

Trinitron[®] ***Color Video Monitor***

Operating Instructions Page 2

Mode d'emploi Page 20

Manual de instrucciones Página 38



Trinitron

PVM-14M4U/14M4E/14M4A **PVM-14M2U/14M2E/14M2A**
PVM-20M4U/20M4E/20M4A **PVM-20M2U/20M2E**

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. _____

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

Dangerously high voltage are present inside the unit.

Do not open the cabinet. Refer servicing to qualified personnel only.

In the event of a malfunction or when maintenance is necessary, consult an authorized Sony dealer.

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.

For the customers in Europe

This product with the CE marking complies with both the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European standards:

- EN60950: Product Safety
- EN55103-1: Electromagnetic Interference (Emission)
- EN55103-2: Electromagnetic Susceptibility (Immunity)

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

These products are designed for operation in the environments E1 to E4. During EMC stress, the performance (evaluated according to ITU/R 562-3 and ITU/R 500-4) may degrade as shown in Table 1. Without the EMC stress, all performance will recover to full function.

Table 1

	Frequency	Level
14-inch Monitors	24-50 MHz	4-3
	190-290, 360 and 420 MHz	4
20-inch Monitors	35-50 MHz	1
	100 and 420 MHz	4

For the customers in the United Kingdom

WARNING

THIS APPARATUS MUST BE EARTHED

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Green-and-yellow: Earth

Blue: Neutral

Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol \perp or coloured green or green-and-yellow.

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

Ensure that your equipment is connected correctly - If you are in any doubt consult a qualified electrician.

On safety

- Operate the unit only with a power source as specified in “Specifications” section.
- The nameplate indicating operating voltage, power consumption, etc., is located at the rear.
- 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.

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.

On cleaning

To keep the unit looking brand-new, periodically clean it with a mild detergent solution. Never use strong solvents such as thinner or benzine, or abrasive cleansers since they will damage the cabinet. As a safety precaution, unplug the unit before cleaning it.

On repacking

Do not throw away the carton and packing materials. They make an ideal container which to transport the unit. When shipping the unit to another location, repack it as illustrated on the carton.

If you have any questions about this unit, contact your authorized Sony dealer.

Features	4
Location and Function of Parts and Controls	6
Front	6
Rear Panel	8
Using On-Screen Menus	10
On-Screen Menu Configuration	10
Operation through On-Screen Menus	11
Functions of On-Screen Menus	12
Connections	15
How to Connect the AC Power Cord	15
How to Connect a Cable to a BNC Connector	15
Specifications	16

About this manual

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

The explanation given in this manual can be applied to the following models unless noted otherwise.
When explanation differs among models, this is clearly indicated in this manual.

- PVM-14M4U/14M4E/14M4A (14-inch monitor)
- PVM-14M2U/14M2E/14M2A (14-inch monitor)
- PVM-20M4U/20M4E/20M4A (20-inch monitor)
- PVM-20M2U/20M2E (20-inch monitor)

Illustrations of the video monitor are of the PVM-20M4U/20M4E/20M4A.

Features

Picture

HR (High Resolution) Trinitron¹⁾ picture tube for PVM-14M4U/14M4E/14M4A/20M4U/20M4E/20M4A
HR Trinitron tube provides a high resolution picture. Horizontal resolution is more than 800 TV lines at the center of the picture.

Trinitron¹⁾ picture tube for PVM-14M2U/14M2E/14M2A/20M2U/20M2E
Trinitron tube provides a high resolution picture. Horizontal resolution is more than 600 TV lines at the center of the picture.

Comb filter

When NTSC video signals are received, a comb filter activates to make more accurate Y/C separation. This contributes to less of a decrease in resolution, cross color and cross luminance phenomena.

Beam current feedback circuit

The built-in beam current feedback circuit assures stable white balance.

Four color system available

The monitor can display NTSC, PAL, SECAM and NTSC_{4.43}²⁾ signals. The appropriate color system is selected automatically.

Blue only mode

In the blue only mode, an apparent monochrome display is obtained with all three cathodes driven with a blue signal. This facilitates color saturation and phase adjustments and observation of VCR noise.

Input

Analog RGB/component input connectors

Analog RGB or component (Y, R-Y and B-Y) signals from video equipment can be input through these connectors.

Y/C input connectors

The video signal, split into the chrominance signal (C) and the luminance signal (Y), can be input through this connector, eliminating the interference between the two signals, which tends to occur in a composite video signal, ensuring video quality.

External sync input

When the EXT SYNC selector is in the on position, the monitor can be operated on the sync signal supplied from an external sync generator.

Automatic termination

(connector with ∇ mark only)

The input connector is terminated at 75 ohms inside when no cable is connected to the loop-through output connector. When a cable is connected to an output connector, the 75-ohm termination is automatically released.

1) "Trinitron" is a registered trademark of Sony Corporation.

2) The NTSC_{4.43} system refers to an NTSC color system in which the subcarrier frequency is modified to 4.43MHz. When an NTSC recorded video program is played back with a Trident (PAL/SECAM/NTSC_{4.43}) VTR, the NTSC_{4.43} signal is output.

Functions

Underscan mode

The signal normally scanned outside of the screen can be monitored in the underscan mode.

Note

When the monitor is in the underscan mode, the dark RGB scanning lines may appear on the top edge of the screen. These are caused by an internal test signal, rather than the input signal.

Horizontal/vertical delay mode

The horizontal and vertical sync signals can be checked simultaneously in the H/V delay mode.

Auto/manual degaussing

Degaussing of the screen can be performed automatically when the power is turned on, or manually by pressing the DEGAUSS button. You can set the delay time of auto degaussing to start working after the power is turned on. (DEGAUSS DELAY menu)

On-screen menus

You can set color temperature, CHROMA SET UP, and other settings by using the on-screen menus.

Five menu languages

You can select the menu language from among five languages on the menu.

SDI (Serial Digital Interface) Kit

By using the following optional SDI Kits, the monitor can display SMPTE 259M 4:2:2 serial digital signal from a digital VCR. (ex. Sony 4:2:2 VCR)

- BKM-101C: Component SDI Kit (for video)
- BKM-102: Component SDI Kit (for audio)

Note

When the serial number of the BKM-101C you want to connect is less than 2,010,000, an optional connecting harness (part no. 1-900-230-35) will be required.

Serial Remote Interface Kit

By using the optional BKM-103 Serial Remote Interface Kit, the monitor can be controlled from personal computers via the RS-422A serial interface.

EIA 19-inch rack mount kit available

Use a suitable kit when rack mounting.

Europe	MB-502C (14-inches) / SLR-103C (20-inches)
Any other area	MB-502B (14-inches) / SLR-103A (20-inches)

ATTENTION – When the product is installed in a rack:

a) Elevated operating ambient temperature

If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (T_{mra}).

b) Reduced air flow

Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

c) Mechanical loading

Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

d) Circuit overloading

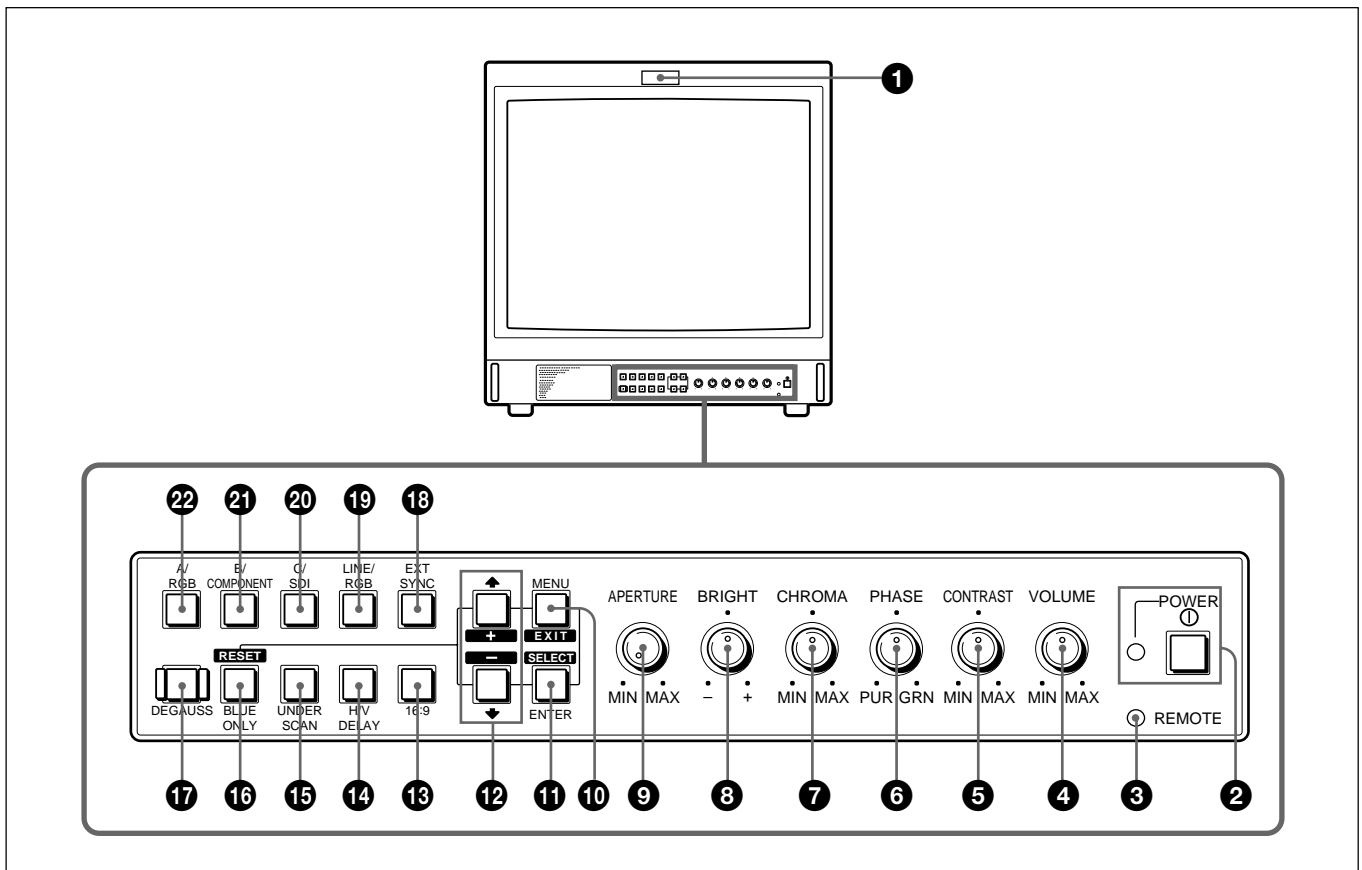
Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

e) Reliable earthing

Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g., use of power strips).

Location and Function of Parts and Controls

Front



1 Tally lamp

Lights up when the video camera connected to this monitor is selected, indicating that the picture is being recorded.

For details on how to light the tally lamp, see page 19.

2 POWER switch and indicator

Depress to turn on the monitor. The indicator will light green.

3 REMOTE indicator

Lights up when you select ON on the USER PRESET menu (see page 13), or when you connect a supplied cable to the REMOTE connector. The controls on the front panel do not work when this indicator lights up.

For details on how to connect the cable, see page 19.

4 VOLUME control

Turn this control clockwise or counterclockwise to obtain the desired volume.

5 CONTRAST control

Turn this control clockwise to make the contrast higher or counterclockwise to make it lower.

6 PHASE control

This control is effective only for the NTSC and NTSC_{4.43} color systems. Turn it clockwise to make the skin tones greenish or counterclockwise to make them purplish.

7 CHROMA control

Turn this control clockwise to increase the color intensity or counterclockwise to decrease it.

8 BRIGHT (brightness) control

Turn this control clockwise to increase the brightness or counterclockwise to decrease it.

9 APERTURE control

Turn this control clockwise to increase sharpness or counterclockwise to decrease sharpness.

Note

The PHASE (6), CHROMA (7) and APERTURE (9) controls have no effect on the pictures of RGB signals.

10 MENU (EXIT) button

Press this button to display the main menu. When a menu is on the display, you can return to the previous menu by pressing this button.

11 ENTER (SELECT) button

Press the button to confirm a selected item on the menu.

12 ↑ (+) / ↓ (-) buttons

Press the buttons to move the cursor (▶) or adjust selected item on the menu.

13 16:9 selector

Press this selector (light on) to monitor the signals of 16:9 picture.

14 H/V DELAY selector

Press this selector (light on) to observe the horizontal and vertical sync signals at the same time. The horizontal sync signal is displayed in the left quarter of the screen; the vertical sync signal is displayed near the center of the screen.

15 UNDER SCAN selector

Press this selector (light on) for underscanning. The display size is reduced by approximately 5% so that four corners of the raster are visible.

**16 BLUE ONLY selector
RESET button**

- As the BLUE ONLY selector, press this selector (light on) 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 VCR noise. (“Phase” adjustment is effective only for the NTSC signals.)
- As the RESET button, you can reset the menu settings by pressing this button when a menu is on the display.

17 DEGAUSS button

Press this button momentarily. The screen will be demagnetized. Wait for 10 minutes or more before using this button again.

18 EXT SYNC (external sync) selector

- Set this selector to the off position (light off) to operate the monitor on the sync signal from the displayed video signal.
- Set this selector to the on position (light on) to operate the monitor on an external sync signal through the EXT SYNC connector.

19 LINE/RGB input selector

- Press this selector to select the input to be monitored.
- Set this selector to the off position (light off) to monitor the signal through the LINE A, LINE B or LINE C connectors.
 - Set this selector to the on position (light on) to monitor the signal through the RGB/COMPONENT connectors.

20 C/SDI selector

- When the LINE/RGB input selector is set to the LINE position (light off), press this selector (light on) to monitor the signal through the LINE C connectors.
- When the LINE/RGB input selector is set to the RGB position (light on), press this selector (light on) to monitor the SDI signal (optional kits are required).

21 B/COMPONENT selector

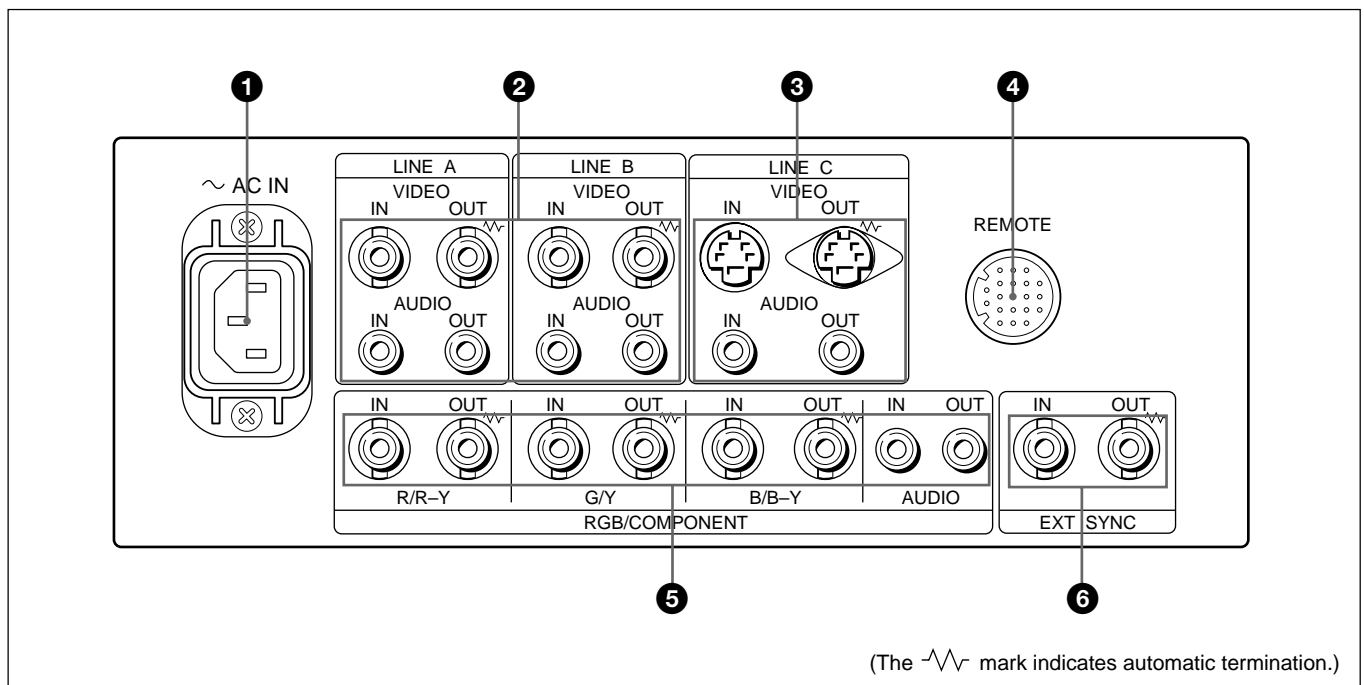
- When the LINE/RGB input selector is set to the LINE position (light off), press this selector (light on) to monitor the signal through the LINE B connectors.
- When the LINE/RGB input selector is set to the RGB position (light on), press this selector (light on) to monitor the component signal through the RGB/COMPONENT connectors.

22 A/RGB selector

- When the LINE/RGB input selector is set to the LINE position (light off), press this selector (light on) to monitor the signal through the LINE A connectors.
- When the LINE/RGB input selector is set to the RGB position (light on), press this selector (light on) to monitor the RGB signal through the RGB/COMPONENT connectors.

Location and Function of Parts and Controls

Rear Panel



❶ AC IN socket

Connect the supplied AC power cord to this socket and to a wall outlet.

❷ LINE A, LINE B connectors

Two groups (A and B) of line input connectors for the composite video and audio signals and their loop-through output connectors.

To monitor the input signal through these connectors, set the LINE/RGB selector to the LINE position (light off) and press the A/RGB or B/COMPONENT selector (light on).

VIDEO IN (BNC)

Connect to the video output of video equipment, such as a VCR or a color video camera.

For a loop-through connection, connect to the video output of another monitor.

VIDEO OUT (BNC)

Loop-through output of the VIDEO IN connector. Connect to the video input of a VCR or another monitor.

When the cable is connected to this connector, the 75-ohm termination of the input is automatically released, and the signal input to the VIDEO IN connector is output from this connector.

AUDIO IN (phono jack)

Connect to the audio output of a VCR or to a microphone via a suitable microphone amplifier. For a loop-through connection, connect to the audio output of another monitor.

AUDIO OUT (phono jack)

Loop-through output of the AUDIO IN connector. Connect to the audio input of a VCR or another monitor.

❸ LINE C connectors

Y/C IN (4-pin mini-DIN)

Connect to the Y/C separate output of a video camera, VCR or other video equipment.

For a loop-through connection, connect to the Y/C separate output of a VCR or another monitor.

Y/C OUT (4-pin mini-DIN)

Loop-through output of the Y/C IN connector.

Connect to the Y/C separate input of a VCR or another monitor.

When the cable is connected to this connector, the 75-ohm termination of the input is automatically released, and the signal input to the Y/C IN connector is output from this connector.

AUDIO IN (phono jack)

Connect to the audio output of a VCR or a microphone (via a suitable microphone amplifier).

AUDIO OUT (phono jack)

Loop-through output of the AUDIO IN connector. Connect to the audio input of a VCR or another monitor.

④ REMOTE connector (20-pin)

Connect to the tally output of a control console, special-effect generator, etc. The tally lamp on the front panel will be turned on and off by the connected equipment. This connector can also be used for connecting a remote control unit.

For details on the pin assignment of this connector, see page 19.

⑤ RGB/COMPONENT connectors

RGB signal or component signal input connectors and their loop-through output connectors.

To monitor the input signal through these connectors, set the LINE/RGB selector to the RGB position (light on), and press the A/RGB or B/COMPONENT selector (light on).

R/R-Y IN, G/Y IN, B/B-Y IN (BNC)

When the EXT SYNC selector is set to the off position (light off), the monitor operates on the sync signal from the G/Y channel.

To monitor the RGB signal

Connect to the analog RGB signal outputs of a video camera, etc.

To monitor the component signal

Connect to the R-Y/Y/B-Y component signal outputs of a Sony Betacam video camera, etc.

R/R-Y OUT, G/Y OUT, B/B-Y OUT (BNC)

Loop-through outputs of the R/R-Y IN, G/Y IN, B/B-Y IN connectors.

When the cables are connected to these connectors, the 75-ohm termination of the inputs is automatically released, and the signal inputs to the R/R-Y IN, G/Y IN, B/B-Y IN connectors are output from these connectors.

To output the RGB signal

Connect to the analog RGB signal inputs of a video printer or another monitor.

To output the component signal

Connect to the R-Y/Y/B-Y component signal inputs of a Betacam video recorder, etc.

AUDIO IN (phono jack)

Connect to the audio output of video equipment when the analog RGB or component signal is input.

AUDIO OUT (phono jack)

Loop-through outputs of the AUDIO IN connector.

⑥ EXT SYNC (external sync) connectors

Press the EXT SYNC selector (light on) to use the sync signal through this connector.

IN (BNC)

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

OUT (BNC)

Loop-through output of the IN connector. Connect to the external sync input of video equipment to be synchronized with this monitor.

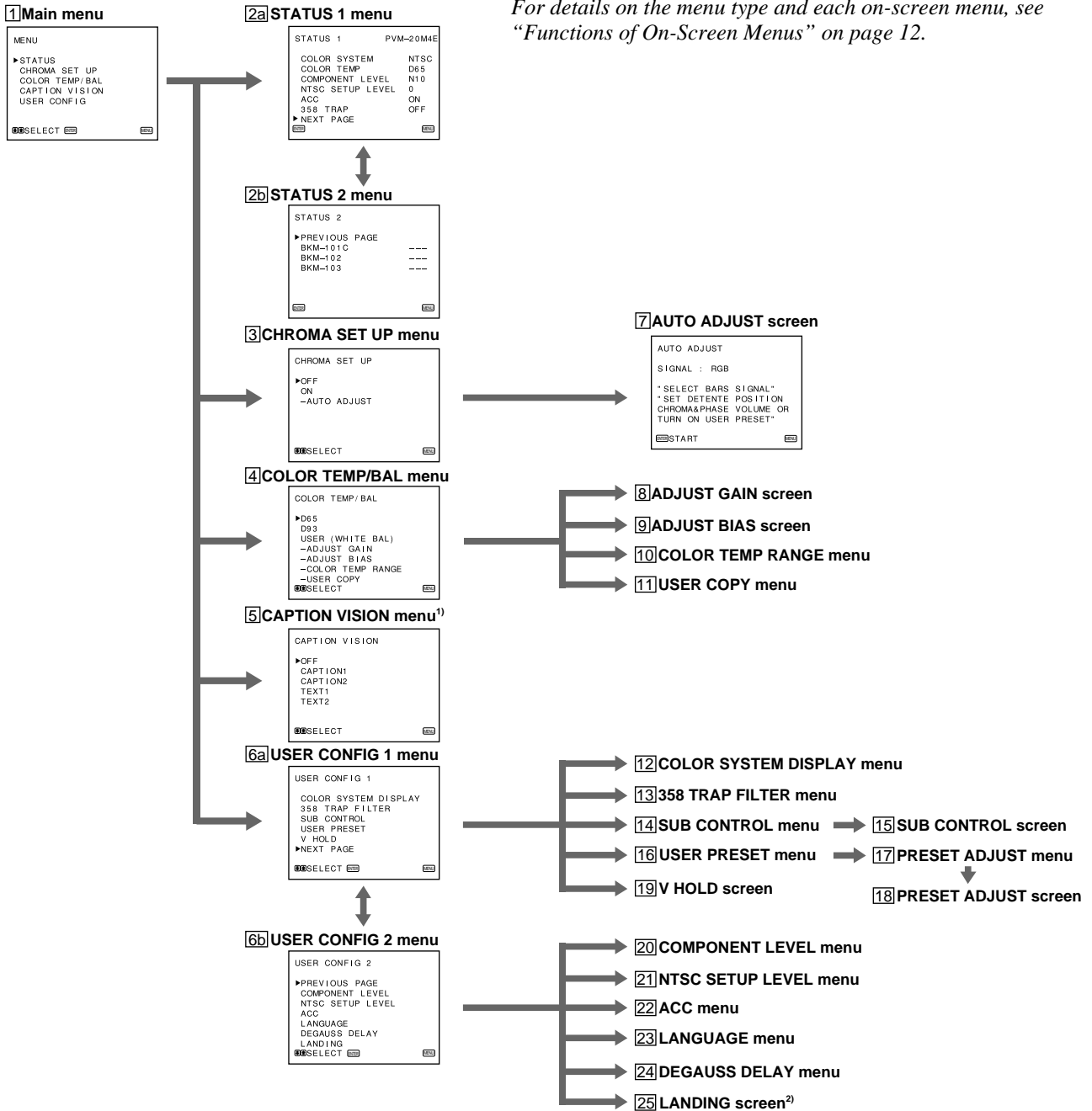
When the cable is connected to this connector, the 75-ohm termination of the input is automatically released, and the signal input to the IN connector is output from this connector.

Using On-Screen Menus

You can make various settings and adjustments of the monitor using the on-screen menus.

On-Screen Menu Configuration

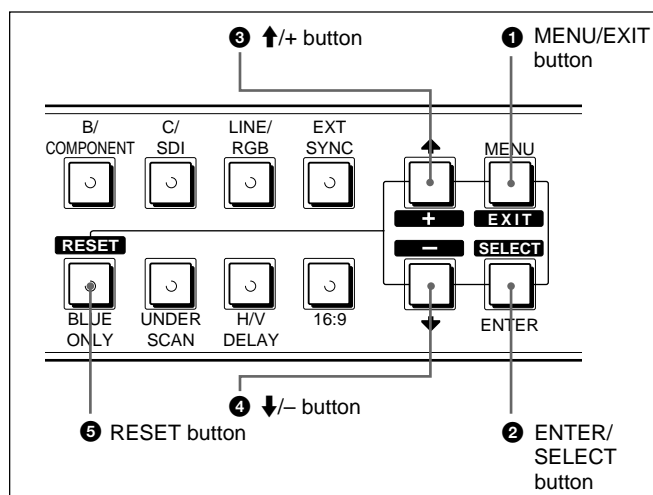
On-screen menu tree-chart



Operation through On-Screen Menus

Menu operation buttons

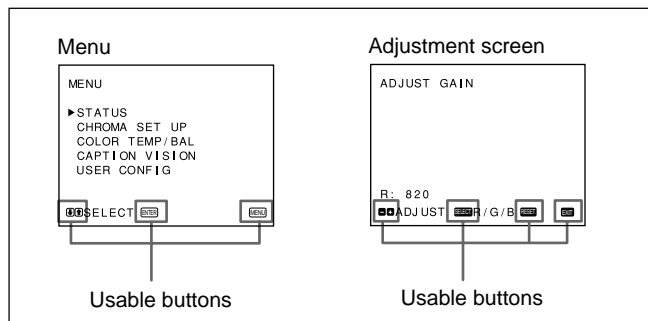
There are five menu operation buttons on the front panel of the monitor.



The following table shows how these five buttons function when using the menus.

Button	To select menu item
	To adjust the item selected
① MENU EXIT	return to the previous menu return to the previous menu
② ENTER SELECT	decide a selected item select an adjustment item
③ ↑ +	move the cursor (▶) upwards increase selected value
④ ↓ -	move the cursor (▶) downwards decrease selected value
⑤ RESET	reset current settings to the factory setting

The buttons that can be used on the menus and adjustment screens are displayed at the bottom of the screen. You can perform menu operation using the displayed buttons.



Display of the usable menu operation buttons

Operating procedures

To display the menu, follow this procedure.

- 1 Press the MENU/EXIT (①) button.
MENU ([1] : main menu) appears.
- 2 Move the cursor (▶) to the desired setting menu by pressing the ↓/- or ↑/+ (④, ③) button.
- 3 Press the ENTER/SELECT (②) button.
The setting menu selected in step 2 appears.
- 4 Move the cursor (▶) to the desired item by pressing the ↓/- or ↑/+ (④, ③) button.
- 5 Press the ENTER/SELECT (②) button.
The adjustment screen or setting menu selected in step 4 appears.

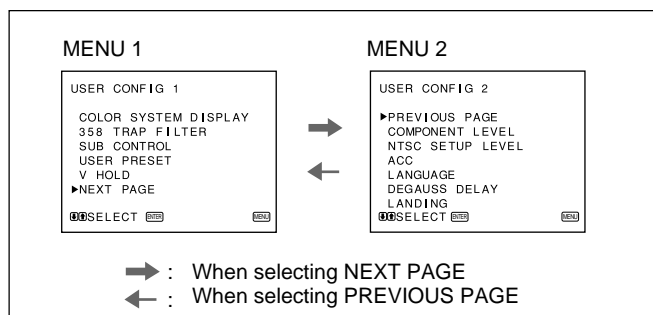
For detailed information of menus, see “Functions of On-Screen Menus” on page 12.

- 1) [5] CAPTION VISION menu is provided with PVM-14M4U/14M2U/20M4U/20M2U only.
- 2) [25] LANDING screen is provided with PVM-20M4U/20M4E/20M4A only.

Using On-Screen Menus

To display the next (or previous) page of the menu

Select NEXT PAGE on the menu to display the next page and PREVIOUS PAGE on the menu to display the previous page.



How to display the next or the previous page

To close the menu (to return to the regular screen)

Each time you press the MENU/EXIT (1) button, the on-screen menu returns to the one previously displayed. Press the MENU/EXIT (1) button repeatedly until the regular screen appears.

For PVM-14M4E/14M4A/14M2E/14M2A/20M4E/20M4A/20M2E:

For the first time when the monitor is turned on, the LANGUAGE menu (23) will appear on the screen. So, select the language you want to use.



- 1 Move the cursor (▶) to the desired language by pressing the ↓/- or ↑/+ (4, 3) button.
- 2 Press the MENU/EXIT (1) button.

Note

Unless you press the MENU/EXIT (1) button in the procedure above, the LANGUAGE menu will always appear whenever you turn on the monitor.

Functions of On-Screen Menus

There are four types of on-screen menus.

Main menu

You can enter another menu such as status menu or setting menu.

Status menu

You can confirm the current settings.

Setting menu

You can select an item or enter an adjustment screen on this menu by using the ↑/+, ↓/- and ENTER/SELECT buttons.

Adjustment screen

You can make adjustments on this screen. The adjustments you made remain unchanged until next change even if you turn off the power.

[] indicates the factory setting.)

1 Main menu

Select another menu and press ENTER/SELECT to go to the menu.

2a STATUS 1 menu

Shows the current settings.

2b STATUS 2 menu

Shows what optional kit is installed in the monitor.

3 CHROMA SET UP menu

Select ON on this menu to activate “chroma” and “phase” (NTSC signal only) adjustments done on the AUTO ADJUST screen (7). [OFF]

4 COLOR TEMP/BAL menu

Select the color temperature from among D65, D93 and USER. USER is set to D65 as the factory setting. You can adjust or change the color temperature in USER mode (a measuring instrument is required). [D65]

5 CAPTION VISION menu

This menu is provided only for PVM-14M4U/14M2U/20M4U/20M2U.

The monitor can display the signal with Caption Vision. To display it, select the caption type in this menu. [OFF]

6a) USER CONFIG 1 menu

Select an item to adjust on the menus and screens (12 through 19). To go to the USER CONFIG 2 menu, select NEXT PAGE.

6b) USER CONFIG 2 menu

Select an item to adjust on the menus and screens (20 through 24). To go to the USER CONFIG 1 menu select PREVIOUS PAGE.

7) AUTO ADJUST screen

Select the color bar signal (full, SMPTE, EIA) and press ENTER/SELECT to start automatic “chroma” and “phase” (NTSC signal only) adjustments. To activate these adjustments, select ON on the CHROMA SET UP menu (3).

8) ADJUST GAIN screen

Adjust GAIN in USER mode.

9) ADJUST BIAS screen

Adjust BIAS in USER mode.

10) COLOR TEMP RANGE menu

Select the color temperature range in USER mode.
[5000K-10000K]

11) USER COPY menu

Store the factory setting of D65 or D93 as the value for USER mode.

12) COLOR SYSTEM DISPLAY menu

Select the color system type. When AUTO is selected, the color system type being used appears on the screen each time you change the signal input. [AUTO]

13) 358 TRAP FILTER menu

Color spill or color noise may be eliminated if you select ON (NTSC signal only). Normally select OFF. [OFF]

14) SUB CONTROL menu

Select an item (CONTRAST, BRIGHT, CHROMA and PHASE controls on the front panel) to finely adjust on the SUB CONTROL screen (15).

15) SUB CONTROL screen

Finely adjust the selected item on the SUB CONTROL menu (14). Each control (CONTRAST, BRIGHT, CHROMA and PHASE control) has a click position at the center of its adjustment range. You can adjust the setting of the click position with this feature.

16) USER PRESET menu

If you select ON on this menu, the REMOTE indicator lights up and the controls on the front panel do not work. The monitor operates with the user preset settings.

To adjust the user preset settings, select the PRESET ADJUST menu (17). [OFF]

17) PRESET ADJUST menu

You can preset the BRIGHT, CHROMA, PHASE, CONTRAST, VOLUME, and APERTURE controls to a desired level and can use these settings by selecting ON on the USER PRESET menu (16).

18) PRESET ADJUST screen

Adjust the selected item (BRIGHT, CHROMA, PHASE, CONTRAST, VOLUME, and APERTURE control) on the PRESET ADJUST menu (17).

19) V HOLD screen

Adjust the vertical hold if the picture rolls vertically. When you cannot read the display, select the input that is not connected.

20) COMPONENT LEVEL menu

Select the component level from among three modes.
N10/SMPTE for 100/0/100/0 signal
BETA 7.5 for 100/7.5/75/7.5 signal
BETA 0 for 100/0/75/0 signal
For PVM-14M4U/14M2U/20M4U/20M2U [BETA 7.5]
For PVM-14M4E/14M4A/14M2E/14M2A/20M4E/20M4A/20M2E [N10/SMPTE]

Using On-Screen Menus

21 NTSC SETUP LEVEL menu

Select the NTSC setup level from two modes.

The 7.5 setup level is mainly used in north America.

The 0 setup level is mainly used in Europe.

For PVM-14M4U/14M2U/20M4U/20M2U [7.5]

For PVM-14M4E/14M4A/14M2E/14M2A/20M4E/
20M4A/20M2E [0]

22 ACC menu

Set ACC (Auto Color Control) circuit on or off. When the fine adjustment is necessary, select OFF on the ACC menu.

Normally select ON. [ON]

23 LANGUAGE menu

You can select the menu language from among five languages (English, German, French, Italian, Spanish).

[ENGLISH]

24 DEGAUSS DELAY menu

Set the delay time of auto degaussing to start working after the power is turned on. The delay time can be set within 0 to 99 seconds. [0]

25 LANDING screen

This menu is provided only for PVM-20M4U/20M4E/20M4A.

If the color is not uniform even after you press the DEGAUSS button, you can adjust the landing so as to obtain color uniformity on this screen.

The following two methods are available to adjust the landing.

When the signals of the horizontal lines are input and displayed:

Press the ↓/- or ↑/+ button until the lines are displayed on the screen as horizontally as possible.

When the signals of the white color are input and displayed:

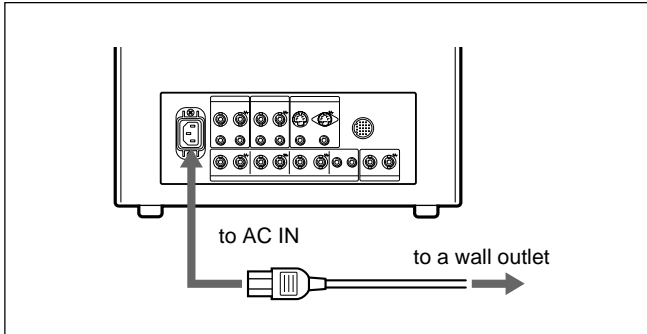
Press the ↓/- or ↑/+ button until the white color on the screen become as uniform as possible.

To reset the setting to standard (00), press the RESET button.

Connections

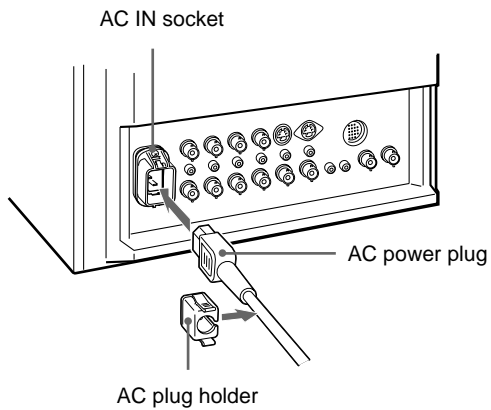
How to Connect the AC Power Cord

Connect the AC power cord (supplied) to the AC IN socket and to a wall outlet.



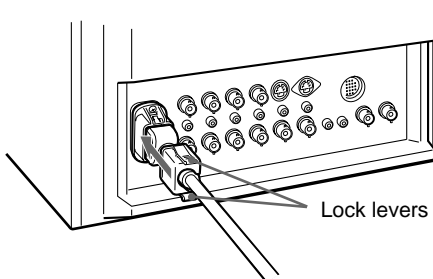
To connect an AC power cord securely with an AC plug holder

1



Plug the power cord into the AC IN socket. Then, attach the AC plug holder (supplied) on top of the AC power cord.

2



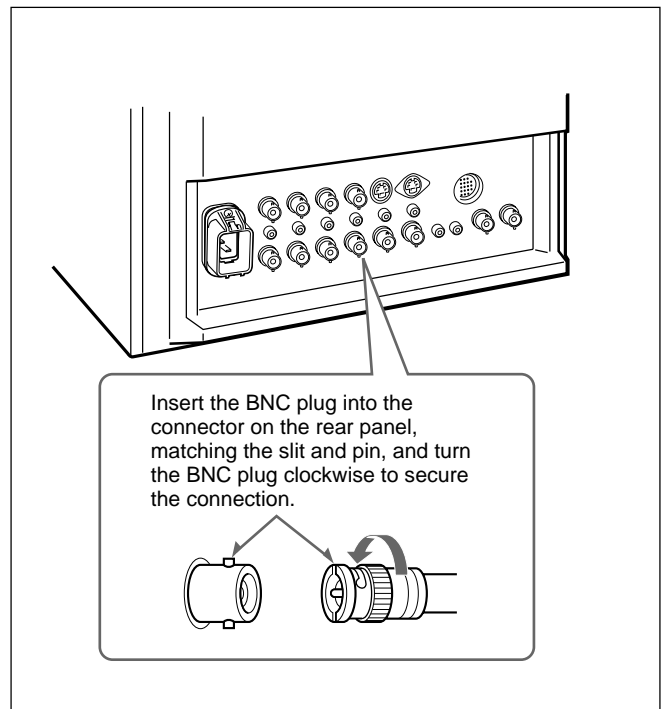
Slide the AC plug holder over the cord until it locks.

To remove the AC power cord

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

How to Connect a Cable to a BNC Connector

Connect a coaxial cable with the BNC plugs to the BNC connectors on the rear panel as illustrated below.



Specifications

Video signal

For PVM-14M4U/14M4E/14M4A/20M4U/20M4E/20M4A:

Color system	NTSC, PAL, SECAM, NTSC ^{4.43}
Resolution	800 TV lines
Aperture correction	0 dB to +6 dB
Frequency response	
LINE	10 MHz \pm 3 dB (Y signal)
RGB	10 MHz \pm 3 dB
Synchronization	AFC time constant 1.0 msec.

For PVM-14M2U/14M2E/14M2A/20M2U/20M2E:

Color system	NTSC, PAL, SECAM, NTSC ^{4.43}
Resolution	600 TV lines
Aperture correction	0 dB to +6 dB
Frequency response	
LINE	10 MHz \pm 3 dB (Y signal)
RGB	10 MHz \pm 3 dB
Synchronization	AFC time constant 1.0 msec.

Picture performance

For PVM-14M4U/14M4E/14M4A/14M2U/14M2E/14M2A:

Normal scan	7 % over scan of CRT effective screen area
Under scan	5 % underscan of CRT effective screen area
H. linearity	Less than 4.0 % (typical)
V. linearity	Less than 4.0 % (typical)
Convergence	
Central area:	Less than 0.4 mm (typical)
Peripheral area:	Less than 0.5 mm (typical)
Raster size stability	H: 1.0%, V: 1.5%
High voltage regulation	3.5 %
Color temperature	D65/D93, selectable USER (3,200K–10,000K, factory setting is D65)

For PVM-20M4U/20M4E/20M4A:

Normal scan	7 % over scan of CRT effective screen area
Under scan	5 % underscan of CRT effective screen area
H. linearity	Less than 5.0 % (typical)
V. linearity	Less than 5.0 % (typical)
Convergence	
Central area:	Less than 0.5 mm (typical)
Peripheral area:	Less than 0.7 mm (typical)
Raster size stability	H: 1.0%, V: 1.5%
High voltage regulation	4.0 %
Color temperature	D65/D93, selectable USER (3,200K–10,000K, factory setting is D65)

For PVM-20M2U/20M2E:

Normal scan	7 % over scan of CRT effective screen area
Under scan	5 % underscan of CRT effective screen area
H. linearity	Less than 5.0 % (typical)
V. linearity	Less than 5.0 % (typical)
Convergence	
Central area:	Less than 0.6 mm (typical)
Peripheral area:	Less than 1.0 mm (typical)
Raster size stability	H: 1.0%, V: 1.5%
High voltage regulation	4.0 %
Color temperature	D65/D93, selectable USER (3,200K–10,000K, factory setting is D65)

Inputs (common to all models)

LINE A/B	
VIDEO IN	BNC connector (×2), 1Vp-p ±6 dB, sync negative
AUDIO IN	Phono jack (×2), -5 dBu ^{a)} , more than 47 kilo-ohms
LINE C	
Y/C IN	4-pin mini-DIN (×1) <i>See the pin assignment on page 19.</i>
AUDIO IN	Phono jack (×1), -5 dBu ^{a)} , more than 47 kilo-ohms
RGB/COMPONENT	
R/R-Y,G/Y,B/B-Y IN:	BNC connector (×3) R, G, B channels: 0.7 Vp-p, ±6 dB Sync on green: 0.3 Vp-p, negative R-Y, B-Y channels: 0.7 Vp-p, ±6 dB Y channel: 0.7 Vp-p, ±6 dB (Standard color bar signal of 75% chrominance)
AUDIO IN	Phono jack (×1), -5 dBu ^{a)} , more than 47 kilo-ohms
EXT SYNC IN	BNC connector (×1) 4 Vp-p, ±6 dB, sync negative
REMOTE	20-pin connector (×1) <i>See the pin assignment on page 19.</i>

a) 0 dBu = 0.775 Vr.m.s.

Outputs (common to all models)

LINE A/B	
VIDEO OUT	BNC connector (×2) loop-through, Automatic 75 ohms termination
AUDIO OUT	Phono jack (×2) loop-through
LINE C	
Y/C OUT	4-pin mini-DIN (×1) loop-through, Automatic 75 ohms termination
AUDIO OUT	Phono jack (×1) loop-through
RGB/COMPONENT	
R/R-Y,G/Y,B/B-Y OUT:	BNC connector (×3) loop-through Automatic 75 ohms termination
AUDIO OUT	Phono jack (×1) loop-through
EXT SYNC OUT	BNC connector (×1) Automatic 75 ohms termination
Speaker output	Output level: 0.8 W

General

For PVM-14M4U:

CRT	SMPTE-C phosphor
Power consumption	90 W (with SDI: 99 W)
Power requirements	120 V AC, 50/60Hz, 1.0 A
Dimensions (w/h/d)	Approx. 346 × 340 × 431 mm (13 ⁵ / ₈ × 13 ¹ / ₂ × 17 inches) not incl. projecting parts and controls
Mass	Approx. 16.7kg (36 lb 13 oz)
Accessory supplied	AC power cord (1) AC plug holder (1) Tally label (1) Cable with a 20-pin connector (1)

For PVM-14M4E/14M4A:

CRT	EBU phosphor
Power consumption	90 W (with SDI: 99 W)
Power requirements	100 to 240 V AC, 50/60Hz, 1.2–0.5 A
Peak inrush current	(1) Power ON, current probe method: 18 A (240 V) (2) Hot switching inrush current, measured in accordance with European standard EN55103-1: 4 A (230 V)
Dimensions (w/h/d)	Approx. 346 × 340 × 431 mm (13 ⁵ / ₈ × 13 ¹ / ₂ × 17 inches) not incl. projecting parts and controls
Mass	Approx. 16.7kg (36 lb 13 oz)
Accessory supplied	AC power cord (1) AC plug holder (1) Tally label (1) Cable with a 20-pin connector (1)

For PVM-14M2U:

CRT	P-22 phosphor
Power consumption	90 W (with SDI: 99 W)
Power requirements	120 V AC, 50/60Hz, 1.0 A
Dimensions (w/h/d)	Approx. 346 × 340 × 431 mm (13 ⁵ / ₈ × 13 ¹ / ₂ × 17 inches) not incl. projecting parts and controls
Mass	Approx. 16.7kg (36 lb 13 oz)
Accessory supplied	AC power cord (1) AC plug holder (1) Tally label (1) Cable with a 20-pin connector (1)

Specifications

For PVM-14M2E/14M2A:

CRT	P-22 phosphor
Power consumption	90 W (with SDI: 99 W)
Power requirements	100 to 240 V AC, 50/60Hz, 1.2–0.5 A
Peak inrush current	(1) Power ON, current probe method: 18 A (240 V) (2) Hot switching inrush current, measured in accordance with European standard EN55103-1: 4 A (230 V)
Dimensions (w/h/d)	Approx. 346 × 340 × 431 mm (13 ⁵ / ₈ × 13 ¹ / ₂ × 17 inches) not incl. projecting parts and controls
Mass	Approx. 16.7kg (36 lb 13 oz)
Accessory supplied	AC power cord (1) AC plug holder (1) Tally label (1) Cable with a 20-pin connector (1)

For PVM-20M4U:

CRT	SMPTE-C phosphor
Power consumption	125 W (with SDI: 135 W)
Power requirements	120 V AC, 50/60Hz, 1.3 A
Dimensions (w/h/d)	Approx. 450 × 458 × 503 mm (17 ³ / ₄ × 18 ¹ / ₈ × 19 ⁷ / ₈ inches) not incl. projecting parts and controls
Mass	Approx. 30.0 kg (66 lb 2 oz)
Accessory supplied	AC power cord (1) AC plug holder (1) Tally label (1) Cable with a 20-pin connector (1)

For PVM-20M4E/20M4A:

CRT	EBU phosphor
Power consumption	130 W (with SDI: 140 W)
Power requirements	100 to 240 V AC, 50/60Hz, 1.6–0.6 A
Peak inrush current	(1) Power ON, current probe method: 18 A (240 V) (2) Hot switching inrush current, measured in accordance with European standard EN55103-1: 7 A (230 V)
Dimensions (w/h/d)	Approx. 450 × 458 × 503 mm (17 ³ / ₄ × 18 ¹ / ₈ × 19 ⁷ / ₈ inches) not incl. projecting parts and controls
Mass	Approx. 30.0 kg (66 lb 2 oz)
Accessory supplied	AC power cord (1) AC plug holder (1) Tally label (1) Cable with a 20-pin connector (1)

For PVM-20M2U:

CRT	P-22 phosphor
Power consumption	115 W (with SDI: 125 W)
Power requirements	120 V AC, 50/60Hz, 1.2 A
Dimensions (w/h/d)	Approx. 450 × 458 × 503 mm (17 ³ / ₄ × 18 ¹ / ₈ × 19 ⁷ / ₈ inches) not incl. projecting parts and controls
Mass	Approx. 30.0 kg (66 lb 2 oz)
Accessory supplied	AC power cord (1) AC plug holder (1) Tally label (1) Cable with a 20-pin connector (1)

For PVM-20M2E:

CRT	P-22 phosphor
Power consumption	120 W (with SDI: 130 W)
Power requirements	100 to 240 V AC, 50/60Hz, 1.5–0.6 A
Peak inrush current	(1) Power ON, current probe method: 18 A (240 V) (2) Hot switching inrush current, measured in accordance with European standard EN55103-1: 7 A (230 V)
Dimensions (w/h/d)	Approx. 450 × 458 × 503 mm (17 ³ / ₄ × 18 ¹ / ₈ × 19 ⁷ / ₈ inches) not incl. projecting parts and controls
Mass	Approx. 30.0 kg (66 lb 2 oz)
Accessory supplied	AC power cord (1) AC plug holder (1) Tally label (1) Cable with a 20-pin connector (1)

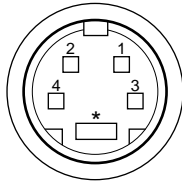
Common to all models

Operating temperature	0 to +35°C (32 to 95°F)
Transport and Storage temperature	–10 to +40°C (14 to 104°F)
Pressure	700 to 1,060 hPa
Humidity	0 to 90% (no condensation)

Design and specifications are subject to change without notice.

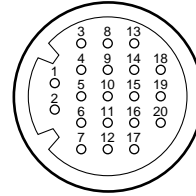
Pin assignment

Y/C IN connector (4-pin mini-DIN)



Pin No.	Signal	Description
1	Y-input	1 Vp-p, sync negative, 75 ohms
2	CHROMA subcarrier-input	300 mVp-p (PAL)/ 286 mVp-p (NTSC), burst Delay time between Y and C: within 0 ± 100 nsec., 75 ohms
3	GND for Y-input	GND
4	GND for CHROMA-input	GND

REMOTE connector (20-pin)



Pin No.	Signal	Wire color
1	Blue only	Brown
2	H/V DELAY	Red
3	MAIN/SUB*	Orange
4	EXT SYNC	Yellow
5	DEGAUSS	Green
6	R ch ON/OFF*	Blue
7	TALLY	Purple
8	LINE B	Grey
9	GND	White
10	GND	Black
11	GND	Pink
12	GND	Light Blue
13	LINE A	Spiral Orange
14	LINE/RGB	Spiral Yellow
15	GND	Spiral Green
16	L ch ON/OFF*	Spiral Blue
17	REMOTE	Spiral Purple
18	LINE C	Spiral Grey
19	UNDER SCAN	Spiral Pink
20	16:9	Spiral Light Blue

(* For digital audio control)

How to connect a remote control unit

Connect No.17 pin to one of the GND pins (No.9 – 12, and 15), then connect pins for the functions you want to use to other GND pins (No.9 – 12, and 15).

How to light the tally lamp

Connect No.7 pin to one of the GND pins (No.9 – 12, and 15).

SECTION 3 SET-UP ADJUSTMENTS

3-1. PREPARATIONS (1)

Service Mode

This set is provided with a switch for service on the front panel that can be used to make various adjustments. The operation method of this switch is explained in detail below.

1. Entering the service mode

Simultaneously press the [ENTER] key and the [DEGAUSS] key shown on the display of the menu.

2. Service mode display

(1)	(5)	(4)	(3)	(6)
(2)				

Range of Service Mode Display

- (1) The service items are largely classified into 16 types displayed by titles.
- (2) The names of the service items or READ/WRITE guidance, etc., are displayed. The names are displayed to the left and the guidance to the right.
- (3) This is the serial number for each of the service items. 1-120.
- (4) This is the adjustment data for the service items that are now stored in the RAM. Adjustments can be made by changing these values, but as long as nothing is written to the ROM the adjustment values will be erased by turning off the power or by reading, so please be careful.
- (5) When the adjustment data that is now displayed is identical with the data in the ROM, the cursor (▶) is displayed.
- (6) The present status is displayed.
 [*]: Writing to the ROM. Make sure not to turn off the power while this display is on.
 [?]: ROM reading error. In this case, an image is output with the standard adjustment data that the microcomputer itself possesses.
 [⌂]: Problem in the I2C bus.

3. Finishing the service mode

Simultaneously press the [ENTER] key and the [DEGAUSS] key shown on the display of the menu.

4. Easy ON/OFF of the service mode

If once entering the service mode after having turned on the power, easy ON/OFF is possible by once more pressing the A, B or C switch on the front panel (the LED lights) as long as the power is not turned off or as long as the service mode is not finished.

5. Change of position of the service mode display

If the switch is continuously pressed when turning on in the above easy mode, the display position moves in the V direction. This method is used when the display is outside of the effective screen area.

6. Change of service items

The items are returned with the [MENU] key and forwarded with the [ENTER] key. When a key is continuously pressed, the operation will be repeated.

7. Change of service data

The service data is made larger with the [↑] key and smaller with the [↓] key. When continuously pressing the keys, the operation will be repeated.

8. Reading of service data

When reading data from the ROM to the RAM, press the [B / O] key once and check that the READ display is shown in the guidance, and then press the [B/O] key once again. The adjustment data that is written will return to its previous state, so please be careful.

9. Writing of service data

When writing data from the RAM to the ROM, press the [DEGAUSS] key once and check that the WRITE display shown in the guidance, and then press the [DEGAUSS] key once again. Not only the displayed data will be written, but all data, so please be careful.

10. Carrying out FACTORY RESETTING

In case the adjustment data has been destroyed for some reason, and you keep pressing the [B/O] key at the beginning of the above reading, the READ guidance will change to FACTORY RESET guidance in approximately 3 seconds so that the factory resetting can be carried out. By once again pressing the [B/O] key after this, resetting will be carried out ([*] will be displayed as status) and factory resetting will be executed. However, in case the data available at the time of shipment from the factory has been destroyed, or if the ROM has been replaced, etc., or if factory setting mentioned later on has been carried out, factory resetting is executed.

11. Carrying out FACTORY SETTING

Make sure to make possible the above factory resetting by making a copy of the adjustment data when replacing the ROM. If you keep pressing the [DEGAUSS] key at the beginning of the above writing, the WRITE guidance will change into FACTORY RESET guidance after approximately 3 seconds. By once again pressing the [DEGAUSS] key after this, setting will be carried out ([*] will be displayed as status) and the data will be copied. By carrying out this operation, the selection items of the menu and the adjustment values will be reset to the standard conditions, so please be careful. If this operation is carried out once, it cannot be carried out again, but the FACTORY SET FLAG (No. 120) in the service mode can be set to 1.

SERVICE MAP

Table 3-1 Table map (1)

* Signify (The setting is vary with the destination.)
Refer to the "Table 3-1 Table map (2)."

No.	SERVICE ITEM		MAX	STD	No.	SERVICE ITEM		MAX	STD
1	NOR 50 DEF	H FREQUENCY	255	85	61	C/T1 D??	BIAS <RED>	1023	376
2		VIDEO PHASE	255	139	62		BIAS <GREEN>	1023	512
3		V SIZE	255	139	63		BIAS <BLUE>	1023	396
4	NOR 60 DEF	H FREQUENCY	255	96	64		GAIN <RED>	1023	660
5		VIDEO PHASE	255	115	65		GAIN <GREEN>	1023	620
6		V SIZE	255	137	66		GAIN <BLUE>	1023	602
7	NOR DEF	V CENTER	255	103	67		B/O <RED>	255	115
8		H SIZE	255	108	68		B/O <GREEN>	255	115
9		PIN PHASE	255	128	69	C/T2 D??	3200K SW	1	0
10		PIN AMP	255	128	70		BIAS <RED>	1023	256
11		LOWER PIN AMP	255	128	71		BIAS <GREEN>	1023	512
12		UPPER PIN AMP	255	128	72		BIAS <BLUE>	1023	512
13		SEXY	255	128	73		GAIN <RED>	1023	602
14		V LINEARITY	255	120	74		GAIN <GREEN>	1023	700
15		V BOW	63	32	75		GAIN <BLUE>	1023	672
16		LOWER BOW	63	32	76		B/O <RED>	255	95
17		V ANGLE	63	32	77		B/O <GREEN>	255	108
18	U/S DEF	V SIZE <50>	255	100	78	W/B	SUB CON <4 :3,NORMAL>	255	178
19		V SIZE <60>	255	100	79		SUB CON <4 :3,H/ DEL AY>	255	97
20		H SIZE	255	118	80		SUB CON <16 :9,NORMAL>	255	150
21		PIN PHASE	255	128	81		SUB CON <16 :9,H/V DEL AY>	255	78
22		PIN AMP	255	100	82		SUB BRIGHT	255	69
23	16 :9 NOR DEF	V SIZE <50>	255	72	83		USER B/O <RED>	255	115
24		V SIZE <60>	255	80	84		USER B/O <GREEN>	255	115
25		PIN PHASE	255	135	85	OTHER	LANDING	255	64
26		PIN AMP	255	90	86		V HOLD	255	128
27	16 :9 U/S DEF	V SIZE <50>	255	61	87		H BLANKING	255	73
28		V SIZE <60>	255	39	88		V BLANKING <50>	255	82
29		PIN PHASE	255	135	89		16 :9 BLANKING START <50>	255	32
30		PIN AMP	255	65	90		16 :9 BLANKING END <50>	255	176
31	COMPONENT	SUB PHASE	255	130	91		V BLANKING <60>	255	161
32		SUB CHROMA <NORMAL>	255	182	92		16 :9 BLANKING START <50>	255	42
33		SUB CHROMA <SMPTE>	255	170	93		16 :9 BLANKING END <50>	255	226
34		R-Y LEVEL	255	163	94		H DELAY	255	142
35	NTSC	BURST GATE PULSE WIDTH	255	52	95		V DELAY	255	104
36		CRYSTAL	255	59	96		HP POSITION	255	145
37		PHASE <NORMAL>	255	80	97		HP WIDTH <NORMAL>	255	148
38		PHASE <ACC OFF>	255	96	98		HP WIDTH <H/V DELAY>	255	62
39		B-Y PHASE	255	162	99	SYSTEM	SDI AUDIO	7	5
40		CHROMA <NORMAL>	255	98	100		358 TRAP FILTER	1	0
41		CHROMA <ACC OFF>	255	27	101		ACC	1	0
42		R-Y LEVEL	255	98	102		CAPTION VISION	7	0
43	NTSC 443	CRYSTAL	255	82	103		COMPONENT LEVEL	3	*
44		PHASE <NORMAL>	255	62	104		NTSC SETUP LEVEL	1	*
45		PHASE <ACC OFF>	255	64	105		CHROMA SET UP	1	0
46		B-Y PHASE	255	181	106		COLOR SYSTEM DISPLAY	3	0
47		CHROMA <NORMAL>	255	104	107		COLOR TEMPERATURE	3	0
48		CHROMA <ACC OFF>	255	36	108		USER PRESET	1	0
49		R-Y LEVEL	255	100	109		LANGUAGE	7	0
50	PAL	PHASE <NORMAL>	255	110	110		RGB SYNC	1	0
51		PHASE <ACC OFF>	255	105	111		OPTION BOARD	7	0
52		B-Y PHASE	255	122	112		AGING MODE	1	0
53		CHROMA <NORMAL>	255	109	113		PAL-M	1	0
54		CHROMA <ACC OFF>	255	41	114		MODEL	31	*
55		R-Y LEVEL	255	121	115		COLOR TEMP DISP 1	127	*
56	SECAM	CHROMA	255	98	116		COLOR TEMP DISP 2	127	*
57		R-Y LEVEL	255	181	117		REMOTE ADDRESS	63	0
58		COLOR BALANCE <R-Y>	255	118	118		RESERVED 1	1	0
59		COLOR BALANCE <B-Y>	225	135	119		RESERVED 2	2	0
60	C/T1 D??	3200K SW	1	0	120		FACTORY SET FLAG	1	0