SONY

MASTER SETUP UNIT

MSU-900
MSU-950

MEMORY STICK ™

OPERATION MANUAL English

1st Edition

WARNING

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

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

THIS APPARATUS MUST BE EARTHED.

For the customers in the USA

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.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

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: 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, three 16 or 18 AWG wires
Length	Minimum 1.5 m (4 ft. 15 in.), less than 2.5 m (8 ft. 3 in.)
Rating	Minimum 10 A, 125 V

Using this unit at a voltage other than 120 V 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 safely 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.

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).

Table of Contents

Using the CD-ROM Manual

The supplied CD-ROM includes operation manuals (Japanese, English, French, German, Italian, and Spanish versions).

CD-ROM System Requirements

The following are required to access the supplied CD-ROM disc.

- Computer: PC with Intel Pentium CPU
  - Installed memory: 64 MB or more
  - CD-ROM drive: × 8 or faster
- Monitor: Monitor supporting resolution of 800 × 600 or higher
- Operating system: Microsoft Windows Millennium Edition, Windows 2000 Service Pack 2, Windows XP Professional or Windows XP Home Edition

When these requirements are not met, access to the CD-ROM disc may be slow, or not possible at all.

Preparations

One of the following software applications must be installed on your computer in order to use the operation manuals contained in the CD-ROM disc.

- Adobe Acrobat Reader Version 4.0 or higher
- Adobe Reader Version 6.0 or higher

If Adobe Acrobat Reader is not installed, it may be downloaded from the following URL:

http://www.adobe.com

To Read the CD-ROM Manual

To read the operation manual contained in the CD-ROM disc, do the following:

1 Insert the CD-ROM disc in your CD-ROM drive.

A cover page appears automatically in your browser. If it does not appear automatically in the browser, double click the index.htm file on the CD-ROM disc.

2 Select and click the operation manual that you want to read.

A PDF file of the operation manual opens.

Note

If you lose the CD-ROM disc or become unable to read its content, for example because of a hardware failure, you can do one of the following:

- Purchase a new CD-ROM disc to replace one that has been lost or damaged. Contact your Sony service representative.
- Purchase printed versions of the operation manuals (Japanese/English version). Contact your Sony service representative.
  When ordering, be sure to specify the part number of the manual you want.

Part No.	Model covered
3-868-947-0X	MSU-900/950

Overview

The MSU-900/950 Master Setup Unit is designed for remote control of the BVP/HDC-series CCD Color Video Camera via the respective Camera Control Unit (CCU). The unit is connected to the CCU or a Camera Command Network Unit (CNU) which is connected to the CCU by a special cable of up to 200 m (656 feet) in length and controls the camera functions which are used most frequently in basic applications from a distance.

Features

Integral control of the camera system

When the camera network command unit is used, 12 cameras standard or 24 cameras maximum can be controlled from a single MSU-900/950. Indicators and buttons light or flash to indicate the status of the system operations. Also, guard frames are provided to protect against accidental use of those buttons vital to camera operation. These features ensure easy and error-free use of this unit.

Touch panel for various operations

In addition to the buttons and controls, the MSU-900/950 has a touch panel which permits various items to be selected and adjusted in menu format.

Controlling the picture and waveform monitors

For picture monitoring and adjustment, this unit controls output signals to the picture monitor and the waveform monitor connected to the CCU.
The signals to be sent to the monitors can be selected on this unit.

Equipped with a “Memory Stick” slot

Various data including scene files and reference files can be stored on a “Memory Stick” and reproduced at any time.

Signal transmission via a digital line

Between this master setup unit and the camera control unit, signals are digitally transmitted via a single connection cable (CCA-5), ensuring reliable signal transfer.

Parallel operation with another controller

Cameras can be concurrently controlled from this unit and another controller, such as the RCP-700-series Remote Control Panel.

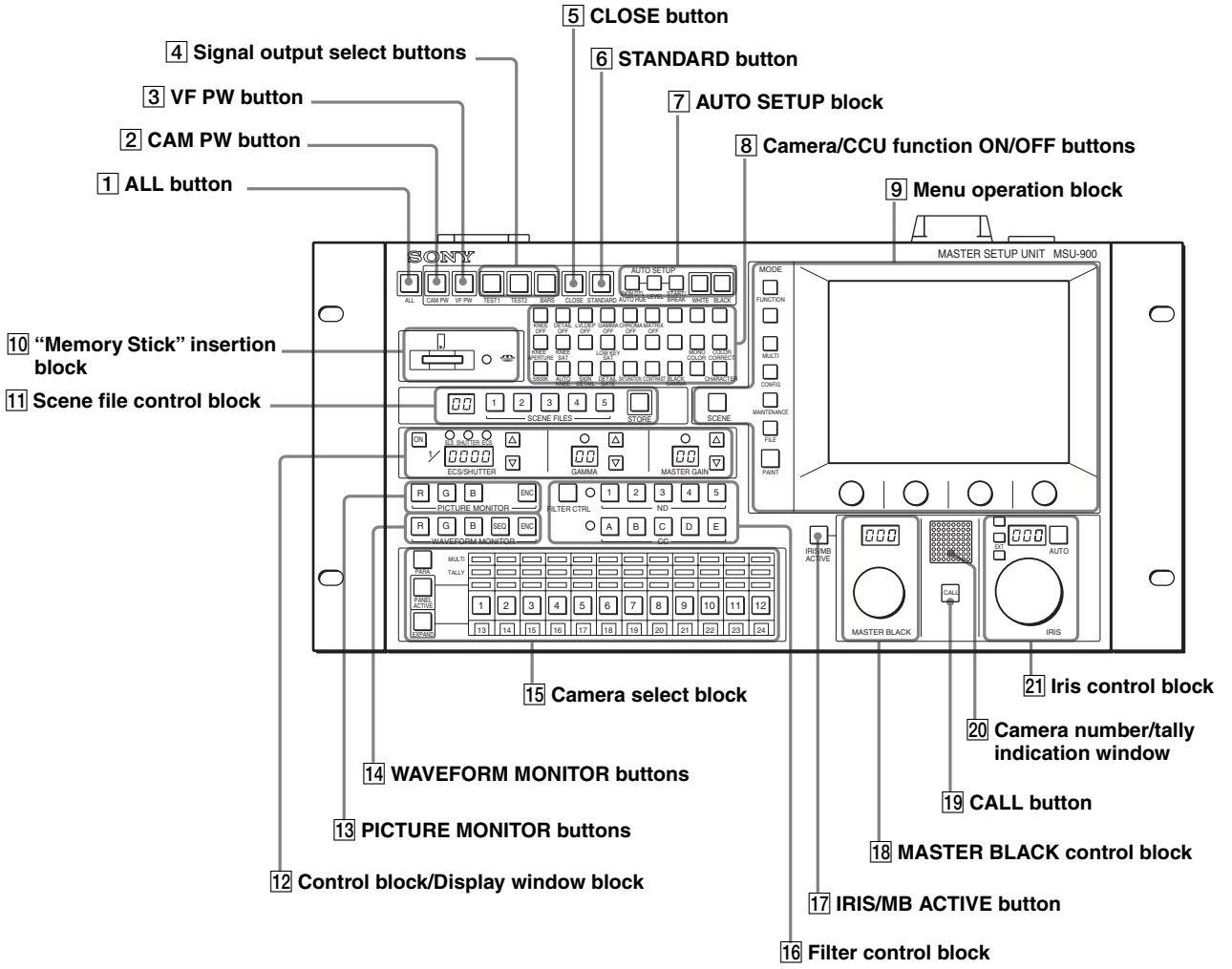
Mountable in a 19-inch rack

This unit can be mounted in a 19-inch EIA standard rack. The height of the MSU-900 is five rack units, and the height of the MSU-950 is eight rack units. If you are using an MSU-950, rack mounting along with RCP-series remote control panel is possible. Mounting brackets are needed to mount the MSU-950 in a rack. For details, consult your Sony service representative.

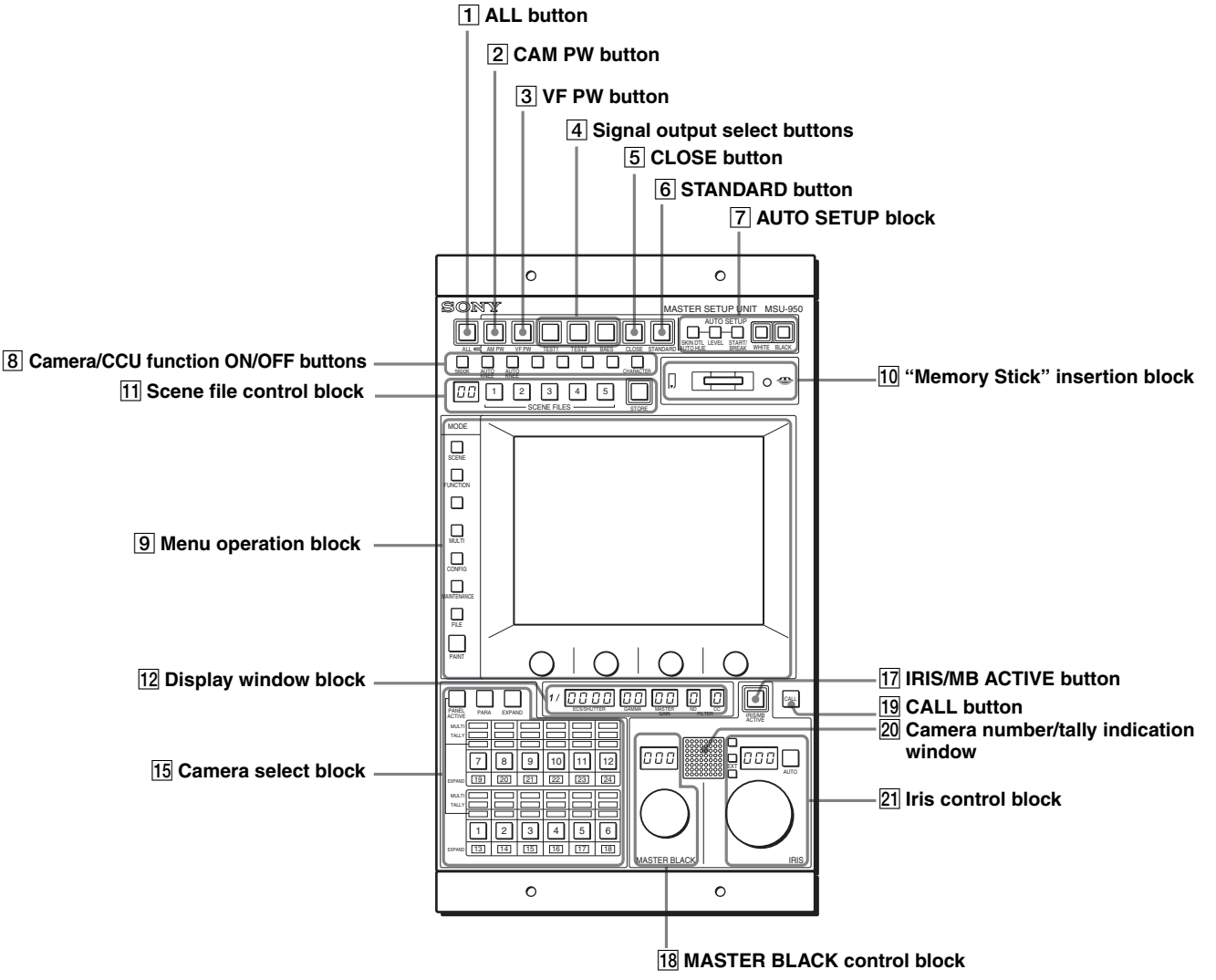
Locations and Functions of Parts

Operation Panel

MSU-900



MSU-950



1 ALL button

Press the button so it starts flashing to activate the 12 buttons located at the right (from CAM PW to AUTO SETUP) for all the connected cameras of the same group.

2 CAM PW (camera power) button

Press and light up this button to supply power to the camera. (The button promptly flashes until the camera becomes ready for transmission.)
When you press this button again, it starts flashing and the power supply to the camera is turned off.

3 VF PW (viewfinder power) button

Press and light up this button to supply power to the camera's viewfinder.
When you press the button again, it goes dark and the power supply is turned off.

4 Signal output select buttons

Press and light up one of these buttons to activate the test signal generator of the camera and send the respective signals.

TEST1: To send a signal (e.g. gamma signal) to test the video circuits

TEST2: To send a signal (e.g. staircase signal) to test the video circuits

BARS: To send a color bar signal

Note

The BARS button takes priority over the other two buttons. If the BARS button is lit, press the button to turn it off before pressing the TEST1 or TEST2 button.

5 CLOSE (iris close) button

Press and light the button to close the iris. Press again to release the close mode.

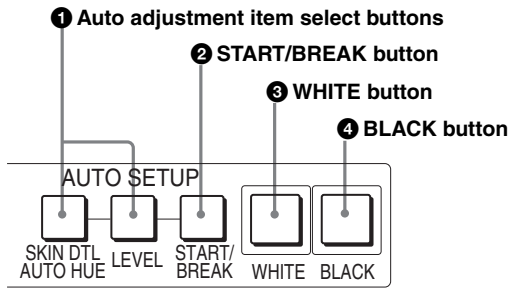
6 STANDARD button

When you press this button, the camera is initialized to its standard state and the button lights for several seconds.
If you press the button while it lights, the camera returns to the state before the button was lit.

For details, refer to the System Manual.

7 AUTO SETUP block

For automatic adjustments of cameras.



❶ Auto adjustment item select buttons

Press and light up these buttons to select the items to be automatically adjusted.
SKIN DTL AUTO HUE: Skin tone detail automatic hue
LEVEL: Gamma balance, knee point, master black level, etc.

❷ START/BREAK button

Press to start automatic adjustment of the selected items.
The button lights during adjustment and goes dark when adjustment is completed.
If you press the button when lit, the automatic adjustment is canceled and the button flashes. To stop the flashing, press the button again.

❸ WHITE (white balance) button

Press to automatically adjust the white balance.
The button lights during adjustment and goes dark when adjustment is completed.
If you press this button when lit or the START/BREAK button, the automatic adjustment is canceled and the button flashes. To stop the flashing, press the button again.

❹ BLACK (black balance) button

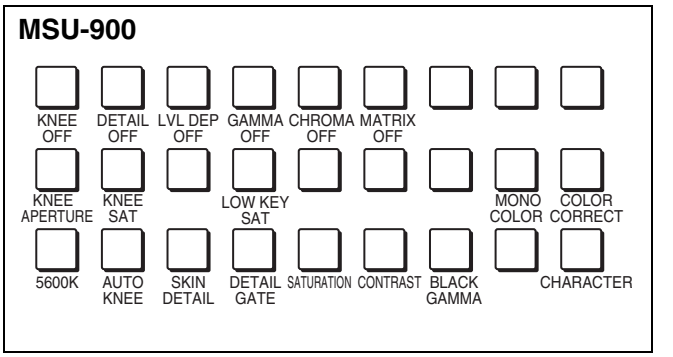
Press to automatically adjust the black balance and black set.
The button lights during adjustment and goes dark when adjustment is completed.
If you press this button when lit or the START/BREAK button, the automatic adjustment is canceled and the button flashes. To stop the flashing, press the button again.

Note

If an error occurs during adjustment, the pressed button flashes.

8 Camera/CCU function ON/OFF buttons

Various functions of the camera or the CCU can be turned on and off from this unit.
With the factory default settings, the following switch functions are assigned to 19 buttons on the MSU-900, and 4 buttons on the MSU-950. The MSU-900 has eight spare buttons, and the MSU-950 has four spare buttons.



For the MSU-950, see the next page.

Upper row (OFF when the button is lit)

KNEE OFF: Knee compensation function
DETAIL OFF: Detail compensation function
LVL DEP OFF: Level dependent function which controls the details in the dark part of a picture
GAMMA OFF: Gamma function
CHROMA OFF: Chroma function
MATRIX OFF: Linear matrix function to enhance color fidelity

• Middle row (ON when the button is lit)

KNEE APERTURE: Knee aperture function
KNEE SAT: Knee saturation function
LOW KEY SAT: To turn on/off the low key saturation function (linear matrix for dark areas)
MONO COLOR: Mono color function which mixes the chroma signals of a single hue with the luminance signal. The chroma level is modulated according to the luminance signal.
COLOR CORRECT: Color correction function for a certain hue range

• Lower row (ON when the button is lit)

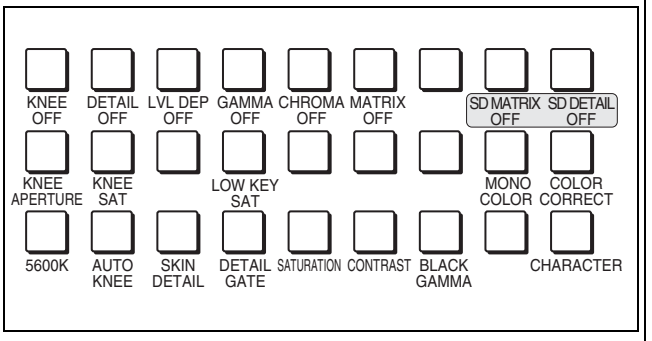
5600K: 5600K electric color temperature conversion function
AUTO KNEE: Auto knee function. When this button is lit (ON), the knee point is automatically adjusted according to the light content of the picture.
SKIN DETAIL: Skin tone detail function
DETAIL GATE: Skin tone detail gate function. When this button is lit (ON), the adjustment range of the skin tone detail is displayed in white on the monitor screen.
SATURATION: Saturation function
CONTRAST: Contrast function
BLACK GAMMA: Black gamma function

CHARACTER: System information display function. When this button is lit (ON), various information on the entire system is displayed on the monitor connected to the CHARACTER connector of the CNU-700. The display contents can be changed through a menu operation.

For MSU-900

Camera/CCU function ON/OFF buttons in use with HD equipment

When this unit is used in an HD camera system (HDC-700/750/700A/750A/900/950, HDW-700/F900, HDCU-700/900), another two camera/CCU function ON/OFF buttons become effective. Use the unit with the label for HD system (supplied) attached to the appropriate position.



- **Right two buttons in the upper row (OFF when the button is lit)**

  SD MATRIX OFF: To turn on/off the linear matrix in downconverting

  SD DETAIL OFF: To turn on/off the SD contour compensation function in downconverting

MSU-950

5600K: 5600K electric color temperature conversion function

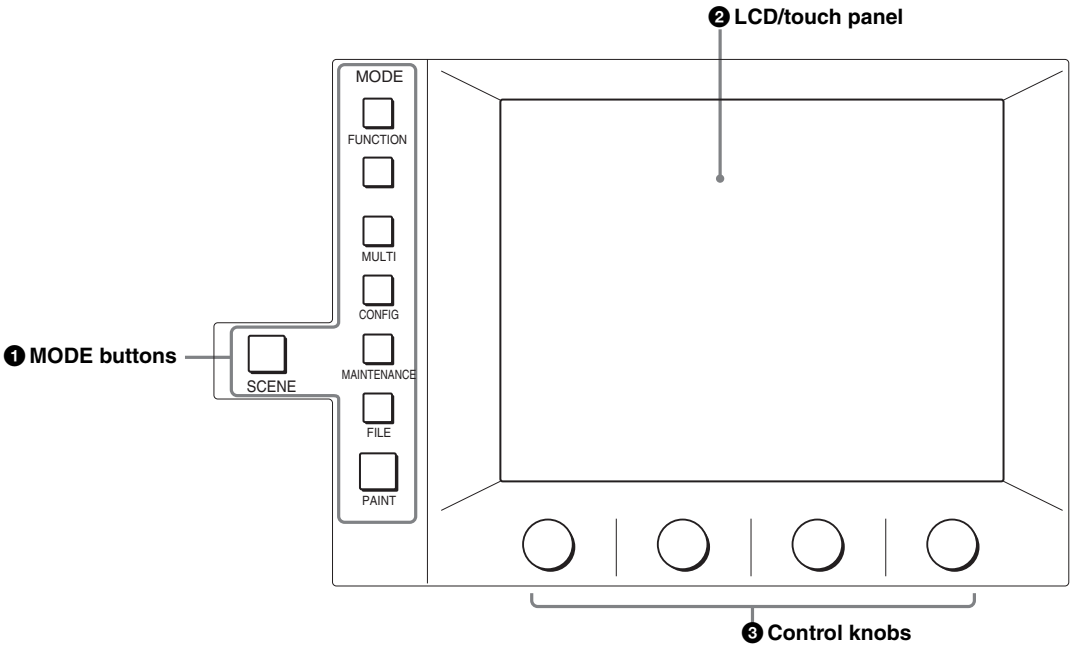
AUTO KNEE: Auto knee function. When this button is lit (ON), the knee point is automatically adjusted according to the light content of the picture.

SKIN DETAIL: Skin tone detail function

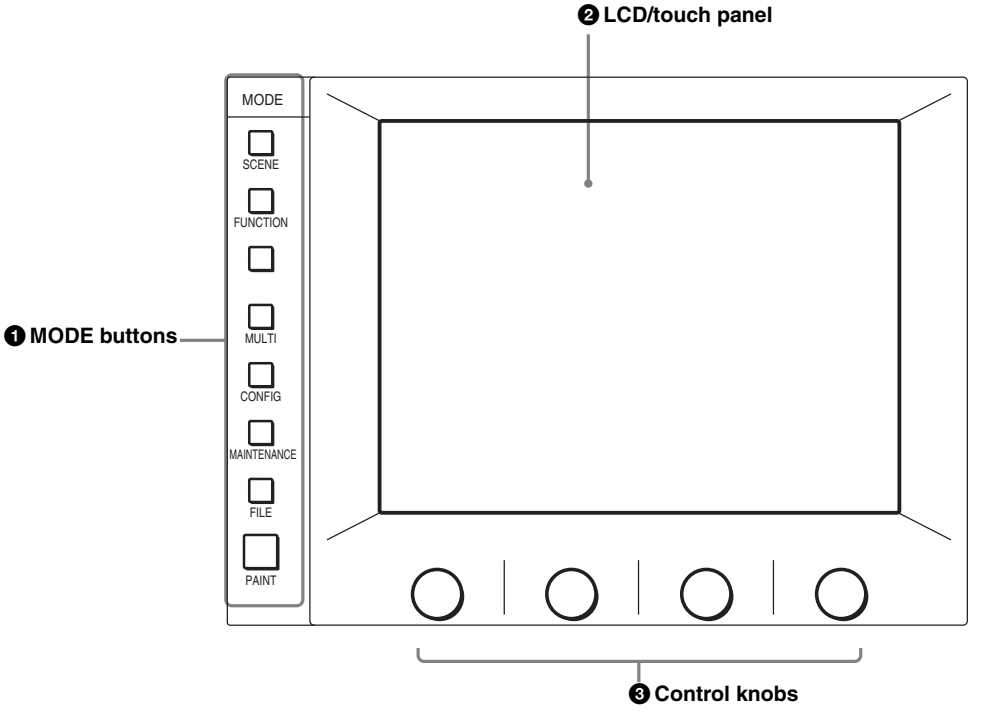
CHARACTER: System information display function. When this button is lit (ON), various information on the entire system is displayed on the monitor connected to the CHARACTER connector of the CNU-700. The display contents can be changed through a menu operation.

9 Menu operation block

MSU-900



MSU-950



❶ MODE (mode select) buttons

Select the menu mode.

If you press and light one of these buttons, the menu for the selected mode appears on the LCD.

When the lit button is pressed again, it goes dark and the menu on the display also disappears.

SCENE: Selects the Scene file operation menu to read or write scene files. This button allows you to select scene files 6 to 32, which do not correspond to the SCENE FILES buttons 1 to 5.

FUNCTION: Selects the Function menu to control various camera and CCU functions.

MULTI: Selects the Multi-Control menu to set the requirements for Master/Slave mode when setting up multiple cameras in synchronization.
CONFIG: Selects the Configuration menu to configure this unit and the entire camera system.
MAINTENANCE: Selects the Maintenance menu to set various camera maintenance items and the H and SC phases of the CCU, etc.
FILE: Selects the File control menu to retrieve and transfer reference files, lens files, and scene files in the camera or on a "Memory Stick."
PAINT: Selects the Paint control menu to adjust various paint items, such as white, black, and flare.

Note

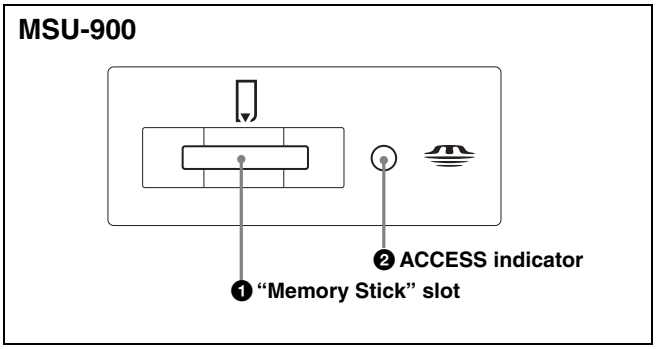
The Function and Scene file operation menus are preemptive to other menus.

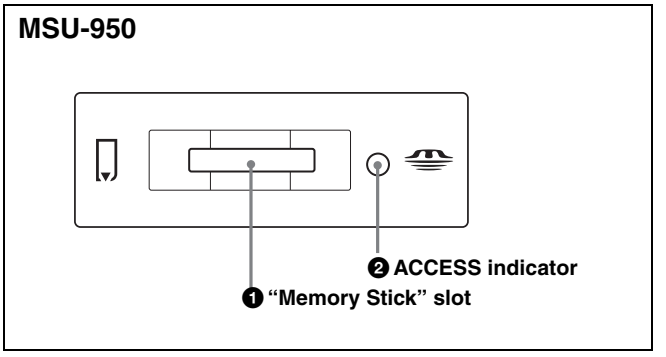
For the items on each menu, see "Menu Items" on page 21.

❷ LCD (liquid crystal display)/touch panel
Displays the menu selected with the MODE buttons and permits the displayed items to be adjusted.

❸ Control knobs (rotary encoders)
Adjust the selected items on the touch panel.

10 "Memory Stick" insertion block





❶ "Memory Stick" slot
Insert a "Memory Stick" to store reference files, lens files, and scene files from the camera or CCU.
This slot also permits software installation for version upgrades to this unit.

To insert a "Memory Stick"
Insert the "Memory Stick" into the slot so that the labeled side of the stick faces you.
When the "Memory Stick" is correctly set, the ACCESS indicator lights in green. If the indicator stays dark, the "Memory Stick" may be inserted incorrectly. Check the stick and reinsert it.
To eject the "Memory Stick," press it.

Note

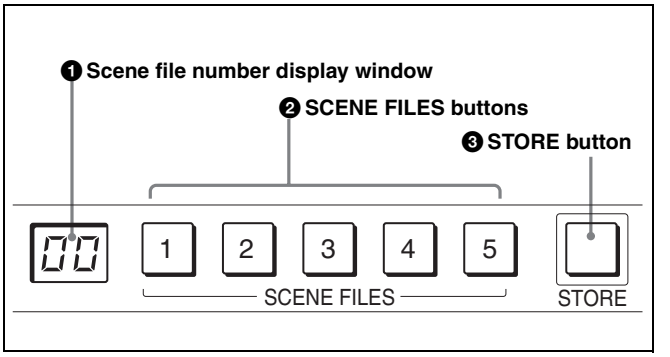
Do not eject a "Memory Stick" when the ACCESS indicator is lit in red (which means that data is being read from or written to the "Memory Stick").
This may erase data stored in the "Memory Stick."

For details, see "About "Memory Stick" Media" on page 38.

❷ ACCESS indicator
Shows the status of the "Memory Stick."

Indication	Meaning or measures
Off	No "Memory Stick" is inserted.
Lit in green	There is a "Memory Stick" in the slot.
Lit in red	Data is being read/written. If you eject the "Memory Stick" in this condition, the data is not guaranteed. All the data may be lost.

11 Scene file control block



❶ Scene file number display window
The number of the selected scene file (1 to 32) is displayed in the window.
If the selected number is 5 or less, the corresponding SCENE FILES button lights simultaneously.

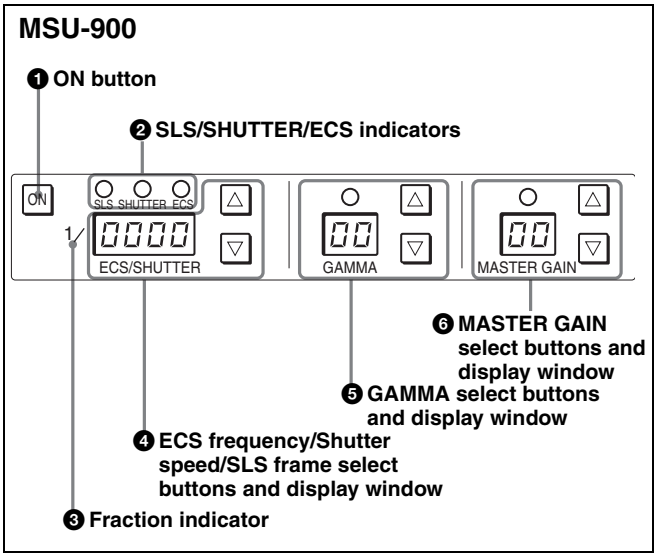
❷ SCENE FILES buttons
While the STORE button is flashing: When you press one of these buttons, the current setting data is stored as a file of the corresponding number.
When the STORE button is dark: The stored data can be retrieved by pressing and lighting up the button of the desired number. Press the lit button to turn it dark and resume the previous status.

❸ STORE button

To store a scene file, first press this button so that the button starts flashing, then press the SCENE FILES button of the desired number. When file registration is completed, the STORE button goes dark.
To cancel the registration, press the flashing button again before pressing the SCENE FILES button. The STORE button goes dark.

12 Control block/Display window block

(Display only for the MSU-950. See page 12.)



❶ ON button

Turns on and off the SLS function, the shutter function, or the ECS function of the camera.
The function is ON when this button is lit.

❷ SLS (Slow Shutter)/SHUTTER/ECS (Extended Clear Scan) indicators

The indicator of the selected function lights. The function selection is made by menu operation.
SLS: Lights in Slow Shutter mode.
SHUTTER: Lights in Shutter mode.
ECS: Lights in ECS (Extended Clear Scan) mode.

❸ Fraction indicator

Lights to indicate the denominator, such as that of the shutter speed.
The indicator lights when the selected value is less than 1S in Slow Shutter mode.

❹ ECS frequency/Shutter speed/SLS frame select buttons and display window

In ECS mode (when the ECS indicator is lit): The selected ECS frequency is displayed in the window. The frequency increases when the ▲ (up) button is pressed and decreases when the ▼ (down) button is pressed. It continuously changes when either button is held down.

In Shutter mode (when the SHUTTER indicator is lit): The fraction indicator lights and the denominator of the selected step shutter speed is displayed in the window. The speed increases when the ▲ (up) button is pressed and decreases when the ▼ (down) button is pressed. It continuously changes when either button is held down.

In Slow Shutter mode (when the SLS indicator is lit): The number of accumulated frames is displayed in the window. The number increases when the ▲ (up) button is pressed and decreases when the ▼ (down) button is pressed. It continuously changes when either button is held down.

❺ GAMMA select buttons and display window

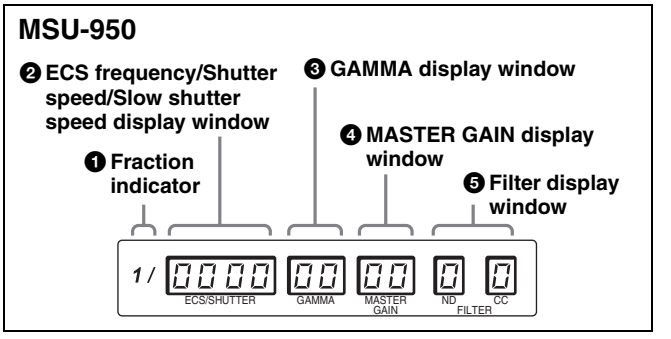
Select the step gamma. The selected value is displayed in the window.
The gamma value decreases when the ▲ (up) button is pressed and increases when the ▼ (down) button is pressed. It continuously changes when either button is held down.

Note

The lower the value, the higher the gamma effect.

❻ MASTER GAIN select buttons and display window

Select the appropriate video gain according to the illumination of the subject to be shot. The selected value (dB) is displayed in the window.
The gain value increases when the ▲ (up) button is pressed and decreases when the ▼ (down) button is pressed. It continuously changes when either button is held down.



❶ Fraction indicator

Lights to indicate the denominator, such as that of the shutter speed.
The indicator lights when the selected value is less than 1S in Slow Shutter mode.

❷ ECS frequency/Shutter speed/Slow shutter speed display window

The currently selected ECS frequency, step shutter speed or slow shutter frame is displayed in the window.
Switching the mode (ECS mode (Extended Clear Scan)/ Shutter mode/Slow Shutter mode), or setting the ECS frequency, shutter speed, or slow shutter frame is made using the Function menu.
When both ECS and Shutter are off, “oFF” is displayed.

❸ GAMMA display window
The currently selected step gamma value is displayed in the window.
The setting is made using the Function menu.
The lower the value, the higher the gamma effect.

❹ MASTER GAIN display window
The selected gain value (dB) of the camera is displayed in the window.
The setting is made using the Function menu.

❺ Filter display window
The currently selected ND and CC filters are displayed. Filter selection is made using the Function menu.

ND filter (Examples)
1: Clear
2: 1/4 ND
3: 1/8 ND
4: 1/16 ND
5: 1/64 ND

CC filter (Examples)
A: Cross filter
B: 3200K (clear)
C: 4300K
D: 6300K
E: 8000K

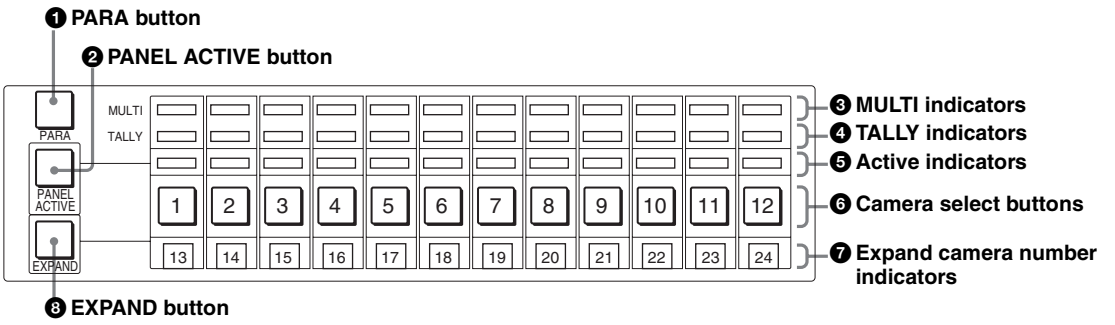
For the Function menu, see pages 20 and 28.

13 PICTURE MONITOR buttons (MSU-900 only)
Press to select the output signal from the PIX2 OUTPUT connector of CCU.
The signal corresponding to the lit button is output.
R/G/B: Select the R signal, G signal, or B signal. The signals can be selected either independently or in combination. When any of these buttons is pressed, the ENC (encode) circuit is turned off.
ENC (encode): When this button is pressed, the R/G/B circuits are turned off, and the ENC signal is output.

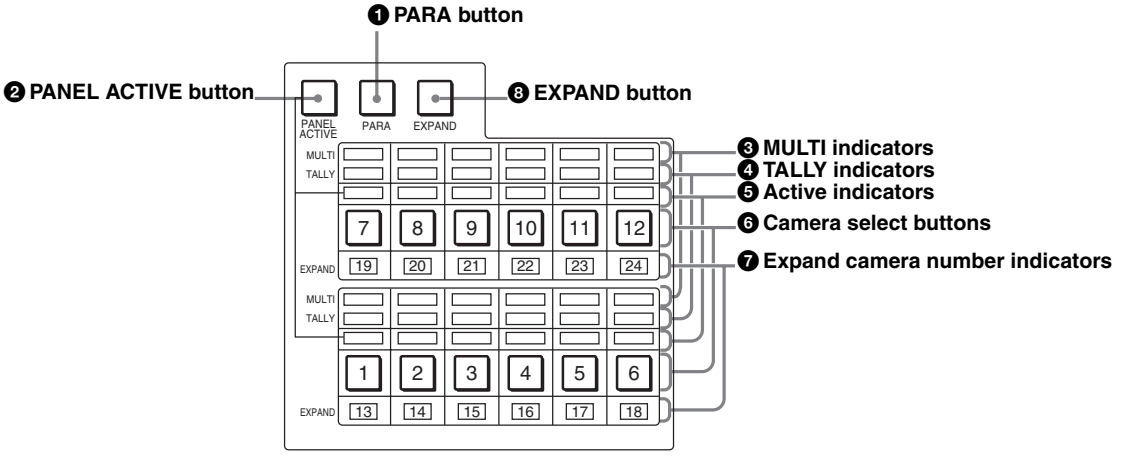
14 WAVEFORM MONITOR buttons (MSU-900 only)
Press to select the output signal from the WF2 OUTPUT connector of the CCU.
The signal corresponding to the lit button is output.
R/G/B: Select the R signal, G signal, or B signal. The signals can be selected either independently or in combination. When any of these buttons is pressed, the SEQ (sequence) and ENC (encode) circuits are turned off.
SEQ (sequence): When this button is pressed, the R/G/B and ENC circuits are turned off, and the SEQ signal is output. You can monitor the waveforms of the three R, G, and B signals in sequence on a waveform monitor.
ENC (encode): When this button is pressed, the R/G/B and SEQ circuits are turned off, and the ENC signal is output.

15 Camera select block

MSU-900



MSU-950



❶ PARA (parallel mode) button

Press and light up this button to activate Parallel mode, which enables concurrent operation with another control panel device.

If you press the button when lit, it goes dark and Parallel mode is canceled.

❷ PANEL ACTIVE button

Press and light up this button to permit the cameras selected with the camera select buttons to be controlled from this unit. The IRIS/MB ACTIVE button also lights up.

If you press the button when lit, it goes dark and the operation panel of this unit is locked.

❸ MULTI indicators

Show the Master/Slave status of the corresponding cameras 1 through 12 (when the EXPAND button is not lit) or 13 through 24 (when the EXPAND button is lit).

The indicator for the camera which is specified as the master for Master/Slave mode lights in green. The indicators for the slave cameras light in orange.

They light in red during the auto setup of the corresponding cameras. If an error occurs during the auto setup and the operation is interrupted, they will flash in red.

❹ TALLY indicators

Show the tally status of the corresponding cameras 1 through 12 (when the EXPAND button is not lit) or 13 through 24 (when the EXPAND button is lit).

The corresponding indicator lights in red when a red tally is sent to a camera, and it lights in green when a green tally is sent. When both red and green tally signals are sent, it lights in orange. When a call signal is sent to the camera, the indicator rapidly flashes in red.

❺ Active indicators
Show the control status of the corresponding cameras 1 through 12 (when the EXPAND button is not lit) or 13 through 24 (when the EXPAND button is lit).
The indicators for the cameras under control of this unit light in green and the indicators for the cameras under control of another control panel light in orange.
An indicator whose corresponding camera (or camera control unit) is not connected does not light.
An indicator lights in red when an error is detected and the self-diagnostic functions are activated in the corresponding camera or camera control unit.

❻ Camera select buttons
Select the cameras to be controlled from this unit. Press and light up the button corresponding to each desired camera.
Cameras 1 through 12 are selected when the EXPAND button is not lit, and cameras 13 through 24 are selected when the EXPAND button is lit.

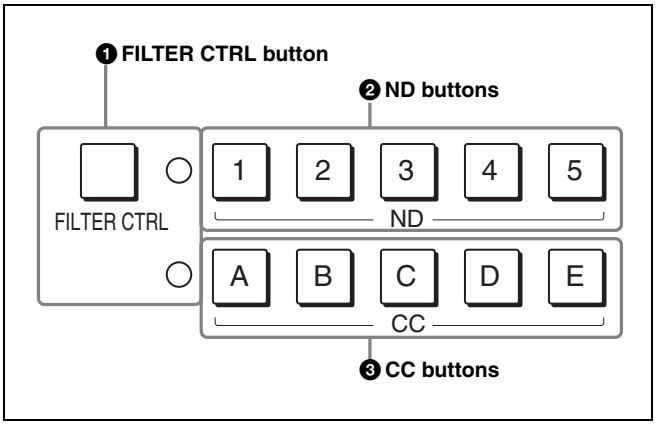
❼ Expand camera number indicators
When the EXPAND button is lit, the numbers of cameras 13 through 24 corresponding to the pressed camera select buttons (1 through 12) are displayed here.

❽ EXPAND button
Press to select the group to be selected with the camera select buttons.
Cameras 1 through 12 can be selected when this button is not lit, and cameras 13 through 24 can be selected when this button is lit.

Note

An appropriate camera command network unit (CNU-700, etc.) is required to control multiple cameras using the camera select function.

16 Filter control block (MSU-900 only)



❶ FILTER CTRL (filter control) button
Press and light up the button to enable filter selection with the CC and ND filter select buttons of this unit.

❷ ND (ND filter select) buttons
While the FILTER CTRL button is lit, press and light up one of these buttons to select the corresponding ND filter.

Examples
1: Clear
2: 1/4 ND
3: 1/8 ND
4: 1/16 ND
5: 1/64 ND

When the FILTER CTRL button is not lit, the button corresponding to the filter selected at the camera lights.

❸ CC (color temperature conversion filter select) buttons
While the FILTER CTRL button is lit, press and light up one of these buttons to select the corresponding CC filter.

Examples
A: Cross filter
B: 3200K (clear)
C: 4300K
D: 6300K
E: 8000K

When the FILTER CTRL button is not lit, the button corresponding to the filter selected at the camera lights.

17 IRIS/MB ACTIVE (iris/master black active) button
Press and light up this button to enable the iris and master black adjustment functions of this unit.
When the PANEL ACTIVE button is pressed, this button automatically lights. To disable only the iris/master black control block of the panel, press this button so that it goes dark.

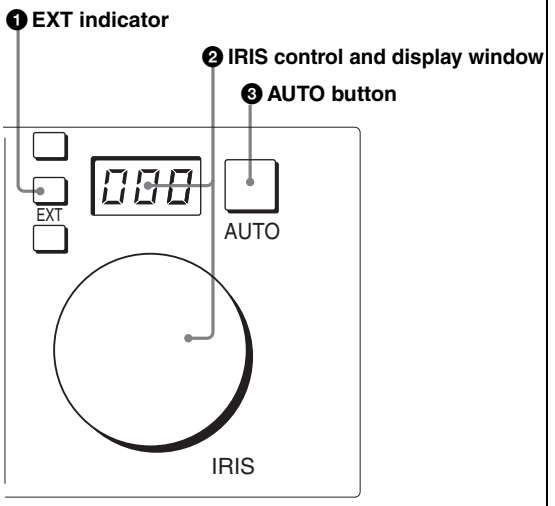
18 MASTER BLACK control block
Turn the control to adjust the master black level.
The adjustment value is displayed in the display window.

19 CALL button
Press to send a call signal to the camera, on which the CALL button lights. The tally lamps on the camera and the red tally lamp on the CCU light when not lit, or go dark when lit.
When the CALL button on the camera is pressed, the CALL button on this unit lights and a buzzer sounds.

20 Camera number/tally indication window
The number of the camera being controlled from this unit is displayed in orange.
When a red tally signal is sent to the camera, the number is displayed in black and the background of the number lights in red.
When a green tally signal is sent to the camera, the number is displayed in black and the background of the number lights in green.

When both the red and green tally signals are simultaneously sent, the left half of the background lights in red and the right half lights in green.

21 Iris control block



❶ EXT (lens extender) indicator
Lights when the lens extender is used.

❷ IRIS control and display window
When the AUTO button is not lit, you can adjust the iris manually by turning the control. The adjustment value is displayed in f numbers on the display.

When the AUTO button is lit, the reference value for automatic iris adjustment can be set in a range of ±2f with this control.
When the iris is closed, "CL" is displayed in the window.

❸ AUTO button
Press and light the button to automatically adjust the iris according to the amount of input light (Auto Iris).
When the button is lit, the reference value for automatic iris adjustment can be set in a range of ±2f with the IRIS control.
If you press the button when lit, it goes dark and manual iris adjustment is enabled.

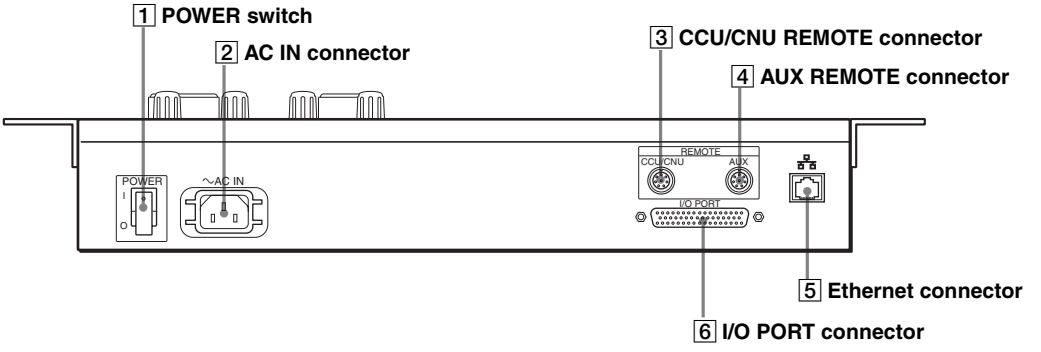
Note

If the subject being used as the reference for automatic adjustment is lost while operating a camera with the skin tone auto iris function, the skin tone auto iris stops functioning, and the iris value at that time is maintained. The AUTO button then flashes. In this condition, not only is the iris not automatically adjusted but also it cannot be changed manually. When you wish to change the iris, turn Auto Iris off.
If Auto Iris is kept ON, the skin tone auto iris will start functioning when the subject for reference is resumed.

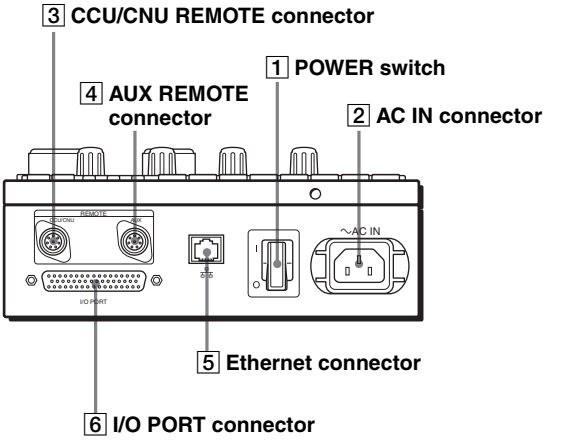
For details on skin tone auto iris, refer to the system manual.

Connector Panel

MSU-900



MSU-950



1 POWER switch

Turns on and off the power of this unit.

2 AC IN (AC power input) connector

Connect to an AC power source using an optional AC power cord. The power cord can be fixed to this unit using an optional plug retainer.

3 CCU/CNU REMOTE (camera control unit/camera command network unit remote) connector (8-pin)

Connect to the RCP/CNU connector of the CCU or the MSU connector of the CNU.

4 AUX REMOTE (auxiliary remote) connector (8-pin)

For future use.

5 Ethernet connector

For future use.

CAUTION

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

6 I/O PORT connector (50-pin)

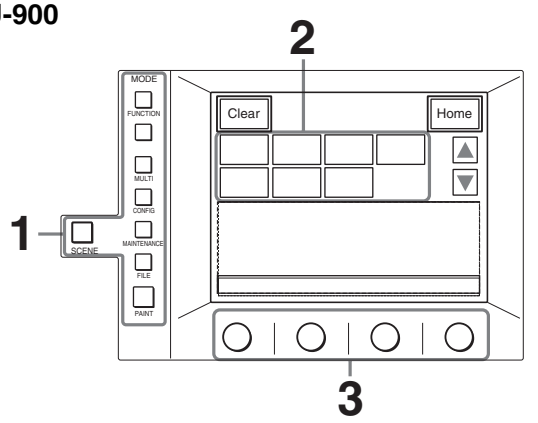
For future use.

Menu Configuration and Basic Menu Operations

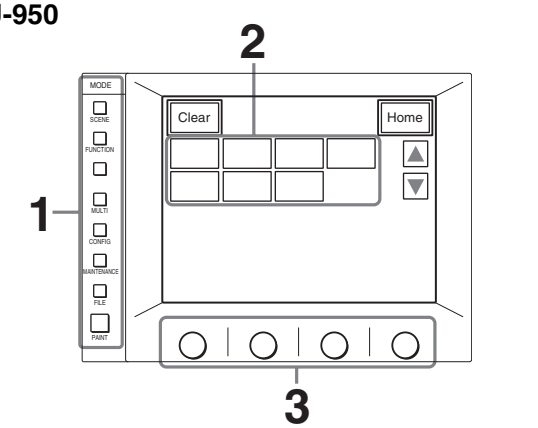
The MSU-900/950 provides menu operations for various functions such as adjustments of system equipment.

Basic Operating Procedure

MSU-900



MSU-950



1 Display a menu.

Press and light one of the MODE buttons.
The menu operation mode is initiated and the menu for the pressed button appears on the display. For the items on each menu, see the page shown in parentheses.
FUNCTION: Function menu (*page 28*)
For display configuration, see page 20.
MULTI: Multi-Control menu (*page 21*)
CONFIG: Configuration menu (*page 22*)
MAINTENANCE: Maintenance menu (*page 23*)
For adjustments, see"Initial Settings" (page 30).
FILE: File control menu (*page 24*)
PAINT: Paint menus (*page 25*)
For display configuration, see page 19.
SCENE: Scene file operation menu (*page 29*)
For operation, see page 21.

2 Select the item to be adjusted.

Press the button that shows the name of the item on the menu to obtain the corresponding adjustment display or operation area.

When the selected menu is composed of multiple pages

For menus composed of multiple pages, such as the Paint menu, press ▲ or ▼ to flip the pages.

See "Initial display" on page 19.

When a submenu is shown

Press the desired submenu item to change the display.

See "Submenu" on page 19 .

3 Set or adjust the item (parameters).

- Turn the control knobs (or press the button) to adjust (or set) the corresponding item (parameters) to the desired values.

See "Adjustment display" on page 19.

- When a message is displayed, follow the instructions and press OK.

When the adjustment is finished

- To adjust another item on the same menu, press the name of that item.
- To adjust items on another menu, press the corresponding MODE button.
- To release the menu operation mode, press the lit MODE button.
- You may select the Function menu or Scene file operation menu without exiting the currently selected menu. When you exit the Function menu or Scene file operation menu by either of the following methods, the previous menu is restored.
  - Press the lit FUNCTION or SCENE button so that it goes dark.
  - Press the lit menu select button for the previous menu.

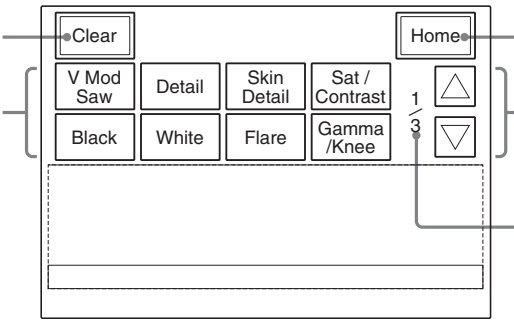
Basic Configuration of Menu Display

Initial display

Example: Paint menu

To clear the adjusted values (see the adjustment display).

The names of the items (item groups) are displayed. Press the name of the item (item group) to be adjusted. The pressed name area is highlighted and the lower half of the panel becomes the adjustment display.



Press to return to the first page of the menu.

Press either to flip the pages of the menu.

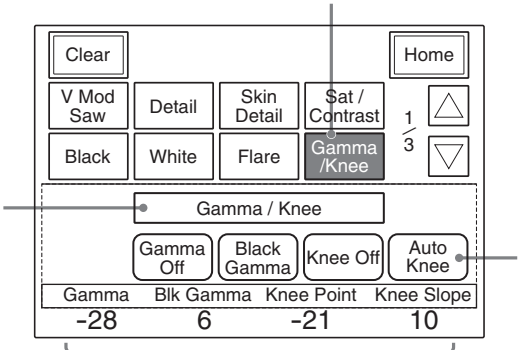
Current page number/Total number of pages (1/3 means that the Paint menu consists of 3 pages in all and that the first page of the menu is displayed at present.)

Adjustment display

Example: Gamma/knee adjustment display (when "Gamma/Knee" is selected from the paint menu)

Select button (highlighted)

The name of the selected item (item group) is displayed.
By pressing this area after pressing "Clear" whereupon it is displayed in red, all the adjustment values for the selected item (item group) are initialized to standard.



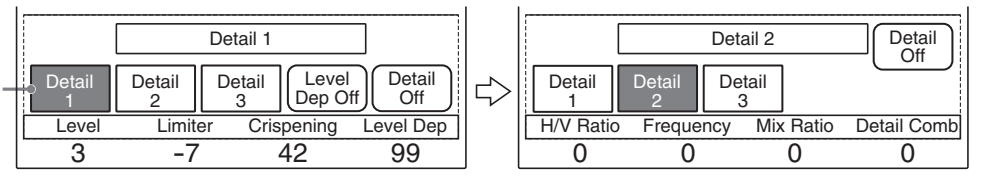
When there are any ON/OFF functions related to the adjustment, the names of the functions are displayed on this line. You can turn these functions on/off by pressing their names in the same manner as with the camera/CCU function ON/OFF buttons.

The adjustment parameters (items) for the selected item (item group) and their adjustment values are displayed.
By pressing a value area after pressing "Clear" whereupon it is displayed in red, that adjustment value is initialized to standard.

Submenu

Example: Submenu of "Detail" (when "Detail" is selected from the Paint menu)

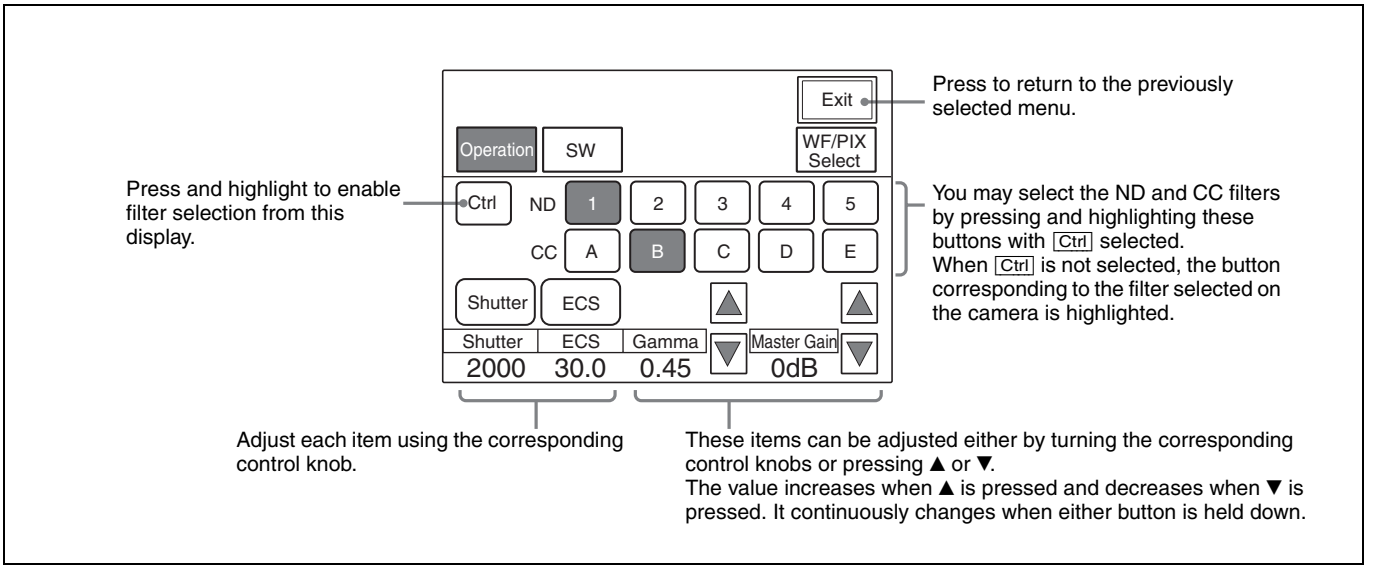
If the selected item group consists of multiple item groups, a submenu is displayed.
Press the desired submenu item (Detail1, Detail 2 or Detail 3 in this example).



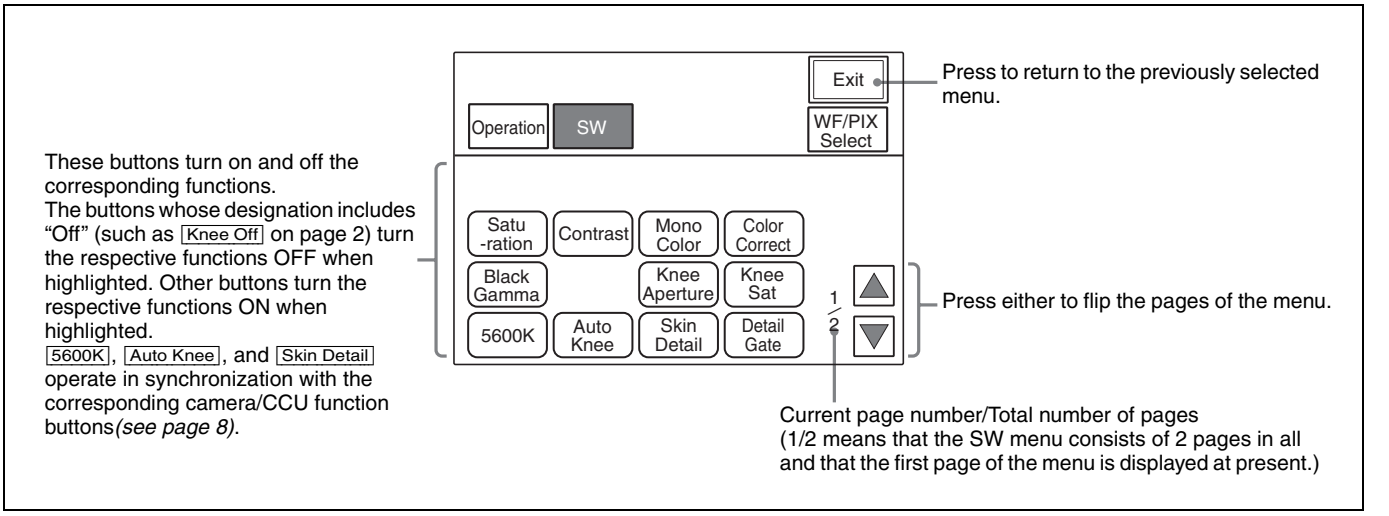
Function menu displays

When “Operation” is selected

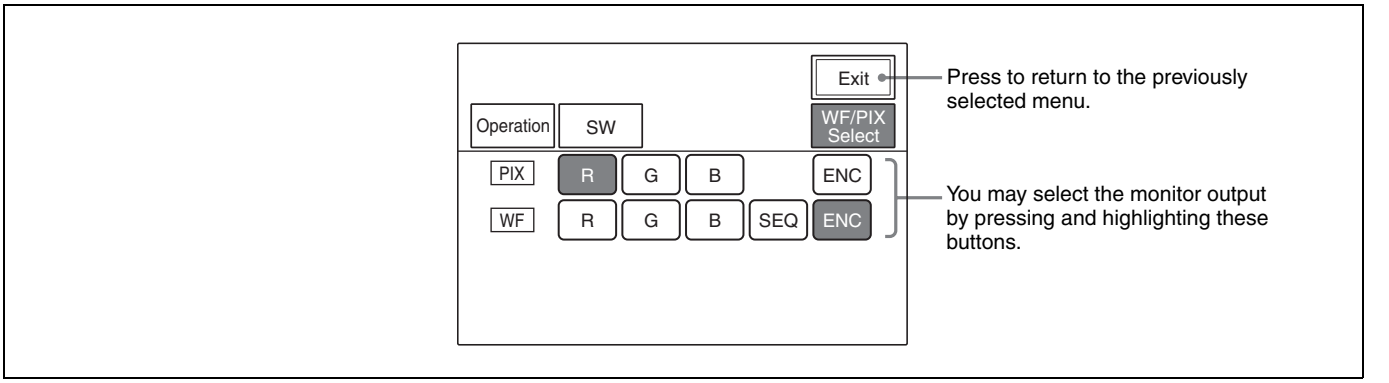
The settings on this display are displayed on the display window block (*page 12*).



When “SW” is selected

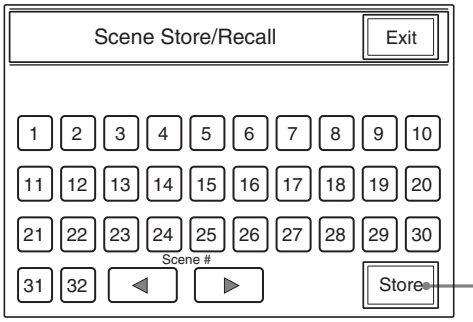


When “WF/PIX Select” is selected



Scene file operation menu displays

To recall a scene file:
Press the number of the desired scene file, and the settings stored in the corresponding scene file will be retrieved. The number of the retrieved file is highlighted. When you press the same number again, the previous condition will be restored.
You can select the files in sequence by pressing ◄ or ►.



To store the current settings in a scene file:
First press and light [Store], then select the desired scene file number.
When file registration is finished, [Store] returns to its original color.

Menu Items

The "Control items" marked with • are those assigned to the control knobs. The other items are operated on the menu display.

Note

The menu items depend on the software versions.

For details on individual functions, refer to the operation manual for the connected camera or CCU.

Multi-Control menu (selected by pressing the MULTI button)

Menu	Control item	Function
Master/Slave	Master	Specifies the master unit.
	Slave	Specifies the slave units.
	All Slave	Specifies all the cameras for the slave units.
	All Off	Cancels the entire slave unit specification.
Character	Character on	Turns the CNU character output ON/OFF.
	Default	Selects the CNU default display.
	System <#-#>	Displays the setting status of the control systems.
	Auto <#-#>	Displays the auto setup statuses.
	Diag <#-#>/One Cam	Displays the results of the self diagnostics.
	Data <#-#>/One Cam	Displays the setting status of the cameras.

Configuration menu (selected by pressing the CONFIG button)

Menu	2ndary menu	Submenu	Control item	Function
Camera	CAM Mode Setting 1/2		Test 2 Mode	Switches the waveform in Test 2 mode.
			White Setup Mode	Sets the white balance adjustment mode.
			Auto White Shading Mode	Switches the auto setup mode for white shading.
			OHB Matrix Correct Mode	Turns on/off the OHB file compensation mode.
			White/Gamma RGB	Sets the auto setup mode for white balance/ gamma.
	CAM Mode Setting 2/2		V Detail Creation Mode	Sets the V detail creation mode.
			V Detail Control Mode	Sets the V detail control mode.
CCU	Bars Char			Superimposes characters on the CCU color bar signal.
CNU	RCP Assign [a]			Performs RCP assignment.
	MSU Assign [b]			Performs MSU assignment.
MSU	MSU Adjusting	Buzzer	• Call/Touch/Switch/ Master	Adjusts the sound volume of the buzzer on the MSU.
			Call Buzzer/Touch Click Switch Click/All Off	Turns the buzzer on the MSU ON/OFF.
		LED Bright	• Switch/Tally/Other LED/ Master	Adjusts the brightness of the LEDs on the MSU.
		LCD Bright/ Contrast	• Bright/Contrast	Adjusts the brightness and the contrast of the liquid crystal display (LCD).
	MSU SW Setting		PIX/WF Synchro [b]	Specifies whether to synchronize PIX and WF with with menu operation in shading adjustments.
			PIX/WF All Mode [b]	Specifies whether to switch PIX/WF on all the cameras simultaneously.
			PIX/WF Control Mode [b]	Specifies whether to give priority to the newly pressed WF button.
			Screen Saver	Sets the screen saver of the LCD on the MSU.
	Date/Time	Date	• Year/Month/Day	Adjusts the date for the built-in clock on the MSU.
		Time	• Hour/Minute/Second	Adjusts the time for the built-in clock on the MSU.
	Security [b]	Code Change		Sets the security code.
		Status		Sets the security status.
	Memory Stick	Format		Initializes a “Memory Stick”.

a) Invalid when using the CNU-500.
b) Valid only in Engineer mode.

Maintenance menu (selected by pressing the MAINTENANCE button)

Menu	2ndary menu	Submenu	Control item	Function
Adjusting	Black Shading	R/G/B	• H Saw/H Para/V Saw/V Para	Adjusts the black shading.
			Auto B. Shading	Executes the auto black shading.
	White Shading	R/G/B	• H Saw/H Para/V Saw/V Para	Adjusts the white shading.
			White	Adjusts the white balance.
			Auto W. Shading	Executes the auto white shading.
	Black Set	Black Set	• R/G/B	Adjusts the black set.
			Gain Bounce	Turns the gain bounce mode ON/OFF.
		Black	• R/G/B/Master	Adjusts the black balance.
			ABB	Executes the black balance auto setup.
	OHB Matrix	1	• R–G/G–B/B–R	Sets the matrix coefficients.
		2	• R–B/G–R/B–G	Sets the matrix coefficients.
		Multi	• Phase/Hue/Saturation	Adjusts the multi matrix.
	Phase	SC	• SC	Adjusts the SC phase.
			• BF	Adjusts the black burst signal phase.
		H	• Coarse/Fine	Adjusts the H phase.
	VBS Level	VBS Level 1	• Y/Sync/I Black/Q Black	Adjusts the VBS levels 1.
		VBS Level 2	• Chroma/SC Quad/Q Level	Adjusts the VBS levels 2.
		Y/C Level [a)]	• Y/R–Y/B–Y	Adjusts the Y/C level of the YC or AD board.
		Y/C Black [a)]	• Y/R–Y/B–Y	Adjusts the black level of the YC or AD board.
	Camera Output	Level	• Y/R–Y/B–Y	Adjusts the camera signal levels.
		Black	• Y/R–Y/B–Y	Adjusts the black levels.
	SDI Output	Level	• Y/R–Y/B–Y	Adjusts the signal levels for SDI output of the AD board.
		Black	• Y/R–Y/B–Y	Adjusts the black levels for SDI output of the AD board.
Auto Setup		Auto White		Executes the white balance auto setup.
		Auto Black		Executes the black balance auto setup.
		Auto Level		Executes the level auto setup.
		Auto Hue	1 to 3	Executes the skin detail auto hue setup.
			Auto Skin Iris	Executes the skin tone auto iris setup.
		Auto W.Shading		Executes the auto white shading.
		Auto B.Shading		Executes the auto black shading.
Lens Adjusting	Flare		• R/G/B	Adjusts the flare balance.
	V Mod Saw		• R/G/B	Adjusts the V modulation.
			D Shad Comp	Turns the dynamic shading ON/OFF.
			V Mod Saw Off	Turns the V modulation ON/OFF.
	Auto Iris		(patterns)	Selects the auto iris patterns.
			• Level	Adjusts the auto iris level.
			• APL Ratio	Adjusts the auto iris APL ratio.
			• Iris Gain	Adjusts the auto iris gain.

Menu	2ndary menu	Submenu	Control item	Function
VCS Adjusting	Monitor Level		• WF Level/WF Chroma	Adjusts the signal levels for a waveform monitor.
			• Low/Middle/High/100%	Adjusts the ratio of character signal to video signal.
			Character on	Turns the VCS character display ON/OFF.

a) Invalid when using the CNU-500.

File control menu (selected by pressing the FILE button)

Menu	Submenu	Control item	Function
Reference	Ref. Store		Stores the reference file.
	Ref. Transfer	CAM → MS	Transfers the reference file (from a camera to a “Memory Stick”).
		MS → CAM	Transfers the reference file (from a “Memory Stick”).
		MS → CAMs	Transfers the reference file (from a “Memory Stick”).
		CAM → CAMs	Transfers the reference file (from a camera to multiple cameras).
	Adjusting	(Paint menu items)	Adjusts the items to be stored.
Scene File	Scene Transfer	CAM → MS	Transfers a scene file (from a camera to a “Memory Stick”).
		MS → CAM	Transfers a scene file (from a “Memory Stick” to a camera).
		MS → CAMs	Transfers a scene file (from a “Memory Stick” to multiple cameras).
		CAM → CAMs	Transfers a scene file (from a camera to multiple cameras).
		Delete	Deletes a scene file.
	Adjusting	(Paint menu items)	Adjusts the items to be stored.
Lens File	Lens Store		Stores a lens file.
	Auto White		Executes white balance auto setup.
	Lens Select	Select File	Selects a lens file.
		Change Name	Changes the lens file name.
	Adjusting	(Lens Adjusting items)	Adjusts the items to be stored.
OHB File	OHB Store		Stores an OHB file.
	Auto W.Shading		Executes auto white shading setup.
	Auto B.Shading		Executes auto black shading setup.
	Auto White		Executes auto white balance setup.
	Auto Black		Executes auto black balance setup.
	Adjusting	Black Shading	Adjusts the black shading.
		White Shading	Adjusts the white shading.
		Black Set	Adjusts the black shading.
		Matrix	Adjusts the OHB matrix.
Memory Stick	Format		Initializes a “Memory Stick.”

Paint menus (selected by pressing the PAINT button)

There are three Paint menus, 1 through 3, for selection on the menu display.

Paint menu 1

Menu	Submenu	Control item	Function
Black		• R/G/B/Master	Adjusts the black balance.
		ABB	Executes the black balance auto setup.
White		• R/G/B	Adjusts the white balance.
		AWB	Executes the white balance auto setup.
		ATW	Executes the white balance auto trace.
Flare		• R/G/B	Adjusts the flare balance.
		Flare Off	Turn the flare ON/OFF.
Gamma/Knee		• Gamma	Adjusts the master gamma.
		• Blk Gamma	Adjusts the master black gamma.
		• Knee Point	Adjusts the master knee point.
		• Knee Slope	Adjusts the master knee slope.
		Gamma Off	Turns the gamma ON/OFF.
		Black Gamma	Turns the black gamma ON/OFF.
		Knee Off	Turns the knee ON/OFF.
		Auto Knee	Turns the auto knee ON/OFF.
V Mod Saw		• R/G/B /Master	Adjusts the V modulation.
		V Mod Saw Off	Turns the V modulation ON/OFF.
Detail	Detail 1	• Level	Adjusts the detail level.
		• Limiter	Adjusts the detail limiter.
		• Crispening	Adjusts the detail crispening.
		• Level Dep	Adjusts the level dependence.
		Level Dep Off	Turns the level dependence ON/OFF.
		Detail Off	Turns the detail ON/OFF.
	Detail 2	• H/V Ratio	Adjusts the detail H/V ratio.
		• Frequency	Adjusts the detail boost frequency.
		• Mix Ratio	Adjusts the detail mix ratio.
		• Detail Comb	Adjusts the detail comb.
		Detail Off	Turns the detail ON/OFF.
	Detail 3	• W.Limiter	Adjusts the white limiter.
		• B.Limiter	Adjusts the black limiter.
		• Fine	Adjusts the fine detail level.
		• Knee Apert	Adjusts the knee aperture.
		Knee Aperture	Turns the knee aperture ON/OFF.
		Fine Detail	Turns the fine detail ON/OFF.
		Detail Off	Turns the detail ON/OFF.

Menu	Submenu	Control item	Function
Skin Detail	1/2/3 (common)	• Level	Adjusts the skin detail level.
		• Phase	Adjusts the skin detail phase.
		• Width	Adjusts the skin detail width.
		• Saturation	Adjusts the skin detail saturation.
		Auto Hue #	Executes the skin detail hue auto setup (each channel).
		Gate #	Turns the skin detail gate ON/OFF (each channel).
		Skin Dtl #	Turns the skin detail ON/OFF (each channel).
		Skin Detail	Turns the skin detail ON/OFF (all channels).
SAT/Contrast		• Saturation	Adjusts the saturation.
		• Contrast	Adjusts the contrast.
		Saturation	Turns the saturation ON/OFF.
		Contrast	Turns the contrast ON/OFF.

Paint menu 2

Menu	Control item	Function
Gamma	Gamma 0.40/ 0.45/ 0.50	Sets the step gamma.
	• R/G/B/Master	Adjusts the gamma.
	Gamma Off	Turns the gamma ON/OFF.
Black Gamma	• R/G/B/Master	Adjusts the black gamma.
	Black Gamma	Turns the black gamma ON/OFF.
	Low Range	Sets the black gamma control range (low).
	L Mid Range	Sets the black gamma control range (low middle).
	H Mid Range	Sets the black gamma control range (high middle).
	High Range	Sets the black gamma control range (high).
Gamma Table	• Standard	Selects the sort of standard.
	Standard	Turns the gamma table (standard) ON/OFF.
	Gamma Off	Turns the gamma ON/OFF.
Auto Knee	• Point Limit	Adjusts the point limit for auto knee.
	• Auto Slope	Adjusts the knee slope for auto knee.
	Adaptive	Turns the adaptive highlight control for auto knee ON/OFF.
	Knee Off	Turns the knee ON/OFF.
	Auto Knee	Turns the auto knee ON/OFF.
Knee Point	• R/G/B/Master	Adjusts the knee point.
	Knee Max	Turns the knee max ON/OFF.
	Auto Knee	Turns the auto knee ON/OFF.
	Knee Off	Turns the knee ON/OFF.
Knee Slope	• R/G/B/Master	Adjusts the knee slope.
	Auto Knee	Turns the auto knee ON/OFF.
	Knee Off	Turns the knee ON/OFF.

Menu	Control item	Function
Knee Sat	• Level	Adjusts the knee saturation.
	• Knee Point	Adjusts the master knee point.
	• Knee Slope	Adjusts the master knee slope.
	Knee Sat	Turns the knee saturation ON/OFF.
White Clip	• R/G/B/Master	Adjusts the white clip.
	White Clip Off	Turns the white clip ON/OFF.

Paint menu 3

Menu	Submenu	Control item	Function
Matrix	Matrix 1	• R–G/G–B/B–R	Adjusts the matrix coefficients.
	Matrix 2	• R–B/G–R/B–G	Adjusts the matrix coefficients.
	Multi	• Phase	Adjusts the multi matrix phase.
		• Hue	Adjusts multi matrix hue.
		• Saturation	Adjusts the multi matrix saturation.
	(common to all sub-menus)	Mlt Matrix	Turns the multi matrix ON/OFF.
		Preset Matrix	Turns the preset matrix ON/OFF.
		User Matrix	Turns the user matrix ON/OFF.
		Matrix Off	Turns all the matrixes ON/OFF.
Color Correct	A/B/C/D/E/F (the same items)	Correct #	Turns the independent color corrector ON/OFF.
		Color Correct	Turns the color corrector ON/OFF.
		• Phase/Width	Adjusts the color corrector.
		• Hue/Saturation	
Low Key Set		• Level	Adjusts the saturation.
		Low Range/L. Mid Range/ H. Mid Range/High Range	Selects the control range.
		Low key Set	Turns the low key saturation ON/OFF.
Comb [a)]		• Level	Adjusts the comb filter.
		Comb	Turns the comb filter ON/OFF.
Notch [b)]		• Level	Adjusts the rejection level of the notch filter.
		• Frequency	Adjusts the target frequency of the notch filter.
		Notch	Turns the notch filter ON/OFF.
Mono Color		• Saturation/Hue	Adjusts the mono color.
		Mono	Turns the mono color ON/OFF.
Cross Color		• Level	Adjusts the cross color suppression.
		CCS	Turns the cross color suppression ON/OFF.
Auto Iris		• Pattern	Selects the pattern for auto iris.
		• Phase	Adjusts the skin tone auto iris phase.
		• Width	Adjusts the skin tone auto iris width.
		Auto Iris	Turns the auto iris ON/OFF.
		Normal Mode	Selects Normal mode for auto iris.
		Skin Mode	Selects Skin mode for auto iris.
		Auto Hue	Executes the auto hue.
		Auto Iris Gate	Turns the skin tone auto iris gate ON/OFF.

Menu	Submenu	Control item	Function
SLS/S-EVS/ECS		• SLS	Adjusts the slow shutter function.
		• Shutter	Adjusts the shutter speed.
		• ECS	Adjusts the ECS frequency.
		• S-EVS	Adjusts the Super EVS.
		SLS	Turns the slow shutter mode ON/OFF.
		Shutter	Turns the shutter mode ON/OFF.
		ECS	Turns the ECS mode ON/OFF.
		S-EVS	Turns the Super EVS mode ON/OFF.

a) NTSC model only

b) PAL model only

Function menu (selected by pressing the FUNCTION button)

Menu	Submenu	Control item	Function
Operation		Ctrl	Selects the filter remote or local mode.
		ND (1/2/3/4/5)	Selects ND filters (when Ctrl is highlighted).
		CC (A/B/C/D/E)	Selects CC filters (when Ctrl is highlighted).
		Shutter	Turns the shutter mode ON/OFF.
		ECS	Turns the ECS mode ON/OFF.
		• Shutter	Selects the shutter speed.
		• ECS	Selects the ECS frequency.
		• Gamma	Selects the step gamma (selection with ▲/▼ is also possible).
		• Master Gain	Selects the master gain (selection with ▲/▼ is also possible).
SW	page 1	5600K	Turns 5600K electric color temperature conversion function ON/OFF.
		Auto Knee	Turns the auto knee function ON/OFF. When this button is highlighted (ON), the knee point is automatically adjusted according to the light content of the picture.
		Skin Detail	Turns the skin tone detail function ON/OFF.
		Detail Gate	Skin tone detail gate function. When this button is highlighted (ON), the adjustment range of the skin tone detail is displayed in white on the monitor screen.
		Black Gamma	Turns the black gamma function ON/OFF.
		Knee Aperture	Turns the knee aperture function ON/OFF.
		Knee Sat	Turns the knee saturation function ON/OFF.
		Saturation	Turns the saturation function ON/OFF.
		Contrast	Turns the contrast function ON/OFF.
		Mono Color	Turns the mono color function ON/OFF. This function mixes the chroma signals of a single hue to the luminance signal. The chroma level is modulated according to the luminance signal.
		Color Correct	Turns the color correction function for a certain hue range ON/OFF.

Menu	Submenu	Control item	Function
SW	page 2	Knee Off	Turns the knee compensation function ON/OFF (OFF when highlighted).
		Gamma Off	Turns the gamma function ON/OFF (OFF when highlighted).
		Detail Off	Turns the detail compensation function ON/OFF (OFF when highlighted).
		Matrix Off	Turns the linear matrix function to enhance color fidelity ON/OFF (OFF when highlighted).
		Level Dep Off	Turns the level dependence which controls the details in the dark part of a picture ON/OFF (OFF when highlighted).
		Chroma Off	Turns the chroma function ON/OFF (OFF when highlighted).
WF/PIX Select		PIX (R/G/B/ENC)	Select output signal from the PIX2 OUTPUT connector of the CCU. R/G/B: Outputs each of red, green, and blue signals, or a combination. ENC: Outputs an encoded signal.
		WF (R/G/B/SEQ/ENC)	Select output signal from the WF2 OUTPUT connector of the CCU. R/G/B: Outputs each of red, green, and blue signals, or a combination. SEQ: Monitors the waveforms of the three red, green, and blue signals in sequential mode. ENC: Outputs an encoded signal.

Scene file operation menu (selected by pressing the SCENE button)

Control item	Function
1 to 32	Select 32 scene files directly.
◀/▶	Select previous or next numbered scene files in sequence.
Store	Registers a scene file.

Initial Settings

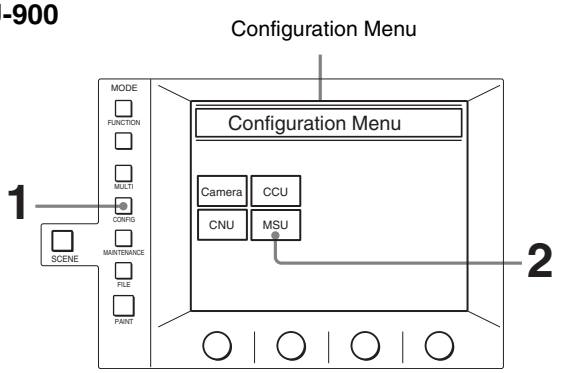
For a system using the MSU-900/950, you will need to set parameters for control of your system from the MSU-900/950 as well as the operating conditions of the MSU-900/950.
The MSU-900/950 has Engineer mode, which allows you to assign cameras to be controlled from the MSU-900/950 and limit the operations on the MSU-900/950.
To authorize specific persons to use this Engineer mode, specify a security code in advance. Once the security code is set, the MSU-900/950 will enter Engineer mode when this security code is input.

Specifying the Security Code

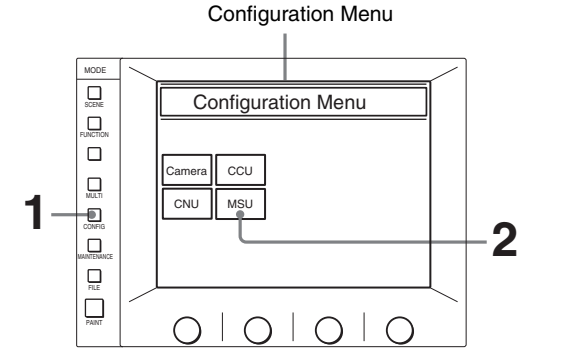
You can set, change, or release the security code for entering Engineer mode as follows:

To set a new security code

MSU-900



MSU-950

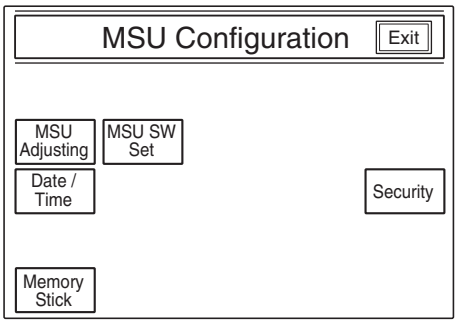


1 Press to light the CONFIG button.

The Configuration Menu appears on the display.

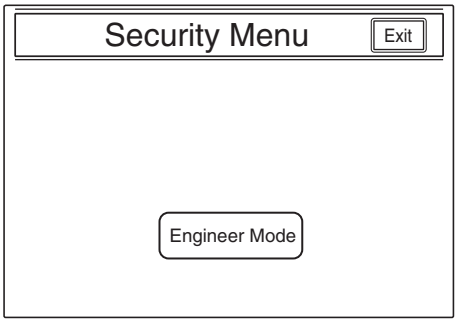
2 Press [MSU].

The MSU Configuration menu appears.



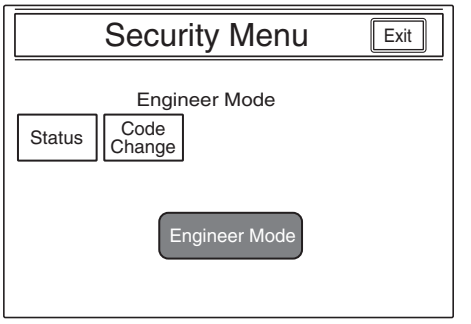
3 Press [Security].

The Security Menu appears.



4 Press and highlight [Engineer Mode].

The Security Menu items appear.

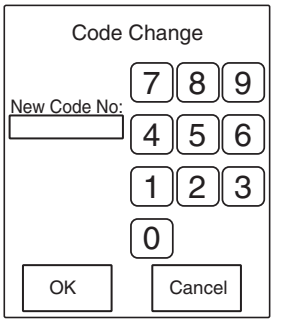


Note

If [Code Change] does not appear, perform steps 1 and 2 of *"To cancel the security code" (page 32)*. Press and highlight [Code Enable], and then exit the menu momentarily by pressing [Exit]. Follow the procedure *"To set a new security code"* again from the beginning, and [Code Change] will appear.

5 Press [Code Change].

The numeric keys and field for entering a new code No. are displayed.



6 Enter the desired code (1 to 8 digits) using the numeric keys, then press OK.

Note

Each digit you input will be displayed as an asterisk.

The message "Retype New Code No:" is displayed.

7 Enter the same code you entered in step **6** once again, then press OK.

The Security Menu display is restored.

8 Press Exit.

The specified security code is now registered. When you next press Engineer Mode on the Security Menu, the numeric keys appear, the code input is requested, and the MSU-900/950 will enter Engineer mode if you enter the code properly and press OK.

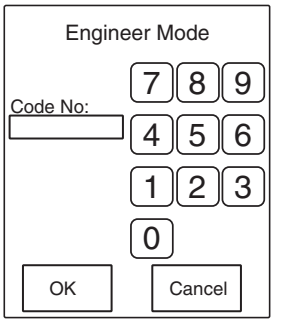
To change the security code

When the registered code must be changed, proceed as follows.

1 Display the Security Menu by following steps **1** through **3** of the previous procedure for setting a new code.

2 Press Engineer Mode.

The numeric keys and field for entering the code No. are displayed.

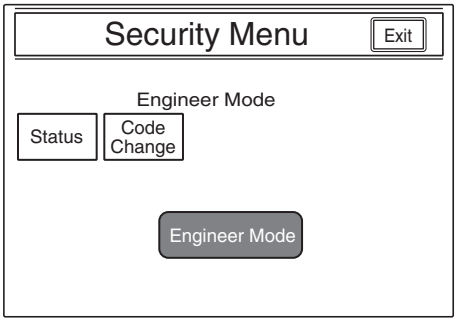


3 Enter the old security code using the numeric keys, then press OK.

Note

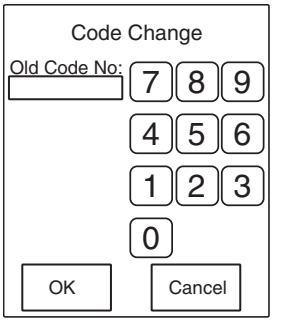
Each digit you input will be displayed as an asterisk.

The Security Menu items appear.



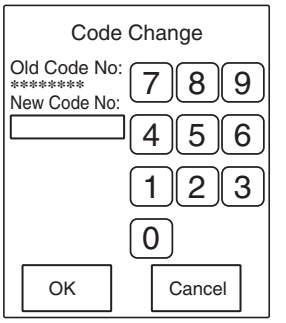
4 Press Code Change.

The numeric keys and field for entering the old code No. are displayed.



5 Enter the old code, then press OK.

The field for entering a new code No. appears.



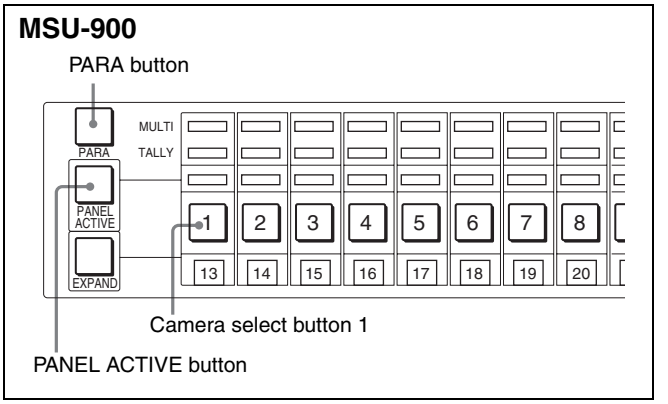
6 Specify a new code by following steps **6** through **8** of the previous procedure for setting a new code.

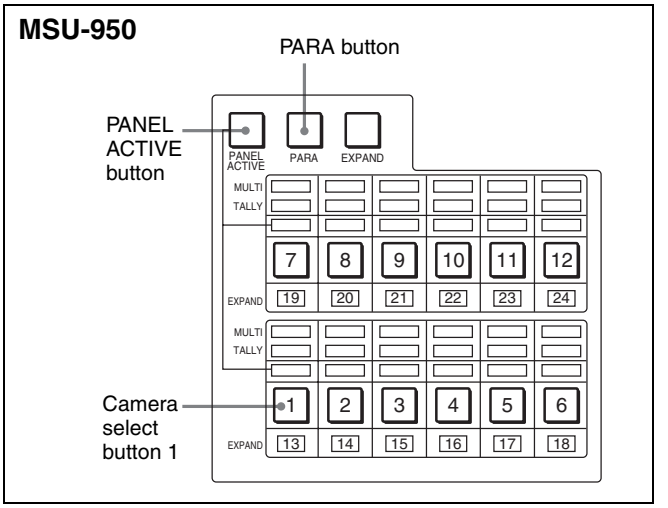
To cancel the security code

If the operator forgets the security code, or if an adjustment in Engineer mode becomes necessary in an emergency when the unauthorized operator is absent, the security code can be canceled by the following procedure:

1 Turn on the power to the MSU-900/950 while holding down PARA, PANEL ACTIVE, and camera select button 1.

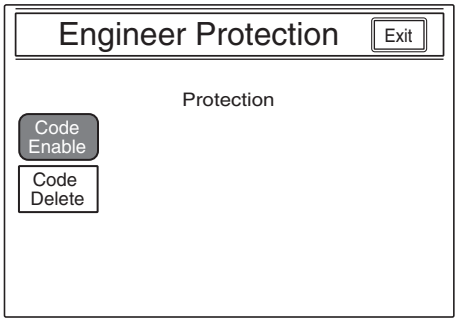
The numeric keys appear on the display.





2 Press [0] [3] [5] [9] on the numeric keys to enter "0359" in the field for the security code, then press [OK].

The Engineer Protection display appears.



3 To delete the security code, press [Code Delete].

To temporarily disable the security code, press and highlight [Code Enable]. (Pressing it again returns it to its original color, and the security code is enabled.)

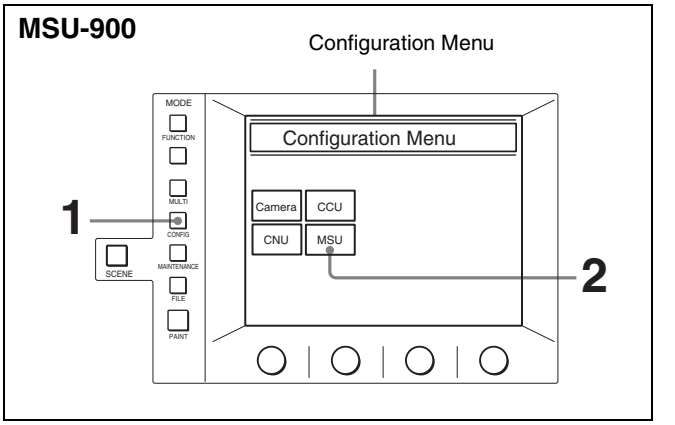
4 The message "Code Delete, OK?" is displayed if you press [Code Delete] in step **3**. Press [OK] .

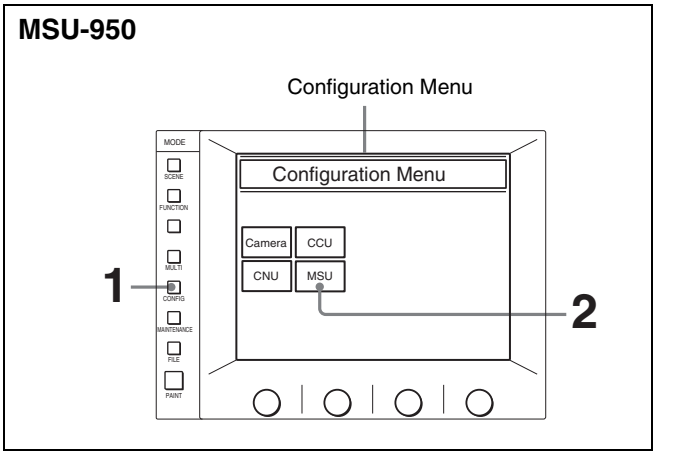
The Engineer Protection display is restored.

5 Press [Exit].

Setting the Security Status

You can limit the control functions of the MSU-900/950 when required.
This status setting is enabled in Engineer mode.



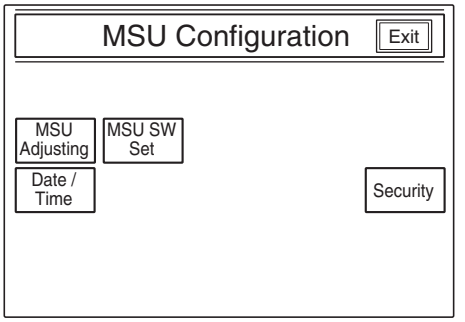


1 Press to light the CONFIG button.

The Configuration Menu appears on the display.

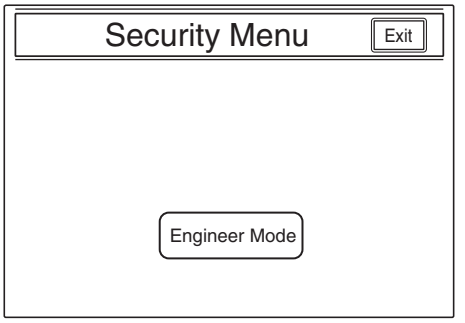
2 Press [MSU].

The MSU Configuration menu appears.



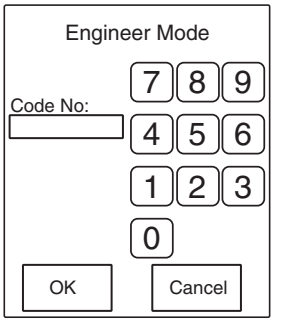
3 Press Security.

The Security Menu appears.



4 Press and highlight Engineer Mode.

The numeric keys and field for entering the code No. are displayed.

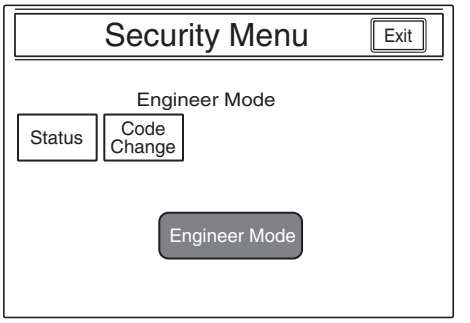


5 Enter the security code using the numeric keys, then press OK.

Note

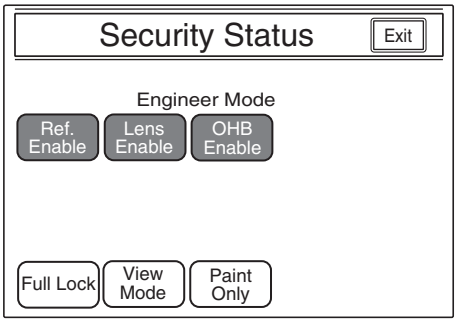
Each digit you input will be displayed as an asterisk.

The Security Menu items appear.



6 Press Status.

The Security Status setting display appears.



7 Set the statuses for control from the MSU-900/950.

Ref. Enable**:** Set it to highlighted to enable the setting in the reference file (Factory setting: ON).
Lens Enable**:** Set it to highlighted to enable the setting in the lens files (Factory setting: ON).
OHB Enable**:** Set it to highlighted to enable the setting in the OHB files (Factory setting: ON).
Full Lock**:** Set it to highlighted to fully disable the MSU-900/950 (Factory setting: OFF).
View Mode**:** Set it to highlighted to disable all operations from the MSU-900/950 other than data reference (Factory setting: OFF). (Only the display and indicators will be active. Any settings and adjustments will be disabled.)
Paint Only**:** Set it to highlighted to enable paint control only (Factory setting: OFF).

8 When the status settings are completed, press Exit.

The Security Menu display in step **5** is restored.

9 Press Engineer Mode to exit Engineer mode.

The statuses specified in step **7** become valid.

Note

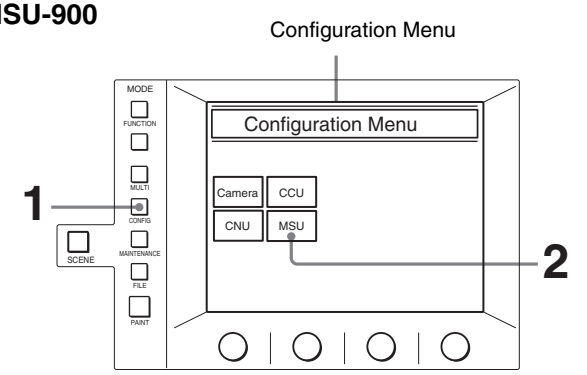
All operations are enabled in Engineer mode regardless of the above status settings.

Setting the Operating Conditions of the MSU-900/950

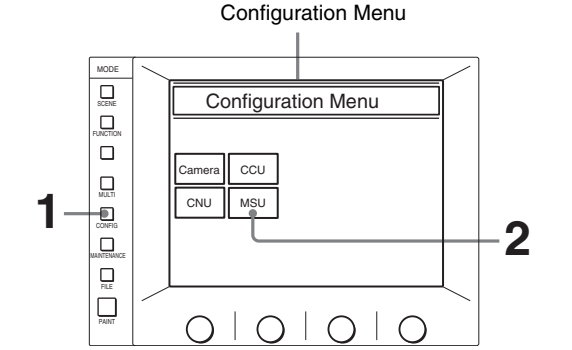
By using the MSU Configuration menu, you can also set the built-in clock of the MSU-900/950 and adjust various conditions of the MSU-900/950, such as the sound volume of the warning buzzer and the brightness of the lamp and LCD.

To display the MSU Configuration menu

MSU-900



MSU-950

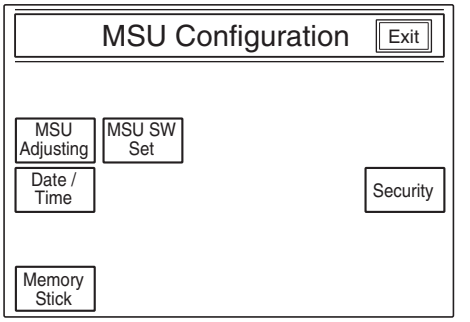


1 Press to light the CONFIG button.

The Configuration Menu appears on the display.

2 Press [MSU].

The MSU Configuration menu appears.

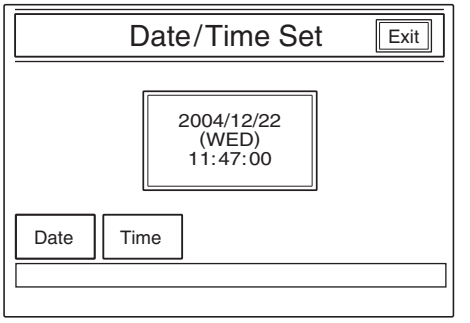


To set the built-in clock

The MSU-900/950 has a built-in clock to record the date and time when reference and scene files are saved to a "Memory Stick".
To set the clock, proceed as follows:

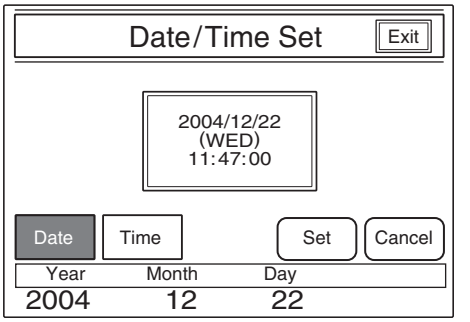
1 Press [Date/Time] on the MSU Configuration menu.

The current setting is displayed on the Date/Time Set menu.



2 To set the date:

① Press and highlight [Date].



② Set the Year, Month, and Day with the left three controls.

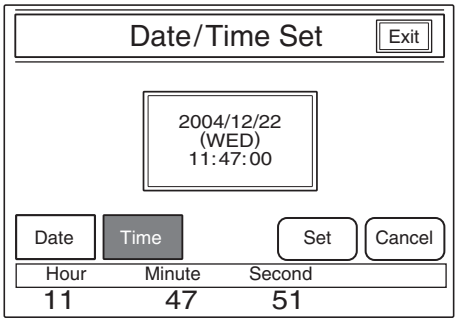
③ Press [Set].

The set date becomes valid.

To restore the previous setting, press [Cancel] instead of [Set].

3 To set the time:

① Press and highlight [Time].



② Set the Hour, Minute and Second with the left three controls.

③ Press [Set] in synchronization with a time signal.

The set time becomes valid.
To restore the previous setting, press [Cancel] instead of [Set].

When the clock setting is completed

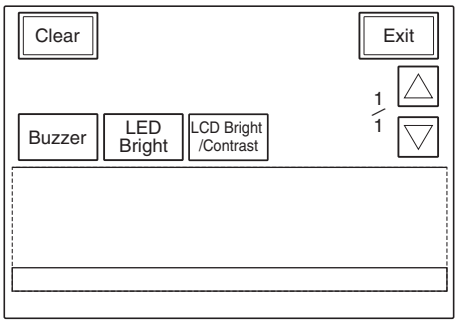
Press [Exit] to exit this menu.

To adjust the buzzer sound

A buzzer sounds on the MSU-900/950 when it receives a call signal or a panel control is operated.
When required, you may turn on/off the buzzer or adjust the sound volume.

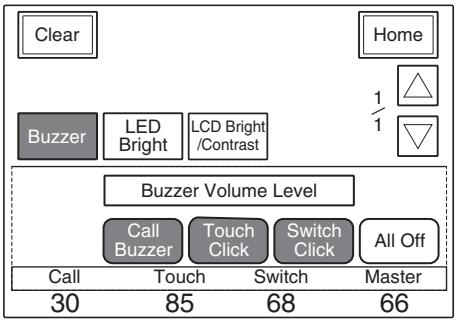
1 Press [MSU Adjusting] on the MSU Configuration menu.

The MSU adjustment menu appears.



2 Press [Buzzer] to set it to highlighted.

The lower half of the display becomes the Buzzer Volume Level adjustment display.



3 Adjust the levels with the three control knobs.

Call: Sound volume of the buzzer when a call signal is received
Touch: Sound volume of the buzzer when a button displayed on the menu display is operated
Switch: Sound volume of the buzzer when a button on the panel is operated

The master volume can be adjusted with the right-most control knob (Master).

To turn on/off the buzzers independently

Press the corresponding button. When the button is highlighted, the buzzer is on.
[Call Buzzer]**:** For the buzzer sound when a call signal is received
[Touch Click]**:** For the buzzer sound when a button displayed on the menu display is operated
[Switch Click]**:** For the buzzer sound when a button on the panel is operated

To turn off all the buzzers

Press and highlight [All Off].

When the adjustment is completed

Press [Home] to return to the MSU adjustment menu, and press [Exit] to exit this menu.

To adjust the brightness of the LEDs

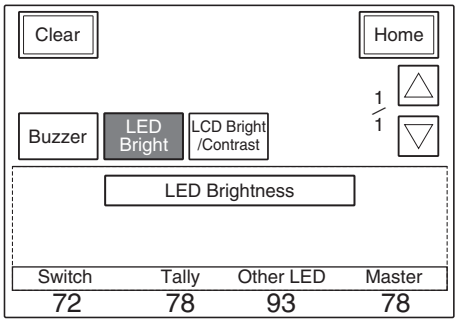
You can adjust the brightness of the LEDs of the panel buttons and camera number/tally indication window.

1 Press [MSU Adjusting] on the MSU Configuration menu.

The MSU adjustment menu appears.

2 Press and highlight [LED Bright].

The lower half of the display becomes the LED Brightness adjustment display.



3 Adjust the brightness with the three control knobs.

Switch: Brightness of the built-in LEDs of the control buttons

Tally: Brightness of the built-in LEDs of the camera number/tally indication window

Other LED: Brightness of the other LED indicators, such as those of the camera select block and the ACCESS indicator

The master brightness can be adjusted with the right-most control knob (Master).

When the adjustment is completed

Press Home to return to the MSU adjustment menu, and press Exit to exit this menu.

To adjust the LCD

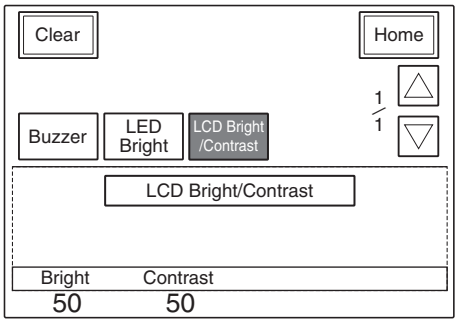
You can adjust the brightness and contrast of the display of the menu control block.

1 Press MSU Adjusting on the MSU Configuration menu.

The MSU Adjustment menu appears.

2 Press and highlight LCD Bright/Contrast.

The lower half of the display becomes the LCD adjustment display.



3 Adjust the brightness and contrast with the left two control knobs.

When the adjustment is completed

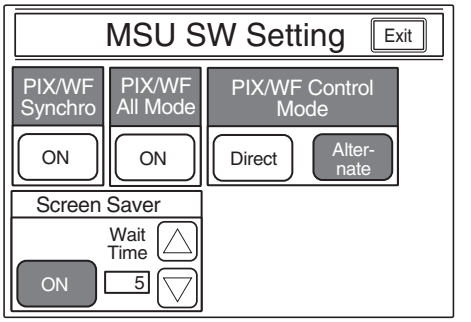
Press Home to return to the MSU adjustment menu, and press Exit to exit this menu.

To set the screen saver

The screen saver can be activated to protect the menu display when the MSU-900/950 is not operated for a certain time.
The screen saver can be turned on and off as required, and the time to activate it can be adjusted.

1 Press MSU SW Set on the MSU Configuration menu.

The MSU SW Setting display appears.



2 Press and highlight ON to activate the screen saver.

3 When the screen saver is turned on, set the wait time (in units of minutes) until it activates by pressing △ or ▽.

When the adjustment is completed

Press Exit to exit this menu.

To select the switch operation modes

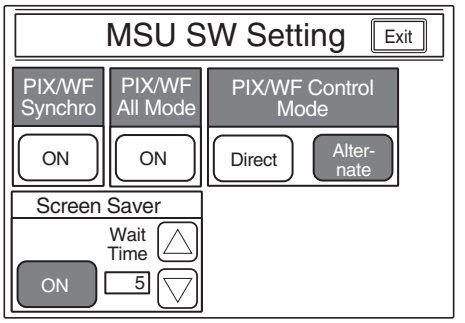
You can specify whether to switch the outputs from the PIX2 OUTPUT and WF2 OUTPUT connectors in synchronization with RGB switching on the adjustment display (PIX/WF Synchro setting), turn on/off All mode (PIX/WF All Mode setting) and select the operation mode of the monitor output select buttons (PIX/WF Control Mode setting).

Note

These settings are enabled only in Engineer mode.

1 Press MSU SW Set on the MSU Configuration menu.

The MSU SW Setting display appears.



PIX/WF Synchro setting

Specify whether to switch the outputs from the PIX2 OUTPUT and WF2 OUTPUT connectors in synchronization with RGB switching on the adjustment display in white or black shading adjustment.

Press the ON button to turn on or off the synchronization.

On (when the ON button is highlighted): The outputs from the PIX2 OUTPUT and WF2 OUTPUT connectors are switched in synchronization with RGB switching on the adjustment display in white or black shading adjustment.

Off: The PIX2 OUTPUT and WF2 OUTPUT connectors output the signal selected with the PICTURE MONITOR or WAVEFORM MONITOR buttons on the control panel regardless of RGB switching on the adjustment display.

PIX/WF All Mode setting

Turn on or off PIX/WF All mode.

Press the ON button to turn on or off the mode.

On (when the ON button is highlighted): The PICTURE MONITOR and WAVEFORM MONITOR buttons have effect on all the connected cameras of the same group.

Off: The PICTURE MONITOR and WAVEFORM MONITOR buttons have effect only on a camera selected with the camera select button.

PIX/WF Control Mode setting

Select the operation mode of the monitor output select buttons.

Press and highlight either button.

Direct**:** Direct mode.

When you press and light any of the R, G, and B buttons of the PICTURE MONITOR and WAVEFORM MONITOR buttons, the previously depressed and lit button goes dark and the signal corresponding to the newly pressed and lit button is output.

To output R and G signals, press the G button while holding down the R button.

Alternate**:** Alternate mode.

When you press and light any of the R, G, and B buttons of the PICTURE MONITOR and WAVEFORM MONITOR buttons, the signal corresponding to the newly pressed and lit button is output in combination with that corresponding to the previously pressed and lit button.

In this case, to output R and G signals, press to light the R button first, then press and light the G button. If the B button is lit, press it so that it goes dark.

When the settings are completed

Press Exit to exit this menu.

About “Memory Stick” Media

What is a “Memory Stick”?

A “Memory Stick” is a new compact, portable and versatile IC (Integrated Circuit) recording medium with a data capacity that exceeds a floppy disk. A “Memory Stick” is specially designed for exchanging and sharing digital data among “Memory Stick” compatible products. Because it is removable, a “Memory Stick” can also be used for external data storage.
The “Memory Stick” is available in two sizes: standard size and compact “Memory Stick Duo” size. Once attached to a “Memory Stick Duo” adapter, a “Memory Stick Duo” turns to the same size as a standard “Memory Stick” and thus can be used with products compliant with a standard “Memory Stick.”

Types of “Memory Stick”

The “Memory Stick” is available in the following four types to meet various requirements in functions.

“Memory Stick-R”

Stored data are not overwritten. You can write data to a “Memory Stick-R” with “Memory Stick-R” compatible products only. Copyright protected data that requires MagicGate copyright protection technology cannot be written to a “Memory Stick-R.”

“Memory Stick”

Stores any type of data except copyright-protected data that requires the MagicGate copyright protection technology.

“MagicGate Memory Stick”

Equipped with the MagicGate copyright protection technology.

“Memory Stick-ROM”

Stores pre-recorded, read-only data. You cannot record on a “Memory Stick-ROM” or erase the pre-recorded data.

Available types of “Memory Stick”

You can use “Memory Sticks” and “MagicGate Memory Sticks” of 128 MB or less with this product. However, as this product does not conform to the MagicGate standards, MagicGate copyright protection is not applied to data recorded using this product.

Note

You cannot use a “Memory Stick Duo” as-is with this product. To use a “Memory Stick Duo,” attach it to the “Memory Stick Duo” adaptor.

Note on data read/write speed

Data read/write speed may vary depending on the combination of the “Memory Stick” and “Memory Stick” compliant product you use.

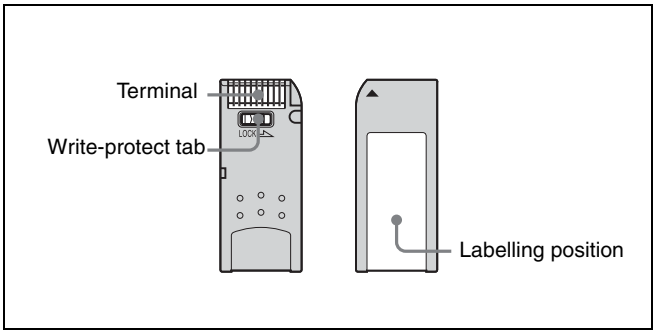
About “Memory Stick PRO”

It is not possible to use a “Memory Stick PRO” in this unit.

What is MagicGate?

MagicGate is copyright protection technology that uses encryption technology.

Before using a “Memory Stick”



- When you set the “Memory Stick” erasure prevention switch to “LOCK,” data cannot be recorded, edited, or erased.
- Data may be damaged if:
  —You remove the “Memory Stick” or turn off the unit while it is reading or writing data.
  —You use the “Memory Stick” in a location subject to the effects of static electricity or electric noise.
- We recommend that you make a backup copy of important data that you record on the “Memory Stick.”

Notes

- Do not attach anything other than the supplied label to the “Memory Stick” labeling position.
- Attach the label so that it does not stick out beyond the labeling position.
- Carry and store the “Memory Stick” in its case.
- Do not touch the connector of the “Memory Stick” with anything, including your finger or metallic objects.
- Do not strike, bend, or drop the “Memory Stick.”
- Do not disassemble or modify the “Memory Stick.”
- Do not allow the “Memory Stick” to get wet.
- Do not use or store the “Memory Stick” in a location that is:
  —Extremely hot, such as in a car parked in the sun
  —Under direct sunlight

—Very humid or subject to corrosive substances

If the ACCESS indicator is lit in red or is flashing

Data is being read from or written to the "Memory Stick." At this time, do not shake the computer or product or subject them to shock. Do not turn off the power of the computer and product or remove the "Memory Stick." This may damage the data.

Precautions

- To prevent data loss, make backups of data frequently. In no event will Sony be liable for any loss of data.
- Unauthorized recording may be contrary to the provisions of copyright law. When you use a "Memory Stick" that has been pre-recorded, be sure that the material has been recorded in accordance with copyright and other applicable laws.
- The "Memory Stick" application software may be modified or changed by Sony without prior notice. Note that there are certain restrictions on recording stage performances and other entertainment events, even if they are recorded for personal use only.

Specifications

General

Power requirements	100 to 240 V AC, 50/60 Hz
Current consumption	0.35 A
Peak inrush current	
(1) Power ON, current probe method:	40 A (100 V), 95 A (240 V)
(2) Hot switching inrush current, measured in accordance with European standard EN55103-1:	25 A (230 V)
Operating temperature	5°C to 40°C (41°F to 104°F)
Maximum cable length	200 m (656 feet)
Dimensions (w/h/d)	MSU-900 482 × 222 × 67 mm (19 × $8^3/_4$ × $2^3/_4$ inches) MSU-950 204 × 354 × 67 mm ($8^1/_8$ × 14 × $2^3/_4$ inches) including projecting parts and controls
Mass	MSU-900 Approx. 4.5 kg (9 lb 15 oz) MSU-950 Approx. 3.7 kg (7 lb 18 oz)

Inputs/outputs

REMOTE	
CCU/CNU	8-pin multiconnector (1)
AUX	8-pin multiconnector (1)
I/O PORT	50-pin (1)
Ethernet	6-pin (1)
AC IN	3-pin (1)

Supplied accessories

Operation Manual (1)
Operation Manual (CD-ROM) (1)

Optional accessories

AC power cord
- For customers in the USA and Canada
  Power cord (125 V, 10 A, 2.4 m (8 feet))
  (Part No. 1-551-812-1X)
  Plug retainer (Part No. 2-990-242-0X)
- For customers in the European countries
  Power cord (250 V, 10 A, 2.4 m (8 feet))
  (Part No. 1-782-929-1X)
  Plug retainer (Part No. 2-990-242-0X)

Design and specifications are subject to change without notice.

Trademark

Ethernet is a registered trademark of Xerox Corporation.

Sony Corporation
B & P Company
http://www.sony.net/

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MSU-950 (SY)
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