SONY

MASTER SETUP UNIT

MSU-1000
MSU-1500

MEMORY STICK ™

OPERATION MANUAL English

1st Edition (Revised 9)

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Precautions

Note on faulty pixels on the LCD panel

The LCD panel fitted to this unit is manufactured with high precision technology, giving a functioning pixel ratio of at least 99.99%. Thus a very small proportion of pixels may be “stuck,” either always off (black), always on (red, green, or blue), or flashing. In addition, over a long period of use, because of the physical characteristics of the liquid crystal display, such “stuck” pixels may appear spontaneously. These problems are not a malfunction.

Cleaning the touch panel

When cleaning the touch panel display, use a soft cloth and some ethanol to gently wipe only the area that is dirty. Using too much ethanol or broad wiping may result in smearing. You can also use a soft, dry cloth such as that used for cleaning glasses to gently wipe off the dirt.

Notes

- Do not clean the touch panel with water or any chemical substances other than ethanol.
- When wiping the touch panel, take proper care to prevent any liquid from entering between the touch panel and the body of the unit.
- Using excessive force when wiping may result in scratches on the touch panel.

Note on interference

Do not place mobile phones or similar devices on the control panel. Doing so may result in malfunction of the unit.

Overview

Features

The MSU-1000 series and RCP-1000 series are remote control panels for configuring and controlling Sony's studio and broadcast cameras.

This section describes the features that are common between the MSU-1000 series and RCP-1000 series.

Remote control panels

The RCP-1000 series of remote control panels is designed mainly for operation. Use a remote control panel with a camera on a one-to-one basis.

- The RCP-1000 is a compact control panel with specialized basic operations. The iris and master black adjustment block employs joystick type control. Up to six units can be mounted in a 19-inch EIA rack.
- The RCP-1001 is a compact control panel with specialized basic operations. The iris and master black adjustment block employs dial (knob) type control. Up to six units can be mounted in a 19-inch EIA rack.
- The RCP-1500 incorporates an LCD display with direct operation switches and a touch panel, which makes it a remote control panel that offers both ease of operation and multifunctionality that compares favorably with the MSU. The iris and master black adjustment block employs joystick type control. Up to four units can be mounted in a 19-inch EIA rack.
- The RCP-1501 incorporates an LCD display with direct operation switches and a touch panel, which makes it a remote control panel that offers both ease of operation and multifunctionality that compares favorably with the MSU. The iris and master black adjustment block employs dial (knob) type control. Up to four units can be mounted in a 19-inch EIA rack.
- The RCP-1530 incorporates an LCD display with a touch panel, and a variety of settings are available to make this remote control panel compare favorably with the MSU. It is multifunctional while at the same time having a slim body that is just 80 mm wide, which allows you to mount up to five units in a 19-inch EIA rack. The iris and master black adjustment block employs joystick type control.

Master setup units

The MSU-1000 series of master setup units are control panels designed mainly for maintenance and configuration. These control panels can centrally control multiple camera systems.

- The MSU-1000 is has a horizontally long shape and is provided with various direct switches to make quick configuration possible.
- The MSU-1500 has a compact vertically long shape and is of the same height as the RCP-1500/1501/1530.

Operability suitable for basic camera operations

This remote control panel is provided with the control functions required to perform the basic operations of cameras to enable the simple and accurate operation of various functions. The operation buttons, adjustment knobs, and other controls are arranged on the panel according to function and frequency of use. Guard frames are provided around buttons that are vital to the operation and setup of cameras to prevent the buttons from being unintentionally operated.
Illuminated buttons with high visibility flash and light to notify you of the operation status to enable operation even in dark locations. Likewise, an illuminated panel surface is employed to allow you to confirm function names even when the surroundings are dark.

Building of a variety of control systems

With the exception of the RCP-1000/1001, it is possible to connect by LAN cable in addition to connecting using CCA-5 cable. Therefore, when setting up a multi-camera control system, not only can a system be built using the CNU-700 as previously, but a system can also be built using a LAN. In a system that uses CNU-700s, two camera command network units (CNUs) can be used to control a camera system of up to 24 cameras. In a system that uses a LAN, a camera system of up to 96 cameras can be controlled.[1)]
A LAN cable cannot be connected directly to the RCP-1000/1001, but an equivalent network system can be built by connecting to a LAN compatible camera control unit (CCU).

Support for operating multiple cameras

Various operations are made possible by using multiple camera systems that support multiple cameras.
The following functions are provided to control the connected cameras.

- Panel active function
  This function always enables one control panel for one camera to prevent unintentional operation. Even with a control panel that does not have the panel active permission, a camera can be operated using the parallel function, with the exception of iris and master black operations.
- ALL function
  This function simultaneously turns on and off the functions of all connected camera systems.[2)]
- RCP assignment function
  This function changes the combination of an RCP and camera system.[2)]
- Master/subordinate function
  This function makes changes in conjunction with the color temperature of the specified camera system.[2) 3)]

Customizable functions

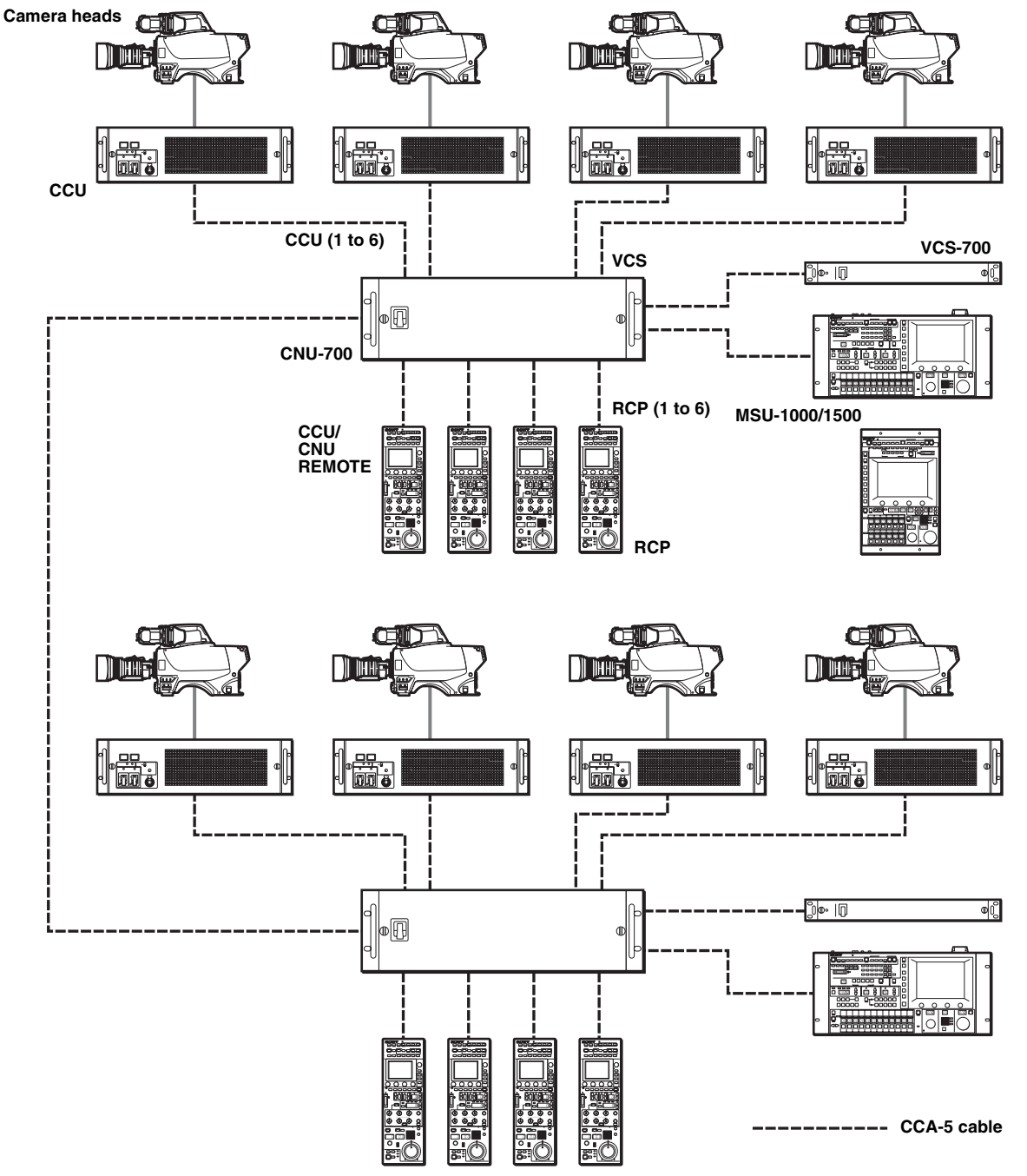
Various settings can be configured according to the operation configuration and the frequency with which functions are used.

- **Menu**
  You can create a custom paint menu, and change the contents and order of a menu.[4)]
- **Function restriction**
  You can restrict access to items of a certain level or above to restrict the operators that can configure settings.[4)]
- **Buttons**
  You can assign any function to a spare button.
- **Adjustment knobs[5)]**
  You can assign any function to a spare adjustment knob.
- **Operation and call sounds[4)]**
  You can mute and adjust the volume of the operation and call sounds if necessary.
- **Exporting and importing of settings[4)]**
  You can save the settings to a “Memory Stick Duo”, and then export them to another remote control panel.
  You can also transfer scene files and reference files from a camera or “Memory Stick Duo” to multiple cameras.[6)]

1) If a system includes control panels other than the MSU-1000 series and RCP-1000 series control panels, the maximum number of cameras that can be controlled will be reduced.
2) If multiple CNUs exist in the system, this only works for cameras connected to the same CNU.
3) This does not work when connected to a network.
4) Except for RCP-1000/1001.
5) Customization of the adjustments knobs is only possible with the RCP-1500/1501.
6) When connected to a network, it is only possible to transfer to one camera at a time.

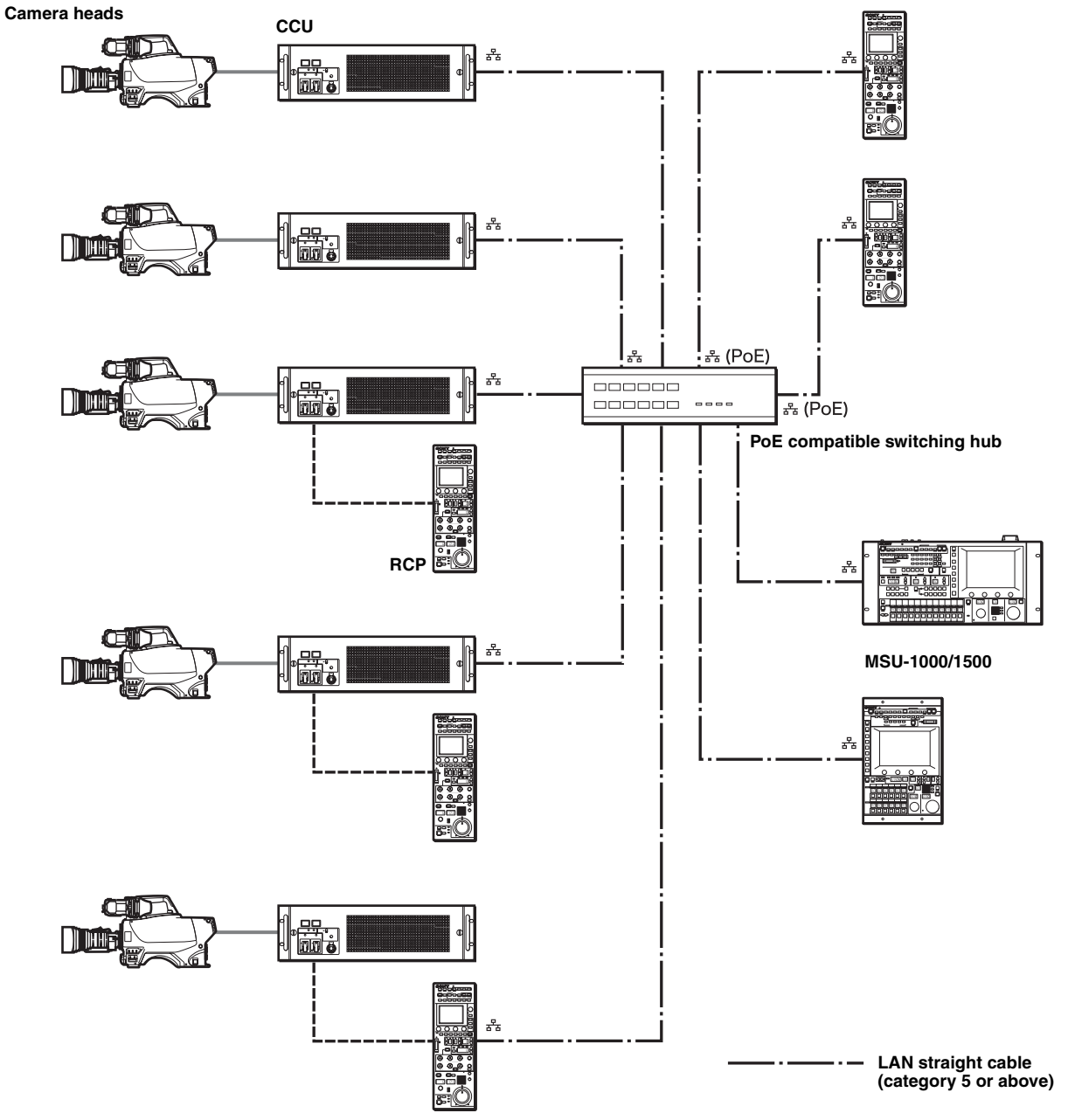
Examples of System Configurations

Connection example for LEGACY mode



- The maximum cable length from a CCU to an RCP is 200 m (approx. 656 ft.).
- Up to six systems can be connected to a CNU-700 as standard. In such a case, connect one MSU and one VCS.
  Up to 12 systems can be connected if you install BKP-7930 in the CNU-700. In such a case, you can connect two MSUs and two VCSs.
- Up to 24 systems can be connected if you connect a pair of CNU-700s. In such a case, you can connect four MSUs and four VCSs, but ALL, RCP assignment, and master/subordinate cannot be executed for cameras connected to a different CNU.

Connection example for MCS mode



- In MCS mode, be sure to set one of the multiple MSUs as the master. Not to turn off the power or disconnect the cable of the master MSU during operation.
- The maximum number of devices that can be directly connected to the network is 96 excluding the master MSU. This maximum number does not include any RCP connected by CCA cable to a CCU connected to the network or any CCU connected by CCA cable to a RCP connected to the network. A client MSU is counted as one unit.
- A CNU and VCS cannot be connected to a system that will be used in MCS mode.

Supported devices

This unit supports connection to the following devices.

- BVP-E30 series
- CCU-590/790 series
- HDC1000(R)/1500(R)/3300(R) series
- HDCU1000/1500/3300(R) series
- HDC2000/2500 series
- HDCU2000/2500 series
- HSC-300/HSCU-300 series
- HXC-100/HXCU-100 series
- HXC-D70/HXCU-D70 series
- HDC-P1
- HDFA-200
- F23/F35
- SRW-9000/SRW-9000PL
- HSC300RF/300R/100RF/100R
- HSCU300RF/300R
- CA4000
- BPU8000/4000

Notes

- Proper functioning may not be possible depending on the firmware version. Be sure to update to the latest version before use.
- The functions that are available on the control panel may be limited depending on the connected camera. Some controls may not function with certain cameras, but this is not a malfunction.

Operating Cameras

Camera control permissions (panel active, IRIS/MB active, and PARA)

By combining an MSU and RCP, you can operate one camera device from multiple control panels, and multiple cameras from one MSU. This is called a “multi-camera system.” A multi-camera system can be implemented by introducing a CNU or by establishing a LAN connection in MCS mode.
To prevent unintentional operation in a multi-camera system, permission is granted to operate the cameras for only either the connected MSU or RCP. There are three types of permission.

- Panel active
  Even if multiple control panels are connected to one camera, only one control panel has the control permission. This is called “panel active.”
  An inactive control panel only allows the state to be viewed. Furthermore, even in this case, you can also enable only IRIS and master black.
- PARA (parallel control)
  By enabling the PARA function on an inactive control panel, you can control cameras. The PARA function is enabled from an inactive control panel, but can be disabled from any control panel.
- IRIS/MB active
  To prevent unintentional operation of IRIS and master black, you can choose the control panels on which to activate IRIS/MB. The PARA function does not operate.
  Operating an inactive control panel on which PARA is disabled will not change the state of the camera.

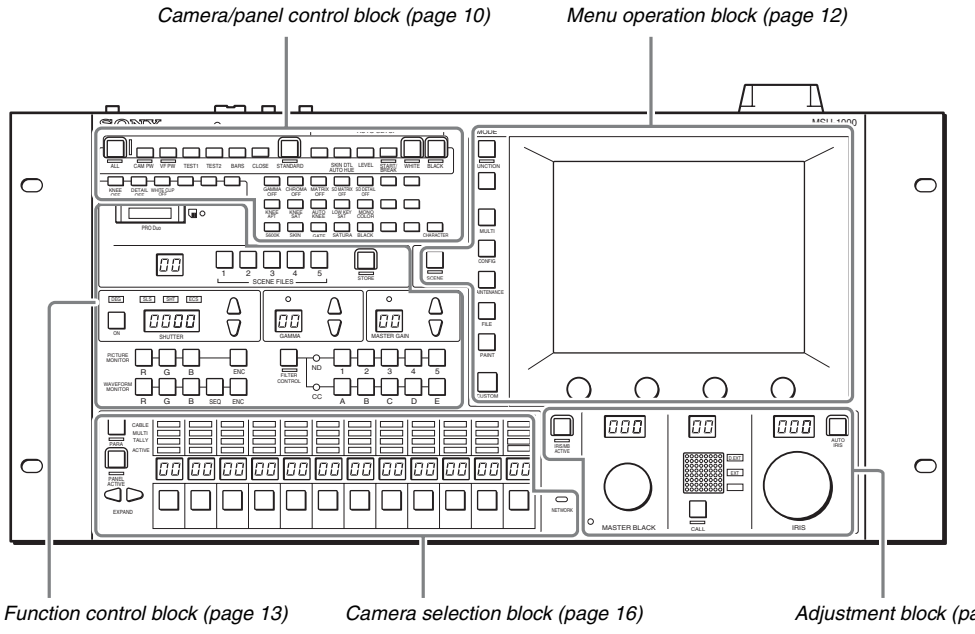
White balance link (master/subordinate mode)

The color temperature of light shining on the subject varies moment by moment when you shoot outdoors. When correcting for this, you can link the cameras within the system and then control them. When you do this, set the camera that is to be controlled directly to “Master,” and the cameras that are to be linked to “Subordinate.”
When you change the white balance of the control panel to which the master camera is connected, the subordinate cameras are corrected by the same correction amount. However, adjusting a subordinate camera does not affect any of the other cameras.
The white balance link function is only enabled when there is a connection to a CNU (LEGACY mode).

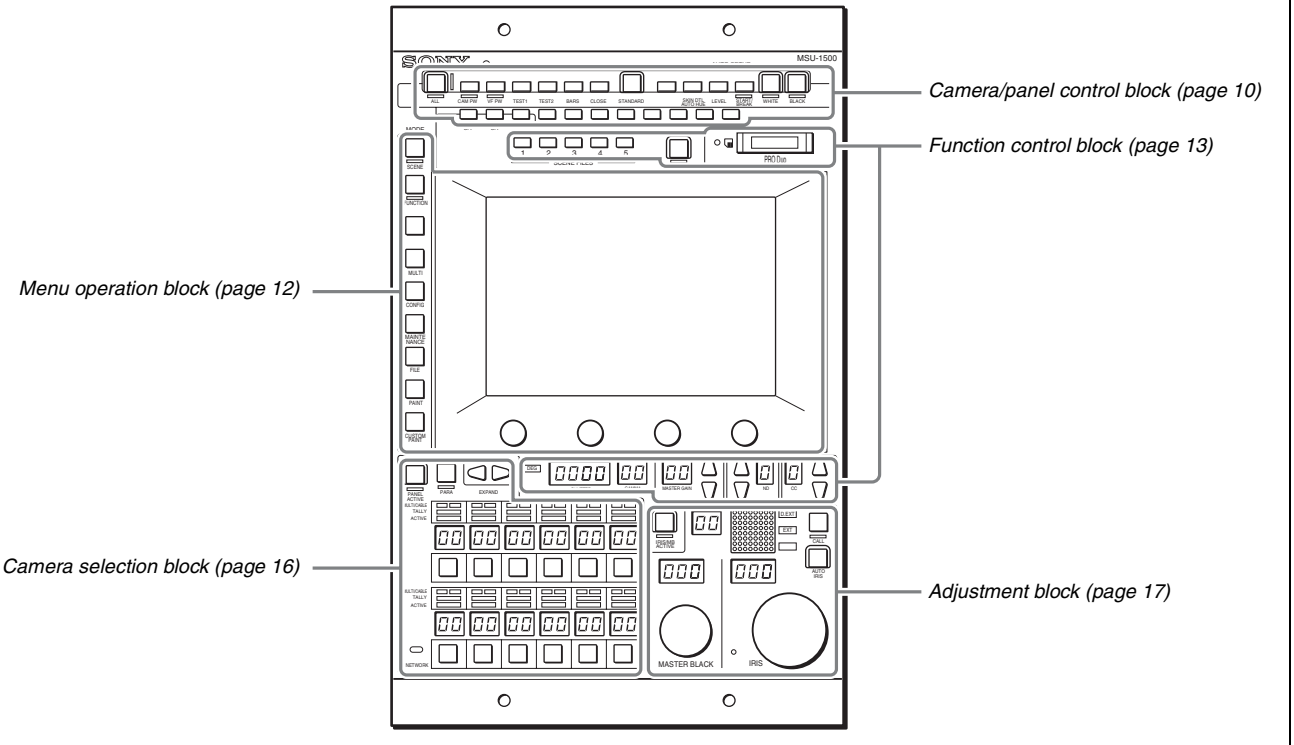
Names and Functions of Parts

Operation Panel

MSU-1000

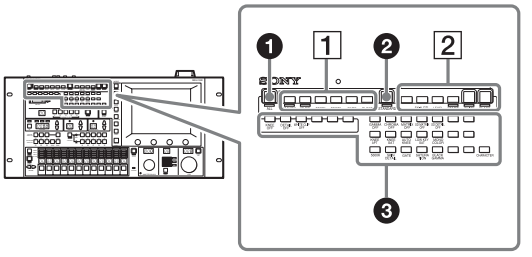


MSU-1500

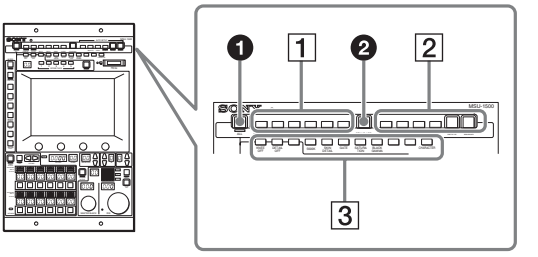


Camera/panel control block

MSU-1000



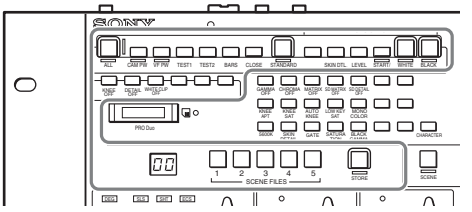
MSU-1500



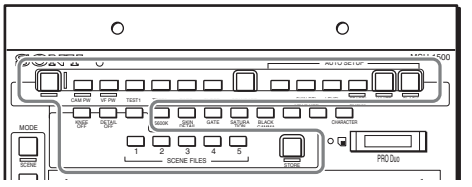
❶ ALL (all mode) button

Pressing this button causes it to flash and then pressing a button in the same area partitioned by gray as the ALL button (see the figure below) changes the state of all cameras within the system (however, a scene file cannot be saved). Pressing the ALL button again to cancel flashing.

MSU-1000



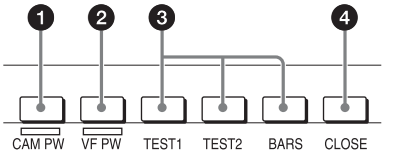
MSU-1500



❷ STANDARD button

This button is for accessing the standard state of the camera. After the standard state is accessed, you can cancel access by pressing the STANDARD button again while it is lit.

1 Power/output signal selection block



❶ CAM PW (camera power) button

This button is for supplying power from the CCU to the camera heads.

Lighting state	Meaning
On	The power is being supplied.
Off	The power is disconnected. It is not supplied even if the button is pressed.
Slow flashing	The power is disconnected. It is supplied when the button is pressed.
Fast flashing	The camera is starting up.

❷ VF PW (viewfinder power) button

Pressing this button causes it to light, and supplies power to the viewfinder of the camera.
Pressing the button again causes the button to go out, and disconnects the power supply to the viewfinder.

❸ Test signal output selection buttons

These buttons light when pressed and are for operating the test signal generator of the camera to output the corresponding signal.
TEST1/TEST2: Camera test signals
BARS (color bars): Color bar signal

Note

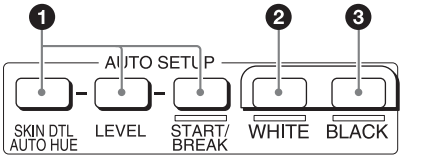
When the BARS button is lit, the function of the BARS button takes priority for CCU output. When you select TEST1 or TEST2, press the BARS button to turn its light off.

❹ CLOSE (iris close) button

This button is for closing the iris of the lens connected to the camera. Pressing it when the auto iris is on changes the iris indication to CLS. Pressing it when the auto iris is off displays the iris value, and the state of that iris value is restored when the close mode is cancelled.

2 AUTO SETUP block

These buttons are for automatically adjusting the camera.



❶ AUTO SETUP buttons and START/BREAK button
Pressing one of the following buttons and then pressing the START/BREAK button runs the corresponding automatic adjustment function.
SKIN DTL AUTO HUE (skin detail auto hue): Automatically sets the skin detail to an effective hue.
LEVEL (level): Runs the auto level setup.
Pressing the START/BREAK button while this function is running stops auto adjustment. The button flashes to indicate that this function is stopped, and pressing the button again stops the flashing indication.

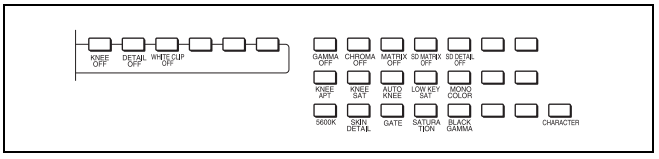
❷ WHITE (auto white balance) button
This button is for starting auto white balance adjustment. The button is lit while this function is running and goes out when adjustment is finished. Pressing it again or pressing the START/BREAK button while this function is running stops automatic adjustment. The button flashes to indicate that this function is stopped, and pressing the button again stops the flashing indication.

❸ BLACK (auto black balance) button
This button is for starting auto black balance adjustment. The button is lit while this function is running and goes out when adjustment is finished. Pressing it again or pressing the START/BREAK button while this function is running stops automatic adjustment. The button flashes to indicate that this function is stopped, and pressing the button again stops the flashing indication.

3 Camera/CCU function ON/OFF buttons
These buttons are for various functions. A function is enabled when its button is lit. A function with an OFF indication is off when the button is lit. Functions can be assigned to the spare buttons (assignable buttons).

For details on assigning functions to assignable buttons, see "To assign functions to assignable buttons" on page 31.

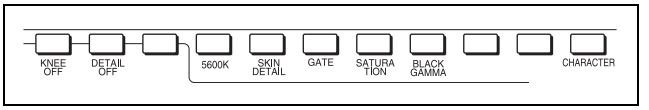
MSU-1000



In the case of MSU-1000, the following switch functions are assigned to 19 buttons and 9 buttons are spare by default.

Button	Description
KNEE OFF	Knee compensation function
DETAIL OFF	Detail function for performing contour correction
WHITE CLIP OFF	White clip function
GAMMA OFF	Gamma function
CHROMA OFF	Chroma function
MATRIX OFF	Linear matrix function
SD MATRIX OFF	SD matrix function
SD DETAIL OFF	SD detail function
KNEE APT	Knee aperture function
KNEE SAT	Knee saturation function
AUTO KNEE	Auto knee function
LOW KEY SAT	Low key saturation function
MONO COLOR	Mono color function
5600K	Electric color temperature correction function
SKIN DETAIL	Skin detail function
GATE	Gate function Displays the active area of the function on the screen (corresponds to Skin DTL and Multi matrix gate). For details on for what kind of image output a gate signal is displayed, refer to the operation manual of the device of the connection destination.
SATURATION	Saturation function
BLACK GAMMA	Black gamma function
CHARACTER	Display CNU or CCU characters. (CNU characters by default. You can change to CCU via function assignment settings.) When set to CCU characters, this turns ON/OFF CCU character display or switches to the next page. When this function is ON, each press of the button switches to the next page (a long press switches to the last page and stops the function in the OFF state). When set to CNU characters, this turns ON/OFF CNU character display. For details on for what kind of image output characters are displayed, refer to the operation manual of the device of the connection destination.

MSU-1500



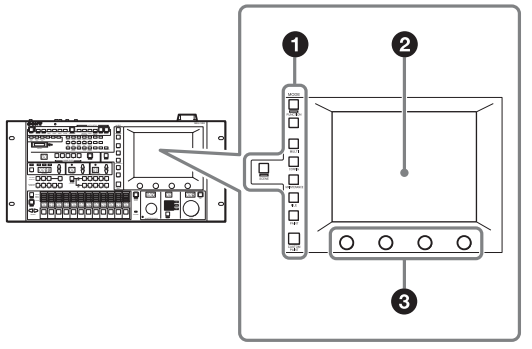
In the case of MSU-1500, the following switch functions are assigned to 8 buttons and 3 buttons are spare by default.

Button	Description
KNEE OFF	Knee compensation function
DETAIL OFF	Detail function
5600K	Electric color temperature correction function
SKIN DETAIL	Skin detail function
GATE	Gate function Displays the active area of the function on the screen (corresponds to Skin DTL and Multi matrix gate). For details on for what kind of image output a gate signal is displayed, refer to the operation manual of the device of the connection destination.
SATURATION	Saturation function

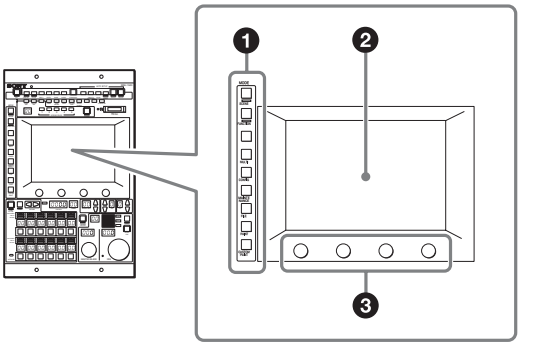
Button	Description
BLACK GAMMA	Black gamma function
CHARACTER	Display CNU or CCU characters. (CNU characters by default. You can change to CCU via function assignment settings.) When set to CCU characters, this turns ON/OFF CCU character display or switches to the next page. When this function is ON, each press of the button switches to the next page (a long press switches to the last page and stops the function in the OFF state). When set to CNU characters, this turns ON/OFF CNU character display. For details on for what kind of image output characters are displayed, refer to the operation manual of the device of the connection destination.

Menu operation block

MSU-1000



MSU-1500



Menu operation is performed on the LCD.
Operation is performed by touching the buttons and tabs that are displayed on the LCD. Use the adjustment knobs to change numbers and select items.

❶ MODE (mode selection) buttons
Each button accesses its corresponding menu.
Pressing a button causes it to light and displays the mode menu corresponding to the button on the LCD.
Pressing the button again causes it to go out and the menu display to disappear.

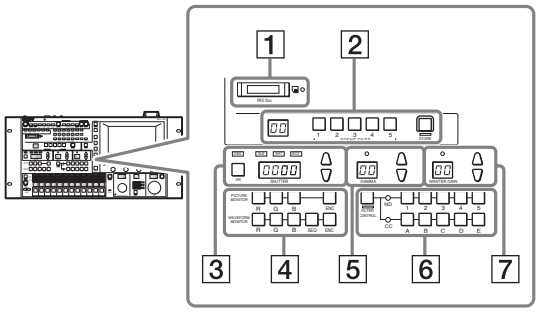
For details on each of the menu items, see "Menus" (page 35).

❷ LCD/touch panel
This is for displaying menus and performing operations.

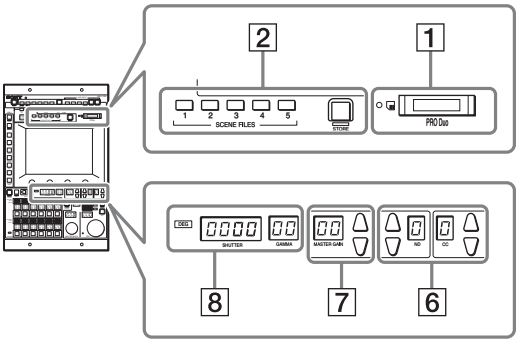
❸ Adjustment knobs (rotary encoders)
These knobs are for adjusting or selecting items in menus.

Function control block

MSU-1000



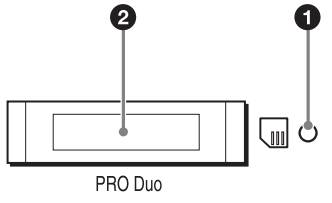
MSU-1500



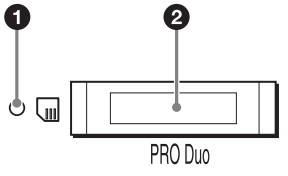
1 "Memory Stick Duo" insertion block

For details on "Memory Stick Duo," see page 71.

MSU-1000



MSU-1500



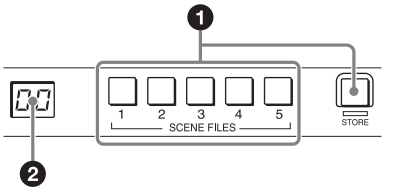
❶ Access indicator
This indicator is for displaying the status of a "Memory Stick Duo."

Indication	Meaning or measure
Off	A "Memory Stick Duo" is not inserted.
Lit in green	A "Memory Stick Duo" is inserted.
Lit in red	Data is being read or written. The data cannot be guaranteed if you eject the "Memory Stick Duo" in this state (be careful because all of the data may be lost).

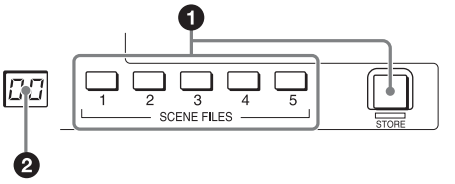
❷ "Memory Stick Duo" slot
This slot allows you to use a "Memory Stick Duo." You can save or read various files.

2 Scene file control block

MSU-1000



MSU-1500



❶ SCENE FILES selection buttons and STORE button
These buttons are for registering and reading scene files.

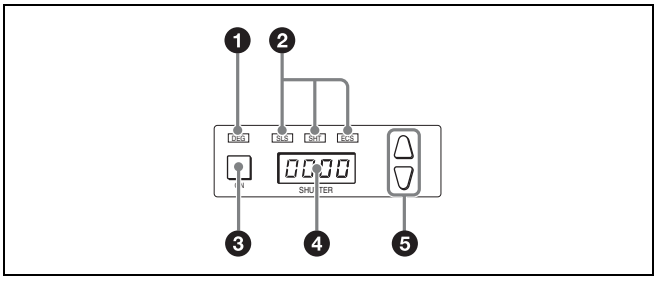
To register a scene file, press the STORE button to start it flashing and then press the SCENE FILE button with the corresponding number. When file registration is finished, the STORE button goes out. To stop registration part way through, press the STORE button again before pressing the SCENE FILE button.

To read a scene file, press the SCENE FILE button with the corresponding number while the STORE button is not flashing.

The items that can be stored to a scene file differ depending on the connected camera.

❷ Scene file number display window
This window is for displaying the number of the selected scene file.

3 Shutter control block (MSU-1000 only)



❶ DEG indicator
This indicator is lit when the shutter indication is an angle value. Configure the setting with the switches in Shutter of the Paint menu.

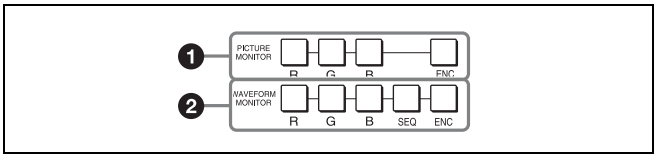
❷ SLS/SHUTTER/ECS indicators
The indicator corresponding to the selected function is lit. Select a function in the menu.
SLS: Slow shutter mode
SHT: Shutter mode
ECS: ECS (Extended Clear Scan) mode

❸ ON button
This button is for turning ON/OFF the camera's SLS, shutter, or ECS function. Pressing the button causes it to light and turns ON the function, and pressing it again causes the button to go out and turns OFF the function.

❹ Shutter speed display window
This window is for indicating the shutter speed that is currently set.

❺ Shutter speed selection buttons
These buttons are for setting the shutter speed. Each press of the ▲ (up) button increases the shutter speed, and each press of the ▼ (down) button decreases it.

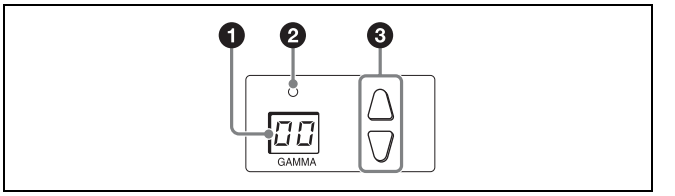
4 Monitor selection block (MSU-1000 only)



❶ PICTURE MONITOR buttons (MSU-1000 only)
These buttons switch the output signals from the PIX2 OUTPUT connector of the CCU. Press the button for the signal you want to output. The signal corresponding to the lit button is output.
R/G/B/ENC (encode): Select the signal to output.
Simultaneously pressing the R, G, and B buttons allows you to superimpose the signals.

❷ WAVEFORM MONITOR button (MSU-1000 only)
These buttons switch the output signals from the WF2 OUTPUT connector of the CCU. Press the button for the signal you want to output. The signal corresponding to the lit button is output.
R/G/B/ENC (encode): Select the signal to output.
Simultaneously pressing the R, G, and B buttons allows you to superimpose the signals.
SEQ (sequence): Changes the sequence mode. The CCU and WF monitor need to be connected and configured.

5 GAMMA (gamma selection) buttons and display window (MSU-1000 only)



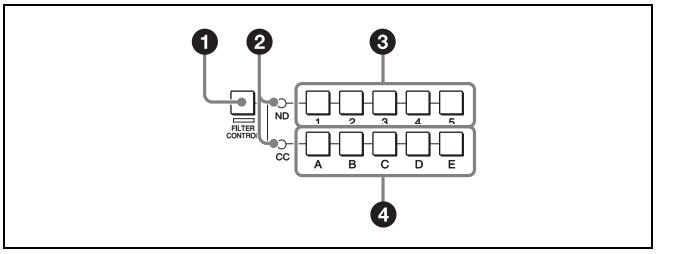
❶ Gamma display window
This window is for displaying the setting value (decimal value) of the step gamma.

❷ Standard value indicator
This indicator lights when the standard value is set in the Standard Indication menu. It lights in green for a standard state, and amber for a non-standard state.

❸ Step gamma selection buttons.
Selects the gamma in steps.
Each press of the ▲ (up) button decreases the value, and each press of the ▼ (down) button increases it. Pressing and holding one of the buttons changes the gamma value continuously.

6 Filter control block

MSU-1000



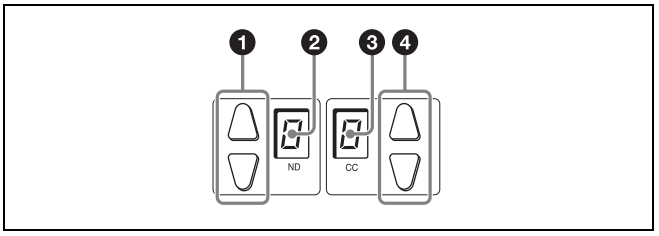
❶ FILTER CONTROL button
This button is lit when the MSU has the filter servo control permission. Pressing the button when it is not lit switches the control permission to the MSU.

❷ Standard value indicators
These indicators light when the standard value is set in the Standard Indication menu. They light in green for a standard state, and amber for a non-standard state.

❸ ND filter selection buttons
Selects or indicates the ND filter.

❹ CC (color temperature conversion) filter selection buttons
Selects or indicates the CC filter.

MSU-1500



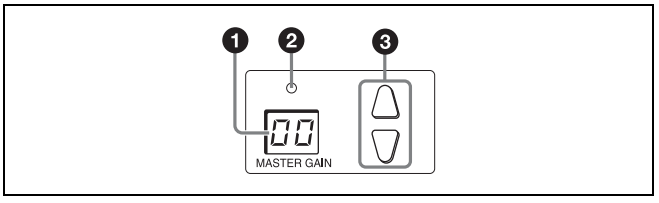
❶ ND filter selection buttons
These buttons are lit when the MSU has the filter servo control permission. When they are not lit, the camera side has the control permission. Pressing either the top or bottom button once switches the control permission to the MSU. If there is no filter servo or the camera does not have a filter, these buttons do not light and the control permission can also not be switched.
The ▲ button changes the ND filters in order in the forward direction. The ▼ button changes them in the opposite direction. Pressing and holding one of the buttons changes the ND filters continuously.

❷ ND filter display window
This window is for indicating the ND filter that is currently selected.

❸ CC (color temperature conversion) filter display window
This window is for indicating the CC filter that is currently selected.

❹ CC (color temperature conversion) filter selection buttons
These buttons are lit when the MSU has the filter servo control permission. When they are not lit, the camera side has the control permission. Pressing either the top or bottom button once switches the control permission to the MSU. If there is no filter servo or the camera does not have a filter, these buttons do not light and the control permission can also not be switched.
The ▲ button changes the ND filters in order in the forward direction. The ▼ button changes them in the opposite direction. Pressing and holding one of the buttons changes the ND filters continuously.

7 Master gain control block

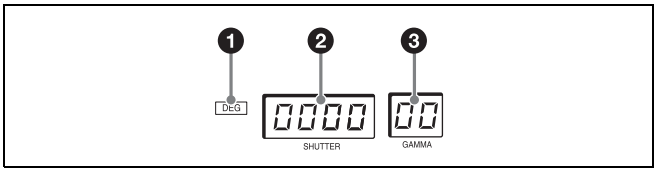


❶ Master gain display window
This window is for indicating the setting value of the master gain.

❷ Standard value indicator (MSU-1000 only)
This lights when the standard value is set in the Standard Indication menu. It light in green for a standard state, and amber for a non-standard state.

❸ Master gain selection buttons
These buttons select the master gain.
Each press of the ▲ (up) button decreases the value, and each press of the ▼ (down) button increases it. Pressing and holding one of the buttons changes the master gain value continuously.

8 Display block (MSU-1500 only)



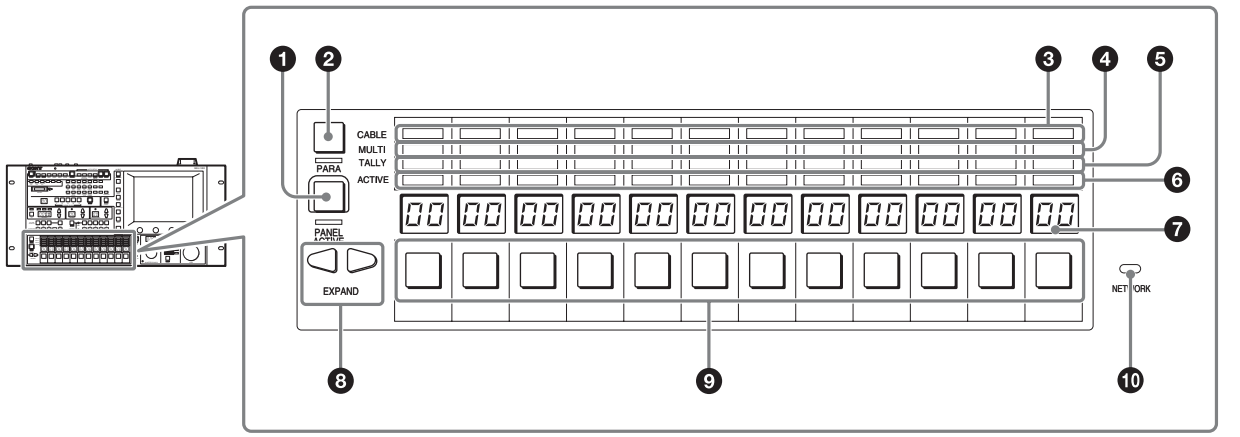
❶ DEG indicator
This is lit when the shutter display is indicating an angle value. Configure the setting with the switches in Shutter of the Paint menu.

❷ ECS frequency/shutter speed/slow shutter frame display window
This window is for indicating the ECS frequency, step shutter speed, or slow shutter frame that is currently selected.
Change the mode (ECS [Extender Clear Scan] mode/shutter mode/slow shutter mode) and configure each of the settings (ECS frequency, shutter speed, and slow shutter frame) from the Shutter page of the Paint menu.
When the DEG indicator is lit, the speed is indicated as an angle value.
When ECS/SHUTTER is off, “OFF” is displayed.

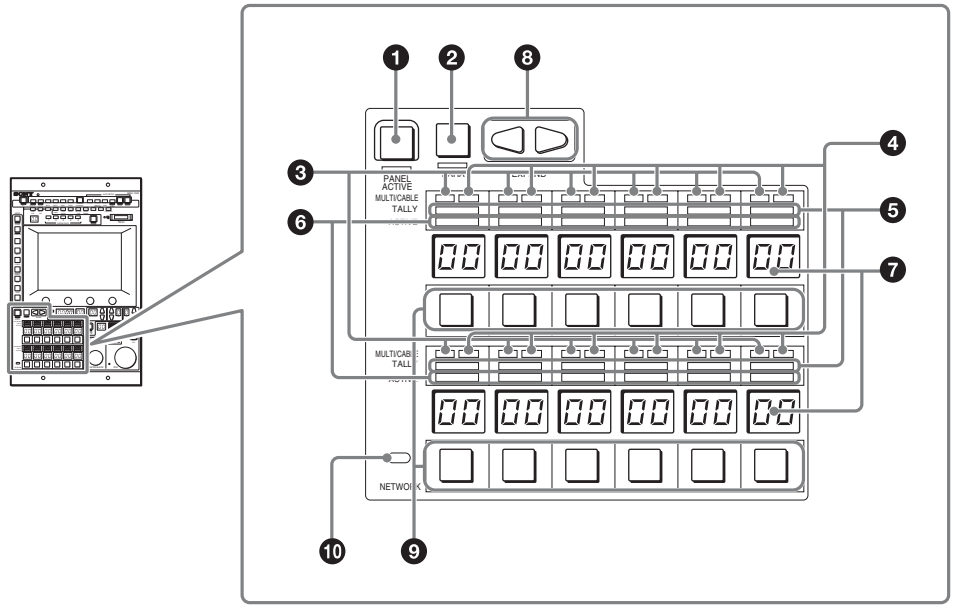
❸ GAMMA (gamma selection) display window
This window is for displaying the setting value (decimal value) of the step gamma.
Configure the setting in the function menu of the menu operation block.
The smaller the number, the greater the gamma effect.

Camera selection block

MSU-1000



MSU-1500



❶ PANEL ACTIVE button

This button is for the control permission. It also serves as a function for preventing unintentional operation because a camera cannot be controlled from this control panel when this button and the PARA button are not lit.

Note

If the connection to the master breaks off in MCS mode system, panel active operations are not possible.
In this case, a long press of the PANEL ACTIVE button forces the availability of the panel active.

❷ PARA (parallel control) button

This button is for the PARA function. It allows you to simultaneously control the control panels that are active. However, IRIS and master black are only enabled on control panels on which IRIS/MB is active, and cannot be controlled simultaneously.

❸ CABLE indicators

This indicator is for indicating the communication state of the camera head and CCU.

Lighting state	Meaning
On (green)	The reception state is good.
On (yellow)	The reception level is low.
On (red)	The reception level is extremely low.
Off	The power of the camera or CCU is off. Also, the connected device has not been recognized.

❹ MULTI (multi mode) indicators
An indicator lights in accordance with the mode of the camera selected with the camera selection buttons lights.
It lights in green when the corresponding camera is set to master in the master/subordinate mode setting, and in amber when the corresponding camera is set to subordinate.
The indicators light in red during auto setup. They flash in red if an error occurs during the auto setup and then auto setup is stopped.

❺ TALLY indicators
An indicator indicates the tally of the camera selected with the camera selection buttons.
The indicator lights in red when the red tally signal is input to the corresponding camera, and in green when the green tally signal is input. It lights red and green if the red tally signal and green tally signal are simultaneously input.
Also, it flashes quickly in red if a call signal is input.

❻ ACTIVE indicators
An indicator lights in accordance with the control state of the camera selected with a camera selection button.
The indicators corresponding to cameras for which this control panel has the control permission light in green, and the indicators corresponding to cameras for which another control panel has the control permission light in amber.
An unlit indicator indicates that the corresponding camera (or CCU) is not connected.
An indicator lights in red when the self-diagnosis function is operating on the camera or CCU and an error is detected.

❼ Camera number display window
This window is for indicating the number of the camera selected with the camera selection buttons.

❽ EXPAND buttons
These buttons are for changing the cameras to select with the camera selection buttons.
When the control panel is connected to a camera network system, you can set the maximum number of cameras that can be selected in a menu. When the control panel is connected to a CNU, the maximum number is set automatically.

❾ Camera selection buttons
These buttons are for selecting the camera to control. Press a button to light it and enable the camera corresponding to the number of the button to be controlled from this control panel.

Note

To control multiple cameras using the camera selection function, a camera command network unit (CNU-700, etc.) that is compatible with the cameras is required.

❿ NETWORK indicator
This indicator is for indicating the status of the network connection.

When this control panel is a client

Lighting state	Meaning
Off	Connect the control panel to the camera network system.
Flashing	Currently connected to the master of the camera network system. Alternatively, connected to the master of the camera network system, but there is not even one CHU (Camera Head Unit)/CCU device.
On	Connected to the master of the camera network system, and also connected to a CHU/CCU device.

When this control panel is the master

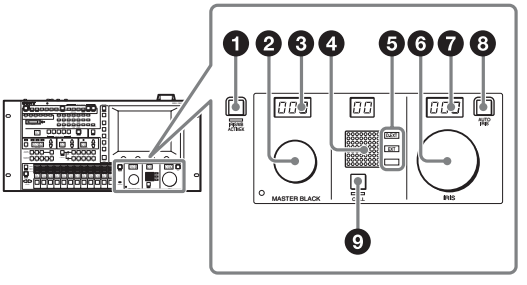
Lighting state	Meaning
Off	Not even one CHU/CCU device is connected in the camera network system.
On	A CHU/CCU device is connected in the camera network system.

When this control panel is a bridge

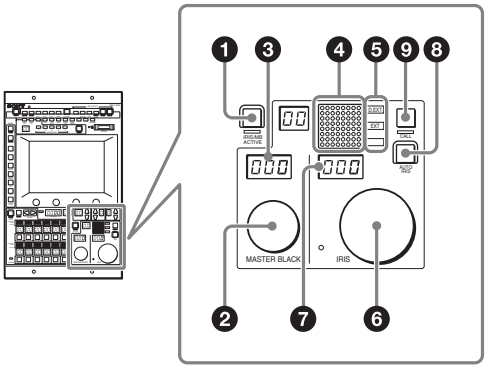
Lighting state	Meaning
Off	Connect the control panel to the camera network system.
On	Connected to a CHU/CCU device in the camera network system.

Adjustment block

MSU-1000



MSU-1500



❶ IRIS/MB ACTIVE (iris/master black active) button
Pressing the button causes it to light and enables iris and CLOSE button control and adjustment of the master black on this control panel.
Pressing the PANEL ACTIVE button also causes this button to light.

❷ MASTER BLACK knob
This knob is for manually adjusting the master black. The setting value is displayed in the master black display window.

❸ Master black display window
This window is for displaying the setting value of the master black.

❹ Camera number/tally display window
This window displays a number in amber for the camera controlled by the control panel.
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 red and green tally signals are simultaneously sent, the left half of the background lights in red, and the right half lights in green.

❺ EXT (lens extender) indicators
D. EXT: Lights when the digital extender function is turned ON.
EXT: Lights when the lens extender is used.

❻ IRIS knob
This knob is for manually adjusting the iris of the lens when the AUTO IRIS button is not lit.
When the AUTO IRIS button is lit, you can finely adjust the reference value for auto adjustment of the iris.

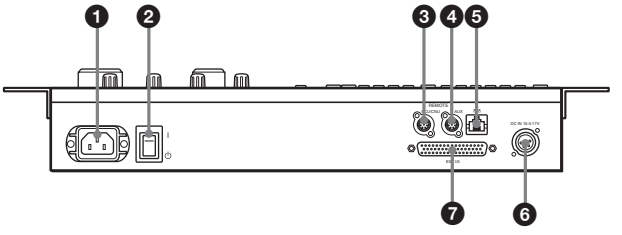
❼ IRIS display window
This window displays the iris setting as an F number. If the lens is closed, “CLS” is displayed.

❽ AUTO IRIS button
This button is for adjusting the iris automatically.

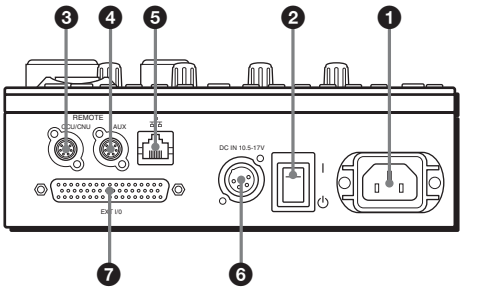
❾ CALL button
This button is for communication. If it is pressed, the tally state for the camera or CCU changes, and a call signal is sent. A call signal can also be received from another device with this button. When a call signal is sent (or received), this button lights and the call sound plays. You can select the call sound.

Connector Panel

MSU-1000



MSU-1500



❶ AC IN (AC power supply input) connector
This is for connecting an AC power supply with a separately sold power cord. You can secure the power cord to the control panel with a separately sold plug holder.

❷ POWER switch
This switch is for turning on/off the power of the control panel.

❸ CCU/CNU REMOTE (CCU/CNU remote) connector (8-pin)
This is for connecting to the RCP/CNU connector of the CCU or the MSU connector of the CNU.

❹ AUX REMOTE (auxiliary remote) connector (8-pin multi-connector, female)
This is a spare connector.

❺ 品 (network) connector (8-pin RJ-45)
This is for connecting to the network.
Use a network cable (shielded type, category 5 or above) to connect to the hub of the network (10BASE-T/100BASE-TX).

❻ DC IN (DC power supply input) connector (4-pin XLR, male)
This connector is used when supplying power from a battery. The DC input voltage range is +10.5 V to +17 V.

❼ I/O PORT connector (50-pin)
This is used for external interface connections.

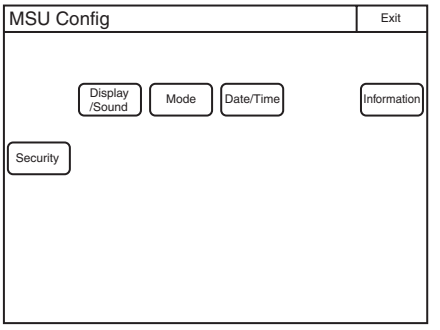
Installation

For details on menu operation, see “Menus” (page 35).

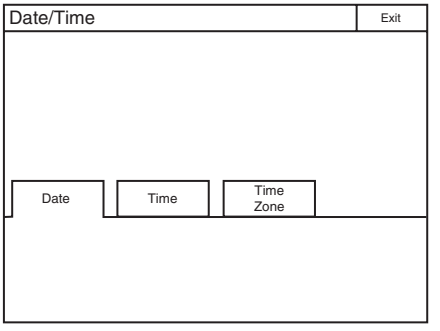
Setting the Clock

The control panel has an internal clock for recording the date and time at which reference files and scene files are saved to a “Memory Stick Duo.”
Use the following procedure to set the clock.

1 Display the MSU Config screen. (page 35)

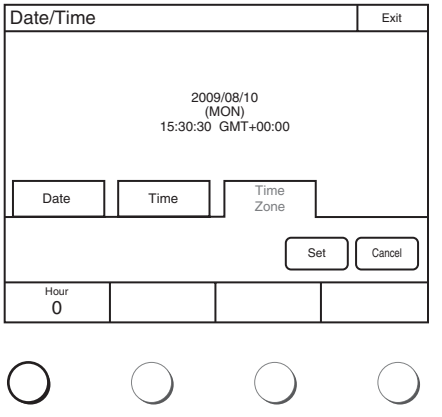


2 Press [Date/Time].
The Date/Time screen appears.



3 Set the time zone.

① Press and highlight [Time Zone].

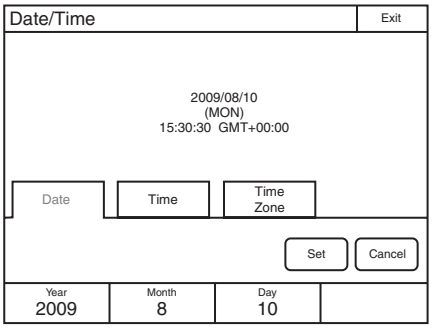


② Use the adjustment knobs on the left to set your region and set the hour offset from Greenwich Standard Time.

③ Press [Set].

4 Set the date.

① Press and highlight [Date].

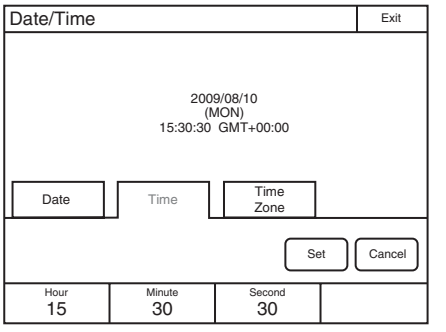


② Set the Year, Month, and Day with the left three adjustment knobs.

③ Press [Set].

5 Set the time.

① Press and highlight [Time].



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

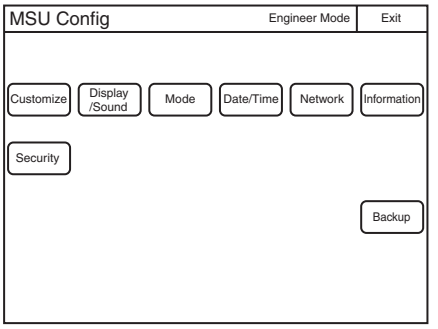
③ Press [Set] in synchronization with a time signal.

Setting the LAN Connection

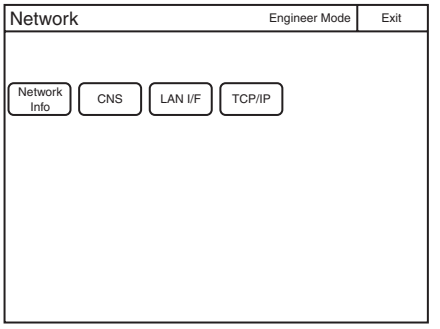
When connecting using a LAN cable, set the LAN I/F as follows:

1 Enter engineer mode. (page 35)

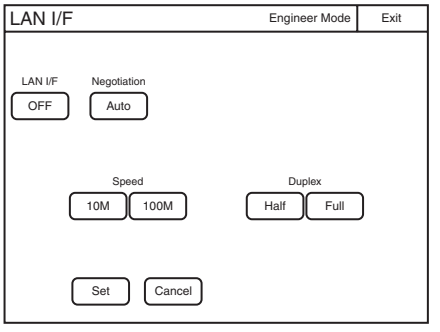
2 Display the MSU Config screen. (page 35)



3 **Press** Network.
The Network screen appears.



4 **Press** LAN I/F.
The LAN I/F screen appears.
The Speed and Duplex buttons are not displayed when Negotiation is set to Auto, as the Speed/Duplex setting is made automatically.



This screen allows settings for the equipment for LAN connection.
Perform the setting according to the connection requirements for the target.

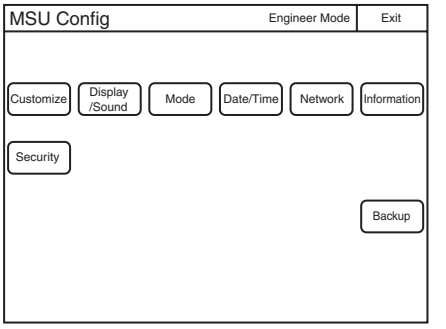
LAN I/F OFF: Sets LAN I/F to OFF.
Negotiation Auto: The connection settings for the target equipment are configured automatically. Use Auto only when the target equipment also supports the Negotiation function.
Speed 10M/100M: Sets the connection speed.
Duplex Half/Full: Sets the communication method: Half (half duplex) or Full (full duplex).

To set to LEGACY mode

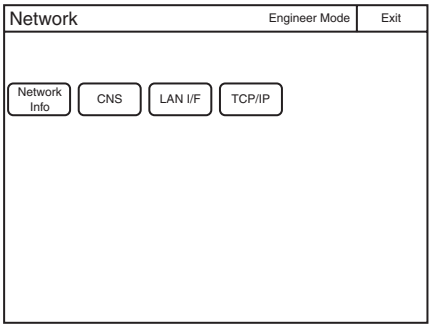
Set the control panel to LEGACY mode when connecting without using a LAN cable. When the control panel is connected, for example, to a multi-camera system with a CNU-700 or to a LAN system and a LAN cable is not directly connected to the control panel, always set the control panel to LEGACY mode.
The TCP/IP and RCP number do not need to be set.

1 **Enter engineer mode. (page 35)**

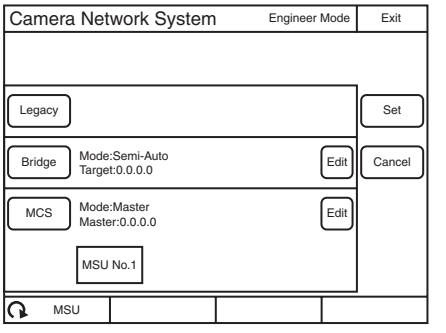
2 **Display the MSU Config screen. (page 35)**



3 **Press** Network.
The Network screen appears.



4 **Press** CNS.
The CNS screen appears.



5 **Press** Legacy.

6 **Press** Set.
The control panel is set to LEGACY mode.

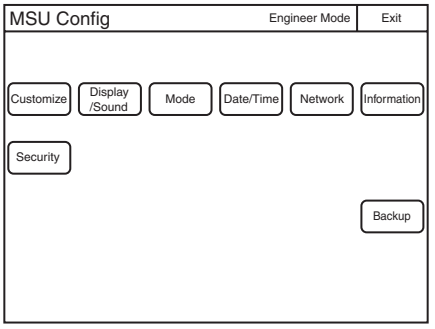
To set to BRIDGE mode

Set the control panel to BRIDGE mode when connecting the control panel and a camera device on a LAN on a one-to-one basis. The TCP/IP needs to be set in BRIDGE mode. The IP address of the connection target camera device also needs to be set in the RCP or MSU. The MSU number does not need to be set.

Multi-camera operation is not possible in BRIDGE mode.

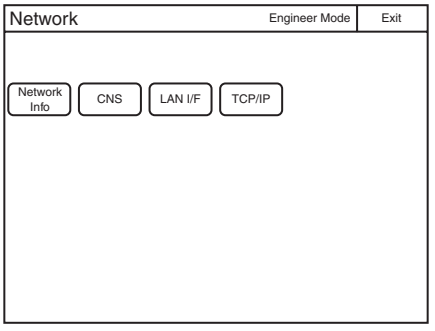
1 Enter engineer mode. (page 35)

2 Display the MSU Config screen. (page 35)



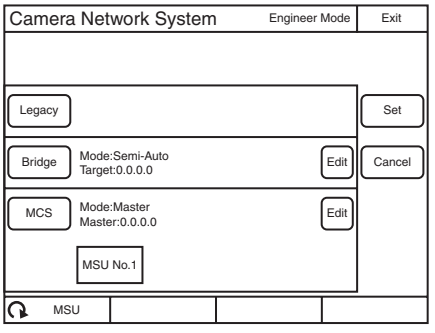
3 Press [Network].

The Network screen appears.



4 Press [CNS].

The CNS screen appears.



5 Press [Bridge].

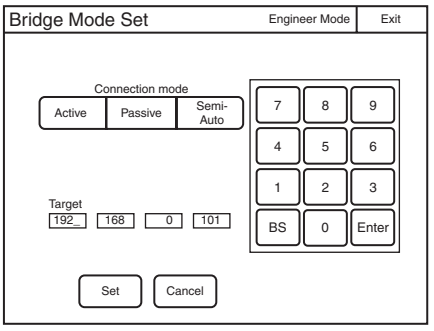
6 Press [Set].

The control panel is set to BRIDGE mode.

7 Set the connection mode.

① Press [Edit].

The Bridge Mode Set screen appears.



② Press a button to set the sub mode (Connection mode) of BRIDGE mode.

Set the sub mode in accordance with the connection state.

[Active]**:** Performs the process to connect to the target by itself.

[Passive]**:** Waits for a connection from the target.

[Semi-auto]**:** Switches between Active and Passive depending on the connection environment. Active is enabled when the MSU stands alone, and Passive is enabled when the MSU is connected to a CCU or camera via a CCA-5 cable.

8 Set the IP address of the connection target camera device.

① Set the target IP address.

Press the IP address input field, and then use the numeric keypad on the screen to enter the IP address.

② Press [Set].

9 Press [Exit].

The CNS screen reappears.

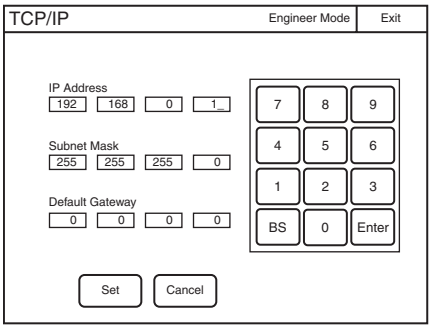
10 Press [Exit].

The Network screen reappears.

11 Set the TCP/IP.

① Press [TCP/IP].

The TCP/IP screen appears.



② Set the IP address, Subnet mask, and Default Gateway.
Press the corresponding input field, and then use the numeric keypad on the screen to enter the information.

③ Press [Set].

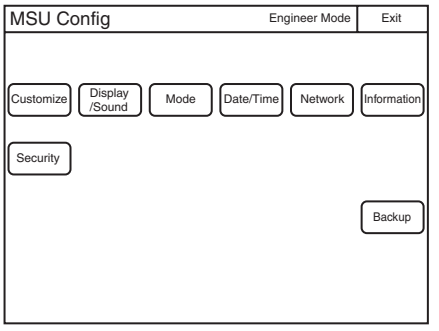
12 Press [Exit].
The Network screen reappears and the control panel is set to BRIDGE mode.

To set to multi-camera system (MCS) mode

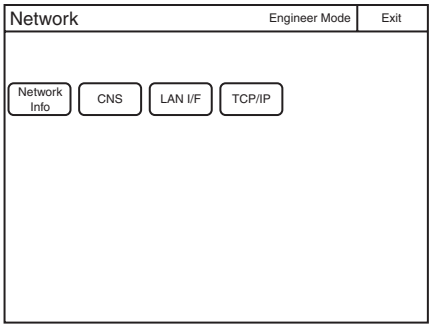
Set the control panel to MCS mode when using it in a multi-camera system on a LAN.
One device needs to be the master in MCS mode. The MSU can be set as the master, but if there are multiple MSUs within the system, set one MSU as the master and set the remaining MSUs as clients.
To set the control panel to MCS mode, the TCP/IP, IP address of the master device, and MSU number need to be set.
Configure the setting so that there will not be a duplicate within the system.

1 Enter engineer mode. (page 35)

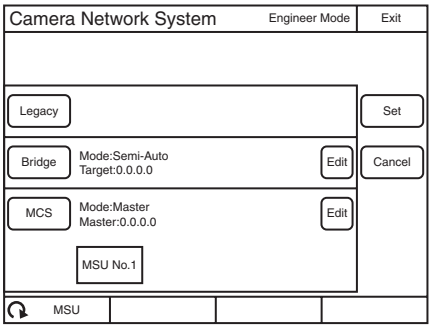
2 Display the MSU Config screen. (page 35)



3 Press [Network].
The Network screen appears.



4 Press [CNS].
The CNS screen appears.

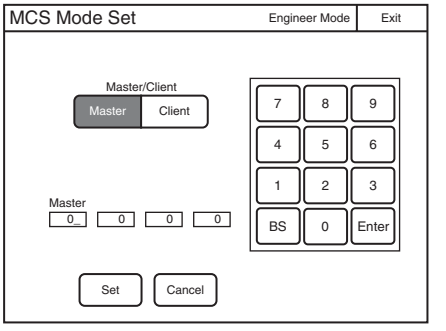


5 Press [MCS].

6 Press [Set].
The control panel is set to MCS mode.

7 Set the MCS mode to Master or Client and set the IP address of the master device.

① Press [Edit].
The MCS Mode Set screen appears.



② To set to Master, press [Master] of Master/Client.

To set to Client, press [Client] of Master/Client then set the IP address of the master device.
Press the IP address input field, and then use the numeric keypad on the screen to enter the IP address.

③ Press [Set].

8 Press [Exit].
The CNS screen reappears.

9 Set the MSU number.

① Turn the adjustment knob on the far left to change the MSU number.
If an MSU number is set to 0 or a duplicate of that of another MSU, the equipment will not function normally. Be sure to set a number that will not be a duplicate of that of another MSU.

② Press [Set].

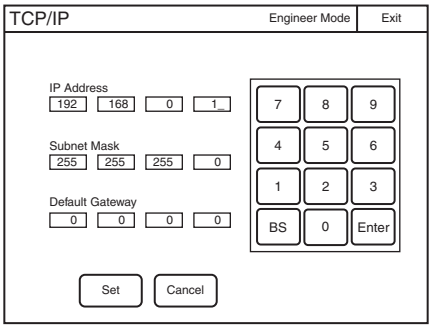
10 Press Exit**.**

The Network screen reappears.

11 Set the TCP/IP.

① Press TCP/IP.

The TCP/IP screen appears.



② Set the IP address, Subnet mask, and Default Gateway.
Press the corresponding input field, and then use the numeric keypad on the screen to enter the information.

③ Press Set.

12 Press Exit**.**

The Network screen reappears and the control panel is set to MCS mode.

Settings

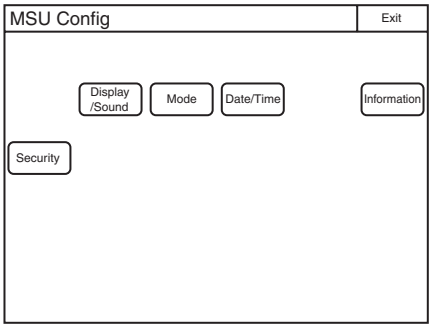
For details on menu operation, see “Menus” (page 35).

Setting the User Interface

To set the sounds

The control panel plays a sound when call signals are received, and when the panel is operated.
Turn ON/OFF the sounds or adjust the volume if necessary.

1 Display the MSU Config screen. (page 35)

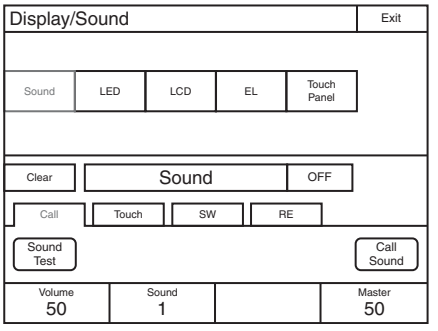


2 Press Display/Sound**.**

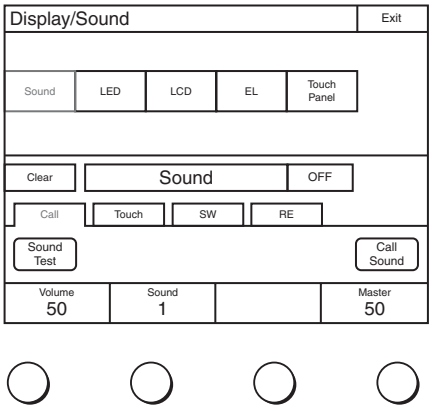
The Display/Sound screen appears.

3 Press and highlight Sound**.**

The Sound submenu appears.



4 **Select the type of sound to set.**
Four types of sound can be set. Press the tab to display the setting screen of the desired sound, and then set each of the sound settings.



Call: Sets the sound played when call signals are received.
Touch: Sets the sound played when the LCD/touch panel is touched.
SW: Sets the sound played when the buttons are pressed.
RE: Sets the sound played when the adjustment knobs are turned.

5 **Turn the adjustment knobs to set the sound.**
The following settings can be configured.
Volume: Adjusts the volume.
Sound: Selects the type of sound.
Master: Adjusts the master volume.
To confirm a sound, press [Sound Test] to play the sound.

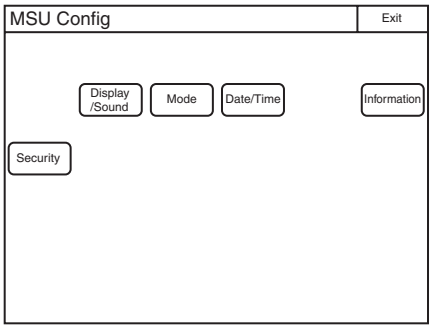
To turn ON/OFF the sound for each type
One of following buttons is displayed in each of the sound setting screens to turn ON/OFF the sound. You can press the button to turn ON/OFF the sound. The sound turns ON when the button lights.
[Call Sound]**:** Turns ON/OFF the sound played when call signals are received.
[Touch Click]**:** Turns ON/OFF the sound played when the LCD/touch panel is touched.
[Switch Click]**:** Turns ON/OFF the sound played when the buttons are pressed.
[RE Click]**:** Turns ON/OFF the sound played when the adjustment knobs are turned.

To turn off all sounds
Press [OFF] to light the button.

To set the brightness of the LEDs

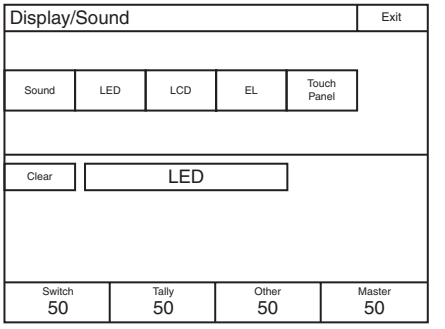
You can adjust the brightness of the operation buttons and tally display window on the control panel.

1 **Display the MSU Config screen. (page 35)**



2 **Press [Display/Sound].**
The Display/Sound screen appears.

3 **Press and highlight [LED].**
The LED submenu appears.

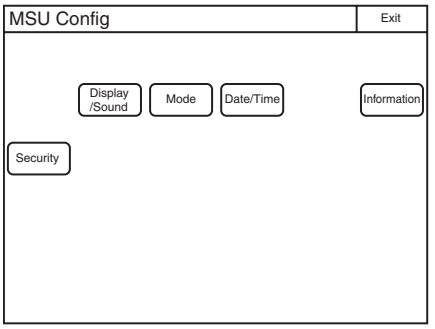


4 **Turn the adjustment knobs to set the brightness of the LEDs.**
The following settings can be configured.
Switch: Sets the brightness of the LEDs built into the operation buttons.
Tally: Sets the brightness of the camera number/tally display window.
Other: Sets the brightness of the indicators.
Master: Sets the brightness of all LEDs.

To adjust the LCD

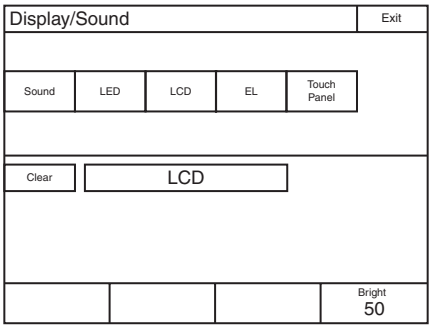
You can adjust the brightness of the LCD of the menu operation block.

1 **Display the MSU Config screen. (page 35)**



2 **Press** Display/Sound**.**
The Display/Sound screen appears.

3 **Press and highlight** LCD**.**
The LCD submenu appears.

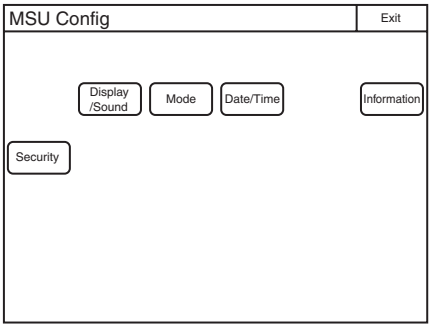


4 **Turn the adjustment knobs to set the brightness of the LCD.**
The following setting can be configured.
Bright: Sets the brightness of the LCD.

To set illuminate the display characters in dark places

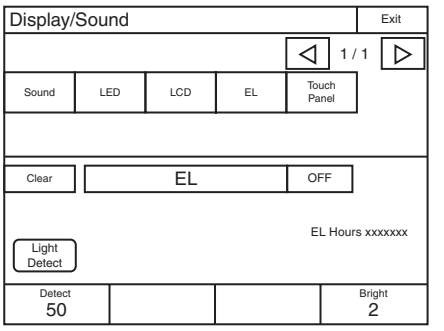
You can set a slight light to be emitted from the characters on the panel by the EL backlight. This setting makes the characters easy to see in dark surroundings.

1 **Display the MSU Config screen. (page 35)**



2 **Press** Display/Sound**.**
The Display/Sound screen appears.

3 **Press and highlight** EL**.**
The EL submenu appears.



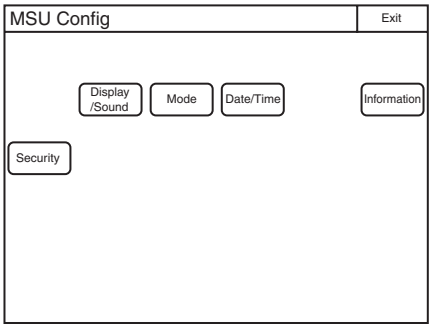
4 **Turn the adjustment knobs to change the settings.**
The following settings can be configured.
Detect: Specifies the surrounding brightness at which to turn OFF the EL backlight. If you press the Light Detect button to light the button, the EL backlight turns OFF automatically when the brightness of the value that is specified here is detected.
Bright: Adjusts the brightness of the EL backlight.

To turn OFF the character light setting
Press OFF to light the button.

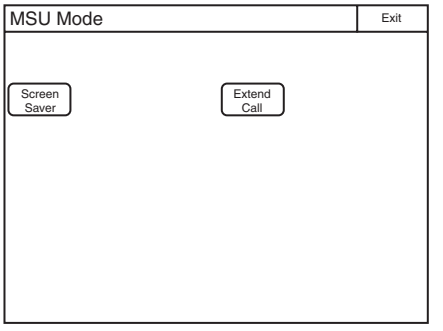
To set the screen saver

You can set the screen saver to be activated to protect the display of the menu operation block when the control panel is not operated for a certain time.
The screen saver can be turned ON/OFF and the time until it is activated can be set as necessary.

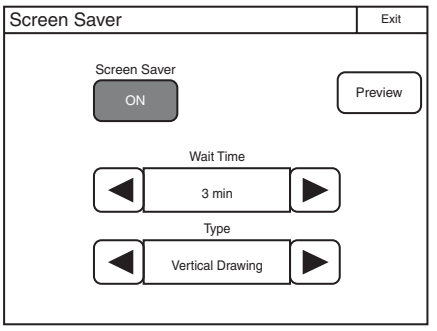
1 **Display the MSU Config screen. (page 35)**



2 **Press** Mode**.**
The Mode screen appears.



3 **Press** [Screen Saver].
The Screen Saver screen appears.



4 **Press [ON] to light the button and turn ON the screen saver.**

5 **Press ◄ or ► of Wait Time to set the time until the screen saver is activated in minutes.**

6 **Press ◄ or ► of Type to select the type of screen saver.**
Press [Preview] to display a preview of the selected screen saver. Press any place on the LCD to cancel the preview display.

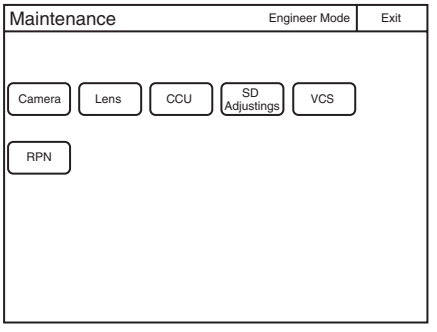
To perform RPN correction

The CCD image sensor is manufactured with high precision technology. However, cosmic rays and other noise may affect the pixels of the CCD image sensor, resulting in small white dots appearing on the display. This is a physical characteristic of CCD image sensors and is not a malfunction.
Performing auto black balance adjustment activates the correction function, and may reduce the effects of this phenomenon.
You can also perform correction manually to reduce the white dots.

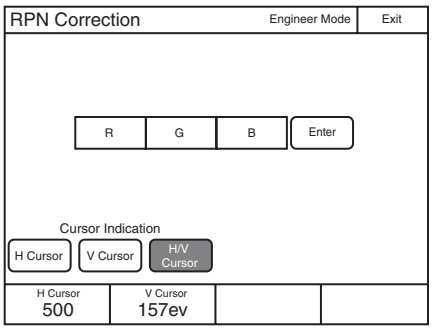
1 **Enter engineer mode. (page 35)**

2 **Press the CONFIG button.**
The menu closes and the control panel remains in engineer mode.

3 **Press the MAINTENANCE button.**
The Maintenance screen appears.



4 **Press** [RPN].
The RPN Correction screen appears.

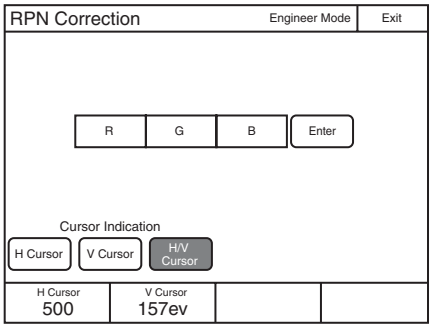


A cross-shaped cursor appears on the PIX monitor.
Perform the following steps while viewing the PIX monitor.

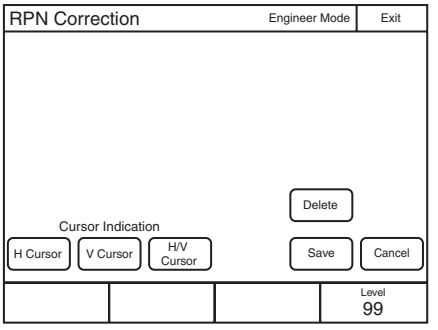
5 **Press the button that corresponds to the channel you want to correct ([R], [G], or [B]) to light it.**

6 **Select the cursor type displayed on the monitor.**
[H Cursor] : Press this to light the button and turn the horizontal cursor ON.
[V Cursor] : Press this to light the button and turn the vertical cursor ON.
[H/V Cursor] : Press this to light the button and turn the horizontal and vertical cursors ON.

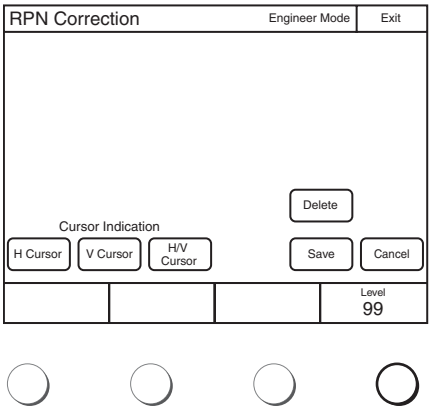
7 **Move the cursors on the monitor to the position you want to correct.**
Turning the adjustment knobs move the cursors on the monitor. Based on the cursor type selected in step **6**, the horizontal or vertical cursor or both will be assigned to the adjustment knobs.



8 **Press** [Enter].
The cursor position is set, and the RPN Correction screen changes to the following.



9 **Turn the adjustment knob on the far right to correct the defect on the monitor.**
Turning the adjustment knob right increases the brightness level, and turning it left decreases the brightness level. View the monitor and perform adjustments until the defects are not visible.



10 **Press** [Save].
The brightness correction value is registered to the control panel.
To set a different correction value, press [Delete] to delete the previous value, and repeat the procedure from step **9**.

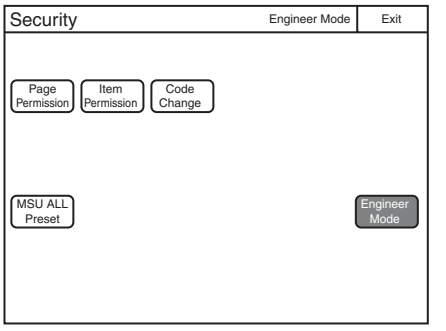
11 **Press** [Exit].
The brightness correction value is registered to the control panel.

Setting Security Restrictions

To set the security level

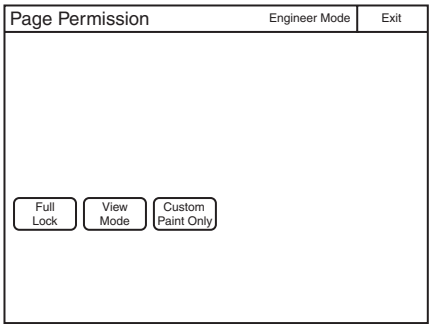
You can restrict the control functions of the control panel if necessary.

1 **Enter engineer mode. (page 35)**



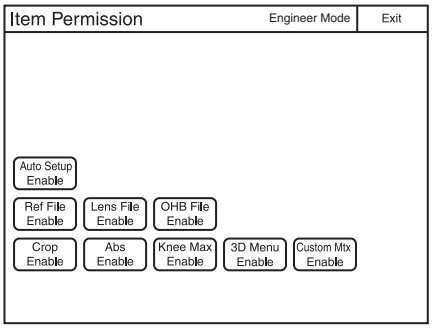
2 **Set the security level.**
The settings for the security level are split into two screens. Press each of the buttons to display each setting screen and configure the security level settings.

When [Page Permission] **is pressed:**



The following settings can be configured.
[Full Lock]**:** Press this to light the button and prohibit all operations of the control panel.
[View Mode]**:** Press this to light the button and prohibit all operations of the control panel except for viewing data.
[Custom Paint Only]**:** Press this to light the button and prohibit the majority of menu operations other than custom paint menu operations.

When [Item Permission] **is pressed:**



The following settings can be configured.

[Auto Setup Enable] : Press this to light the button and add the [Auto Setup] button to the Maintenance menu. The APR function of the control panel is permitted.

[Ref File Enable]**:** Press this to light the button and permit reference file configuration from the control panel.

[Lens File Enable]**:** Press this to light the button and lens file configuration from the control panel.

[OHB File Enable]**:** Press this to light the button and permit OHB file configuration from the control panel.

[Crop Enable]**:** Press this to light the button and permit 16:9 → 4:3 Crop configuration from the control panel.

[Abs Enable]**:** Press this to light the button and permit the switching to the absolute value indication.

[Knee Max Enable]**:** Press this to light the button and permit knee max configuration from the control panel.

[3D Menu Enable]**:** Press this to light the button and permit 3D System and CCU 3D Monitor configuration from the control panel. Light [3D Menu Enable] when using the HDFA-200 and configuring the 3D system.

[Custom Mtx Enable]**:** Press this to light the button and the Custom Matrix menu is added to the FILE menu. You can save a Custom Preset Matrix file, and save or readout the file from a Memory Stick.

3 Press [Exit] when the settings are finished.
The Security screen reappears.

4 Press [Engineer Mode] to cancel engineer mode.

To protect operations with a security code

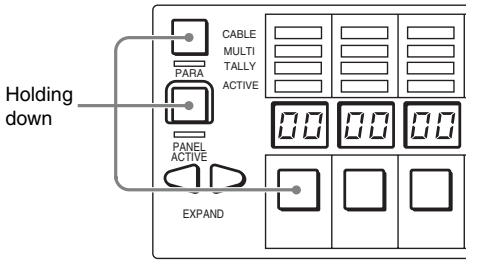
To prevent unwanted operations, you can protect operation of the control panel with a security code.

To enable security code protection

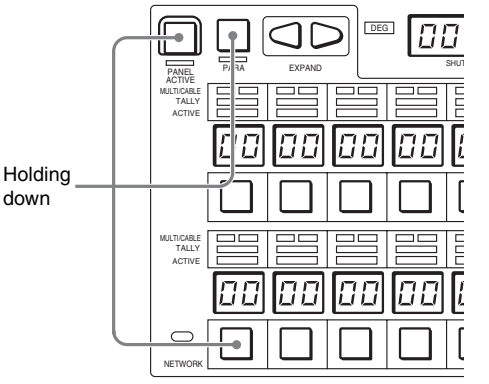
Under the default settings, the security code is disabled. Use the following procedure to enable the security code.

1 Turn on the control panel while holding down the PARA button, PANEL ACTIVE button, and camera selection button 1.

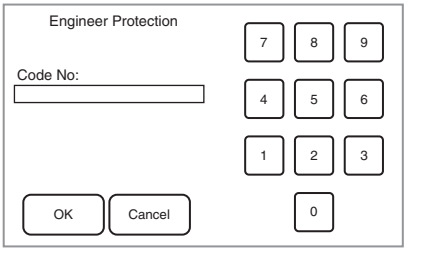
MSU-1000



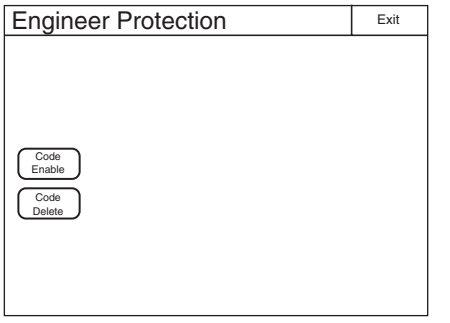
MSU-1500



The numeric keypad appears.



2 Use the numeric keypad to enter "0359," and then press [OK].
The Engineer Protection screen appears.



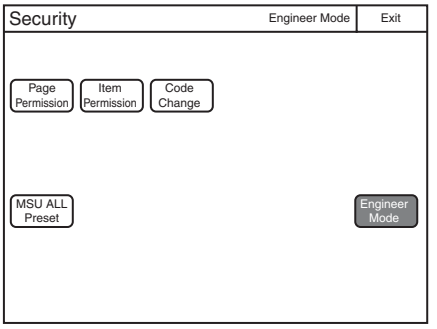
3 Press [Code Enable] to light the button.
Security code protection is enabled.
If you press [Code Delete] here to light the button, a confirmation screen for security code deletion appears. The Engineer Protection screen reappears when you press [OK].

4 Press [Exit].

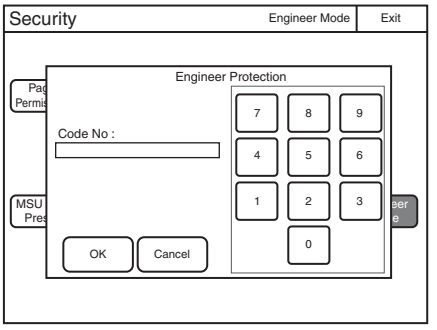
To set the security code

Some of the menus on the control panel are operated in engineer mode. To limit the use of engineer mode to specific operators, preset the security code. After you set the security code, it will need to be entered to switch to engineer mode.

1 **Enter engineer mode. (page 35)**



2 **Press** Code Change **.**
The numeric keypad and new security code (Code No.) input field appear.



3 **Use the numeric keypad to enter any security code (1 to 8 digits), and then press** OK **.**

Note

Each number entered for the security code appears as "*" on the screen.

A security code reentry screen appears.

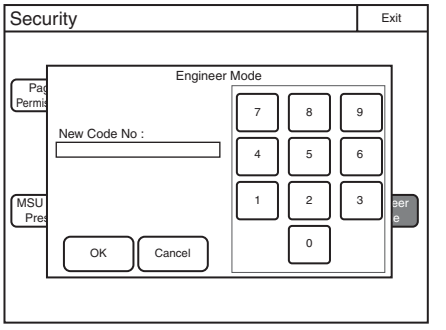
4 **Confirm the security code entered in step 3 by reentering it, and press** OK **.**
The Security screen reappears.

5 **Press** Engineer Mode **to cancel engineer mode.**
The security code is set, and the numeric keypad will appear whenever you press the Engineer Mode button in the Security screen. To enter engineer mode, enter the security code that was set and press the OK button.

To change the security code

1 **Perform steps 1 to 3 of "To enter engineer mode" (page 35) to display the Security screen.**

2 **Press** Engineer Mode **.**
The numeric keypad and security code (Code No.) input field appear.



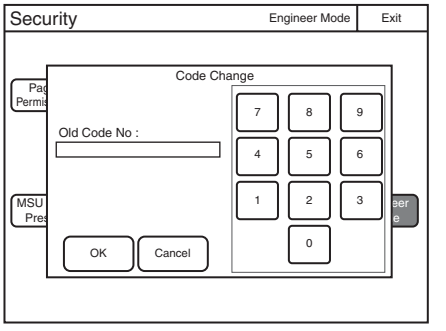
3 **Enter the security code, and then press** OK **.**

Note

Each number entered for the security code appears as "*" on the screen.

The control panel enters engineer mode, and Code Change appears.

4 **Press** Code Change **.**
The current security code (Old Code No.) input field appears.



5 **Enter the security code that you entered in step 3, and then press** OK **.**
The new security code (New Code No.) input field appears.

6 **Perform steps 3 to 5 of "To set the security code" (page 28) to set a new security code.**

To delete the security code

If you forget the security code or need to disable it to enter engineer mode in an emergency, perform the procedure for *"To enable security code protection" (page 28)*, and perform one of the following in step **3**.

- Press Code Enable to turn the button light off (security code protection is disabled).
- Press Code Delete to light the button (the security code is deleted).

Operation Settings

To set the PIX/WF operations

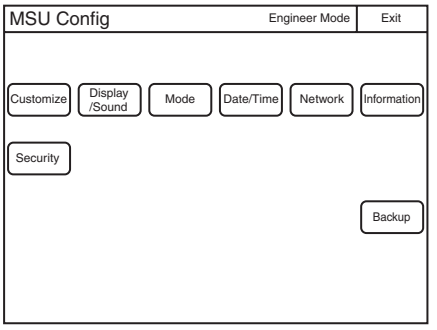
You can set the following operations for PIX/WF output.

- Whether to link output from the PIX2 OUTPUT and WF2 OUTPUT connectors to RGB switching on the adjustment display (PIX/WF Synchro setting).
- Turn ON/OFF All Mode (PIX/WF/Synchro setting)
- Control mode of the monitor selection buttons (PIX/WF Control Mode setting)

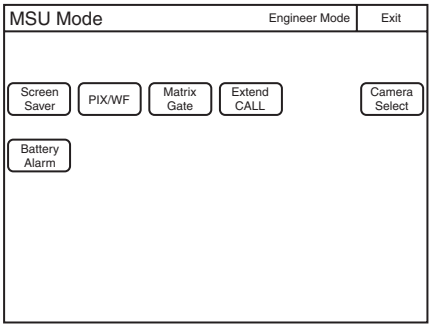
1 **Enter engineer mode. (page 35)**

2 **Press the CONFIG button.**
The menu closes and the control panel remains in engineer mode.

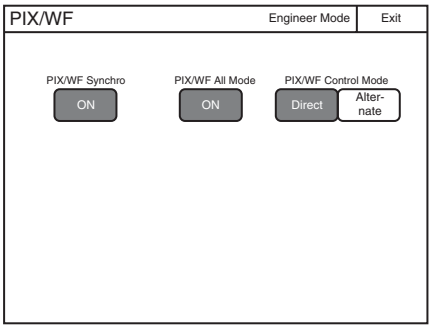
3 **Display the MSU Config screen. (page 35)**



4 **Press** Mode **.**
The Mode screen appears.



5 **Press** PIX/WF **.**
The PIX/WF screen appears.



6 **Set the PIX/WF operations.**
The following settings can be configured.

PIX/WF Synchro

Turn ON/OFF linking of output from the PIX2 OUTPUT and WF2 OUTPUT connectors to RGB switching on the adjustment display.

- Press ON to light the button and switch to linking of output from the PIX2 OUTPUT and WF2 OUTPUT connectors to RGB switching on the adjustment display when the white shading or black shading is adjusted.
- Set OFF to output the signal selected with the PICTURE MONITOR or WAVEFORM MONITOR buttons from the PIX2 OUTPUT and WF2 OUTPUT connectors regardless of the RGB selection in the adjustment screen.

PIX/WF All Mode

Turn ON/OFF PIX/WF All mode.

- Press ON to light the button and set each of the buttons of PICTURE MONITOR or WAVEFORM MONITOR to function for all of the cameras in the selected group.
- Set OFF to set each of the buttons of PICTURE MONITOR or WAVEFORM MONITOR to function for only the camera selected with a camera selection button.

PIX/WF Control Mode

Select the control mode of the monitor selection buttons.

- Press Direct to switch to direct mode. When you press any of the R, G, and B buttons of the PICTURE MONITOR and WAVEFORM MONITOR to light it, the button that was pressed previously goes out, and the signal corresponding to the newly pressed button is output. To output the R and G signals, press the G button while holding down the R button.
- Press Alternate to switch to alternate mode. When you press any of the R, G, and B buttons of the PICTURE MONITOR and WAVEFORM MONITOR to light it, the signal is output in combination with that of the button that is already lit. To output the R and G signals, press the R button to light it and then press the G button to light it. When the B button is lit, press it so that it goes out.

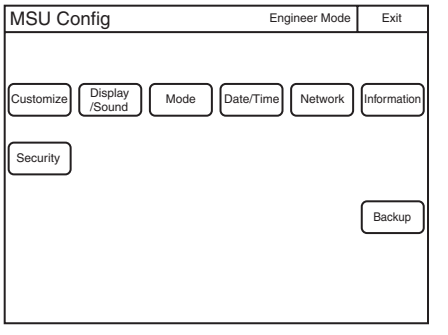
Setting the Battery Alarm

The battery alarm is displayed on the LCD when the control panel operates on DC power. Before End and End voltages for the battery alarm can be set.

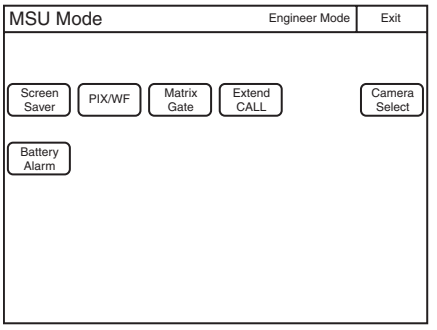
1 **Enter engineer mode. (page 35)**

2 **Press the CONFIG button.**
The menu closes and the control panel remains in engineer mode.

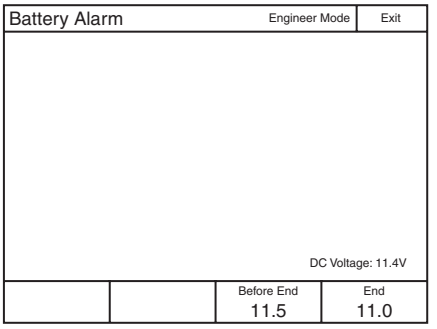
3 **Display the MSU Config screen. (page 35)**



4 **Press** Mode.
The Mode screen appears.



5 **Press** Battery Alarm.
The Battery Alarm screen appears.



Use this screen for setting the battery alarm. Set the items as required.

DC Voltage: Displays the current DC input voltage.

Setting item	Default setting	Setting value
Before End	11.5 V	11.5 to 17.0 V
End	11.0 V	11.0 to 11.5 V

Customization

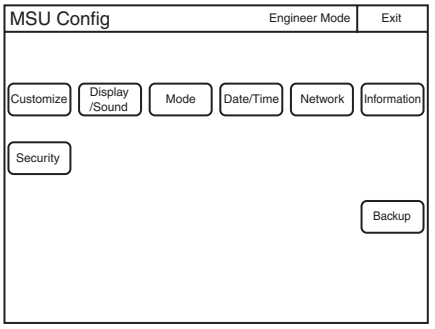
To assign functions to assignable buttons

Some of the buttons on the control panel are assignable buttons, and you can assign any function to an assignable button. Assignable buttons can also be assigned as CUSTOM buttons.

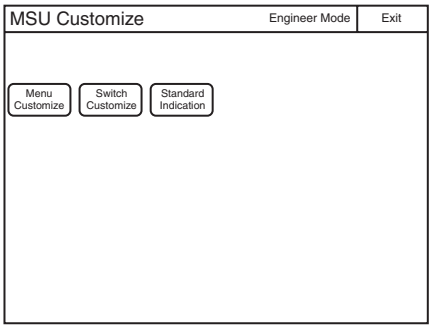
1 **Enter engineer mode. (page 35)**

2 **Press the CONFIG button.**
The menu closes and the control panel remains in engineer mode.

3 **Display the MSU Config screen. (page 35)**

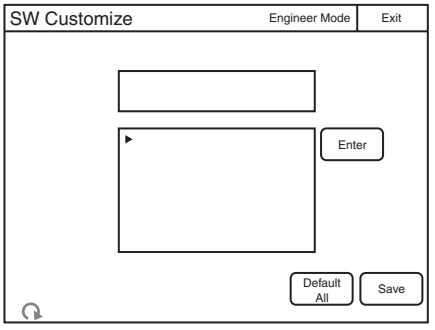


4 **Press** Customize.
The Customize screen appears.



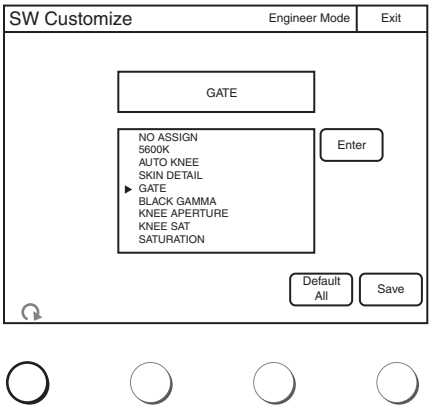
The Standard Indication button appears only for MSU-1000.

5 **Press** SW Customize.
The SW Customize screen appears.



All of the assignable buttons light immediately after this screen is displayed.

6 **Press the button for which to change the assigned function.**
The function that is currently assigned to the pressed button appears in the SW Customize screen.
A list of assignable functions also appears.



7 **Turn the adjustment knob on the far left to select the function to assign to the button.**
Turning the adjustment knob on the far left moves the cursor (▶) in the list up or down. If you align the cursor with an assignable function, that function name is displayed in amber.

8 **Press** Enter**.**
The function assigned to the button changes to the function that was selected in the previous step. At that time, "*" appears in front of the function name.

9 **Repeat steps 6 to 8 if you want to assign functions to multiple buttons.**

10 **Press** Save**.**
The confirmation message screen appears.

11 **Press** Save**.**
The function assignments of assignable buttons are saved.
If you exit the menu without saving, the function assignments will not be reflected.

To reset the function assignments of assignable buttons to their default settings

1 **Press** Default All**.**
The confirmation message screen appears.

2 **Press** OK**.**
The function assignments of assignable buttons are reset to their default settings.

3 **Press** Save**.**
The confirmation message screen appears.

4 **Press** Save**.**
The function assignments of assignable buttons are saved.
If you exit the menu without saving, the function assignments will not be reflected.

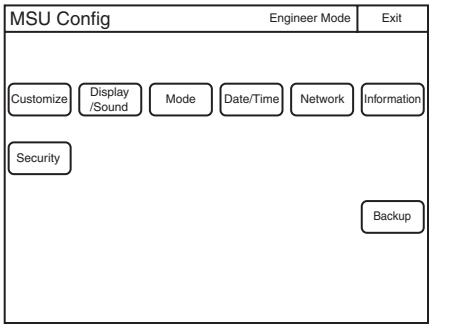
To set the custom paint menu

If you register the custom paint menu containing frequently used paint menu items, you can quickly display the necessary paint menu items to configure settings.

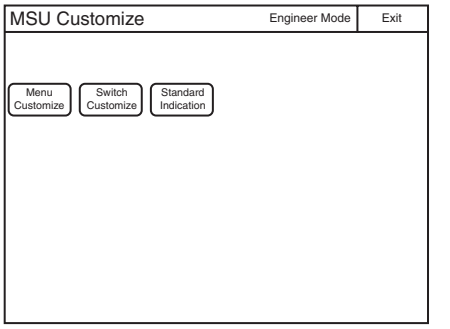
1 **Enter engineer mode. (page 35)**

2 **Press the CONFIG button.**
The menu closes and the control panel remains in engineer mode.

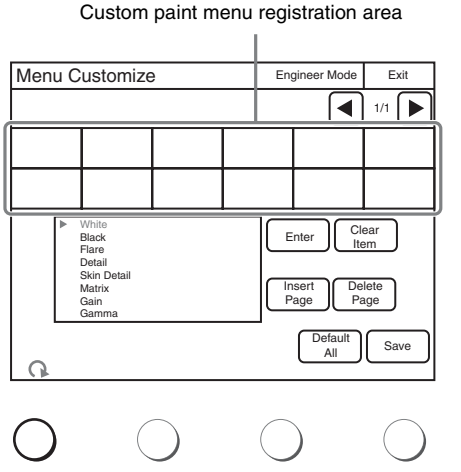
3 **Display the MSU Config screen. (page 35)**



4 **Press** Customize**.**
The Customize screen appears.



5 **Press** Menu Customize**.**
The Menu Customize screen appears.



The custom paint menu registration area is at the upper part of this screen. Below that area is a list of the paint menu items that can be added to the custom paint menu. You can edit the custom paint menu by selecting paint menu items in the list below and adding them to the registration area above.

To add a paint menu item to the custom paint menu

1 Press and highlight the place to insert the paint menu item in the custom paint menu registration area.

2 Turn the adjustment knob on the far left to select the paint menu item to add to the custom paint menu from the list below.
Turning the paint adjustment knob on the far left moves the cursor (▶) in the list below up or down. If you align the cursor with the paint menu item to add to the custom paint menu, that paint menu item is highlighted.

3 Press [Enter].
The paint menu item selected in the list below is added to the highlighted paint menu.

4 Repeat steps 1 to 3 if you want to add multiple paint menu items.

5 Press [Save].
The confirmation message screen appears.

6 Press [Save].
The contents of the custom paint menu are saved and registered to the control panel.

To delete a paint menu item from the custom paint menu

1 Press and highlight the paint menu item to delete from the custom paint menu registration area.

2 Press [Clear Item].
The selected paint menu item is deleted from the custom paint menu registration area.

To add a page to the custom paint menu

1 Press [Insert Page].
When a custom paint menu already has multiple pages and the Menu Customize screen is displayed in the second or a subsequent page, the page is added after the displayed page.
When you display the Menu Customize screen in the first page of a custom paint menu or when the custom paint menu only has one page, a message screen for confirming whether to add the page before or after the page appears.

2 Press [Before] to add the page before the current page, and press [After] to add the page after it.
The page corresponding to the pressed button is added.

To delete a page from the custom paint menu

If a custom paint menu has multiple pages, you can delete a page. However, it is not possible to delete a page if the custom paint menu only has one page.

1 Press ◄ or ► to display the page to delete.

2 Press [Delete Page].
A page delete confirmation message screen appears.

3 Press [Delete].
The page is deleted.

To reset the custom paint menu to the default settings

1 Press [Default All].
The confirmation message screen appears.

2 Press [OK].
The contents of the custom paint menu are reset to the default settings.

3 Press [Save].
The confirmation message screen appears.

4 Press [Save].
The contents of the custom paint menu are saved and registered to the control panel.

Saving and Initializing Settings

To save changed setting values to a “Memory Stick Duo”

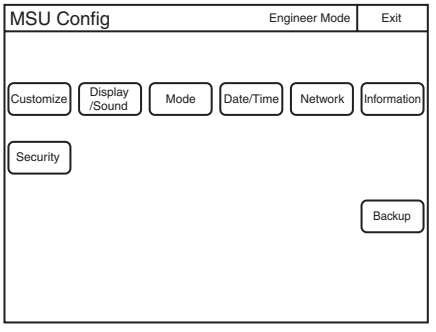
You can save the settings to a “Memory Stick Duo.” You can use these files when necessary by reading them from the “Memory Stick Duo.”

1 Insert a “Memory Stick Duo” into the “Memory Stick Duo” slot. (page 71)

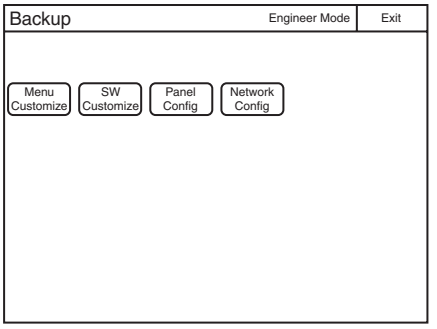
2 Enter engineer mode. (page 35)

3 Press the CONFIG button.
The menu closes and the control panel remains in engineer mode.

4 Display the MSU Config screen.



5 Press [Backup].
The Backup screen appears.



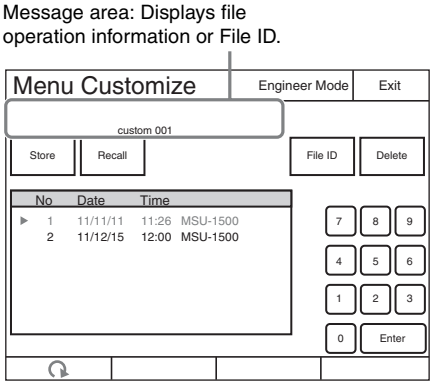
6 **Select the settings to save.**

Menu Customize: Custom paint menu settings
SW Customize: Assignable button settings
Panel Config: MSU configuration menu settings other than the above
Network Config: Network settings

Note

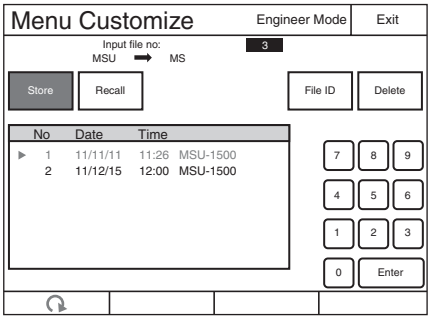
When selecting a Network Config file saved to the same model unit but with the different serial number, other than this unit, the model information on the file displayed on a message area is shown in red. It is possible to read such a file, but confirm that the IP address does not conflict with an IP address of another unit.

Example: When Menu Customize is selected.



7 **Press Store.**

The screen changes as follows.



8 **Use the numeric keypad or the leftmost adjustment knob to select the file number, and press Enter.**

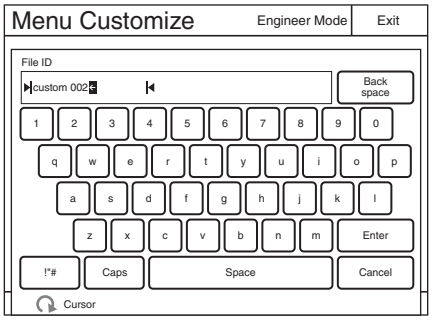
If you select the same number as that of a file displayed in the list, the data is overwritten.

9 **Confirm the file number, and press Enter.**

The settings are saved to the "Memory Stick Duo."

10 **Press File ID to set or change the File ID in the file.**

When software keyboard is displayed, enter a File ID, and press Enter to set the File ID.



To read settings saved to a "Memory Stick Duo"

Perform the procedure of "To save changed setting values to a "Memory Stick Duo"" *(page 33)* up to step **5**, and then press Recall in step **6**. The subsequent operation is the same.

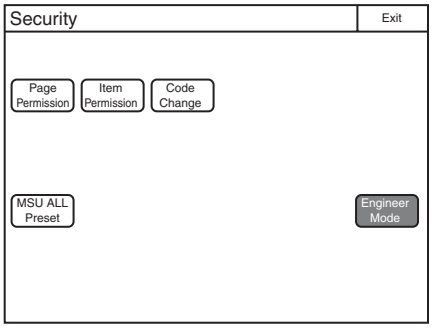
To delete settings saved to a "Memory Stick Duo"

Perform the procedure of "To save changed setting values to a "Memory Stick Duo"" *(page 33)* up to step **5**, and then press Delete in step **6**. The subsequent operation is the same.

To initialize the settings

You can reset all of the MSU configuration menu settings to their default settings.

1 **Enter engineer mode. (page 35)**



2 **Press MSU All Preset.**

The confirmation message appears.

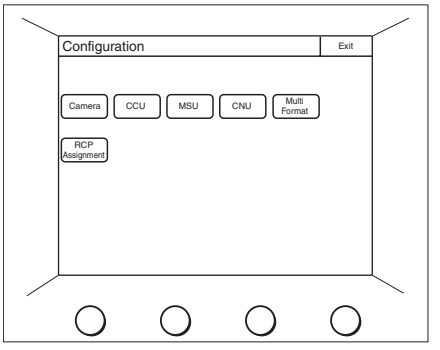
3 **Press OK.**

The MSU configuration menu settings are all reset to their default settings.

Menus

Menu Operations

You can use various menus to adjust system devices and perform various other operations with the control panel.



1 **Display a menu.**

Press any of the MODE buttons to light it.

The control panel enters the menu operation mode and the menu corresponding to the pressed MODE button appears on the display. For details on each of the menu items, see the page shown in the parenthesis.

Menu	Description
SCENE	Perform operations for scene files. *(page 70)*
FUNCTION	Turns ON/OFF various functions on the camera or CCU. *(page 69)*
MULTI	Sets master/subordinate mode when controlling multiple cameras. *(page 68)*
CONFIG	Sets configuration settings for the unit or devices in the system. *(page 59)*
MAINTENANCE	Sets the H phase and SC phase of the CCU, and performs maintenance for each camera. *(page 51)*
FILE	Performs operations such as access, registration, and transfer of files that are stored on a camera or “Memory Stick Duo” (reference files, lens files, scene files, etc.). *(page 49)*
PAINT	Adjusts white, black, flare, etc. *(page 39)*

2 **Select the item to operate.**

Press an item button on the menu screen, and display the setting/adjustment screen or operation area.

When the menu has multiple pages

When a menu has multiple pages like the paint menu, press ▲ or ▼ to change the page of the menu if necessary.

When there are submenus

Press a tab to switch to the setting or adjustment items.

3 **Set or adjust the item.**

- Turn the knob (or press the button) corresponding to the setting or adjustment item (parameter) to adjust the item to the desired value (select the desired setting).
- If a message appears, perform the operation in accordance with the message, and then press OK.

When the setting or adjustment is finished

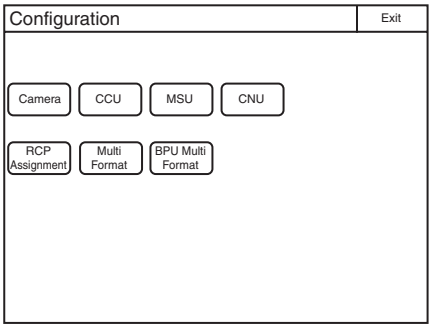
- To adjust another item of the same menu, press the button of that item.
- To adjust a different menu, press the corresponding MODE button to switch to the menu.
- To end the menu operation mode, press the lit MODE button.
- The function menu and scene file operation menu cannot be selected unless the menu currently being set is closed. If you use one of the following procedures to close the function menu or scene file operation menu, the screen displayed before you switched to that menu reappears.
  — Press the FUNCTION button or SCENE button to cause it to go out.
  — Press the lit menu selection button (for the menu displayed immediately before).

To display the MSU Config screen

When setting the control panel, use the following procedure to display the MSU Config screen.

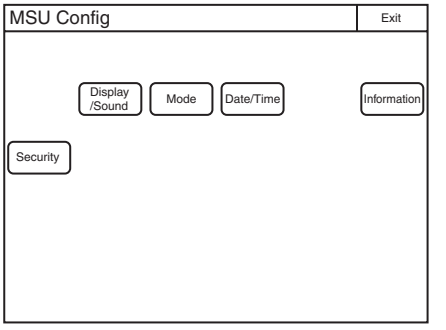
1 **Press the CONFIG button.**

The Configuration screen appears.



2 **Press MSU.**

The MSU Config screen appears.

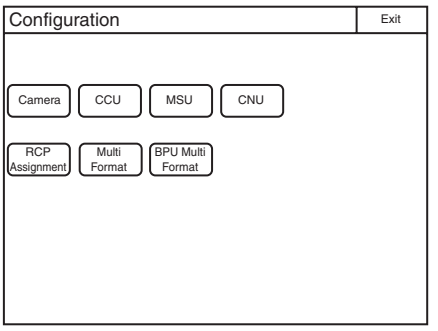


To enter engineer mode

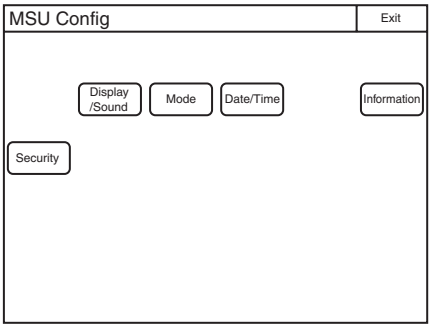
Some settings of the control panel have their functions restricted and are not displayed to prevent unintentional operation. When you enter engineer mode, the restrictions are cancelled.

Use the following procedure to enter engineer mode.

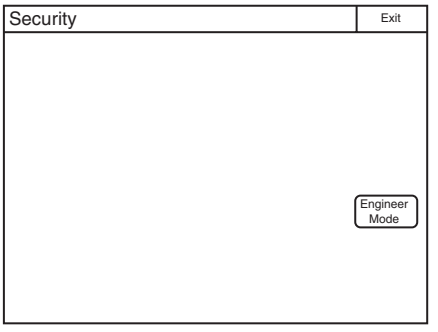
1 **Press the CONFIG button.**
The Configuration screen appears.



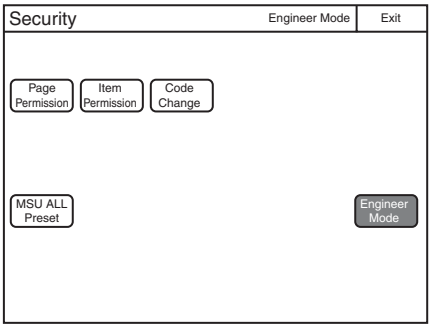
2 **Press** [MSU]**.**
The MSU Config screen appears.



3 **Press** [Security]**.**
The Security screen appears.



4 **Press** [Engineer Mode] **to light the button.**
The items that were hidden appear.



The [Code Change] button appears when [Code Enable] is lit on the Engineer Protection screen *(page 28)*.

Menu Tree

Paint

- White
  - RGB
  - Color Temp
- Black
- Flare
- Detail*
  - 1/3
  - 2/3
  - 3/3
- Skin DTL
  - Skin DTL 1
  - Skin DTL 2
  - Skin DTL 3
  - Y Limit
- Matrix
  - User 1/2
  - User 2/2
  - Multi
  - Preset
- Gain
- Gamma
  - Gamma
  - Step
- Black Gamma
- Knee
  - Knee Point
  - Knee Slope
  - Auto Knee
  - Soft Knee
- Shutter
  - Shutter
  - FPS
- Saturation
- V Mod Saw
- White Clip
- Auto Iris
- Mono Color
- Noise Suppression
- Flicker Reduction
  - Adjusting
  - Type
- Gamma/Knee
- Low Key Saturation
- Knee Saturation
- Gamma Table
  - Standard
  - Hyper
  - Special
  - User
- HDR Operation
  - HDR Setup
  - HDR Knee
- HDR Conversion
  - Highlight Cre.
  - Black
  - White/Gain
- Detail*
  - 1/3
  - 2/3
  - 3/3
- HD Detail
  - 1/3
  - 2/3
  - 3/3
- 4K Detail
  - 1/3
  - 2/3
  - 3/3
- HD Detail Reduction

File

- Reference
  - Reference Store
  - Reference Transfer
  - Adjusting
- Scene
  - Store/Recall
  - Scene Transfer
  - Adjusting
- Lens
  - Lens Store
  - Lens Select
  - Auto White
  - Adjusting
- OHB
  - OHB Store
  - Auto W Shading
  - Auto B Shading
  - Auto White
  - Auto Black
  - Adjusting
- Custom Matrix
  - Store
  - Transfer
  - Adjusting
- User Gamma
  - User Gam Transfer
  - Adjusting
- RCP Assignment
  - Store/Recall
  - RCP Assignment
- Converter All-Settings
  - Store/Recall
  - All-Settings Transfer
- Memory Stick
  - Format

Maintenance

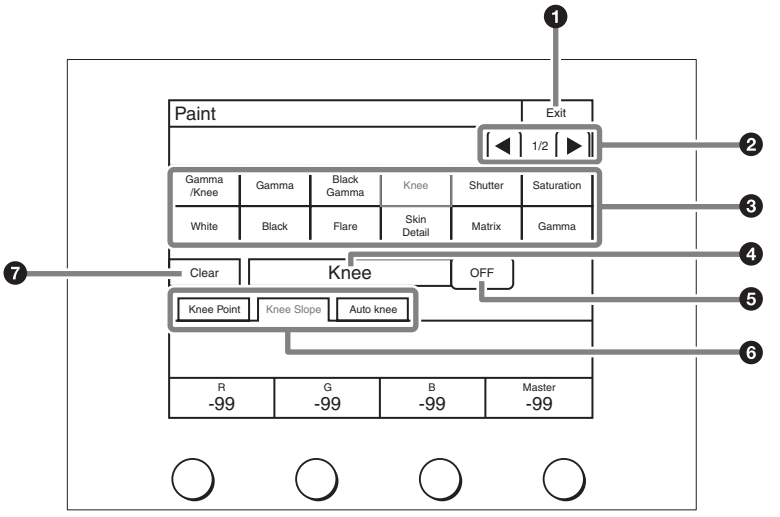
- Camera
  - Black Shading
    - R
    - G
    - B
  - White Shading
    - R
    - G
    - B
    - White
  - Black Set
    - Black Set
    - Black
  - OHB Matrix
    - User Matrix 1/2
    - User Matrix 2/2
    - Multi Matrix
  - ATW Setting
  - Microphone Gain
- Lens
  - Auto Iris Settings
  - Flare
  - V Mod Saw
  - ALAC
  - F Drop Comp
  - Zoom/Focus
- CCU
  - Phase
    - H
    - SC
  - Monitor Output
  - 3D Monitor
    - Select
    - Mode
    - CAM Ctrl
- SD Adj
  - SD Detail
    - 1/3
    - 2/3
    - 3/3
  - SD Gamma
  - SD Matrix
    - User Matrix 1/2
    - User Matrix 2/2
    - Multi Matrix
    - Preset Matrix
  - Interpolation
  - Cross Color Reduction
  - Aspect
- VCS
  - Monitor Level
- RPN
- Auto Setup

* Same menu appears twice.

- **Config**
  - Camera
    - Mode
    - CAM Menu Control
  - CCU
    - Mode
    - Return Setting
    - Channel ID
    - CCU Menu Control
    - HDFX
      - IF Select
  - MSU
    - Customize
      - Menu Customize
      - Switch Customize
      - Standard Ind
    - Display/Sound
      - Sound
        - Call
        - Touch
        - SW
        - RE
      - LED
      - LCD
      - EL
      - Touch Panel
    - Mode
      - Screen Saver
      - PIX/VF
      - Matrix Gate
      - Extend Call
      - Camera Select
    - Date/Time
      - Date
      - Time
      - Time Zone
    - Network
      - Network Info
      - CNS
      - LAN I/F
      - TCP/IP
    - Information
      - Version
      - Network Info
    - Security
      - Page Permission
      - Item Permission
      - MSU ALL Preset
      - Engineer Mode
    - Backup
      - Menu Customize
      - SW Customize
      - Panel Config
      - Network Config
  - CNU
    - MSU Assign
  - Converter
    - AIR Matching
  - RCP Assignment
  - Multi Format
  - BPU Multi Format
  - 3D System
    - 3D Mode
    - Channel ID
    - 3D CAM Control
- **Multi**
  - Master/Subordinate
  - Character
  - Simul Setting
- **Function**
  - Optical Level
  - PIX/WF (MSU-1500 only)

Paint Menu

Screen display example (when “Knee” is selected in the Paint menu)



❶ Press this to return to the previous menu screen.

❷ This indicates the page number/total number of pages. When this indication is displayed, you can press ◀ or ▶ to change the page.

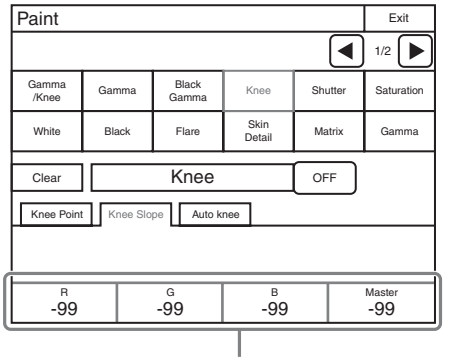
❸ Selects functions.

❹ Displays the names of functions that are selected.

❺ Turns OFF the functions displayed in ❹.

❻ Press a tab to switch to the setting items. Indicators are displayed for the individual setting items of each tab to indicate whether or not a setting is ON or OFF (an indicator lights when the setting item is ON).

❼ Press this to light the button in red and display a red frame around items that can be cleared.



Items that can be cleared are indicated by a red frame

You can press items with a red frame around them to clear their value one by one. If you press ❹, the values for all of the items with a red frame around them will be cleared. To cancel clearing items, press Clear again.

Menu items

Paint menu		Switch	Control item	Description
Menu	**Submenu**			
White				Corrects the color reproduction of the camera to match the color temperature of the light source shining on the subject.
	RGB		R/G/B	Changes the sensitivity of each primary color (R, G, and B) and corrects the color temperature.
		ATW		This is the Auto Tracing White Balance. It continually corrects the white balance to match the screen during shooting. An error may be generated depending on the pattern.
		AWB		This is the Auto White Balance. Pressing this button during the shooting of a white subject automatically corrects the color temperature so that the white parts of the subject become white.
	Color Temp		Balance	Corrects the balance so that it intersects the color temperature in the color space. (R and B are corrected in the same direction.)
			Color Temp	Corrects the color temperature in accordance with the spectrum of black body radiation of the color space. (R and B are corrected in the opposite direction.)
		ATW		This is the Auto Tracing White Balance. It continually corrects the white balance to match the screen during shooting. An error may be generated depending on the pattern.
		AWB		This is the Auto White Balance. Pressing this button during the shooting of a white subject automatically corrects the color temperature so that the white parts of the subject become white.
Black				Adjusts the black level of images for when the lens is closed.
			R/G/B	Adjusts the black level of each of R, G, and B.
			Master	Links R, G, and B and adjusts them simultaneously.
		ABB		This is the Auto Black Balance. It automatically adjusts the R Black and B Black so that no color is added to black when the lens is closed. Depending on the model of camera, Black Set is also automatically adjusted at the same time. When this is executed, the lens is temporarily closed.
Flare				Corrects the phenomenon of black in the subject becoming bright and color being added due to the influence of the optical system. Adjusting this in the plus direction reduces the black level of the corresponding color in accordance with the brightness of the subject. Be careful not to overcorrect this.
		OFF		Disables the flare correction function.
			R/G/B	Adjusts the correction level of each of R, G, and B.
			Master	Links R, G, and B and adjusts them simultaneously.
Detail				Corrects the contour.
		OFF		Disables the detail function.
	1/3			This is the first page of detail adjustment.
			Level	Adjusts the contour correction level. Adjusting this in the plus direction makes pictures sharp, and adjusting this in the minus direction makes pictures soft. For cameras with an electronic software focus function, this enables softer pictures than when in the DTL OFF state.
			Limiter	Makes adjustments so that contour correction is not greater than a set level to prevent overcorrection by strong contour correction when shooting subjects with large luminance differences. Adjusting this in the plus direction also enables clipping of objects with small luminance differences.
			Crispening	Makes adjustments so that signals with small luminance differences are considered to be noise and correction is not applied to them in order to reduce the emphasizing of also the contours of noise by the contour correction function. Adjusting this in the plus direction results in luminance differences for which contour correction is not performed becoming large and improvements in S/N sensitivity, but resolution sensitivity deteriorates.
			Level Dep	Contour correction is not applied to the dark parts and S/N sensitivity is increased in order to reduce the emphasizing of also the contours of noise by the contour correction function. Adjusting this in the plus direction results in contour correction not being applied up to a brighter level.

Paint menu		Switch	Control item	Description
Menu	Submenu			
		Level Dep OFF		Disables the Level Dep function.
	2/3			This is the second page of detail adjustment.
			H/V Ratio	Adjusts the horizontal and vertical ratio of contour correction.
			Frequency	Adjusts the center frequency of contour correction.
			Mix Ratio	With a type of camera that creates a contour correction signal from gamma, adjusts the ratio for adding that correction signal before and after the gamma.
			Detail Comb	Reduces cross color noise by applying the comb filter to contour correction signals. Adjusting this in the plus direction reduces cross color noise, but resolution sensitivity deteriorates. This can only be used when an SD camera is connected.
	3/3			This is the third page of detail adjustment.
			W Limiter	This is the limiter correction for detail signals added in the white direction.
			B Limiter	This is the limiter correction for detail signals added in the black direction.
			Fine DTL	Attenuates the contour correction signal. Adjusting this in the plus direction attenuates the signal. This can only be used when an SD camera is connected.
		Fine DTL		Enables the Fine DTL function. This can only be used when an SD camera is connected.
			Knee Apt	Adjusts the resolution sensitivity of high-luminance parts for which knee is applied.
		Knee Apt		Enables the Knee Apt function.
Skin DTL				Allows adjustment of the contour correction level of the set color area. For example, allows you to make the faces of people appear shiny.
		ON		Enables the Skin DTL function. Allows up to three channels to be adjusted separately. This switch enables the Skin DTL function to be turned ON/OFF simultaneously in accordance with the setting of each channel.
	Skin DTL 1			Sets the first channel of Skin DTL. When this channel is enabled, the ON mark appears on the very left of the tab.
			Level	This is the contour correction value within the color area that is set with Phase or Width. Adjusting this in the plus direction makes pictures sharp, and adjusting this in the minus direction makes pictures soft. For cameras with an electronic software focus function, this enables softer pictures than when in the DTL OFF state.
			Phase	Adjusts the center of the hues of the effective color area of Skin DTL. The value is almost equivalent to the phase on a vector scope.
			Width	Sets a range centered on the phase. The value indicates an angle.
			Saturation	Disables Skin DTL for places with a small degree of color saturation. Adjusting this in the minus direction lowers the degree of saturation at which Skin DTL is disabled.
		Auto Hue 1		This is a function for automatically searching for a hue. Capture the subject you want to measure in the center of the screen and execute the function. The phase of this channel is adjusted automatically.
		Gate 1		Adds a gate signal to the range of this channel for which Skin DTL is effective. For the output connector for which the signal can be added, see the manual of the corresponding device.
		Natural Skin DTL		Enables the Natural Skin DTL function. This can be common to control the three channels.
		Skin DTL 1		Enables Skin DTL of this channel. The first channel cannot be disabled.
		Zoom Link		Turns on/off the function that changes the correction amount for Skin DTL in response to the zoom value of the camera.
	Skin DTL 2			Sets the second channel of Skin DTL.
			Level	This is the contour correction value within the color area that is set with Phase or Width. Adjusting this in the plus direction makes pictures sharp, and adjusting this in the minus direction makes pictures soft. For cameras with an electronic software focus function, this enables softer pictures than when in the DTL OFF state.

Paint menu		Switch	Control item	Description
Menu	Submenu			
			Phase	Adjusts the center of the hues of the effective color area of Skin DTL. The value is almost equivalent to the phase on a vector scope.
			Width	Sets a range centered on the phase. The value indicates an angle.
			Saturation	Disables Skin DTL for places with a small degree of color saturation. Adjusting this in the minus direction lowers the degree of saturation at which Skin DTL is disabled.
		Auto Hue 2		This is a function for automatically searching for a hue. Capture the subject you want to measure in the center of the screen and execute the function. The phase of this channel is adjusted automatically.
		Gate 2		Adds a gate signal to the range of this channel for which Skin DTL is effective. For the output connector for which the signal can be added, refer to the manual of the corresponding device.
		Natural Skin DTL		Enables the Natural Skin DTL function. This can be common to control the three channels.
		Skin DTL 2		Enables Skin DTL of this channel. When this channel is enabled, the ON mark appears on the very left of the tab.
		Zoom Link		Turns on/off the function that changes the correction amount for Skin DTL in response to the zoom value of the camera.
	Skin DTL 3			Sets the third channel of Skin DTL.
			Level	This is the contour correction value within the color area that is set with Phase or Width. Adjusting this in the plus direction makes pictures sharp, and adjusting this in the minus direction makes pictures soft. For cameras with an electronic software focus function, this enables softer pictures than when in the DTL OFF state.
			Phase	Adjusts the center of the hues of the effective color area of Skin DTL. The value is almost equivalent to the phase on a vector scope.
			Width	Sets a range centered on the phase. The value indicates an angle.
			Saturation	Disables Skin DTL for places with a small degree of color saturation. Adjusting this in the minus direction lowers the degree of saturation at which Skin DTL is disabled.
		Auto Hue 3		This is a function for automatically searching for a hue. Capture the subject you want to measure in the center of the screen and execute the function. The phase of this channel is adjusted automatically.
		Gate 3		Adds a gate signal to the range of this channel for which Skin DTL is effective. For the output connector for which the signal can be added, refer to the manual of the corresponding device.
		Natural Skin DTL		Enables the Natural Skin DTL function. This can be common to control the three channels.
		Skin DTL 3		Enables Skin DTL of this channel. When this channel is enabled, the ON mark appears on the very left of the tab.
		Zoom Link		Turns on/off the function that changes the correction amount for Skin DTL in response to the zoom value of the camera.
	Y Limit			Disables Skin DTL for low-luminance. Sets the maximum for the Y level to disable.
			Y Limit1	Sets the maximum for the Y level in the first channel of Skin DTL.
			Y Limit2	Sets the maximum for the Y level in the second channel of Skin DTL.
			Y Limit3	Sets the maximum for the Y level in the third channel of Skin DTL.

Paint menu		Switch	Control item	Description
Menu	**Submenu**			
Matrix				Corrects the color reproduction without changing the white balance.
		OFF		Enables the matrix function. This switch enables the function to be turned ON/OFF simultaneously in accordance with individual matrix settings.
	User 1/2			Sets the matrix correction factor individually. This is the first page of the settings. When User Matrix is enabled, the ON mark appears on the very left of the tab.
		User Matrix		Enables the User Matrix function.
			R-G	Corrects the signal of the R channel in accordance with the difference between the signals of the R channel and G channel.
			G-B	Corrects the signal of the G channel in accordance with the difference between the signals of the G channel and B channel.
			B-R	Corrects the signal of the B channel in accordance with the difference between the signals of the B channel and R channel.
		Adaptive Matrix		Enables the Adaptive Matrix function. This can be common to control all the matrix functions.
	User 2/2			Sets the matrix correction factor individually. This is the second page of the settings. When User Matrix is enabled, the ON mark appears on the very left of the 1/2 tab.
		User Matrix		Enables the User Matrix function. This is the same switch as 1/2.
			R-B	Corrects the signal of the R channel in accordance with the difference between the signals of the R channel and B channel.
			G-R	Corrects the signal of the G channel in accordance with the difference between the signals of the G channel and R channel.
			B-G	Corrects the signal of the B channel in accordance with the difference between the signals of the B channel and G channel.
		Adaptive Matrix		Enables the Adaptive Matrix function. This can be common to control all the matrix functions.
	Multi			Changes color reproduction for each hue divided into 16. When Multi Matrix is enabled, the ON mark appears on the very left of the tab.
		Multi Matrix		Enables the Multi Matrix function.
			Phase	Selects the hue to adjust.
			Hue	Changes the hue of colors within the hue range selected with Phase.
			Saturation	Changes the saturation of colors within the hue range selected with Phase.
		Adaptive Matrix		Enables the Adaptive Matrix function. This can be common to control all the matrix functions.
		Gate		Adds a gate signal to an image within the hue range selected with Phase. For the output connector for which the signal can be added, see the manual of the corresponding device.
		All Clear		Returns the factors of all ranges of Multi Matrix to their initial states.
	Preset			Selects the matrix provided for the camera in advance. When Preset Matrix is enabled, the ON mark appears on the very left of the tab.
		Preset Matrix		Enables Preset Matrix.
			Preset Matrix	Selects the matrix provided for the camera in advance.
		Adaptive Matrix		Enables the Adaptive Matrix function. This can be common to control all the matrix functions.
			Level	Adjusts the effective condition of the Adaptive Matrix function.
Gain				Sets the sensitivity of the camera. The sensitivity of the camera is determined by the sum of the master gain, master white gain, and F drop gain.
			Total Gain	Sum of the master gain, master white gain, and F drop gain.
			F Drop Gain	Value of gain that compensates for lens F drop (display only).
			Step Gain	Changes the sensitivity of the camera in steps.
			M White	Changes the sensitivity of the camera continuously.

Paint menu		Switch	Control item	Description
Menu	**Submenu**			
Gamma				Corrects the photoelectric conversion characteristic of the image pickup device to the luminance characteristic of the display.
		OFF		Disables the gamma correction function.
	Gamma		R/G/B	Adjusts the correction level of each of R, G, and B.
			Master	Links R, G, and B and adjusts them simultaneously.
	Step		Step Gamma	Changes correction in steps.
Black Gamma				Adjusts gamma correction of the screen dark sections.
		ON		Enables the black gamma function.
		Range		Selects the range for which black gamma is effective. Select from Low Range, L.Mid Range, H.Mid Range, and High Range.
			R/G/B	Adjusts the correction level of each of R, G, and B.
			Master	Links R, G, and B and adjusts them simultaneously.
Knee				Compresses the bright parts of the screen to enable expressions within the signal standard. This enables you to obtain pictures that have a high dynamic range.
		OFF		Disables knee correction. Auto Knee is also disabled.
	Knee Point			Compresses the bright parts and adjusts the start level.
			R/G/B	Adjusts the level of each of R, G, and B.
			Master	Links R, G, and B and adjusts them simultaneously.
		Knee Max		Applies clipping at the point that knee correction is applied to make adjusting the knee point easy. This can only be set when in engineer mode or when Knee Max Enable is enabled.
	Knee Slope			Adjusts the ratio for compressing images.
			R/G/B	Adjusts the compression level of each of R, G, and B.
			Master	Links R, G, and B and adjusts them simultaneously.
	Auto Knee			Automatically adjusts the knee factor in accordance with the captured image signal.
		Adaptive		Divides the area with knee applied in the level direction, and sets the optimal slope for each part.
		Auto Knee		Enables the auto knee function. The settings configured for Knee Point/ Slope are ignored. When auto knee is enabled, the ON mark appears on the very left of the tab.
			Point Limit	Sets the lower limit for the knee point automatically adjusted by auto knee. This results in low level images not being influenced by auto knee.
			Auto Slope	Sets the knee slope of auto knee.
	Soft Knee			Changes the polygonal line in the vicinity of the knee point to a curve.
		Soft Knee		Turns the soft knee function ON/OFF.
			Radius	Adjusts the curvature of the curve in the vicinity of the knee point.

Paint menu		Switch	Control item	Description
Menu	**Submenu**			
Shutter				Controls the exposure time of the image pickup device.
	Shutter			Selects and sets the shutter mode.
		Angle		Displays the shutter speed as an angle value.
		Slow Shutter	Slow Shutter	Shoots with the frequency from the frame frequency of the capture image format (unit: number of frames).
		Shutter	Shutter	Controls the exposure time in steps. Display is 1/x seconds.
		ECS	ECS	This is the Extended Clear Scan. It finely controls the exposure time (unit: Hz).
		S-EVS	S-EVS	This is the Super Enhanced Vertical Definition System. It controls the vertical definition.
	FPS			This function is for overcrank and undercrank shooting.
		Shutter ON		Enables the shutter function.
		Angle		Displays the shutter speed as an angle value.
		Select FPS		Performs overcrank and undercrank shooting.
			Step/ continuous	Sets the shutter speed.
			Compensation	Corrects the change in the image level for when the FPS is changed. **OFF**: Disables the correction function. **Angle**: Automatically controls the shutter in conjunction with the FPS and maintains the output level. **Gain**: Automatically controls the electronic gain in conjunction with the FPS and maintains the output level.
			FPS	Sets the number of frames to capture.
Saturation				Adjusts the saturation of images. The luminance is not changed.
		ON		Enables the saturation function.
			Saturation	Adjusts the saturation.
V Mod Saw				Corrects color shading in the vertical direction caused by the lens or optical system.
		OFF		Disables the V Modulation Saw correction function.
			R/G/B	Adjusts the correction level of each of R, G, and B.
			Master	Links R, G, and B and adjusts them simultaneously. R, B, and G move in the opposite direction.
White Clip				Sets the maximum value of the image signal. Limits signals over a certain value by applying a clip to them.
		OFF		Disables the white clip function.
			R/G/B	Sets the maximum value of each of R, G, and B.
			Master	Links R, G, and B and sets them simultaneously.
Auto Iris				Controls the iris of the lens in accordance with the brightness of the subject. Additional adjustments are possible with the iris adjustment knob even when using the auto focus.
		ON		Enables the auto iris function.
			Pattern	Selects the weighted pattern of auto iris in accordance with the screen position.
Mono Color				Applies a special effect to make the screen mono color.
		ON		Enables the mono color function.
			Saturation	Sets the saturation.
			Hue	Sets the hue.
Noise Suppression				Controls the white noise on the screen. Over control results in deterioration of fine resolution sensitivity.
		ON		Enables the Noise Suppression function.
			Noise Sup	Adjusts the control level.

Paint menu		Switch	Control item	Description
Menu	**Submenu**			
Flicker Reduction				This function is for super motion. It allows you to reduce flickering on the screen caused by the relationship between temporal fluctuations of the light source and the frame frequency of the camera.
		ON		Enables the Flicker Reduction function.
	Adjusting			Adjusts the flicker reduction function.
		ACM		Selects the ACM method flicker reduction function.
		Standard		Selects the standard method flicker reduction function.
			Power Line Frequency	Sets the power line frequency of the lighting.
			Area	When there are multiple light sources, the screen is divided into areas and flickering is reduced in each area. This sets that area division method.
			Average Time	Sets the time constant of the parameter used for correction.
			Gain	This is the correction level.
			Offset	This is image level at which correction starts to be applied.
	Type			Sets Standard/ACM properties.
		ACM		Selects the ACM method flicker reduction function.
		Standard		Selects the standard method flicker reduction function.
			ACM	In ACM mode, selects the combination of frames to add.
			Light	In Standard mode, selects the type of lighting.
Gamma/Knee				This page contains the gamma, black gamma, and knee.
		Gamma OFF		Disables gamma correction.
			Gamma	This value corresponds to the master of gamma adjustment.
		Black Gamma ON		Enables the black gamma function.
			Blk Gamma	This value corresponds to the master of black gamma adjustment.
		Knee OFF		Disables knee correction. Auto Knee is also disabled.
			Knee Point	This value corresponds to the master of knee point adjustment.
			Knee Slope	This value corresponds to the master of knee slope adjustment.
		Auto Knee ON		Enables the auto knee function.
Low Key Saturation				Allows adjustment of the saturation of dark sections.
			ON	Enables the low key saturation function.
			Range	Sets the range for which low key saturation is performed.
			Low Key Sat	Sets the saturation level.
Knee Saturation				Compensates for the color fading of the parts for which knee is applied and makes them appear colorful.
		ON		Enables the knee saturation function.
			Knee Sat	Sets the correction level.

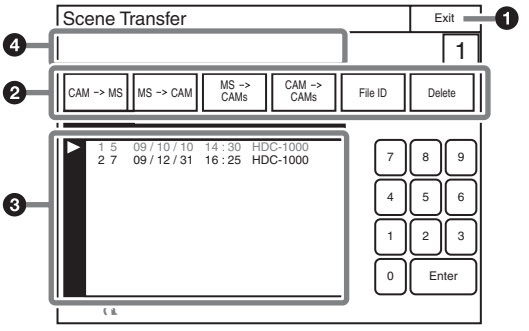
Paint menu		Switch	Control item	Description
Menu	**Submenu**			
Gamma Table				Allows you to select the curve for gamma correction.
	Standard	Standard		Uses a standard gamma curve.
			Standard	Allows you to select a type of standard gamma curve.
		Gamma OFF		Disables gamma correction.
	Hyper	Hyper		Uses gamma to completely reproduce the dynamic range of the camera including the high-luminance parts.
			Hyper	Allows you to select a type of hyper gamma curve.
		Gamma OFF		Disables gamma correction.
	Special	Special		Allows you to select the gamma that emulates film and other gamma.
			Special	Allows you to select a type of special gamma curve.
		Gamma OFF		Disables gamma correction.
	User	User		Allows you to select gamma created with CVP File Editor and other gamma.
			User	Allows you to select a type of user gamma curve.
		Gamma OFF		Disables gamma correction.
HDR Operation				Makes adjustments related to HDR (High Dynamic Range).
	HDR Setup			
			Black Offset	In Live HDR, adjusts the black offset of the HDR images only.
			HDR Contrast	HDR contrast value derived from SDR Gain (display only)
			SDR Gain	In Live HDR, adjusts (reduces) the gain of the SDR images only.
	HDR Knee			
		HDR Knee		Enables/disables the HDR knee function.
			Knee Point	Adjusts the HDR knee point.
			Knee Slope	Adjusts the HDR knee slope.
HDR Conversion				Adjustment items for converting from SDR to HDR.
	Highlight Cre.			Highlight creation (restores areas with knee applied) function.
		Highlight Cre.		Turns the highlight creation function ON/OFF.
			Point	Adjusts the knee point of SDR images.
			Slope	Adjusts the knee slope of SDR images.
	Black			Adjusts the black level.
		Input Lvl Adjust		Turns the black level adjustment function ON/OFF.
			Input	Adjusts the input black level.
			SDR Output	Adjusts the black level of the SDR output.
			HDR Output	Adjusts the black level of the HDR output.
	White/Gain			
		White Balance		Turns the white balance adjustment function for SDR input ON/OFF.
		Gain		Turns the gain correction function for SDR input ON/OFF.
			R/G/B	Adjusts the white balance (R, G, B).
			M.White	Adjusts the gain correction.
HD Detail				Adjusts the detail in the HD output.
		OFF		Disables the HD detail function. Displayed only when supported by the connected device.
	1/3			This is the first page of detail adjustment.
			Level	Adjusts the contour correction level. Adjusting this in the plus direction makes pictures sharp, and adjusting this in the minus direction makes pictures soft. For cameras with an electronic software focus function, this enables softer pictures than when in the DTL OFF state.

Paint menu		Switch	Control item	Description
Menu	Submenu			
			Limiter	Makes adjustments so that contour correction is not greater than a set level to prevent overcorrection by strong contour correction when shooting subjects with large luminance differences. Adjusting this in the plus direction also enables clipping of objects with small luminance differences.
			Crispening	Makes adjustments so that signals with small luminance differences are considered to be noise and correction is not applied to them in order to reduce the emphasizing of also the contours of noise by the contour correction function. Adjusting this in the plus direction results in luminance differences for which contour correction is not performed becoming large and improvements in S/N sensitivity, but resolution sensitivity deteriorates.
			Level Dep	Contour correction is not applied to the dark parts and S/N sensitivity is increased in order to reduce the emphasizing of also the contours of noise by the contour correction function. Adjusting this in the plus direction results in contour correction not being applied up to a brighter level.
	2/3			This is the second page of detail adjustment.
			H/V Ratio	Adjusts the horizontal and vertical ratio of contour correction.
			Frequency	Adjusts the center frequency of contour correction.
			Mix Ratio	With a type of camera that creates a contour correction signal from gamma, adjusts the ratio for adding that correction signal before and after the gamma.
	3/3			This is the third page of detail adjustment.
			W Limiter	This is the limiter correction for detail signals added in the white direction.
			B Limiter	This is the limiter correction for detail signals added in the black direction.
			Knee Apt	Adjusts the resolution sensitivity of high-luminance parts for which knee is applied.
4K Detail				Adjusts the detail in the 4K output.
		OFF		Disables the 4K detail function. Displayed only when supported by the connected device.
	1/3			This is the first page of detail adjustment.
			Level	Adjusts the contour correction level. Adjusting this in the plus direction makes pictures sharp, and adjusting this in the minus direction makes pictures soft. For cameras with an electronic software focus function, this enables softer pictures than when in the DTL OFF state.
			Limiter	Makes adjustments so that contour correction is not greater than a set level to prevent overcorrection by strong contour correction when shooting subjects with large luminance differences. Adjusting this in the plus direction also enables clipping of objects with small luminance differences.
			Crispening	Makes adjustments so that signals with small luminance differences are considered to be noise and correction is not applied to them in order to reduce the emphasizing of also the contours of noise by the contour correction function. Adjusting this in the plus direction results in luminance differences for which contour correction is not performed becoming large and improvements in S/N sensitivity, but resolution sensitivity deteriorates.
			Level Dep	Contour correction is not applied to the dark parts and S/N sensitivity is increased in order to reduce the emphasizing of also the contours of noise by the contour correction function. Adjusting this in the plus direction results in contour correction not being applied up to a brighter level.
	2/3			This is the second page of detail adjustment.
			H/V Ratio	Adjusts the horizontal and vertical ratio of contour correction.
			Frequency	Adjusts the center frequency of contour correction.
			Mix Ratio	With a type of camera that creates a contour correction signal from gamma, adjusts the ratio for adding that correction signal before and after the gamma.
	3/3			This is the third page of detail adjustment.
			W Limiter	This is the limiter correction for detail signals added in the white direction.
			B Limiter	This is the limiter correction for detail signals added in the black direction.

Paint menu		Switch	Control item	Description
Menu	Submenu			
			Knee Apt	Adjusts the resolution sensitivity of high-luminance parts for which knee is applied.
HD Detail Reduction				Function for reducing detail components in the HD input.
		ON		Enables the HD detail reduction function.
			Level	Adjusts the level of detail components in the HD input.
			Frequency	Adjusts the frequency of detail components in the HD input.

File Menu

Screen display example (when “Scene” is selected in the File menu, and then “Scene Transfer” is selected)



❶ Press this to return to the previous menu screen.

❷ Press a button to select the transfer destination and source. Press the File ID button to enter a File ID, press the Delete button to delete a file.

❸ This displays a list of scene files that can be transferred. When there are multiple files, turn the SELECT knob to select the scene file that will be transferred.

❹ Message area
This displays files and the operation information.

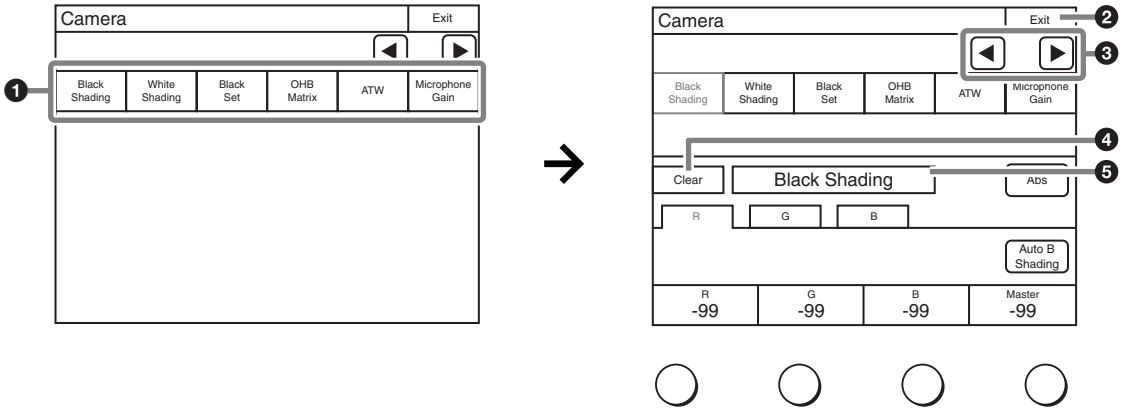
Menu items

File menu		Control item	Function
Menu	Submenu		
Reference	Reference Store		Registers a reference file.
	Reference Transfer	CAM → MS	Transfers a reference file from a camera to a “Memory Stick Duo.”
		MS → CAM	Transfers a reference file from a “Memory Stick Duo” to a camera.
		MS → CAMs	Transfers a reference file from a “Memory Stick Duo” to multiple cameras. Not available during network connections.
		CAM → CAMs	Transfers a reference file from a camera to multiple cameras. Not available during network connections.
		File ID	Sets a File ID in a reference file of a “Memory Stick Duo.”
	Adjusting	(Paint menu items)	Allows you to adjust the save items.
Scene	Store/Recall		Registers or reads a scene file.
	Scene Transfer	CAM → MS	Transfers a scene file from a camera to a “Memory Stick Duo.”
		MS → CAM	Transfers a scene file from a “Memory Stick Duo” to a camera.
		MS → CAMs	Transfers a scene file from a “Memory Stick Duo” to multiple cameras. Not available during network connections.
		CAM → CAMs	Transfers a scene file from a camera to multiple cameras. Not available during network connections.
		File ID	Sets a File ID in a scene file of a “Memory Stick Duo.”
		Delete	Deletes a scene file from a “Memory Stick Duo.”
	Adjusting	(Paint menu items)	Allows you to adjust the save items.

File menu		Control item	Function
Menu	**Submenu**		
Lens	Lens Store		Registers a lens file.
	Lens Select	Change Name	Changes the lens name.
		Select File	Selects a lens file.
	Auto White		Adjusts the auto white balance.
	Adjusting	(Paint menu items)	Allows you to adjust the save items.
OHB	OHB Store		Registers an OHB file.
	Auto W Shading		Adjusts the auto white shading.
	Auto B Shading		Adjusts the auto black shading.
	Auto White		Adjusts the auto white.
	Auto Black		Adjusts the auto black.
	Adjusting	Black Shading	Adjusts the black shading.
		White Shading	Adjusts the white shading.
		Black Set	Adjusts the black set.
		Matrix	Adjusts the OHB matrix.
Custom Matrix	Store		Registers a Custom Preset Matrix file.
	Transfer	CAM → MS	Transfers a Custom Preset Matrix file from a camera to a “Memory Stick Duo.”
		MS → CAM	Transfers a Custom Preset Matrix file from a “Memory Stick Duo” to a camera.
		MS → CAMs	Transfers a Custom Preset Matrix file from a “Memory Stick Duo” to multiple cameras. Not available during network connections.
		CAM → CAMs	Transfers a Custom Preset Matrix file from a camera to multiple cameras. Not available during network connections.
		File ID	Sets a File ID in a Custom Preset Matrix file of a “Memory Stick Duo.”
		Delete	Deletes a Custom Preset Matrix file from a “Memory Stick Duo.”
	Adjusting	(Paint menu items)	Allows you to adjust the save items.
User Gamma	User Gam Transfer	MS → CAM	Transfers a user gamma file from a “Memory Stick Duo” to a camera.
		MS → CAMs	Transfers a user gamma file from a “Memory Stick Duo” to multiple cameras. Not available during network connections.
		Delete	Allows you to delete a user gamma file from a “Memory Stick Duo.”
	Adjusting	(Paint menu items)	Selects a Gamma Table.
RCP Assignment	Store/Recall	Store	Saves an RCP assignment file from MSU internal memory to a “Memory Stick Duo.”
		Recall	Reads an RCP assignment file from a “Memory Stick Duo” to MSU internal memory.
		File ID	Sets a File ID in an RCP assignment file of a “Memory Stick Duo.”
		Delete	Deletes an RCP assignment file from a “Memory Stick Duo.”
	RCP Assignment	–	Sets the RCP assignment setting.
Converter All-Settings	Store/Recall		Stores or recalls a converter all-settings file.
	All-Settings Transfer	CAM → MS	Transfers a converter all-settings file from the camera to “Memory Stick Duo” media.
		MS → CAM	Transfers a converter all-settings file from “Memory Stick Duo” media to the camera.
		File ID	Sets the file ID of a converter all-settings file on “Memory Stick Duo” media.
		Delete	Deletes a converter all-settings file from “Memory Stick Duo” media.
Memory Stick	Format		Formats a “Memory Stick Duo.”

Maintenance Menu

Screen display example (when “Camera” is selected in the Maintenance menu)



❶ This displays the setting items. Pressing a button to light it displays the setting screen for that item in the bottom of the screen.

❷ Press this to return to the previous menu screen.

❸ This indicates the page number/total number of pages. When this indication is displayed, you can press ◀ or ▶ to change the page.

❹ Press this to clear the setting items.

❺ This displays the current setting item name. After Clear is pressed to light it, you can clear all of the setting values.

Menu items

Maintenance menu		Submenu	Switch	Control item	Description
Menu	Secondary menu				
Camera					These are the maintenance items related to camera heads.
	Black Shading				Corrects black shading in images.
		R	Auto B Shading		This is the Auto Black Shading. It automatically adjusts each of the RGB, HV, and SAW/PARA parameters. Auto adjustment may be additionally performed with 2D Black Shading depending on the camera. If 2D Black Shading is not saved to the OHB file, it will not be saved when the power of the camera is turned off.
				H SAW	Corrects spots in the left and right directions of the R channel in a linear fashion.
				H PARA	Corrects spots in the horizontal direction in relation to the center part of the R channel in a parabolic fashion.
				V SAW	Corrects spots in the up and down directions of the R channel in a linear fashion.
				V PARA	Corrects spots in the vertical direction in relation to the center part of the R channel in a parabolic fashion.
		G	Auto B Shading		This is the Auto Black Shading. It automatically adjusts each of the RGB, HV, and SAW/PARA parameters. Auto adjustment may be additionally performed with 2D Black Shading depending on the camera. If 2D Black Shading is not saved to the OHB file, it will not be saved when the power of the camera is turned off.
				H SAW	Corrects spots in the left and right directions of the G channel in a linear fashion.
				H PARA	Corrects spots in the horizontal direction in relation to the center part of the G channel in a parabolic fashion.
				V SAW	Corrects spots in the up and down directions of the G channel in a linear fashion.
				V PARA	Corrects spots in the vertical direction in relation to the center part of the G channel in a parabolic fashion.

Maintenance menu		Submenu	Switch	Control item	Description
Menu	Secondary menu				
		B	Auto B Shading		This is the Auto Black Shading. It automatically adjusts each of the RGB, HV, and SAW/PARA parameters. Auto adjustment may be additionally performed with 2D Black Shading depending on the camera. If 2D Black Shading is not saved to the OHB file, it will not be saved when the power of the camera is turned off.
				H SAW	Corrects spots in the left and right directions of the B channel in a linear fashion.
				H PARA	Corrects spots in the horizontal direction in relation to the center part of the B channel in a parabolic fashion.
				V SAW	Corrects spots in the up and down directions of the B channel in a linear fashion.
				V PARA	Corrects spots in the vertical direction in relation to the center part of the B channel in a parabolic fashion.
	White Shading				Corrects sensitivity shading in images.
		R	Auto W Shading		This is the Auto White Shading. It automatically adjusts each of the RGB, HV, and SAW/PARA parameters. Auto adjustment may be additionally performed with 3D White Shading depending on the camera. If 3D White Shading is not saved to the OHB file, it will not be saved when the power of the camera is turned off.
				H SAW	Corrects spots in the left and right directions of the R channel in a linear fashion.
				H PARA	Corrects spots in the horizontal direction in relation to the center part of the R channel in a parabolic fashion.
				V SAW	Corrects spots in the up and down directions of the R channel in a linear fashion.
				V PARA	Corrects spots in the vertical direction in relation to the center part of the R channel in a parabolic fashion.
		G	Auto W Shading		This is the Auto White Shading. It automatically adjusts each of the RGB, HV, and SAW/PARA parameters. Auto adjustment may be additionally performed with 3D White Shading depending on the camera. If 3D White Shading is not saved to the OHB file, it will not be saved when the power of the camera is turned off.
				H SAW	Corrects spots in the left and right directions of the G channel in a linear fashion.
				H PARA	Corrects spots in the horizontal direction in relation to the center part of the G channel in a parabolic fashion.
				V SAW	Corrects spots in the up and down directions of the G channel in a linear fashion.
				V PARA	Corrects spots in the vertical direction in relation to the center part of the G channel in a parabolic fashion.
		B	Auto W Shading		This is the Auto White Shading. It automatically adjusts each of the RGB, HV, and SAW/PARA parameters. Auto adjustment may be additionally performed with 3D White Shading depending on the camera. If 3D White Shading is not saved to the OHB file, it will not be saved when the power of the camera is turned off.
				H SAW	Corrects spots in the left and right directions of the B channel in a linear fashion.
				H PARA	Corrects spots in the horizontal direction in relation to the center part of the B channel in a parabolic fashion.
				V SAW	Corrects spots in the up and down directions of the B channel in a linear fashion.
				V PARA	Corrects spots in the vertical direction in relation to the center part of the B channel in a parabolic fashion.
		White		R/G/B	Changes the sensitivity of each primary color (R, G, and B) and corrects the color temperature.
			AWB		This is the Auto White Balance. Pressing this button during the shooting of a white subject automatically corrects the color temperature so that the white parts of the subject become white.

Maintenance menu		Submenu	Switch	Control item	Description
Menu	Secondary menu				
	Black Set				Makes adjustments so that the black level of each color does not change when the master gain is changed.
		Black Set		R/G/B	Adjusts the correction level of each of R, G, and B.
			ABB		This is the Auto Black Balance. It automatically adjusts the R black and B black so that no color is added to black when the lens is closed. Depending on the model of camera, Black Set is also automatically adjusted at the same time. When this is executed, the lens is automatically closed.
		Black		R/G/B	Adjusts the black level of each of R, G, and B.
				Master	Links R, G, and B and adjusts them simultaneously.
			ABB		This is the Auto Black Balance. It automatically adjusts the R black and B black so that no color is added to black when the lens is closed. Depending on the model of camera, Black Set is also automatically adjusted at the same time. When this is executed, the lens is automatically closed.
	OHB Matrix				Absorbs variations in color reproduction by the optical head block (optical unit).
			ON		Enables the OHB matrix function. This switch enables the function to be turned ON/OFF simultaneously in accordance with individual matrix settings.
		User Matrix 1/2			Sets the OHB User Matrix correction factor individually. This is the first page of the settings.
				R-G	Corrects the signal of the R channel in accordance with the difference between the signals of the R channel and G channel.
				G-B	Corrects the signal of the G channel in accordance with the difference between the signals of the G channel and B channel.
				B-R	Corrects the signal of the B channel in accordance with the difference between the signals of the B channel and R channel.
		User Matrix 2/2			Sets the matrix correction factor individually. This is the second page of the settings.
				R-B	Corrects the signal of the R channel in accordance with the difference between the signals of the R channel and B channel.
				G-R	Corrects the signal of the G channel in accordance with the difference between the signals of the G channel and R channel.
				B-G	Corrects the signal of the B channel in accordance with the difference between the signals of the B channel and G channel.
		Multi Matrix			Allows you to change color reproduction for each hue divided into 16.
				Phase	Selects the hue to adjust.
				Hue	Changes the hue of colors within the hue range selected with Phase.
				Saturation	Changes the saturation of colors within the hue range selected with Phase.
			All Clear		Returns the factors of all ranges of Multi Matrix to their initial states.
	ATW Setting				Adjusts the Auto Tracing White balance.
			ATW		Enables the ATW function.
				Speed	Sets the convergence speed.
	Microphone Gain				Sets the sensitivity of the microphones mounted on the camera head. Depending on the firmware version of the connected CCU, this setting may not be retained after the power is turned off.
				Ch1	Sets the sensitivity of microphone 1.
				Ch2	Sets the sensitivity of microphone 2.

Maintenance menu		Submenu	Switch	Control item	Description
Menu	**Secondary menu**				
Lens					These are the maintenance items related to the lens.
	Auto Iris Settings				Sets various parameters of the auto iris.
				Level	Sets the convergence level of the auto iris. The higher the value the brighter it becomes.
				APL Ratio	Sets the responsiveness to detailed bright parts of the subject. The higher the value the nearer it becomes to the average value, resulting in unresponsiveness to detailed parts.
				Iris Gain	This is the response speed of the auto iris. The higher the value the faster the response, but hunting becomes more likely to occur.
				Pattern	Sets the detection area of the auto iris.
			Auto Iris		Enables the auto iris function.
	Flare				Corrects the phenomenon of black in the subject becoming bright and color being added due to the influence of the optical system. Adjusting this in the plus direction reduces the black level of the corresponding color in accordance with the brightness of the subject. Be careful not to overcorrect this.
			OFF		Disables the flare correction function.
				R/G/B	Adjusts the correction level of each of R, G, and B.
				Master	Links R, G, and B and adjusts them simultaneously.
	V Mod Saw				Corrects color shading in the vertical direction caused by the lens or optical system.
			OFF		Disables the V Modulation Saw correction function.
				R/G/B	Adjusts the correction level of each of R, G, and B.
				Master	Links R, G, and B and adjusts them simultaneously. R, B, and G move in the opposite direction.
			D.shade Comp		Automatically corrects V Mod Shading in accordance with the state of the lens. Operation is only possible for compatible lens.
	ALAC				This is the Auto Lens Aberration Compensation. It automatically reduces the chromatic aberration or magnification when using a compatible lens. When the function is stopped or a compatible lens is not attached, “Stop” is displayed on the screen.
			ON		Enables the ALAC function.
	F Drop Comp				Automatically adjusts the gain to compensate for the reduction in brightness due to lens F drop.
			ON		Enables the F drop compensation function.
				F Drop Gain	Value of gain that compensates for lens F drop (display only).
				Max Gain	Adjustment gain with lens open to full aperture and zoom at the telephoto end.
				Drop Point	Position of break point in polygonal line approximation of F drop characteristic with the lens iris fully open. This corresponds roughly to the zoom position at which F drop occurs.
				Roundness	The F drop characteristic can be approximated by a polygonal line. However, depending on the lens, this is not a perfect polygonal line, but has a roundness in the vicinity of the break point (which is smoothly interpolated). The roundness is expressed in terms of the compensation gain at the break point position. The higher the value, the higher the smoothing between two straight lines of the polygonal line. A value of 0 represents a perfect polygonal line.

Maintenance menu		Submenu	Switch	Control item	Description
Menu	**Secondary menu**				
	Zoom/Focus				
			Active		Switches the zoom/focus operation between the panel (this unit) and the camera. (When Active is ON, zoom/focus cannot be adjusted on the camera side.)
			Distance (mm)		Switches the zoom display units. (Distance/Percentage)
			Distance (m)		Switches the focus display units. (Focus distance/Percentage)
				Zoom	Adjusts the zoom.
				Focus	Adjusts the focus.
CCU					These are the maintenance items related to the CCU.
	Phase				When a synchronization signal is input to the CCU, this allows you to set the phase in relation to that signal.
		H			Sets the phase of H.
				H Step	Adjusts the phase of the H direction.
				H Course	Coarsely adjusts the phase of the H direction.
				H Fine	Finely adjusts the phase of the H direction. This can only be used when an SD camera is connected.
		SC			Adjusts the phase of the subcarrier.
				SC Phase	Adjusts the phase of the VBS subcarrier.
				BF Phase	Adjusts the phase of the burst flag. This can only be used when an SD camera is connected.
	Monitor Output				Sets the marker for monitor output.
			4:3 Marker		Places a 4:3 marker on a 16:9 image for monitor output of the CCU.
				Gate Marker	Sets the brightness of the gate marker (skin gate, etc.).
			4:3 Mod		Darkens the outside of a 4:3 area within an 16:9 image for monitor output of the CCU.
				Modulation Level	This is the level with which to darken with 4:3 Mod.
	3D Monitor				Sets the 3D Monitor output of the CCU.
			Select		Select Left Camera, Right Camera or 3D Monitor for the 3D Monitor output.
			Mode		Sets the display mode during the 3D Monitor output setting.
				Border Line	Sets whether to display the border lines when the 3D Monitor Mode is set to split mode.
			CAM Ctrl		Sets the camera(s) to be controlled from the control panel: Left Camera, Right Camera, or both.

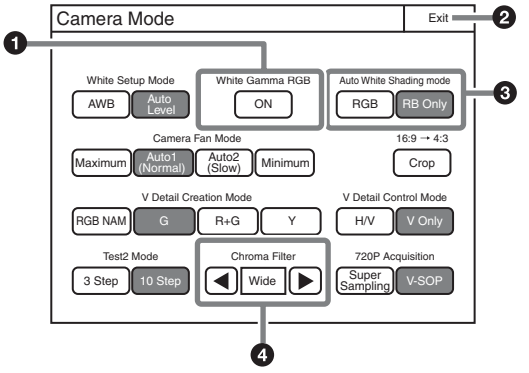
Maintenance menu		Submenu	Switch	Control item	Description
Menu	Secondary menu				
SD Adj					These are the maintenance items for down converter output.
	SD Detail				This is the contour correction function for down converter output.
			OFF		Disables the SD Detail function.
		1/3			This is the first page of SD Detail adjustment.
				Level	This the contour correction level. Adjusting this in the plus direction makes pictures sharp, and adjusting this in the minus direction makes pictures soft.
				Limiter	Makes adjustments so that contour correction is not greater than a set level to prevent overcorrection by strong contour correction when shooting subjects with large luminance differences. Adjusting this in the plus direction also enables clipping of objects with small luminance differences.
				Crisp	Makes adjustments so that signals with small luminance differences are considered to be noise and correction is not applied to them in order to reduce the emphasizing of also the contours of noise by the contour correction function. Adjusting this in the plus direction results in luminance differences for which contour correction is not performed becoming large and improvements in S/N sensitivity, but resolution sensitivity deteriorates.
				Level Dep	Contour correction is not applied to the dark parts and S/N sensitivity is increased in order to reduce the emphasizing of also the contours of noise by the contour correction function. Adjusting this in the plus direction results in contour correction not being applied up to a brighter level.
		2/3			This is the second page of SD Detail adjustment.
				H/V Ratio	Adjusts the horizontal and vertical ratio of contour correction.
				Frequency	Adjusts the center frequency of contour correction.
				Detail Comb	Reduces cross color noise by applying the comb filter to contour correction signals. Adjusting this in the plus direction reduces cross color noise, but resolution sensitivity deteriorates. This can only be used when an SD camera is connected.
		3/3			This is the third page of SD Detail adjustment.
				W Limiter	This is the limiter correction for detail signals added in the white direction.
				B Limiter	This is the limiter correction for detail signals added in the black direction.
	SD Gamma				This is the gamma correction for down converter output.
				SD M Gamma	Adjusts SD gamma.
	SD Matrix				This is the linear matrix correction for down converter output.
			OFF		Disables the SD matrix function. This switch enables the function to be turned ON/OFF simultaneously in accordance with individual matrix settings.
		User Matrix 1/2			Sets the SD matrix correction factor individually. This is the first page of the settings. When User Matrix is enabled, the ON mark appears on the very left of the tab.
			ON		Enables the User Matrix function.
				R-G	Corrects the signal of the R channel in accordance with the difference between the signals of the R channel and G channel.
				G-B	Corrects the signal of the G channel in accordance with the difference between the signals of the G channel and B channel.
				B-R	Corrects the signal of the B channel in accordance with the difference between the signals of the B channel and R channel.

Maintenance menu		Submenu	Switch	Control item	Description
Menu	Secondary menu				
		User Matrix 2/2			Sets the SD matrix correction factor individually. This is the second page of the settings. When User Matrix is enabled, the ON mark appears on the very left of the 1/2 tab.
			ON		Enables the User Matrix function. This is the same switch as 1/2.
				R-B	Corrects the signal of the R channel in accordance with the difference between the signals of the R channel and B channel.
				G-R	Corrects the signal of the G channel in accordance with the difference between the signals of the G channel and R channel.
				B-G	Corrects the signal of the B channel in accordance with the difference between the signals of the B channel and G channel.
		Multi Matrix			If Multi Matrix which allows you to change the color reproduction for each hue divided into 16 is enabled, the ON mark appears on the very left of the tab.
			ON		Enables the SD Multi Matrix function.
				Phase	Selects the hue to adjust.
				Hue	Changes the hue of colors within the hue range selected with Phase.
				Saturation	Changes the saturation of colors within the hue range selected with Phase.
			All Clear		Returns the factors of all ranges of Multi Matrix to their initial states.
		Preset Matrix			Selects the matrix provided in advance. When Preset Matrix is enabled, the ON mark appears on the very left of the tab.
			ON		Enables SD Preset Matrix.
	Interpolation				Selects the filter for the down converter. Each of the frequency characteristics differ.
				H	Selects the filter for the horizontal direction.
				V	Selects the filter for the vertical direction.
	Cross Color Reduction				Reduces the cross color of VBS output.
			ON		Disables the Cross Color Reduction function.
				Coring	Sets cross color elimination to not work for detail signals.
				CC Reduction	This is the level for cross color elimination.
	Aspect				Sets the aspect for the down converter.
			SD Aspect Ratio		**16:9 Squeeze**: Outputs without converting the aspect. This is for a 16:9 monitor. **Letter Box**: Inserts a black band at the top and bottom and then outputs. This is for a 4:3 monitor. **4:3 Crop**: Crops to 4:3. This is for a 4:3 monitor.
				Letter Box	Sets the aspect of Letter Box.
			Center Lock		Crops the center part when cropping to 4:3.
				Crop Position	Sets the position for when cropping to 4:3.
VCS					The maintenance items related to the VCS.
	Monitor Level				Adjusts the Monitor Out.
				WF Level	Adjusts the output level.
				WF Chroma	Adjusts the chroma level.
			VCS Character		Outputs VCS characters.
				Character Level	Adjusts the character level.

Maintenance menu		Submenu	Switch	Control item	Description
Menu	**Secondary menu**				
RPN					Corrects the RPN. This can only be set when in engineer mode.
			R/G/B		Select the channel to correct.
			Enter		Confirms settings.
			H Cursor		Outputs the H cursor.
				H Cursor	Confirms the H cursor position.
			V Cursor		Outputs the V cursor.
				V Cursor	Confirms the V cursor position.
			H/V Cursor		Outputs the H and V cursors.
Auto Setup					
			APR		Starts the APR function of the camera.

Config Menu

Screen display example (when “Camera” (Mode of Camera Config) is selected in the Config menu)



❶ When there is only one button for a setting item, you can press that button to light it and turn ON or OFF the function.

❷ Press this to return to the previous menu screen.

❸ When there are two or more buttons for a setting item, press one of the buttons to select the function (operation mode, etc.).

❹ Press ◀ or ▶ to select a filter.

Menu items

Config Menu		Item	Option	Function
Menu	**Submenu**			
Camera				Sets the camera.
	Mode	White Setup Mode		Selects the white value for when an auto setup is performed or an item is cleared.
			AWB	Restores the value obtained from the last time auto white balance was performed.
			Auto Level	Restores the reference file value.
		White Gamma RGB		Selects the reference for white and gamma of the auto setup.
			ON	R, G, and B are independent when this is ON, and all of R, G, and B use the G channel as the reference when this is OFF.
		Auto White Shading Mode		Sets the operation mode of auto white shading.
			RGB	Matches all of the R, G, and B channels so that they become even. A white subject with uniform luminance and no color shading must be used in this mode.
			RB Only	Matches the R and B channels to the G channel.
		Camera FAN Mode		Sets the operation mode of the camera fan.
			Maximum	Sets the number of revolutions of the camera fan to the maximum number.
			Auto1	Controls the number of revolutions of the fan in accordance with the internal temperature of the camera. This is the optimal mode for reducing any rise in the internal temperature.
			Auto2	Controls the number of revolutions of the fan in accordance with the internal temperature of the camera. This is the optimal mode for reducing the operation sound of the fan.
			Minimum	Sets the number of revolutions of the camera fan to the minimum number. However, if the internal temperature exceeds a specified value, the number of revolutions are increased.
		16:9 → 4:3		Crops a 16:9 picture to 4:3.
			Crop	Executes cropping when Crop is ON.

Config Menu		Item	Option	Function
Menu	Submenu			
		V Detail Creation Mode		Selects the generation method for V Detail.
			RGB Nam	Uses the V Detail generated from each of the R, G, and B channels that has the largest amplitude. This increases resolution sensitivity, but S/N sensitivity may deteriorate.
			G	Generates V Detail from the G channel.
			R+G	Generates V Detail from a signal combining R and G.
			Y	Generates V Detail from the luminance signal.
		V Detail Control Mode		Sets control for when the Detail H/V Ratio knob is turned.
			H/V	Moves H Detail and V Detail in the opposite direction in response to movement of the knob.
			V Only	Adjusts V Detail only.
		Test2 Mode		Selects the signal of Test2.
			3step	Selects a convex test waveform.
			10step	Selects a step test waveform.
		Chroma Filter		Sets the band for the chroma component. Full is the same band as the signal standard, and the band becomes gradually narrower above that.
		720P Acquisition		Selects the 720P generation mode. This can only be set when a camera with a switching function is connected.
			Super Sampling	This is 720P using the super sampling system.
			V-SOP	This is 720P using the V-SOP system.
	CAM Menu Control		–	See *“To control the CAMERA/BPU menu” (page 65)*.
CCU				Sets the CCU.
	Mode	GenLock Mode		Selects the type of signal using synchronization.
			HD	This is the HD3 value SYNC.
			SD	This is BBS.
		Bars Character		Sets the characters to add to color bars signals.
			On	Add characters to color bars signals.
			Edit	Opens the character edit screen.
		Chroma		Turns OFF the VBS chroma signal.
			Off	Adds the chroma component to VBS.
	Return Settings		–	See *“To set the return input settings” (page 65)*.
	Channel ID			Sets the Channel ID display for direct output.
			Channel ID ON	Turns ON the Channel ID display for direct output.
	CCU Menu Control		–	See *“To control the CCU menu” (page 65)*.
	HDFX			Performs the HDFX200 settings.
		IF Select		Selects the interface.
			Triax	Triax interface
			Fiber	Fiber interface
MSU				See *“MSU menu items” (page 61)*.
CNU				Sets the system configuration using the CNU. (For details on the CNU menu, please contact your Sony representative.)
Converter				Sets the converter (HDRC-4000).
	AIR Matching			Turns the AIR matching function ON/OFF.
RCP Assignment				See *“To change RCP assignments” (page 66)*.
Multi Format				Sets the video format for each CCU output.
BPU Multi Format				Sets the video format for each BPU output.

Config Menu		Item	Option	Function
Menu	Submenu			
3D System				Sets the 3D System using the HDFA-200.
	3D Mode		3D Mode	Turns ON/OFF the 3D Mode.
	Channel ID			Sets the Channel ID display for direct output.
			Channel ID ON	Turns ON the Channel ID display for direct output.
	3D CAM Control			Sets the camera to be controlled from the control panel in 3D System.
			CAM Ctrl	Sets the camera(s) to be controlled from the control panel: Left Camera, Right Camera, or both.

RCP Assignment menu items

Menu	Submenu	Switch	Control item	Description
RCP Assignment		1 - 5		Selects a memory file number of an RCP assignment.
		CLR		Clears the memory file of the selected RCP assignment.
		Store		Saves the memory file of the RCP assignment.
	RCP List			Sets the RCP assignment setting.
			Panel	Selects the panel to change the RCP assignment.
			Camera	Selects the camera to be assigned to the selected panel.
		Set		Enables reflecting the state of RCP List to the system.
		Cancel		Returns the state of RCP List to the current state.
		All Camera		Also displays the panel and camera which are currently not in the system, in the RCP List.
		All Reset		Resets the current state of RCP assignment.

MSU menu items

Menu	Item	Option	Function
Customize	–	Menu Customize	Changes the custom paint configuration. This can only be set when in engineer mode.
	–	SW Customize	Assigns functions to spare switches. This can only be set when in engineer mode.
	–	Standard Ind (MSU-1000 only)	Selects the standard state. The LED at the top of the corresponding indication lights green in the standard state, and amber in the non-standard state. It remains off when not even one standard state is selected. This can only be set when in engineer mode.

Menu	Secondary menu	Submenu	Switch	Control item	Description
Display/Sound	Sound				Sets the volume and type.
			OFF		Sets no sound to be emitted from the speakers.
		Call			Sets the call sound.
			Sound Test		Confirms the set call sound.
			CALL Sound		Disables the call sound.
				Volume	Adjusts the volume of the call sound.
				Sound	Selects the type of the call sound.
				Master	Simultaneously sets the volume for all sounds emitted from the speakers.

Menu	Secondary menu	Submenu	Switch	Control item	Description
		Touch			Sets the operation sound for when a switch on the LCD is pressed.
			Sound Test		Confirms the set operation sound.
			Touch Sound		Disables the operation sound.
				Volume	Adjusts the volume of the operation sound.
				Sound	Selects the type of the operation sound.
				Master	Simultaneously sets the volume for all sounds emitted from the speakers.
		SW			Sets the operation sound for when a switch button is pressed.
			Sound Test		Confirms the set operation sound.
			Switch Sound		Disables the operation sound.
				Volume	Adjusts the volume of the operation sound.
				Sound	Selects the type of the operation sound.
				Master	Simultaneously sets the volume for all sounds emitted from the speakers.
		RE			Sets the operation sound for when an adjustment knob is turned.
			Sound Test		Confirms the set operation sound.
			RE Sound		Disables the operation sound.
				Volume	Adjusts the volume of the operation sound.
				Sound	Selects the type of the operation sound.
				Master	Simultaneously sets the volume for all sounds emitted from the speakers.
	LED				Sets the LED brightness.
			Switch		Sets the switch brightness.
			Tally		Sets the tally brightness.
			Other		Sets other LED settings.
			Master		Simultaneously sets the brightness of all items.
	LCD				Adjusts the LCD.
				Bright	Adjusts the brightness of the LCD.
	EL				Adjusts the backlight for illuminating the function names.
			OFF		Turns off the backlight.
			Light Detect		Turns off the backlight in response to the surrounding brightness.
				Detect	Sets the brightness for turning off the backlight.
				Bright	Adjusts the brightness of the backlight.
	Touch Panel				Sets the touch sensor of the LCD.
			Touch Test		Tests the response of the touch sensor.
				Sense	Sets the sensitivity of the touch sensor.

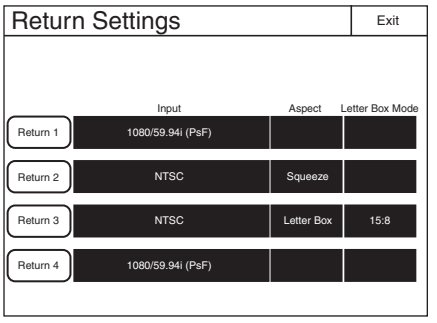
Menu	Item	Option	Function
Mode	Screen Saver		Sets the screen saver to display on the LCD.
		ON	Enables the screen saver function.
		Preview	Displays a preview of the set screen saver.
		Wait Time	Sets the time from when the last operation was performed until when the screen saver is displayed.
		Type	Selects the screen saver type.
	PIX/WF		Sets the operation for when PIX/WF output.
		PIX/WF Synchro	Links RGB selection in the menu and PIX/WF control for when Black Shading and White Shading are adjusted (linked when ON). This can only be set when in engineer mode.
		PIX/WF Control Mode	Sets the control mode of the monitor selection buttons. See *"To set the PIX/WF operations" (page 30)*.
	Matrix Gate	Gate Interlock	When this is turned ON, priority is given to the setting of the control panel for the selection of Multi Matrix Gate when the control panel disables Panel Active or PARA, even if another panel has a different channel selected. This can only be set when in engineer mode.
	Extend Call		The TALLY indicator continues to flash for a while when a call is received.
		ON	Enables Extend Call.
		Time	Sets the flashing duration of the TALLY indicator.
		Mode	Sets the condition for enabling this function.
	Camera Select	Max Cam No	Sets the maximum number of cameras to be connected to the system.
	Battery Alarm		Sets the battery alarm.
		Before End	Sets the voltage to indicate the battery drain alarm.
		End	Sets the voltage to indicate the low battery voltage alarm.
Date/Time		Date	Sets the date.
		Time	Sets the time.
		Time Zone	Sets the time zone.
Network	Network Info		Displays the network information.
	CNS	Legacy/Bridge/MCS	Sets the connection mode.
	LAN I/F	Negotiation	Sets the negotiation operation.
		LAN I/F OFF	Turns OFF the LAN I/F.
		Speed	Sets the network line connection speed.
		Duplex	Sets the network line connection method.
	TCP/IP	IP Address	Sets the IP address.
		Subnet Mask	Sets the subnet mask.
		Default GW	Sets the default gateway.
Information	Version	–	Displays the version information.
	Network Info	–	Displays the network information.

Menu	Item	Option	Function
Security	Page Permission	Full Lock	Locks all menu screens.
		View Mode	Locks the menu screens. However, the menus can be viewed.
		Custom Paint Only	Enables the menus such as Paint, Maintenance, and File.
	Item Permission	Ref File Enable	Enables the operation of reference files.
		Lens File Enable	Enables the operation of lens files.
		OHB File Enable	Enables the operation of OHB files.
		Crop Enable	Enables the operation of crop.
		Abs Enable	Enables the absolute value display button.
		Knee Max Enable	Enables the operation of Knee Max.
		3D Menu Enable	Enables the 3D System settings.
		Custom Matrix Enable	Enables the operation of a Custom Preset Matrix file.
		Auto Setup Enable	Enables the operation of the Auto Setup menu.
	Code Change	Code No.	Registers a security code.
	Engineer Protect	Code Enable	Protects switching to engineer mode with a security code.
	All Preset		Restores all settings to their default states.
	Engineer Mode		Switches to engineer mode.

Menu	Submenu	Control item	Function
Backup	Menu Customize	Store	See *“To save changed setting values to a “Memory Stick Duo”” (page 33)*.
		Recall	
		File ID	
		Delete	
	SW Customize	Store	
		Recall	
		File ID	
		Delete	
	Panel Config	Store	
		Recall	
		File ID	
		Delete	
	Network Config	Store	
		Recall	
		File ID	
		Delete	

To set the return input settings

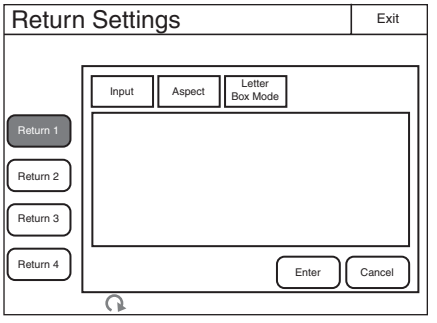
Select [Return Settings] in the CONFIG menu to set the formats of return signals from the CCU.



Use the following procedure to set the settings.

1 Press any one of [Return-1] to [Return-4].

The screen for specifying the format of the return signal appears.



2 Set the format of the return signal.

[Input]: Specifies the input signal.
[Aspect]: Specifies the aspect ratio. This can only be set if you specified SD signal for [Input].
[Letter Box Mode]: Specify the display mode for letter box if you specified [Letter Box] for [Aspect].

The setting values that can be selected for each setting value are displayed in a list. Turn the adjustment knob on the very left to move the cursor to select a setting value.

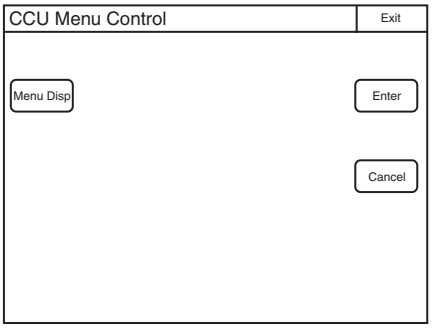
3 Press [Enter].

The settings for the format of the return signal are changed.

4 Repeat steps 1 to 3 if you also want to set the remaining return signals.

To control the CCU menu

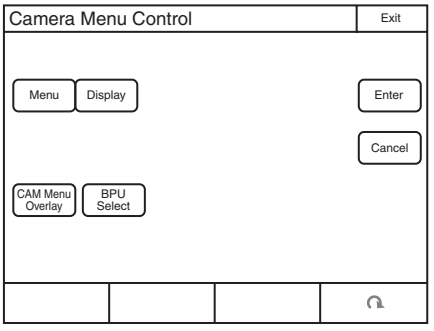
Select [CCU Menu Control] in the CONFIG menu to remotely control the menu displayed for image output of the CCU from this control panel.



- Use [Menu Disp] to display or hide the CCU menu. The setting menu appears when this button is pressed even when CHARACTER display is enabled for image output of the CCU. In such a case, closing the setting menu redisplays the CHARACTER display.
- Press [Enter] to switch to the setting mode and confirm changing of the setting value.
- Press [Cancel] to end the setting mode and cancel changing of the setting value.
- Turn the adjustment knob on the very right to move the cursor in the CCU menu and change a setting value.

To control the CAMERA/BPU menu

When you select [CAM Menu Control] in the CONFIG menu, you can control the menu obtained by the camera head or the BPU from the unit displaying the image output of the CCU.



- Use [CAM Menu Overlay] to display the camera/BPU menu switching the CCU character display.
- Use [BPU Select] to select whether to display the camera menu or the BPU menu in the image output of the CCU when the [CAM Menu Overlay] button is lit. When BPU is not used, this button is disabled.
- Use [Display] to display or hide the camera/BPU operation state.
- Use [Menu] to display or hide the camera/BPU menu.

The [Display] and [Menu] buttons are equivalent to the toggle switch for the menu display in the camera head or the front panel of the BPU.

To operate while displaying the camera/BPU menu

- Press [Enter] to switch to the setting mode and confirm changing of the setting value.
- Press [Cancel] to end the setting mode and cancel changing of the setting value.
- Turn the adjustment knob on the very right to move the cursor in the camera/BPU menu and change a setting value.

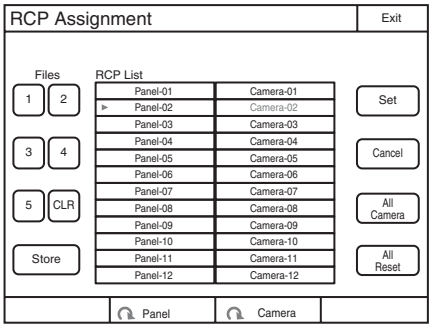
To change RCP assignments

Selecting [RCP Assignment] in the Config menu allows you to change RCP assignments.

Note

The following RCP assignment function is only available in MCS mode. In addition, the function is not available when an MSU-900/950 is set as the master.

To set RCP assignments



1 Use the "Panel" knob to select the RCP number for which you want to change assignment.
If you select the [All Camera] button, all RCPs and cameras will be displayed. (When [All Camera] is not selected, only devices with established connections to the Master of the MCS mode are displayed.)

2 Use the "Camera" knob to select the camera that will be controlled from the RCP selected in step 1.

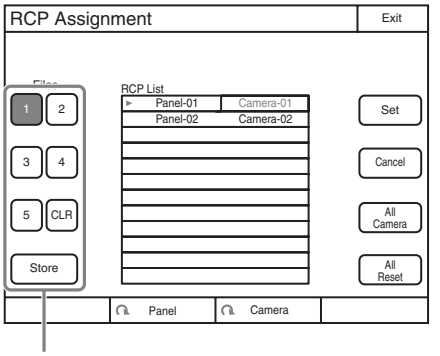
3 To return all RCP assignments to their standard state, press the [All Reset] button.

4 Press the [Set] button.
The setting changes are applied.

You can save up to five states of RCP assignment to the MSU internal memory, and retrieve them to reflect in the system, as needed.

To retrieve the state of RCP assignment saved to the MSU internal memory

1 Press the file number button to select the saved state of RCP assignment you want to read.
The selected file button lights, then the state of RCP assignment is reflected in the RCP List.



Buttons to operate memory files stored in the unit

Notes

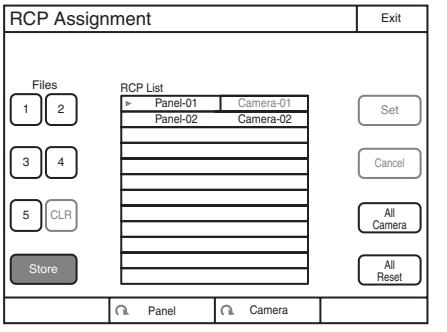
- You can select only the file number button that has state of RCP assignment saved.
- When the file number button is pressed and a changed state is reflected in the RCP List, RCP assignment has not yet been reflected in the system. You can add RCP assignment changes by using the Panel knob and Camera knob.
- If the panel existed when an RCP assignment file was saved, but no longer exists when the file is read, the assignment state of the non-existing panel is not guaranteed.

2 Press the [Set] button.
The file number button light goes off, and the change of setting is confirmed.

To save the state of RCP assignment to the MSU internal memory

1 Set the state of RCP assignment.

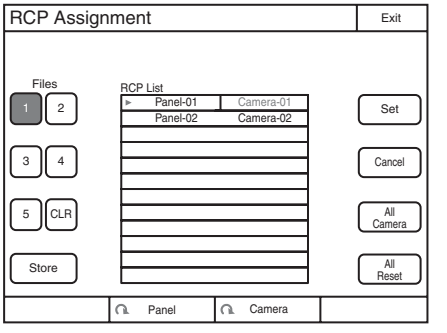
2 Press the [Store] button.
The [Store] button lights.



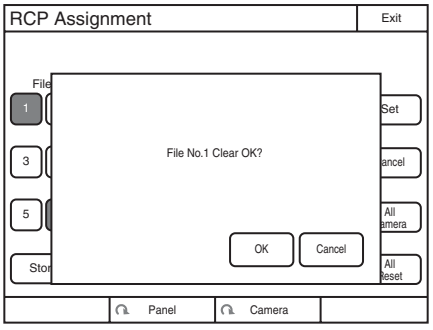
3 Press the file number to save.
The state of RCP assignment is saved to the assigned file number, and the [Store] button and the file number button lights go off.

To clear the RCP assignment file saved to the MSU internal memory

1 Press the file number button to select the saved state of RCP assignment you want to clear.
The selected file button lights, then the state of RCP assignment is reflected in the RCP List.

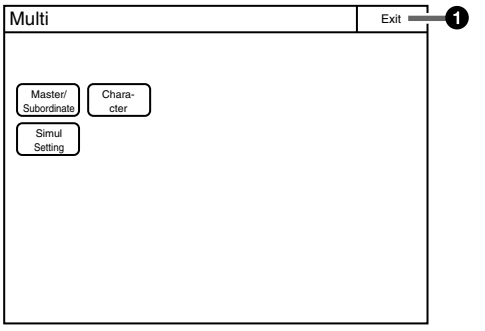


2 **Press the CLR button.**
The confirmation message screen for file clearing is displayed.



3 **Press OK.**
The saved data of the specified file is cleared, and the file number button will be disabled.
Press Cancel not to clear files.
When you press Cancel, the RCP List returns to the state before the file numbers were pressed.

Multi Menu



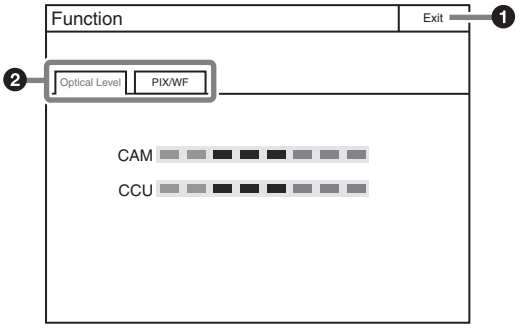
❶ Press this to return to the previous menu screen.

Menu items

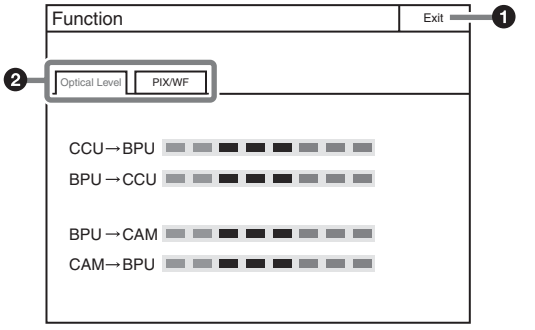
Item	Control item	Function
Master/Subordinate	Master	Specifies the master function.
	Subordinate	Specifies the subordinate function.
	All Subordinate	Specifies the subordinate function for all of the cameras.
	All Off	Cancels the subordinate specification for all of the cameras.
Character	Character On	Turns ON CNU character output.
	Default	Selects the default display.
	System <#-#>	Displays the control system setting state.
	Auto <#-#>	Displays the auto setup items.
	Diag <#-#>/One Cam	Displays the self-diagnosis results.
	Data <#-#>/One Cam	Displays the camera setting state.
Simul Setting		Links the conversion parameters when simultaneously converting HDR and SDR.

Function Menu

Screen display example



When connecting the normal camera



When connecting the separate camera

❶ Press this to return to the previous menu screen.

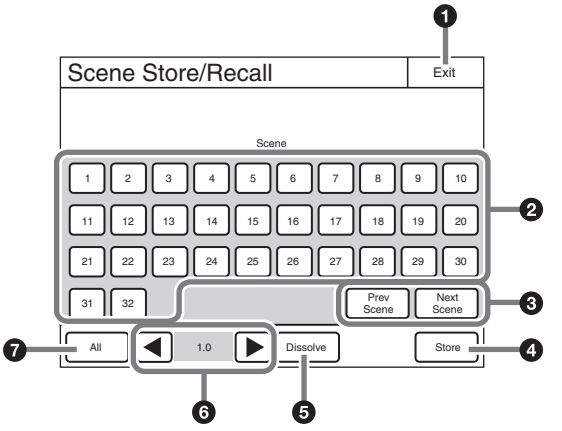
❷ Press a tab to change to the submenu. The PIX/WF tab is only displayed for the MSU-1500.

Menu items

Menu	Item	Function
Optical Level (when connecting the normal camera)	CAM	Displays the optical communication reception level of the camera.
	CCU	Displays the optical communication reception level of the CCU.
Optical Level (when connecting the separate camera)	CCU → BPU	Displays the optical communication reception level from CCU to BPU.
	BPU → CCU	Displays the optical communication reception level from BPU to CCU.
	BPU → CAM	Displays the optical communication reception level from BPU to the camera.
	CAM → BPU	Displays the optical communication reception level from the camera to BPU.
PIX/WF	PIX (R/G/B/ENC)	Selects the OUTPUT output signal of PIX2 of CCU. **R/G/B**: Outputs one of the R, G, and B signals (or a combination of multiple signals). **ENC**: Outputs an encoded signal.
	WF (R/G/B/SEQ/ENC)	Selects the OUTPUT output signal of WF2 of CCU. **R/G/B**: Outputs one of the R, G, and B signals (or a combination of multiple signals). **SEQ**: Monitors the waveforms of the three signals R, G, and B in sequential mode. **ENC**: Outputs an encoded signal.

Scene Menu

Screen display example (when connected to the cameras of the 32 scene files)



❶ Press this to return to the previous menu screen.

❷ Select and press the number of a scene file to access the registered file. When you access a file, the number of the accessed scene file lights.
If you press the same number, the state returns to that before you accessed the file.
Press [Prev Scene] or [Next Scene] to change files in number order.

❸ Press [Prev Scene] or [Next Scene] to access scene files in number order.

❹ Press [Store], and then select the desired scene file number. When file registration is finished, [Store] turns off.

❺ When you press [Dissolve] to turn it on, the picture changes gradually when the scene file is recalled. (When off, the picture changes instantly.)

❻ Set the approximate time to change the picture while [Dissolve] is on. (The larger the number the longer it takes for the picture to change.)

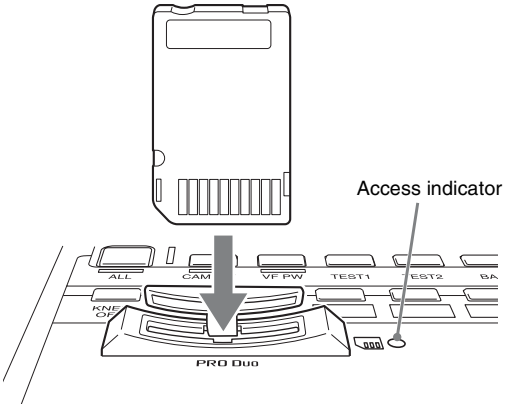
❼ Press [All] and then press the scene file number to access the scene file of that number on all cameras.

About “Memory Stick Duo”

You can use “Memory Stick Duo” and “Memory Stick PRO Duo” with the camera section of this control panel.
The operation of “Memory Stick Duo” media up to 8 GB has been verified for this control panel.
This unit is equipped with PrFILE for Memory Stick manufactured by eSOL Co.,Ltd.

Inserting a “Memory Stick Duo”

Open the “Memory Stick Duo” slot cover, and insert the “Memory Stick Duo” into the “Memory Stick Duo” slot as shown, until it clicks into place and the access (status) indicator lights red.
When the “Memory Stick Duo” is properly inserted, the indicator changes from red to green.



Note

If there is some resistance when you insert it or it does not fit properly, the “Memory Stick Duo” may be turned the wrong way or upside down. Do not force the “Memory Stick Duo” into the slot. Confirm the sides and ends of the “Memory Stick Duo” before inserting it again.

To remove a “Memory Stick Duo”

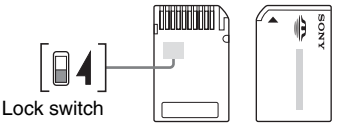
Confirm that the access indicator is not lit red, then lightly push in the “Memory Stick Duo” to release the lock.

Note

If the access indicator is lit red, data is being read from or written to the “Memory Stick Duo.” In such cases, do not shake the unit or subject it to shock. In addition, do not turn off the power to the unit or remove the “Memory Stick Duo.” Doing so may damage the data.

Protecting Saved Data

To prevent accidental erasure of important data, use the LOCK switch on the “Memory Stick Duo.”
Slide the switch upward to the write protect position.
This ensures that you cannot inadvertently overwrite data on the “Memory Stick Duo.”



Note

If you are using a “Memory Stick Duo” that does not have a LOCK switch, be careful not to inadvertently overwrite or erase your data.

Precautions

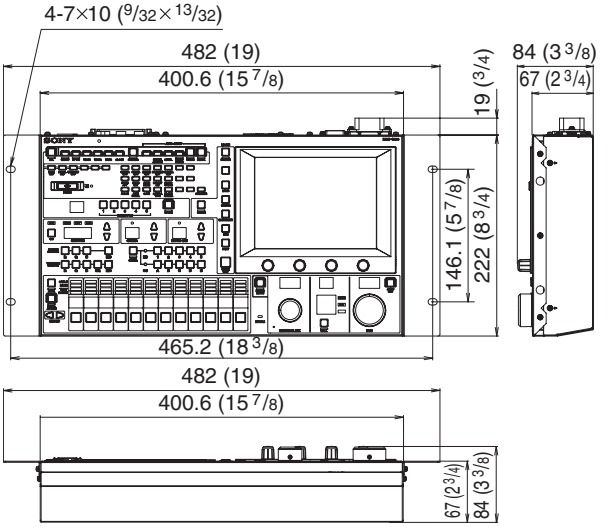
- Do not attach anything other than the supplied label to the “Memory Stick Duo” label position.
- Attach the label so that it does not stick out beyond the labeling position.
- Carry and store the “Memory Stick Duo” in its case.
- Do not touch the connector of the “Memory Stick Duo” with anything, including your finger or metallic objects.
- Do not strike, bend, or drop the “Memory Stick Duo.”
- Do not disassemble or modify the “Memory Stick Duo.”
- Do not allow the “Memory Stick Duo” to get wet.
- Do not use or store the “Memory Stick Duo” 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
- 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 Duo” that has been pre-recorded, be sure that the material has been recorded in accordance with copyright and other applicable laws.

Specifications

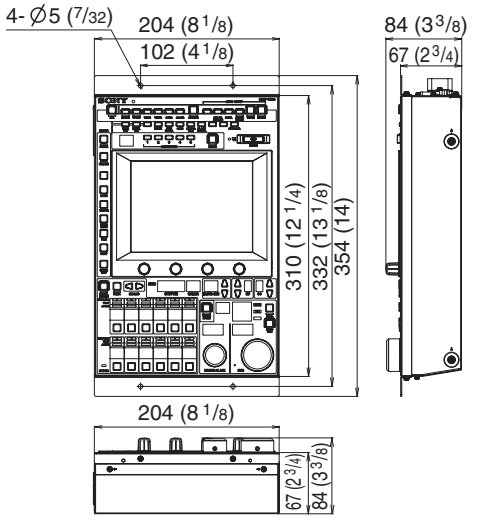
General	
Power supply	AC 100 - 240 V 50/60 Hz 0.35 A (Max.) DC 10.5 - 17 V 1.2 A (Max.)
Operating temperature	5 °C to 40 °C (41 °F to 104 °F)
Weight	MSU-1000: Approx. 4.6 kg (10 lb. 2 oz.) MSU-1500: Approx. 3.6 kg (7 lb. 15 oz.)

External dimensions Unit: mm (inches)

MSU-1000



MSU-1500



Input/output connectors	
REMOTE	
CCU/CNU	8-pin multi-connector (1)
AUX	8-pin multi-connector (1)
I/O PORT	50-pin (1)
品	8-pin RJ-45 (1)
AC IN	3-pin (1)
DC IN	4-pin (1)

Supplied accessories

Operation guide (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. 1-551-812-3X)
- For customers in the European countries
  Power cord (250 V, 10 A, 2.5 m (8.2 feet))
  (Part No. 1-782-929-1X)

Plug holder 2-990-242-0X
External I/O connector JAE-DE-50PF-N equivalent
CCA-5-3 remote cable (3 m)
CCA-5-10 remote cable (10 m)
CCA-5-30 remote cable (30 m)

Design and specifications are subject to change without notice.

Note
Always verify that the unit is operating properly before use. SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF THE LOSS OF PRESENT OR PROSPECTIVE PROFITS DUE TO FAILURE OF THIS UNIT, EITHER DURING THE WARRANTY PERIOD OR AFTER EXPIRATION OF THE WARRANTY, OR FOR ANY OTHER REASON WHATSOEVER.

MSU-1000 (SY)
MSU-1500 (SY)
4-169-281-**10**(1)

Sony Corporation

http://www.sony.net/