



## Technical Memo

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**RANK** 3

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**Revised :**

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**Issued :** December 13, 2021

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**Subject:** SoftwareRelease[V1.30]

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**Revise Point(s)**

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**Issue No.**HDCM21-054

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**Target Models / Destination**

Model Name	Dest	Model Name	Dest	Model Name	Dest	Model Name	Dest
MSU-3000	SYL	MSU-3500	SYL				

**[Description]**

Updated version of the software (V1.21 => V1.30) for MSU-3000/3500 is released.  
Upgrade it as necessary.

**[Applicable Model]**

Model / Destination	Serial Number	Number of Unit
MSU-3000 SYM		
MSU-3500 SYM		

**[Change Point]**

<New Functions>

1. Added Cinema, S-Gamut3 choice to OETF/Color Space on Multi Format.
2. Added HDR User Gamma setting.
3. Added ND Filter 1-9 to SW customization function of MSU-3000
4. DHCP support for TCP/IP settings
5. Added CCU assignment function.
6. Supports log acquisition.
7. Supports Ember+.
8. Supports Web menu.

<Description of new functions>

### 1. Added Cinema, S-Gamut3 choice to OETF/Color Space on Multi Format.

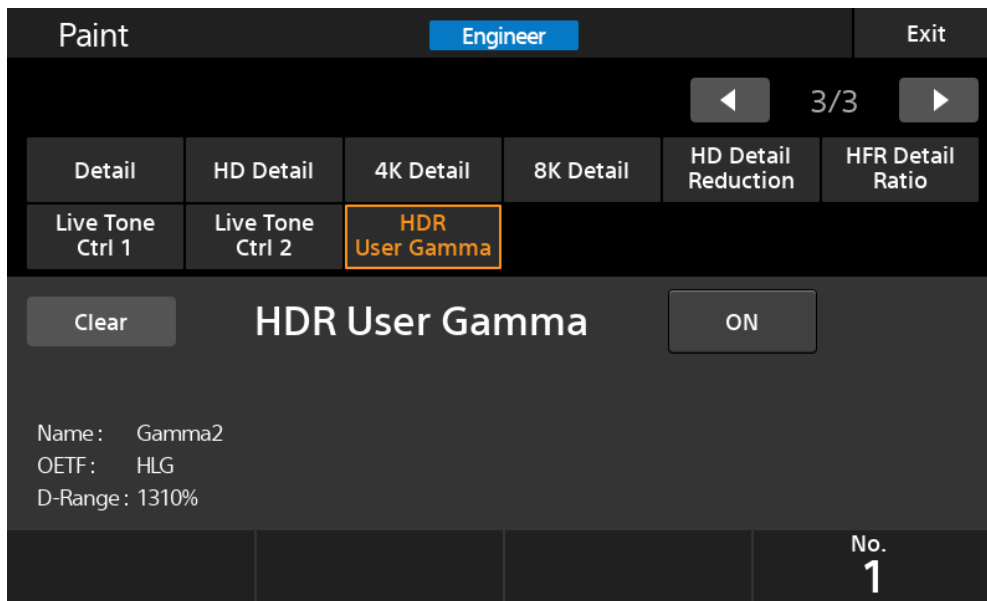
Added the following options.

OETF: S-Log3(Cinema)  
 Color Space: S-Gamut3, S-Gamut3.Cine

### 2. Added HDR User Gamma setting.

Added HDR User Gamma settings to the Paint menu.

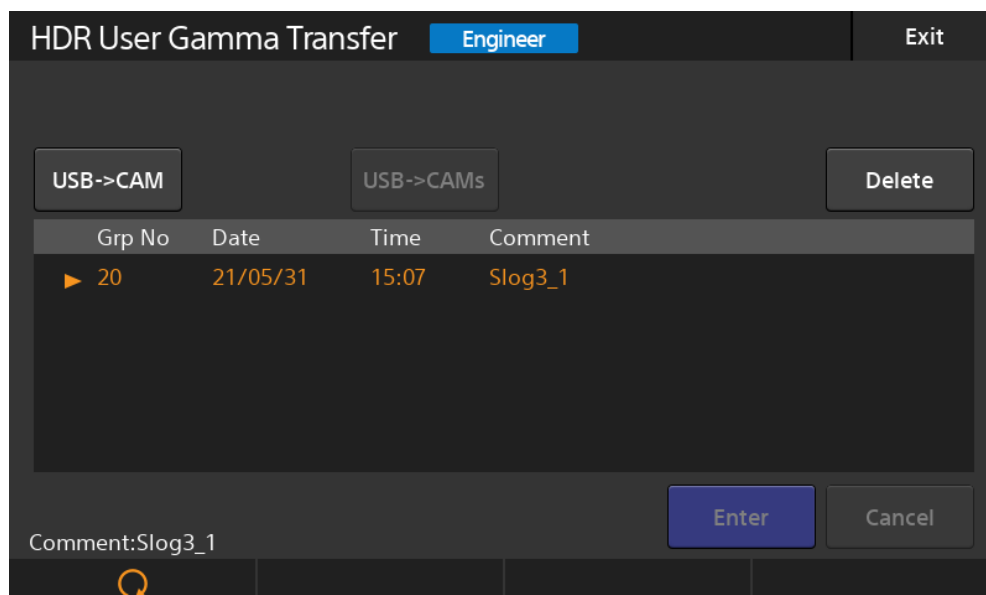
HDR User Gamma is a function that allows to adapt the curve created to the HDR output. Set HDR User Gamma function On/Off with the ON button, and select the curve number applicable to the HDR output with the rotary encoder.



Also, added HDR User Gamma Transfer Menu.

\* File -> HDR User Gamma -> HDR User Gam Trans

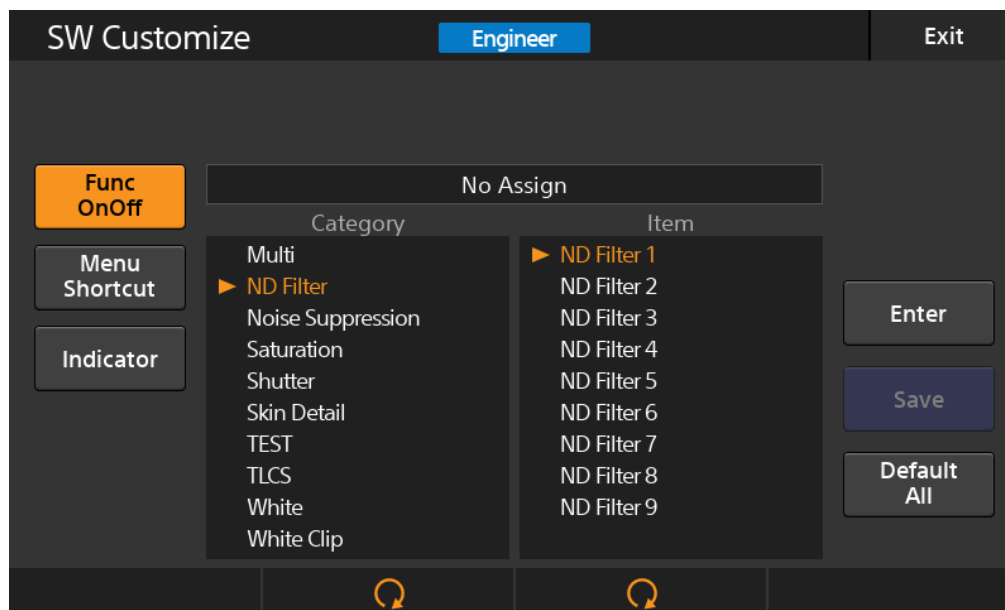
HDR User Gamma files saved on USB memory can be transferred to the camera. The operation specifications are the same as the conventional User Gamma Transfer.



### 3. Added ND Filter 1-9 to SW customization function of MSU-3000

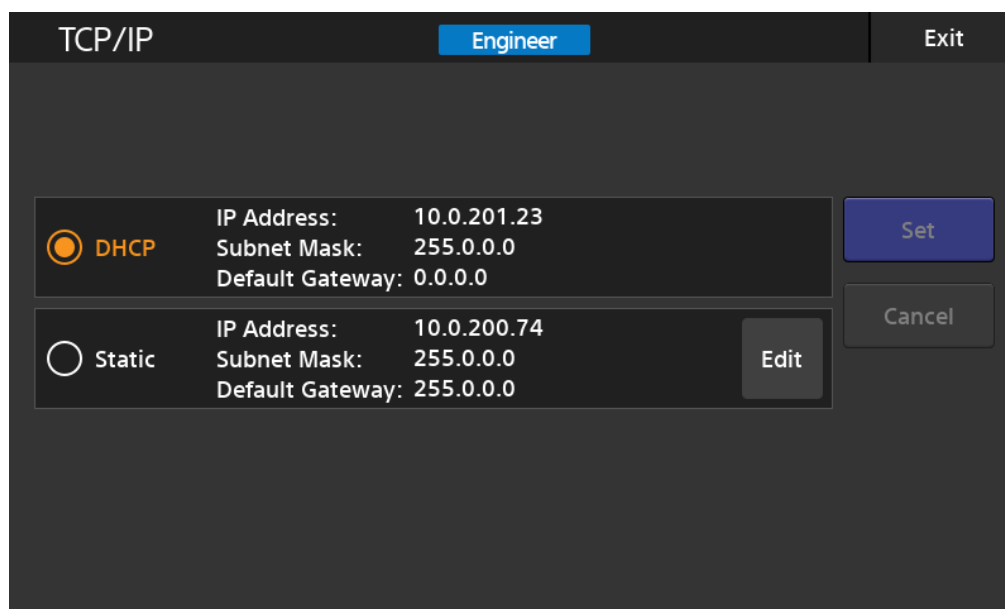
MSU-3000 cannot select ND6-9 because the switch of the ND Filter selection UI is ND1-5. Therefore, ND Filter 1-9 was added as a function to assign to assignable switches.

\* Not supported by MSU-3500



### 4. DHCP support for TCP/IP settings

Added DHCP to TCP/IP settings. The conventional fixed IP setting can be selected as Static.

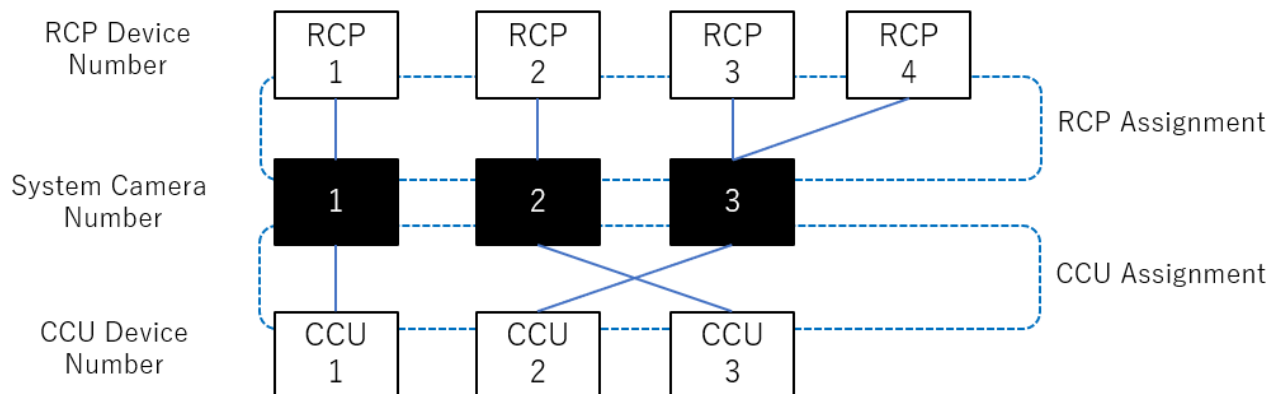


## 5. Added CCU assignment function.

### About CCU assignment function.

The camera number displayed on the MSU/RCP is not a CCU number, but a logical number called the System Camera number. CCU assignment function is a function that allows to change CCU assigned to the system camera number. Unlike RCP assignment, only one CCU can be assigned to one system camera number.

The conceptual diagram is shown below.



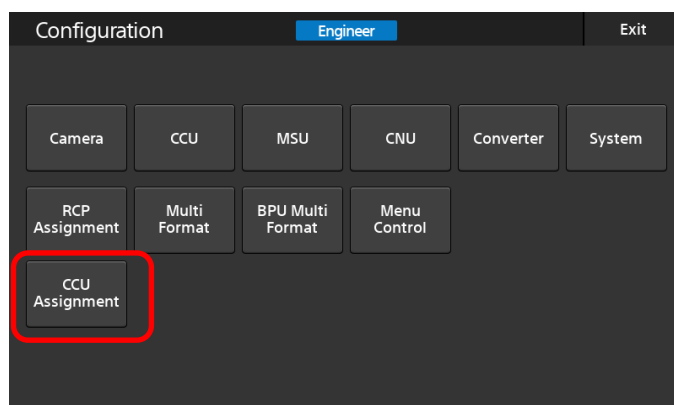
In this example, CCU No.2 is assigned to System Camera No.3, and the number display on the front panel and camera head of the CCU is 3.

In addition, RCP No.3 and 4 are assigned to System Camera No.3, and 3 is displayed on the camera number display of the RCP, which actually controls CCU No.2.

### CCU assignment Menu Page

Added CCU assignment Menu. This allows to change the CCU assignment.

\*Configuration -> CCU assignment



CCU Assignment

Engineer

Exit

Files

1

2

3

4

5

CLR

Store

System Camera No.	Device No.
▶ Camera-01	CCU-01
Camera-02	*CCU-11
Camera-03	CCU-03
Camera-11	*No Assign
No Assign	*CCU-02

Set

Cancel

All Camera

All Reset

Camera

CCU

It is possible to change CCU assignment on this page. In addition, the current assignment information can be saved (Store) or recalled (Recall) in internal memory. The operation specifications are the same as the RCP Assignment Page but the RCP assignment selects the System Camera number for the Device No. (RCP No.), while the CCU assignment selects the Device No. (CCU No.) for the System Camera number.

(Notes)

“CCU Assignment” button is not displayed by default. It is necessary to turn on the “CCU Assign Enable” button on the newly created second page of Item Permission, And this button only appears in Engineer mode.

Item Permission

Engineer

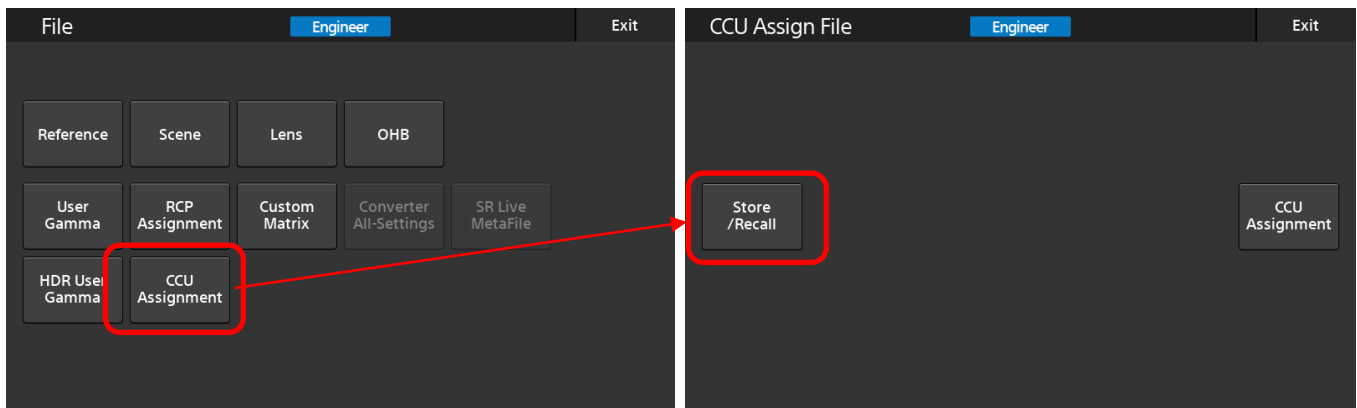
Exit

◀ 2/2 ▶

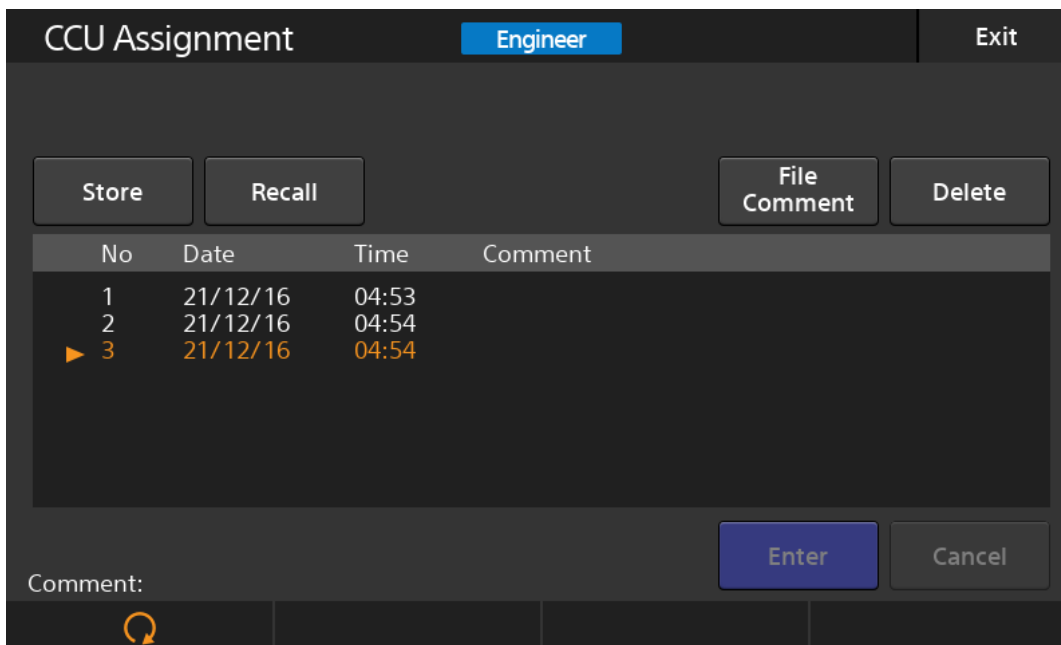
CCU Assign Enable

## Store/Recall of CCU Assignment Menu Page

Added Store/Recall menu for CCU assignment under FILE -> CCU Assignment.



It is possible to save the assignment information saved in the internal memory to the USB memory as a file using CCU Assignment Menu. The operation specifications are the same as Store/Recall Menu of RCP Assignment.



The save destination of the file in the USB memory is /MSSONY/PRO/CAMERA/SYSTEM/. The save file name is CCUXXXXXX.PNL.

\*XXXXXX is 5-digit number starting with 00001.

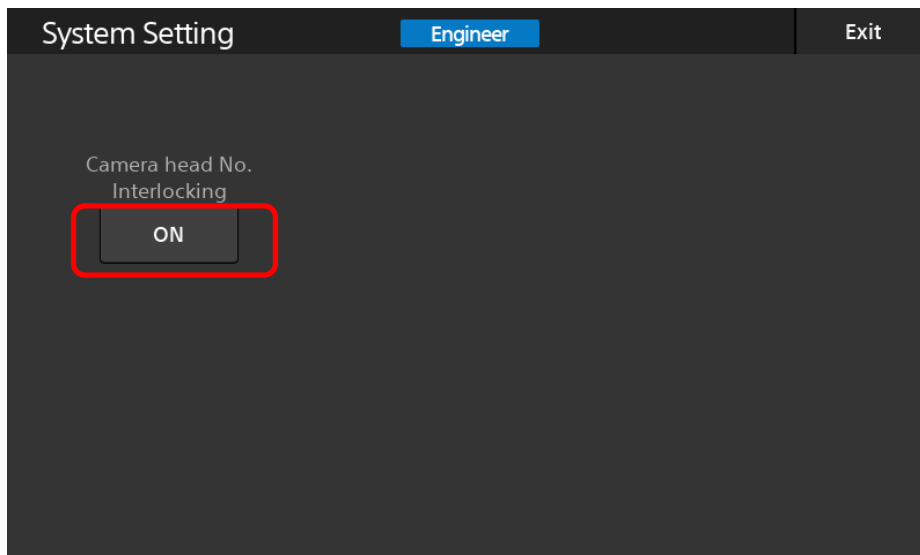
## System Camera number interlocking setting Menu

A function to set whether to link the camera number display of Camera head to the System Camera number. If want to link the camera number of Camera head to the System Camera number when change the assignment with the CCU assignment function turn this function on.

OFF: Displays the camera number set by Camera head. It is same as the conventional operation.

ON: Change the display according to the System Camera number set in the CCU assignment.

Added the System Camera number interlocking setting switch to the Configuration -> System menu.

**<Notes: About CAMERA/CCU that support the CCU assignment function>**

To operate the CCU assignment function, CAMERA and CCU must also have compatible firmware. The supported firmware is as follows.

Compatible CAMERA/CCU models and versions.

HDCU-3100/3170	V2.90 or higher
HDCU-3500/5500/5000	V1.90 or higher
HDC-3100/3170/3500/5500/5000	V3.0 or higher
HDC-P50/P31	V3.0 or higher

**Precautions for non-compatible models.****Please use without changing the assignment (System Camera number = CCU number).**

If change the System Camera number for a non-compatible CCU, the connection with the MSU/RCP may be disconnected or the CCU number may change unintentionally. Please restore the assignment of the target CCU and then restore the CCU number from the CCU Menu.

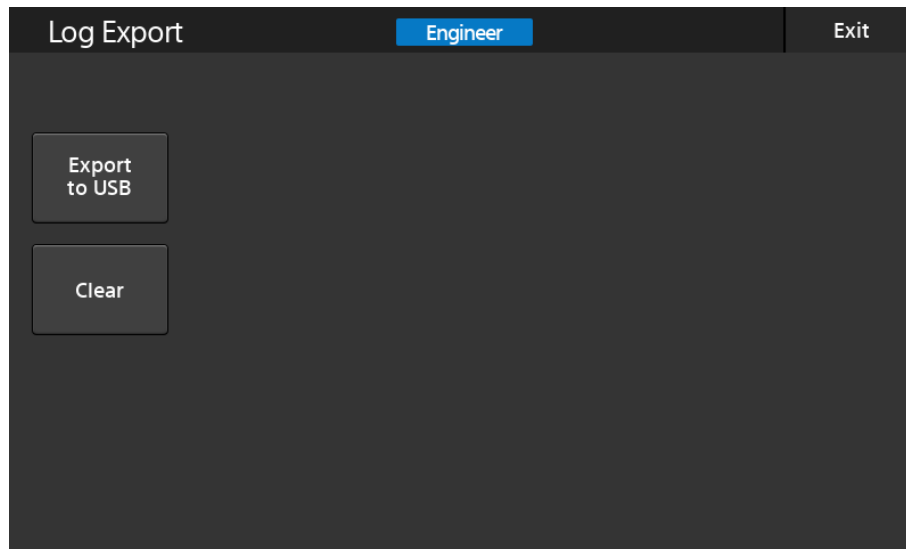


## 6. Supports log acquisition

Added the Log Menu. \*Configuration->MSU->Log

In the Engineer Mode, it is possible to get the log from CONFIG > MSU > LOG Menu to the USB memory.

The operation log saved in the internal memory can be output to the USB memory. It is also possible to clear the log saved in the internal memory.



## 7. Supports Ember+

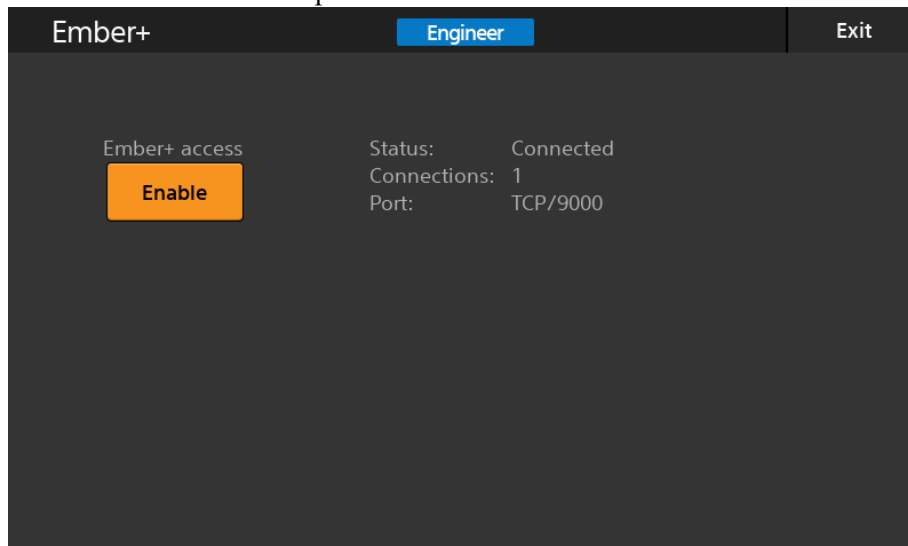
Enables Camera Network Settings of MSU, RCP/CCU assignment, and Camera Select Operations from an external controller that supports the Ember+ protocol.

Perform the following operations in Engineer Mode.

### 7.1 Enable Ember+ function

Enable the “Ember+ access” from Configuration > MSU > Network > Ember+ Menu.

The connection destination port from the external controller is fixed at 9000.

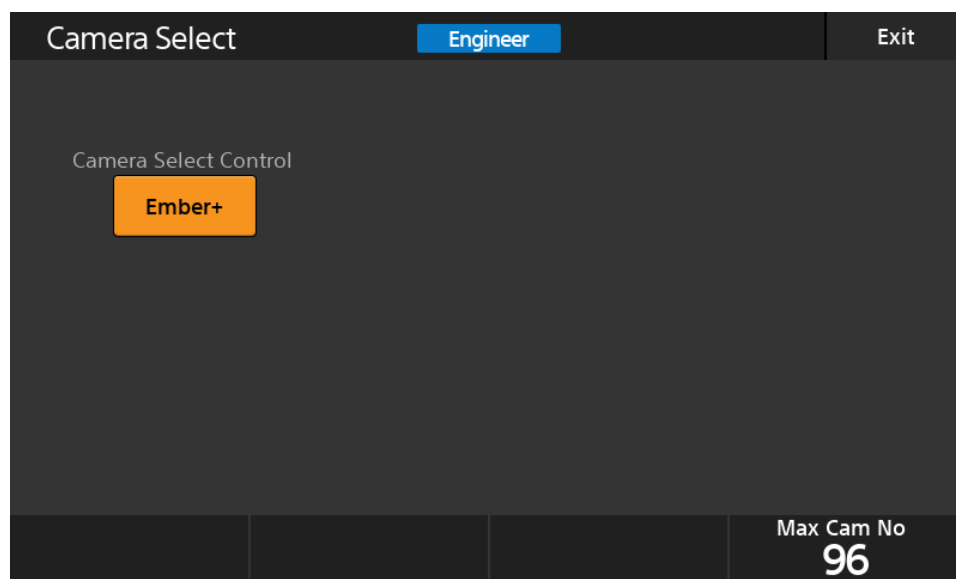


### 7.2 Enable Camera Selection and RCP/CCU assignment change from Ember+

By default, Camera Select and RCP/CCU assignment changes in the Ember+ protocol are disabled. When operating from an external controller, enable it from the LCD Menu of MSU as below

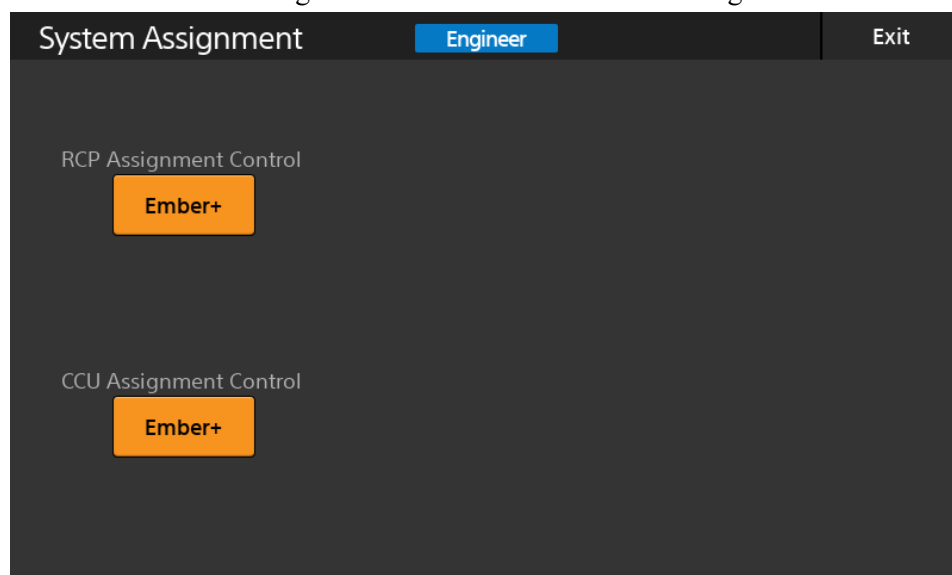
### 7.2.1 Camera Select

Enable “Camera Select Control Ember+” from the Config > MSU > Mode > Camera Select Menu.



### 7.2.2 RCP/CCU assignment

Enable “RCP/CCU Assignment control Ember+” from Config > MSU > Mode > System Assignment.



### 7.3 Ember+ support item

The following settings and browsing are possible with this unit by the Ember+ protocol.

- Browsing device information (serial number, etc.)
- Camera network settings (CNS Settings)
- CCU/RCP assignment change
- Camera Selection

Table 7-1 shows the items that can be set and browsed from the external controller using the Ember+ protocol.

Table 7-1

Primary Item	Item	Access	Description
Information	Category	Read Only	“MSU” fixed
	Model name	Read Only	“MSU-3000” or “MSU-3500”
	Serial number	Read Only	Serial number
	Version	Read Only	Software version
	Manufacturer	Read Only	“Sony Corporation” fixed
	Id	Read Only	Device Unique ID
Network /CNS Settings	CNS Mode	Read/Write	Corresponds to the CNS menu item of the MSU LCD menu.
	MSU number	Read/Write	
	Master/Client	Read/Write	
	Master IP	Read/Write	
	Bridge Target IP	Read/Write	
Mutli Camera System	CCUs/CCU[n] n: 1~96	Read Only	Indicates whether each numbered CCU is connected to the Camera Network.
	RCPs/RCP[n] n: 1~96	Read Only	Indicates whether each numbered RCP is connected to the Camera Network
Multi Camera System/CCU assignment	CCU assignment matrix	Read/Write	Matrix showing CCU assignment status. Target is System Camera number and Source is CCU number.
	Parameter/Changeable	Read/Write	Set to True when changing CCU assignment by Ember+
Multi Camera System/RCP assignment	RCP assignment matrix	Read/Write	Matrix showing RCP assignment status. Target is RCP number and Source is System Camera number.
	Parameter/Changeable	Read/Write	Set to True when changing RCP assignment by Ember+
Operation/Camera selection	GPIO/Syscam[n]/CAM[n] n : 1~96	Read/Write	Select the camera with that number by setting the item with that number to True.
	Camera number	Read/Write	Specify the camera to select by number.
	Parameter/Changeable	Read/Write	Set to True when performing Camera selection by Ember+

## 8. Supports Web Menus

By using the Web browser, you can check the setting information of this unit and set the assignable function.

### How to access the Web menu

Perform the following operations in Engineer Mode.

1. Make sure that <WEB Menu> -> WEB MENU in NETWORK menu is ENABLE.
2. Make the settings (IP address, Subnet Mask, Default Gateway, etc.) required for network connection on the <TCP/IP> in NETWORK menu
3. Enter the IP address of this unit (example: http://192.168.0.101/) in the Web browser of the PC, and press the Enter key.
4. Enter the username (admin) and the password set in the pop-up displayed by the web browser. If the password has not been set, the password setting screen will be displayed.

#### (Notes)

**Recommended to use Chrome. If use a web browser other than Chrome, the design of the Web menu may be corrupted or some functions may not work. It is necessary to use the browser with digest authentication enabled.**

**As a security measure, if authentication fails multiple times, access from that PC will be denied for a while. This state will be canceled after 5 minutes. The password can be reset with <WEB MENU> -> PASSWORD RESET in the NETWORK menu of this unit.**

## Set an authentication password

Use digest authentication for added security. If the password has not been set, the password setting screen will be displayed when access the Web menu. Enter the password in [Password] and [Confirm Password] on the screen. [Username] is fixed as admin.

[Password]

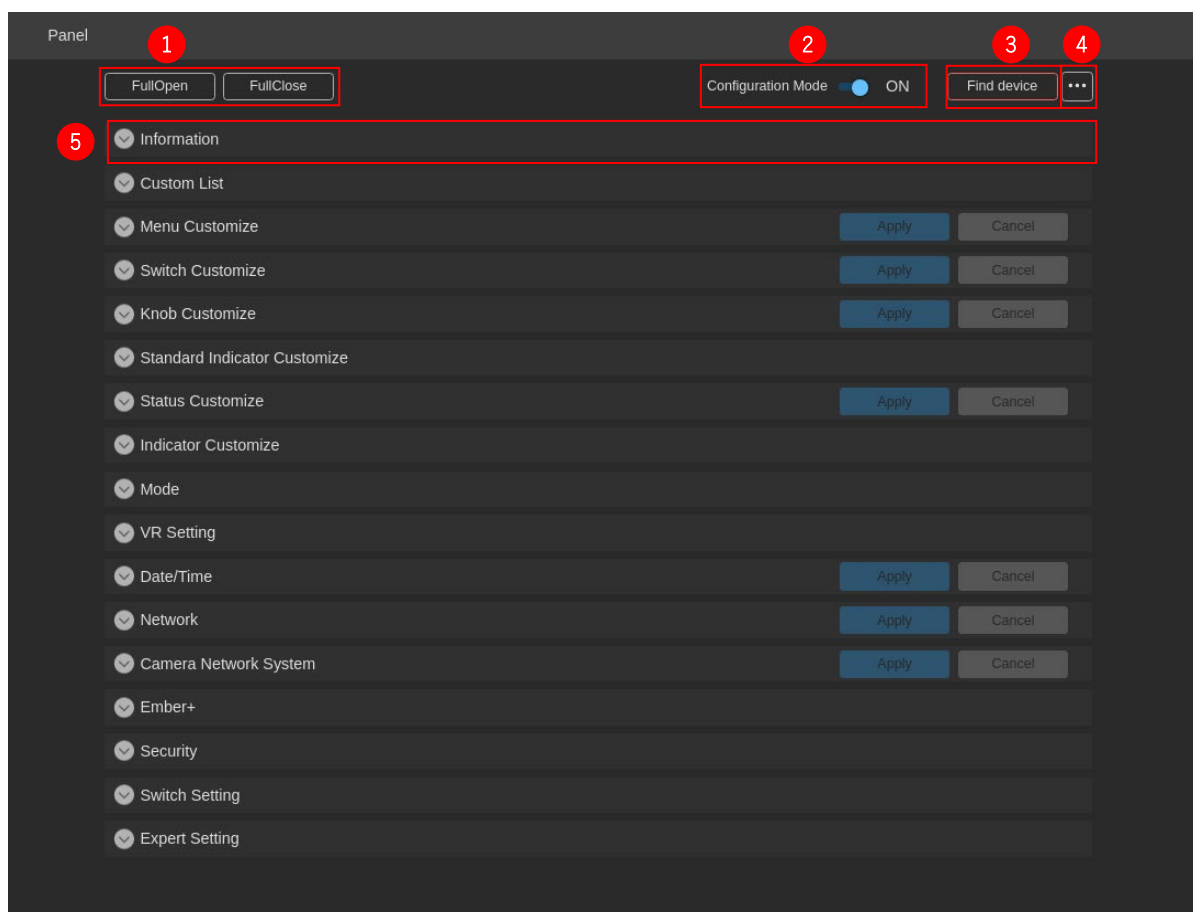
The password can be 8-32 alphanumericals and symbols. Must include both letters and numbers for added security.

\*Possible symbols: ! ? # \$ % & ' + ~ , - . = \_ < > \* " @ ¥ | / : ; { } half-width space

[Confirm Password]

To confirm the password, re-enter the same characters that entered in [Password].

## Homepage



### 1 FullOpen/Close

Click to open / Close all function panels.

### 2 Configuration Mode

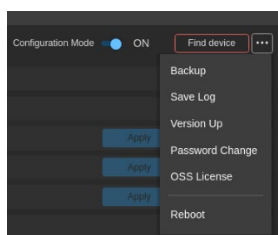
If click and select the toggle switch ON, it is possible to change the settings on the Web page. IF it is OFF, only reference is possible. Configuration Mode is set for each Web browser that has a web menu open.

### 3 Find Device


When using multiple units, it can be used to identify the set whose settings have been changed. It switches between ON and OFF each time the button is pressed. When turned on, the CALL buttons on the unit light up in red and make a sound.

### 4 Context Menu Button

Press the button to open the Context Menu. Close by clicking on the opened choice or by clicking outside the Context Menu. Each item will be explained in <Context Menu>.



### 5 Function panel

Click the  button or Function panel name to expand the function panel. If click the button or Function panel name again while it is open, the Function panel will be closed.

## Timing of reflection of settings in the operation of this unit

There are two types of functions: the Function panel to reflect the changed value immediately and the Function panel to reflect the change by pressing the Apply button after editing.

- An example of the Function panel that immediately reflects the changed value (Mode and VR settings)



Functions without the Apply / Cancel button will be reflected in the operation when the setting is changed. Basic settings are made using the toggle switch, pull-down button, or check box shown below.

### 1 Toggle switch

Click to switch the settings on and off.

### 2 Pull-down button

Click to display choices in pull-down menu format. Select one of the options or click outside the frame to close the pull-down menu.

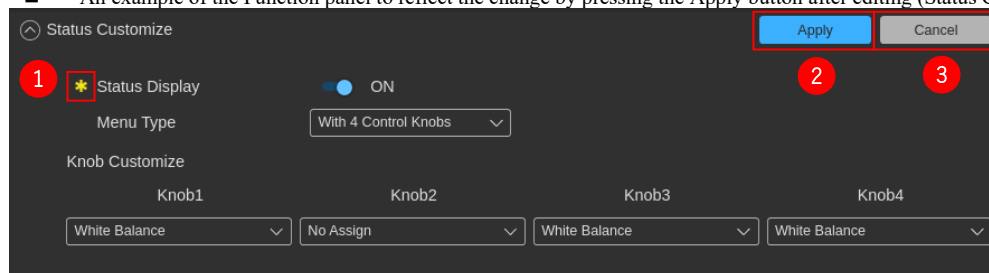
### 3 Check box

Click to check the item. Multiple checks are possible.

### 4 Radio button

Click to select the item. Since only one item can be selected, if another item is selected, it is deselected.

- An example of the Function panel to reflect the change by pressing the Apply button after editing (Status Customize).



In the Function panel with Apply button and Cancel button, the edit mark is displayed when the change is made, and the Apply button and Cancel button, which were disabled in the initial state, can be pressed.

The edited contents in the Web menu are retrained until the Apply button is pressed, and the contents are reflected in the operation after pressing Apply.

\*After pressing Apply, the Apply button and Cancel button will be disabled again.

Press the cancel button to discard the edited contents in the Web menu and reset with the setting value reflected in the current operation.

\*After pressing Apply, the Apply button and Cancel button will be disabled again.

If not editing in the Web Menu, the changes on the MSU are automatically reflected on the Web menu side, but the changes on the MSUt are not automatically reflected during editing.

Edits are retained even when Expander is closed.

### 1 Edit mark

When changes are made from the initial state, a yellow edit mark is displayed for each setting value.

It disappears when press the Apply button.

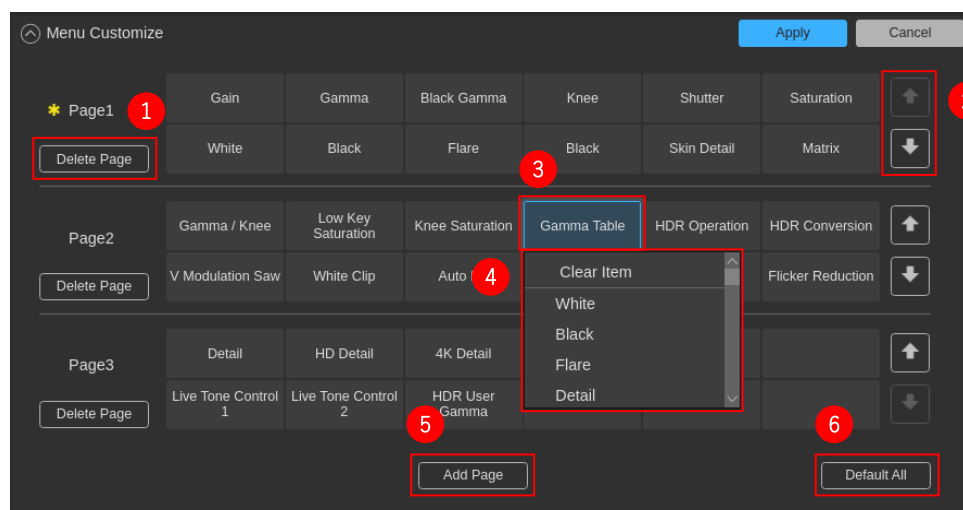
### 2 Apply button

When press the button, the settings edited with this Function panel will be reflected in the operation.

### 3 Cancel button

Press the button to delete the settings edited with this function and reset the Web menu display to the current settings.

## Menu Customize



### 1 Delete Page button

Delete Page. The last page cannot be deleted.

\*Will be disabled on the last page.

### 2 Page Up/Down button

Move the page index up or down by one.

\*Up is disabled for the top page and Down is disabled for the bottom page.

### 3 Custom Paint Menu button

Click to display a pull-down list of options that can be assigned to the Custom Paint.

### 4 Pull-down menu of Custom Paint Menu

It is possible to select an item from the options. It is also possible to set "No Assign" in "Clear Item". Clicking on a choice or outside the frame closes the pull-down menu.

### 5 Add Page button

Up to 9 pages can be added.

\*Disabled when there are 9 pages.

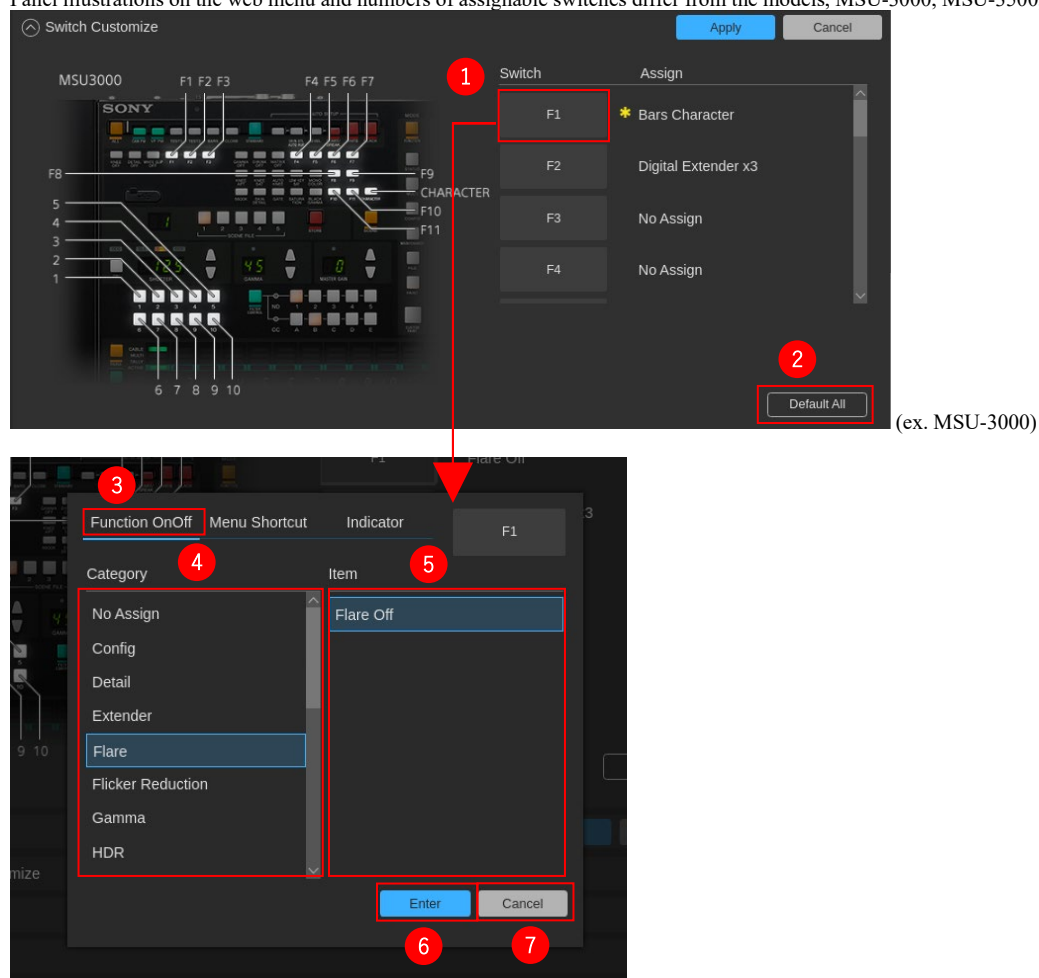
### 6 Default All button

Set the setting of Custom Paint to the default value.



## Switch Customize

Panel illustrations on the web menu and numbers of assignable switches differ from the models, MSU-3000, MSU-3500, RCP-3500 and RCP-3501.



### 1 Switch button

Lists up the switches on each model. Click to show a modal dialogue for Switch Customize.

### 2 Default All button

Set the assignment settings to the default values.

### 3 Menu Type tab

Tab to select a Menu Type of items to assign to the switch. Click to switch.

### 4 Category List

A selection list of categories of items to assign to the switch. Click to select and active the item. In the initial state, the current setting is active. \*No automatic scrolling to the current value

### 5 Item List

A list of item choices to assign to the switch. Click to select and active the item. In the initial state, the current setting is active. \*No automatic scrolling to the current value

### 6 Enter button

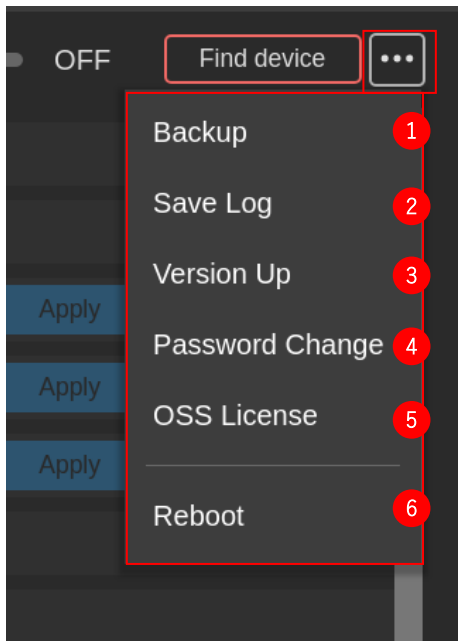
If click Enter with an item selected, the value selected in the modal dialog is determined as editing data and the modal dialog closes.

### 7 Cancel button

Click to cancel the value edited in the modal dialog and close the modal dialog.

## Context Menu

Explain the items that can be selected in the menu. Clicking on an item will show up the corresponding modal dialog.



### 1 Backup

[Panel Config]

Download to PC button

Make a backup file of the unit configuration (except Network) on the PC.

Load to Panel button

Load the saved unit configuration file (except Network) on the PC to the unit.

[Network Config]

Download to PC button

Make a backup file of the Network settings on the PC.

Load to Panel button

Load the saved Network settings file (except Network) on the PC to the unit.

If change the Network settings, web connection will be lost after loading the settings. Re-connection will be required in case of that.

### 2 Save Log

Download the log file on the unit.

### 3 Version Up

Save the package file of the desired version on the PC which accesses to the Web menu. Click this item to perform a version-up.

While in a proceed of a version-up, the screen that indicates the version-up is ongoing show up on the Web menu.

Once the version-up completes, the unit reboots automatically. The User Name and Password input screen to access the web menu will show up.

### 4 Password Change

Change the password to access the web menu. The current password is required.

### 5 OSS License

Shows the OSS (Open Source Software) license list.

### 6 Reboot

Reboots the unit.

**[Preparation]**

< USB flash drive>

Version upgrade is executed using a USB flash drive.

<Software File>

File name:

Upgrade file: msu3x00.pkg

\* Obtain it from Software Download site.

Create a folder having the name shown below in a USB flash drive, and copy the above file in it.

¥MSSONY¥PRO¥CAMERA¥ MSU3X00

**[Installation Procedure]**

Refer to the section of “Firmware Update” in the Service Manual.

**[Confirmation / Adjustment]**

When the firmware update is completed, the updated version is displayed on the MSU LCD screen.

Make sure the APP version is V1.30.

You can also check it in Config> MSU> Information> Version.

[Software History]  
MSU-3000/3500

Tech Memo Number	App/OS/Updater	SY
Initial release	V1.11	V1.010
HDCM21-024R	V1.21	V1.010
HDCM21-054	V1.30	V1.010