

OPERATION MANUAL

MBP-RUA

Remote Control Unit (For MBP Board)

2nd Edition

Edition Revision History

Edit.	Rev.	Date	Description	Section/Page
1	-	2014/01/24		
2	-	2016/03/23	Changed the unit design.	

Precautions

Important Safety Warnings

[Power]

 Caution	Operate unit only at the specified supply voltage.
	Disconnect the power cord via the power plug only. Do not pull on the cable portion.
 Stop	Do not place or drop heavy or sharp-edged objects on the power cord. A damaged cord can cause fire or electrical shock hazards. Regularly check the power cord for excessive wear or damage to avoid possible fire / electrical hazards.
 Caution	Ensure the power cord is firmly plugged into the AC outlet.

[Grounding]

 Caution	Ensure the unit is properly grounded at all times to prevent electrical shock.
 Hazard	Do not ground the unit to gas lines, units, or fixtures of an explosive or dangerous nature.

[Operation]

 Hazard	Do not operate the unit under hazardous or potentially explosive atmospheric conditions. Doing so could result in fire, explosion, or other hazardous results.
 Hazard	Do not allow liquids, metal pieces, or other foreign materials to enter the unit. Doing so could result in fire, other hazards, or a unit malfunction.
	If a foreign material does enter the unit, turn the power off and immediately disconnect the power cord. Remove the material and contact an authorized service representative if damage has occurred.

[Transportation]

 Caution	Handle with care to avoid impact shock during transit, which may cause malfunction. When you need to transport the unit, use the original or suitable alternative packing material.
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[Circuitry Access]

	<p>Do not remove covers, panels, casing, or access the circuitry with power applied to the unit. Turn the power off and disconnect the power cord prior to removal. Internal servicing / adjustment of unit should only be performed by qualified personnel.</p>
 <p>Stop</p>	<p>Do not touch any parts / circuitry with a high heat factor. Capacitors can retain enough electric charge to cause mild to serious shock, even after the power has been disconnected. Capacitors associated with the power supply are especially hazardous.</p>
 <p>Hazard</p>	<p>Unit should not be operated or stored with cover, panels, and / or casing removed. Operating the unit with circuitry exposed could result in electric shock / fire hazards or a unit malfunction.</p>

[Potential Hazards]

 <p>Caution</p>	<p>If abnormal odors or noises are noticed coming from the unit, immediately turn the power off and disconnect the power cord to avoid potentially hazardous conditions. If problems similar to the above occur, contact an authorized service representative before attempting to operate the unit again.</p>
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[Rack Mount Brackets, Ground Terminal, and Rubber Feet]

 <p>Caution</p>	<p>To rack-mount or ground the unit, or to install rubber feet, do not use screws or materials other than those supplied. Doing so may cause damage to the internal circuits or components of the unit. If you remove the rubber feet that are attached to the unit, do not reinsert the screws that secure the rubber feet.</p>
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[Consumables]

 <p>Caution</p>	<p>Consumable items that are used in the unit must be periodically replaced. For further details on which parts are consumables and when they should be replaced, refer to the specifications at the end of the Operation Manual. Since the service life of the consumables varies greatly depending on the environment in which they are used, such items should be replaced at an early date. For details on replacing consumable items, contact your dealer.</p>
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Upon Receipt

Unpacking

MBP-RUA units and their accessories are fully inspected and adjusted prior to shipment. Operation can be performed immediately upon completing all required connections and operational settings.

Check your received items against the packing list below. Check to ensure no damage has occurred during shipment. If damage has occurred, or items are missing, inform your supplier immediately.

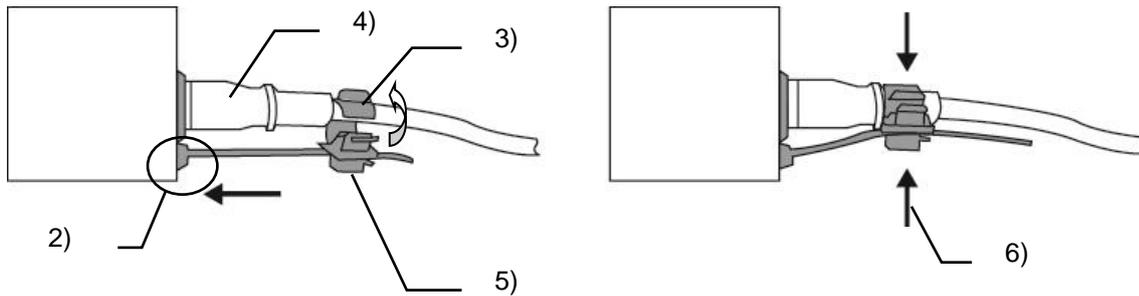
ITEM	QTY	REMARKS
MBP-RUA	1	
AC Cable	1	
Rack Mount Brackets	1 set	EIA standard type
Installation Disc (MBP-RUA_SUB)	1	MBP-RUA Switch Assign Builder User manual (PDF) included
Unpacking	1	

Installing the AC Cord Retention Clip

Secure the AC cord with the supplied ladder strap/retention clip assembly to prevent accidental removal from the unit.

◆ Installing the clip

- 1) Wrap the retention clip around the AC cord (with the anchor of the ladder strap toward the unit.)
- 2) Insert the anchor into the hole next to the AC IN socket.
- 3) Lightly fasten the clip around the AC cord.
- 4) Plug in the power cord.
- 5) Slide the clip on the ladder strap toward the plug.
- 6) Fasten the clip tightly.
- 7) Gently pull on the AC cord to ensure it is secured.



◆ Unplugging the AC cord

- 1) Push the tab on the retention clip up to unfasten the clip.
- 2) Push the tab on the ladder strap up and slide the clip back.
- 3) Unplug the AC cord.

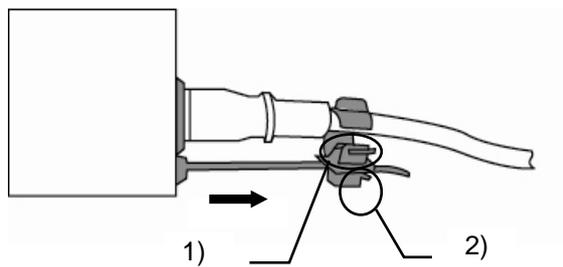


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1. Prior to Starting

1-1. Welcome

Congratulations! By purchasing MBP-RUA Remote Control Unit you have entered the world of FOR-A and its many innovative products. Thank you for your patronage and we hope you will turn to FOR-A products again and again to satisfy your video and audio needs.

FOR-A provides a wide range of products, from basic support units to complex system controllers, which have been increasingly joined by products for computer video based systems. Whatever your needs, talk to your FOR-A representative. We will do our best to be of continuing service to you.

1-2. Features

MBP-RUA is a remote control unit for MBP-1244 Multimedia Broadcasting Platform for Virtual Processing. Controlling MBP-100CK or MBP-12CK Chromakey option is also supported. MBP-12GUI, a software application for controlling MBP-1244 or MBP-100CK, is also available as a separate option.

On the Brainstorm PC in which MBP-1244 is installed or on the MBP-100CK, MBP-12Server is installed. MBP-RUA and MBP12GUI control MBP-1244 or MBP-100CK through MBP-12Server using the TCP/IP protocol. MBP-RUA is supported for switchable controls of up to 5 MBP-1244 or MBP-100CK units. Meanwhile, multiple MBP-RUA and/or MBP-12GUI can control the same MBP-1244. Up to 5 devices can be connected in the same network.

- Up to 5 MBP-1244 or MBP-100CK units can be controlled
- The Ethernet connection (100BASE-TX) is used to connect MBP-1244 or MBP-100CK
- Multiple MBP-RUA and/or MBP-12GUI can control the same MBP-1244 or MBP-100CK
- Touch screen for easy operation
- USB ports for USB devices; keyboard, mouse, USB memory device
- User customizable front panel button assignments

1-3. About This Manual

This manual is intended to help the user easily operate this product and make full use of its functions during operation. Before connecting or operating your unit, read this operation manual thoroughly to ensure you understand the product. Afterwards, it is important to keep this manual in a safe place and available for reference.

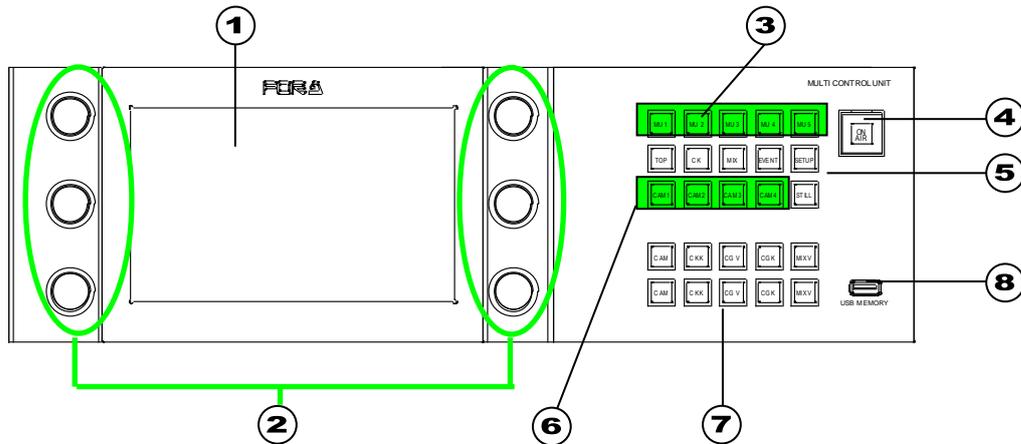
Font and Wording Conventions

The following conventions are used throughout this manual:

- Text enclosed by a square (such as **SETUP**) indicates physical front panel buttons.
- Bold text (such as **MANUAL**) indicates touch screen buttons, **GUI pages** and **important words**.
- Shaded text (such as **ON**) indicates a **setting menu** or **parameter value**.
- Touch panel GUI on the MBP-RUA is just called **GUI**.

2. Panel Descriptions

2-1. Front Panel



No.	Name	Description	Ref.
(1)	Touch screen	Displays menus, so you can change settings.	
(2)	Control knob	Used to change and set values for menus.	
(3)	MU selection buttons	Used to select a MBP-1244/100CK to be controlled.	5-2
(4)	ON AIR lock button	Used to disable the control over MBP-1244/100CK. MBP-RUA is disabled to control MBP-1244/100CK unless the lock is cancelled by pressing the button again.	4-10
(5)	Menu selection buttons	Used to display corresponding menus on the touch screen.	3-4-2
(6)	Camera selection buttons	Used to select a camera to be used.	5-1
(7)	Output selection buttons	Buttons in the upper row are used to select a signal to output from OUT1. Buttons in the lower row are used to select a signal to output from OUT2.	4-3-2
(8)	USB port	Used to connect a USB device such as a memory stick, a keyboard, or a mouse. USB2.0, A type	

2-1-1. Selection Buttons

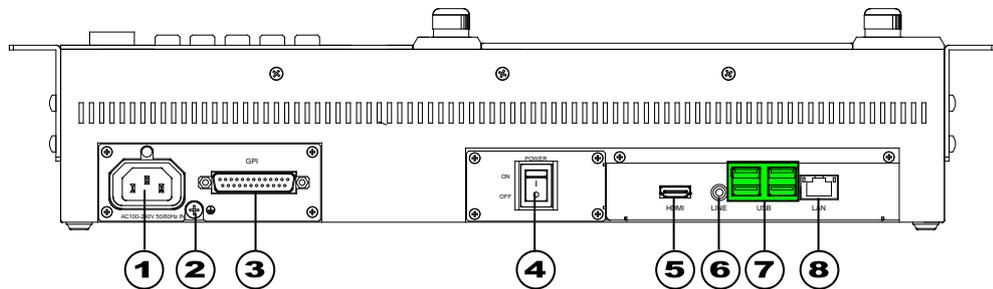
Those selection buttons have functions described in the above table. Pressing the button will activate the function. The buttons also have following characteristics.

- These buttons allow you to activate the function from whichever the menu you are in.
- The selectable buttons illuminate green, the currently selected buttons illuminate orange, and unavailable buttons are unlit.
- You can select functions from the function options and assign them to the buttons.

The next table shows the standard function assignments of the buttons. (The button banks are numbered from the top row to the bottom row in the above figure.)

Bank	Button		Action	Operation
1	MU buttons	MU1 - 5	Press the button	Selects a MU to be controlled.
2	Menu buttons	TOP	Press the button	Displays Top menu.
		CK	Press the button	Displays CK menu.
		MIX	Press the button	Displays MIX menu.
		EVENT	Press the button	Displays EVENT menu.
		SETUP	Press the button	Displays SETUP menu.
3	Camera buttons	CAM1 - 4	Press the button	Selects a camera to be used.
	STILL buttons	STILL	Press the button	Displays STILL&CAPTURE menu
4	Output buttons (Upper row)	CAM	Press the button	Outputs the camera input to OUT1.
		CK K	Press the button	Outputs CK KEY image to OUT1.
		CG V	Press the button	Outputs CG VIDEO image to OUT1.
		CG K	Press the button	Outputs CG KEY image to OUT1.
		MIX V	Press the button	Outputs MIX VIDEO image to OUT1.
5	Output buttons (Lower row)	CAM	Press the button	Outputs the camera input to OUT2.
		CK K	Press the button	Outputs CK KEY image to OUT2.
		CG V	Press the button	Outputs CG VIDEO image to OUT2.
		CG K	Press the button	Outputs CG KEY image to OUT2.
		MIX V	Press the button	Outputs MIX VIDEO image to OUT2.

2-2. Rear Panel

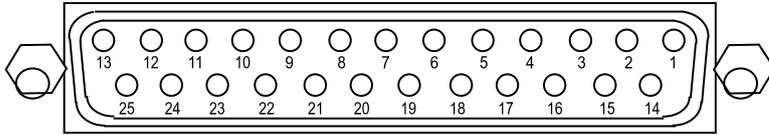


No.	Name	Description
(1)	AC IN	Apply AC power (AC100V-240V 50/60Hz).
(2)	Ground terminal	Ground unit to protect operators against static electricity and / or electrical shock.
(3)	GPI	Used for GPI inputs and outputs.
(4)	Power switch	Used to power ON or OFF the unit. Switching to " " powers on.
(5)	HDMI	Outputs the current LCD screen via an HDMI port. Normally this port is not used.
(6)	LINE	Audio line output. Not used.
(7)	USB	Used to connect USB devices such as a memory stick, a keyboard, or/and a mouse. USB2.0, A type, 4 ports
(8)	LAN	An ethernet port. Used for the connection with MBP-1244/100CK. 10BASE-T/100BASE-TX/1000BASE-TX, RJ-45

2-3. Interface

2-3-1. GPI

A GPI port is provided on this model.



Connector Pin Assignments (25-pin D-sub connector, female)

Pin No.	Signal
1-10	Output: PinNo.1 to PinNo.10
11	N/C
12	+5 V output
13	+5 V output
14-23	Input: PinNo.1 to PinNo.10
24	GND
25	GND

- * Connector pins are free assignable. When assigning pin functions on the GUI, use **PinNo.1 to PinNo.12** for specifying each pin under **Assign No.**
- * The GPI connectors use inch-screws.

GPI functions can be assigned to the GPI connector pins in the GUI menu. See section 5-5. "GPI Menu."

3. Preparation

3-1. Powering On

Connect all the devices and units you need for your system, then power on the units. The power switch for MBP-RUA is placed on the rear panel. After MBP-RUA is powered on buttons on the front panel start to illuminate and then the [Top menu] as below appears in about 30 seconds.



IMPORTANT

The **CK** button is enabled only when an MBP-12CK or MBP-100CK is connected. The **STILL&CAPTURE** button is enabled only when an MBP-100CK is connected. In other cases, these buttons are greyed out.

3-2. Setting IP Address

First, set IP address for your MBP-RUA. (NETWORK and RU settings can be made without connecting MU.)

- 1) Tap **SETUP** to open the SETUP menu.



- 2) Then tap **NETWORK** to go to the NETWORK menu.



3) In the NETWORK menu, set the IP address for your MBP-RUA (this unit).



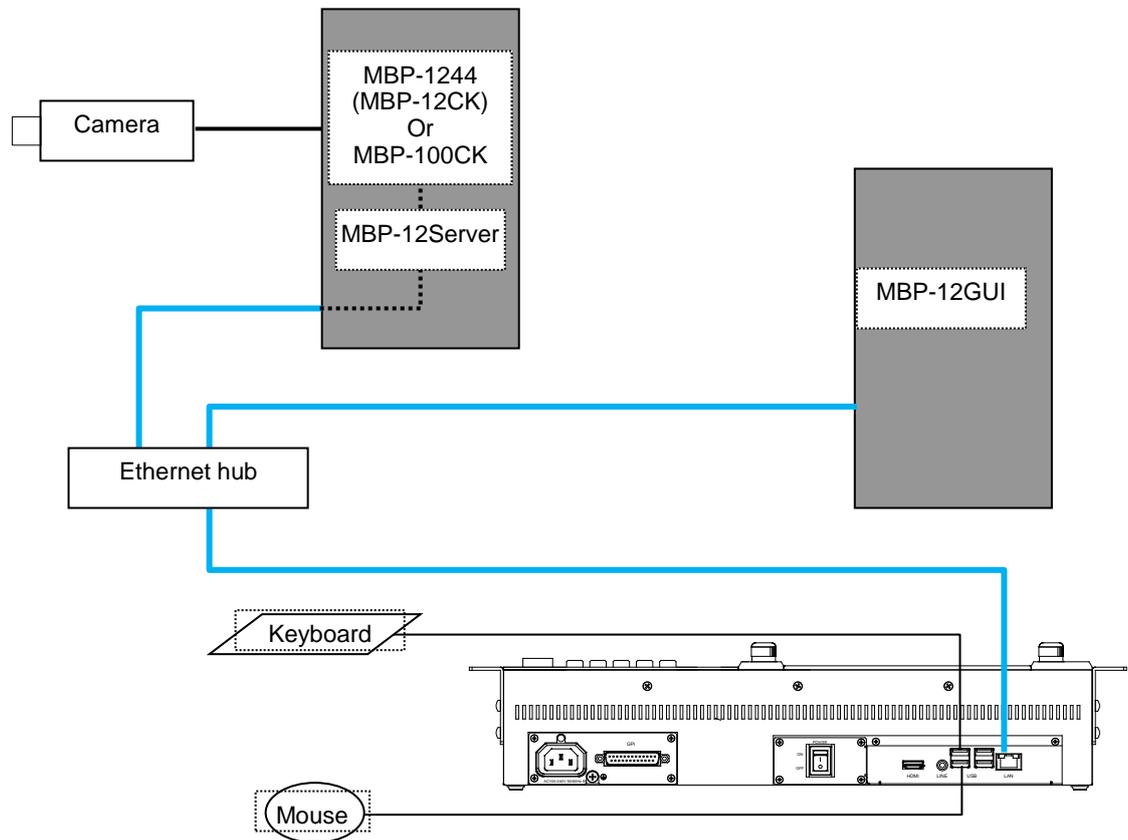
- a) Turn the knob at top left, or tap a box of digits to select a box in RU IP address which you are going to change the value of. (The selected box turns to green.)
 - * As you turn the knob, each box of RU and MU1 through 5 gets focused from left to right and the top row to the bottom row.
 - b) Turn the knob at top right to change the value.
 - c) Repeat the step a) and b) for all the digits need to be changed. (If you are going to change MU IP addresses, continue to do the same thing to the MUs before going to the next step.)
 - d) Tap **ACCEPT** to confirm the changes.
 - e) The "Do you want to change RU IP address?" message will appear. Tap **OK**.
 - f) MBP-RUA automatically shuts down and reboots. So do not do anything and **just wait** until GUI will be displayed again. The settings are completed when the GUI is displayed.
 - *Set the RU IP address "0.*.*", then the IP address will be automatically assigned for the MBP-RUA by the DHCP server if there is a DHCP server in the network.
- 4) In the NETWORK menu, set the IP address for the connected MUs.
- a) Turn the knob at top left, or tap a box of digits to select a box in MU 1 to 5 IP addresses which you are going to change the value of. (The selected box turns to green.)
 - * As you turn the knob, each box of RU and MU1 through 5 gets focused from left to right and the top row to the bottom row.
 - b) Turn the knob at top right to change the value.
 - c) Repeat the step a) and b) for all the digits need to be changed.
 - d) Repeat the steps a) to c) for other MUs if necessary.
 - e) Press the **ACCEPT** button to confirm the changes.
 - f) The "Do you want to change MU IP address?" message will appear. Tap **OK**. (The "Do you want to change RU IP address?" message will appear, if you have changed the IP address for RU.)
 - g) This GUI will be automatically closed if you have changed the IP address only for MU. Double-tap the "MBP-RUA" icon on the desktop to restart the GUI. MBP-RUA automatically shuts down and reboots if the IP address for RU was also changed. Then, do not do anything and **just wait** until the GUI will be displayed again. The settings are completed when the GUI is displayed in either cases.

IMPORTANT

DO NOT POWER OFF MBP-RUA during the automatic processing for the IP address changes made for the MBP-RUA.

3-3. Connections

After completing the IP address settings, establish a connection with the system. Use an Ethernet hub for the connection with the MU (the PC in which MBP-1244 and MBP-12Server are installed, or MBP-100CK). See the MBP-1244 Operation Manual for setting up the system. You can use the USB ports provided one on the front panel and two on the rear panel for connecting USB devices, such as USB memory devices, keyboards, and mice.



3-4. Menu Operations

3-4-1. Menu Structure

The MBP-RUA menu structure is as follows.

Level 1	Level 2		Description
TOP	CK	AUTO CK	Allows you to set auto chromakeying.
		MANUAL CK	Allows you to manually set a backing color for the chromakey.
		MATTE DENSITY FINE TUNING	Allows you to adjust the backing color setting.
		COLOR SUPPRESSION FINE TUNING	Allows you to finely adjust suppression of backing color to prevent foreground images to be affected.
		FG OPTION	Allows you to set optional effects, such as noise filters, useful for adjusting foreground images.
		MATTE OPTION	Allows you to set optional effects, such as noise filters, useful for adjusting matte signals.
		WINDOW MASK	Allows you to specify a rectangular masking area for chromakeying.
		COLOR ADJUST	Allows you to make level adjustments to chromakeyed signal.
	MIX & OUT	MIXER1 SETTING	Allows you to specify whether to output the layer or how to mix layers for each layer in Mixer 1.
		MIXER2 SETTING	Allows you to specify whether to output the layer or how to mix layers for each layer in Mixer 2.
		OUTPUT SELECT	Allows you to select signals to output to OUTPUT1 through 4.
	EVENT		Allows you to control event data stored in MBP-1244/100CK.
	SETUP	VIDEO	Allows you to select TV standards and types of sync signal, and to adjust phase for gunlock(sync) signals.
		DELAY SETTING	Allows you to set camera delay.
		OUT OPTION	Allows you to set whether to show the chromakey cursor for each output.
		NETWORK	Allows you to set IP address for the MBP-RUA and each MU.
		RU SETTING	Allows you to change the brightness of LCD screen and also the brightness and assignments of the buttons on the front panel.
	STILL & CAPTURE	GPI	Allows you to assign GPI inputs and outputs to pins.
		STILL	Allows you to select image files to output to STILL OUT.
	STILL & CAPTURE	CAPTURE	Allows you to capture or save the camera input image, or to control internal camera signals.
		INFO	

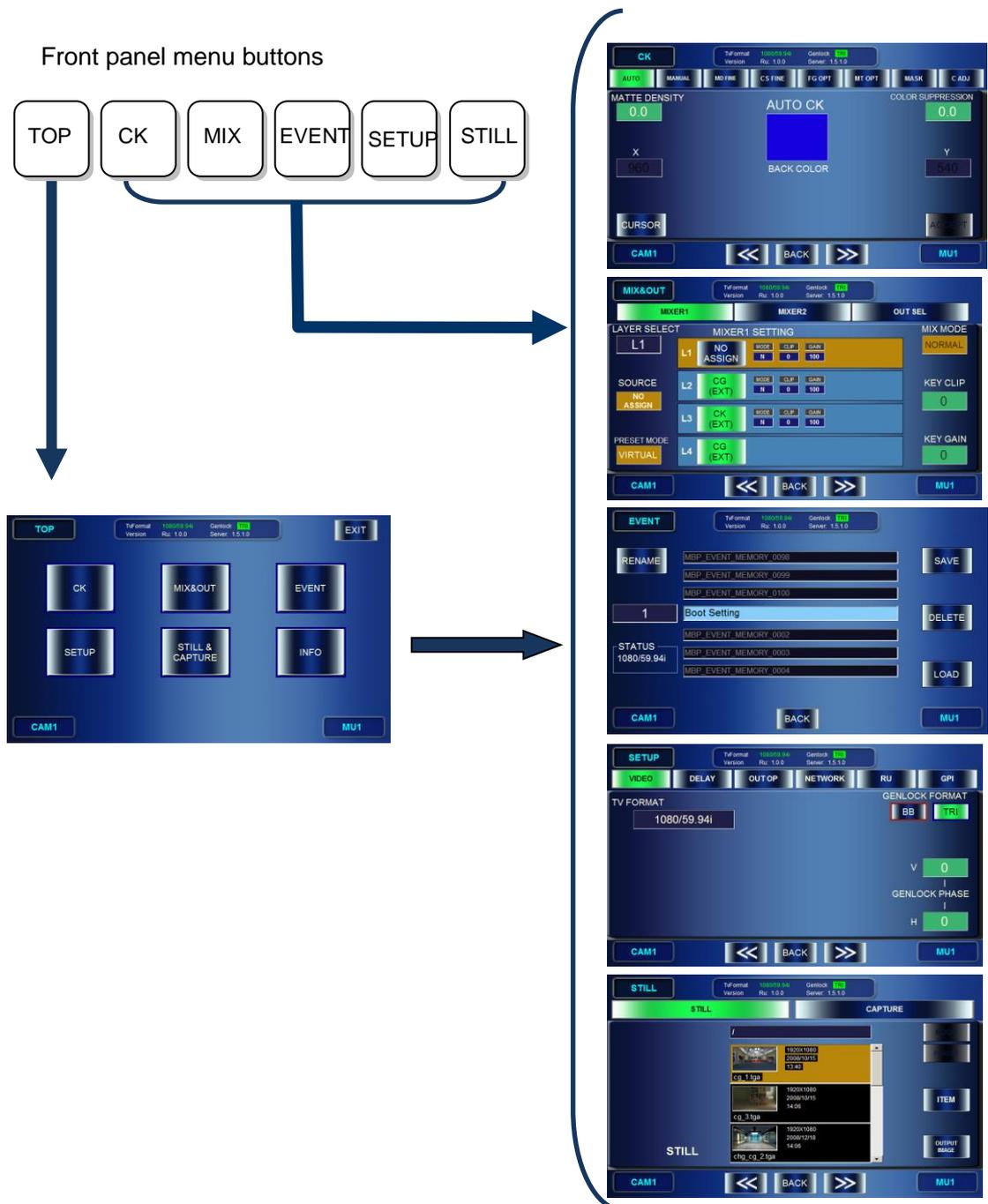
IMPORTANT

The **STILL&CAPTURE** menu is available only when an MBP-100CK is connected.

3-4-2. Displaying Menus

The Top menu appears when MBP-RUA is started up. From the Top menu, you can go to other menus by tapping **CK**, **MIX & OUT**, **EVENT**, **SETUP**, and **STILL** buttons. You can also access the menus by pressing the **CK**, **MIX**, **EVENT**, **SETUP**, and **STILL** buttons on the front panel.

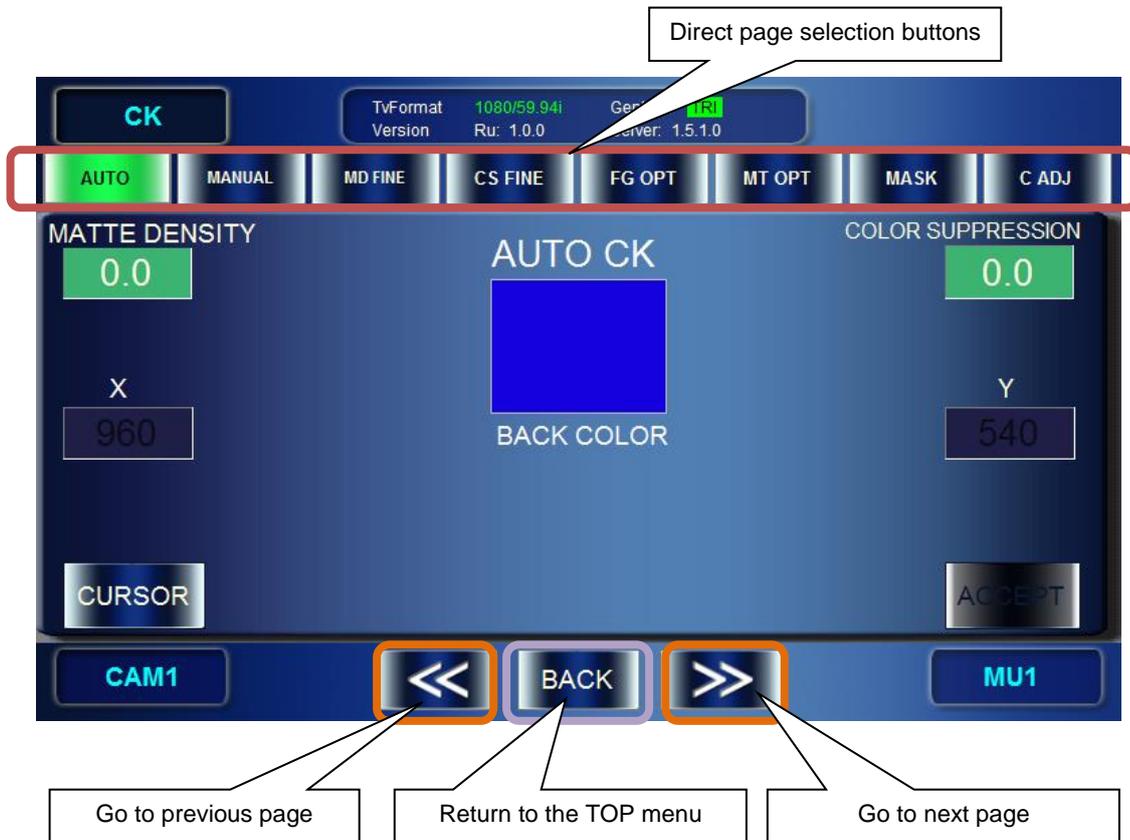
The settings for MU (MBP-1244 installed PC) and MBP-RUA can be made in the submenus (the second level menus shown in section 3-4-1. "Menu Structure") accessed from the menus opened by the above mentioned buttons.



- * Pressing INFO button displays system data for maintenance.
- * The STILL&CAPTURE button is active only when MBP-100CK is connected.

3-4-3. Menu Navigation Tools

The respective second level menu shown in section 3-4-1. "Menu Structure" have some pages under them. To go to those pages, you can use double-arrow buttons which allows you to go to next page or previous page at the bottom of menu pages, or you can use direct menu buttons at near the top of menu pages.



- * BACK button allows you to go back to the Top menu from the second level menus.
- * The front panel TOP, CK, MIX, EVENT, SETUP, and STILL buttons allow you to access those menus directly from any menu.

3-4-4. Basic Functions

3-4-4-1. GUI

The MBP-RUA is equipped with a touch screen. You can press the GUI buttons displayed on the screen by tapping them on the screen.

- If there are selection buttons, press a button for your selection. The selected button turns green.
- The grayed out buttons are not selectable.
- If you tap the numeric value box, the numeric input panel opens to allow you to input numeric values.

3-4-4-2. Buttons on Front Panel

The MBP-RUA is equipped with buttons on its front panel.

- The buttons can directly operate some functions the same as the GUI.
- You can press the buttons that are illuminating green.
- The selection buttons illuminate orange when selected.
- You can customize the function assignment for the buttons.

3-4-4-3. Knobs

The MBP-RUA is equipped with six knobs on its front panel. Those knobs allow you to select items to set and change the values on the GUI.

Changing values

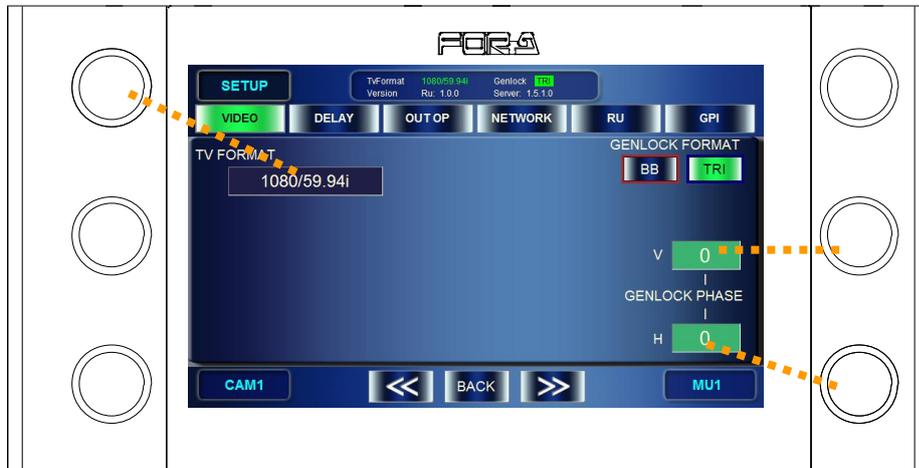
- Turn the knob to change the value.
- Press the knob to switch the value between UNITY and VARIABLE (the value applied right before it set to UNITY).
- Press and hold down the knob (at least two seconds) to change the adjustment mode between COARSE (blue background fields) and FINE (green background fields) .

Selecting items

- Turn the knob to select the item.
- Press the knob to confirm the selection.

3-4-4-4. Setting Example

The followings are the setting examples for the SETUP - VIDEO CONFIG menu.



TV FORMAT

Press the top left knob to open the format selection menu. Turn the knob and select a TV standard, then press the knob to confirm the selection.

GENLOCK FORMAT

Tap either **BB** or **TRI** to select a sync signal. The selected button turns green. If it is not synchronized, the button flashes green.

GENLOCK V PHASE

- Turn the middle right knob to change the value.
- Every press on the knob switches the value between UNITY (0) and VARIABLE.
- Press and hold down the knob (at least three seconds) to change the adjustment mode between COARSE (step of ± 10) and FINE (step of ± 1).
- The setting box is colored green when it is set to FINE, and it is colored blue when it is set to COARSE.

GENLOCK H PHASE

You can set the same as GENLOCK V PHASE using the bottom right knob.

3-5. Powering Off

To terminate the operation;

- 1) Press the **TOP** button on the front panel to open the Top menu.
- 2) Tap the **EXIT** button at the top right corner.
- 3) The message saying “Do you want to quit this application now?” appears. Tap **OK**.
 - * Tapping **CANCEL** cancels the termination. You can continue to operate the application.
- 4) The message saying “Do you want to shutdown now?” appears. Tap **OK**.
 - * Tapping **CANCEL** closes the application only, and returns to Windows.
- 5) Wait for the screen to become white after the GUI is closed and Windows automatically shuts down.
- 6) Turn off the power switch on the rear panel.

3-6. Other Notes

- MBP-RUA uses nonvolatile memory as the storage medium. The overwrite protection is set for the operation system to protect the data in the memory. Writable areas in MBP-RUA are as follows. (Creating and overwriting are allowed. Deleting is not allowed.)

Files or folders under the C: \MBP-RUA directory

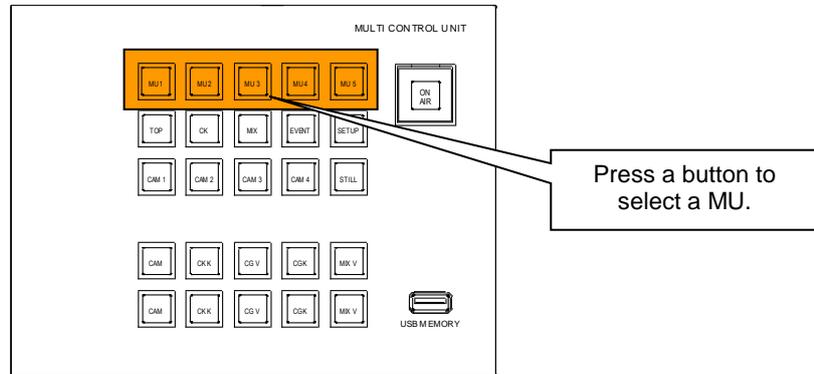
- You cannot save the changes made on the operation system, due to the overwrite protection.

4. Operation

This section briefly explains how to operate MBP-RUA. See section 5. "Menu Descriptions" for more details.

4-1. Selecting MU

4-1-1. Using Buttons on Front Panel

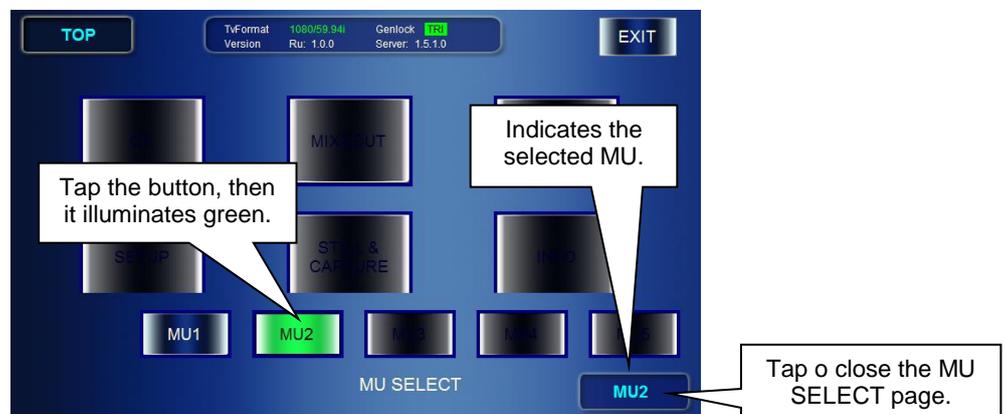


4-1-2. Using Menus

- 1) Double-tap the MU selection button at the bottom right corner.



- 2) The [MU SELECT] page is displayed. The buttons for selectable MUs are indicated with white letters. Tap a desired MU button. The button illuminates green when the MU is connected. The indication on the bottom MU selection button changes to the selected MU.



4-2. TV Standard / Genlock Signal Settings

4-2-1. Checking Current TV Standard / Genlock Signal

The currently employed TV standard and the type of Genlock signal are displayed at the upper area on the menu page when MBP-RUA is connected with the MU. The Genlock signal type indication illuminate green when it is synchronized. When it is asynchronous the indication is unlit.



4-2-2. Changing TV Format Selection

1) Press the **SETUP** button on the front panel. (Or tap **SETUP** in the **TOP** menu.)

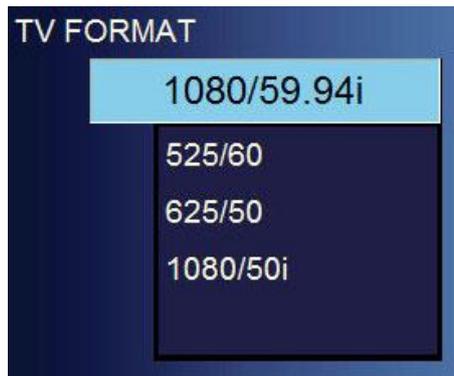


2) If the accessed SETUP menu is not the VIDEO CONFIG menu, tap the **VIDEO** button.

3) In the VIDEO CONFIG menu, press the top left button to open the TV FORMAT selection menu.



- 4) Turn the top left knob and select a TV standard, then press the knob to confirm the selection. The message "Do you want to change video format?" appears. Select **OK**. Then the TV standard will be changed.



4-2-3. Changing Genlock Signal Selection

Go to **SETUP > VIDEO CONFIG** menu. Tap either **BB** or **TRI** in the GENLOCK FORMAT section to change the selection.



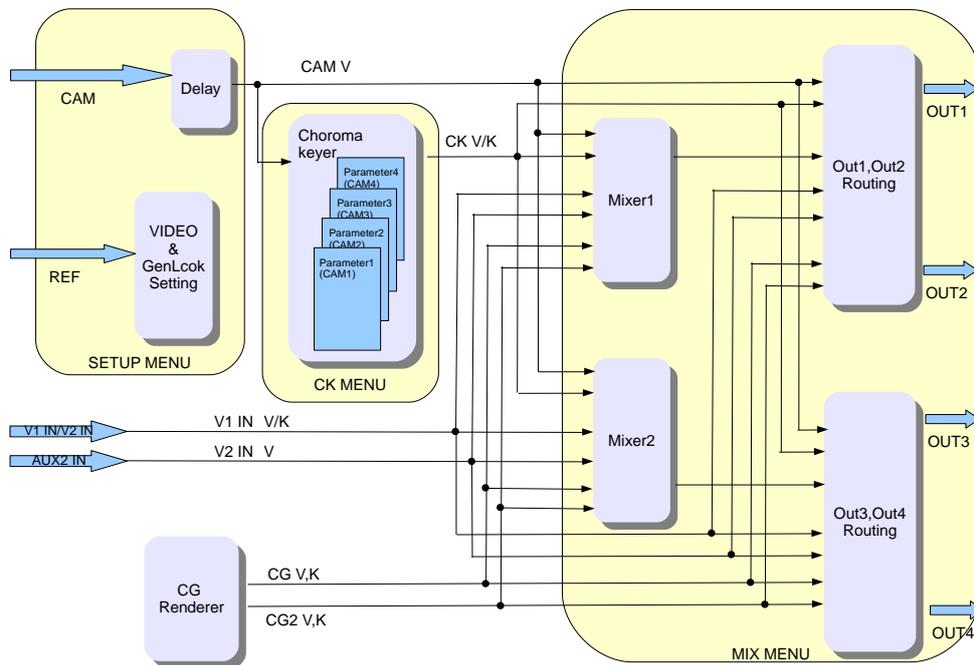
NOTE

To adjust the phase for the sync signal, follow the instruction given in the section 3-4-4-4. "Setting Example".

4-3. Selecting Output Signal

4-3-1. MBP-1244

The Input/Output Circuit of MBP-1244 is as shown below.



Selectable signals to output from OUT1 and OUT2 are as follows.

MIX VIDEO	Video signal used in the mixed image in MIXER1
MIX KEY	Key signal used in the mixed image in MIXER1
CAM	Input camera signal
CG VIDEO	Computer graphics video signal
CG KEY	Computer graphics key signal
CK VIDEO	Video signal used in chromakeying
CK KEY	Key signal used in chromakeying
CG2 VIDEO	CG2 video signal (generated by Brainstorm)
CG2 KEY	CG2 key signal (generated by Brainstorm)
V1 IN VIDEO	Input video signal in V1 IN
V1 IN KEY	Input video signal in V2 IN
V2 IN VIDEO	Input video signal in AUX2

Selectable signals to output from OUT3 and OUT4 are as follows.

MIX VIDEO	Video signal used in mixed images in MIXER2
MIX KEY	Key signal used in mixed images in MIXER2
CAM	Input camera signal
CG VIDEO	Computer graphics video signal
CG KEY	Computer graphics key signal
CK VIDEO	Video signal used in chromakeying
CK KEY	Key signal used in chromakeying
CG2 VIDEO	CG2 video signal (generated by using Brainstorm)
CG2 KEY	CG2 key signal (generated by using Brainstorm)
V1 IN VIDEO	Input video signal in V1 IN
V1 IN KEY	Input video signal in V2 IN
V2 IN VIDEO	Input video signal in AUX2

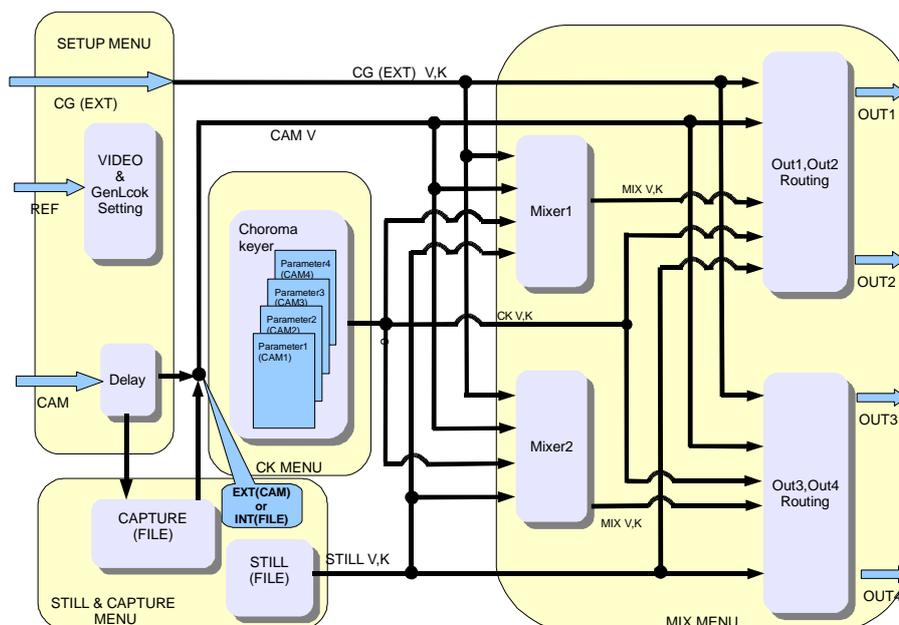
See important note in next page

IMPORTANT

MBP-1244 is provided with two mixing circuit, MIXER1 and MIXER2. The mixed images processed in the MIXER1 can be output from OUT1 and/or OUT2. The mixed images processed in the MIXER2 can be output from OUT3 and/or OUT4. CG2 V/K, V1 IN V/K, and V2 IN VIDEO are not selectable in the system with MBP-100CK.

4-3-2. MBP-100CK

The Input/Output Circuit of MBP-100CK is as shown below.



Selectable signals to output from OUT1 and OUT2 are as follows.

MIX VIDEO	Video signal used in the mixed image in MIXER1
MIX KEY	Key signal used in the mixed image in MIXER1
CAM(EXT or INT)	Camera input signal The signal is switched between an input from external device(EXT) and a filed image(INT) by the INT/EXT setting in the STILL&CAPTURE menu.
CG VIDEO	Computer graphics video signal
CG KEY	Computer graphics key signal
CK VIDEO	Video signal used in chromakeying
CK KEY	Key signal used in chromakeying
STILL VIDEO	Video signal used for generating still image.
STILL KEY	Key signal used for generating still image.

Selectable signals to output from OUT3 and OUT4 are as follows.

MIX VIDEO	Video signal used in the mixed image in MIXER2
MIX KEY	Key signal used in the mixed image in MIXER2
CAM(EXT or INT)	Camera input signal The signal is switched between an input from external device(EXT) and a filed image(INT) by the INT/EXT setting in the STILL&CAPTURE menu.
CG VIDEO	Computer graphics video signal
CG KEY	Computer graphics key signal
CK VIDEO	Video signal used in chromakeying
CK KEY	Key signal used in chromakeying
STILL VIDEO	Video signal used for generating still image.
STILL KEY	Key signal used for generating still image.

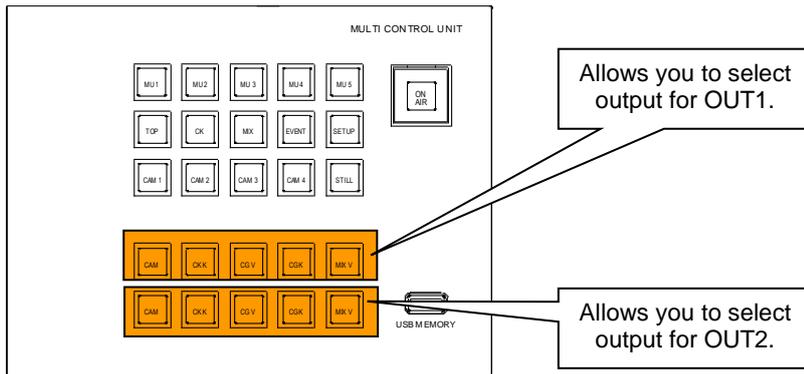
IMPORTANT

MBP-100CK is provided with two mixing circuit, MIXER1 and MIXER2. The mixed images processed in the MIXER1 can be output from OUT1 and/or OUT2. The mixed images processed in the MIXER2 can be output from OUT3 and/or OUT4.

STILL VIDEO and STILL KEY are selectable only in the system with MBP-100CK.

4-3-3. Using Buttons on Front Panel

You can also select output signal for OUT1 and OUT using the output selection buttons on the front panel.



OUT1	CAM	Outputs CAM image from OUT1.
	CK K	Outputs CK KEY image from OUT1.
	CG V	Outputs CG VIDEO image from OUT1.
	CG K	Outputs CG KEY signal from OUT1.
	MIX V	Outputs MIX VIDEO image from OUT1.
OUT2	CAM	Outputs CAM image from OUT2.
	CK K	Outputs CK KEY image from OUT2.
	CG V	Outputs CG VIDEO image from OUT2.
	CG K	Outputs CG KEY image from OUT2.
	MIX V	Outputs MIX VIDEO image from OUT2.

IMPORTANT

You cannot select outputs for OUT3 and OUT4 on the front panel in the standard assignment. Select the outputs in the menu.

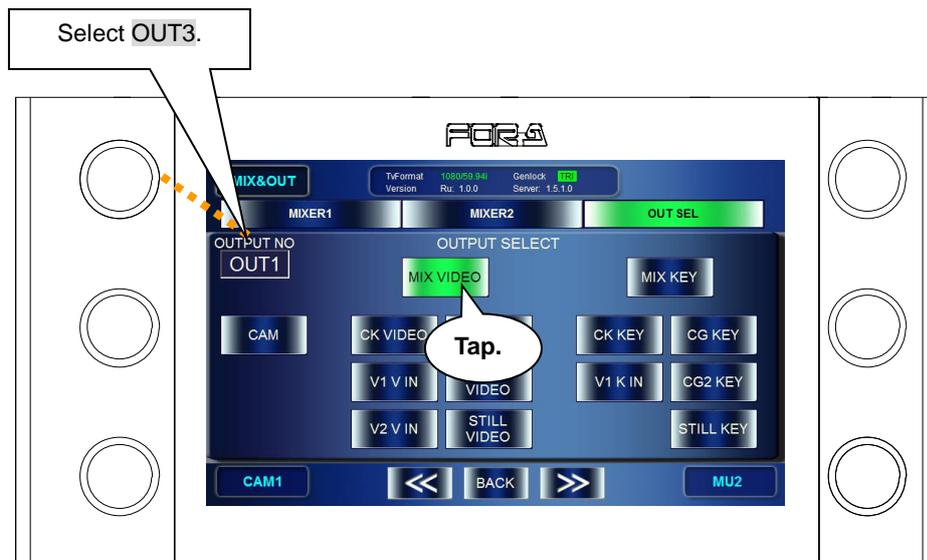
4-3-4. Using Menus

This section shows you an example procedure to output MIX VIDEO from OUT3.

- 1) Press the **MIX** button on the front panel (or tap **MIX** in the **TOP** page) to go to the **MIX&OUT** menu.
- 2) If the accessed **MIX&OUT** menu does not display the **OUTPUT SELECT** submenu, tap the **OUT SEL** button.



- 3) The **OUTPUT SELECT** menu is displayed.
- 4) Turn the top left knob and select **OUT3**.
- 5) Tap **MIX VIDEO**.



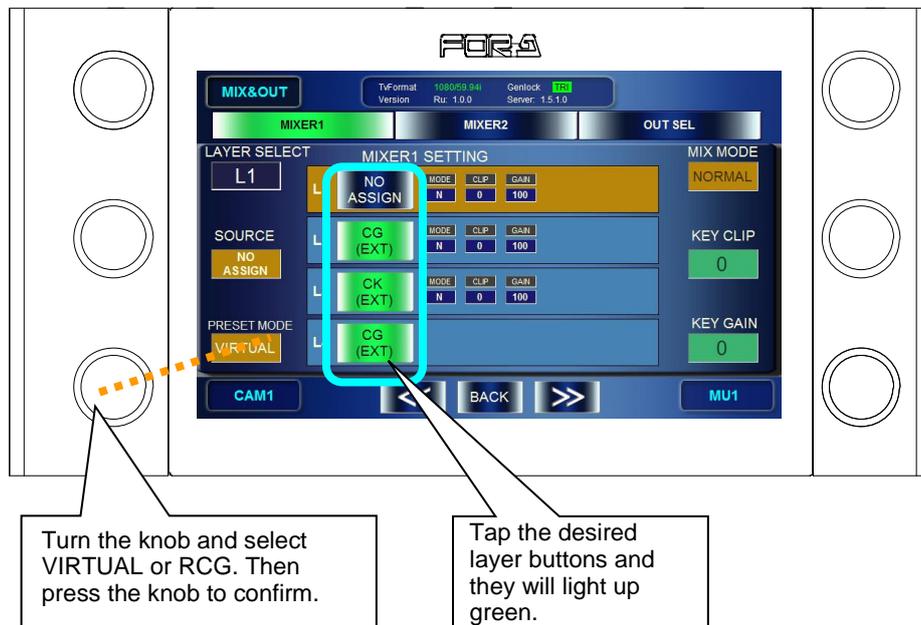
4-4. Setting Layers for Mixed images

MBP-1244/100CK is provided with two mixing circuit, MIXER1 and MIXER2. The mixed images processed in the MIXER1 can be output from OUT1 and/or OUT2. The mixed images processed in the MIXER2 can be output from OUT3 and/or OUT4.

Each mixing circuit consists of four layers (from the top L1, L2, L3, and L4). The layer structure can be selected from two preset structures that are preset as RCG mode and Virtual mode, or can be customized by the users.

4-4-1. Setting Layers of MIXER1 to RCG Mode or VIRTUAL Mode

- 1) Press the **MIX** button on the front panel to go to the MIX menu.
- 2) In the **MIX** menu tap the **MIXER1** button.
- 3) Turn the bottom left knob and change the indication of the PRESET MODE box to either **VIRTUAL** or **RCG**. Then press the knob to confirm the change. The PRESET MODE box changes to orange when it is confirmed. (The selected preset mode is indicated with the orange background.)
- 4) Press the layer buttons you want to mix and the buttons will light up green.



The layer structures in the preset modes are as below.

Preset mode	L1	L2	L3	L4
Virtual	NO ASSIGN	CG image*1 (mask, foreground object)	Chromakeyed image	CG image*1 (Background object)
RCG	CG image *2 (mask, foreground object)	Chromakeyed image	CG image *2 (middle-ground object)	Camera image

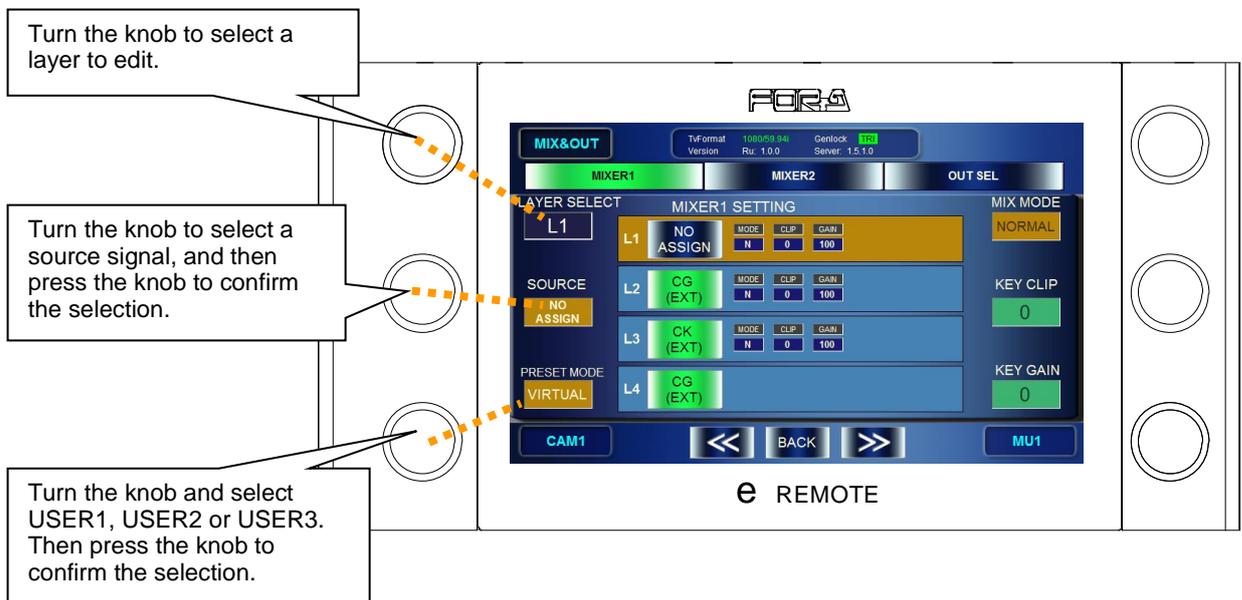
*1 L2 and L4 are carried in the same signal.

*2 L1 and L3 are carried in the same signal.

4-4-2. Customizing Layer Structure of MIXER1

The User mode of MBP-RUA allows you to change layer assignments as you wish. Three customized layer structures can be assigned at the same time as USER1 to USER3. The customized assignments are stored in the event data.

- 1) Press the **MIX** button on the front panel (or tap **MIX** in the **TOP** menu) to go to the **MIX&OUT** menu.
- 2) In the **MIX&OUT** menu tap the **MIXER1** button.
- 3) Turn the bottom left knob and change the indication of the PRESET MODE box to either **USER1**, **USER2** or **USER3**. Then press the knob to confirm the change. (The PRESET MODE box turns orange when it is confirmed. (The selected preset mode is indicated with the orange background.)
- 4) Turn the top left knob and select a layer to assign from L1 to L4.
- 5) Turn the middle left knob and select a source signal to assign to the layer. Press the knob to confirm the selection. (The SOURCE box changes to orange when it is confirmed. (The selected source signal is indicated with the orange background.)
- 6) Press the layer buttons you want to mix and the buttons will light up green.



Assignable sources are as shown below.

Source	Description
NO ASSIGN	Not assigning any signal. (BLACK image)
CAM (INT/EXT)	Camera input signal In the system with MBP-1244, it is an input signal in CAM connector (EXT). In the system with MBP-100CK, it can be switched between an input signal in CAM connector (EXT) and an internally generated still image signal (INT) by selecting a source material for chromakeying described in section 4-6-2.
CK (INT/EXT)	Chromakeyed signal In the system with MBP-1244, it is a chromakeyed signal input to CAM connector (EXT). In the system with MBP-100CK, it can be switched between an input chromakeyed signal in CAM connector (EXT) and an internally generated chromakeyed signal using still image (INT) by selecting a source material for chromakeying described in section 4-6-2. This signal is selectable only if MBP-12CK Chromakey option is installed.

CG (INT/EXT)	CG signal In the system with MBP-1244, it is an internally generated CG signal (INT) by using Brainstorm. In the system with MBP-100CK, it is an input signal in CG(V/K)INPUT connector (EXT).
STILL	Internally generated CG still image signal Available only if MBP-100CK is connected.
CG2	The secondary CG signal that is generated by using Brainstorm.
V1 IN	The input video or key signal in the V1 IN or V2 IN connector.
V2 IN	The input video signal in the AUX2 connector. V2 will be processed without an associated key signal.

* CG2, V1, and V2 are disabled in the system with MBP-100CK.

4-4-3. Changing Mixing Details of Layers for MIXER1

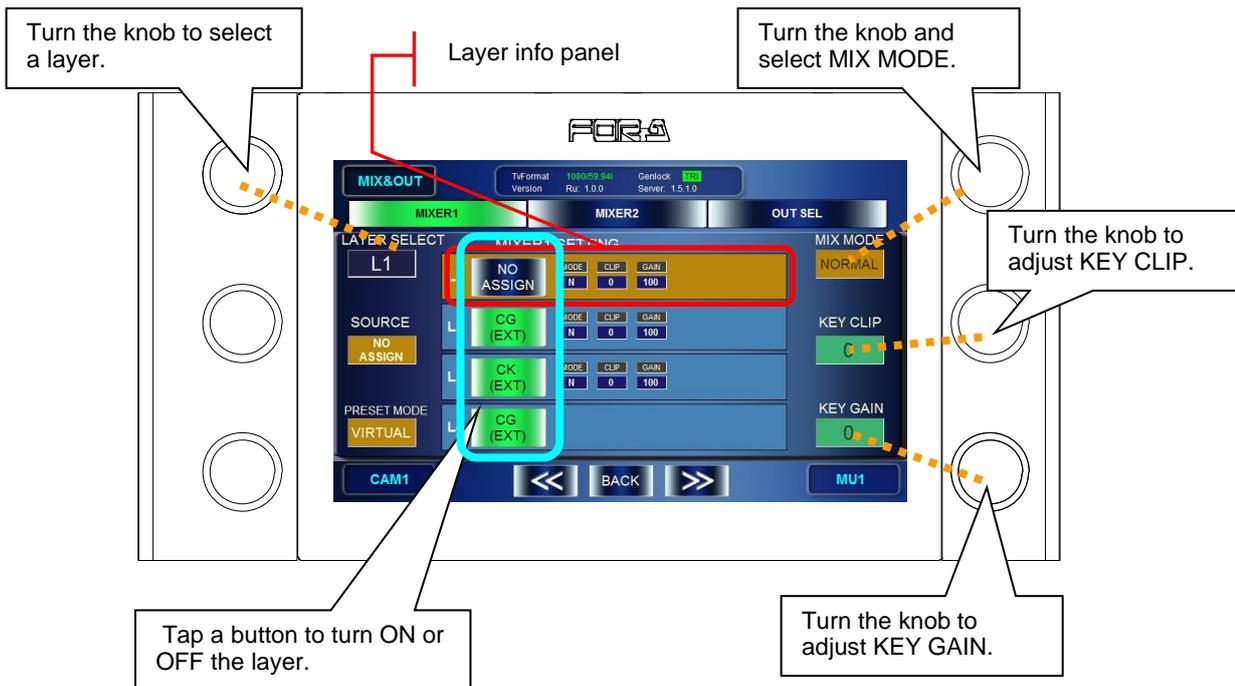
- 1) Press the **MIX** button on the front panel (or tap **MIX** in the **TOP** menu) to go to the **MIX&OUT** menu.
- 2) In the **MIX&OUT** menu, tap the **MIXER1** button to go to **MIXER 1 SETTING** menu.
- 3) Press each of L1, L2, L3, and L4 button to display (ON) or not to display (OFF). It is set to display when the button is green, and it is set not to display when the button is blue.

To change the setting values for MIX MODE, KEY CLIP and KEY GAIN for mixing, change the values for each layer while the layer is selected.

Turn the top left knob and select a layer. The background of one Layer info panel among L1, L2 and L3 turns orange when the layer is selected. (The mixing parameters of L4 such as MIX MODE cannot be changed.)

Adjust the mixing details as below.

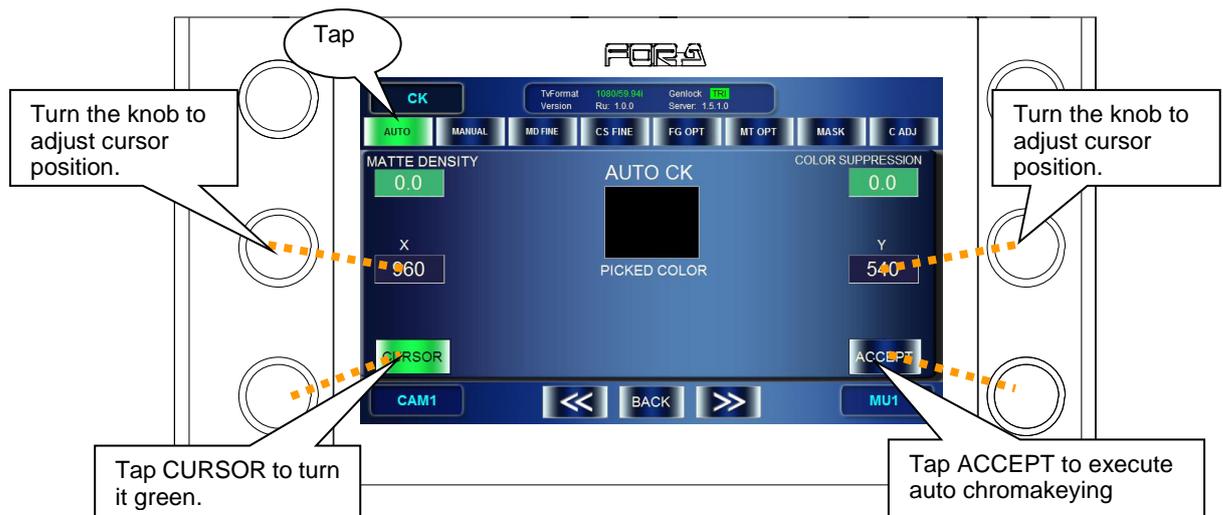
- Turn the top right knob and select how to mix from ADD and NORMAL, and then press the knob to confirm the selection. When it is confirmed, the MIX MODE box turns orange.
- Turn the middle right knob and adjust the key clip level for mixing.
- Turn the bottom right knob and adjust the key gain level for mixing.



4-5. Creating Chromakeys (MBP-12CK or MBP-100CK)

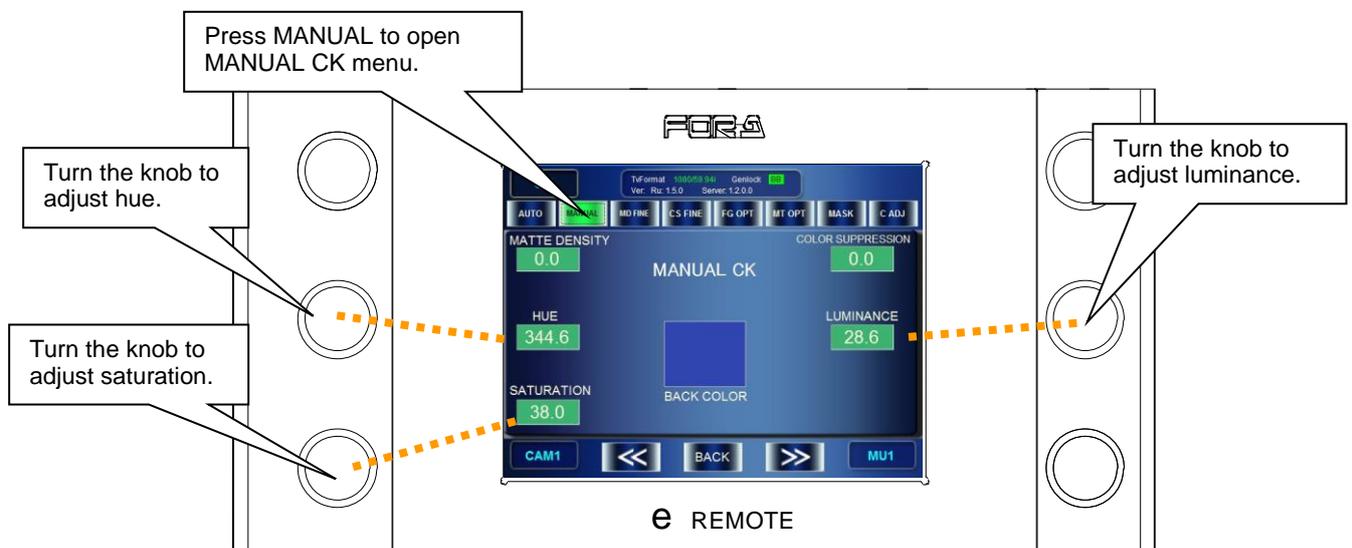
4-5-1. Auto Chromakey

- 1) Press the **CK** button on the front panel (or tap **CK** in the **TOP** menu) to go to the **CK** menu.
- 2) If the accessed CK menu is not the **AUTO CK** menu, tap **AUTO** to go to the **AUTO CK** menu.
- 3) Press the bottom left knob, or tap **CURSOR** on the GUI to display a chromakey cursor on the output screen. (The **CURSOR** button turns green.)
- 4) Turn the middle left knob and the middle right knob to move the cursor on the output screen to spot the backing color you want to cut.
- 5) Press the bottom right knob, or tap **ACCESS** to confirm the settings. (The chromakey cursor automatically disappears.)



4-5-2. Manual Chromakey

- 1) Press the **CK** button on the front panel (or tap **CK** in the **TOP** menu) to go to the CK menu.
- 2) If the accessed **CK** menu is not the **MANUAL CK** menu, tap **MANUAL** on the GUI to go to the **MANUAL CK** menu.
- 3) Turn the bottom and middle left knobs and the right middle knob to adjust **HUE**, **SATURATION**, and **LUMINANCE** for the backing color to cut. The specified color will be displayed in the **BACK COLOR** box on the GUI.



4-6. Capturing Still Image from Camera Input (MBP-100CK)

MBP-100CK allows you to capture video input in CAM connector, and save the captured images as still image files to the dedicated directory in the MBP-100CK. The still image files can also be used in place of a signal from a camera.

NOTE

MBP-RUA cannot add or delete directories, nor edit the captured files such as deleting or changing file names. Use MBP-12GUI which is installed in the MBP-100CK for managing the directories and files.

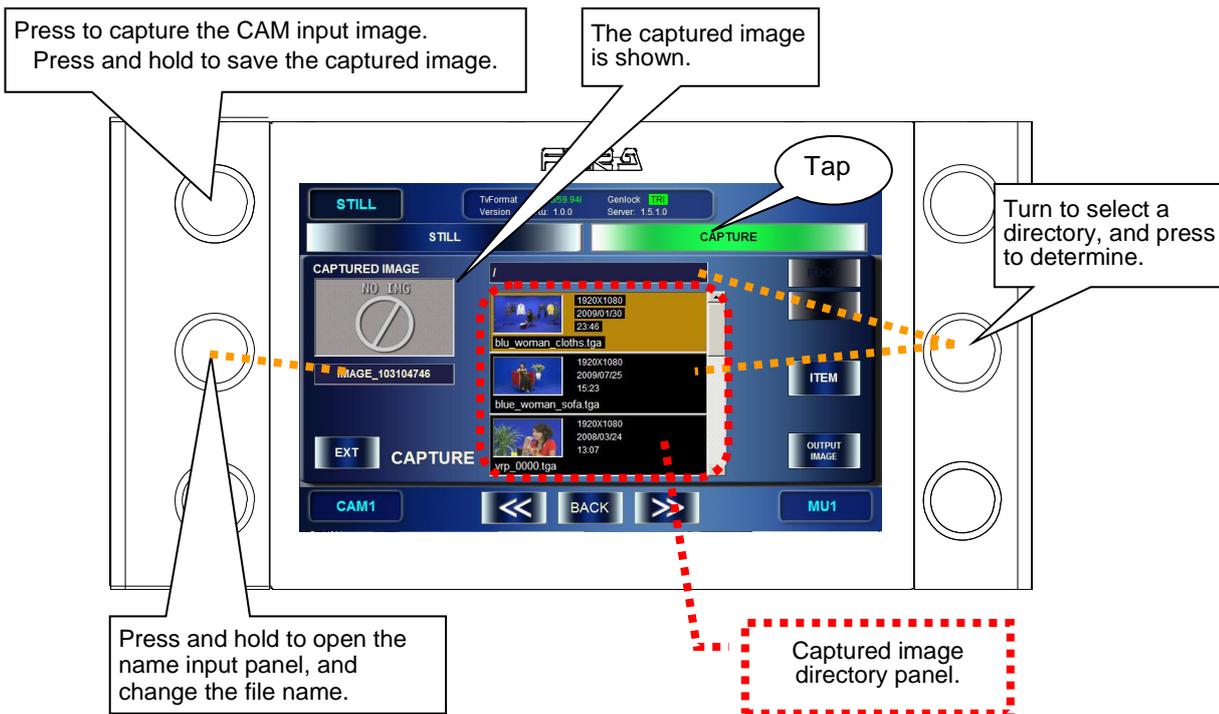
4-6-1. Capturing Image from Camera Input

- 1) Press the **STILL** button on the front panel (or tap **STILL&CAPTURE** in the **TOP** menu) to go to the **STILL & CAPTURE** menu.
- 2) In the **STILL & CAPTURE** menu tap **CAPTURE** to go to **CAPTURE** menu.
- 3) Use the middle right knob or **ROOT** and **PARENT** buttons on the GUI, and select a directory to save the captured image in the captured image directory panel.
- 4) Turn the top left knob and capture the input signal in CAM connector. The still image will be shown in the **CAPTURED IMAGE** box. To redo the capturing, press the top left knob. (It recaptures the still image).
- 5) Press and hold the middle left knob to open the name input panel, and name the file to save.

NOTE

See section 5-9-1. "Event Name Input Panel" for how to enter texts.

- 6) Press and hold the top left knob to save the file in the selected directory with the file name set in the step 5. If there is the same file name, the message "**Cannot save. The file name is already in use**" appears and it cancels saving the file.

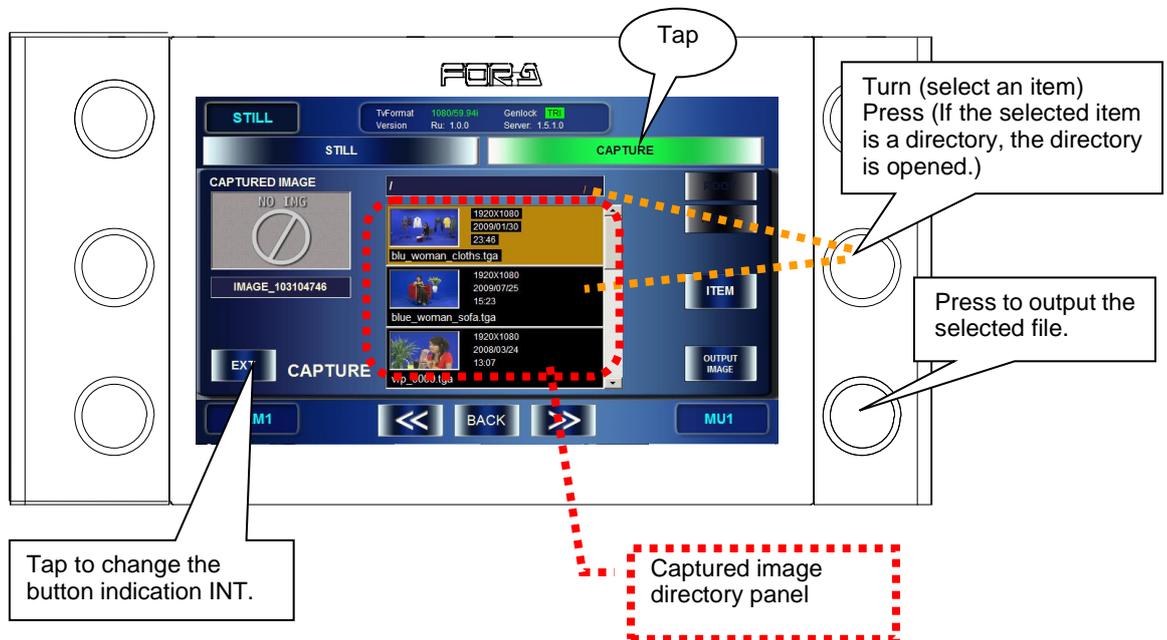


4-6-2. Using Captured Image for Chromakeying

- 1) Press the **STILL** button on the front panel (or tap **STILL&CAPTURE** in the **TOP** menu) to go to the **STILL & CAPTURE** menu.
- 2) In the **STILL & CAPTURE** menu tap **CAPTURE** to go to **CAPTURE** menu.
- 3) Press the **INT/EXT** button on the GUI to make the button to indicate **INT**. The **INT** represents the internal chromakey mode which is to use internally generated image for chromakey source material.
- 4) Select a directory where the file you want to use is saved in the **Captured image directory panel** using the middle right knob or **ROOT** and **PARENT** buttons on the GUI.
- 5) Press the bottom right knob to confirm the selection of the image to use for chromakeying. The message "Do you want to output this picture?" appears. Press **OK** to output the image. The selected image is shown in the **CAPTURED IMAGE** box. (At the same time, the CAM output image described in section 4-3-2 is changed to the same image.)

NOTE

Check the actual output image to see the image currently used for chromakeying.



4-7. Using Captured Image File as Still Image (MBP-100CK)

MBP-100CK allows you to use the still image files saved to the dedicated directory in MBP-100CK as source materials for layers.

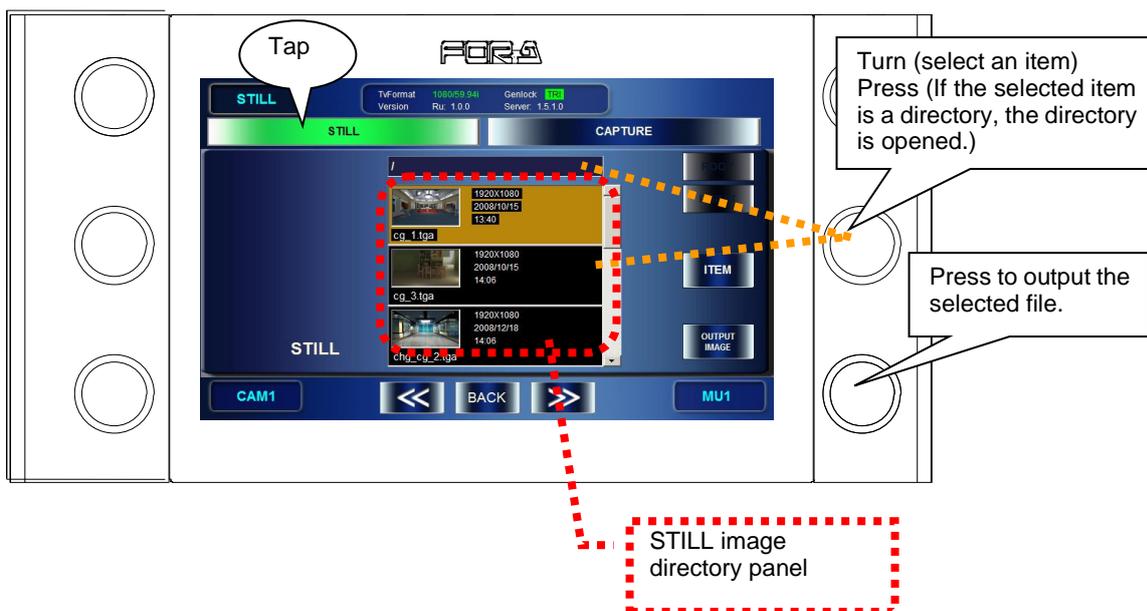
NOTE

MBP-RUA cannot add or delete the directory, nor edit the captured files such as deleting or changing file names. Use MBP-12GUI which is installed in the MBP-100CK for managing.

- 1) Press the **STILL** button on the front panel (or tap **STILL&CAPTURE** in the **TOP** menu) to go to the **STILL & CAPTURE** menu.
- 2) In the **STILL & CAPTURE** menu tap **STILL** to go to **STILL** menu.
- 3) Select a directory where the file you want to use is saved in the Still Image directory panel using the middle right knob or **ROOT** and **PARENT** buttons on the touch panel.
- 4) Press the bottom right knob to confirm the selection of STILL. The message "Do you want to output this picture" appears. Tap **OK**. When the selection is confirmed, The output image from STILL output is changed to the image of the selected file.

NOTE

Check the actual output image to see the image currently used for chromakeying.



4-8. Using Events

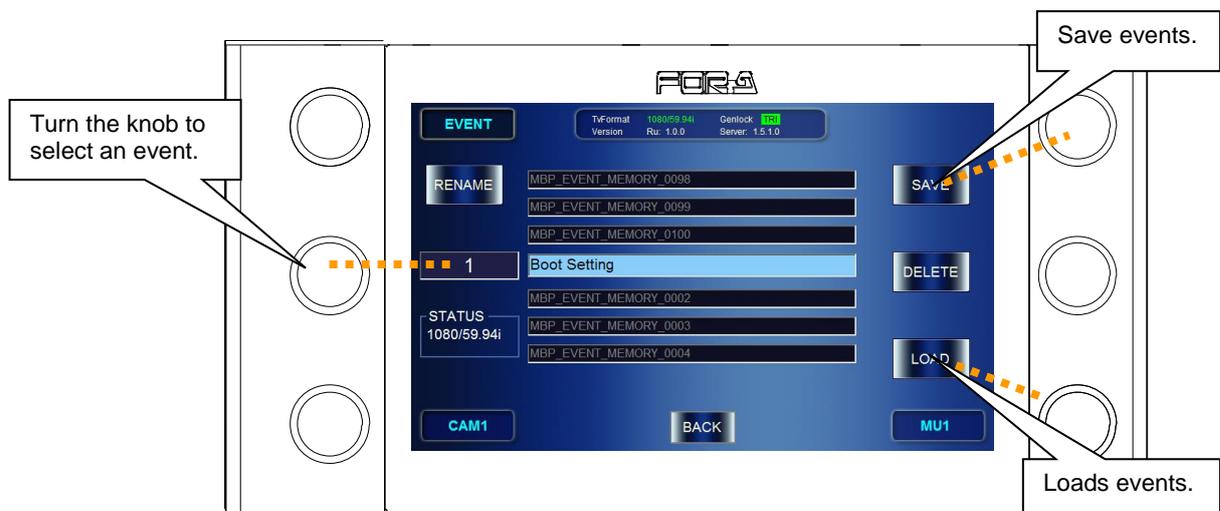
MBP-1244/100CK can store the setting data of its own as events.
MBP-RUA can store, load, delete and rename the events.

4-8-1. Storing Events

- 1) Press the **EVENT** button on the front panel (or tap **EVENT** in the **TOP** menu) to go to the **EVENT** menu.
- 2) Turn the middle left knob and select the event number you wish to save.
(Turning the knob let you go up and down on the list at the center of the GUI. The events whose background of the box is black have not been saved yet.)
- 3) Press the top right knob or tap **SAVE** on the GUI to save the selected event. The message saying "Do you want to save EVENT No*?" appears. Tap **OK** to save the event.
(If there already is a data in the selected event, the data will be overwritten.)

4-8-2. Loading Events

- 1) Press the **EVENT** button on the front panel (or tap **EVENT** in the **TOP** menu) to go to the **EVENT** menu.
- 2) Turn the middle left knob and select the event number you wish to load.
(If the unsaved event is selected, the **LOAD** button on the GUI will be grayed out to indicate the loading cannot be done.)
- 3) Press the bottom right knob or tap **LOAD** on the GUI to load the event. The message saying "Do you want to load EVENT No*?" appears. Press **OK** to load the event. All the settings are replaced with the loaded event data.

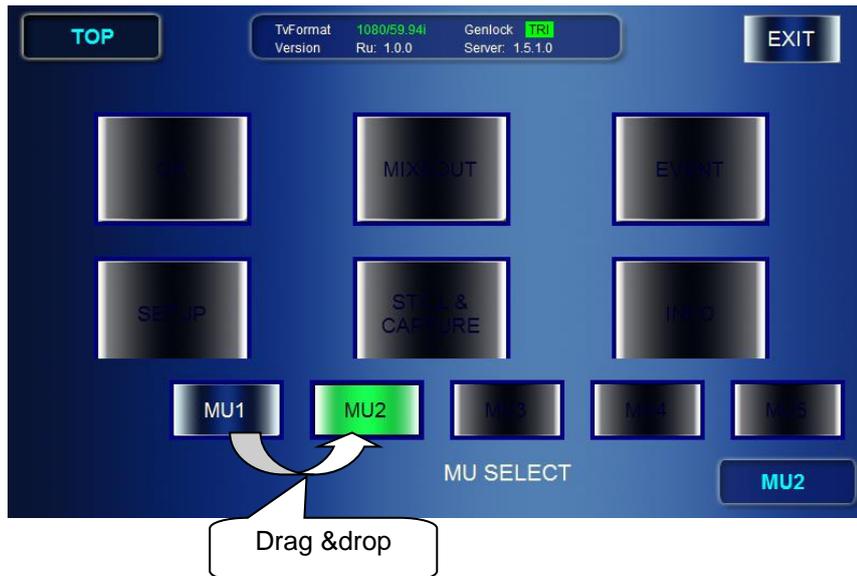


4-9. Copying Parameters

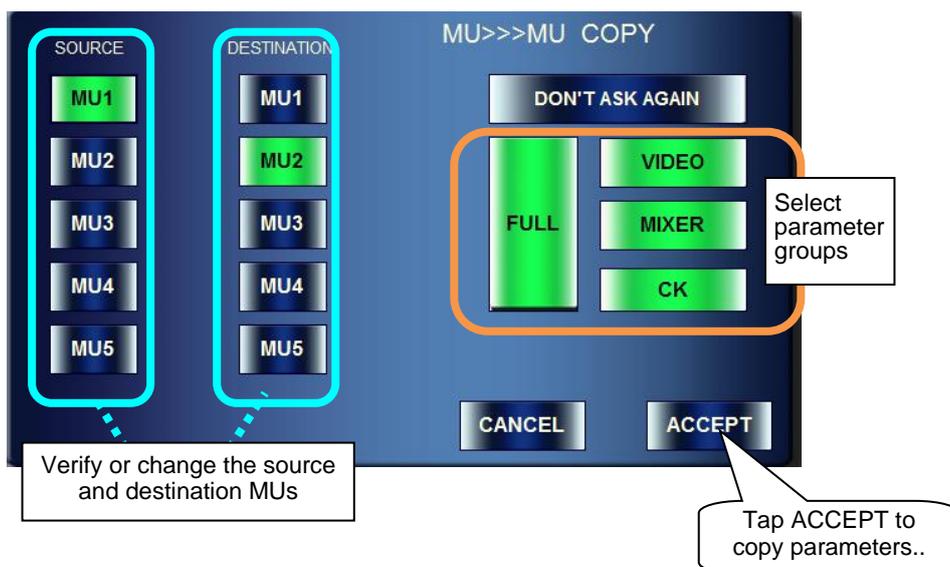
MBP-RUA provides a copy function that allows users to copy parameters between MUs (between the connected MBP-1244 units or between the connected MBP-100CK units) and between cameras in an MU. Parameter copies can be performed in any menu page.

4-9-1. Copying Parameters between MUs

- 1) Double-tap **MU** in the right bottom corner on the GUI to display the **MU SELECT** menu pane in the bottom of the screen.
- 2) Drag an MU to be copied (**MU1** in the figure below) and drop it on the destination MU (**MU2** in the figure below).



- 3) Once an MU is dropped on another MU, the **MU COPY** menu as shown below appears. Verify that the source and destination MUs are properly set. The source and destination MUs can be changed in this menu. Select parameter groups to be copied. Tap **ACCEPT** to perform the parameter copy. Tapping **CANCEL** cancels the process.



Parameter Groups

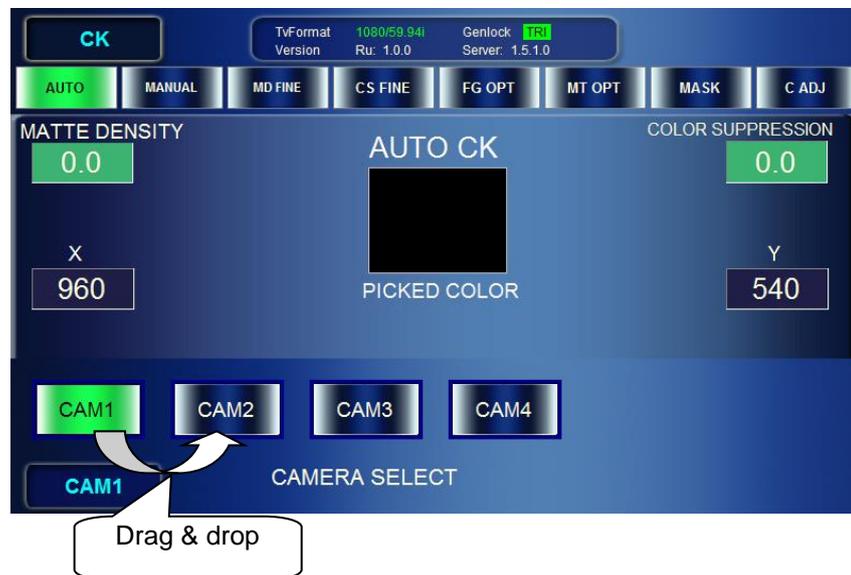
Group buttons	Parameters to be copied	Menus
VIDEO	TV format Genlock format and phases Camera delay (ON/OFF, Frame, V, H)	SETUP/VIDEO SETUP/DELAY SETTING
MIXER	Layer assignments for USER1 to USER3 MIXER1 and 2 settings (PRESET MODE, ON/OFF, MIX MODE) Output channel (OUT1 to OUT4) settings	MIX/MIXER1 MIX/MIXER2 MIX/OUT SEL
CK	Camera settings Chromakey cursor settings for each output	All CK menus SETUP/OUT OP
FULL	Event memory data and all above settings	—

NOTE

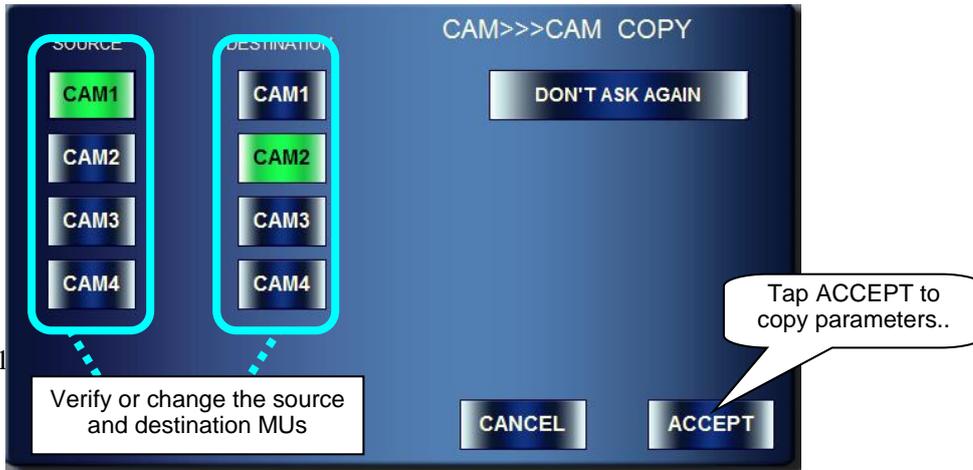
Tapping **DON'T ASK AGAIN** in the **MU COPY** menu allows you to **quickly** copy between MUs using the **last set** parameter groups. In such case, the **MU COPY** menu is not displayed. To display the **MU COPY** menu, tap **COPY OPT DIALOG** in the **SETUP/RU** menu to turn it to green.

4-9-2. Copying Parameters between Cameras

- 1) Double-tap **CAM** in the bottom left corner to display the **CAMERA SELECT** menu pane in the bottom of the screen.
- 2) Drag a camera to be copied (**CAM1** in the figure below) and drop it on the destination camera (**CAM2** in the figure below).



- 3) Once a camera is dropped on another camera, the **CAMERA COPY** menu as shown below appears] Verify that the source and destination cameras are properly set. The source and destination cameras can be changed in this menu. Tap **ACCEPT** to perform the parameter copy. Tapping **CANCEL** cancels the process.



NOTE

Tapping **DON'T ASK AGAIN** in the **CAMERA COPY** menu allows you to **quickly** copy between cameras without displaying the **CAMERA COPY** menu. To display the **CAMERA COPY** menu, tap **COPY OPT DIALOG** in the **SETUP/RU** menu to turn it to green.

4-10. Lock Functions

In MBP-RUA, the lock functions are provided for preventing accidental operations while MBP-1244/100CK is outputting video. The following three lock functions are available in MBP-RUA.

Table 1 : Lock Functions

Lock Function	Controlling MBP-1244/100CK		Releasing Lock Function	
	Client which applied the lock function	Clients other than the one applied the lock function	Client which applied the lock function	Clients other than the one applied the lock function
On Air Lock (Standard function)	Operating MBP-1244/100CK is inhibited. Viewing the settings and changing its own settings is possible	Same as on the left	Press and hold down ON AIR on the front panel to release the lock function	Press and hold down ON AIR on the front panel and enter the password to release the lock function
Exclusive Lock	Normal operation possible	Operating MBP-1244/100CK is inhibited. Viewing the settings and changing their own settings are possible	Press and hold down EX LOCK on the front panel to release the lock function	Press and hold down EX LOCK on the front panel and enter the password to release the lock function
Operation Lock	Operating MBP-1244 other than releasing The Operation lock is inhibited.	Normal operation possible	Press and hold down OP LOCK on the front panel to release the lock function	Unable to release the lock function

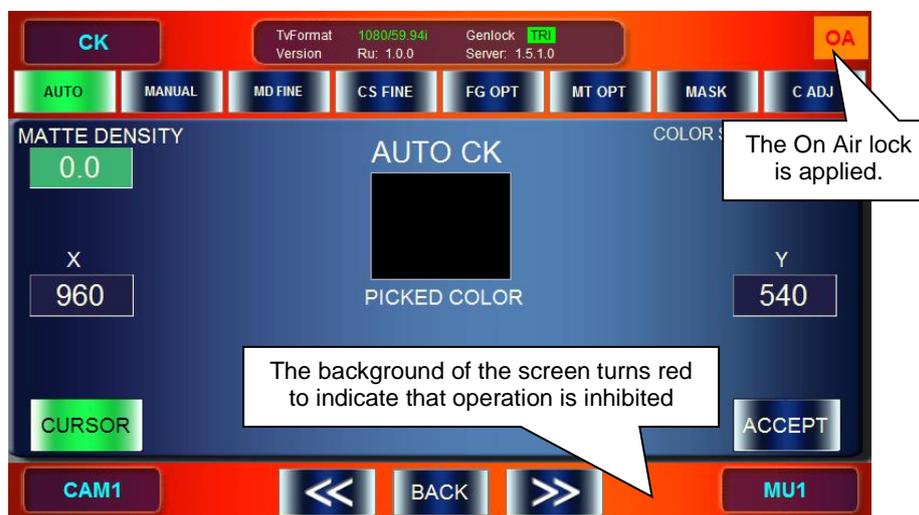
* "Client" is MBP-RUA or MBP-12GUI connected to MBP-1244 or MBP-100CK

4-10-1. On Air Lock (Standard Function)

The On Air lock inhibits (locks) controls of connected MBP-1244/100CK by all clients including the one applied the lock function. The On Air lock is applied by using the **ON AIR** button, which is one of the buttons on the front panel as a standard assignment.

Applying OnAir Lock

- 1) Select a MBP-1244/100CK you wish to apply the On Air lock by pressing a MU button on the front panel.



- 2) Press the **ON AIR** button on the front panel. Once the On Air lock is applied, the background of the page on MBP-RUA turns red as shown in the figure below. (The page also appears the same when the lock function is applied by another client.)

Releasing On Air Lock

- 1) Press and hold down the **ON AIR** button.
If the On Air lock is self-applied, the lock is released at this step. If the lock is applied by other clients, follow the next step.
- 2) The password input panel is displayed. Enter the password specified in the MBP-1244/100CK.



See section 5-9-1. "Event Name Input Panel" for details on entering characters. (However, the entered characters are hidden behind the asterisks. (*))

- 3) If the password is authenticated successfully, the On Air lock is released and the operation becomes possible.

4-10-2. Exclusive Lock

The Exclusive lock inhibits (locks) control of connected MBP-1244/100CK by all clients except the one applied the lock function.

NOTE
The Exclusive lock cannot be applied with the standard button assignment. The assignment needs to be changed and the EX LOCK button needs to be assigned.

The effect of the Exclusive lock is different on the client which applies the lock and on the other clients.

4-10-2-1. Self-Applied Exclusive Lock

Applying Exclusive Lock

- 1) Select a MBP-1244/100CK you wish to apply the Exclusive lock by pressing a MU button on the front panel.
- 2) Press the **EX LOCK** button on the front panel.
Once the Exclusive lock is applied, the mark **EX** with the green background is displayed at the upper right of the MBP-RUA screen (lower center for the top menu). The one which applied the lock can still control MBP-1244/100CK, however other clients cannot control MBP-1244/100CK.

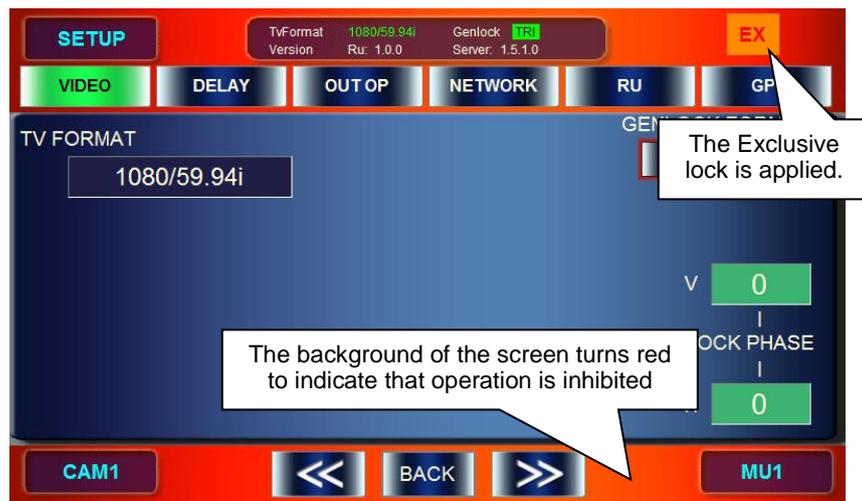


Releasing Exclusive Lock

- 1) Press and hold down the **EX LOCK** button.
- 2) The Exclusive lock is released and the operation through all clients becomes possible.

4-10-2-2. Exclusive Lock by Other Clients

Once the Exclusive lock is applied by other clients, the background of the MBP-RUA page turns red and all operations except for releasing the Exclusive lock are inhibited.



Releasing Exclusive Lock

- 1) Press and hold down the **EX LOCK** button.
- 2) The password input panel is displayed. Enter the password specified for MBP-1244/100CK.
- 3) If the password is authenticated successfully, the Exclusive lock is released and the operation becomes possible.

4-10-3. Operation Lock

The Operation lock inhibits (locks) control of connected MBP-1244 by the client which applied the lock function. It inhibits all MBP-1244 related operations of the client except releasing the Operation lock. It does not lock MBP-1244 itself, therefore other clients can still control MBP-1244/100CK normally.

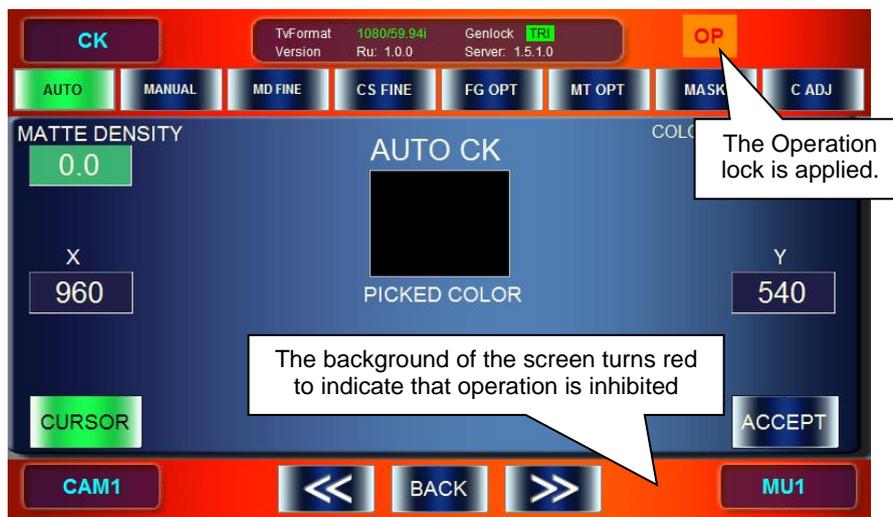
NOTE

The Operation lock cannot be applied with the standard button assignment. The assignment needs to be changed and the **OP LOCK** button needs to be assigned.

Applying Operation Lock

- 1) Press the **OP LOCK** button on the front panel.

Once the Operation lock is applied, the background of the page on MBP-RUA turns red as shown in the figure below.



Releasing Operation Lock

- 1) Press and hold down the **OP LOCK** button on the front panel to release the Operation lock.

4-11. Changeable Function Assignment

You can customize the function assignments for the buttons and the indications on the bank indicators on the MBP-RUA front panel.

- the buttons and indicators can be customized by specifying the assignment files (extension "mru"). (SETUP→RU SETTING→SW CONFIG)
- Save the assignment file (*.mru) under the C:\MBP-RUA\DATA directory in MBP-RUA.
- Assignment files are processed by the application, MBP-RUA Switch Assign Builder (MBP-RUA_SAB), which is different from this GUI.
- Assignable functions are as below. (■ shaded items are the menus set as a standard.)

Category	Function name	Operation	Label indication
MENU SELECT	TOP MENU	Opens the Top menu.	TOP
	CK MENU	Opens the CK menu.	CK
	MIX&OUT MENU	Opens the MIX&OUT menu.	MIX
	EVENT MENU	Opens the EVENT menu.	EVENT
	SETUP MENU	Opens the SETUP menu.	SETUP
	STILL MENU	Opens the STILL&CAPTURE menu. (Active only if MBP-100CK is connected.)	STILL
	MENU NEXT	Goes to the next submenu in each menu.	MENU NEXT
	MENU PREV	Goes to the previous submenu in each menu.	MENU PREV
	MENU RETURN	Returns to the Top menu.	MENU RETURN
MU SELECT	MU1 SELECT	Selects MU1.	MU1
	MU2 SELECT	Selects MU2.	MU2
	MU3 SELECT	Selects MU3.	MU3
	MU4 SELECT	Selects MU4.	MU4
	MU5 SELECT	Selects MU5.	MU5
CAM SELECT	CAM1 SELECT	Selects CAM1.	CAM1
	CAM2 SELECT	Selects CAM2.	CAM2
	CAM3 SELECT	Selects CAM3.	CAM3
	CAM4 SELECT	Selects CAM4.	CAM4
OUT1 SELECT	OUT1 MIXV	Changes OUT1 output to a combined video image.	MIX V
	OUT1 MIXK	Changes OUT1 output to a combined key image.	MIX K
	OUT1 MONI V CG	Changes OUT1 output to computer graphics.	CG V
	OUT1 MONI V CK	Changes OUT1 output to a chromakeyed video image.	CK V
	OUT1 MONI CAM	Changes OUT1 output to a Camera image.	CAM
	OUT1 MONI K CG	Changes OUT1 output to a computer graphics key image.	CG K
	OUT1 MONI K CK	Changes OUT1 output to a chromakeyed key image.	CK K
	OUT1 MONI V STILL	Changes OUT1 output to a STILL video image. (Active only if MBP-100CK is connected.)	ST V
	OUT1 MONI K STILL	Changes OUT1 output to a STILL key image. (Active only if MBP-100CK is connected.)	ST K
	OUT1 MONI V CG2	Changes OUT1 output to a CG2 video image.	CG2 V
	OUT1 MONI K CG2	Changes OUT1 output to a CG2 key signal.	CG2 K
	OUT1 MONI V V1	Changes OUT1 output to an input video in V1 IN (V1 video signal).	V1 V
	OUT1 MONI K V1	Changes OUT1 output to an input video in V2 IN (V1 key signal).	V1 K
	OUT1 MONI V V2	Changes OUT1 output to an input video in AUX2 (V2 video signal).	V2 V

Continued to next page

Category	Function name	Operation	Label indication
OUT2 SELECT	OUT2 MIXV	Changes OUT2 output to a combined video image.	MIX V
	OUT2 MIXK	Changes OUT2 output to a combined key image.	MIX K
	OUT2 MONI V CG	Changes OUT2 output to computer graphics.	CG V
	OUT2 MONI V CK	Changes OUT2 output to a chromakeyed video image.	CK V
	OUT2 MONI CAM	Changes OUT2 output to a Camera image.	CAM
	OUT2 MONI K CG	Changes OUT2 output to computer graphics key.	CG K
	OUT2 MONI K CK	Changes OUT2 output to a chromakeyed key image.	CK K
	OUT2 MONI V STILL	Changes OUT2 output to a STILL video image. (Active only if MBP-100CK is connected.)	ST V
	OUT2 MONI K STILL	Changes OUT2 output to a STILL key image. (Active only if MBP-100CK is connected.)	ST K
	OUT2 MONI V CG2	Changes OUT2 output to a CG2 video signal.	CG2 V
	OUT2 MONI K CG2	Changes OUT2 output to a CG2 key signal.	CG2 K
	OUT2 MONI V V1	Changes OUT2 output to an input video in V1 IN (V1 video signal).	V1 V
	OUT2 MONI K V1	Changes OUT2 output to an input video in V2 IN (V1 key signal).	V1 K
	OUT2 MONI V V2	Changes OUT2 output to an input video in AUX2 (V2 video signal).	V2 V
OUT3 SELECT	OUT3 MIXV	Changes OUT3 output to a combined video image.	MIX V
	OUT3 MIXK	Changes OUT3 output to a combined key image.	MIX K
	OUT3 MONI V CG	Changes OUT3 output to computer graphics.	CG V
	OUT3 MONI V CK	Changes OUT3 output to a chromakeyed video image.	CK V
	OUT3 MONI CAM	Changes OUT3 output to a Camera image.	CAM
	OUT3 MONI K CG	Changes OUT3 output to a computer graphics key image.	CG K
	OUT3 MONI K CK	Changes OUT1 output to a chromakeyed key image.	CK K
	OUT3 MONI V STILL	Changes OUT3 output to a STILL video image. (Active only if MBP-100CK is connected.)	ST V
	OUT3 MONI K STILL	Changes OUT3 output to a STILL key image. (Active only if MBP-100CK is connected.)	ST K
	OUT3 MONI V CG2	Changes OUT3 output to a CG2 video signal.	CG2 V
	OUT3 MONI K CG2	Changes OUT3 output to a CG2 key signal.	CG2 K
	OUT3 MONI V V1	Changes OUT3 output to an input video in V1 IN (V1 video signal).	V1 V
	OUT3 MONI K V1	Changes OUT3 output to an input video in V2 IN (V1 key signal).	V1 K
	OUT3 MONI V V2	Changes OUT3 output to an input video in AUX2 (V2 video signal).	V2 V
OUT4 SELECT	OUT4 MIXV	Changes OUT4 output to a combined video image.	MIX V
	OUT4 MIXK	Changes OUT4 output to a combined key image.	MIX K
	OUT4 MONI V CG	Changes OUT4 output to computer graphics.	CG V
	OUT4 MONI V CK	Changes OUT4 output to a chromakeyed video image.	CK V
	OUT4 MONI CAM	Changes OUT4 output to a Camera image.	CAM

Continued to next page

Category	Function name	Operation	Label indication
OUT4 SELECT	OUT4 MONI K CG	Changes OUT4 output to a computer graphics key image.	CG K
	OUT4 MONI K CK	Changes OUT4 output to a chromakeyed key image.	CK K
	OUT4 MONI V STILL	Changes OUT4 output to a STILL video image. (Active only if MBP-100CK is connected.)	ST V
	OUT4 MONI K STILL	Changes OUT4 output to a STILL key image. (Active only if MBP-100CK is connected.)	ST K
	OUT4 MONI V CG2	Changes OUT4 output to a CG2 video image.	CG2 V
	OUT4 MONI K CG2	Changes OUT4 output to a CG2 key image.	CG2 K
	OUT4 MONI V V1	Changes OUT4 output to an input video in V1 IN (V1 video signal).	V1 V
	OUT4 MONI K V1	Changes OUT4 output to an input video in V2 IN (V1 key signal).	V1 K
	OUT4 MONI V V2	Changes OUT4 output to an input video in AUX2 (V2 video signal).	V2 V
MIX SELECT	MIXER1 LAYER1	Sets layer 1 in MIXER1 to ON or OFF.	L1
	MIXER1 LAYER2	Sets layer 2 in MIXER1 to ON or OFF.	L2
	MIXER1 LAYER3	Sets layer 3 in MIXER1 to ON or OFF.	L3
	MIXER1 LAYER4	Sets layer 4 in MIXER1 to ON or OFF.	L4
	MIXER2 LAYER1	Sets layer 1 in MIXER2 to ON or OFF.	L1
	MIXER2 LAYER2	Sets layer 2 in MIXER2 to ON or OFF.	L2
	MIXER2 LAYER3	Sets layer 3 in MIXER2 to ON or OFF.	L3
	MIXER2 LAYER4	Sets layer 4 in MIXER2 to ON or OFF.	L4
EVENT LOAD	EVENT LOAD1	Loads the event of number 1.	EVENT1
	EVENT LOAD2	Loads the event of number 2.	EVENT2
	EVENT LOAD3	Loads the event of number 3.	EVENT3
	EVENT LOAD4	Loads the event of number 4.	EVENT4
	EVENT LOAD5	Loads the event of number 5.	EVENT5
	EVENT LOAD6	Loads the event of number 6.	EVENT6
	EVENT LOAD7	Loads the event of number 7.	EVENT7
	EVENT LOAD8	Loads the event of number 8.	EVENT8
	EVENT LOAD9	Loads the event of number 9.	EVENT9
	EVENT LOAD10	Loads the event of number 10.	EVENT10
OTHER BUTTON	DELAY ON	Sets camera delay function to ON or OFF.	DELAY ON
	VIRTUAL PRESET	Sets layer preset mode to VIRTUAL mode for both MIXER 1 and MIXER2.	VIRTUAL
	RCG PRESET	Sets layer preset mode to RCG mode for both MIXER 1 and MIXER2.	RCG
	ON AIR LOCK	Enables or disables the ON AIR lock.	ON AIR
	EXCLUSIVE LOCK	Enables or disables the EXCLUSIVE lock.	
	OPERATION LOCK	Enables or disables the OPERATION lock.	

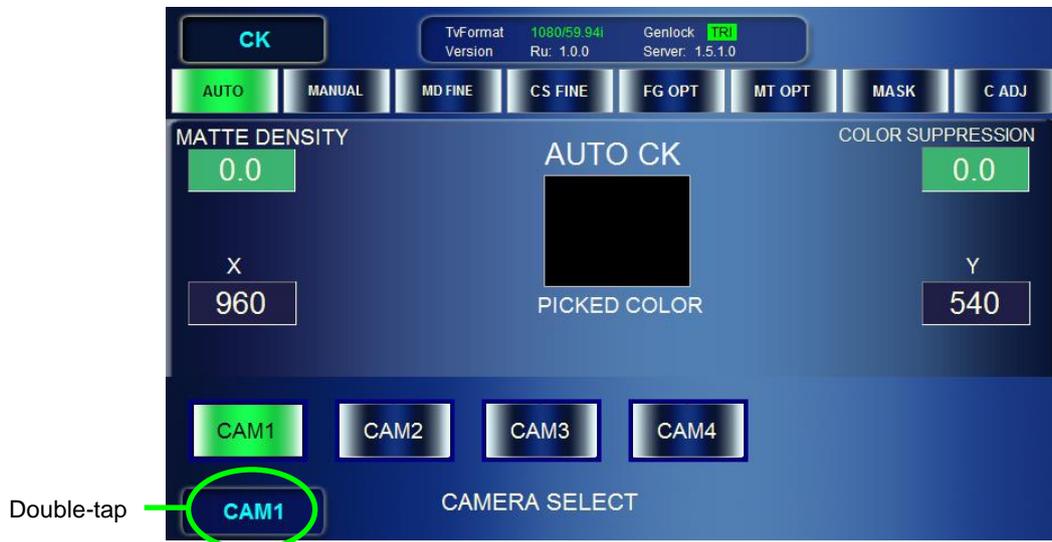
- You can also change the button labels using the Labels supplied with the MBP-RUA for MBP-RUA_SAB and other functions.

NOTE
MP-12RU_SAB is described in the Appendix of this manual. See the Appendix for details.

5. Menu Descriptions

5-1. Camera Selection

Double-tapping the Camera selection button at the bottom right on the touch screen opens the **CAMERA SELECT** menu as shown below. This **CAMERA SELECT** menu can be accessed from any menu.



To change the camera selection, tap a button among **CAM1** through **CAM4**. The selected button turns green, and the indication on the camera selection button changes to the selected camera.

NO	Touch panel operation	Description
①	Tap CAM1 .	Selects CAM1.
②	Tap CAM2 .	Selects CAM2.
③	Tap CAM3 .	Selects CAM3.
④	Tap CAM4 .	Selects CAM4.

You can also change the camera selection by using the **CAM1**, **CAM2**, **CAM3** or **CAM4** button on the front panel.

To go back to the previous menu, tap the camera selection button at the bottom right once.

5-2. MU Selection

Double-tapping the MU selection button at the right bottom on the touch screen opens the **MU SELECT** menu as shown below.



Up to 5 MU can be selected.

To change the MU selection, tap a button among **MU1** through **MU5**. The selected button turns green, and the indication on the MU selection button changes to the selected MU.

You can also change the MU selection using the **MU1**, **MU2**, **MU3**, **MU4** or **MU5** button on the front panel.

The selectable MU is indicated with the white letters as the buttons numbered ② and ③.

The MU1 to MU5 buttons on the GUI and on the front panel show the current state as shown in the table below.

NO	Touch panel button indication	MU status	Front panel button indication
①	Blue button with the black letters (flashing)	Parameters are set but the MU is not present.	Unlit
②	Blue button with the white letters	Selectable	Lit green
③	Green button (lit)	Controlled	Lit orange
④	Black button with the black letters	Parameters are not set and the MU is not present.	Unlit

To go back to the previous menu, tap the MU selection button at the bottom right once.

5-3. TOP

This **TOP** menu is opened by tapping the **TOP** button on the front panel. The menu buttons provided at the center of the screen allow you to access corresponding menus.



NO	Touch panel	Description
①	Tap CK .	Displays the CK menu. (Disabled when MUs are not connected.)
②	Tap MIX&OUT .	Displays the MIX&OUT menu. (Disabled when Mus are not connected.)
③	Tap EVENT .	Displays the EVENT menu. (Disabled when MUs are not connected.)
④	Tap SETUP .	Displays the SETUP menu.
⑤	Tap STILL&CAPTURE .	Displays the STILL&CAPTURE menu. (MBP-100CK only. Disabled when MUs are not connected.)
⑥	Tap INFO .	Displays the INFO page (See below.)
⑦	Tap EXIT .	Displays the QUIT dialog window. (See below.)



⑧	Tap CLOSE .	Closes the INFO page and returns to the TOP page.
⑨	Tap CANCEL .	Returns to the TOP menu.
⑩	Tap OK .	Displays the Shutdown dialog window. (See above.)
⑪	Tap CANCEL .	Closes the application and returns to the Windows.
⑫	Tap OK .	Shuts down the MBP-RUA.

5-4. SETUP

The SETUP menus allow you to make video settings for MBP-1244/100CK and settings of RU.

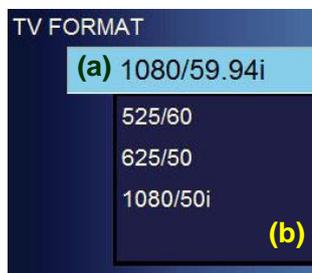
5-4-1. VIDEO Menu

The VIDEO menu allows you to select TV formats and adjust GENLOCK signals.



① Display / Select TV FORMAT

Touch panel	Front panel	Description
---	Press the top left knob.	Opens / Closes the TV FORMAT selection panel.



Front panel	Description
Turn the top left knob.	Selects a TV standard in the list. The current selection of the TV format (a) is shown in the TV FORMAT box (b).
Press the top left knob.	Confirms the TV format selection. A confirmation message will appear. Tap OK to change the TV format.

② Select GENLOCK FORMAT

BB and **TRI** button indication:

Green colored button:

Currently used

Button with red frame:

Being selected

Black button with white letters:

Selectable

Black button with black letters:

Unselectable (due to the current TV format or other)

Touch panel	Front panel	Description
Tap BB .	---	Selects the black burst signal.
Tap TRI .	---	Selects the tri-level sync signal.
---	Press the top right knob.	Confirms the selected reference signal (button with red frame).
---	Turn the top right knob.	Selects another reference signal (by moving the red frame).

③④ Adjust the GENLOCK phase (vertical and horizontal)

Indication: Shows the current values.

If the input box is **green**, the tuning mode is set to **FINE**.

If the box is **blue**, the mode is set to **COARSE**.

NO	Touch panel	Front panel	Description
③	---	Turn the middle right knob.	Increases (turn clockwise) or decreases (turn counterclockwise) the vertical phase value. FINE adjustment: ± 1 COARSE adjustment: ± 10 Setting range: Varies depending on TV standard.
④	---	Turn the bottom right knob.	Increases (turn clockwise) or decreases (turn counterclockwise) the horizontal phase value. FINE adjustment: ± 1 COARSE adjustment: ± 10 Setting range: Varies depending on TV standard.
③④	---	Hold down the knob.	Changes tuning modes between FINE and COARSE .
③④	---	Press the knob.	Changes the value between UNITY (0) and VARIABLE .

⑤⑥⑦⑧ Menu navigation buttons

NO	Touch panel	Front panel	Description
⑤	Tap "<<".	---	Opens the GPI menu.
⑥	Tap BACK .	---	Returns to the TOP menu.
⑦	Tap ">>".	---	Opens the DELAY SETTING menu.
⑧	Tap each menu access button.	---	Opens the menu corresponding to the button tapped.

5-4-2. DELAY SETTING Menu

The DELAY SETTING menu shows you and allows you to set the amount of camera delay.

You cannot change values of Delay Frame, V, and H, if DELAY is set to **OFF**.



① Display / Set the number of frames of Camera delay

Indication: Shows the value of the current setting.

Touch panel	Front panel	Description
---	Turn the top left knob.	Increases / Decreases the number of frames for camera delay. Increment/Decrement unit: ± 1 Setting range: 0 - 6 frames
---	Press the top left knob.	Changes the value between UNITY (0) and VARIABLE .

②③ Set the camera delay (vertical and horizontal)

Indication: Shows the current values.

If the input box is **green**, the tuning mode is set to **FINE**.

If the box is **blue**, the mode is set to **COARSE**.

NO	Touch panel	Front panel	Description
②	---	Turn the middle left knob.	Increases / Decreases the vertical value of camera delay. FINE adjustment: ± 1 COARSE adjustment: ± 10 Setting range: 0 - the maximum value (that varies depending on TV standard.)
③	---	Turn the bottom left knob.	Increases / Decreases the horizontal value of camera delay. FINE adjustment: ± 2 COARSE adjustment: ± 20 Setting range: 0 - the maximum value (that varies depending on TV standard.)
②③	---	Hold down the knob.	Changes tuning modes between FINE and COARSE .
②③	---	Press the knob.	Changes the value between UNITY (0) and VARIABLE .

④ Display / Set active or inactive for camera delay

Indication: Shows whether the camera delay is **active** (green button) or **inactive** (blue button).

Touch panel	Front panel	Description
Tap Delay .	Press the top right knob.	Sets the camera delay ON and OFF .

⑤⑥⑦⑧ Menu navigation buttons

NO	Touch panel	Front panel	Description
⑤	Tap "<<".	---	Opens the VIDEO menu.
⑥	Tap BACK .	---	Returns to the TOP menu.
⑦	Tap ">>".	---	Opens the OUTPUT OPTION menu.
⑧	Tap each menu access button.	---	Opens the menu corresponding to the button tapped.

5-4-3. OUTPUT OPTION Menu

The OUTPUT OPTION menu allows you to set whether to display a cursor of AUTO CK on the VIDEO OUTPUT1 to 4 images.



①②③④ Set to display or not to display an Auto Chromakey cursor.

Indication: Shows whether a cursor display is **ON (green button)** or **OFF (blue button)**.

NO	Touch panel	Front panel	Description
①	Tap OUT1.	Press the top left knob.	Sets whether to display a cursor on OUTPUT1.
②	Tap OUT2.	Press the top right knob.	Sets whether to display a cursor on OUTPUT2.
③	Tap OUT3.	Press the middle left knob.	Sets whether to display a cursor on OUTPUT3.
④	Tap OUT4.	Press the middle right knob.	Sets whether to display a cursor on OUTPUT4.

⑤⑥⑦⑧ Menu navigation buttons

NO	Touch panel	Front panel	Description
⑤	Tap "<<".	---	Opens the DELAY SETTING menu.
⑥	Tap BACK .	---	Returns to the TOP menu.
⑦	Tap ">>".	---	Opens the NETWORK menu.
⑧	Tap each menu access button.	---	Opens the menu corresponding to the button tapped.

5-4-4. NETWORK Menu

The NETWORK menu allows you to make network settings for MBP-RUA and MUs.



- ① Shows IP address of the MBP-RUA.
- ② Shows the IP address of the MBP-1244/100CK designated as MU1.
- ③ Shows the IP address of the MBP-1244/100CK designated as MU2.
- ④ Shows the IP address of the MBP-1244/100CK designated as MU3.
- ⑤ Shows the IP address of the MBP-1244/100CK designated as MU4.
- ⑥ Shows the IP address of the MBP-1244/100CK designated as MU5.

⑦⑧⑨⑩⑦⑧⑨⑩ Menu navigation buttons

NO	Touch panel	Front panel	Description
⑦	Tap "<<".	---	Opens the AUTO CK CURSOR ON/OFF menu.
⑧	Tap BACK .	---	Returns to the TOP menu.
⑨	Tap ">>".	---	Opens the RU SETTINGS menu.
⑩	Tap each menu access button.	---	Opens the menu corresponding to the button tapped.

◆ Changing IP Addresses

- Tap an MU or RU button, **RU**, **MU1** to **MU5** (① to ⑥), to select the address to be changed.
- Change the IP address using the following procedures.

Touch panel	Front panel	Description
Tap an octet field to be changed.	Turn the top left knob.	Selects an octet (such as 100) to be changed. The octet value is displayed at ⑪.
---	Turn the top right knob.	Changes the octet value.

- When the IP address(es) is changed properly, confirm the change using the following procedures.

Touch panel	Front panel	Description
Tap Accept (⑫).	Press the bottom right knob.	Confirms the change.

If the RU IP address is changed, the following "Change RU IPAddress" dialog appears. If MU IP address(es) is changed, "Change MU IPAddress" dialog appears.

Change RU IPAddress dialog



Change MU IPAddress dialog



4. Tap **OK** to close the dialog. See the following tables below for more details on these dialogs.

Change RU IPAddress dialog

NO	Touch panel	Front panel	Description
⑬	Tap CANCEL .	---	<p> Cancels the changes made for RU IP address and returns to the NETWORK menu page.</p> <p> If you also have changed MU IP address, the Change MU IP Address dialog also opens.</p>
⑭	Tap OK .	---	<p> Confirm the changes made for the RU IP address.</p> <p> It also confirms the changes made for the IP addresses of MU1 through MU5 along with the changes for RU's IP address here.</p> <p> After the confirmation, the MBP-RUA reboot twice, and then the software will start.</p>

Change MU IPAddress dialog

NO	Touch panel	Front panel	Description
⑬	Tap CANCEL .	---	<p> Cancels the changes made for MU IP addresses, and return to the NETWORK menu page.</p>
⑭	Tap OK .	---	<p> Confirm the changes made for the MU IP addresses.</p> <p> After the confirmation, the application shuts down and the screen returns to the Windows. On the Windows' desktop, double-tap on the MbpRUA shortcut icon to restart the application.</p>

5-4-5. RU SETTING Menu

The RU SETTING menu allows you to change the brightness of the RU's LCD and the buttons on the front panel, and to change the assignments of the buttons on the front panel.



① Display the SW CONFIG selection panel

NO	Touch panel	Front panel	Description
①		Press the top left knob.	Opens SW CONFIG selection panel. See section 5-4-6 for more details.

②③④⑤ Adjust the brightness.

NO	Touch panel	Front panel	Description
②	---	Turn the top right knob.	Changes the brightness of the LCD Setting range: 0 - 15 (The larger, the brighter)
③	---	Turn the middle right knob.	Changes the brightness value of front panel buttons. Setting range: 0 - 15 (The larger, the brighter)
④	---	Turn the bottom right knob.	Changes the brightness value of Bank Indicator buttons. Setting range: 0 - 15 (The larger, the brighter)
⑤	---	Turn the bottom left knob.	Sets the start time of Screen Saver. Setting range: 0 - 1000 (minutes) (1-minute basis). Setting to 0 disables Screen Saver.

⑥ Select whether to display the confirmation dialog during MU or Camera Copy operation.

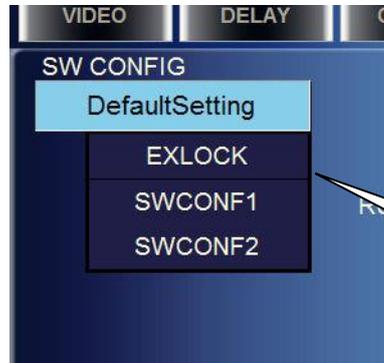
NO	Touch panel	Front panel	Description
⑥	Tap COPY OPT DIALOG .	---	Enables/disables the confirmation dialog during MU or Camera Copy operation.

⑦⑧⑨⑩ Menu navigation buttons

NO	Touch panel	Front panel	Description
⑦	Tap "<<".	---	Opens the NETWORK menu.
⑧	Tap BACK .	---	Returns to the TOP menu.
⑨	Tap ">>".	---	Opens the GPI menu.
⑩	Tap each menu access button.	---	Opens the menu corresponding to the button tapped.

5-4-6. SW CONFIG Panel

The SW CONFIG panel allows you to select assignment files for the buttons on the MV-12RU front panel. The assignment files can be created using the application MBP-RUA_SAB supplied as a standard with the MBP-RUA. The assignment files should be stored under the C:\MBP-RUA\DATA of this MBP-RUA.



Front panel	Description
Turn the top left knob.	Selects an assignment file in the DATA folder (the file with the light blue background is selected).
Press the top left knob.	Confirms to change the assignments with the selected assignments, and closes the SW CONFIG panel. A confirmation message appears. Tap OK . The change will be applied at the next startup of the GUI.

5-5. GPI Menu

The MBP RUA has GPI inputs and outputs, which can receive GPI commands to trigger actions or output tallies to external devices. The GPI menu allows users to assign these functions to input or output pins on the GPI port.

The GPI connectors have 10-input pins (PinNo.1 - PinNo.10) and 10-output pins (PinNo.1 - PinNo.10) in total. See section GPI 2-3-1. "GPI" for details on the connector layout.



The current input pin assignments are displayed in ③.
The current output pin assignments are displayed in ⑥.

◆ How to Assign a GPI Input Function to an Input Pin:

- 1) Turn the top left knob to select and display the input pin number at ①.
- 2) Press the top left knob to display the GPI Input Assignment Panel.
- 3) Refer to section 5-5-1 to select a function to the pin. (See "GPI Input List" for details on available functions.)

◆ How to Assign a Tally Output to an Output Pin:

- 1) Turn the top right knob to select and display the output pin number at ⑥.
- 2) Press the top right knob to display the Tally Output Assignment Panel.
- 3) Refer to section 5-5-2 to select a function to the pin. (See "TALLY Output List" for details on available tallies.)

①②③ GPI input

NO	Touch panel	Front panel	Description
①	---	Turn the top left knob.	Selects an input pin number.
	---	Press the top left knob.	Displays the GPI Input Assignment Panel. (See section 5-5-1.)
②	Tap on the field.	---	Displays the GPI Input Assignment Panel. (See section 5-5-1.)
③	---	---	Displays the current input pin assignments.

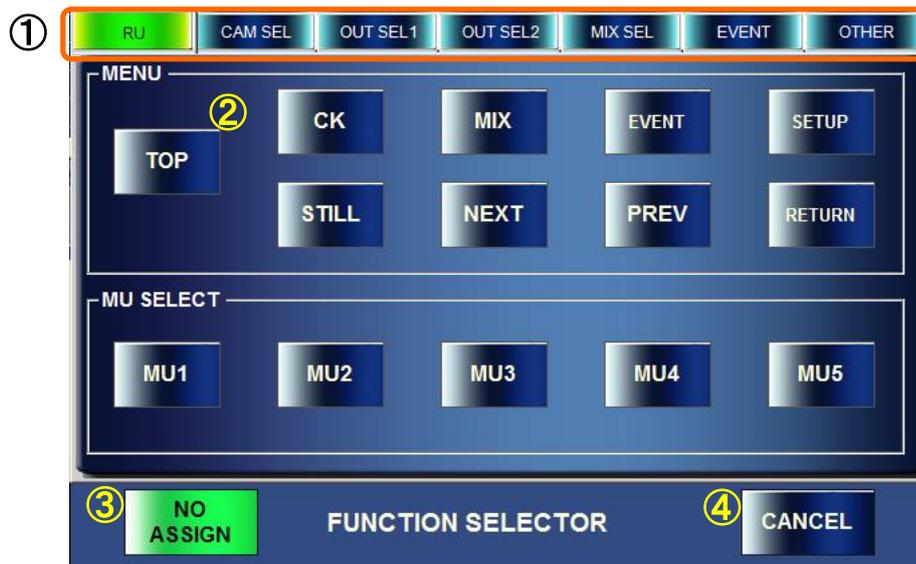
④⑤⑥ TALLY Output

NO	Touch panel	Front panel	Description
④	---	Turn the top left knob.	Selects an output pin number.
	---	Press the top left knob.	Displays the Tally Output Assignment Panel. (See section 5-5-2)
⑤	Tap on the field.	---	Displays the Tally Output Assignment Panel. (See section 5-5-2)
⑥	---	---	Displays the current output pin assignments.

⑦⑧⑨⑩ Menu navigation buttons

NO	Touch panel	Front panel	Description
⑦	Tap "<<".	---	Opens the RU SETTING menu.
⑧	Tap BACK .	---	Returns to the TOP menu.
⑨	Tap ">>".	---	Opens the VIDEO menu.
⑩	Tap each menu access button.	---	Opens the menu corresponding to the button tapped.

5-5-1. GPI Input Assignment Panel



◆ **Assignment Procedure**

- 1) Tap one of seven buttons in ① to select a category. (If a category has sub-categories, tap a button to select a sub-category.)
- 2) Function buttons will be displayed in ②. Tap a button to select a function. The panel will close and return to the GPI menu. See the "GPI Input List" on the next page for details on available functions.

NO	Touch panel	Description
①	Tap a category button.	Displays function buttons of the selected category (sub category).
②	Tap a function button	Selects a function to the selected pin.
③	Tap NO ASSIGN .	Disselects the pin function and returns to the GPI menu
④	Tap CANCEL .	Cancels the process and returns to the GPI menu

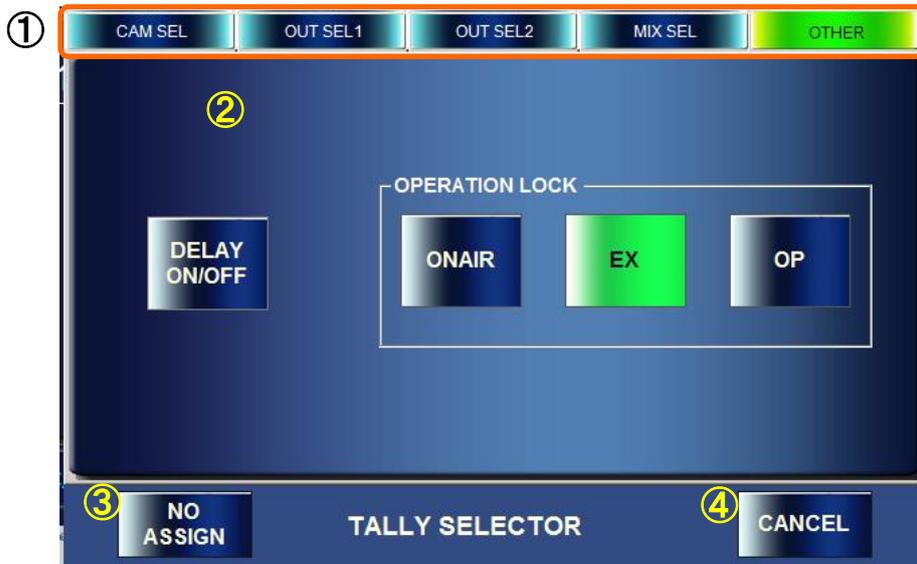
GPI Input List

Category	Sub-category	Button name	Function
RU	MENU	TOP	Moves to TOP menu.
		CK	Moves to CK] menu.
		MIX	Moves to MIX menu.
		EVENT	Moves to EVENT menu.
		SETUP	Moves to SETUP menu.
		STILL	Moves to STILL&CAPTURE menu.
		NEXT	Moves to next menu.
		PREV	Moves to previous menu.
		RETURN	Moves to TOP menu.
	MU SELECT	MU1	Selects MU1.
		MU2	Selects MU2.
		MU3	Selects MU3.
		MU4	Selects MU4.
		MU5	Selects MU5.
CAM SEL	---	CAM1	Selects CAM1.
		CAM2	Selects CAM2.
		CAM3	Selects CAM3.
		CAM4	Selects CAM4.
OUT SEL1	OUT1 SEL	MIX V/K	Sets MIXV/K for VOUT1.
		CAM	Sets CAM for VOUT1.
		CG V/K	Sets CG V/K for VOUT1.
		CK V/K	Sets CK V/K for VOUT1.
		STILL V/K	Sets STILL V/K for VOUT1.
		CG2 V/K	Sets CG 2 V/K for VOUT1.
		V1 IN V/K	Sets V1 IN V/K for VOUT1.
		V2 IN V	Sets V2 IN V for VOUT1.
	OUT2 SEL	MIX V/K	Sets MIXV/K for VOUT2.
		CAM	Sets CAM for VOUT2.
		CG V/K	Sets CG V/K for VOUT2.
		CK V/K	Sets CK V/K for VOUT2.
		STILL V/K	Sets STILL V/K for VOUT2.
		CG2 V/K	Sets CG 2 V/K for VOUT2.
OUT SEL2	OUT3 SEL	MIX V/K	Sets MIXV/K for VOUT3.
		CAM	Sets CAM for VOUT3.
		CG V/K	Sets CG V/K for VOUT3.
		CK V/K	Sets CK V/K for VOUT3.
		STILL V/K	Sets STILL V/K for VOUT3.
		CG2 V/K	Sets CG 2 V/K for VOUT3.
		V1 IN V/K	Sets V1 IN V/K for VOUT3.
		V2 IN V	SetsV2 IN V for VOUT3.
	OUT4 SEL	MIX V/K	Sets MIXV/K for VOUT4.
		CAM	Sets CAM for VOUT4.
		CG V/K	Sets CG V/K for VOUT4.
		CK V/K	Sets CK V/K for VOUT4.
		STILL V/K	Sets STILL V/K for VOUT4.
		CG2 V/K	Sets CG 2 V/K for VOUT4.
	V1 IN V/K	Sets V1 IN V/K for VOUT4.	
	V2 IN V	Sets V2 IN V for VOUT4.	

(Continued on next page)

Category	Sub-category	Button name	Function
MIX SEL	MIXER1	LAYER1 ON/OFF	Toggles Layer1 in MIXER1 to ON/OFF.
		LAYER2 ON/OFF	Toggles Layer2 in MIXER1 to ON/OFF.
		LAYER3 ON/OFF	Toggles Layer3 in MIXER1 to ON/OFF.
		LAYER4 ON/OFF	Toggles Layer4 in MIXER1 to ON/OFF.
	MIXER2	LAYER1 ON/OFF	Toggles Layer1 in MIXER2 to ON/OFF.
		LAYER2 ON/OFF	Toggles Layer2 in MIXER2 to ON/OFF.
		LAYER3 ON/OFF	Toggles Layer3 in MIXER2 to ON/OFF.
		LAYER4 ON/OFF	Toggles Layer4 in MIXER2 to ON/OFF.
EVENT	---	EVENT LOAD1- EVENT LOAD10	Loads an event (EVENT1 to EVENT10).
OTHER	MIXER PRESET	RCG	Sets the MIXER preset mode to RCG.
		VIRTUAL	Sets the MIXER preset mode to VIRTUAL.
		USER1 to USER3	Sets the MIXER preset mode to a USER mode (USER1-USER3)
	OPERATION LCOK	ONAIR	Enables ON AIR lock. (Release command is unavailable.)
		EX	Enables EXCLUSIVE lock. (Release command is unavailable.)
		OP	Enables OPERATION lock. (Release command is unavailable.)
	---	DELAY ON/OFF	Toggles the DELAY function ON/OFF.

5-5-2. TALLY Output Assignment Panel



◆ Assignment Procedure

- 1) Tap one of five buttons in ① to select a category. (If a category has sub-categories, tap a button to select a sub-category.)
- 2) Function buttons will be displayed in ②. Tap a button to select a function. The panel will close and return to the GPI menu. See the "GPI Output List" below for details on available functions.

NO	Touch panel	Description
①	Tap a category button.	Displays function buttons of the selected category (sub category).
②	Tap a function button	Selects a function to the selected pin.
③	Tap NO ASSIGN .	Disselects the pin function and returns to the GPI menu
④	Tap CANCEL .	Cancel the process and returns to the GPI menu

TALLY Output List

Category	Sub-category	Button name	When tallies output:
CAM SEL	---	CAM1 to CAM4	CAM1 (CAM2, CAM3 or CAM4) is selected.
OUT SEL1	OUT1 SEL	MIX V/K	MIXV/K is selected for VOUT1.
		CAM	CAM is selected for VOUT1.
		CG V/K	CG V/K is selected for VOUT1.
		CK V/K	CK V/K is selected for VOUT1.
		STILL V/K	STILL V/K is selected for VOUT1.
		CG2 V/K	CG 2V/K is selected for VOUT1.
		V1 IN V/K	V1 IN V/K is selected for VOUT1.
		V2 IN V	V2 IN is selected for VOUT1.
	OUT2 SEL	MIX V/K	MIXV/K is selected for VOUT2.
		CAM	CAM is selected for VOUT2.
		CG V/K	CG V/K is selected for VOUT2.
		CK V/K	CK V/K is selected for VOUT2.
		STILL V/K	STILL V/K is selected for VOUT2.
		CG2 V/K	CG 2V/K is selected for VOUT2.
	V1 IN V/K	V1 IN V/K is selected for VOUT2.	
	V2 IN V	V2 IN is selected for VOUT2.	

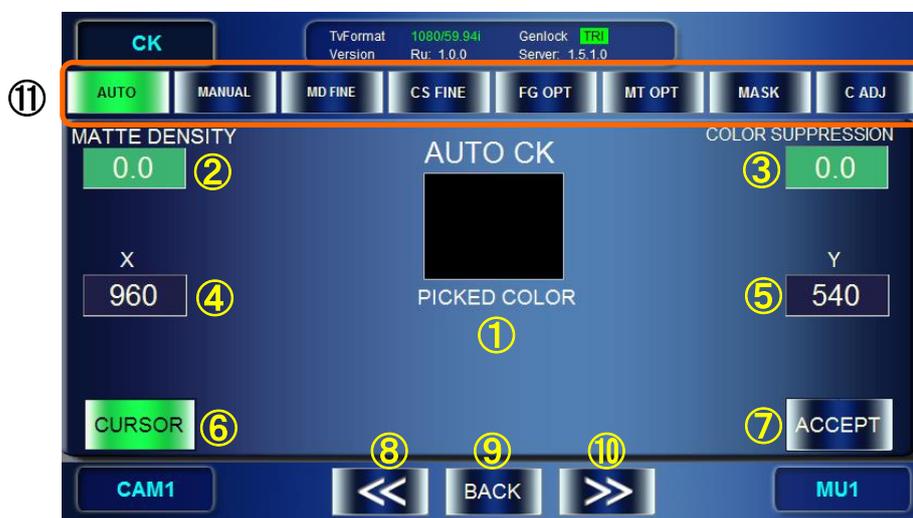
OUT SEL2	OUT3 SEL	MIX V/K	MIXV/K is selected for VOUT3.
		CAM	CAM is selected for VOUT3.
		CG V/K	CG V/K is selected for VOUT3.
		CK V/K	CK V/K is selected for VOUT3.
		STILL V/K	STILL V/K is selected for VOUT3.
		CG2 V/K	CG 2V/K is selected for VOUT3.
		V1 IN V/K	V1 IN V/K is selected for VOUT3.
		V2 IN V	V2 IN is selected for VOUT3.
	OUT4 SEL	MIX V/K	MIXV/K is selected for VOUT4.
		CAM	CAM is selected for VOUT4.
		CG V/K	CG V/K is selected for VOUT4.
		CK V/K	CK V/K is selected for VOUT4.
		STILL V/K	STILL V/K is selected for VOUT4.
		CG2 V/K	CG 2V/K is selected for VOUT4.
V1 IN V/K		V1 IN V/K is selected for VOUT4.	
V2 IN V		V2 IN is selected for VOUT4.	
MIX SEL	MIXER1	LAYER1 ON/OFF	Layer 1 in MIXER1 is ON.
		LAYER2 ON/OFF	Layer 2 in MIXER1 is ON.
		LAYER3 ON/OFF	Layer 3 in MIXER1 is ON.
		LAYER4 ON/OFF	Layer 4 in MIXER1 is ON.
	MIXER2	LAYER1 ON/OFF	Layer 1 in MIXER2 is ON.
		LAYER2 ON/OFF	Layer 2 in MIXER2 is ON.
		LAYER3 ON/OFF	Layer 3 in MIXER2 is ON.
		LAYER4 ON/OFF	Layer 4 in MIXER2 is ON.
OTHER	OPERATION LCOK	ONAIR	The ON AIR video is locked.
		EX	The EXCLUSIVE lock is enabled.
		OP	OPERATION is locked.
	---	DELAY ON/OFF	The DELAY function is ON.

5-6. CK Menu

The CK menu allows you to make chromakey settings for MBP-1244/100CK.

5-6-1. AUTO CK Menu

The AUTO CK menu allows you to specify the backing color for generating a matte signal for chromakeying by pointing the color on the screen. (AUTO CK mode)



① Display the specified BACK COLOR

Indication: If AUTO CK is **ON**: Shows the backing color where the cursor is positioned (Picked Color).

If AUTO CK is **OFF**: Shows the currently set BACK COLOR.

Touch panel	Front panel	Description
Tap the box.	---	Shows or hides the BG CONDITION panel. (See section 5-6-3.)

② Adjust the Matte Density (adjust density of matte signal for the backing color with the range of similarity.)

⑤ Adjust the Color Suppression (Suppress the backing color in the foreground image to prevent color contamination)

Indication: Shows the current values.

If the input box is **green**, the tuning mode is set to **FINE**.

If the box is **blue**, the mode is set to **COARSE**.

NO	Touch panel	Front panel	Description
②	---	Turn the top left knob.	Changes the Density value for matte signal. FINE adjustment: ±0.5 COARSE adjustment: ±5 Setting range: -100 to 100 Same item as ② in MANUAL CK Menu menu
③	---	Turn the top right knob.	Changes the Color Suppression value. FINE adjustment: ±0.5 COARSE adjustment: ±5 Setting range: -100 to 100 Same item as ③ in MANUAL CK Menu menu
②③	---	Hold down each knob.	Changes tuning modes between FINE and COARSE .
②③	---	Press each knob.	Changes the value between UNITY (0) and VARIABLE .

④⑤ Adjust the auto chromakey cursor XY coordinates

Indication: Shows the current values.

If the input box is **green**, the tuning mode is set to **FINE**.

If the box is **blue**, the mode is set to **COARSE**.

NO	Touch panel	Front panel	Description
④	---	Turn the middle left knob.	Changes the X-coordinate value of the cursor. FINE adjustment: ± 1 COARSE adjustment: ± 10 Setting range: 0 - the maximum value (that varies depending on TV standard.)
⑤	---	Turn the middle right knob.	Changes the Y-coordinate value of the cursor. FINE adjustment: ± 1 COARSE adjustment: ± 10 Setting range: 0 - the maximum value (that varies depending on TV standard.)
④⑤	---	Hold down each knob.	Changes tuning modes between FINE and COARSE .
④⑤	---	Press each knob.	Changes the value between UNITY (Center of the screen) and VARIABLE .

* The values can be changed only when Auto chromakeying Cursor (⑥) is set to ON.

⑥ Auto chromakeying Cursor ON/OFF button

Indication: If it is set to **ON**, the button is **green**. If set to **OFF** the button is **blue**.

Touch panel	Front panel	Description
Tap CURSOR .	Press the bottom left knob.	If it is OFF : Turns auto chromakeying cursor ON and enters to AUTO CK mode. If it is ON : Exits AUTO CK mode, and turns auto chromakeying cursor OFF.

⑦ BACK COLOR apply button

Indication: Activated when AUTO CK is ON.

Touch panel	Front panel	Description
Tap Accept .	Press the bottom right knob.	Applies the currently selected Picked Color as the backing color, and performs keying on the video. After this operation, AUTO CK mode will be cancelled and the auto chromakeying cursor will also be turned OFF.

⑧⑨⑩⑪ Menu navigation buttons

NO	Touch panel	Front panel	Description
⑧	Tap "<<".	---	Opens the COLOR ADJUST menu.
⑨	Tap BACK .	---	Returns to the TOP menu.
⑩	Tap ">>".	---	Opens the MANUAL CK menu.
⑪	Tap each menu access button.	---	Opens the menu corresponding to the button tapped.

5-6-2. MANUAL CK Menu

The BACK COLOR menu allows you to generate matte signals by adjusting three parameters of HUE, SATURATION, and LUMINANCE of the backing color.



① BACK COLOR

Indication: Shows the BACK COLOR specified by HUE, SATURATION and LUMINANCE.

Touch panel	Front panel	Description
Tap on the BACK COLOR box.	---	Shows or hides the BG CONDITION panel. (See section 5-6-3.)

② Adjust the Matte Density (adjust density of matte signal for the backing color with the range of similarity.)

③ Adjust Color Suppression (Suppress the backing color in the foreground image to prevent color contamination)

Indication: Shows the current values.

If the input box is **green**, the tuning mode is set to **FINE**.

If the box is **blue**, the mode is set to **COARSE**.

NO	Touch panel	Front panel	Description
②	---	Turn the top left knob.	Changes the Density value for matte signal. FINE adjustment: ±0.5 COARSE adjustment: ±5 Setting range: -100 to 100 Same setting as ② in the AUTO CK menu. (See section 5-6-1.)
③	---	Turn the top right knob.	Changes the Color Suppression value. FINE adjustment: ±0.5 COARSE adjustment: ±5 Setting range: -100 - 100 Same setting as ③ in the AUTO CK menu.
②③	---	Hold down each knob.	Changes tuning modes between FINE and COARSE .
②③	---	Press each knob.	Changes the value between UNITY (0) and VARIABLE .

④⑤⑥ Set the HUE, LUMINANCE and SATURATION values for BACK COLOR.

Indication: Shows the current values.

If the input box is **green**, the tuning mode is set to **FINE**.

If the box is **blue**, the mode is set to **COARSE**.

NO	Touch panel	Front panel	Description
④	---	Turn the middle left knob.	Changes the value of the HUE. FINE adjustment: ± 0.1 COARSE adjustment: ± 10 Setting range: 0 - 359.5
⑤	---	Turn the middle right knob.	Changes the LUMINANCE value. FINE adjustment: ± 0.1 COARSE adjustment: ± 1 Setting range: 0 - 109
⑥	---	Turn the bottom left knob.	Changes the value of SATURATION. FINE adjustment: ± 0.1 COARSE adjustment: ± 1 Setting range: 0 - 100
④⑤⑥	---	Hold down each knob.	Changes tuning modes between FINE and COARSE .
④⑤⑥	---	Press each knob.	Changes the value between UNITY (the previous chromakeying value) and VARIABLE .

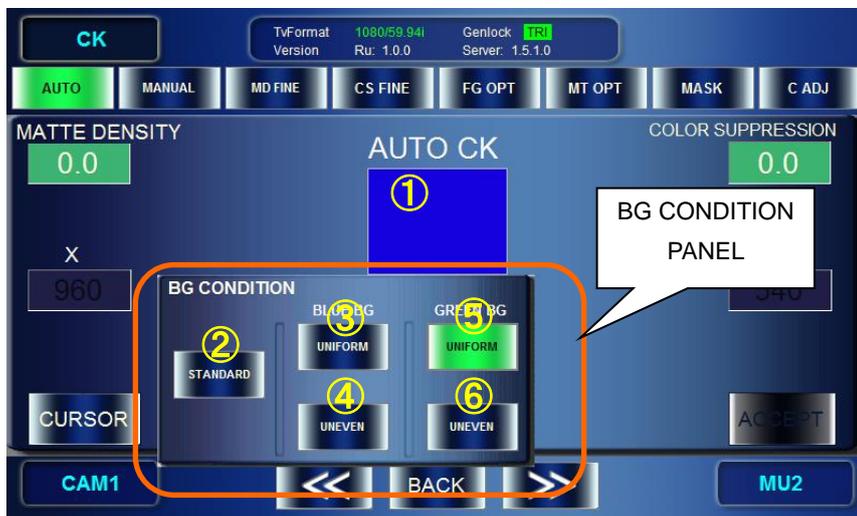
⑦⑧⑨⑩ Menu navigation buttons

NO	Touch panel	Front panel	Description
⑦	Tap "<<".	---	Opens the AUTO CK menu.
⑧	Tap BACK .	---	Returns to the TOP menu.
⑨	Tap ">>".	---	Opens the MATTE DENSITY FINE TUNING menu.
⑩	Tap each menu access button.	---	Opens the menu corresponding to the button tapped.

5-6-3. BACKGROUND CONDITION Panel

By selecting the most suitable chromakey mode according to the backing color, a better matte (key) signal can be generated. However, the result may not always be as you expected. Please adjust your selection according to the created images if necessary. The following five BG CONDITION modes are selectable.

- STANDARD mode
Standard settings.
- BLUE BACK UNIFORM mode
Effective when a backing color is blue and evenly colored.
- BLUE BACK UNEVEN mode
Effective when a backing color is blue and unevenly colored.
- GREEN BACK UNIFORM mode
Effective when a backing color is green and evenly colored.
- GREEN BACK UNEVEN mode
Effective when a backing color is green and unevenly colored.



- ① Show / hide the **BG CONDITION** panel (shared by AUTO CK and MANUAL CK menus).
By tapping on the **PICKED COLOR** box in the AUTO CK menu.
By tapping on the **BACK COLOR** box in the MANUAL CK menu.

No	Touch panel	Front panel	Description
②	Tap STANDARD	---	Sets the mode to STANDARD.
③	Tap UNIFORM for BLUE BG	---	Sets the mode to BLUE BACK UNIFORM.
④	Tap UNEVEN for BLUE BG.	---	Sets the mode to BLUE BACK UNEVEN.
⑤	Tap UNIFORM for GREEN BG	---	Sets the mode to GREEN BACK UNIFORM.
⑥	Tap UNEVEN for GREEN BG	---	Sets the mode to GREEN BACK UNEVEN.

5-6-4. MATTE DENSITY FINE TUNING Menu

The MATTE DENSITY FINE TUNING menu allows you detailed adjustments of density for generating matte signals in chromakeying.



① to ⑥ Adjust the BACK COLOR components

Indication: Shows the current values.

If the input box is **green**, the tuning mode is set to **FINE**.

If the box is **blue**, the mode is set to **COARSE**.

NO	Touch panel	Front panel	Description
① to ⑥	Tap on each field	---	Displays the numeric keypad that allows users to directly enter values Setting range: -100 - 100
①	---	Turn the top left knob.	Increase or decrease the value for MD FINE WHITE.
②	---	Turn the middle left knob.	Increase or decrease the value for MD FINE RED .
③	---	Turn the bottom left knob.	Increase or decrease the value for MD FINE BLUE.
④	---	Turn the top right knob.	Increase or decrease the value for MD FINE BLACK.
⑤	---	Turn the middle right knob.	Increase or decrease the value for MD FINE GREEN.
⑥	---	Turn the bottom right knob.	Increase or decrease the value for MD FINE SOLIDNESS.
① to ⑥	---	Hold down each knob.	Changes tuning modes between FINE and COARSE . FINE adjustment: ±0.5 COARSE adjustment: ±5
① to ⑥	---	Press each knob.	Changes the value between UNITY (0) and VARIABLE .

⑦⑧⑨⑩ Menu navigation buttons

NO	Touch panel	Front panel	Description
⑦	Tap "<<".	---	Opens the MANUAL CK menu.
⑧	Tap BACK .	---	Returns to the TOP menu.
⑨	Tap ">>".	---	Opens the COLOR SUPPRESSION FINE TUNING menu.
⑩	Tap each menu access button.	---	Opens the menu corresponding to the button tapped.

5-6-5. COLOR SUPPRESSION FINE TUNING Menu

This menu allows you to adjust the backing color contamination of foreground images.



① to ⑥ Adjust the suppression of backing color on the foreground images where white component is included.

Indication: Shows the current values.

If the input box is **green**, the tuning mode is set to **FINE**.

If the box is **blue**, the mode is set to **COARSE**.

NO	Touch panel	Front panel	Description
① to ⑥	Tap on each field	---	Displays the numeric keypad that allows users to directly enter values Setting range: -100 - 100
①	---	Turn the top left knob.	Increase or decrease the value for CS FINE WHITE.
②	---	Turn the middle left knob.	Increase or decrease the value for CS FINE RED.
③	---	Turn the bottom left knob.	Increase or decrease the value for CS FINE BLUE.
④	---	Turn the top right knob.	Increase or decrease the value for CS FINE BLACK.
⑤	---	Turn the middle right knob.	Increase or decrease the value for CS FINE GREEN.
⑥	---	Turn the bottom right knob.	Increase or decrease the value for CS FINE SOLIDNESS.

① to ⑥	---	Hold down each knob.	Changes tuning modes between FINE and COARSE . FINE adjustment: ± 0.5 COARSE adjustment: ± 5
① to ⑥	---	Press each knob.	Changes the value between UNITY (0) and VARIABLE .

⑦⑧⑨⑩ Menu navigation buttons

NO	Touch panel	Front panel	Description
⑦	Tap "<<".	---	Opens the MATTE DENSITY FINE TUNING menu.
⑧	Tap BACK .	---	Returns to the TOP menu.
⑨	Tap ">>".	---	Opens the FG OPTION menu.
⑩	Tap each menu access button.	---	Opens the menu corresponding to the button tapped.

5-6-6. FG (FOREGROUND) OPTION Menu

The FG OPTION menu allows you to set optional chromakey effects on the foreground signals for mixing images.



① to ⑦ Turn ON/OFF each function.

Indication: Function buttons glow green when enabled.

NO	Touch panel	Front panel	Description	Default
①	Tap Color Suppression .	---	Turns On/Off the back color suppression. If set to OFF, COLOR SUPPRESSION settings cannot be preformed.	ON
②	Tap Light&Darkness Emphasis .	---	Turns On/Off the emphasis of color contrast, which allows to darken the black mustache brightened by lighting, or brighten the white smoke darkened by the reflection of the backing color.	OFF
③	Recursive Filter .	---	Set On/Off the noise filter, which is effective for reducing flicker noise.	ON

④	Tap Edge Replace Left.	---	Turns On/Off the Chromakey left edge color replacement with its inner adjacent color. Replacing the color of the edge brightened (whitened) by lighting, or the edge darkened (blackened) by the lens aberration of the camera can improve the result more natural.	ON
⑤	Tap Edge Replace Right.	---	Turns On/Off the Chromakey right edge color replacement with its inner adjacent color.	ON
⑥	Tap Edge Replace Top.	---	Turns On/Off the Chromakey top edge color replacement with its inner adjacent color.	ON
⑦	Tap Edge Replace Bottom.	---	Turns On/Off the Chromakey bottom edge color replacement with its inner adjacent color.	ON

⑧ Reset the FG OPTION functions.

NO	Touch panel	Front panel	Description
⑧	Tap OPT DEFAULT.	---	Resets all settings from ① to ⑦ to their default values.

⑨⑩⑪⑫ Menu navigation buttons

NO	Touch panel	Front panel	Description
⑨	Tap "<<".	---	Opens the COLOR SUPPRESSION FINE TUNING menu.
⑩	Tap BACK.	---	Returns to the TOP menu.
⑪	Tap ">>".	---	Opens the MATTE OPTION menu.
⑫	Tap each menu access button.	---	Opens the menu corresponding to the button tapped.

5-6-7. MATTE OPTION Menu

The MATTE OPTION menu allows you to set optional chromakey effects on the background signals for mixing images.



① to ⑫ Turn ON/OFF each function.

Indication: Function buttons glow green when enabled.

NO	Touch panel	Front panel	Description	Default
①	Tap PostFilter V.	---	Turns ON/OFF the vertical filter when generating mattes. Setting ON will smooth the vertical edges of mattes.	ON
②	Tap PostFilter H.	---	Turns ON/OFF the horizontal filter when generating mattes. Setting ON will smooth the horizontal edges of mattes.	ON
③	Tap Lum Coring.	---	Turns ON/OFF the noise filter effective for correcting the unevenness of the luminance component.	OFF
④	Tap Red Coring.	---	Turns ON/OFF the noise filter effective for correcting the unevenness of the red component.	OFF
⑤	Tap Green Coring.	---	Turns ON/OFF the noise filter effective for correcting the unevenness of green component.	OFF
⑥	Tap Blue Coring.	---	Turns ON/OFF the noise filter effective for correcting the unevenness of blue component.	OFF
⑦	Tap EdgeShrink Left.		Turn ON/OFF the shrink effect on the left side of the matte signal. Enabling Edge Shrink can make the result more natural.	OFF
⑧	Tap EdgeShrink Right.	---	Turn ON/OFF the shrink effect on the right side of the matte signal.	OFF
⑨	Tap EdgeShrink Top.		Turn ON/OFF the shrink effect on the top side of the matte signal	OFF
⑩	Tap EdgeShrink Bottom.	---	Turn ON/OFF the shrink effect on the bottom side of the matte signal	OFF

⑪	Tap Recursive Filter.	---	Turns On/Off the noise filter effective for reducing flicker noise.	ON
⑫	Tap White Mode.	---	Set to ON when your backing color is white, black or such color.	OFF

⑬ Reset the MATTE OPTION functions.

NO	Touch panel	Front panel	Description
⑬	Tap OPT DEFAULT.	---	Resets all settings from ① to ⑫ to their default values.

⑭⑮⑯⑰ Menu navigation buttons

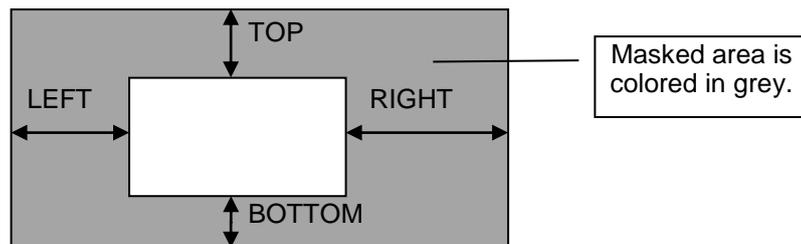
NO	Touch panel	Front panel	Description
⑭	Tap "<<".	---	Opens the FG OPTION menu.
⑮	Tap BACK.	---	Returns to the TOP menu.
⑯	Tap ">>".	---	Opens the WINDOW MASK menu.
⑰	Tap each menu access button.	---	Opens the menu corresponding to the button tapped.

5-6-8. WINDOW MASK Menu

The WINDOW MASK menu allows you to add a rectangular mask (an area not to apply chromakey) within an area where chromakey is applied. The setting data of each created Window Mask can be saved to each camera parameters(CAM), and recalled as you select the CAM.



The Window Mask add a mask to chromakeyed image as shown below.



Window Mask and its parameters

① Tun ON/OFF the Window Mask.

Indication: The button glows green when enabled.

Touch panel	Front panel	Description
Tap the button	---	Turns ON/OFF the Window Mask function. DEFAULT: OFF

② Invert the Window Mask.

Indication: The button glows green when enabled.

Touch panel	Front panel	Description
Tap the button	---	Turns ON/OFF the inversion of Window Mask. DEFAULT: OFF

③④⑤⑥ Set the Window Mask area.

Indication: Shows the current values.

If the input box is **green**, the tuning mode is set to **FINE**.

If the box is **blue**, the mode is set to **COARSE**.

NO	Touch panel	Front panel	Description
③	---	Turn the top left knob.	Sets TOP for the Window Mask. Setting range: 0 - (Screen size of TV standard – BOTTOM)
④	---	Turn the middle left knob.	Sets LEFT for the Window Mask. Setting range: 0 - (Screen size of TV standard – RIGHT)
⑤	---	Turn the top right knob.	Sets BOTTOM for the Window Mask. Setting range: 0 - (Screen size of TV standard – TOP)
⑥	---	Turn the middle right knob.	Sets RIGHT for the Window Mask. Setting range: 0 - (Screen size of TV standard – LEFT)
③ to ⑥	---	Hold down each knob.	Changes tuning modes between FINE and COARSE . FINE adjustment: ± 1 COARSE adjustment: ± 10
③ to ⑥	---	Press each knob.	Changes the value between UNITY (0) and VARIABLE .

⑦ GAIN

Indication: Shows the current value.

If the input box is **green**, the tuning mode is set to **FINE**.

If the box is **blue**, the mode is set to **COARSE**.

Touch panel	Front panel	Description
---	Turn the bottom left knob.	Adjust Gain for Window Mask. FINE adjustment: ± 1 COARSE adjustment: ± 5 Setting range: 100 - 0
--	Press the bottom left knob.	Changes the value between UNITY (0) and VARIABLE .
--	Hold down the bottom left knob.	Changes tuning modes between FINE and COARSE .

⑧ EDGE SOFTNESS

Blurs the Windows Mask edge. The edge of the specified pixel size will be blurred.

Indication: Shows the current value.

Touch panel	Front panel	Description
---	Turn the bottom right knob.	Selects a size of the mask edge to be blurred. Setting range: OFF, 4PIX, 8PIX, 16PIX
---	Press the bottom right knob.	Confirms the set value. The confirmed value is indicated with orange background.

⑨⑩⑪⑫ Menu navigation buttons

NO	Touch panel	Front panel	Description
⑨	Tap "<<".	---	Opens the MATTE OPTION menu.
⑩	Tap BACK .	---	Returns to the TOP menu.
⑪	Tap ">>".	---	Opens the COLOR ADJUST menu.
⑫	Tap each menu access button.	---	Opens the menu corresponding to the button tapped.

5-6-9. COLOR ADJUST Menu

The COLOR ADJUST menu allows you to adjust levels of the chromakeyed output signal by setting Offset and Gain for each Y, Pb, Pr signals of chromakeyed foreground signal. The Color Adjust setting data can be stored to each camera parameters(CAM) and can be used as you select the CAM.



①②③ Set the YPbPr offset for the chromakeyed foreground signal.

Indication: Shows the current values.

If the input box is **green**, the tuning mode is set to **FINE**.

If the box is **blue**, the mode is set to **COARSE**.

NO	Touch panel	Front panel	Description
①	---	Turn the top left knob.	Sets the Offset value of foreground Y signal. Setting range: -50.0 - 50.0 (%)
②	---	Turn the middle left knob.	Sets the Offset value of foreground Pb signal. Setting range: -50.0 - 50.0 (%)
③	---	Turn the bottom left knob.	Sets the Offset value of foreground Pr signal. Setting range: -50.0 - 50.0 (%)
①②③	---	Hold down each knob.	Changes tuning modes between FINE and COARSE . FINE adjustment: ±0.1 COARSE adjustment: ±1
①②③	---	Press each knob.	Changes the value between UNITY (0) and VARIABLE .

④⑤⑥ Set the YPbPr gain for the chromakeyed foreground signal.

Indication: Shows the current values.

If the input box is **green**, the tuning mode is set to **FINE**.

If the box is **blue**, the mode is set to **COARSE**.

NO	Touch panel	Front panel	Description
④	---	Turn the top right knob.	Sets the Gain value of foreground Y signal. Setting range: -50.0 - 150.0 (%)
⑤	---	Turn the middle right knob.	Sets the Gain value of foreground Pb signal. Setting range: -50.0 - 150.0 (%)
⑥	---	Turn the bottom right knob.	Sets the Gain value of foreground Pr signal. Setting range: -50.0 - 150.0 (%)
④⑤⑥	---	Hold down each knob.	Changes tuning modes between FINE and COARSE . FINE adjustment: ±0.1 COARSE adjustment: ±1
④⑤⑥	---	Press each knob.	Changes the value between UNITY (0) and VARIABLE .

⑦⑧⑨⑩ Menu navigation buttons

NO	Touch panel	Front panel	Description
⑦	Tap "<<".	---	Opens the WINDOW MASK menu.
⑧	Tap BACK .	---	Returns to the TOP menu.
⑨	Tap ">>".	---	Opens the AUTO CK menu.
⑩	Tap each menu access button.	---	Opens the menu corresponding to the button tapped.

5-7. MIX & OUT Menu

The MIX menus allow you to make settings for two video mixers (mixing circuits) MBP-1244 has. The video processed in the MIXER1 can be sent to VIDEO OUT1 and VIDEO OUT2. The video processed in the MIXER2 can be sent to VIDEO OUT3 and VIDEO OUT4.

5-7-1. MIXER1 SETTING Menu

MIXER1 SETTING menu allows you to make setting for MIXER1.

In the MBP video mixing, L1 is the uppermost layer and L4 is the lowermost layer.



①②③ Select a layer mode at ③. If USER1, 2 or 3 is selected, select a layer at ① and its video source at ②.

NO	Touch panel	Front panel	Description
①	---	Turn the top left knob.	Selects a layer (L1, L2, L3 or L4) to be set.
②	---	Turn the middle left knob.	Selects a video source for the selected layer. (This cannot be changed, if the Layer mode is set to VIRTUAL or RCG at ③.) Options: CAM (INT/EXT), CK (INT/EXT), CG (INT/EXT), CG2, STILL, V1 IN, V2 IN, NO ASSIGN
	---	Turn the bottom left knob.	Confirms the selected video source.. The confirmed value is indicated with orange background.
③	---	Turn the bottom left knob.	Selects a layer mode. (See the next page for more details.) Options: VIRTUAL, RCG, USER1, USER2, USER3
	---	Press the bottom left knob.	Confirms the selected layer mode.. The confirmed value is indicated with orange background.

● Layer source signal option details

Signals that can be selected as source signals for layers are as shown below.

Source	Description
CAM (INT/EXT)	Camera input signal In the system with MBP-1244, it is an input signal in CAM connector (EXT). In the system with MBP-100CK, it can be switched between an input signal in CAM connector (EXT) and an internally generated still image signal (INT) by selecting a source material for chromakeying described in section 4-6-2.
CK (INT/EXT)	Chromakeyed signal In the system with MBP-1244, it is a chromakeyed signal input to CAM connector (EXT). In the system with MBP-100CK, it can be switched between an input chromakeyed signal in CAM connector (EXT) and an internally generated chromakeyed signal using still image (INT) by selecting a source material for chromakeying described in section 4-6-2. This signal is selectable only if MBP-12CK Chromakey option is installed.
CG (INT/EXT)	CG signal In the system with MBP-1244, it is an internally generated CG signal (INT) using Brainstorm. In the system with MBP-100CK, it is an input signal in CG(V/K)INPUT connector (EXT).
STILL	Internally generated CG still image signal Available only if MBP-100CK is connected.
CG2	The secondary CG signal. Not selectable in the system with MBP-100CK.
V1 IN	The input signal in the V1 IN or V2 IN connector. Not selectable in the system with MBP-100CK.
V2 IN	The input signal in the AUX2 connector. (processed without an associated key signal.) Not selectable in the system with MBP-100CK.
NO ASSIGN	Not assigning any signal. (BLACK image)

● Layer structure mode option details

You can select a mode from a total of 5 modes. Two are preset, VIRTUAL and RCG modes, and other three are customizable user modes.

The structures of respective modes are as shown below.

Layer	VIRTUAL	RCG	USER1	USER2	USER3
L1 (Top)	NO ASSIGN	CG	Freely assignable (All layers are set to NO ASSIGN as default.)		
L2	CG	CK			
L3	CK	CG			
L4 (Bottom)	CG	CAM			

④⑤⑥⑦ Layer ON/OFF button

Indication: Shows whether a layer is output (green) or not (blue).

The name of video assigned to the layer is displayed on the button.

The Mix Mode(MODE), Key Clip(CLIP) and Key Gain(GAIN) settings are also displayed next to the button for ④ to ⑥.

NO	Touch panel	Front panel	Description
④	Tap the button	---	Sets whether to output Layer1.
⑤	Tap the button	---	Sets whether to output Layer2.
⑥	Tap the button	---	Sets whether to output Layer3.
⑦	Tap the button	---	Sets whether to output Layer4.

⑧⑨⑩ Set Mix Mode, Clip and Gain for MIXER1.

Indication: The Mix Mode(MODE), Key Clip(CLIP) and Key Gain(GAIN) settings are also displayed next to the button for ④ to ⑥.

NO	Touch panel	Front panel	Description
⑧	---	Turn the top right knob.	Selects how to mix the layer selected at ① with the one beneath from Add and Normal .
	---	Press the top right knob.	Confirms the Mix Mode selection. The confirmed value is indicated with orange background.
⑨	---	Turn the middle right knob.	Adjusts the key clip level for the selected layer. Setting range: 0 - 100
	---	Press the middle right knob.	Changes the value between UNITY (0) and VARIABLE .
	---	Hold down the middle right knob.	Changes tuning modes between FINE and COARSE . FINE adjustment: ± 1 COARSE adjustment: ± 10
⑩	---	Turn the bottom right knob.	Adjusts the key gain for the selected layer. Setting range: 0 - 3199
	---	Press the bottom right knob.	Changes the value between UNITY (100) and VARIABLE .
	---	Hold down the bottom right knob.	Changes tuning modes between FINE and COARSE . FINE adjustment: 1 COARSE adjustment: 50

⑪⑫⑬⑭ Menu navigation buttons

NO	Touch panel	Front panel	Description
⑪	Tap "<<".	---	Opens the OUTPUT SELECT menu.
⑫	Tap BACK .	---	Returns to the TOP menu.
⑬	Tap ">>".	---	Opens the MIXER2 SETTING menu.
⑭	Tap each menu access button.	---	Opens the menu corresponding to the button tapped.

5-7-2. MIXER2 SETTING Menu

The MIXER2 SETTING menu allows you to make setting for MIXER2. In the MBP video mixing, L1 is the uppermost layer and L3 is the lowermost layer.



① to ⑩ Same settings as those for MIXER1 SETTING. See the previous chapter.

⑪⑫⑬⑭ Menu navigation buttons

NO	Touch panel	Front panel	Description
⑪	Tap "<<".	---	Opens the MIXER1 SETTING menu.
⑫	Tap BACK .	---	Returns to the TOP menu.
⑬	Tap ">>".	---	Opens the OUTPUT SELECT menu.
⑭	Tap each menu access button.	---	Opens the menu corresponding to the button tapped.

5-7-3. OUTPUT SELECT Menu

The OUTPUT SELECT menu allows you to set output signals for OUT1 to OUT4.



① Select OUTPUT.

NO	Touch panel	Front panel	Description
①	---	Turn the top left knob.	Selects a output channel to make settings for from OUT1 through OUT4 .

② to ⑮ Select each signal assigned to the output selected at ①.

Indication: When button is **green**: Being output

When button is **blue**: Other source is output.

NO	Touch panel	Front panel	Description
②	Tap MIX VIDEO .	---	Outputs the mixed video from the output
③	Tap MIX KEY .	---	Outputs the key of MIX VIDEO from the output
④	Tap CAM .	---	Outputs the camera feed from the output
⑤	Tap CK VIDEO .	---	Outputs the chromakey video from the output
⑥	Tap CK KEY .	---	Outputs the key of CK VIDEO from the output
⑦	Tap CG VIDEO .	---	Outputs the CG video from the output
⑧	Tap CG KEY .	---	Outputs the key of CG VIDEO from the output
⑨	Tap V1 V IN .	---	Outputs the V1 input video from the output
⑩	Tap V1 K IN .	---	Outputs the key of V1 V IN from the output
⑪	Tap CG2 VIDEO .	---	Outputs the CG2 video from the output
⑫	Tap CG2 KEY .	---	Outputs the key of CG2 VIDEO from the output
⑬	Tap V2 V IN .	---	Outputs the V2 input video from the output
⑭	Tap STILL VIDEO .	---	Outputs the STILL image from the output
⑮	Tap STILL KEY .	---	Outputs the KEY of STILL from the output

⑩⑪⑫⑬ Menu navigation buttons

NO	Touch panel	Front panel	Description
⑩	Tap "<<".	---	Opens the MIXER2 SETTING menu.
⑪	Tap BACK .	---	Returns to the TOP menu.
⑫	Tap ">>".	---	Opens the MIXER1 SETTIN menu.
⑬	Tap each menu access button.	---	Opens the menu corresponding to the button tapped.

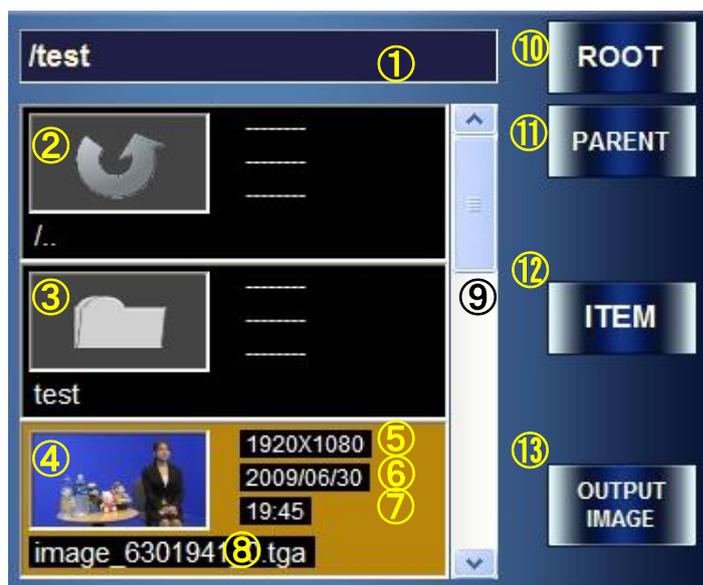
5-8. STILL & CAPTURE Menu (MBP-100CK)

MBP-100CK enables you to capture images from input in CAM connector, save the captured images as still image files, use those saved data in place of camera input, and output the still images saved in the MBP-100CK.

This menu consists of STILL menu and CAPTURE menu.

◆ Directory display

In both the STILL menu and the CAPTURE menu, the dedicated directories in MBP-100CK are displayed. This section describes the directory display in the menu pages.



- ① Shows the currently selected directory.
- ② Parent directory icon. Press the icon, and then it goes to the directory one above the current directory. (If the current directory is a root directory, this icon is not visible.)
- ③ Subdirectory icon. Press the icon, and then it goes to a subdirectory.
- ④ Displays the image file in the current directory with their thumbnails.
- ⑤ Displays the file size.
- ⑥ Displays the saved date of the file.
- ⑦ Displays the saved time of the file.
- ⑧ Displays the file name.
- ⑨ A scroll bar. This is used when there are multiple still files in the directory to display other files in the directory that are not currently visible in the box. (This scroll bar also responds to the middle right knob.)
- ⑩ Returns to the root directory. (that is in MBP-100CK and specified by MBP-12Server.)
- ⑪ Returns to the directory one above the current directory. (The root directory is the highest.)
- ⑫ Selects scroll size for the scroll bar from one file (ITEM) or three files (PAGE). If PAGE is selected, the button lights up green and the text on the button changes to PAGE.
- ⑬ Output image button. Press the button to output the image in the selected file. (If it is pressed in the STILL menu, the image will be output to STILL OUT connector. If it is pressed in the CAPTURE menu, the image will be output to CAM output and also will be output as a source material for chromakeying.)

5-8-1. STILL Menu

The STILL menu allows you to select a still image to output.



①② Select a directory. The contents of the directory is displayed at ③.

NO	Touch panel	Front panel	Description
①	Tap the button.	---	Returns to the root directory of the Still file directory specified by MBP-12SERVER.
②	Tap the button.	---	Returns to the parent directory one above the current directory. (The action is ineffective if in the root directory.)

③④⑤ Select an image file for STILL.

Indication: The background of the selected image file is in **orange**.

NO	Touch panel	Front panel	Description
③	---	Turn the middle right knob.	Scrolls through the directory to select an image file.
	---	Press the middle right knob	Returns to the parent directory of the current directory, if the parent directory icon is selected, Goes to the selected subdirectory, if subdirectory icon is selected.
④	Tap the button	Hold down the middle right knob.	Changes the scroll size between ITEM ↔ PAGE.
⑤	Tap OUTPUT IMAGE .	Press the bottom right button.	Outputs the selected file as a still image. Before outputting the image, the confirmation message dialog appears. Select OK to confirm the output.

⑥⑦⑧⑨ Menu navigation buttons

NO	Touch panel	Front panel	Description
⑥	Tap "<<".	---	Opens the CAPTURE menu.
⑦	Tap BACK .	---	Returns to the TOP menu.
⑧	Tap ">>".	---	Opens the CAPTURE menu.
⑨	Tap each menu access button.	---	Opens the menu corresponding to the button tapped.

5-8-2. CAPTURE Menu

The CAPTURE menu allows you to output the stored still images of the captured CAM input as source materials for chromakeying.



①② Display and save thumbnails of captured images.

NO	Touch panel	Front panel	Description
①	Tap the thumbnail.	Press the top left knob.	Captures the current input image in CAM and displays the thumbnail of the captured image.
	Long-tap the thumbnail.	Hold down the top left knob.	Stores the captured image in the current directory with the name indicated in ②. If there is a file or a folder of the same name, a warning message appears. Change the name and save the image.
②	Tap the label	Press the middle left knob.	Automatically renames the file according to the MBP-RUA naming rule. (Updates the time part)
	Long-tap the label	Hold down the middle left knob.	Opens the text input panel to enable you to change the file name.

* MBP-RUA naming rule

Name string = IMAGE_#\$\$%

#: Current month

\$\$: Current date

%%: Time (time/minute/second) (The time when the first time STILL&CAPTURE menu is opened after the startup of the MBP-RUA.)

③ Select a Chromakey source between the camera input or still image.

NO	Touch panel	Front panel	Description
③	---	Press the bottom left knob.	Switches the selection between the camera input (EXT) and still image (INT).

④⑤ Select a directory. The contents of the directory is displayed at ⑥.

NO	Touch panel	Front panel	Description
④	Tap the button.	---	Changes the directory display to display the root directory of stored captured image files which is specified by the MBP-12SERVER.
⑤	Tap the button.	---	Returns to the parent directory one above the current directory. (The action is ineffective if in the root directory.)

⑥⑦⑧ Select an image file for STILL.

Indication: The background of the selected image file is in **orange**.

NO	Touch panel	Front panel	Description
⑥	---	Turn the middle right knob.	Scrolls through the directory to select an image file.
	---	Press the middle right knob	Returns to the parent directory of the current directory, if the parent directory icon is selected, Goes to the selected subdirectory, if subdirectory icon is selected.
⑦	Tap the button	Hold down the middle right knob.	Changes the scroll size between ITEM ↔ PAGE.
⑧	Tap OUTPUT IMAGE .	Press the bottom right button.	Sets the selected file as a still image, if INT is selected at ③. When the confirmation message dialog appears, select OK to confirm the selection.

⑥⑦⑧⑨ Menu navigation buttons

NO	Touch panel	Front panel	Description
⑥	Tap "<<".	---	Opens the STILL menu.
⑦	Tap BACK .	---	Returns to the TOP menu.
⑧	Tap ">>".	---	Opens the STILL menu.
⑨	Tap each menu access button.	---	Opens the menu corresponding to the button tapped.

5-9. EVENT Menu

The EVENT menu allows you to browse, load, save, delete, or rename the data(event) of MBP-1244 settings. The saving does not store the events to MBP-RUA. They are stored to the PC in which MBP-1244 is installed.



①②③ Select an event at ②. The selected event details are displayed in the center (①).

Indication: Events with data are shown with the **white letters on the blue background**.

Events without data are shown with the **gray letters on the black background**.

NO	Touch panel	Front panel	Description
①	---	---	Shows the selected event and each three events which preceded and followed.
②	---	Turn the middle left knob.	Selects event number (1 - 100)
	Tap the number field.	---	A numeric keypad will appear. Enter the event number.
	---	Press the middle left knob.	Resets the number to 1 to select the event number 1.
③	---	---	Shows the TV standard of the selected event. "NOT SET" is indicating no event is stored in the event.

④⑤⑥⑦ Save, Load, Delete or Rename the selected event.

NO	Touch panel	Front panel	Description
④	Tap RENAME .	Press the top left knob.	Opens the event name input panel to enable you to enter a name for the event. (See section 5-9-1.)
⑤	Tap SAVE .	Press the top right knob.	Saves the current setting data in the selected event. In the confirmation dialog, tap OK .
⑥	Tap DELETE .	Press the middle right knob.	Deletes the data in the selected event. In the confirmation dialog, tap OK .
⑦	Tap LOAD .	Press the bottom right knob.	Loads the selected event data. In the confirmation dialog, tap OK .

⑧ Return to the TOP menu.

NO	Touch panel	Front panel	Description
⑧	Tap BACK .	---	Returns to the TOP menu.

5-9-1. Event Name Input Panel

The event name input panel appears for renaming events to enter the names.



① to ⑧ Tap a character to be changed. The selected character is displayed at ①.

Indication: The selected character is displayed in reverse video.

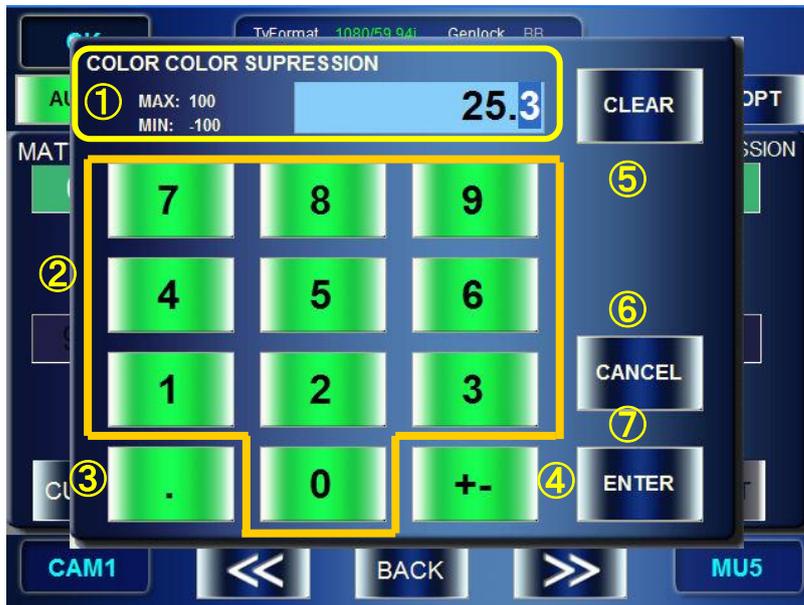
NO	Touch panel	Front panel	Description
①	---	Turn the top left knob.	Moves the cursor.
	---	Hold down the top left knob.	Delete the string.
	---	Turn the top right knob.	Changes the displayed character at the cursor position. The characters are ordered from A - Z, a - z, 0 - 9, -, _, (space) to the blank character.
②	Tap the character.	---	
③	Tap BS .	---	Deletes the character before the cursor position.
④	Tap DEL .	Press the top left knob.	Delete a character at the cursor position.
⑤	Tap the button.	Press the top right knob.	Changes the character set used at ② among the following three sets: A-Z a-z 0-9, -, _, (space)
⑥	Tap the button.	---	Changes the character input entering mode. When the button is green: Insert mode blue: Overwrite mode
⑦	Tap CANCEL .	---	Cancels the name inputs and closes the event name input panel. (The event name is not changed.)
⑧	Tap OK .	---	Determines the renaming and closes the event name input panel. (The event name is changed to the name entered here.)

IMPORTANT

The buttons and knobs on the front panel are inactive while the event name input panel is open.

5-10. Numeric Input Panel

Numeric data in MBP-RUA can be changed using either knobs on the front panel or the numeric input panel which is opened by touching the value boxes in menus. This section explains how to use the numeric input panel.



① to ⑦ Tap a number to be changed. The selected number is displayed at ①.

Indication: The selected number is displayed in reverse video.

The name of the parameter and setting range (MAX and MIN) are displayed at the left side of the field.

NO	Touch panel	Front panel	Description
①	---	---	Displays the input number.
②	Tap the button.	---	Enters the number value by tapping each digit number from higher to lower position.
③	Tap the button.	---	Enters a decimal point.
④	Tap the button.	---	Alternates between positive value and negative value.
⑤	Tap CLEAR .	---	Clears the value in the numeric box (resets to 0).
⑥	Tap CANCEL .	---	Cancels the process and closes the numeric panel. The value in the numeric box is not changed.
⑦	Tap ENTER .	---	Confirms the change and closes the numeric panel. The value in the numeric box is changed.

* If a value which exceeds the range of possible maximum and minimum values is entered, the MAX or MIN indication turns to red and the value in the value box is changed to the possible maximum or minimum value.

6. Specifications and Dimensions

6-1. Specifications

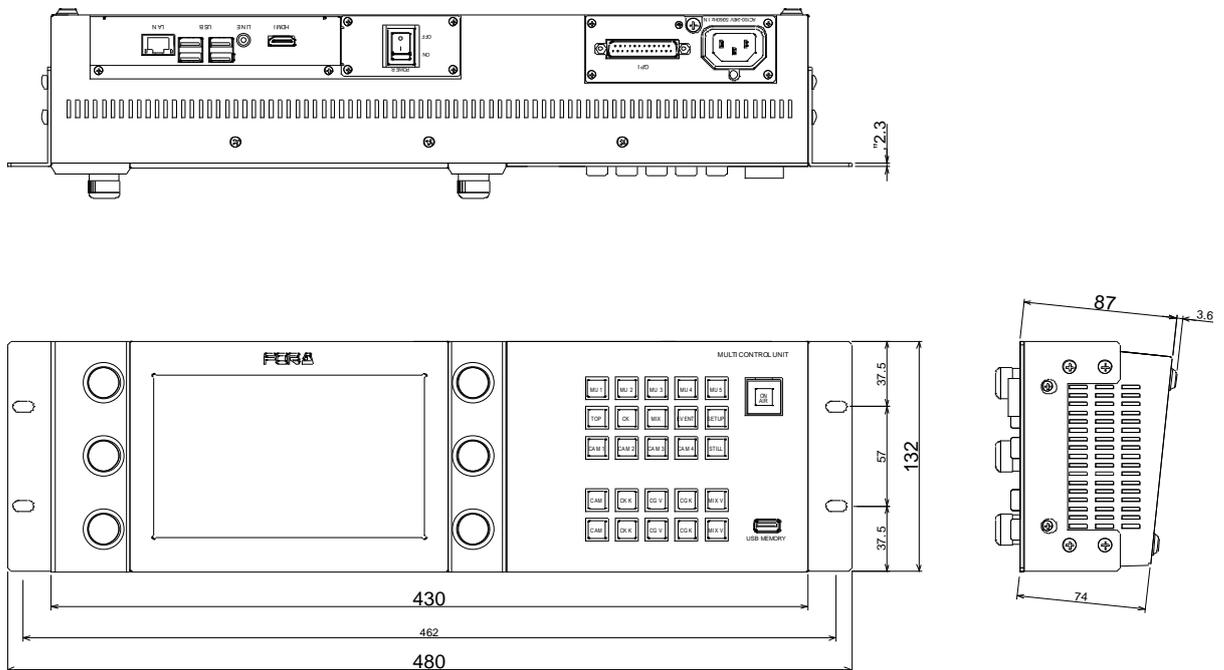
Interface

LAN	100BASE-TX, RJ-45 x 1
USB	USB2.0, Type A connector x 5 (1 on front panel, 4 on rear panel)
GPI	25-pin D-sub (female) x 1
Other connectors are not in use.	

Temperature	10°C - 35°C
Humidity	30% - 90% (No condensation)
Power	100VAC - 240VAC ±10%, 50/60Hz
Consumption	19 W (at 100-120 V), 18W (at 220-240 V)
Dimensions	430 (W) x 87 (H) x 132 (D) mm, EIA 3RU
Weight	Approx. 3.3 kg
Consumables	Battery: CR2032 (Replace approx. every 5 years, at the use in 25°C)

6-2. External Dimensions

(All dimensions in mm)



Appendix

MBP-RUA Switch Assign Builder

About MBP-RUA Switch Assign Builder

- Enables creating assignment files for MBP-RUA front panel buttons
- It can be installed on the computer on which WINDOWS XP (ServicePack2) or later is installed.

Installing MBP-RUA Switch Assign Builder

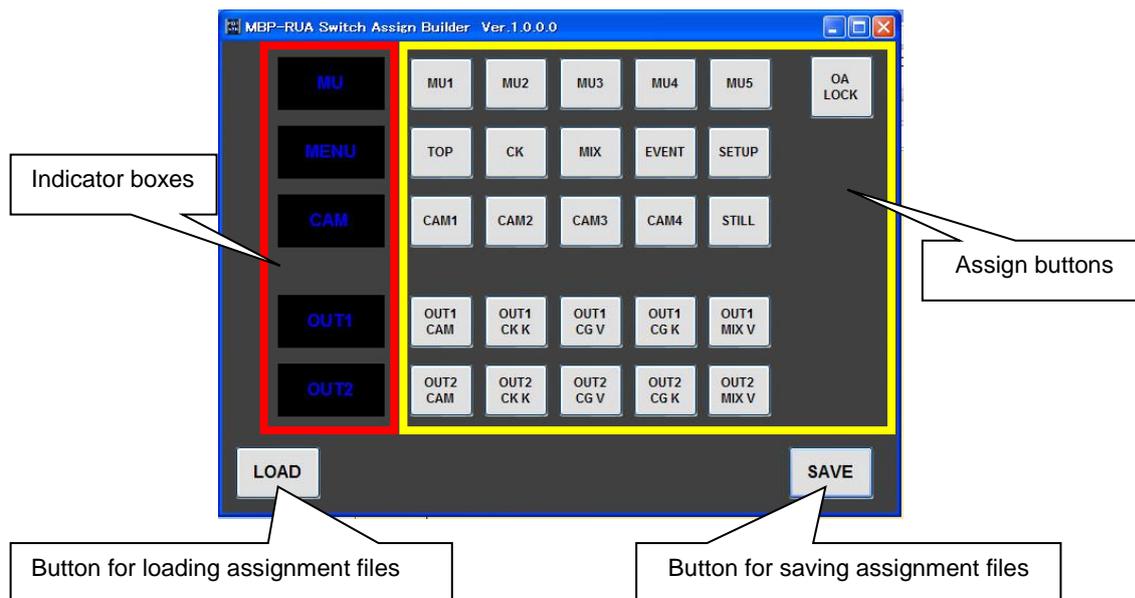
You will need to use the **MBP-RUA_SAB Installation CD** supplied with MBP-RUA.

- 1) Insert the CD into the CD-ROM drive of your computer.
- 2) Run **Setup_English \setup.exe**.
- 3) Follow the instructions in the wizard to install the application.

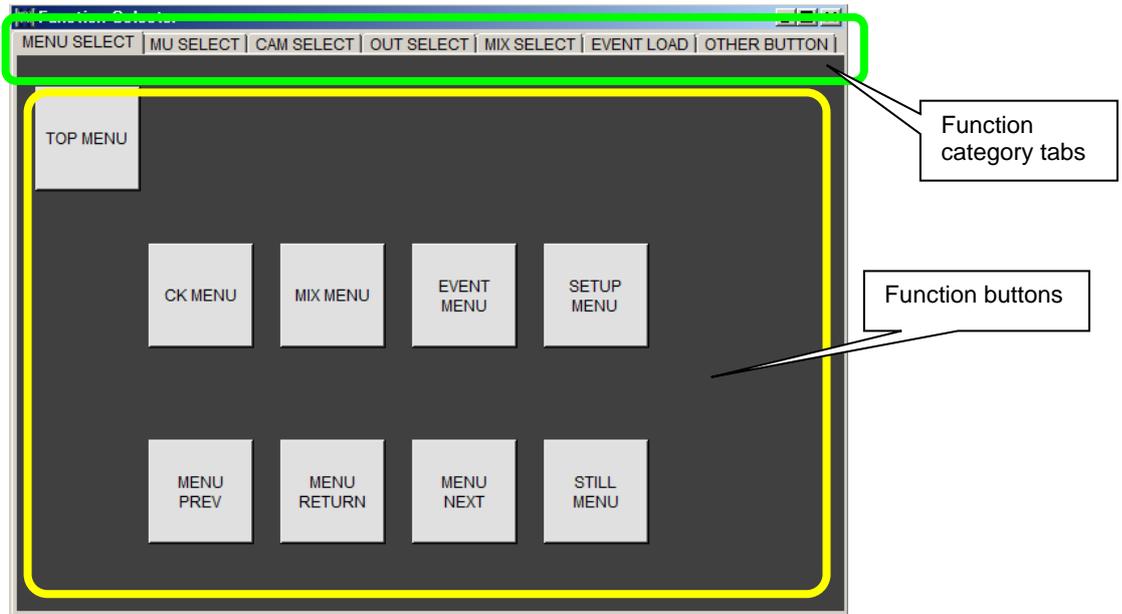
Changing Assignments

This section explains how to change the assignments using **MBP-RUA Switch Assign Builder (MBP-RUA SAB)**.

- 1) Start **MBP-RUA SAB**. If you are running MBP-RUA SAB on MBP-RUA, close the main application and double-tap the **MBP-RUA SAB** icon under the **MBP-RUA** folder on the desktop. If you are running MBP-RUA SAB on a computer instead of MBP-RUA, choose **Start >All Programs > FOR-A > MBP-RUA_SAB > * * * *** and click **MBP-RUA_SAB (* * * *)** is the version number). For running MBP-RUA SAB on MBP-RUA, it is recommended that a USB mouse and a keyboard be connected to MBP-RUA.
- 2) After the application is started, the screen as shown below is displayed. The layout of buttons on the screen corresponds to the layout of actual buttons on MBP-RUA. The **LOAD** button and the **SAVE** button are used for loading and saving the assignment files respectively. When the application is started, the default assignment is applied.



- 3) To change an assignment, click a button you wish to change the assignment. The **Function Selector** window is displayed.



- 4) Click to select a function category tab that contains the function button you wish to select, and click the function button. The **Function Selector** window is automatically closed. The change is applied to the button on the main screen.
- 5) To rename an indicator box, click an indicator box you wish to rename. Enter the name using a keyboard (up to 4 characters). Characters that can be used are: a to z, A to Z, 0 to 9, underbar (_), dash (-), space ()
- 6) To change the color of an indicator box, click an indicator box you wish to change the color of. The pop-up menu appears. Select a color in the pop-up menu.
- 7) Repeat the steps 3) to 6) to all assign buttons and indicator boxes you wish to change the assignment or rename.

Note that Steps 5) to 7) are unavailable in the current RUA version.

- 8) After changing settings, click the **SAVE** button to save an assignment file. If you are running MBP-RUA SAB on a computer, save the file to the desired location, and copy the file under **C:\MBP-RUA\DATA** on MBP-RUA (by using a USB memory). If you are running MBP-RUA SAB on MBP-RUA, save the file under **C:\MBP-RUA\DATA**.

Applying Assignments to MBP-RUA

This section explains how to change the button assignments on the MBP-RU using the assignment file created in the previous section.

- 1) On MBP-RUA, specify the file that you created in **SW CONFIG** in the **RU SETUP** menu under the **SETUP** menu.
- 2) Close the application and restart MBP-RUA to apply the assignment (see 5-4-6 for details).

Be sure to turn off the power of MBP-RUA for replacing the button films.

Button Labels

Please make use of this page when you change the function assignments of the buttons on the front panel.

CK V	CK V	CK V	CK V	EVENT 1	EVENT 2	EVENT 3	EVENT 4	CG2 V	CG2 V	CG2 V	CG2 V
MIX K	MIX K	MIX K	MIX K	EVENT 5	EVENT 6	EVENT 7	EVENT 8	CG2 K	CG2 K	CG2 K	CG2 K
CAM	CAM	CK K	CK K	EVENT 9	EVENT 10	EX LOCK	OP LOCK	V1 IN V	V1 IN V	V1 IN V	V1 IN V
CG V	CG V	MIX V	MIX V	L1	L2	L3	L4	V1 IN K	V1 IN K	V1 IN K	V1 IN K
MIX K	MIX K	CK ON	DELAY ON	L1	L2	L3	L4	V2 IN V	V2 IN V	V2 IN V	V2 IN V
MENU NEXT	MENU PREV	MENU RETURN	VIRTUAL	STILL V	STILL V	STILL V	STILL V				
RCG	USER 1	USER 2	USER 3	STILL K	STILL K	STILL K	STILL K				

TOP	CK	EVENT	MIX
SETUP	MU 1	MU 2	MU 3
MU 4	MU 5	CAM 1	CAM 2
CAM 3	CAM 4	CAM	CK K
CG V	MIX V	CG K	CAM
CK K	CG V	MIX V	CG K
STILL			

<input type="text"/>				
<input type="text"/>				
<input type="text"/>				

Warning

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



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