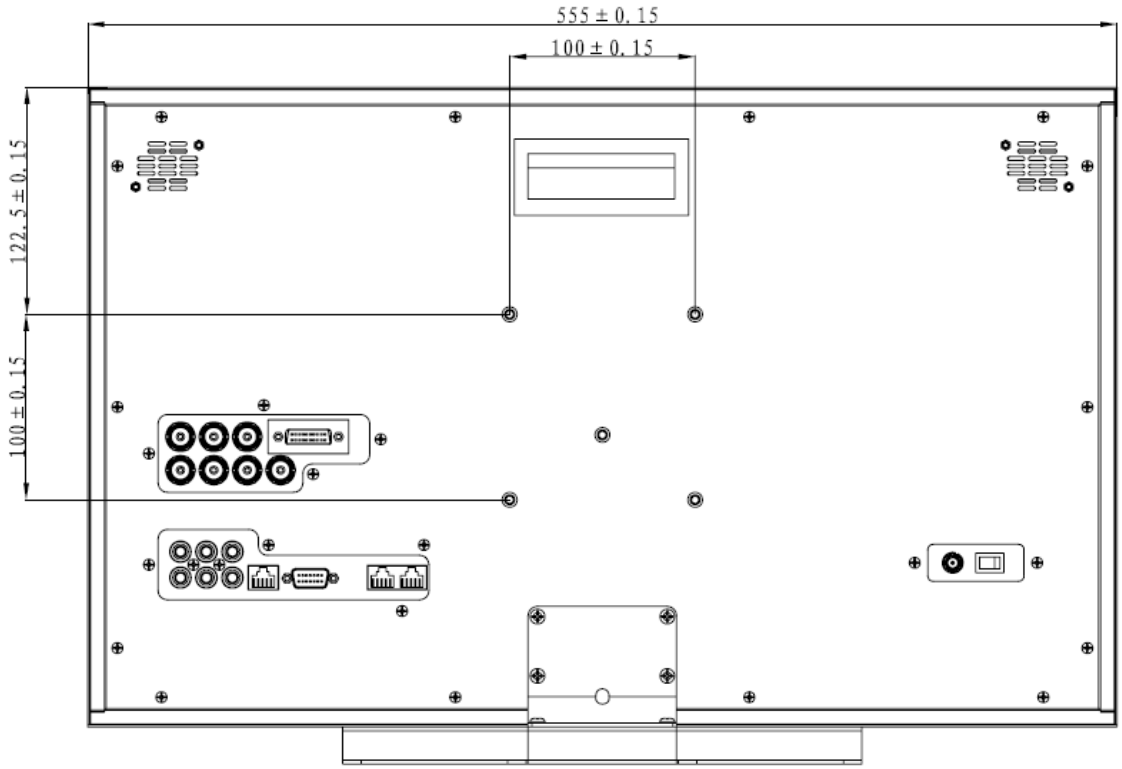
4. Place the LMW-230 in the required location for operation.
5. Connect the required signals. For BNC connections use 75Ω rated connectors.
6. Connect A.C. Mains power using the included EIC power cord. Please ensure an Earth ground present to ensure proper operation of the unit.
7. As a final step turn on the mains power using the toggle switch located on the rear of the LMW-230 above the power connection.

Chapter 3 Dimensions

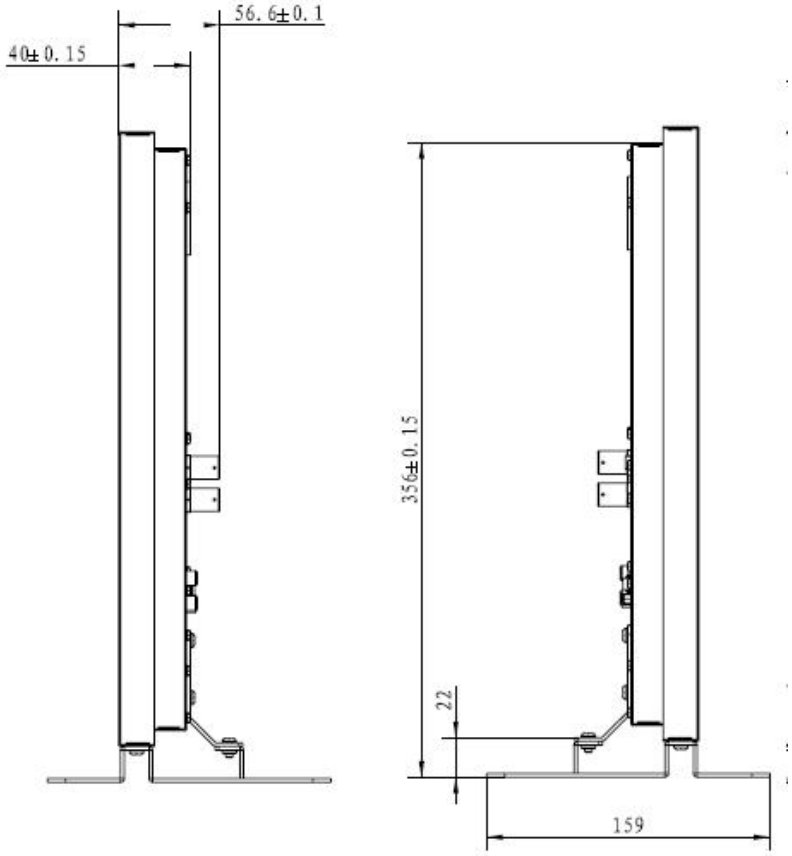
Front View （Unit: mm）



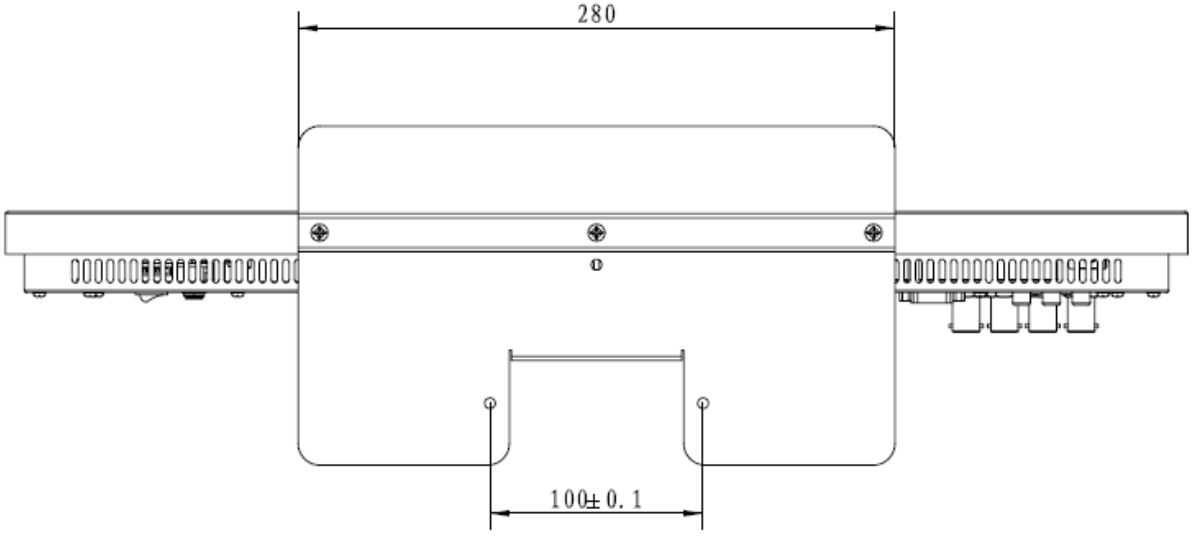
Rear View （Unit: mm ）



Side View （Unit: mm）

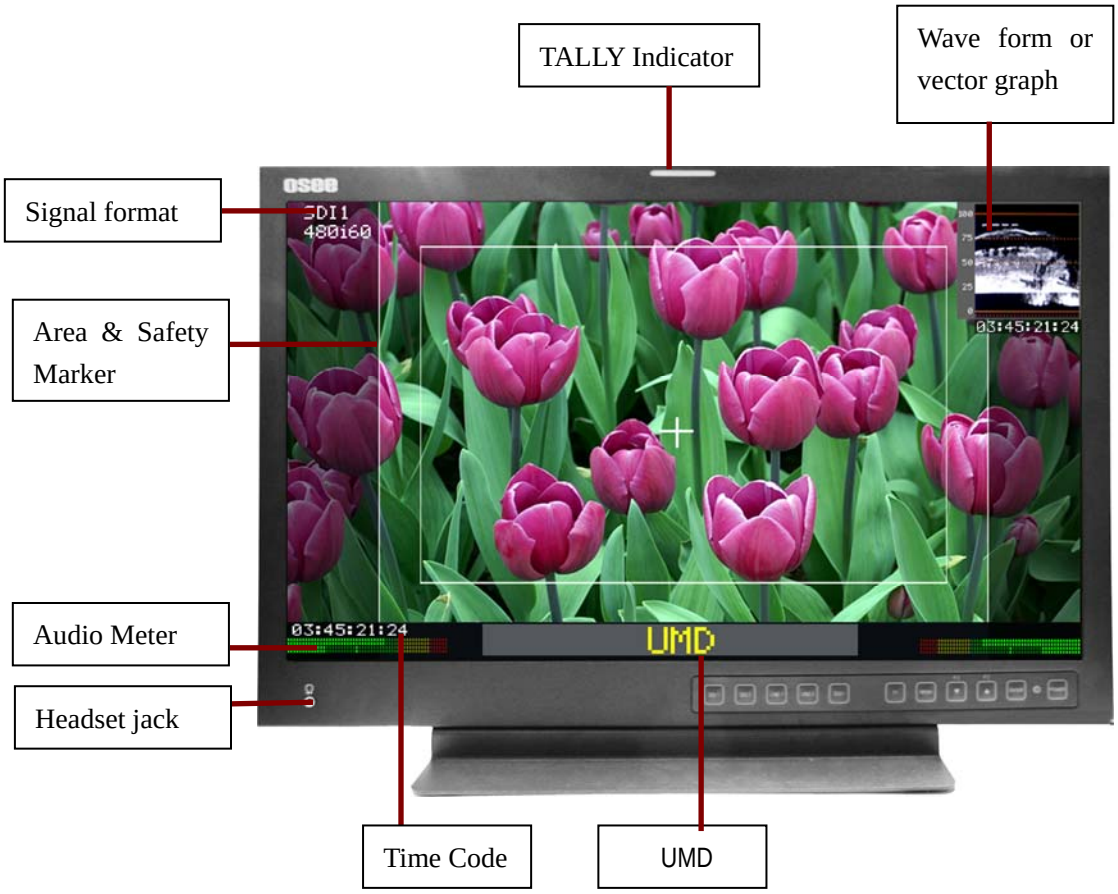


Top Side View （Unit: mm）



Chapter 4 Operation

4.1 Status Display



☞ **Tally Indicator:**

It is used to check the status of the monitor by the color of the tally lamp.

(For more information, see the fourth page of "USER CONFIG" menu)

☞ **Headset jack**

Output the audio which is selected by the input terminal select button.

☞ **Wave form or vector graph**

It is used to check the wave form or vector graph of the displaying signal picture.

Only used for SDI signal.

You can open and set the wave form or vector graph on the second page of "USER CONFIG" menu.

4.2 Supported Signals

The following signals are supported by the LMW-230 H monitor:

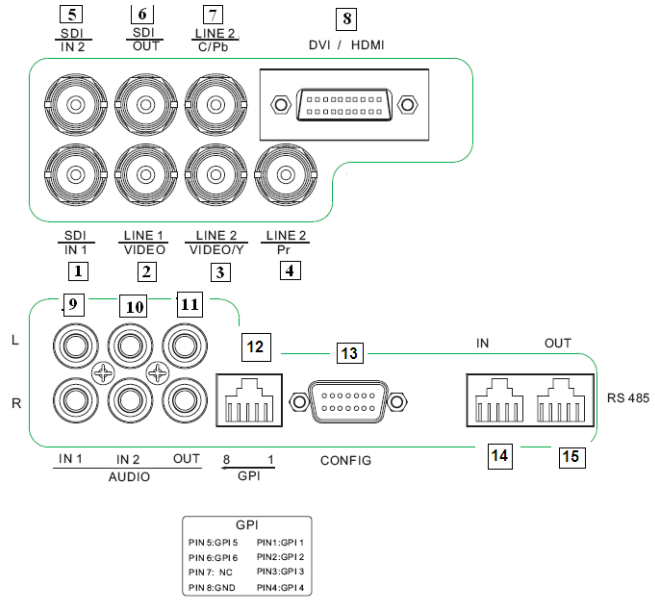
Format	SDI	Video	Y/C	YPbPr	HDMI	DVI	VGA
NTSC	\	YES	YES	\	\	\	\
PAL	\	YES	YES	\	\	\	\
SECAM	\	YES	YES	\	\	\	\
NTCS-4.43	\	YES	YES	\	\	\	\
PAL-M	\	YES	YES	\	\	\	\

480I60	YES	\	\	YES	YES	\	\
576I50	YES	\	\	YES	YES	\	\
480P60	\	\	\	YES	YES	\	\
576P50	\	\	\	YES	YES	\	\
720P24	YES	\	\	YES	YES	\	\
720P25	YES	\	\	YES	YES	\	\
720P30	YES	\	\	YES	YES	\	\
720P50	YES	\	\	YES	YES	\	\
720P60	YES	\	\	YES	YES	\	\
1080I60	YES	\	\	YES	YES	\	\
1080I50	YES	\	\	YES	YES	\	\
1080P24	YES	\	\	YES	YES	\	\
1080P25	YES	\	\	YES	YES	\	\
1080P30	YES	\	\	YES	YES	\	\
1080P50	\	\	\	YES	YES	\	\
1080P60	\	\	\	YES	YES	\	\
1080SF24	YES	\	\	YES	YES	\	\
VGA	\	\	\	\	\	YES	YES
SVGA	\	\	\	\	\	YES	YES
XGA	\	\	\	\	\	YES	YES
SXGA	\	\	\	\	\	YES	YES
UXGA	\	\	\	\	\	YES	YES
WVGA	\	\	\	\	\	YES	YES
WXGA	\	\	\	\	\	YES	YES
WUXGA	\	\	\	\	\	YES	YES

“YES”：Adjustable/can be set; “\” ：Not adjustable/cannot be set

4.3 Rear Panel Terminals

A. Audio and Video Connections



The specifications of terminals are as follows ：

1 SDI IN1: SDI 1 Input Terminal

SD-SDI input signal which is in compliance with SMPTE259M and ITU-R BT656 standard.

5 SDI IN2: SDI 2 Input Terminal

SD-SDI input signal which is in compliance with SMPTE259M and ITU-R BT656 standard.

6 SDI OUT: SDI Output Terminal

Output terminal for selected SDI signal.

2 LINE1(VIDEO) : LINE 1 Input Terminal

Analog Composite Video Signal only.

3 LINE2 (VIDEO/Y): LINE 2 Input Terminal

Analog Composite Video input signal, or luminance (Y) signal of Y/C or YPbPr.

7 LINE2 (C/Pb): LINE 2 Input Terminal

Chroma (C) signal of Y/C or Pb(Blue) component of YPbPr .

4 LINE2 (Pr): LINE 2 Input Terminal

Pr (Red) component of YPbPr .

8 DVI-I (DVI-D/VGA/HDMI): DVI-I Input Terminal

DVI analog/digital. Requires adapter for VGA signals. Supports HDMI input signal.

9 AUDIO IN1: Analog Audio (IN1) Terminal

Input terminal for the analog audio signal.

L:left audio channel; **R:** right audio channel.

10 AUDIO IN2: Analog Audio (IN2) Terminal

Input terminal for the analog audio signal.

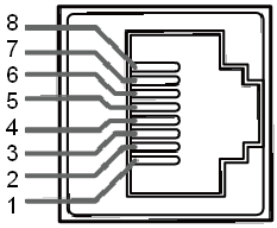
L:left audio channel; **R:** right audio channel.

11 AUDIO OUT: Analog Audio (OUT) Terminal

Outputs the audio signal which is selected by the input select button on the front panel.

L:left audio channel; **R:** right audio channel.

12 GPI ： GPI Terminal



Female RJ-45 Receptacle

PIN	Description
PIN 1	GPI1
PIN 2	GPI2
PIN 3	GPI3
PIN 4	GPI4
PIN 5	GPI5
PIN 6	GPI6
PIN 7	NC
PIN 8	GND

For the detailed information about GPI 1-GPI 6, see the fourth page of “USER CONFIG” menu.

13 **CONFIG ： Configuration Terminal**

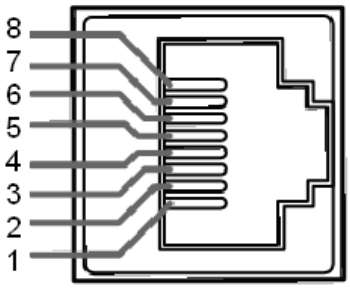
It is used to update the hardware program only.

14 **RS485 IN : RS485 IN Terminal**

It is used to support dynamic UMD/Tally.

15 **RS485 OUT : RS485 OUT Terminal ；**

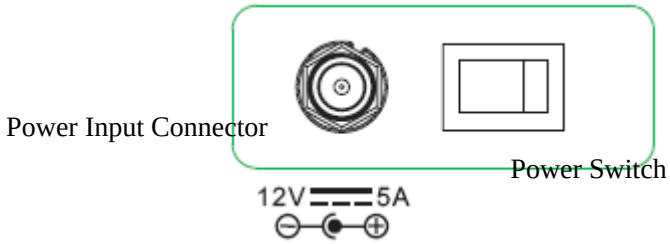
It is used to support dynamic UMD/Tally



Female RJ-45 Receptacles

Pin No.	RS485 IN Terminal Signal	RS485 OUT Terminal Signal
1,2	GND	GND
3	Tx-	Tx-
4	Rx+	Rx+
5	Rx-	Rx-
6	Tx+	Tx+
7,8	NC	NC

B. The right part of rear panel



O/－ (**Power) Switch**

The power is turned on or off.

The monitor is turned on by pressing side－.

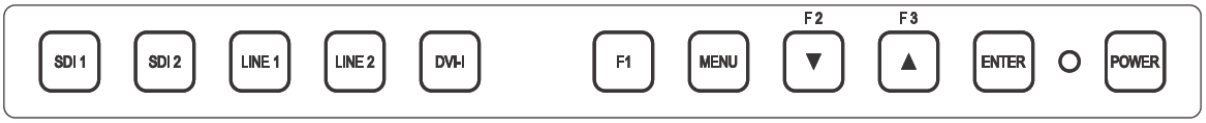
Power Input Connector

Total power consumption: 100-240V AC, 50-60Hz.

Equipment power consumption: 40W.

A power source with the capacity of more than 45W is recommended.

4.4 Location and Function of Control Buttons And Knobs On Front Panel



SDI1	SDI 1 switch key
SDI2	SDI 2 switch key
LINE1	VIDEO1 switch key
LINE2	VIDEO2/YC/YPBPR switch key
DVI-I	VGA/DVI/HDMI switch key
F1	Related to the menu page of user config 3/5 “F1 BUTTON”.
MENU	Call out Main Menu. Or make the Main Menu disappear when it is on.
DOWN/F2	Following Three status: No any Menu: F3, Related to the menu page of user config 3/5 “F2 BUTTON”. Main Menu: Select the next Item on the Menu. Volume/Brightness/Contrast/Chroma/Phase Menu: show current value
UP/F3	The following Three status: No Menu: Related to the menu page of user config 3/5 “F3 BUTTON”. Main Menu: Select the Pre Item on the Menu. Volume/Brightness/Contrast/Chroma/Phase Menu: Decrease current value
ENTER	The following two status: No any Menu: Switch between Volume/Brightness/Contrast/Chroma/Phase Menu Page. Main Menu: Press the key to enter the adjustable menu page.
POWER	Power on/off key

NOTE: Press ENTER 10 seconds and the default setting menu will display. And it will return back to default setting.

The default setting menu is as following:

Sub Menu	*Settings*	*Explanation*
FACTORY MENU		
LOGO TYPE	OFF	<OFF> <WOHLER>
LOGO TIME	OFF	2~5second

Input Signals and Adjustable/setting Items

Item	Input signal							
	VideoY/C	YPbPrSD	YPbPrHD	SDI SD	SDI HD	HDMI	DVI	VGA
Contrast	YES	YES	YES	YES	YES	YES	YES	YES
Bright	YES	YES	YES	YES	YES	YES	YES	YES
Chroma	YES	YES	YES	YES	YES	YES		
Phase	NTCS							
Sharpness	YES	YES	YES	YES	YES	YES		
NTSC Setup	NTSC							
Compo Level	SMPTE	480I60	SMPTE	SMPTE	SMPTE	SMPTE		
Color Temp	YES	YES	YES	YES	YES	YES	YES	YES
SCAN	YES	YES	YES	YES	YES	YES	FULL	FULL
ASPECT	YES	YES		YES		SD/YES		
MARKER	YES	YES	YES	YES	YES	YES		
BLUE ONLY	YES	YES	YES	YES	YES	YES		
MONO	YES	YES	YES	YES	YES	YES		
H/V DELAY				YES	YES			
DOT PHASE								YES
H Position								YES
V Position								YES
Audio	Ext	Ext	Ext	Ext/Ebd	Ext/Ebd	Ext/Ebd		
Time Code				YES	YES			
UMD	YES	YES	YES	YES	YES	YES		
Audio Meter	YES	YES	YES	YES	YES	YES		

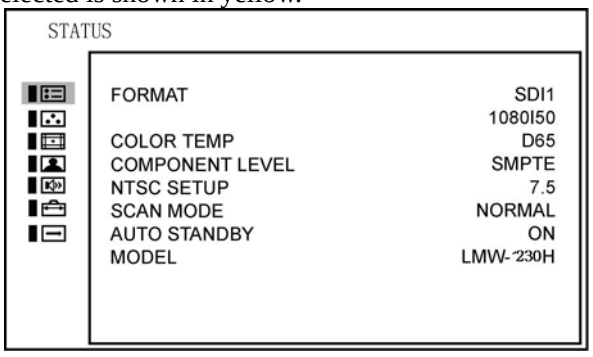
NOTE:“YES”：Adjustable/can be set; “\” ：Not adjustable/cannot be set

Chapter 5 Menu Operation Guide

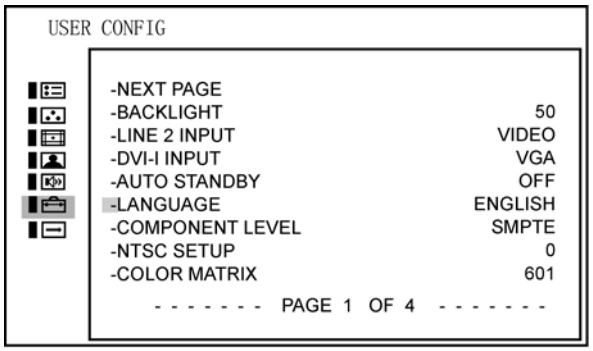
5.1 Selecting the Menu Language

You can select one of two languages (English, Chinese) for displaying the menu and other on-screen displays. ”English” is selected in the default setting.
The current settings are displayed in place of the ■ marks on the illustrations of the menu screen.

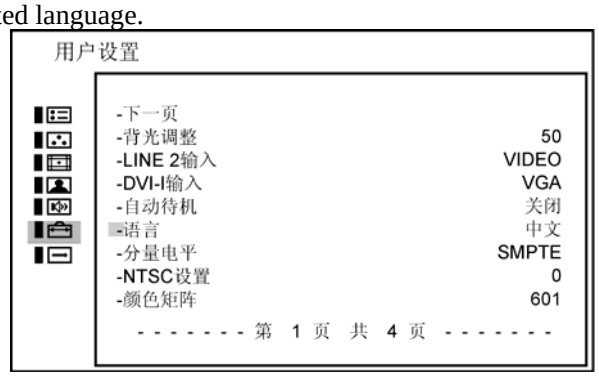
1. Turn on the unit.
2. Press MENU button.
   The menu appears.
   The menu presently selected is shown in yellow.



3. Press ∧（up）or ∨(down) button to select the first page of USE CONFIG menu, then press the ENTER button. The setting items (icons) in the selected menu are displayed in yellow.



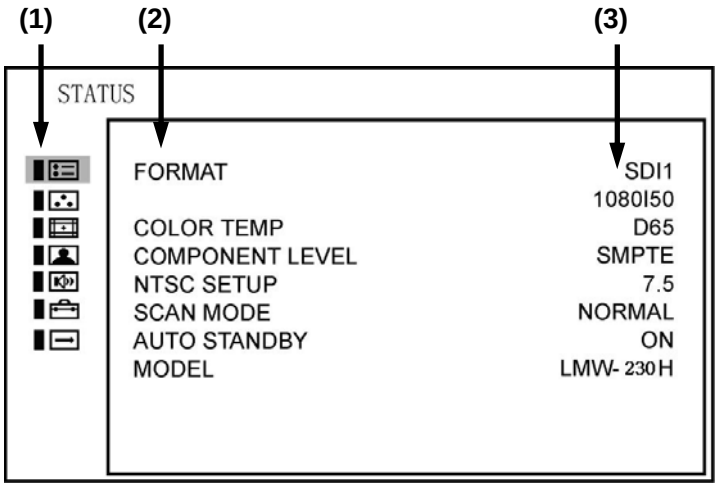
4. Press ∧（up）or ∨(down) button to select “LANGUAGE,” then press the ENTER button. The selected item is displayed in yellow.
5. Press ∧（up）or ∨(down) button to select a language, then press the ENTER button. The menu changes to the selected language.



To clear the menu:
Press the MENU button.
The menu disappears automatically if none of the buttons is operated for one minute.

Using the Menu

The unit is equipped with an on-screen menu for making various adjustments and settings such as **STATUS**, **COLOR TEMP**, **MARKER**, etc.
The current settings are displayed in place of the ■ marks on the illustrations of the menu screen.



(1): Main Menu Item Select Field

Pressing Up/down key can select the sub menu.
Pressing Enter key can enter into the control item.
Pressing Menu key can quit the main menu.

(2): Sub Menu Item Select Field

Pressing Up/down key can select the control item.
Pressing Enter key can enter into the sub adjustable item.
Pressing Menu key can return to main menu.

(3): Control Item Select Field

Pressing Up/down key can adjust the item value, if the item is adjustable.
Pressing Enter key can save and quit current item. The item in white means the value is adjustable, the item in blue means the value is not adjustable.
Pressing Menu key can quit current item, but can not save adjusted item.

While the menu is on, it can refresh the menu, if the input changed

To clear the menu:

Press the MENU button.
The menu disappears automatically if none of the buttons is operated for one minute.

Chapter 6 LMW-230 Series LCD Monitor Menu Structure

6.1 Main Menu

The screen menu of this monitor consists of the following items.

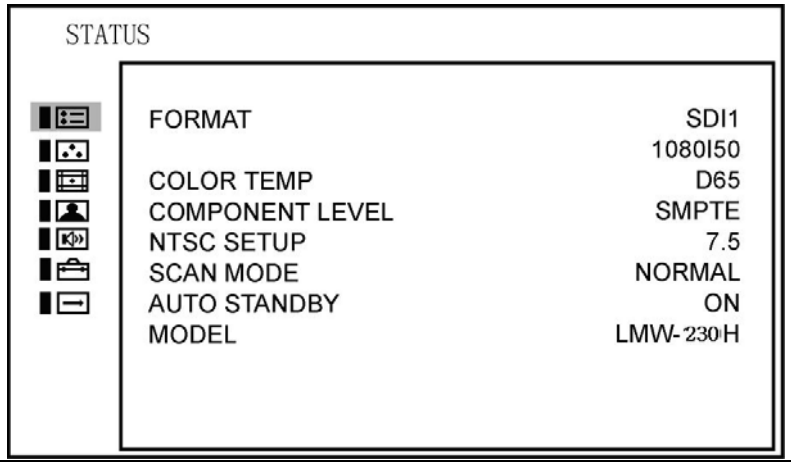
[Label]	[Main Menu Item]	[Sub Menu]
	STATUS	**1**
	COLOR TEMP	**1**
	MARKER	**1**
	VIDEO CONFIG	**1**
	AUDIO CONFIG	**3**
	USER CONFIG	**5**
	CONTROL	**1**

6.2 Adjusting and Changing the Settings

STATUS

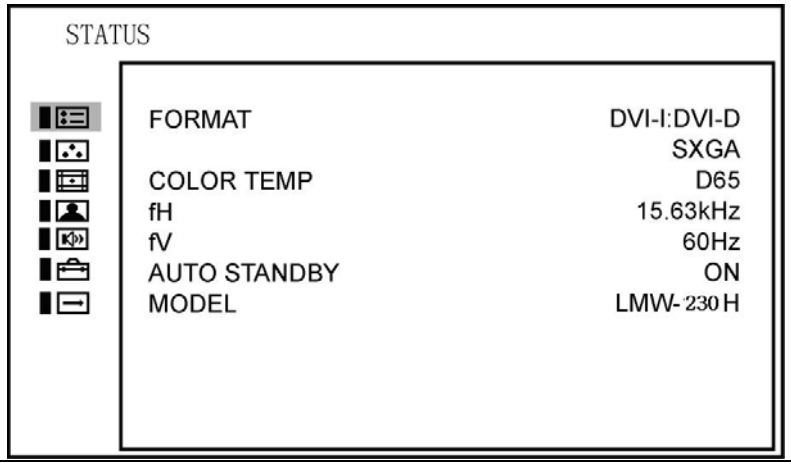
The STATUS menu is used to display the current status of the unit. The following items are displayed.

For the video inputs include SDI1, SDI2, Line1, Line2 or DVI-I (HDMI input only), the following items are displayed.



STATUS	
FORMAT	SDI1
	1080I50
COLOR TEMP	D65
COMPONENT LEVEL	SMPTE
NTSC SETUP	7.5
SCAN MODE	NORMAL
AUTO STANDBY	ON
MODEL*	LMW-230H

For the DVI/VGA input, the following items are displayed.

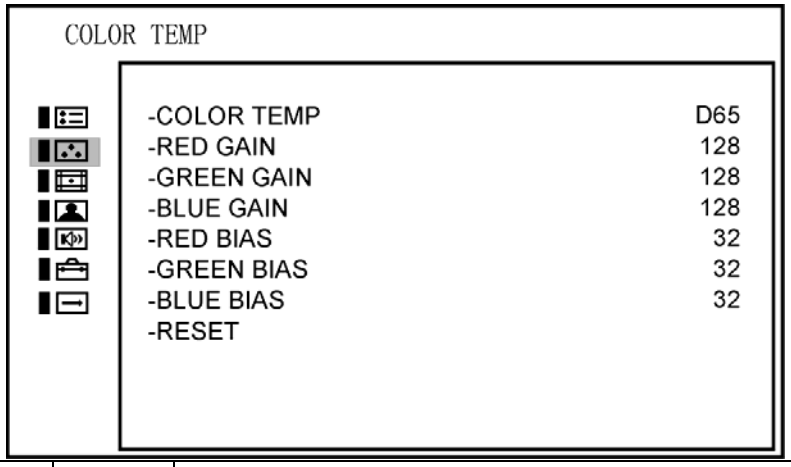


STATUS	
FORMAT	DVI-I:DVI-D
	SXGA
COLOR TEMP	D65
fH	15.63kHz
fV	60Hz
AUTO STANDBY	ON
MODEL*	LMW-230H

** For Model, it will display LMW-230H or LMW-230S or LMW-230V, depending on the unit model.*

COLOR TEMP

The COLOR TEMP menu is used for adjusting the picture white balance.



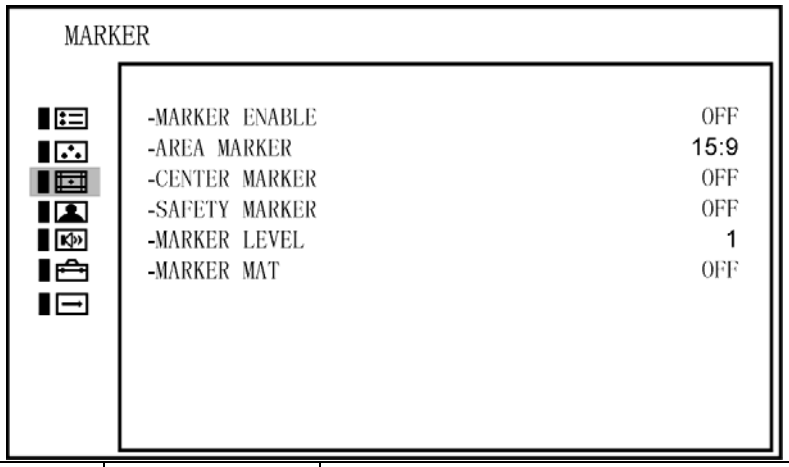
Sub Menu	***Settings***	***Explanation***
COLOR TEMP		
-COLOR TEMP	D65	Used to select the color temperature that will become the basis for adjustments: • <D93> around 9300K • <D65> around 6500K • <D56> around 5600K • <USER>
-RED GAIN	0-255	<0-60>, factory preset settings: 128
-GREEN GAIN	0-255	<0-60>, factory preset settings: 128
-BLUE GAIN	0-255	<0-60>, factory preset settings: 128

-RED BIAS	0-64	<0-60>, factory preset settings: 32
-GREEN BIAS	0-64	<0-60>, factory preset settings: 32
-BLUE BIAS	0-64	<0-60>, factory preset settings: 32
-RESET		This returns the GAIN and BIAS settings to the factory presets

When adjusting the GAIN and BIAS settings, the item display moves to the middle part of the screen.

MARKER

The MARKER menu is used for setting the marker.



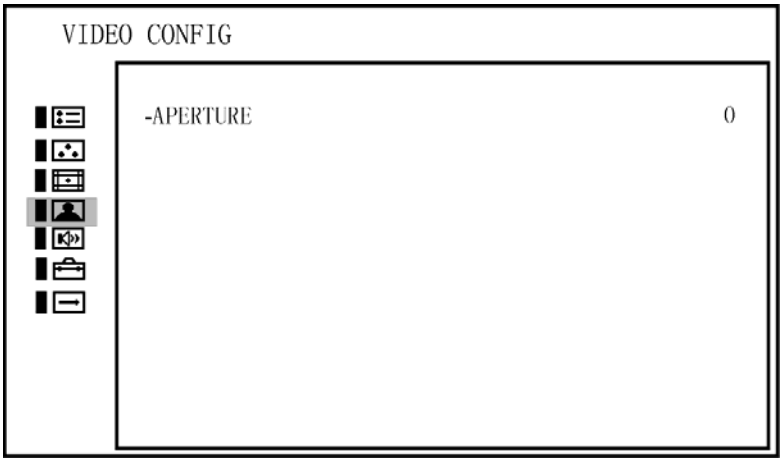
Sub Menu	*Settings*	*Explanation*
MARKER		
-MARKER ENABLE	ON	<ON> marker displayed <OFF> marker not displayed
-AREA MARKER	15:9	Selects the area marker aspect ratio according to the display aspect, ☞ **For display aspect ratio is 16:9** <OFF> <4:3> vertical <15:9> vertical <14:9>vertical <13:9> vertical <1.85:1> horizontal <2.35:1> horizontal ☞ **For display aspect ratio is 4:3** <OFF> <16:9>
-CENTER MARKER	ON	<ON> marker displayed <OFF> marker not displayed
-SAFETY MARKER	OFF	Setting the picture safe area size marker for the aspect ratio determined by the button which the aspect function is assigned. (According to display aspect and SCAN control) • <OFF> • <80%> • <85%> • <88%> • <90%> • <93%> • <95%

Sub Menu	*Settings*	*Explanation*
-MARKER LEVEL	<1>	Sets the luminance to display safety, center and area marker line. • <1>: 50% white level • <2>: 75% white level • <3>: 100% white level
-MARKER MAT	<OFF>	Sets the area marker mat transparency. • <OFF> : Normal background, only use line for area marker edge indication • <HALF> : 50% background brightness • <BLACK> : Black

- *16:9 and 4:3 area marker settings are stored separately.*
  Use 16:9 setting if display aspect is 16:9; Use 4:3 setting if display aspect is 4:3
- *Marker is disabled when SCAN is NATIVE, input is DVI or VGA.*

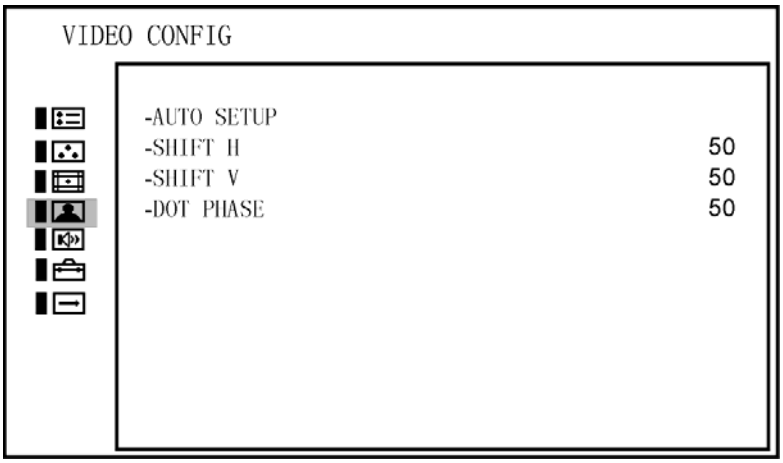
VIDEO CONFIG

For the video inputs include SDI1, SDI2, Line1, Line2 or DVI-I (HDMI input only), the following items are displayed.



Sub Menu	*Settings*	*Explanation*
VIDEO CONFIG		
PICTURE CONTROL		
-APERTURE	0	<0-100>

For the DVI/VGA input, the following items are displayed.

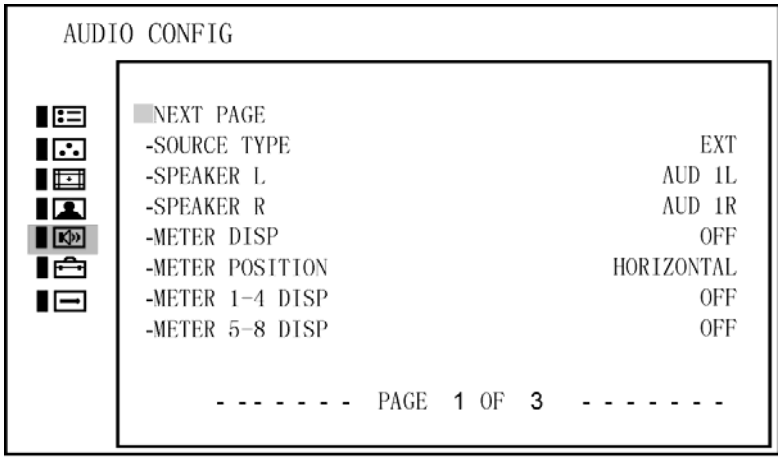


Sub Menu	*Settings*	*Explanation*
VIDEO CONFIG		
PICTURE CONTROL		
-AUTO SETUP[1]		Automatic Pixel Adjustment, press to adjust the picture automatically to maximize clarity and correct H/V position for the VGA input signal
-SHIFT H	50	Adjusts the horizontal position of the picture <0-100>
-SHIFT V	50	Adjusts the vertical position of the picture <0-100>
-DOT PHASE	50	Adjusts the dot phase <0-100>

1. For "AUTO SETUP" menu, it is valid for VGA input, but not valid for DVI input.

AUDIO CONFIG

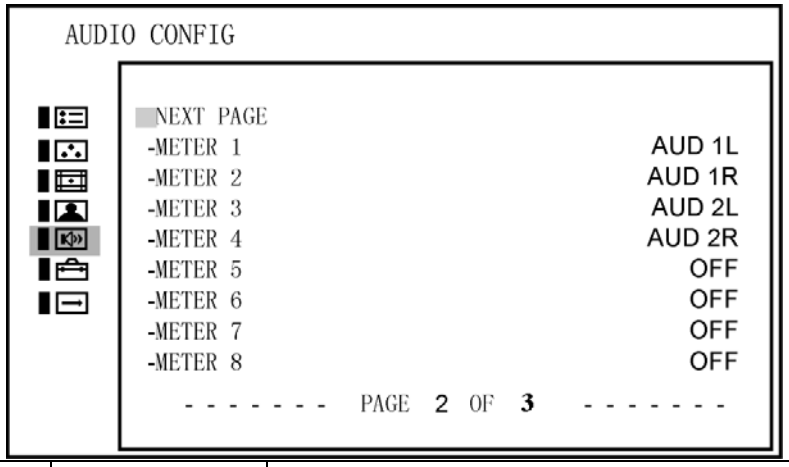
For the video inputs include SDI1, SDI2, Line1, Line2 or DVI-I (HDMI input only), the following items are displayed.



Sub Menu	*Settings*	*Explanation*
AUDIO CONFIG 1/3		
GENERAL SETUP		
-NEXT PAGE		

-SOURCE TYPE	EXT	Used to select the audio source type <EXT> <EBD> can be selected only for SDI or HDMI input <NONE>
-SPEAKER L	AUD 1L (EBD CH1)	Select the audio channel to the left speaker based on the selected audio source type ☞ <OFF> ☞ If SOURCE TYPE is EXT <AUD 1L, AUD 1R, AUD 2L, AUD 2R> ☞ If SOURCE TYPE is EBD and SDI input <EBD CH1 – EBD CH16> ☞ If SOURCE TYPE is EBD and HDMI input <EBD CH1 – EBD CH2>
Sub Menu	***Settings***	***Explanation***
-SPEAKER R	AUD 1R (EBD CH2)	The same as above
-METER POSITION	HORIZONTAL	<HORIZONTAL> <VERTICAL>
-METER DISP	OFF	<OFF> <ON>
-METER 1-4 DISP	OFF	<OFF> <1-2> <1-4>
-METER 5-8 DISP	OFF	<OFF> <5-6> <5-8>

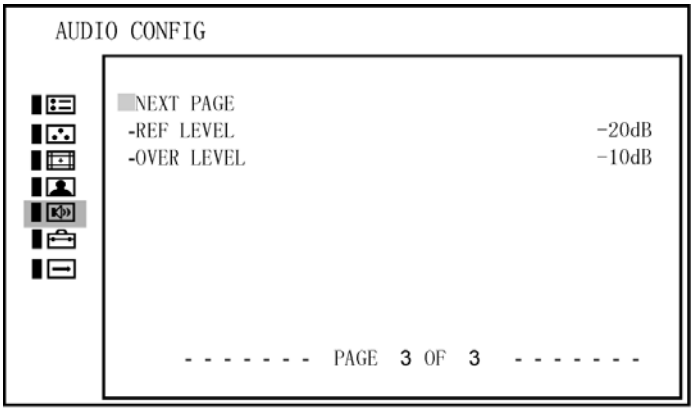
Press ∧(up)or ∨(down) button to select “NEXT PAGE” item, then press Enter button to display the next page menu as follows.



Sub Menu	***Settings***	***Explanation***
AUDIO CONFIG 2/3		
METER SOURCE		
-NEXT PAGE		
-METER 1	AUD 1L (EBD CH1)	Used to assign the audio channel for meter display based on the selected audio source type

		☞ <OFF> ☞ If SOURCE TYPE is EXT <AUD 1L, AUD 1R, AUD 2L, AUD 2R> ☞ If SOURCE TYPE is EBD and SDI input <EBD CH1 – EBD CH16> ☞ If SOURCE TYPE is EBD and HDMI input <EBD CH1 – EBD CH2>
-METER 2	AUD 1R (EBD CH2)	The same as above
-METER 3	AUD 2L (EBD CH3)	The same as above
-METER 4	AUD 2R (EBD CH4)	The same as above
-METER 5	OFF (EBD CH5)	The same as above
Sub Menu	***Settings***	***Explanation***
-METER 6	OFF (EBD CH6)	The same as above
-METER 7	OFF (EBD CH7)	The same as above
-METER 8	OFF (EBD CH8)	The same as above

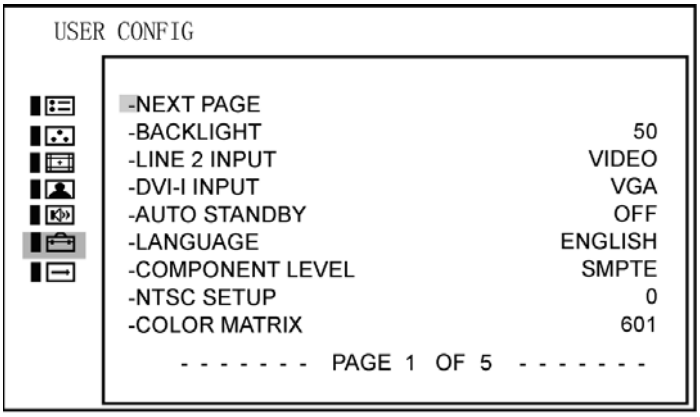
Press ∧(up)or ∨(down) button to select “NEXT PAGE” item, then press Enter button to display the next page menu as follows. Select “NEXT PAGE” item in the following menu, it will return to display the first page menu of “AUDIO CONFIG”.



Sub Menu	***Settings***	***Explanation***
AUDIO CONFIG 3/3		
LEVEL SETUP		
-NEXT PAGE		
-REF LEVEL	-20dB	<-20dB> <-18dB>
-OVER LEVEL	-10dB	<-10dB> <-8dB > <-6dB > <-4dB > <-2dB >

USER CONFIG

The USER CONFIG menu is used for setting the LINE 2 input, DVI-I input, language, etc.



Sub Menu	*Settings*	*Explanation*
USER CONFIG 1/5		
SYSTEM SETUP		
-NEXT PAGE		
-BACKLIGHT[1]	50	Adjusts the backlight <0 ... 100>
-LINE 2 INPUT	VIDOE	Selects the LINE 2 input type • <VIDEO> • <Y/C> • <YPbPr>
-DVI-I INPUT[2]	VGA	Selects the DVI-I input type • <VGA> • <DVI-D> • <HDMI>
-AUTO STANDBY	OFF	Sets the power saving mode turn on/off PANEL (include backlight and panel power supply, signal to panel) • <ON> the monitor goes into power saving mode if no signal is input for about one minute • <OFF> the monitor keeps power on regardless input signal status
-LANGUAGE	ENGLISH	<ENGLISH>: English <中文>: Chinese
-COMPONENT LEVEL[3]	SMPTE	Only for 480i60 component input, refer to table 1 • <SMPTE> for 100/0/100/0 signal • <BETA0> for 100/0/75/0 signal • <BETA7.5> for 100/7.5/75/7.5 signal
-NTSC SETUP[4]	0	Only for NTSC signal • <0> for Japan • <7.5> for North America
-COLOR MATRIX[5]	601	Applied to 480/60I or 480/60P • <601> • <709>

1. Backlight Intensity is a factor in the operating life of the backlight. Reducing the intensity will lengthen the backlight life whilst maximum intensity will decrease backlight life.

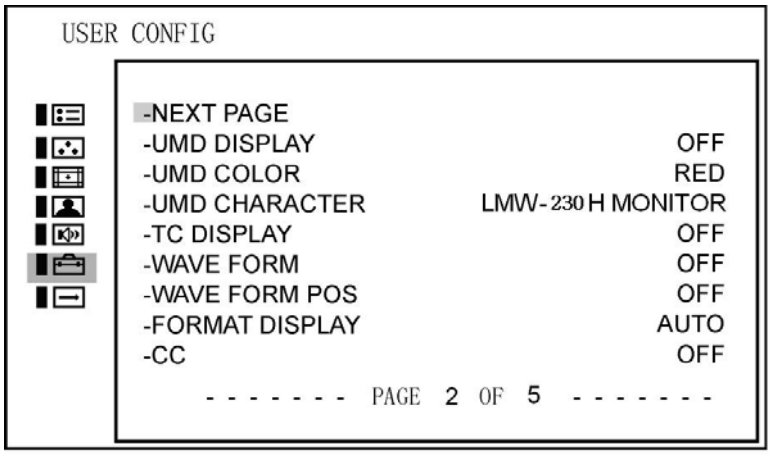
*2. **NOTES:** the displaying signal, switching from HDMI to DVI-D or from DVI-D to HDMI, may not normally display.*

3. Component level only effects for YPbPr 480i input signal, and it will be set in blue color when other signal. Component level always uses SMPTE except for 480i60 input signal.

4. NTSC SETUP only effects for NTSC input signal, and it will be set in blue color when other signal.

5. COLOR MATRIX is only applied to 480i/60 or 480/60p input signal, and it will be set in blue color when other signal.

Press ∧ (up) or ∨ (down) button to select "NEXT PAGE" item, then press Enter button to display the next page menu as follows.



Sub Menu	***Settings***	***Explanation***
USER CONFIG 2/4		
-NEXT PAGE		
-UMD DISPLAY	OFF	<ON> <OFF>
-UMD COLOR	RED	<RED> <GREEN> <YELLOW> <WHITE>
-UMD CHARACTER[1]	LMW-230H MONITOR	16 characters
-TC DISPLAY	OFF	<ON> <OFF> Display --:--:--:-- if no TC in ANC
-WAVE FORM [2]	OFF	<OFF> <WAVE>:Waveform <VECT75> Vector graph <VECT100> Vector graph
-WAVE FORM POS [2]	TOP RIGHT	<BOT LEFT> <BOT RIGHT> <TOP LEFT> <TOP RIGHT>
-FORMAT DISPLAY	AUTO	• <ON> the format and scan mode are always displayed • <AUTO> the format and scan mode are displayed for about 10 seconds when the input of the signal starts • <OFF> the display is hidden

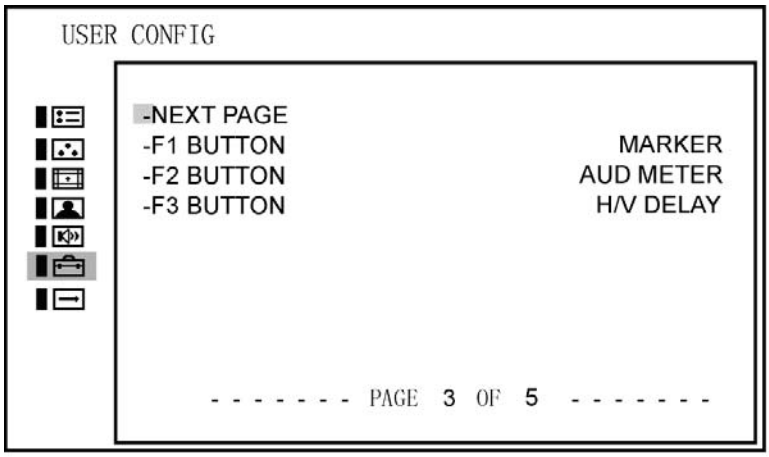
-CC [3]	OFF	<OFF> <CC1> <CC2> <CC3> <CC4> <TEXT1> <TEXT2> <TEXT3> <TEXT4> <XDS>

1. The default of "UMD CHARACTER" depends on the type of device.

2. Wave form is used to check the wave form and vector graph of the displaying signal picture. Only used for SDI signal.

3. CC only can be used for VIDEO: NTSC and Y/C: NTSC input signal.

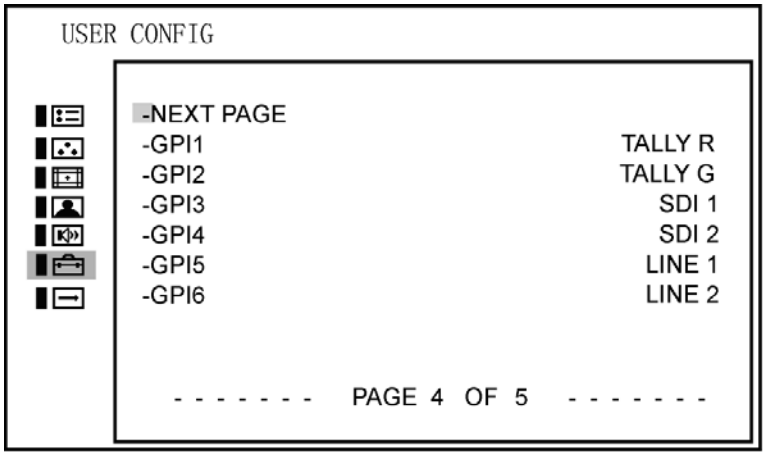
Press ∧(up)or ∨(down) button to select "NEXT PAGE" item, then press Enter button to display the next page menu as follows.



Sub Menu	*Settings*	*Explanation*
USER CONFIG 3/4		
FUNCTION BUTTON SETUP		
-NEXT PAGE		
-F1 BUTTON	MARKER	F1- F3 button functions can be set as follows: • <MARKER>: Control all MARKER ON-OFF-ON • <AUD METER>: Control all audio meter display, ON-OFF-ON • <WAVEFORM>: WAVEFORM-OFF • <H/V DELAY>: OFF-H-V-H/V-OFF • <AUTO ADJ>: Press to initial auto adjustment • <NATIVE>: [NATIVE]-OFF • <BLUE ONLY>: BLUE-NORMAL-BLUE • <MONO>: MONO-NORMAL-MONO • <ASPECT>:4:3-16:9 • <SCAN>:NORMAL-OVER • <MUTE>:OFF-MUTE • <UNDEF>: no settings
-F2 BUTTON	AUD METER	
-F3 BUTTON	H/V DELAY	

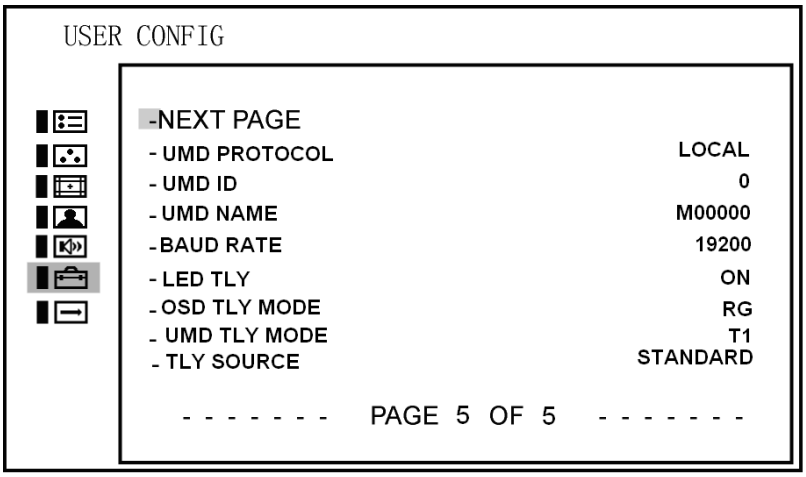
Press ∧(up)or ∨(down) button to select "NEXT PAGE" item, then press Enter button to display the

next page menu as follows.



Sub Menu	*Settings*	*Explanation*
USER CONFIG 4/4		
GPI SETUP		
-NEXT PAGE		
-GPI1	TALLY R	• <NONE> • <TALLY R> • <TALLY G> • <SDI 1> • <SDI 2> • <LINE 1> • <LINE 2> • <DVI-I> • <H/V DELAY> • <MONO> • <BLUE ONLY> • <NORMAL SCAN> • <OVER SCAN> • <NATIVE> • <ASPECT 4:3> • <ASPECT 16:9> • <MARKER ENABLE>
-GPI2	TALLY G	The same as above
-GPI3	SDI 1	The same as above
-GPI4	SDI 2	The same as above
-GPI5	LINE 1	The same as above
-GPI6	LINE 2	The same as above

Press ∧(up)or ∨(down) button to select “NEXT PAGE” item, then press Enter button to display the next page menu as follows. Select “NEXT PAGE” item in the following menu, it will return to display the first page menu of “USER CONFIG”.

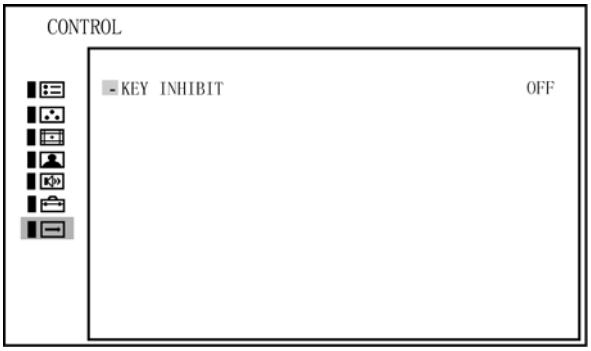


Sub Menu	*Settings*	*Explanation*
USER CONFIG 5/5		
-NEXT PAGE		
-UMD PROTOCAL	LOCAL	**LOCAL/TSL3.1/TSL4.0/IMAGE VIDEO** • **LOCAL:** Use UMD setting (USER CONFIG 2/5) to control the UMD. • **TSL3.1:** Use the TSLV3.1 protocol setting to control the UMD from a TSL tally controller. • **TSL4.0:** Use the TSLV4.0 protocol setting to control the UMD from a TSL tally controller. • **IMAGE VIDEO:** Use the Image video protocol setting to control the UMD from an Image Video tally controller (TSL-1510).
-UMD ID	0	**0 – 255** The UMD ID will determine which DISPLAY will be show.
-UMD NAME(S/N)	M00000	**16 Characters for Option** • Use this setting to assign a name to the Remote Display. • Press ENTER to edit the UMD name. • Use UP and DOWN to select characters. • Press ENTER to go to next cursor. Press MENU to exit editor.
-BAUD RATE	19200	**9600/19200/38400**
-LED TLY	OFF	**ON/OFF** Set the LED Tally ON or OFF.
-OSD TLY MODE	OFF	**RG/GR/RGY/OFF** Use this setting to choose OSD Tally Mode. Only the TALLY SOURCE is STANDARD or STANDARD+IV422 can make the setting be available.
-UMD TLY MODE	T1	**T1/T2/T1T2/T2T1/T1-/T2-/T1T2-/T2T1-** Use this setting when using the Image Video tally control. This setting will determine the state which is selected.
-TLY SOURCE	STANDARD	**STANDARD/IMAGE VIDEO HW/IMAGE VIDEO**

		422/STANDARD+IV422//TSL • **STANDARD:** Use the Standard setting to control tally via contact closure on GPI tally. • **IMAGE VIDEO HW:** Use the Image Video HW setting to control Image Video tally states via contact closure on the GPI tally interface. Contact closure of the Red pin corresponds to the left Tally, and the Green pin maps to right Tally. Contact closure (ground) corresponds to a LOW state, and open circuit corresponds to a HIGH state. This mode requires to the UMD tally mode parameter to be set. • **IMAGE VIDEO 422:** Use the setting to control tally state via 422 port. GPI toggle is no available. • **STANDARD +IV422:** OSD and LED tally setting are the same as STANDARD and IMAGE VIDEO 422. This mode requires to the UMD tally mode parameter to be set. User can set the OSD tally level via 422 port. • **TSL:** Use the TSL 422 setting to control OSD and LED tally via the TSL serial protocol.

CONTROL

The CONTROL menu is used for setting the key inhibit function.



Sub Menu	*Settings*	*Explanation*
CONTROL		
-KEY INHIBIT	OFF/ON	Inhibit all keys except power and menu keys

❖ *If the key inhibit has been turned on, when you press any of the buttons except power and menu, the prompt box will display on the screen as follows, and the other button functions are not valid. (Only if the Menu button is pressed,∧(up), ∨(down) and Enter button will be valid.)*

KEY INHIBIT

❖ *The only menu setting can be changed when the key inhibit is engaged is the KEY INHIBIT ON/OFF item. To change any of the items, turn the key inhibit to OFF first.*

Chapter 7 Technical Specifications

7.1 LED Detailed Information:

Display Area	23” diagonal, 509.184 (H) ×286.416 (V)
Viewing Angles	178(H) × 178(V))
Color Depth	16.7M
Resolution	1920H X 1080V
Dot Pitch	0.22652(H) × 0.2652(V)
Contrast Ratio	1000 :1
Response Time	<14ms
Power	100～240 V AC，50/60Hz，40Wmax
Power Consumption	40W
Luminance, White	250cd/m^2
Back light	White LED
Back light life time（Hrs）	30,000
Operating Temperature	0° C to 50° C

7.2 Inputs

- HD-SDI Inputs with Loop-through
- 1 Video Input
- 1 Configurable Video, Y/C, YPbPr Input
- 1 Configurable HDMI, VGA, DVI Input
- 4 Channels Audio Input
- GPI Inputs on RJ45
- RS485 with Loop-through

7.3 Component Level Definition

BETA 7.5		**SMPTE**	
Setup	53.37 mV	Setup	0 mV
Y	714.29 mV (Peak Luma, 100% White)	Y	700.00 mV (Peak Luma, 100% White)
Pb/Pr	700.00 mVp-p (75% Color Bars)	Pb/Pr	525.00 mVp-p (75% Color Bars)
	933.34 mVp-p (100% Color Bars)		700.00 mVp-p (100% Color Bars)
Sync	-286 mV	Sync	-300 mV
BETA 0			
Setup	0 mV		
Y	714.30 mV (Peak Luma, 100% White)		
Pb/Pr	756.80 mVp-p (75% Color Bars)		
	1009.0 mVp-p (100% Color Bars)		
Sync	-286 mV		

7.4 Standard Definition Video, Frame Refresh Rate and Color Matrix (1920×1080)

	OVERSCAN		NATIVE		FULL NORMAL		Frame Rate	Color Matrix
	INPUT	OUTPUT	INPUT	OUTPUT	INPUT ALL	OUTPUT NORMAL		
NTSC	684X462	1920X1080 1024X768	720X487	720X487	720X487	1920X1080 1024X768	60	601
PAL	684X548	1920X1080 1024X768	720X576	720X576	720X576	1920X1080, 1024X768	50	601
SECAM	684X548	1920X1080 1024X768	720X576	720X576	720X576	1920X1080, 1024X768	50	601
NTCS-4.43	684X462	1920X1080 1024X768	720X487	720X487	720X487	1920X1080, 1024X768	60	601
PAL-M	684X462	1920X1080 1024X768	720X487	720X487	720X487	1920X1080, 1024X768	60	601
480I60	684X462	1920X1080 1024X768	720X487	720X487	720X487	1920X1080, 1024X768	60	601/709
576I50	684X548	1920X1080 1024X768	720X576	720X576	720X576	1920X1080, 1024X768	50	601
480P60	684X462	1920X1080 1024X768	720X487	720X487	720X487	1920X1080, 1024X768	60	601/709
576P50	684X548	1920X1080 1024X768	720X576	720X576	720X576	1920X1080, 1024X768	50	601
720P24	1216X684	1920X1080	1280x720	1280x720	1280x720	1920X1080,	48	709
720P25	1216X684	1920X1080	1280x720	1280x720	1280x720	1920X1080	50	709
720P30	1216X684	1920X1080	1280x720	1280x720	1280x720	1920X1080	30	709
720P50	1216X684	1920X1080	1280x720	1280x720	1280x720	1920X1080	50	709
720P60	1216X684	1920X1080	1280x720	1280x720	1280x720	1920X1080	60	709
1080I60	1824X1026	1920X1080	1920X1080	1920X1080	1920X1080	1920X1080	60	709
1080I50	1824X1026	1920X1080	1920X1080	1920X1080	1920X1080	1920X1080	50	709
1080P24	1824X1026	1920X1080	1920X1080	1920X1080	1920X1080	1920X1080	48	709
1080P25	1824X1026	1920X1080	1920X1080	1920X1080	1920X1080	1920X1080	50	709
1080P30	1824X1026	1920X1080	1920X1080	1920X1080	1920X1080	1920X1080	60	709
1080P50	1824X1026	1920X1080	1920X1080	1920X1080	1920X1080	1920X1080	50	709
1080P60	1824X1026	1920X1080	1920X1080	1920X1080	1920X1080	1920X1080	60	709
1080SF24	1824X1026	1920X1080	1920X1080	1920X1080	1920X1080	1920X1080	48	709
VGA					640X480	1920X1080	60-75	
SVGA					800X600	1920X1080	60-75	
XGA					1024x768	1920X1080	60-75	
SXGA					1280x1024	1920X1080	60-75	
UXGA					1600x1200	1920X1080	60	
WXGA					1360X768	1920X1080	60	
WUXGA					1920x1200	1920X1080	60	

NOTE:

**Don't display all OSD except FORMAT when SCAN is NATIVE*

*Don't display MARKER when SCAN is NATIVE

When the output resolution ratio is 1920x1080, the display fonts would be red, and it won't affect the use.

Chapter 8 Supplied Accessories

Standard accessories:

1. Display 1
2. AC Power Cord 1
3. M4 x 8mm Screws 7
4. Warranty Card 1
5. Table Stand 1
6. User Manual 1

Note：Specifications are subject to change without notice.