SONY®

LCD Monitor

Operating Instructions

Before operating the unit, please read this manual thoroughly
and retain it for future reference.

LMD-4251TD

Owner's Record

The model and serial numbers are located at the rear. Record these numbers in the spaces provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. _____

Serial No. _____

Important Safety Instructions

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

WARNING

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

THIS APPARATUS MUST BE EARTHED.

This apparatus is provided with a main switch on the rear panel.
Install this apparatus so that user can access the main switch easily.

WARNING
Make sure the surface is wide enough so that this apparatus's width and depth don't exceed the surface's edges.
If not, this apparatus may lean or fall over and cause an injury.

Consult with Sony qualified personnel for wall mount installation.

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING
The apparatus shall not be exposed to dripping or splashing. No objects filled with liquids, such as vases, shall be placed on the apparatus.

CAUTION
The unit is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the unit itself has been turned off.

For kundene i Norge
Dette utstyret kan kobles til et IT-strømfordelingssystem.

For the customers in the U.S.A.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

All interface cables used to connect peripherals must be shielded in order to comply with the limits for a digital device pursuant to Subpart B of part 15 of FCC Rules.

WARNING: THIS WARNING IS APPLICABLE FOR USA ONLY.
If used in USA, use the UL LISTED power cord specified below.
DO NOT USE ANY OTHER POWER CORD.

Plug Cap Parallel blade with ground pin
(NEMA 5-15P Configuration)
Cord Type SJT or SVT, three 16 or 18 AWG wires
Length Minimum 1.5 m (4 ft 11 in), Less than 2.5 m
(8 ft 3 in)
Rating Minimum 10A, 125V

Using this unit at a voltage other than 120V may require the use of a different line cord or attachment plug, or both. To reduce the risk of fire or electric shock, refer servicing to qualified service personnel.

WARNING: THIS WARNING IS APPLICABLE FOR OTHER COUNTRIES.
1. Use the approved Power Cord (3-core mains lead) / Appliance Connector / Plug with earthing-contacts that conforms to the safety regulations of each country if applicable.
2. Use the Power Cord (3-core mains lead) / Appliance Connector / Plug conforming to the proper ratings (Voltage, Ampere).

If you have questions on the use of the above Power Cord / Appliance Connector / Plug, please consult a qualified service personnel.

When installing the installation space must be secured in consideration of the ventilation and service operation.
• Do not block the ventilation holes at the top side and bottom side.
• Leave a space around the unit for ventilation.
• Leave more than 15 cm of space in the rear of the unit to secure the operation area.
When the unit is installed on the desk or the like, leave at least 10 cm of space in the top and bottom sides. Leaving 15 cm or more of space in the rear of the unit is recommended for service operation.

For the customers in Europe

This product is intended for use in the following Electromagnetic Environments: E1 (residential), E2 (commercial and light industrial), E3 (urban outdoors), E4 (controlled EMC environment, ex. TV studio).

Table of Contents

Precaution

On Safety

- Operate the unit only with a power source as specified in the "Specifications" section.
- A nameplate indicating operating voltage, etc., is located on the rear panel.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Do not drop or place heavy objects on the power cord. If the power cord is damaged, turn off the power immediately. It is dangerous to use the unit with a damaged power cord.
- Unplug the unit from the wall outlet if it is not to be used for several days or more.
- Disconnect the power cord from the AC outlet by grasping the plug, not by pulling the cord.
- The socket-outlet shall be installed near the equipment and shall be easily accessible.
- Take regular breaks between watching 3D video images.

On Installation

- Allow adequate air circulation to prevent internal heat build-up.
  Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- To prevent injuries or accidents that might occur as a result of the monitor falling over, be sure to use a dedicated monitor stand when placing it on the table or the floor. For details on the stand, please contact your Sony dealer.
- Consult with Sony qualified personnel for installation.

Handling the LCD Screen

- Due the physical characteristics of LCD panels, there may be a decrease in brightness or change in color temperature over a long period of use. These problems are not a malfunction.
  In addition, these occurrences will not affect recorded data.
- The LCD panel fitted to this unit is manufactured with high precision technology, giving a functioning pixel ratio of at least 99.99%. Thus a very small proportion of pixels may be "stuck", either always off (black), always on (red, green, or blue), or flashing. In addition, over a long period of use, because of the physical characteristics of the liquid crystal display, such "stuck" pixels may appear spontaneously. These problems are not a malfunction.

- Do not leave the LCD screen facing the sun as it can damage the LCD screen. Take care when you place the unit by a window.
- Do not push or scratch the LCD monitor's screen. Do not place a heavy object on the LCD monitor's screen. This may cause the screen to lose uniformity.
- If the unit is used in a cold place, horizontal lines or a residual image may appear on the screen. This is not a malfunction. When the monitor becomes warm, the screen returns to normal.
- The screen and the cabinet become warm during operation. This is not a malfunction.

On Burn-in

For LCD panel, permanent burn-in may occur if still images are displayed in the same position on the screen continuously, or repeatedly over extended periods.

Images that may cause burn-in
- Masked images with aspect ratios other than 16:9
- Color bars or images that remain static for a long time
- Character or message displays that indicate settings or the operating state

To reduce the risk of burn-in
- Turn off the character displays
  Press the MENU button to turn off the character displays. To turn off the character displays of the connected equipment, operate the connected equipment accordingly. For details, refer to the operation manual of the connected equipment.
- Turn off the power when not in use
  Turn off the power if the monitor is not to be used for a prolonged period of time.

On a Long Period of Use

Due to the characteristics of LCD panel, displaying static images for extended periods, or using the unit repeatedly in a high temperature/high humidity environments may cause image smearing, burn-in, areas of which brightness is permanently changed, lines, or a decrease in overall brightness.

In particular, continued display of an image smaller than the monitor screen, such as in a different aspect ratio, may shorten the life of the unit.

Avoid displaying a still image for an extended period, or using the unit repeatedly in a high temperature/high humidity environment such an airtight room, or around the outlet of an air conditioner.

To prevent any of the above issues, we recommend reducing brightness slightly, and to turn off the power whenever the unit is not in use.

On Cleaning

Before cleaning
Be sure to disconnect the power cord from the AC outlet.

Cleaning the monitor screen
The monitor screen surface is treated to reduce light reflections. As incorrect maintenance may impair their performance, take care with respect to the following:
- Wipe the screen gently with a soft cloth such as a cleaning cloth or glass cleaning cloth.
- Stubborn stains on the screen may be removed with a soft cloth such as a cleaning cloth or glass cleaning cloth lightly dampened with water.
- Never use solvent such as alcohol, benzene or thinner, or acid, alkaline or abrasive detergent, or chemical cleaning cloth, as they will damage the surface.

Cleaning the monitor cabinet
- Clean the cabinet and frames gently with a soft dry cloth. Stubborn stains may be removed with a cloth lightly dampened with mild detergent solution, followed by wiping with a soft dry cloth.
- Use of alcohol, benzene, thinner or insecticide may damage the finish of the cabinet and frames or remove the indications on the cabinet. Do not use these chemicals.
- If you rub on the cabinet and frames with a stained cloth, they may be scratched.
- If the cabinet and frames are in contact with a rubber or vinyl resin product for a long period of time, the finish of them may deteriorate or the coating may come off.

On Moisture Condensation

If the unit is suddenly taken from a cold to a warm location, or if ambient temperature suddenly rises, moisture may form on the outer surface of the unit and/or inside of the unit. This is known as condensation. If condensation occurs, turn off the unit and wait until the condensation clears before operating the unit. Operating the unit while condensation is present may damage the unit.

On Repacking

Do not throw away the carton and packing materials. They make an ideal container which to transport the unit.

The Life Expectancy of the Parts

The life expectancy of the electrolytic capacitor is about 5 years under normal operating temperatures and normal usage (8 hours per day; 25 days per month). If usage exceeds the above normal usage frequency, the life expectancy may be reduced correspondingly.

Features

The LMD-4251TD (42-type) is a multiple format LCD monitor equipped with a circular micro-polarizer filter for broadcast use, featuring a precise image and high performance. It supports various 3D signal formats, including dual-stream HD-SDI signals, by using an optional input adaptor (BKM-250TGM) for both 2D and 3D signals. For comfort over long hours of use, a pair of exclusive 3D glasses designed to suit the performance of the monitor is available as an optional accessory. The monitor has a number of new features for 3D picture production, as well as various features supporting 2D picture production.

Circular micro-polarizer filter
Two input signals are separated into even lines and odd lines on the display and circular polarized before appearing on the screen. Images on the left of the screen are viewed through left lens of the 3D glasses and those on the right are viewed through right lens. With this feature, you can monitor multiple screens at one time.

Supporting various 3D input signal formats
With BKM-250TGM (optional), various signals, such as 3G, dual-stream, side-by-side and line-by-line, are supported. While multiple signal formats–including 1080P, 1080i, 1080PsF and 720P–are available, line-by-line-type DVI signals are also supported.

Select 720P scan size
NORMAL or NATIVE scan size can be selected when a 720P signal is input.

Luminance difference display
Luminance difference between the left and right signals is displayed. This function is convenient to check the disparity.

Checkerboard
Left and right HD-SDI input signals are displayed in a grid pattern. The two signals shown in a grid makes for easy adjusting of the iris and color settings for the camera. This function is only available in 2D display mode.

L/R switch
Left and right dual-stream HD-SDI signals can be swapped over without being visually disturbed by black frames. This allows you to easily compare the color and brightness between left and right signals. This function is only available in 2D display mode.
The automatic switch of left and right signals function is supported. The switching interval can be selected from among SHORT, MEDIUM and LONG.

White balance offset for 3D
You can set to match the white balance for 2D and 3D images (with glasses). Also you can set to switch the white balance automatically when selecting 2D or 3D display.

Grid display function
A grid (vertical and horizontal lines) can be displayed on the entire screen. The vertical lines are used when checking the overall image disparity. Both the vertical and horizontal lines are used to check the geometrical mismatch of left and right images.

Disparity ruler
Two vertical lines can be displayed for measuring the disparity value of specific subjects.

Virtual subject marker
Use the virtual subject marker for planning the subject position. A square marker is displayed as a pseudo-3D subject marker. The position and screen depth of the marker can be adjusted for planning the real subject's placement. The size of the square marker can also be adjusted.

Disparity simulation
The phase of either or both left and right signal for 3D image can shift horizontally. The monitor simulates parallax without the need for 3D rig adjustment. It saves time and effort in setting and adjusting the 3D rig and equipment.

Notes
- Going out of the disparity simulation feature initializes the parallax setting. Adjust 3D rig if parallax needs to be changed.
- Simulated images cannot be output to any device.

Horopter check
Left/right signals for the 3D image are displayed in selected single colors. This helps you define if the subjects are in front of the determined screen position or behind it. You can carefully adjust the depth of the 3D effect using this feature. This function is only available in 3D display mode.

Flip H
If a half mirror type rig is used, left or right signal will be reversed. With the Flip H feature, signals that are shot this way are horizontally reversed again for normal viewing.

Note
A delay between left and right signals occurs as a result of the signal processing. Because left and right signals are internally synchronized to offset the delay, display speed may decrease before the image reaches the screen.

Payload ID

Channel assign information of payload ID data superimposed on input signals is displayed. You can monitor which of two channels a left/right input signal is assigned to.

Dual time code display

The time codes for the both left and right signals are displayed. When the time codes are out of sync, due to incorrect VTR settings, etc., and the time code lag is more than one frame, the time code on the right of the screen is displayed with the black and white inverted.

High brightness LCD panel

Because of precise image, wide viewing angle technology and high speed response, real color image can be reproduced.

Multi-format

The monitor supports the video, Y/C, RGB, component, SDI (3G/HD/SD, when the optional input adaptor is used) signals and NTSC/PAL color systems.
SDI supports not only HD-SDI and SD-SDI, but also 3G-SDI, which transmits twice as much data as HD-SDI with a Single-link.
HD15 (analog) and DVI-D (digital) connectors are equipped for the PC input.

For more information, see "Available signal formats" on page 37.

Expandable input capability

The input connector configuration can be easily modified by installing the optional input adaptor into the optional input port. Up to two adaptors can be installed.

For more information, see "Available signal formats" on page 37.

External remote function

The input signal is selected or various items are adjusted by use of the serial (Ethernet) remote function. Up to 32 monitors and control units (max. 4) can be connected by the Ethernet (10BASE-T/100BASE-TX) connection and controlled remotely on the network. You can control individual monitors or monitor groups simply by entering the monitor ID or group ID number. You can also execute the same operation on all connected monitors, or put all connected monitors into the same setup and adjustment state.

For more information, see SERIAL REMOTE of REMOTE menu on page 33.

Refer to the Operation Manual of the BKM-16R Monitor Control Unit.

Mount function

The monitor is compatible with the VESA 400 × 400 mounting.

Two-display

Two kinds of input signals are put on the monitor.

For more information, see MULTI DISPLAY of MULTI DISPLAY SETTING on page 27.

Audio level display

The audio level of the input signal (embedded audio only) is displayed as the sub display.

For more information, see SUB INPUT SELECT of MULTI DISPLAY SETTING on page 28 and ALM DISPLAY of OPTION SETTING on page 31.

Closed caption

The closed caption conforming to the EIA608 standard is displayed.
The EIA/CEA-608 and EIA/CEA-708 standard closed caption signals superimposed on an SDI signal are displayed by installing the optional input adaptor.

Auto chroma/phase function

The chroma and phase of the decoder are automatically adjusted with the auto chroma/phase function.

Blue only mode

In the blue only mode, a monochrome display is obtained with all three of the R/G/B picture elements driven with a blue signal. This mode is convenient for chroma and phase adjustments and monitoring of signal noise.

H/V delay mode

The horizontal and vertical sync signals can be monitored simultaneously. This mode cannot be activated when 3D images are displayed on the screen.

Select marker/scan display

Various items for broadcast use can be displayed. The center marker, safe area marker, aspect marker or display size (scan), etc are displayed by selecting according to use.

For more information, see MARKER SETTING on page 27 and SCAN of SYSTEM SETTING on page 26.

APA (Auto Pixel Alignment) function

For the signal input to the HD15 input connector, you can adjust the picture to the appropriate size simply by pressing the button assigned as the APA function.

Select color temperature mode

You can select the color temperature from among two (9300 K, 6500 K) settings.

Color space function

You can select one from among three color space settings (SMPTE-C/EBU/ITU-R BT.709).

On-screen menus

You can set the appropriate settings according to the connected system by using the on-screen menus.
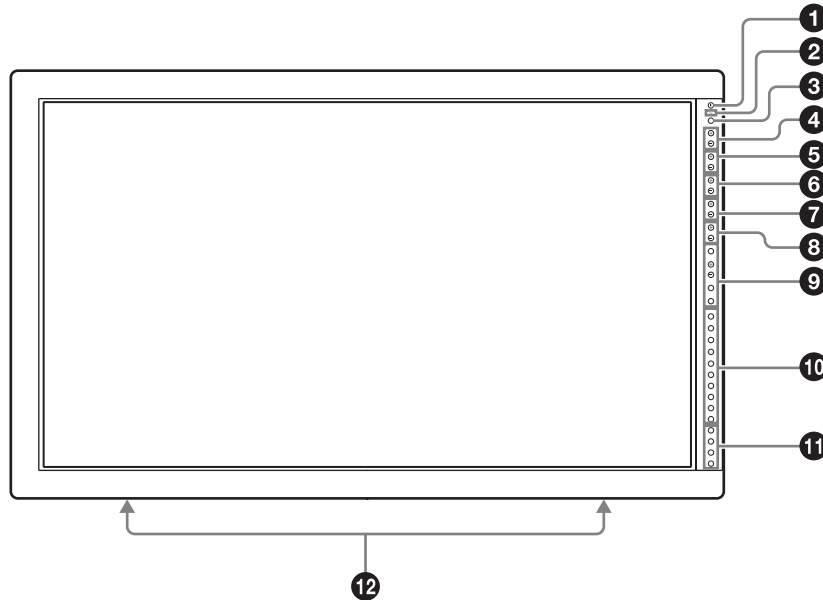
Select language display

You can select from seven display languages, English, French, German, Spanish, Italian, Japanese and Chinese.

Key inhibit function

You can inhibit a key function to prevent missing an operation.

Location and Function of Parts and Controls

Front Panel

❶ ⏻ (standby) switch and indicator
Press the switch to turn on the power in standby mode (the power switch on the rear panel is turned on). The indicator lights in green. Pressing the switch again sets the monitor in standby mode and the indicator lights in red.

❷ ⊶ (key inhibit) indicator
Lights in red when KEY INHIBIT in the KEY INHIBIT menu is set to ON.

❸ CONTROL button
Press to display the buttons on the front panel. Press again to clear the display.

❹ VOLUME buttons
Press the + button to increase the volume or the – button to decrease it.

❺ CONTRAST buttons
Press the + button to make the contrast higher or the – button to make it lower.

❻ PHASE buttons
Press the + button to make the skin tones greenish or the – button to make them purplish.

❼ CHROMA buttons
Press the + button to increase the color intensity or the – button to decrease it.

❽ BRIGHT (brightness) buttons

Press the + button to increase the brightness or the – button to decrease it.

❾ Menu operation buttons
Displays the on-screen menu or sets items.
　MENU button
　Press to display the on-screen menu.
　Press again to clear the menu.
　+/– buttons
　Press to select the items and setting values.
　ENTER button
　Press to confirm a selected item on the menu.
　When the menu is not displayed and the button is pressed, the distinguished signal format is displayed.
　RETURN button
　When the menu is displayed and the button is pressed, the value of an item is reset to the previous value.
　When the menu is not displayed and the button is pressed, the function selected in FUNCTION BUTTON SETTING of the USER CONFIG menu is displayed on the side of the F1 to F4 button.

❿ Input select buttons

Press to monitor the signal input to each connector.
A-1, A-2, B-1 and B-2 buttons are used when an optional input adaptor has been installed in the option port.

COMPOSITE button: to monitor the signal through the COMPOSITE IN connector

Y/C button: to monitor the signal through the Y/C IN connector

RGB button: to monitor the RGB signal through the connectors for the R/G/B signal input

COMPONENT button: to monitor the component signal through the connectors for Y/PB/PR signal input

A-1 button: to monitor the signal from connector 1 (the connectors for the R/G/B signal input in BKM-229X) of the input adaptor installed to the option port A

A-2 button: to monitor the signal from connector 2 (the connectors for Y/PB/PR signal input in BKM-229X) of the input adaptor installed to the option port A

B-1 button: to monitor the signal from connector 1 (the connectors for the R/G/B signal input in BKM-229X) of the input adaptor installed to the option port B

B-2 button: to monitor the signal from connector 2 (the connectors for Y/PB/PR signal input in BKM-229X) of the input adaptor installed to the option port B

HD15 button: to monitor the signal through the HD15 input connector

DVI button: to monitor the signal through the DVI-D input connector

⓫ Function buttons

You can turn the assigned function on or off.
The factory setting is as follows;

F1 button: EXT SYNC
F2 button: SCAN
F3 button: ASPECT
F4 button: H/V DELAY

You can assign the function from among SCAN, ASPECT, EXT SYNC, I/P MODE, MULTI DISPLAY, CLOSED CAPTION, MONO, H/V DELAY, MARKER, APA, BLUE ONLY, 2D/3D SELECT, CHECKERBOARD, L/R SWITCH, HOROPTER CHECK, DISPARITY SIM., GRID, DISPARITY RULER, AUTO L/R SW, DIFFERENCE and VIRTUAL SUB. MAR. in FUNCTION BUTTON SETTING of the USER CONFIG menu (see page 28).

For details of the function assigned to the function button, see page 28.

⓬ Speakers

The audio signal which is selected by the input select button is output.
When BKM-220D/243HSM/244CC/250TGM is not installed, the audio signal which is selected in INPUT SELECT of the USER CONFIG menu is output (see page 31).
When BKM-220D/243HSM/244CC/250TGM is installed, the audio signal of the channel which is selected in

OPTION AUDIO SETTING of the USER CONFIG menu is output (see page 31).
The audio signals from the speakers are output from the AUDIO L/R OUT connector on the rear (see page 14).

Input Signals and Adjustable/Setting Items

Item	Video*3, Y/C*3	B & W*3	Component*4		RGB*4		SDI			Computer		3D	
			SD	HD	SD	HD	SD*5	HD*6	3G*11	DVI	HD15	HD-SDI *12	DVI*12
CONTRAST*1	○	○	○	○	○	○	○	○	○	○	○	○	○
BRIGHT*1	○	○	○	○	○	○	○	○	○	○	○	○	○
CHROMA*1	○	×	○	○	×	×	○	○	○	○	○	○	○
PHASE*1	○ (NTSC)	×	×	×	×	×	×	×	×	○	○	×	○
APERTURE	○	○	○	○	○	○	○	○	○	○	○	○	○
COLOR TEMP	○	○	○	○	○	○	○	○	○	○	○	○	○
COLOR SPACE	○	○	○	○	○	○	○	○	○	○	○	○	○
AUTO CHROMA/ PHASE	○	×	○	○	×	×	×	×	×	×	×	×	×
ACC	○	×	×	×	×	×	×	×	×	×	×	×	×
CTI	○	×	○	×	×	×	×	×	×	×	×	×	×
V SHARPNESS	○	○	○	×	○	×	○	×	×	×	×	×	×
MATRIX*2	×	×	○	×	×	×	×	×	×	×	×	×	×
COMPONENT LEVEL	×	×	○ (480/60I)	×	×	×	×	×	×	×	×	×	×
NTSC SETUP	○ (NTSC)	○ (480/60I)	×	×	×	×	×	×	×	×	×	×	×
SCAN	○	○	○	○	○	○	○	○	○	×	×	×	×
ASPECT	○	○	○	×	○	×	○	×	×	×	×	×	×
MARKER	○	○	○	○	○	○	○	○	○	×	×	○	×
BLUE ONLY	○	×	○	○	○	○	○	○	○	×	×	○	×
MONO	○	×	○	○	×	×	○	○	○	×	×	○	×
H/V DELAY	○	○	○	○	○	○	○	○	○	×	×	×	×
APA	×	×	×	×	×	×	×	×	×	×	○	×	×
SIZE	×	×	×	×	×	×	×	×	×	×	○	×	×
SHIFT	○	○	○	○	○	○	○	○	○	×	○	×	×
PITCH	×	×	×	×	×	×	×	×	×	×	○	×	×
DOT PHASE	×	×	×	×	×	×	×	×	×	×	○	×	×
POWER SAVING	○	○	○	○	○	○	○	○	○	○	○	○	○
I/P MODE*7	○	○	○	○	○	○	○	○	×	×	×	×	×
MULTI DISPLAY	○	○	○	○	○	○	○	○	○	○*9	○*9	○*14	○*9
CLOSED CAPTION	○*8	○*8	×	×	×	×	○*10	○*10	×	×	×	×	×
3D SETTING	×	×	×	×	×	×	×	×	×	×	×	○*13	○*13

○ : Adjustable/can be set
× : Not adjustable/cannot be set

*1　Adjustment of SUB CONTROL is the same.
*2　When a component signal (480/60I or 480/60P) is input and the COMPONENT LEVEL is set to SMPTE, this can be switchable.
*3　When a BKM-227W is installed, the number of the input connector is increased.
*4　When a BKM-229X is installed, the number of the input connector is increased.
*5　When a BKM-220D, BKM-243HSM, BKM-244CC or BKM-250TGM is installed, the signal is input.
*6　When a BKM-243HSM, BKM-244CC or BKM-250TGM is installed, the signal is input.
*7　Only the interlace signal is input.
*8　When an NTSC signal is input, closed captions are displayed. Not displayed when any of the format display, marker display,

or multi display is set to ON (see FORMAT DISPLAY on page 26, MARKER ENABLE on page 27, and MULTI DISPLAY ENABLE on page 28).
*9　The signal can only be selected in the main display (see SUB INPUT SELECT on page 28).
*10　When a BKM-244CC is installed, closed captions are displayed.
*11　When a BKM-250TGM is installed, the signal is input.
*12　3D display mode is available when selecting 3D in 2D/3D SELECT.
*13　For details about adjustable items, see "3D Input Signals and Adjustable/Setting Items".
*14　Displays in 2D display mode when selecting SIDE BY SIDE in MULTI DISPLAY.

3D Input Signals and Adjustable/Setting Items

Item	3D input signal						
	3G-B	Dual-stream	Sequential	Side-by-side 1	Side-by-side 2	Line-by-line	DVI
2D/3D SELECT	○	○	○	○	○	○	○
DISPARITY SIM.	○*16	○*16	✕	○*16	○*16	✕	✕
HOROPTER CHECK	○*16	○*16	✕	✕	✕	✕	✕
FLIP H	○	○	✕	✕	✕	✕	✕
CHECKERBOARD	○*15	○*15	✕	○*18	○*18	✕	✕
L/R SWITCH	○*15	○*15	✕	✕	✕	✕	✕
AUTO L/R SW	○*15	○*15	✕	✕	✕	✕	✕
PAYLOAD ID	✕	○	✕	✕	✕	✕	✕
720P SCAN	○	○	✕	○	✕	✕	✕
GRID*17	○	○	○	○	○	○	✕
DISPARITY RULER*17	○	○	○	○	○	○	✕
DIFFERENCE	○*15	○*15	✕	○	○	✕	✕
GRID/RULER INTENSITY	○	○	○	○	○	○	✕
VIRTUAL SUB. MAR.	○*16	○*16	✕	✕	✕	✕	✕

○ : Adjustable/can be set
✕ : Not adjustable/cannot be set

*15　Available when selecting 2D in 2D/3D SELECT.
*16　Not available when NORMAL is selected in 720P SCAN.
*17　GRID and DISPARITY RULER cannot be used simultaneously.
*18　Available when SIDE BY SIDE 1 or SIDE BY SIDE 2 in 3D SIGNAL FORMAT is set to PSF while the interlace signal is input.

Side Panel
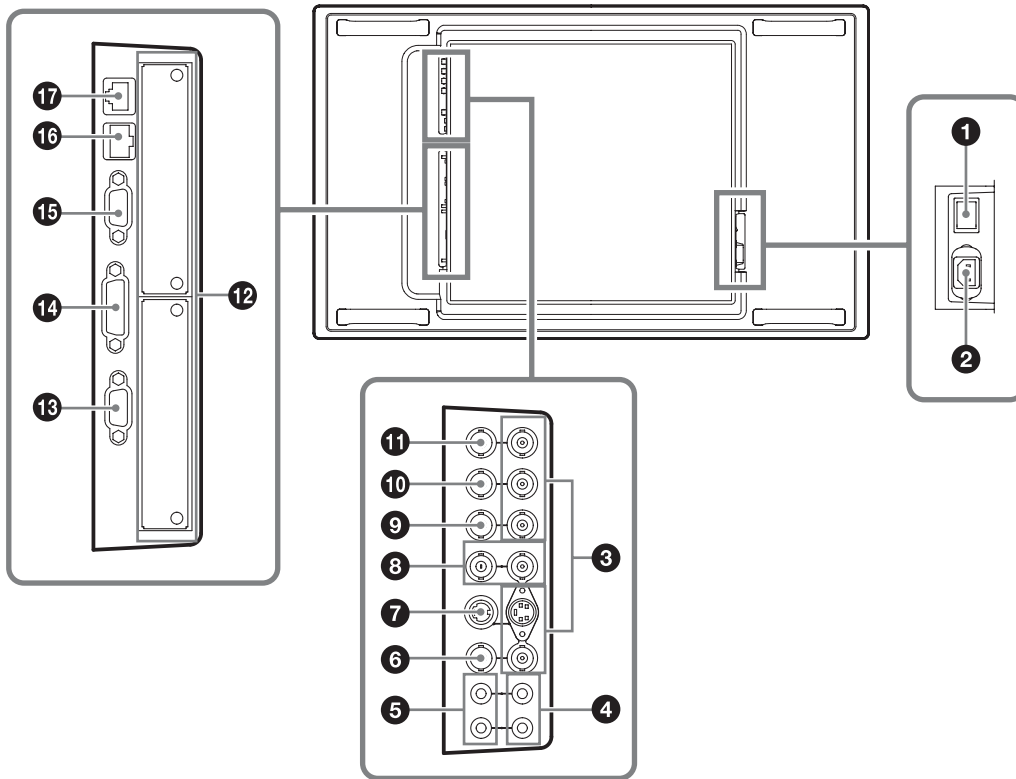
❶ ○/I (power) switch
The power is turned on or off.
The monitor is turned on by pressing side **I**.

❷ AC IN socket
Connect the supplied power cord.

❸ Loop-through output connectors
Outputs the signals input to the input connectors (❻ to ❶). Connect to the analog input (composite, Y/C, analog component or analog RGB) of equipment, according to the input signal.

❹ AUDIO L/R OUT connectors (phono jack)
Outputs the audio signal which is selected by the input select button on the front panel.
When BKM-220D/243HSM/244CC/250TGM is not installed, output the audio signal which is selected in INPUT SELECT of the USER CONFIG menu (see page 31).
When BKM-220D/243HSM/244CC/250TGM is installed, output the audio signal of the channel which is selected in OPTION AUDIO SETTING of the USER CONFIG menu (see page 31).
The audio signal from this connector is monitored on the front speakers (see page 11).

❺ AUDIO L/R IN connectors (phono jack)
Connect to the audio outputs of a VCR or to an audio mixer.

❻ COMPOSITE IN connector (BNC)
Input connector for composite signals.

❼ Y/C IN connector (4-pin mini-DIN)
Input connector for Y/C signals.

❽ EXT SYNC IN/OUT (external sync) connectors (BNC)
To use the external sync signal, press the function button that EXT SYNC is assigned (F1 button at the factory setting).

IN connector
When this unit operates on an external sync signal, connect the reference signal from a sync generator to this connector.

Note

When inputting a video signal with the jitters, etc. the picture may be disturbed. We recommend using the TBC (time base corrector).

OUT connector
Loop-through output of the IN connector. Connect to the external sync input of video equipment to be synchronized with this unit.
When the cable is connected to this connector, the 75-ohm termination of the input is automatically released, and the signal input to the IN connector is output from this connector.

⑨ R/P$_R$ IN connector (BNC)
Input connector for R of RGB signals and P$_R$ (red color difference) of component signals.

⑩ B/P$_B$ IN connector (BNC)
Input connector for B of RGB signals and P$_B$ (blue color difference) of component signals.

⑪ G/Y IN connector (BNC)
Input connector for G of RGB signals and component Y (luminance) signals.

⑫ Optional input port
An optional input adaptor can be installed according to your system configuration (see page 16).
The monitor has port A on the upper side and port B on the lower.
Press the A-1, A-2, B-1 or B-2 button to select the signal.

⑬ HD15 input connector (D-sub 15-pin, female)
Inputs an analog RGB video signal (0.7 Vp-p, positive polarity) and sync signal.
The Plug & Play function corresponds to DDC2B.

⑭ DVI-D input connector (DVI-D)
Inputs DVI Rev.1.0 applicable digital RGB signal.
To view the signals of the SXGA and higher resolution when the DVI input is selected, use the cable within 3 m (118 ^{1}/8 inches) in length.

⑮ SERIAL REMOTE RS-232C connector (D-sub 9-pin, female)
Connect to the RS-232C control connector on external equipment connected to the monitor. The monitor can be operated according to control commands sent from external equipment connected to it.

For details on the pin assignment and factory setting function assigned to each pin, see page 37.

For details, refer to the Interface Manual for Programmers (saved in the supplied CD-ROM, Japanese and English only.)

⑯ SERIAL REMOTE connector (RJ-45)
Connect to the network or Sony BKM-16R Monitor Control Unit by using a 10BASE-T/100BASE-TX LAN cable (shielded type, optional).

For details, refer to the Interface Manual for Programmers (saved in the supplied CD-ROM, Japanese and English only.)

CAUTION
- When you connect the LAN cable of the unit to peripheral device, use a shielded-type cable to prevent malfunction due to radiation noise.
- For safety, do not connect the connector to peripheral device wiring that might have excessive voltage. Follow the instructions for use for this port.
- The connection speed may be affected by the network system. This unit does not guarantee the communication speed or quality of 10BASE-T/100BASE-TX.

⑰ PARALLEL REMOTE connector (modular connector, 8-pin)
Forms a parallel switch and controls the monitor externally.

For details on the pin assignment and factory setting function assigned to each pin, see page 37.

CAUTION
For safety, do not connect the connector to peripheral device wiring that might have excessive voltage. Follow the instructions for use for this port.

Connecting the Power Cord

1 Plug the power cord into the AC IN socket on the rear panel. Then, attach the AC plug holder to the power cord.

AC IN socket

Power cord (Supplied)

AC plug holder (Supplied)
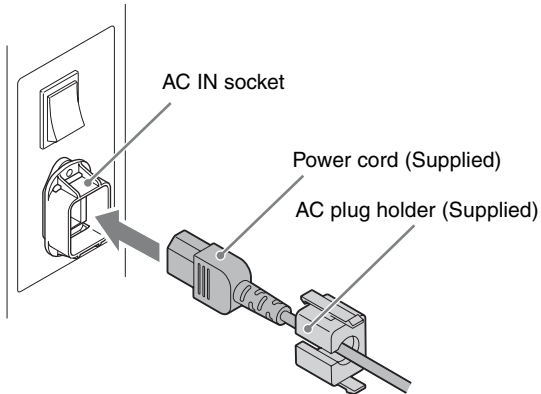
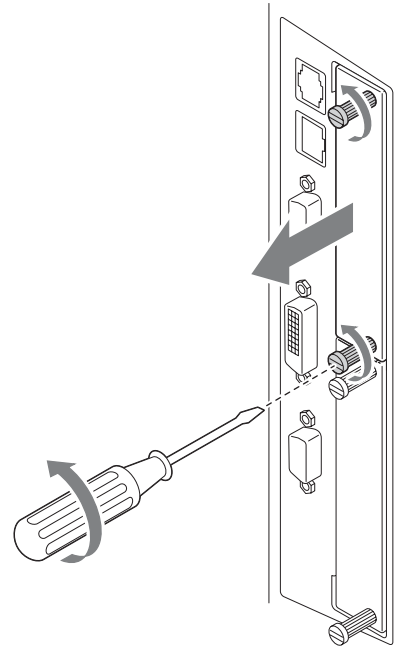**2** Slide the AC plug holder over the cord until it locks.
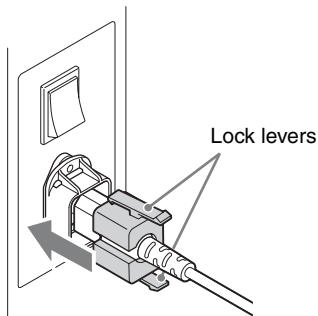
Lock levers

To disconnect the power cord

Pull out the AC plug holder while pressing the lock levers.

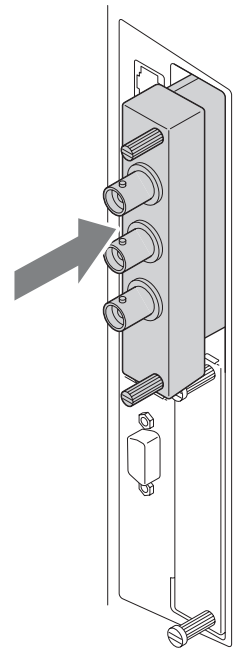# Installing the Input Adaptor

Before installing the input adaptor, disconnect the power cord.
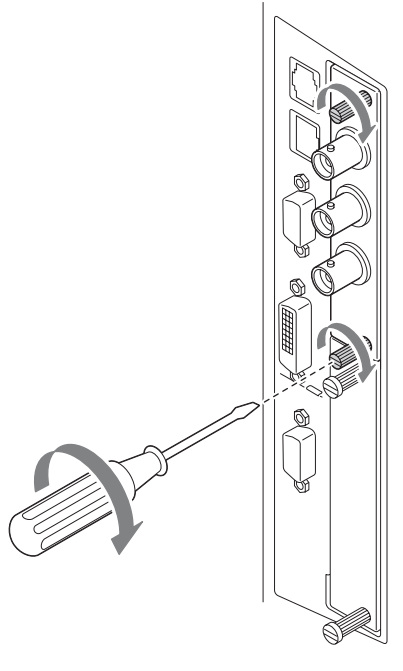
1 Remove the panel of the optional input port.
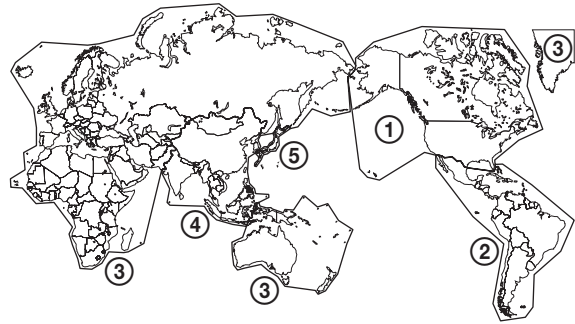
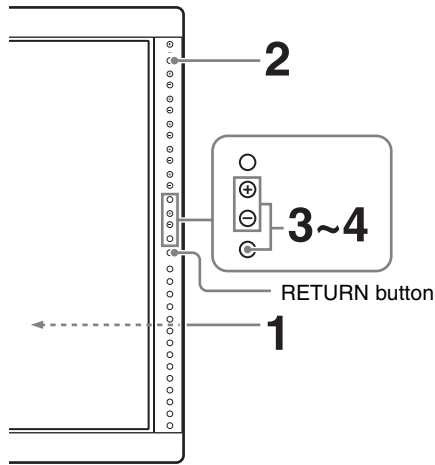**2** Insert the input adaptor into the port.

3 Tighten the screws.

Selecting the Default Settings

When you turn on the unit for the first time after purchasing it, select the area where you intend to use this unit from among the options.

The default setting values for each area

		COLOR TEMP	COMPONENT LEVEL	NTSC SETUP	COLOR SPACE
①**NORTH AMERICA**		D65	BETA7.5	7.5	SMPTE-C
②**LATIN AMERICA** PAL&PAL-N AREA	ARGENTINA	D65	SMPTE	0	EBU
	PARAGUAY	D65	SMPTE	0	EBU
	URUGUAY	D65	SMPTE	0	EBU1
NTSC&PAL-M AREA	OTHER AREA	D65	BETA7.5	7.5	SMPTE-C
③**AFRICA AUSTRALASIA EUROPE MIDDLE-EAST**		D65	SMPTE	0	EBU
④**ASIA EXCEPT JAPAN**	NTSC AREA	D65	BETA7.5	7.5	SMPTE-C
	PAL AREA	D65	SMPTE	0	EBU
⑤**JAPAN**		D93	SMPTE	0	EBU

1 Turn on the unit with the power switch on the rear panel.

The SELECT SETTING screen appears.

① North America
② Latin America
③ Africa, Australia/New Zealand, Europe, Middle East, Russia
④ Asia Except Japan
⑤ Japan
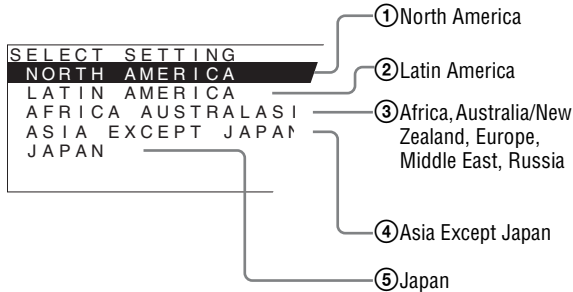
2 Press the CONTROL button.

3 Press the + or – button to select the area where you intend to use the unit and press the ENTER button.

If you select either ①, ③ or ⑤

The confirmation screen is displayed. Confirm the selected area. When the setting is wrong, press the RETURN button to return to the previous screen.

```
SELECT THIS AREA?
NORTH AMERICA

[ENTER]YES
[RETURN]NO
```
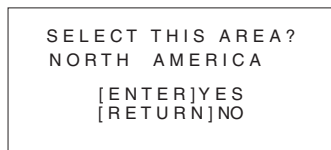
If you select either ② or ④

One of the following screens appears. Press the + or – button to narrow the area further and then press the ENTER button.
The confirmation screen is displayed. Confirm the selected area. When the setting is wrong, press the RETURN button to return to the previous screen.
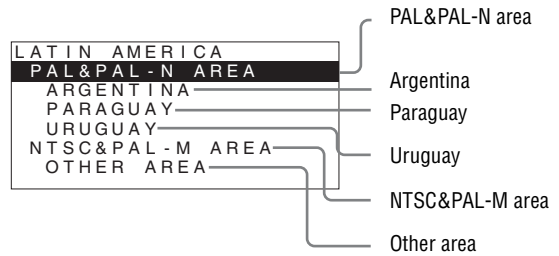
② If LATIN AMERICA is selected:

PAL&PAL-N area
Argentina
Paraguay
Uruguay
NTSC&PAL-M area
Other area

④ If ASIA EXCEPT JAPAN is selected:

Customers who will use this unit in the shaded areas shown in the map below should select NTSC AREA. Other customers should select PAL AREA.

NTSC area
PAL area
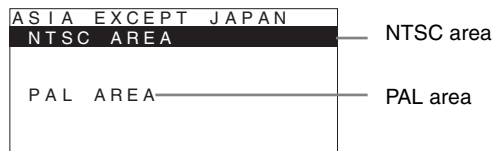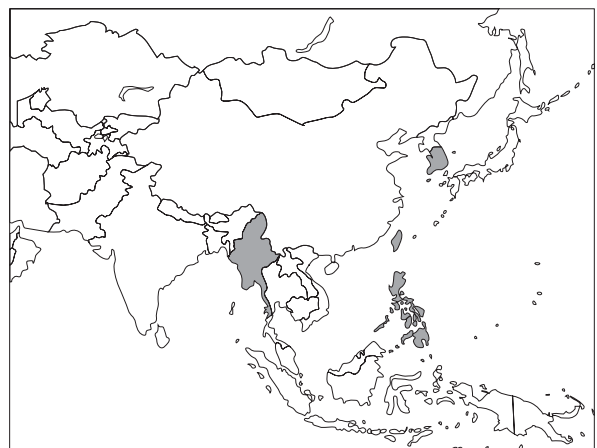
4 Press the ENTER button.

The SELECT SETTING screen disappears and the menu item settings suitable for the selected area are applied.

> **Note**
>
> When you have selected the wrong area, set the following items using the menu.
> - COLOR TEMP (on page 23)
> - COMPONENT LEVEL (on page 26)
> - NTSC SETUP (on page 26)
> - COLOR SPACE (on page 23)
>
> See "The default setting values for each area" (page 17) on the setting value.

Selecting the Menu Language

You can select one of seven languages (English, French, German, Spanish, Italian, Japanese, Chinese) for displaying the menu and other on-screen displays. ENGLISH (English) is selecte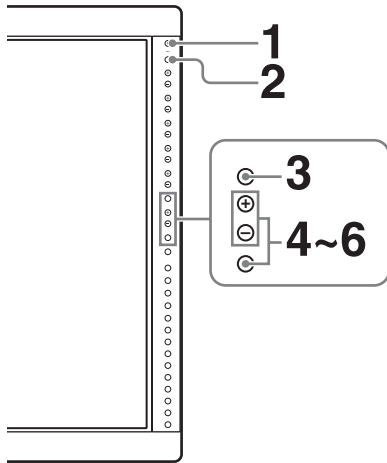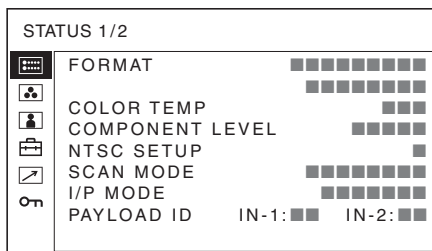d in the default setting. The current settings are displayed in place of the ■ marks on the illustrations of the menu screen.
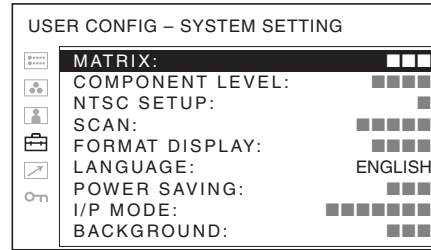
1 Turn on the unit.

2 Press the CONTROL button.

The operation buttons are displayed.

3 Press the MENU button.

The menu appears.
The menu presently selected is shown in yellow.

```
STATUS 1/2
▦   FORMAT            ■■■■■■■■
                     ■■■■■■■■
⬡   COLOR TEMP             ■■■
👤  COMPONENT LEVEL       ■■■■■
🗄   NTSC SETUP               ■
↗   SCAN MODE          ■■■■■■■■
🔒  I/P MODE           ■■■■■■■
    PAYLOAD ID   IN-1:■■  IN-2:■■
```
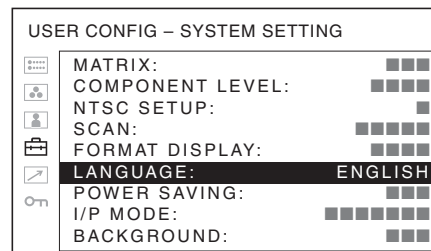
4 Press the + or – button to select SYSTEM SETTING of the USER CONFIG (User Configuration) menu, then press the ENTER button.

The setting items (icons) in the selected menu are displayed in yellow.

```
USER CONFIG – SYSTEM SETTING
▦   MATRIX:                  ■■■
⬡   COMPONENT LEVEL:        ■■■■
👤  NTSC SETUP:                ■
🗄   SCAN:                  ■■■■■
    FORMAT DISPLAY:         ■■■■
↗   LANGUAGE:           ENGLISH
🔒  POWER SAVING:           ■■■
    I/P MODE:           ■■■■■■■
    BACKGROUND:             ■■■
```

5 Press the + or – button to select LANGUAGE, then press the ENTER button.

The selected item is displayed in yellow.

```
USER CONFIG – SYSTEM SETTING
▦   MATRIX:                  ■■■
⬡   COMPONENT LEVEL:        ■■■■
👤  NTSC SETUP:                ■
🗄   SCAN:                  ■■■■■
    FORMAT DISPLAY:         ■■■■
↗   LANGUAGE:           ENGLISH
🔒  POWER SAVING:           ■■■
    I/P MODE:           ■■■■■■■
    BACKGROUND:             ■■■
```

6 Press the + or – button to select a language, then press the ENTER button.

The menu changes to the selected language.
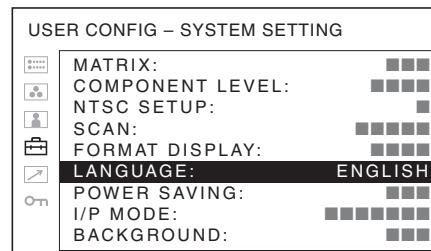
```
USER CONFIG – SYSTEM SETTING
▦   MATRIX:                  ■■■
⬡   COMPONENT LEVEL:        ■■■■
👤  NTSC SETUP:                ■
🗄   SCAN:                  ■■■■■
    FORMAT DISPLAY:         ■■■■
↗   LANGUAGE:           ENGLISH
🔒  POWER SAVING:           ■■■
    I/P MODE:           ■■■■■■■
    BACKGROUND:             ■■■
```

To clear the menu

Press the MENU button.
The menu disappears automatically if a button is not pressed for one minute.

Using the Menu

The unit is equipped with an on-screen menu for making various adjustments and settings such as picture control, input setting, set setting change, etc. You can also change the menu language displayed in the on-screen menu.

To change the menu language, see "Selecting the Menu Language" on page 19.

The current settings are displayed in place of the ■ marks on the illustrations of the menu screen.

RETURN button

1 Press the CONTROL button.

The operation buttons are displayed.

2 Press the MENU button.

The menu appears.
The menu presently selected is shown in yellow button.

STATUS 1/2

FORMAT
COLOR TEMP
COMPONENT LEVEL
NTSC SETUP
SCAN MODE
I/P MODE
PAYLOAD ID   IN-1:■■   IN-2:■■

3 Press the + or – button to select a menu, then press the ENTER button.

The menu icon presently selected is shown in yellow and setting items are displayed.

USER CONFIG – SYSTEM SETTING

MATRIX:
COMPONENT LEVEL:
NTSC SETUP:
SCAN:
FORMAT DISPLAY:
LANGUAGE: ENGLISH
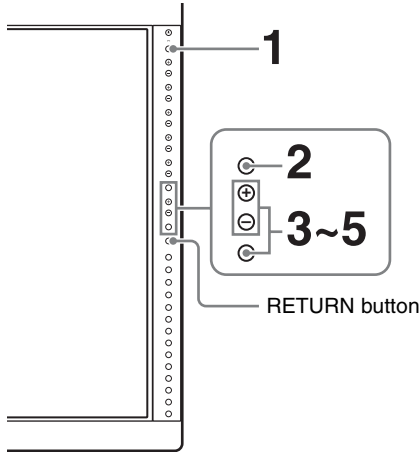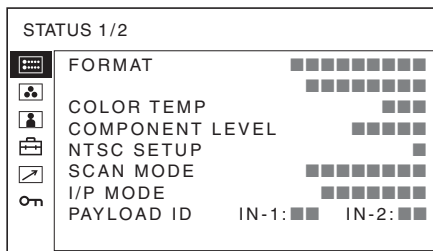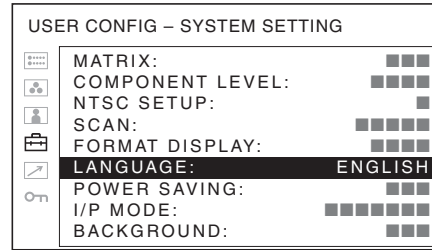POWER SAVING:
I/P MODE:
BACKGROUND:

4 Select an item.

Press the + or – button to select the item, then press the ENTER button.
The item to be changed is displayed in yellow.
If the menu consists of multiple pages, press + or – button to go to the desired menu page.

5 Make the setting or adjustment on an item.

When changing the adjustment level:
To increase the number, press the + button.
To decrease the number, press the – button.
Press the ENTER button to confirm the number, then restore the original screen.
When changing the setting:
Press the + or – button to change the setting.
Press the ENTER button to confirm the setting.
When returning the adjustment or setting to the previous value:
Press the RETURN button before pressing the ENTER button.

Notes

- An item displayed in black cannot be accessed. You can access the item if it is displayed in white.
- If the key inhibit has been turned on, all items are displayed in black. To change any of the items, turn the key inhibit to OFF first.

For details on the key inhibit, see page 35.

To return the display to the previous screen

Press the RETURN button.

To clear the menu

Press the MENU button.
The menu disappears automatically if a button is not pressed for one minute.

About the memory of the settings

The settings are automatically stored in the monitor memory.

Adjustment Using the Menus

Items

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

▦ STATUS (the items indicate the current settings.)

For the video input
  FORMAT
  COLOR TEMP
  COMPONENT LEVEL
  NTSC SETUP
  SCAN MODE
  I/P MODE
  PAYLOAD ID
  Model name and serial number
  OPTION A and serial number
  OPTION B and serial number

For the DVI/HD15 input
  FORMAT
  fH
  fV
  COLOR TEMP
  POWER SAVING
  Model name and serial number
  OPTION A and serial number
  OPTION B and serial number

▣ COLOR TEMP/SPACE

  COLOR TEMP
  MANUAL ADJUSTMENT
  3D OFFSET
  3D OFFSET ADJ.
  COLOR SPACE

▣ USER CONTROL

For the video input
  AUTO CHROMA/PHASE
  SUB CONTROL
  PICTURE CONTROL
  INPUT SETTING

For the DVI/HD15 input
  SUB CONTROL
  PICTURE CONTROL

🛠 USER CONFIG

SYSTEM SETTING
   MATRIX
   COMPONENT LEVEL
   NTSC SETUP
   SCAN
   FORMAT DISPLAY
   LANGUAGE
   POWER SAVING
   I/P MODE
   BACKGROUND
MARKER SETTING
   MARKER ENABLE
   MARKER SELECT
   CENTER MARKER
   SAFETY AREA
   MARKER LEVEL
   MARKER MAT
MULTI DISPLAY SETTING
   MULTI DISPLAY ENABLE
   MULTI DISPLAY
   SUB INPUT SELECT
   POSITION
   FRAME
   SUB PICTURE SIZE
FUNCTION BUTTON SETTING
   F1 BUTTON
   F2 BUTTON
   F3 BUTTON
   F4 BUTTON
CLOSED CAPTION SETTING
   For the composite or Y/C input
   CLOSED CAPTION ENABLE
   CAPTION VISION
   For a signal input from a BKM-244CC
   (when a BKM-244CC is installed)
   CLOSED CAPTION ENABLE
   BKM-244CC
AUDIO SETTING
   INPUT SELECT
   OPTION AUDIO SETTING
OPTION SETTING [*1]
   ALM (audio level meter) DISPLAY
   POSITION
   TRANSPARENCY
   T/C DISPLAY
   FORMAT
   POSITION
*1 Displayed only when BKM-250TGM is installed.

3D SETTING [*2]
   2D/3D SELECT
   3D SIGNAL FORMAT
   DISPARITY SIM.
   HOROPTER CHECK
   FLIP H
   720P SCAN
   GRID

   DISPARITY RULER
   GRID/RULER INTENSITY
   AUTO L/R SW
   3G-B DEFAULT CH
   DIFFERENCE
   VIRTUAL SUB. MAR.
*2 Displayed only when selecting input signals from BKM-250TGM or DVI input signals.

↗ REMOTE

PARALLEL REMOTE
SERIAL REMOTE

🔒 KEY INHIBIT

KEY INHIBIT

Adjusting and Changing the Settings

▦ STATUS menu

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

For the video input
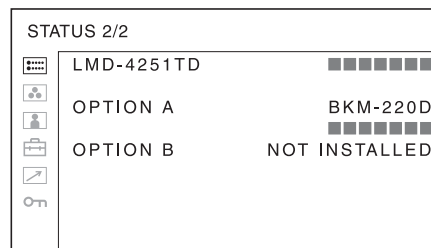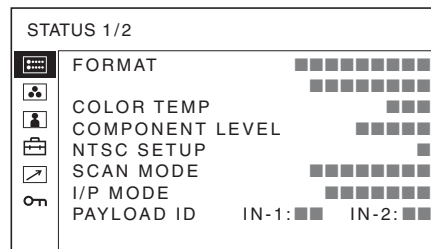
- Signal format
- Color temperature
- Component level
- NTSC setup
- Scan mode
- I/P mode
- PAYLOAD ID
- Model name and serial number
- OPTION A[*] and serial number
- OPTION B[*] and serial number

*When the BKM-243HS is used, BKM-243HSM is displayed as an input adaptor, and when the BKM-250TG is used, BKM-250TGM is displayed.

About Payload ID

Displays the channel assign information of payload ID superimposed on input signals from the IN (INPUT)-1 and IN (INPUT)-2 connector on BKM-250TGM. Going out of the STATUS menu renews channel assign information.

- **-:** Payload ID is not superimposed on signals.
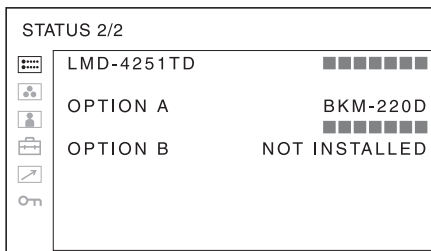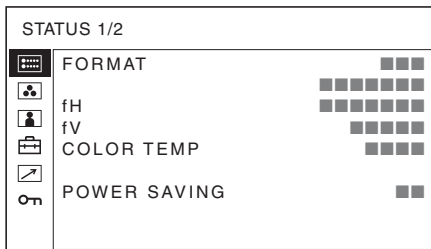- **x:** Channel assign information is detected as Link-2 or Link-3.
- **LEFT:** Channel assign information is detected as Link-0.
- **RIGHT:** Channel assign information is detected as Link-1.

Payload ID is only available when DUAL is selected in 3D SIGNAL FORMAT under 3D SETTING.

For the DVI/HD15 input

```
STATUS 1/2
▦   FORMAT                    ■■■
♣   fH                  ■■■■■■■
▮   fV                     ■■■■■
⌗   COLOR TEMP               ■■■■
↗
⌐   POWER SAVING               ■■
```

```
STATUS 2/2
▦   LMD-4251TD         ■■■■■■■
♣
▮   OPTION A           BKM-220D
⌗                      ■■■■■■■
↗   OPTION B       NOT INSTALLED
⌐
```
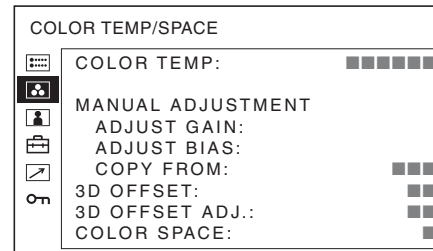
- Signal format
- fH
- fV
- Color temperature
- Power saving
- Model name and serial number
- OPTION A and serial number
- OPTION B and serial number

⊙ COLOR TEMP/SPACE menu

The COLOR TEMP/SPACE menu is used for adjusting the picture white balance or color space.
You need to use the measurement instrument to adjust the white balance.

Recommended: Konica Minolta Color Analyzer CA-310

```
COLOR TEMP/SPACE
▦   COLOR TEMP:            ■■■■■■
⊙
▮   MANUAL ADJUSTMENT
⌗     ADJUST GAIN:
↗     ADJUST BIAS:
⌐     COPY FROM:              ■■■
    3D OFFSET:                 ■■
    3D OFFSET ADJ.:            ■■
    COLOR SPACE:                ■
```

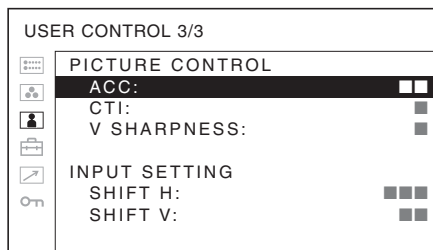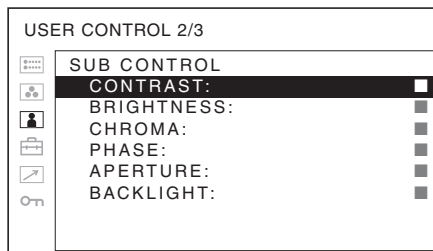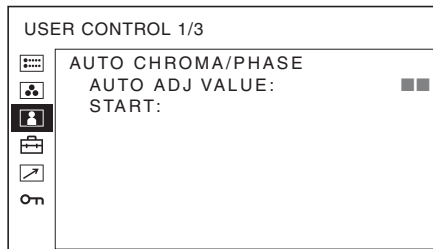| Submenu	Setting
COLOR TEMP	Selects the color temperature from among D65, D93 and USER settings.
MANUAL ADJUSTMENT	If you set the COLOR TEMP to USER setting, the item displayed is changed from black to white, which means you can adjust the color temperature. The set values are memorized. • **ADJUST GAIN**: Adjusts the color balance (GAIN). • **ADJUST BIAS**: Adjusts the color balance (BIAS). • **COPY FROM**: If you select D65 or D93, the white balance data for the selected color temperature will be copied in the USER setting.
3D OFFSET	Selects the desired mode pertaining to the 3D offset adjustment. • **AUTO**: The setting value of 3D offset adjustment is not applied to 2D display mode. The setting value of 3D offset adjustment is applied to 3D display mode. • **OFF**: The setting value of 3D offset adjustment is not applied to either 2D or 3D display mode. • **ON**: The setting value of 3D offset adjustment is applied to both 2D and 3D display modes.
3D OFFSET ADJ.	Available when 3D is selected from 2D/3D SELECT. Defines white balance for 3D viewing in order to provide colors as accurate as those when 3D glasses are not used. You can select from among R GAIN, G GAIN, B GAIN, R BIAS, G BIAS and B BIAS.
COLOR SPACE	Selects the color space from among EBU, SMPTE-C, ITU-709 and OFF. OFF sets the color space to the original color reproduction of the LCD panel.

🔲 USER CONTROL menu

The USER CONTROL menu is used for adjusting the picture.
Items that cannot be adjusted depending on the input signal are displayed in black.

For details of input signals and adjustable/setting items, see page 12.
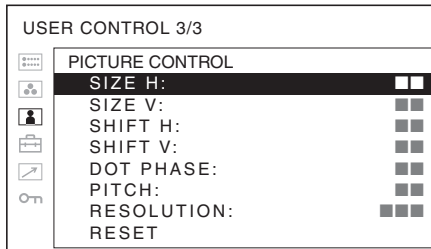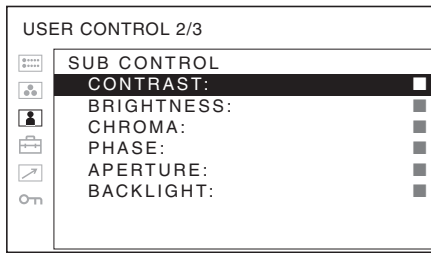
For the video input

```
USER CONTROL 1/3

    AUTO CHROMA/PHASE
       AUTO ADJ VALUE:        ■■
       START:
```

```
USER CONTROL 2/3

    SUB CONTROL
       CONTRAST:              ■
       BRIGHTNESS:            ■
       CHROMA:                ■
       PHASE:                 ■
       APERTURE:              ■
       BACKLIGHT:             ■
```

```
USER CONTROL 3/3

    PICTURE CONTROL
       ACC:                   ■■
       CTI:                   ■
       V SHARPNESS:           ■

    INPUT SETTING
       SHIFT H:               ■■■
       SHIFT V:               ■■
```

Submenu	Setting
AUTO CHROMA/PHASE	Adjusts color intensity (CHROMA) and tones (PHASE). • **AUTO ADJ VALUE**: Selects ON or OFF of the auto adjustment. When you set to OFF, this parameter is reset to the factory setting. When you set to ON, the automatically adjusted value is enabled. • **START**: The auto adjustment starts when you display the color bar signals (Full/SMPTE/ EIA) on the screen and press the ENTER button. After adjusting the color intensity, press the MENU button to clear the adjustment screen. After the adjustment is done correctly, the AUTO ADJ VALUE is automatically set to ON.
SUB CONTROL	Adjusts finely the adjustment range of the button on the front panel for CONTRAST, BRIGHTNESS, CHROMA and PHASE. • **CONTRAST**: Adjusts the picture contrast. • **BRIGHTNESS**: Adjusts the picture brightness. • **CHROMA**: Adjusts color intensity. The higher the setting, the greater the intensity. The lower the setting, the lower the intensity. • **PHASE**: Adjusts color tones. The higher the setting, the more greenish the picture. The lower the setting, the more purplish the picture. • **APERTURE**: Adjusts the picture sharpness. The higher the setting, the sharper the picture. The lower the setting, the softer the picture. • **BACKLIGHT:** Adjusts the backlight. When the setting is changed, the brightness of the backlight is changed.
PICTURE CONTROL	Adjusts the picture. • **ACC (Auto Color Control):** Sets ACC circuit on or off. To check the fine adjustment, select OFF. Normally select ON. • **CTI (Chroma Transient Improvement)**: When a low color resolution signal is input, a crisp image can be displayed. When the setting is higher, the picture becomes even more crisp. • **V SHARPNESS**: A crisp image can be displayed. When the setting is higher, the picture becomes even more crisp.
INPUT SETTING	• **SHIFT H**: Adjusts the position of the picture. As the setting increases, the picture moves to the right, and as the setting decreases, the picture moves to the left. • **SHIFT V**: Adjusts the position of the picture. As the setting increases, the picture moves up, and as the setting decreases, the picture moves down.

For the DVI/HD15 input
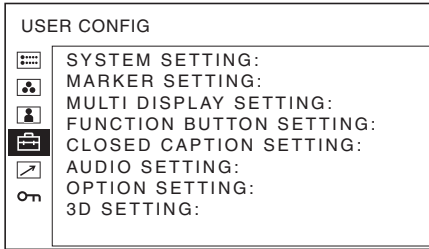
* The 1/3 menu cannot be adjusted.

```
USER CONTROL 2/3

      SUB CONTROL
        CONTRAST:              ■
        BRIGHTNESS:            ■
        CHROMA:                ■
        PHASE:                 ■
        APERTURE:              ■
        BACKLIGHT:             ■
```

```
USER CONTROL 3/3

      PICTURE CONTROL
        SIZE H:              ■■
        SIZE V:              ■■
        SHIFT H:             ■■
        SHIFT V:             ■■
        DOT PHASE:           ■■
        PITCH:               ■■
        RESOLUTION:         ■■■
        RESET
```

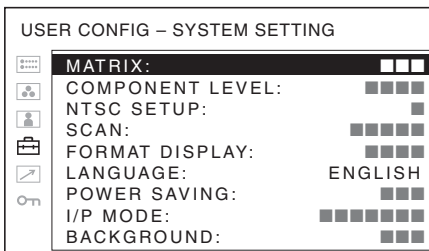| Submenu	Setting
SUB CONTROL	Adjusts finely the adjustment range of the button on the front panel for CONTRAST, BRIGHTNESS, CHROMA and PHASE. • **CONTRAST**: Adjusts the picture contrast. • **BRIGHTNESS**: Adjusts the picture brightness. • **CHROMA**: Adjusts color intensity. The higher the setting, the greater the intensity. The lower the setting, the lower the intensity. • **PHASE**: Adjusts color tones. The higher the setting, the more greenish the picture. The lower the setting, the more purplish the picture. • **APERTURE**: Adjusts the picture sharpness. The higher the setting, the sharper the picture. The lower the setting, the softer the picture. • **BACKLIGHT:** Adjusts the backlight. When the setting is changed, the brightness of the backlight is changed.

Submenu	Setting
PICTURE CONTROL	Adjusts to monitor the picture more clearly. • **SIZE H**: Adjusts the horizontal size of the picture. The higher the setting, the larger the horizontal size of the picture. The lower the setting, the smaller the horizontal size of the picture. • **SIZE V**: Adjusts the vertical size of the picture. The higher the setting, the larger the vertical size of the picture. The lower the setting, the smaller the vertical size of the picture. • **SHIFT H**: Adjusts the position of the picture. As the setting increases, the picture moves to the right, and as the setting decreases, the picture moves to the left. • **SHIFT V:** Adjusts the position of the picture. As the setting increases, the picture moves up, and as the setting decreases, the picture moves down. • **DOT PHASE**: Adjusts the dot phase. Adjust the picture further for a finer picture after APA (page 29) is adjusted. • **PITCH:** Adjusts the horizontal size of the picture with the left side of the picture fixed. The higher the setting, the larger the width of the picture. The lower the setting, the narrower the width of the picture. • **RESOLUTION:** Sets when the computer signal is input and it is difficult to understand the signal type such as XGA/60, WXGA/60, UXGA/60 or WUXGA/60. •**XGA:** Displayed as XGA signal. •**WXGA:** Displayed as WXGA signal. •**UXGA:** Displayed as UXGA signal. •**WUXGA:** Displayed as WUXGA signal. • **RESET:** Resets the value of SIZE H, SIZE V, SHIFT H, SHIFT V, DOT PHASE and PITCH to the factory preset value.

⊟ USER CONFIG menu

The USER CONFIG menu is used for setting the system, marker, multi display, function button, closed caption, audio, option and 3D.
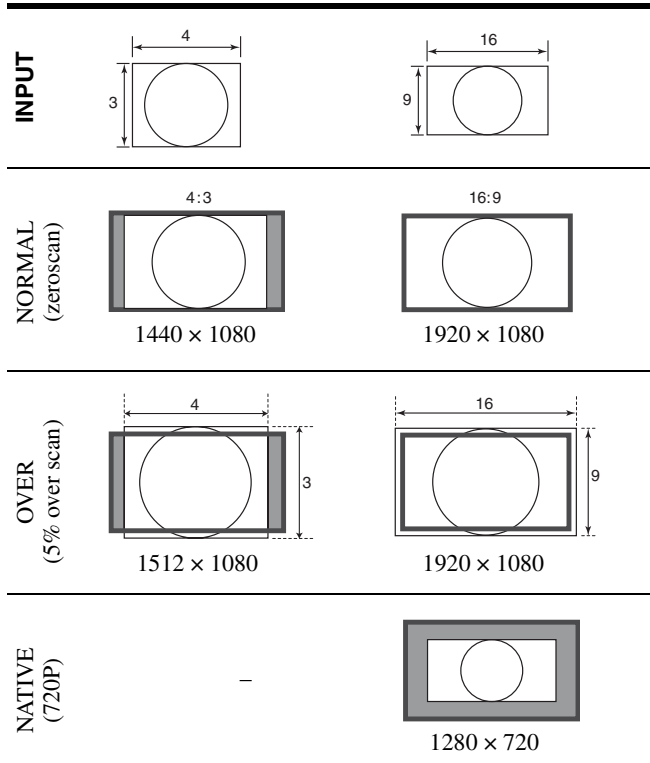
```
USER CONFIG
▦   SYSTEM SETTING:
⬚   MARKER SETTING:
⬚   MULTI DISPLAY SETTING:
     FUNCTION BUTTON SETTING:
🛠   CLOSED CAPTION SETTING:
↗   AUDIO SETTING:
⛏   OPTION SETTING:
     3D SETTING:
```
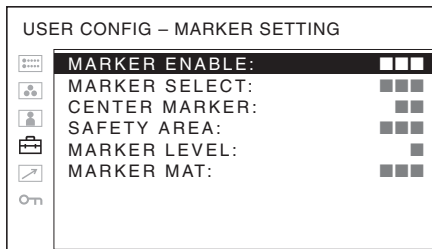
SYSTEM SETTING

```
USER CONFIG – SYSTEM SETTING
▦   MATRIX:                 ■■■
⬚   COMPONENT LEVEL:        ■■■■
⬚   NTSC SETUP:             ■
     SCAN:                   ■■■■■
🛠   FORMAT DISPLAY:         ■■■■
↗   LANGUAGE:        ENGLISH
⛏   POWER SAVING:           ■■■
     I/P MODE:               ■■■■■■
     BACKGROUND:             ■■■
```

Submenu	Setting
MATRIX	Applied to 480/60I or 480/60P signal. Select 601 or 709.
COMPONENT LEVEL	Selects the component level from among three modes. • **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	Selects the NTSC setup level from two modes. The 7.5 setup level is used mainly in North America. The 0 setup level is used mainly in Japan.
SCAN	Enables setting of the scan mode by the button which the scan function is assigned. Select from among STANDARD and NATIVE. The displayed picture differs according to the selected mode (see "Scan mode image" on page 27). **When STANDARD is selected** NORMAL scan (0% scan) and OVER scan (5% over scan) **When NATIVE is selected** NORMAL scan, OVER scan and NATIVE NATIVE is effective only when the following signal is input: 720P. 1080P can be selected when BKM-250TGM is installed.

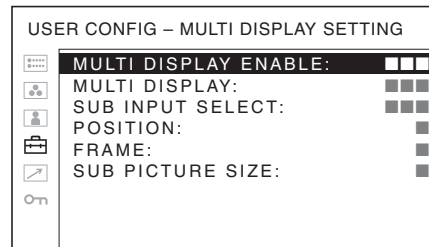| Submenu	Setting
FORMAT DISPLAY	Selects the display mode of the signal format and scan mode. • **ON**: The format and scan mode are always displayed. • **OFF**: The display is hidden. • **AUTO**: The format and scan mode are displayed for about 10 seconds when the input of the signal starts.
LANGUAGE	Selects the menu or message language from among seven languages. • **ENGLISH:** English • **FRANÇAIS:** French • **DEUTSCH:** German • **ESPAÑOL:** Spanish • **ITALIANO:** Italian • 日本語 **:** Japanese • 中文 **:** Chinese
POWER SAVING	Sets the power saving mode on or off. When you set to ON, the monitor goes into power saving mode if no signal is input for about one minute.
I/P MODE (picture delay minimum)	Selects to set the delay by the picture processing to the minimum level when the interlace signal is input. • **INTER-FIELD**: Mode for giving precedence to the picture quality. Performs interpolation depending on the movement of the images between the fields. It takes longer than FIELD MERGE or LINE DOUBLER for processing the picture. INTER-FIELD is the factory setting. • **FIELD MERGE**: The processing time is shorter. Combines the lines in the odd fields and even fields alternately regardless of the movement of images. Suitable for viewing still images. • **LINE DOUBLER**: The processing time is shorter. Performs interpolation by repeating each line in the data receiving sequence regardless of the field. As the line flicker is displayed in this mode, it is available for checking the line flicker of the telop work and so on.
BACKGROUND	Sets the brightness of the black bars appearing in the upper and lower positions of the screen, or on the sides of the screen. • **OFF**: Displays a darker bar (black). • **ON**: Displays a brighter bar (gray).

Scan mode image

MARKER SETTING

```
USER CONFIG – MARKER SETTING

 ▒▒  MARKER ENABLE:          ■■■
 ♣   MARKER SELECT:          ■■
 ♟   CENTER MARKER:          ■■
 🖻   SAFETY AREA:            ■■■
 ↗   MARKER LEVEL:           ■
 O╖  MARKER MAT:             ■■■
```

Submenu	Setting
MARKER ENABLE	Selects ON to display the marker and OFF not to display.

> **Note**
>
> When NATIVE is selected in the SCAN setting, the marker is not displayed.
> To display the marker, select a setting other than NATIVE.

Submenu	Setting
MARKER SELECT	Selects the aspect ratio according to the film, when the frame of the film is displayed on the screen. **When 16:9 aspect ratio is selected with the button which the aspect function is assigned** You can select from among 4:3, 15:9, 14:9, 13:9, 1.85:1, 2.35:1, 1.85:1 & 4:3 and OFF. **When 4:3 aspect ratio is selected with the button which the aspect function is assigned** You can select 16:9 or OFF.
CENTER MARKER	Selects ON to display the center mark of the picture and OFF not to display.
SAFETY AREA	Selects the safe area size for the aspect ratio determined by the button which the aspect function is assigned. You can select from among OFF, 80%, 85%, 88%, 90% and 93%. When the marker is displayed, the safe area for the marker is displayed.
MARKER LEVEL	Sets the luminance to display the MARKER SELECT, CENTER MARKER and SAFETY AREA. You can select from among 1 to 3. When the setting is low, the marker is displayed dark.
MARKER MAT	Selects whether you put mat on the outside of the marker display. • **OFF**: No mat is put. • **HALF**: Gray mat is put. • **BLACK**: Black mat is put.

MULTI DISPLAY SETTING

```
USER CONFIG – MULTI DISPLAY SETTING

 ▒▒  MULTI DISPLAY ENABLE:     ■■■
 ♣   MULTI DISPLAY:            ■■
 ♟   SUB INPUT SELECT:         ■■■
 🖻   POSITION:                 ■
 🖻   FRAME:                    ■
 ↗   SUB PICTURE SIZE:         ■
 O╖
```

Submenu	Setting
MULTI DISPLAY ENABLE	Selects ON to display the multi display and OFF not to display.

Notes

- When the frame frequency of the main display is different from that of the sub display, the picture may be disturbed. When no signal is input to the main display, the picture may not be displayed correctly.
- When the multi display is enabled, the marker display is not available.
- 3D display is only available in the main display when PIP multi display mode is selected. In other multi display modes, images appear in the 2D display.

Submenu	Setting
MULTI DISPLAY	• **PIP/POP:** The sub display is put in the main display for the 16:9 display and by the side of the main display for the 4:3 display. • **SIDE BY SIDE:** The main display is put in the left side of the display and the sub display is put in the right side of the display.

Notes

- When the HD15 or DVI signal is input, SIDE BY SIDE cannot be selected on the menu.
- When MULTI DISPLAY is set to SIDE BY SIDE, CTI (page 24) is not available.
- Only 2D display mode is available when SIDE BY SIDE is selected.

Submenu	Setting
SUB INPUT SELECT	Sets the input signal of the sub display. You can select from among COMPOSITE, Y/C, RGB, COMPONENT, OPTION A-1, OPTION A-2, OPTION B-1, OPTION B-2 and OFF.

Notes

- The multi display with COMPOSITE and Y/C, RGB and COMPONENT, OPTION A-1 and OPTION A-2, and OPTION B-1 and OPTION B-2 is not displayed.
- When SUB INPUT SELECT is set to OFF, the sub display is not displayed even if you set MULTI DISPLAY ENABLE to ON.

Submenu	Setting
POSITION	Sets the position of the sub display. You can select from among 1 to 3 for the 4:3 display and 1 to 4 for the 16:9 display. **4:3 display** • **1:** Top • **2:** Center • **3:** Bottom **16:9 display** • **1:** Bottom left • **2:** Bottom right • **3:** Top right • **4:** Top left
FRAME	Sets the position of the main display when MULTI DISPLAY is set to POP and the sub display is put on the 4:3 display. • **RIGHT:** The main display is put by the right side of the sub display. • **LEFT:** The main display is put by the left side of the sub display.
SUB PICTURE SIZE	Sets the size of the sub picture. You can select from among 1 to 3. When the setting is high, the size becomes large.

FUNCTION BUTTON SETTING

```
USER CONFIG – FUNCTION BUTTON SETTING

  F1 BUTTON:                ■■■■
  F2 BUTTON:                ■■■■
  F3 BUTTON:                ■■■■
  F4 BUTTON:                ■■■■
```

Submenu	Setting
F1 BUTTON to F4 BUTTON	Assigns the function to the function buttons of the front panel and turns the function on or off. You can assign the function from among SCAN, ASPECT, EXT SYNC, I/P MODE, MULTI DISPLAY, CLOSED CAPTION, MONO, H/V DELAY, MARKER, APA, BLUE ONLY, 2D/3D SELECT, CHECKERBOARD, L/R SWITCH, HOROPTER CHECK, DISPARITY SIM., GRID, DISPARITY RULER, AUTO L/R SW, DIFFERENCE and VIRTUAL SUB. MAR. **Factory setting** • **F1 button:** EXT SYNC • **F2 button:** SCAN • **F3 button:** ASPECT • **F4 button:** H/V DELAY

About the function assigned to the function button

For details about supported 3D input signals for each function, see "Input Signals and Adjustable/Setting Items"

on page 12 and "3D Input Signals and Adjustable/Setting Items" on page 13.

SCAN
Press the button to change the scan size of the picture according to the setting of STANDARD or NATIVE selected in SCAN (page 26).

ASPECT
Press the button to set the aspect ratio of the picture, 4:3 or 16:9.

EXT SYNC (external sync)
Press the button to operate the unit on an external sync signal through the EXT SYNC IN connector.
EXT SYNC works when the component/RGB signals are input.

I/P MODE
Press the button to set the delay by the picture processing to the minimum level when interlace signal is input. The mode switches in the sequence INTER-FIELD → FIELD MERGE → LINE DOUBLER with every press of the button (see page 26).

MULTI DISPLAY
Press the button to display the multi display. Set the multi display setting in the MULTI DISPLAY SETTING menu (see page 27).

CLOSED CAPTION
Press the button to display the closed caption. Set the closed caption setting in the CLOSED CAPTION SETTING menu (see page 30).
Not available for the signal input from BKM-227W.

MONO
Press the button to display a monochrome picture. When the buttons is pressed again, the monitor switches automatically to color mode.

H/V DELAY
Press the button to observe the horizontal and vertical sync signals at the same time.

MARKER
Press the button to display the marker. Set the aspect marker and safety area size in the MARKER SETTING menu (see page 27).

APA (Auto Pixel Alignment)
Press the button to adjust the picture automatically to maximum clarity for the signal input to the HD15 input connector. For finer according to the input signal, see DOT PHASE on page 25.
When the menu screen is displayed, the APA does not function.

Note

If the APA operation does not finish correctly depending on the input signal, adjust DOT PHASE (page 25).

BLUE ONLY
Press the button to eliminate the red and green signals. Only blue signal is displayed as an apparent monochrome picture on the screen. This facilitates chroma and phase adjustments and observation of signal noise.

2D/3D SELECT
Press the button to switch from 2D display mode to 3D display mode. Pressing the button again switches to 2D display mode. You can change the 3D display settings using the 3D SETTING menu.

CHECKERBOARD
Press the button to display the left/right 3D input signals in a checkerboard pattern on the screen, allowing you to simultaneously monitor the two signals. Pressing the button again displays the input signals in default pattern.

L/R SWITCH
Press the button to quickly switch the left/right 3D input signals, allowing you to easily compare each signal.

HOROPTER CHECK
Press the button to select display formats in monitoring left/right signals for 3D image display. Select the desired format from HOROPTER CHECK (page 32) under the 3D SETTING menu. Pressing the button again switches to default display format.

DISPARITY SIM. (disparity simulation)
Press the button to change the phase of left/right signals for 3D image display. You can monitor the depth of 3D images using simulated 3D effect. Press the + or – button to adjust the phase of the selected signal(s). Select the signal(s) you want to adjust from DISPARITY SIM. under the 3D SETTING menu before using this function button. Pressing the button again displays signals in their original phase.

GRID
Press the button to display a grid. The setting switches ON → H GRID WIDTH → OFF with every press of the button. You can adjust the grid width by pressing the + or – button.

Note

The grid center is shifted 2 dots to the right and 2 lines below the center of the screen, so the bottom and right edges of the grid may not be displayed.

DISPARITY RULER
Press the button to measure the disparity. Two vertical lines are displayed when the button is pressed. The setting

switches ON → RULER POSITION → DISPARITY → OFF with every press of the button (see page 33). Press the + or – button to adjust the position of the lines.

AUTO L/R SW

Press the button to automatically switch between the left and right of 3D input signals. Select the desired switching interval from AUTO L/R SW (page 33) under the 3D SETTING menu.

DIFFERENCE

Press the button to monitor the disparity by displaying the luminance differences between the left and right signals of the 3D image, in gray.
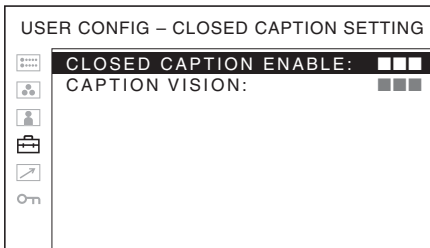
VIRTUAL SUB. MAR. (virtual subject marker)

Press the button to tentatively check the disparity for 3D display by displaying a pseudo-3D subject marker. The setting switches ON → H POSITION → V POSITION → DISPARITY → OFF with every press of the button (see page 33). Press the + or – button to adjust the position or disparity of the marker.
The size of the marker can be set via "VIRTUAL SUB. MAR." (page 33), under the 3D SETTING menu.
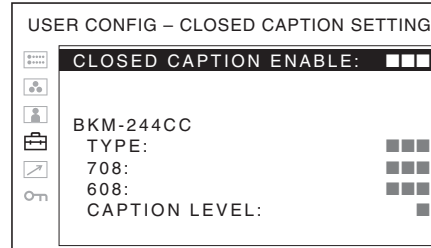
CLOSED CAPTION SETTING

For the composite or Y/C input

```
USER CONFIG – CLOSED CAPTION SETTING
CLOSED CAPTION ENABLE:    ■■■
CAPTION VISION:           ■■■
```

Submenu	Setting
CLOSED CAPTION ENABLE	Select ON to display closed caption and OFF not to display. **Note** When you display closed caption, set FORMAT DISPLAY (page 26) to OFF or AUTO, and set MARKER ENABLE (page 27) and MULTI DISPLAY ENABLE (page 28) to OFF.
CAPTION VISION	Sets closed caption. You can select from among OFF, CC1, CC2, CC3, CC4, TEXT1 and TEXT2.

For a signal input from a BKM-244CC
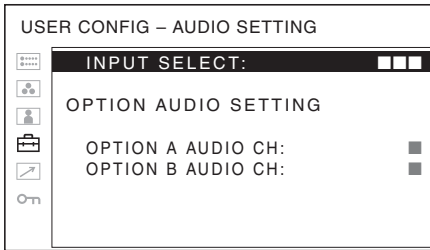
(when a BKM-244CC is installed)

```
USER CONFIG – CLOSED CAPTION SETTING
CLOSED CAPTION ENABLE:    ■■■

BKM-244CC
 TYPE:                    ■■■
 708:                     ■■■
 608:                     ■■■
 CAPTION LEVEL:           ■
```

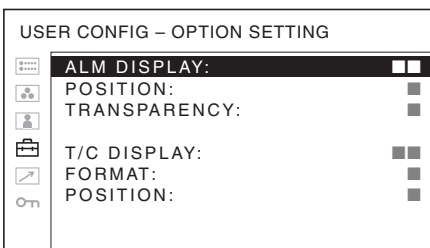| Submenu	Setting
CLOSED CAPTION ENABLE	Select ON to display closed caption and OFF not to display.
BKM-244CC	Sets closed caption. • **TYPE:** Selects the closed caption signal format. •**708:** To display a closed caption signal conforming to the EIA/CEA-708 standard. •**608 (708):** To display a closed caption signal conforming to the EIA/CEA-608 standard transmitted as EIA/CEA-708 data. •**608 (ANC):** To display a closed caption signal conforming to the EIA/CEA-608 standard transmitted as ANC (ancillary) data. •**608 (VBI):** To display a closed caption signal conforming to the EIA/CEA-608 standard transmitted over Line 21. • **708:** This item is displayed when TYPE is set to "708", and you can set closed caption. Select from among 1 to 6. • **608:** This item is displayed when TYPE is set to "608 (708)", "608 (ANC)" or "608 (VBI)", and you can set closed caption. Select from among CC1, CC2, CC3, CC4, TEXT1, TEXT2, TEXT3 and TEXT4. • **CAPTION LEVEL:** Sets the luminance of the displayed characters. You can select from among 1, 2 and 3. **Note** When two BKM-244CC adaptors are installed, the last set information is applied to both adaptors.

AUDIO SETTING

```
USER CONFIG – AUDIO SETTING

   INPUT SELECT:              ■■■

   OPTION AUDIO SETTING

     OPTION A AUDIO CH:          ■
     OPTION B AUDIO CH:          ■
```

Submenu	Setting
INPUT SELECT	Selects the input audio signal. • **ALL:** The sound except from BKM-220D/243HSM/244CC/250TGM is output. • **COMPOSITE:** When the COMPOSITE button is pressed, the sound is output. • **Y/C:** When the Y/C button is pressed, the sound is output. • **RGB:** When the RGB button is pressed, the sound is output. • **COMPONENT:** When the COMPONENT button is pressed, the sound is output. • **HD15:** When the HD15 button is pressed, the sound is output. • **DVI:** When the DVI button is pressed, the sound is output.
OPTION AUDIO SETTING	When BKM-220D/243HSM/244CC/250TGM is installed, set the audio channel for each adaptor. CH1, CH2, CH1+CH2, CH3, CH4, CH3+CH4, CH5, CH6, CH5+CH6, CH7, CH8, CH7+CH8, CH9, CH10, CH9+CH10, CH11, CH12, CH11+CH12, CH13, CH14, CH13+CH14, CH15, CH16, CH15+CH16, OFF You can display the L/R audio levels of the selected channels on the display when the multi display is enabled. When dual-stream HD-SDI input is selected, only a signal from the IN (INPUT)-1 connector of BKM-250TGM is displayed.

OPTION SETTING

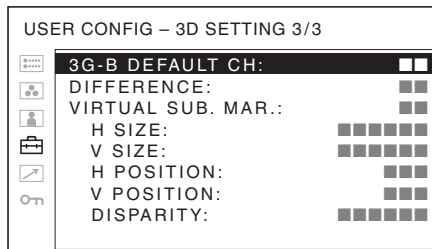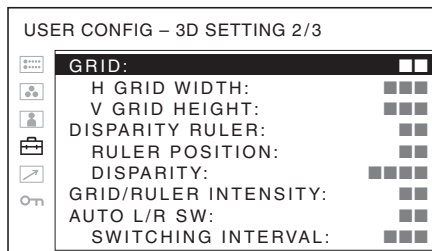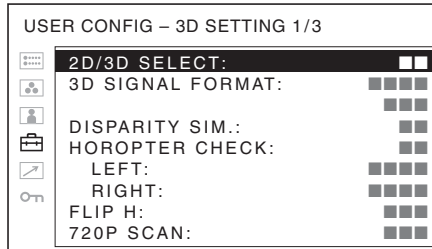* This setting is displayed only when a BKM-250TGM is installed.

```
USER CONFIG – OPTION SETTING

   ALM DISPLAY:               ■■
   POSITION:                   ■
   TRANSPARENCY:               ■

   T/C DISPLAY:               ■■
   FORMAT:                     ■
   POSITION:                   ■
```

Submenu	Setting
ALM DISPLAY	Selects ON to display the ALM (audio level meter) display and OFF not to display. The indications of the audio level signify as illustrated below, although the units and values of the scale do not appear on the display.

Channel number
(Displayed in eight channels, including the channel which is selected.)

Submenu	Setting
POSITION	Sets the position of the ALM display. You can select between 1 and 2. • **1**: Top • **2**: Bottom
TRANSPARENCY	Selects from 1 and 2 for the background of the ALM display. • **1**: The background is black. Displayed image is hidden behind the background. • **2**: The background is transparent. Displayed image can be seen indistinctly behind the ALM display.
T/C DISPLAY	Selects ON to display the time code display and OFF not to display. If the time codes of the left and right signals are out of sync, the time code on the right of the screen is displayed with black and white inverted.
FORMAT	Sets the time code format. • **VITC**: To display the time code in VITC format. • **LTC**: To display the time code in LTC format.
POSITION	Sets the position of the time code display. You can select between 1 and 2. • **1**: Bottom • **2**: Top

3D SETTING

* This setting menu is displayed only when input from BKM-250TGM or DVI is selected.
* Only 2D/3D SELECT is displayed when DVI input is selected.
* The IN (INPUT)-1 connector on BKM-250TGM can be used for left signal input, and the IN (INPUT)-2 connector for right signal input.
* For details about supported 3D input signals for each setting item, see "3D Input Signals and Adjustable/Setting Items" on page 13.

```
USER CONFIG – 3D SETTING 1/3

2D/3D SELECT:                  ■■
3D SIGNAL FORMAT:              ■■■■
                               ■■■
DISPARITY SIM.:                ■■
HOROPTER CHECK:                ■■
  LEFT:                        ■■■■
  RIGHT:                       ■■■■
FLIP H:                        ■■■
720P SCAN:                     ■■■
```

```
USER CONFIG – 3D SETTING 2/3

GRID:                          ■■
  H GRID WIDTH:                ■■■
  V GRID HEIGHT:               ■■■
DISPARITY RULER:               ■■
  RULER POSITION:              ■■
  DISPARITY:                   ■■■■
GRID/RULER INTENSITY:          ■■
AUTO L/R SW:                   ■■
  SWITCHING INTERVAL:          ■■■
```

```
USER CONFIG – 3D SETTING 3/3

3G-B DEFAULT CH:               ■■
DIFFERENCE:                    ■■
VIRTUAL SUB. MAR.:             ■■
  H SIZE:                      ■■■■■■
  V SIZE:                      ■■■■■■
  H POSITION:                  ■■■
  V POSITION:                  ■■■
  DISPARITY:                   ■■■■■■
```

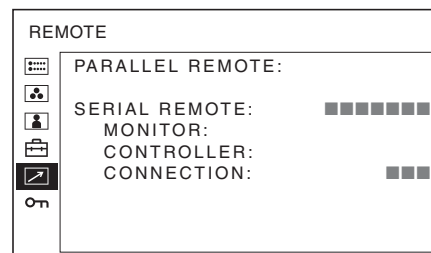| Submenu	Setting
2D/3D SELECT	Switches between 2D and 3D display mode. • **2D:** Displays input signals for 2D display mode. • **3D:** Displays input signals for 3D display mode.

Submenu	Setting

3D SIGNAL FORMAT	Selects input signal format for 3D display.
	• **3G-B:** Displays 3G Level-B HD-SDI signals for 3D display mode.
	   •**INTER:** Displays 1080/50i or 1080/60i signal.
	   •**PROG:** Displays 1080/24P, 25P, 30P or 720/50P, 60P signal.
	   •**PSF:** Displays 1080/24PsF or 1080/25PsF signal.
	• **DUAL:** Displays dual-stream HD-SDI signals for 3D display mode.
	   •**INTER:** Displays 1080/50i or 1080/60i signal.
	   •**PROG:** Displays 1080/24P, 25P, 30P or 720/50P, 60P signal.
	   •**PSF:** Displays 1080/24PsF or 1080/25PsF signal.
	• **SEQUENTIAL:** Displays field sequential HD-SDI signals for 3D display mode.
	• **SIDE BY SIDE 1:** Displays side-by-side typed HD-SDI signals for 3D display mode.
	   •**INTER:** Displays 1080/50i or 1080/60i signal.
	   •**PROG:** Displays 1080/24P, 25P, 30P or 720/50P, 60P signal.
	   •**PSF:** Displays 1080/24PsF or 1080/25PsF signal.
	• **SIDE BY SIDE 2:** Displays non-compressed horizontal resolution side-by-side typed HD-SDI signals for 3D display mode.
	   •**INTER:** Displays 1080/50i or 1080/60i signal.
	   •**PROG:** Displays 1080/24P, 25P, 30P or 720/50P, 60P signal.
	   •**PSF:** Displays 1080/24PsF or 1080/25PsF signal.
	• **LINE BY LINE:** Displays line-by-line typed HD-SDI signals for 3D display mode.

DISPARITY SIM.	Adjusts the phase of left/right input signals. You can monitor the depth of 3D images using simulated 3D effect. • **LR:** Shifts the phase of left and right channels at the same time. • **LEFT:** Shifts the phase of left channel. • **RIGHT:** Shifts the phase of right channel.
HOROPTER CHECK	Select ON to switch the display settings for the left/right channel signals. Select OFF when you do not wish to perform switching. By changing the display settings, the left/right signals become easier to identify. • **NORMAL:** Displays video signals. • **BLACK:** Displays black signals. (No video signals) • **MONO:** Displays video signals as grayscale image. • **RED:** Displays video signals as RGB red color component. • **BLUE:** Displays video signals as RGB blue color component.

Submenu	Setting
FLIP H	Changes display patterns (normal/horizontally reversed display) in monitoring left/right input signals. • **OFF:** Deactivates the reversing function. • **LEFT:** Horizontally reverses left signal. • **RIGHT:** Horizontally reverses right signal.
720P SCAN	Selects scan mode for 720P input signals. • **NORMAL:** Displays normal scan. • **NATIVE:** Displays native scan.
GRID	Selects ON to display a grid for checking the overall image disparity, and OFF not to display grid. • **H GRID WIDTH:** Enables to change the grid width (horizontal). You can select from 0.50% to 10.00%. • **V GRID HEIGHT:** Enables to change the grid height (vertical). You can select from among OFF, 16.7%, 12.5%, 10% and 8.3%.
DISPARITY RULER	Selects ON to display two vertical lines for measuring the disparity, and OFF not to display. • **RULER POSITION:** Enables to move the two lines as a pair to the desired position for measuring the disparity. • **DISPARITY:** Enables to move only one of the two lines to measure the disparity.
GRID/RULER INTENSITY	Enables to adjust display brightness of the lines for GRID and DISPARITY RULER functions.
AUTO L/R SW	Selects ON to automatically switch the left and right of 3D input signals, and OFF not to switch. • **SWITCHING INTERVAL:** Selects the interval from among SHORT, MEDIUM and LONG.
3G-B DEFAULT CH	Sets the signal to be displayed (left or right) when 3G-B signal is input and 2D is selected for the display mode. • **LEFT:** Displays the 3G-B left channel signal. • **RIGHT:** Displays the 3G-B right channel signal.
DIFFERENCE	The difference between the luminance signal component of the left signal (L) and that of the right signal (R) is displayed. A gray portion indicates that the luminance level of the two signals is the same. When the luminance level of the two signals is not the same, a monochrome image is displayed according to the difference in the luminance. This function is useful for checking the disparity level.

| Submenu	Setting
VIRTUAL SUB. MAR.	Displays two squares as a pseudo-3D subject marker to check the disparity for 3D display. The 3D SETTING 3/3 menu screen becomes semi-transparent. • **H SIZE:** Enables adjustment of the marker width. • **V SIZE:** Enables adjustment of the marker height. • **H POSITION:** Enables horizontal movement of the marker. • **V POSITION:** Enables vertical movement of the maker. • **DISPARITY:** Enables change to the disparity of the marker.

↗ REMOTE menu

```
REMOTE
 [▦]    PARALLEL REMOTE:
 [♣]
 [👤]   SERIAL REMOTE:      ■■■■■■
 [📁]     MONITOR:
 [↗]      CONTROLLER:
           CONNECTION:        ■■■
 [⊶]
```

Submenu	Setting
PARALLEL REMOTE	Selects the PARALLEL REMOTE connector pins for which you want to change the function. You can assign various functions to 1 to 4 pins and 6 to 8 pins. The following lists the functions you can assign to the pins. • – – – ("– – –": No function is assigned.) • COMPOSITE • Y/C • RGB • COMPONENT • DVI • HD15 • OPTION A-1 • OPTION A-2 • OPTION B-1 • OPTION B-2 • OVERSCAN • NORMAL • NATIVE • 4:3 • 16:9 • EXT SYNC • BLUE ONLY • MONO • H/V DELAY • 16:9 MARKER • 15:9 MARKER • 14:9 MARKER • 13:9 MARKER • 1.85:1 MARKER • 2.35:1 MARKER • 1.85:1 & 4:3 MARKER • 4:3 MARKER • CENTER MARKER • SAFE AREA 80% • SAFE AREA 85% • SAFE AREA 88% • SAFE AREA 90% • SAFE AREA 93% • MARKER MAT HALF • MARKER MAT BLACK • 2D/3D SELECT • CHECKERBOARD • L/R SWITCH • HOROPTER CHECK • DISPARITY SIM. • GRID • AUTO L/R SW • 3G-B DEFAULT CH • VIRTUAL SUB. MAR. • DISPARITY RULER • DIFFERENCE • 720P SCAN • MENU – • MENU +

Submenu	Setting
	Notes • If you use the PARALLEL REMOTE function, you need to connect cables. For more details, see page 37. • Set MARKER ENABLE (page 27) to ON to control the aspect marker, center marker or safe area marker.
SERIAL REMOTE	Selects the mode to be used. • **OFF:** SERIAL REMOTE does not function. • **RS-232C:** The monitor is controlled by the command of RS-232C. • **ETHERNET**: The monitor is controlled by the command of Ethernet. • **BKM-16R:** Sets BKM-16R.
MONITOR	Sets the monitor setting. **MONITOR ID:** Sets the ID of the monitor. **GROUP ID:** Sets the group ID of the monitor. **IP ADDRESS:** Sets the IP address. **SUBNET MASK:** Sets the subnet mask. (255.255.255.000) **DEFAULT GATEWAY:** Sets the default gateway on or off. **ADDRESS:** Sets the default gateway. **CANCEL:** Selects to cancel the setting. **CONFIRM:** Selects to save the setting.
CONTROLLER	Sets the address of the remote controller. **IP ADDRESS:** Sets the IP address. **SUBNET MASK:** Sets the subnet mask. (255.255.255.000) **DEFAULT GATEWAY:** Sets the default gateway on or off. **ADDRESS:** Sets the default gateway. **CANCEL:** Selects to cancel the setting. **CONFIRM:** Selects to save the setting.
CONNECTION	Sets the connection of the monitor and the controller. **PEER TO PEER:** for one to one connection **LAN:** for connection via a network

⊶ KEY INHIBIT menu

```
KEY INHIBIT
▦    KEY INHIBIT:              ■■
⊛
▨
⬚
↗
⊶
```
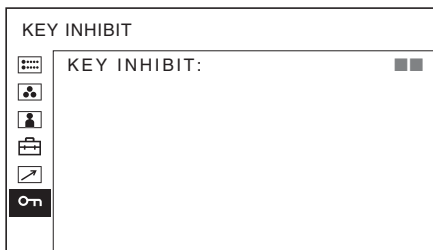
You can lock the setting so that they cannot be changed by an unauthorized user.
Select OFF or ON.
If you set to ON, all items are displayed in black, indicating the items are locked.

Troubleshooting

This section may help you isolate the cause of a problem and as a result, eliminate the need to contact technical support.

- **The display is colored in green or purple** → Select the correct input by pressing RGB or COMPONENT button.
- **The unit cannot be operated** → The key protection function works. Set the KEY INHIBIT setting to OFF in the KEY INHIBIT menu.
- **The black bars appear at the upper and lower positions of the display** → When the signal aspect ratio is different from that of the panel, the black bars appear. This is not a failure of the unit.

Specifications

Picture performance

LCD panel   a-Si TFT Active Matrix
Pixel efficiency   99.99%
2D viewing angle (LCD panel specifications) (up/down/
      left/right, contrast > 10 : 1)
      89°/89°/89°/89° (typical)
3D viewing angle
      See "3D Viewing Angle (vertical)" on
      page 41.
Scan   Normal 0%
      Over scan 5%
Efficient picture size (w/h, dia)
      928 × 522, 1,065 mm
      ($36^5/_8 \times 20^5/_8$, 42 inches)
Resolution   H 1,920 dots, V 1,080 lines
Aspect ratio   16 : 9

Input

Composite input (NTSC/PAL) connector
      BNC type (1)
      1 Vp-p ± 3 dB sync negative
Y/C input connector
      4-pin mini-DIN (1)
      Y: 1 Vp-p ± 3 dB sync negative
      C: 0.286 Vp-p ± 3 dB (NTSC burst signal
      level)
      0.3 Vp-p ± 3 dB (PAL burst signal
      level)
RGB/component input connectors
      BNC type (3)
      RGB input: 0.7 Vp-p ± 3 dB (Sync On
      Green, 0.3 Vp-p sync negative)
      Component input: 0.7 Vp-p ± 3 dB (75%
      chrominance standard color bar signal)
Audio input connectors
      Phono jack (2)
      –5 dBu 47 kilohms or higher
External synchronized input connector
      BNC type (1)
      0.3 to 4.0 V p-p ± bipolarity ternary or
      negative polarity binary
HD15 input connector
      D-sub 15-pin (1)
      R/G/B: 0.7 Vp-p, sync positive (Sync On
      Green, 0.3 Vp-p sync negative)
      Sync: TTL level (polarity free, H/V
      separate sync)
      Plug & Play function: corresponds to
      DDC2B
DVI input connector
      DVI-D (1)
      TMDS single link

Remote input connector
      Parallel remote
           Modular connector 8-pin (1)
      Serial remote
           D-sub 9-pin (RS-232C) (1)
           RJ-45 modular connector (ETHERNET)
           (1)
Optional input port
      2 ports
      Signal format:
           H: 15 kHz to 45 kHz
           V: 48 Hz to 60 Hz

Output

Composite output connector
      BNC type (1)
      Loop-through, with 75 ohms automatic
      terminal function
Y/C output connector
      4-pin mini-DIN (1)
      Loop-through, with 75 ohms automatic
      terminal function
RGB/component connectors
      BNC type (3)
      Loop-through, with 75 ohms automatic
      terminal function
External synchronized output connector
      BNC type (1)
      Loop-through, with 75 ohms automatic
      terminal function
Audio monitor output connectors
      Phono jack (2)
Built-in speaker output
      1.0 W + 1.0 W (stereo)

General

Power   AC 100 V to 240 V, 50/60 Hz, 2.7 A to
      1.1 A
Power consumption
      Maximum: approx. 250 W (when two
      BKM-229X are installed)
Operating conditions
      Temperature
           0 °C to 35 °C (32 °F to 95 °F)
      Recommended temperature
           20 °C to 30 °C (68 °F to 86 °F)
      Humidity   30% to 85% (no condensation)
      Pressure   700 hPa to 1060 hPa
Storage and transport conditions
      Temperature
           –20 °C to + 60 °C (–4 °F to +140 °F)
      Humidity   0% to 90%
      Pressure   700 hPa to 1060 hPa

Accessories supplied
    Power cord (1)
    AC plug holder (1)
    Before Using This Unit (1)
    CD-ROM (Operating Instructions) (1)
    European Representative (1)
Optional accessories
    SDI 4:2:2 input adaptor
        BKM-220D
    HD/D1-SDI input adaptor
        BKM-243HSM (You can also use the
        BKM-243HS.)
    NTSC/PAL input adaptor
        BKM-227W
    Analog component input adaptor
        BKM-229X
    HD/SD-SDI closed caption adaptor
        BKM-244CC
    3G/HD/SD-SDI input adaptor
        BKM-250TGM
        (You can use BKM-250TG with a
        serial number 7400001 or greater in
        the same function as the
        BKM-250TGM.)
    3D glasses (glasses-type)
        BKM-30GM/30G
    3D glasses (clip-on-type)
        BKM-31GM/31G

Design and specifications are subject to change without notice.

Note
- Always verify that the unit is operating properly before use. SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF THE LOSS OF PRESENT OR PROSPECTIVE PROFITS DUE TO FAILURE OF THIS UNIT, EITHER DURING THE WARRANTY PERIOD OR AFTER EXPIRATION OF THE WARRANTY, OR FOR ANY OTHER REASON WHATSOEVER.
- SONY WILL NOT BE LIABLE FOR CLAIMS OF ANY KIND MADE BY USERS OF THIS UNIT OR MADE BY THIRD PARTIES.
- SONY WILL NOT BE LIABLE FOR THE TERMINATION OR DISCONTINUATION OF ANY SERVICES RELATED TO THIS UNIT THAT MAY RESULT DUE TO CIRCUMSTANCES OF ANY KIND.

Pin assignment

PARALLEL REMOTE connector
Modular connector
(8-pin)
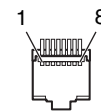
| Pin number	Functions
1	Designating composite input signal
2	Designating component input signal
3	NC
4	NC
5	GND
6	Selecting external sync
7	Selecting over scan
8	Selecting normal scan

You can allocate functions using the REMOTE menu (see).

Wiring required to use the Remote Control
Connect the function you want to use with a Remote Control to the Ground (Pin 5).

SERIAL REMOTE (RS-232C) connector
D-sub 9-pin, female
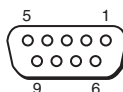
Pin number	Signal
1	NC
2	RX
3	TX
4	NC
5	GND
6	NC
7	RTS
8	CTS
9	NC

Available signal formats
The unit is applicable to the following signal formats.

System	Composite Y/C BKM-227W	RGB Component BKM-229X	BKM-220D	BKM-243HSM /244CC	BKM-250TGM 2D	BKM-250TGM 3D
575/50I (PAL)	○	○	○	○	○	–
480/60I (NTSC)[*1]	○	○	○	○	○	–

System	Composite Y/C BKM-227W	RGB Component BKM-229X	BKM-220D	BKM-243HSM/244CC	BKM-250TGM 2D	BKM-250TGM 3D
576/50P	–	○	–	–	–	–
480/60P	–	○	–	–	–	–
1080/24PsF[*1]	–	○[*2]	–	○	○	○
1080/25PsF	–	○[*2]	–	○	○	○
1080/24P[*1]	–	○[*2]	–	○	○	○
1080/25P	–	○[*2]	–	○	○	○
1080/30P[*1]	–	○[*2]	–	○	○	○
1080/50I	–	○	–	○	○	○
1080/60I[*1]	–	○	–	○	○	○
720/50P	–	○[*2]	–	○	○	○
720/60P[*1]	–	○	–	○	○	○
1080/50P	–	–	–	–	○	–
1080/60P	–	–	–	–	○	–

○ : Adjustable/can be set
– : Not adjustable/cannot be set
*1 The frame rate is also compatible with 1/1.001.
*2 Component only.

Available HD15 input signal formats

VESA DMT

Resolution	Dot clock [MHz]	fH [kHz]	fV [Hz]	Sync. polarity	
				Horizontal	Vertical
640 × 480 60 Hz	25.175	31.469	59.940	Negative	Negative
800 × 600 56 Hz	36.000	35.156	56.250	Positive	Positive
800 × 600 60 Hz	40.000	37.879	60.317	Positive	Positive
800 × 600 72 Hz	50.000	48.077	72.188	Positive	Positive
800 × 600 75 Hz	49.500	46.875	75.000	Positive	Positive
800 × 600 85 Hz	56.250	53.674	85.061	Positive	Positive
1024 × 768 60 Hz	65.000	48.363	60.004	Negative	Negative
1024 × 768 70 Hz	75.000	56.476	70.069	Negative	Negative
1024 × 768 75 Hz	78.750	60.023	75.029	Positive	Positive
1024 × 768 85 Hz	94.500	68.677	84.997	Positive	Positive
1152 × 864 75 Hz	108.000	67.500	75.000	Positive	Positive
1280 × 960 60 Hz	108.000	60.000	60.000	Positive	Positive
1280 × 1024 60 Hz	108.000	63.981	60.020	Positive	Positive

VESA CVT

Resolution	Dot clock [MHz]	fH [kHz]	fV [Hz]	Sync. polarity	
				Horizontal	Vertical
640 × 480 60 Hz	23.625	29.531	59.780	Positive	Negative
800 × 600 60 Hz	35.500	36.979	59.837	Positive	Negative
1024 × 768 60 Hz	56.000	47.297	59.870	Positive	Negative
1280 × 960 60 Hz	85.250	59.201	59.920	Positive	Negative
1360 × 768 50 Hz	69.500	39.489	49.922	Negative	Positive
1360 × 768 60 Hz	84.625	47.649	59.936	Negative	Positive
1360 × 768 60 Hz	72.000	47.368	59.960	Positive	Negative
1920 × 1080 50 Hz*	141.375	55.572	49.975	Negative	Positive
1920 × 1080 60 Hz*	138.625	66.647	59.988	Positive	Negative
1280 × 1024 60 Hz	91.000	63.194	59.957	Positive	Negative
1280 × 768 50 Hz	65.125	39.518	49.959	Negative	Positive
1280 × 768 60 Hz	80.125	47.693	59.992	Negative	Positive
1280 × 768 75 Hz	102.875	60.091	74.926	Negative	Positive
1280 × 768 60 Hz	68.250	47.396	59.995	Positive	Negative

*Down convert display

Others

Resolution	Dot clock [MHz]	fH [kHz]	fV [Hz]	Sync. polarity	
				Horizontal	Vertical
720 × 400 70 Hz	28.322	31.469	70.087	Negative	Positive
1280 × 800 60 Hz	68.900	48.935	59.969	Negative	Negative

Available DVI input signal formats

Range of DVI input signal
   Vertical frequency: 50.0 Hz to 85.1 Hz
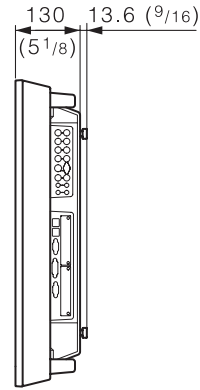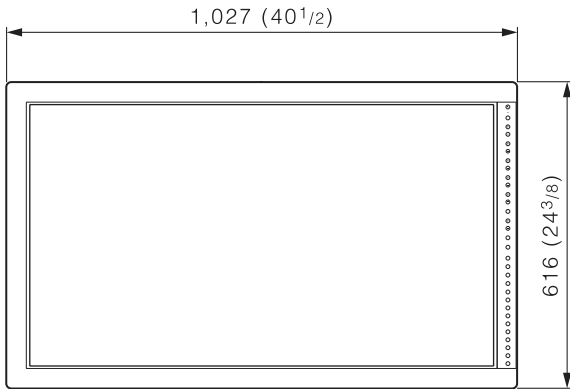   Horizontal frequency: 31.5 kHz to 77.0 kHz
   Dot clock: 25.175 MHz to 148.500 MHz
   Picture size, phase: automatic discrimination by the DE
     (Data Enable) signal

Dimensions

Front

1,027 (40^1/$_2$)

616 (24^3/$_8$)
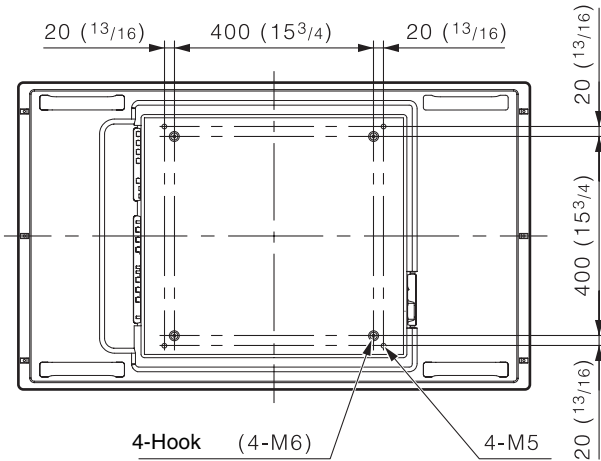
Side

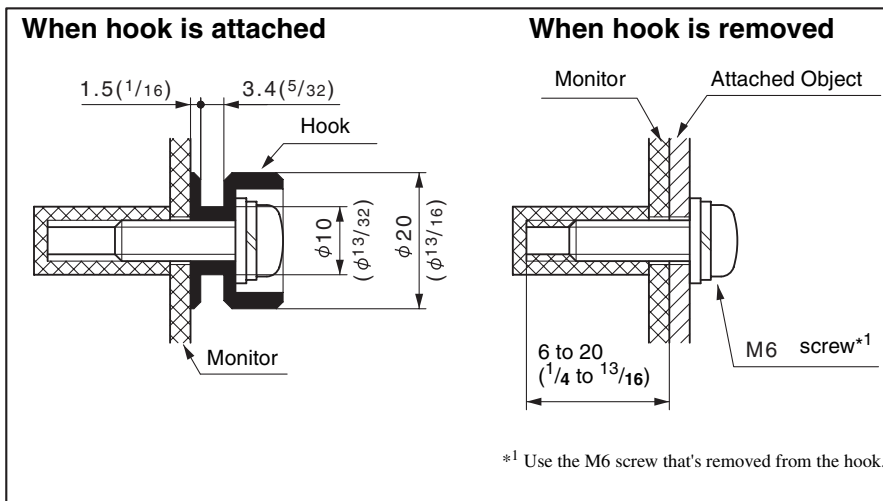130 (5^1/$_8$)   13.6 (^{9}/$_{16}$)

Unit: mm (inches)

Mass:
   Approx. 19.5 kg (43 lb) (when no input adaptor is installed)
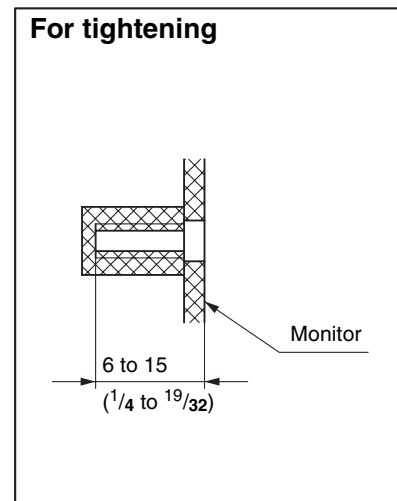   Approx. 20.0 kg (44 lb 1.5 oz) (when two BKM-229X are installed)

Rear (Mount Instruction)

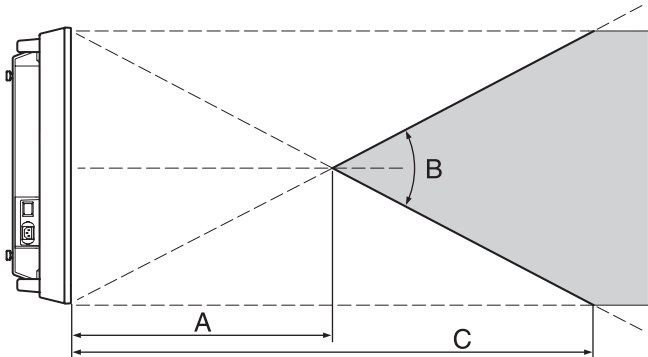20 (^{13}/$_{16}$)   400 (15^3/$_4$)   20 (^{13}/$_{16}$)

20 (^{13}/$_{16}$)

400 (15^3/$_4$)

20 (^{13}/$_{16}$)

4-Hook   (4-M6)   4-M5

Hook / M6

When hook is attached	When hook is removed
1.5(^{1}/$_{16}$) 3.4(^{5}/$_{32}$)	Monitor Attached Object
Hook	
ϕ10 (ϕ^{13}/$_{32}$) ϕ20 (ϕ^{13}/$_{16}$)	
Monitor	6 to 20 (^{1}/$_4$ to ^{13}/$_{16}$) M6 screw*^{1}

*^{1} Use the M6 screw that's removed from the hook.

M5

For tightening
Monitor
6 to 15 (^{1}/$_4$ to ^{19}/$_{32}$)

3D Viewing Angle (vertical)

Side View

3D Viewing Angle (vertical)

Crosstalk ratio $\leq$ 7%

A (Typical)	B (Typical)	C (Typical)
1,140 mm (45 inches)	26°	2,280 mm (89 $^7/_8$ inches)