![FOR.A - INNOVATIONS IN VIDEO and AUDIO TECHNOLOGY]

OPERATION MANUAL

DCC-OUA

Operation Unit for Color Corrector

S/N 12510121 - higher

4th Edition

(Version 3.0.0 - higher)

FOR-A COMPANY LIMITED

Precautions

Important Safety Warnings

[Power]

|	
⚠ Caution	Operate unit **only** on the specified supply voltage.
(icon)	Disconnect power cord by connector only. **Do not** pull on cable portion.
🚫 Stop	**Do not** place or drop heavy or sharp-edged objects on power cord. A damaged cord can cause fire or electrical shock hazards. Regularly check power cord for excessive wear or damage to avoid possible fire / electrical hazards.

[Grounding]

❗ Caution	**Ensure** unit is properly grounded at all times to prevent electrical shock hazard.
⚠ Hazard	**Do not** ground the unit to gas lines, units, or fixtures of an explosive or dangerous nature.
❗ Caution	**Ensure** power cord is firmly plugged into AC outlet.

[Operation]

⚠ Hazard	**Do not** operate unit in hazardous or potentially explosive atmospheres. Doing so could result in fire, explosion, or other dangerous 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 unit malfunction.
(icon)	If foreign material does enter the unit, turn power off and disconnect power cord **immediately.** Remove material and contact authorized service representative if damage has occurred.

[Transportation]

❗ Caution	**Handle** with care to avoid shocks in transit. Shocks may cause malfunction. When you need to transport the unit, use the original packing materials or alternate adequate packing.

[Circuitry Access]

(symbol)	**Do not** remove covers, panels, casing, or access circuitry with power applied to the unit! Turn power off and disconnect power cord prior to removal. Internal servicing / adjustment of unit should only be performed by qualified personnel.
(symbol) Stop	**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 power is disconnected. Capacitors associated with the power supply are especially hazardous. Avoid contact with any capacitors.
(symbol) Hazard	Unit **should not** be operated or stored with cover, panels, and / or casing removed. Operating unit with circuitry exposed could result in electric shock / fire hazards or unit malfunction.

[Potential Hazards]

(symbol) Caution	If abnormal smells or noises are noticed coming from the unit, turn power off immediately and disconnect power cord to avoid potentially hazardous conditions. If problems similar to above occur, contact authorized service representative **before** attempting to again operate unit.

[Rack Mount Brackets, Ground Terminal, and Rubber Feet]

(symbol) Caution	To rack mount or ground the unit, or to install rubber feet, do not use other than the supplied parts and screws. Otherwise, it may cause damage to the internal circuits or components of the unit. If you remove the rubber feet attached on the unit, do not reinsert the screws securing the rubber feet.

[Consumables]

(symbol) Caution	The consumables used in unit must be replaced periodically. 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, they should be replaced at an early date. For details on replacing the consumables, contact your dealer.

Upon Receipt

Unpacking

DCC-OUA 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 lists below.

ITEM	QTY	REMARKS
DCC-OUA	1	Operation Unit for Color Corrector
AC Cord	1 set	(Including an AC cord retaining clip)
Rack Mount Brackets	1 set	EIA standard type
Operation Manual	1	

Option

ITEM	QTY	REMARKS
DCC-70HS	1	Main Unit (HD unit type)
DCC-100	1	Main Unit (SD unit type)
UFM-100DCC	1	Main Unit (SD module type)
UFM-30DCC	1	Main Unit (HD/SD SDI module type)

IMPORTANT
MU is separate purchase item from OU. Both required for basic system. When purchasing UFM-30DCC, the dedicated control cable (PC-2076-3) must be purchased separately.
The UFM-100DCC and UFM-30DCC are board type modules. It requires a dedicated UFM frame (separate purchase).

Check

Check to ensure no damage has occurred during shipment. If damage has occurred, or items are missing, inform your supplier immediately.

Rack Mounting

The DCC-OUA can be mounted to EIA standard rack units. When rack mounting a unit, remove the rubber feet and use the accessory rack mount brackets (rack ears).

Installing the AC Cord Retaining Clip

Please secure the AC cord with the supplied AC cord retaining clip to prevent accidental removal from the DCC-OUA.

1) Lightly wrap the plug with the band. (The anchor of the retaining clip pointing toward the unit.)
2) Plug in the power cord. Insert the anchor to the hole next to AC IN.
3) Slide the belt on the retaining clip ladder strap. Fasten the belt tightly.

　　(Push up the tab to slide the belt backwards.)
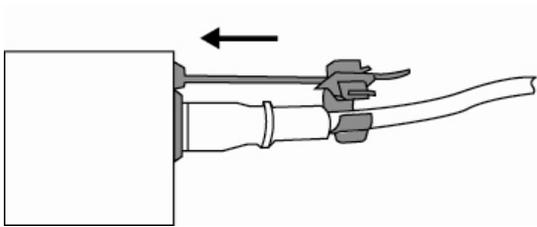
2)　　　　　　　　　　　　　　　　　　　　　　3)
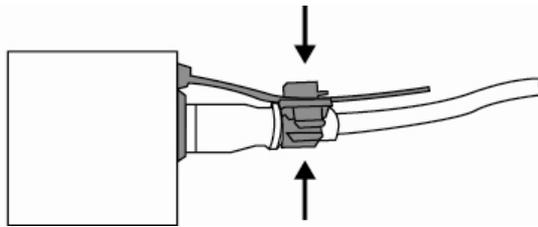
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1. Prior to Starting

1-1. Welcome

Congratulations! By purchasing DCC-OUA Operation 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

The DCC-OUA is a control unit for operating Digital Color Corrector Main Units (DCC-70HS, DCC-100, UFM-100DCC, and UFM-30DCC). The established models such as DCC-700 and DCC-700H can also be connected to the DCC-OUA.

➢ Up to 4 MUs (DCC-70HS, DCC-100, UFM-100DCC and UFM-30DCC) can be connected

➢ Establishes a RS-422 serial control between MUs (DCC-70HS, DCC-100, UFM-100DCC, and UFM-30DCC)

➢ Offers remote control for a variety of functions and settings:

- Process amplifier function
- Color correction for Balanced / Differential / Sepia modes
- Video clip control in YBR (YCbCr) mode.
- Gamma curve selection (for DCC-100, UFM-100DCC, and UFM-30DCC)
- Input signal selection (for DCC-100 and UFM-100DCC)
- Dual Channel mode control (for UFM-30DCC)

➢ Offers event memory to store settings. Up to 99 events for color correction settings and 9 for clip settings. (The event memory is shared by all MUs .)

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 operations. Before connecting or operating your unit, read this operation manual thoroughly to ensure you understand the product. After reading, it is important to keep this manual in a safe place and available for reference.

2. Panel Descriptions

2-1. Front Panel
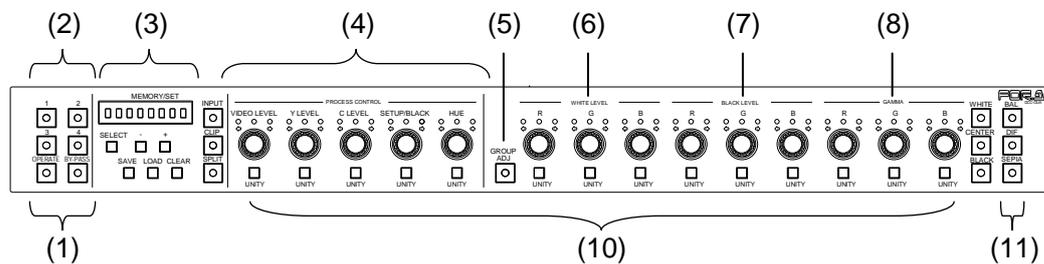
(1) BYPASS/OPERATE
Used to select OPERATE or BY-PASS.

OPERATE (button indicator lit)	Color correction can be applied to the selected MU from OU front panel.
BY-PASS (button indicator lit)	The MU directly outputs unprocessed input video signals.

OPERATE button indicator will flash if either of the conditions below exist:
● MU power is switched OFF.
● Connection between OU and MU is missing or incorrect.
(Any operation except selecting MU using 1-4 buttons cannot be done in the OU while OPERATE button is flashing.)

(2) MU select 1/2/3/4
Used to select which MU the OU settings will be applied to. If the connection between DCC-OUA and MU is not established, the MU cannot be selected.
When controlling UFM-30DCC in Dual Channel mode, also select here which channel is used: Channel1 or Channel2. (See section 5-2.)
Press the MU select button for several seconds for entering the model type setting mode. See section 4-1. "Model Type Setting" for details.

(3) MEMORY/SET
● Event Memory
Up to 99 correction data and 9 clip data can be saved in the memory and the saved data can be loaded when needed. The data will be retained when power is turned off. (The event memory is shared by all MUs.)

● Menu Setting
The menu item and value are displayed on the display panel except during the event memory setting.

See section 5-7. "Event Memory" for details.

(4) PROCESS CONTROL
Used for process control in Color Correction Mode. （See section 5-1, "Process Control and Color Correction."）

The three controls in the center are used for the clip settings in Clip Mode. (See section 5-3, "YPbPr Clip Settings".)

(5) GROUP ADJ
Used to adjust all of R, G and B controls for WHITE LEVEL, BLACK LEVEL, or GAMMA by using any one control of them. When on (button indicator lit), turning any control of R, G or B for (6), (7), or (8) makes changes in overall level for each group.

(6) WHITE LEVEL
Used to adjust R, G, and B of WHITE LEVEL after selecting Color Correction Mode at (11) (not functional in Sepia mode).

(7) BLACK LEVEL
Used to adjust R, G, and B of BLACK LEVEL after selecting Color Correction Mode at (11) (not functional in Sepia mode).

(8) GAMMA
Used to adjust R, G, and B of GAMMA LEVEL after selecting Color Correction Mode at (11). (The Y signal can be adjusted using the G control. The R and B controls are not functional.)

In the case of DCC-100, UFM-100DCC, and UFM-30DCC, the gamma curve can be selected using WHITE, CENTER, and BLACK buttons.

(9) INPUT/CLIP/SPLIT
● INPUT (DCC-100 and UFM-100DCC only)
Used to select the input signal format. Press the INPUT button. The signal formats available are displayed on the display panel. Select a signal format using − and + buttons. Press the INPUT button again to apply the selection. See section 5-6. "Display Panel" for details.

● CLIP
Press the CLIP button for at least 5 seconds to enter Clip Mode. The functions available differ depending on the model type setting. See section 5-6. "Display Panel" for details. For details on the clip settings, see section 5-3. "YPbPr Clip Settings," 5-4."GBR Clip Settings, and 5-5."Composite (VBS) Clip Settings."

● SPLIT (DCC-100, UFM-100DCC, and UFM-30DCC only)
The mode is switched every time the SPLIT button is pressed, in the following order:
OFF > MODE1> MODE2> MODE3

OFF	Displays the image after correction (factory default).
1	Splits the screen vertically and displays images before and after correction.
2	Splits the screen horizontally and displays images before and after correction.
3	Displays the image before correction.

Mode: OFF   Mode: 1   Mode: 2   Mode: 3   □ Image before correction   ▨ Image after correction
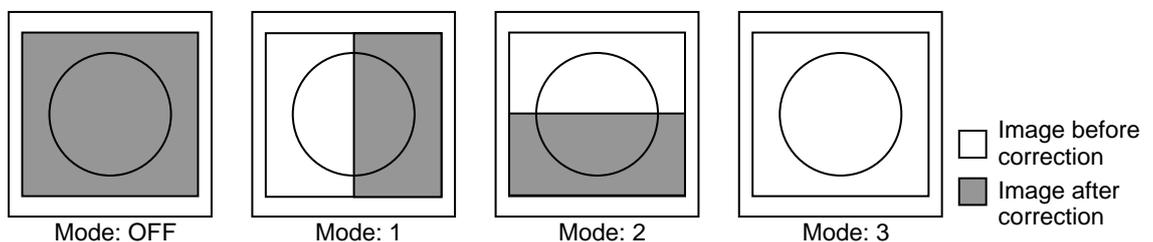
(10) UNITY
Pressing the UNITY button resets the value to the default. Pressing the button again returns the default value to the previous value.

(11)BAL/DIF/SEPIA

Press to select BAL (balanced), DIF (differential), or SEPIA (sepia color) Color Correction Mode.

◆ **BAL: RGB signal correction mode**

Allows you to adjust the white balance. Gray scale can be changed by adjusting R, G and B levels.

◆ **DIF: Color difference signal mode**

Allows you to adjust contrast without changing white balance. R, G and B levels can be changed without affecting gray scale. This adjustment is effective for images with different color saturation levels.

◆ **SEPIA: Sepia mode**

Useful for creating black and white images.

2-2. Rear Panel
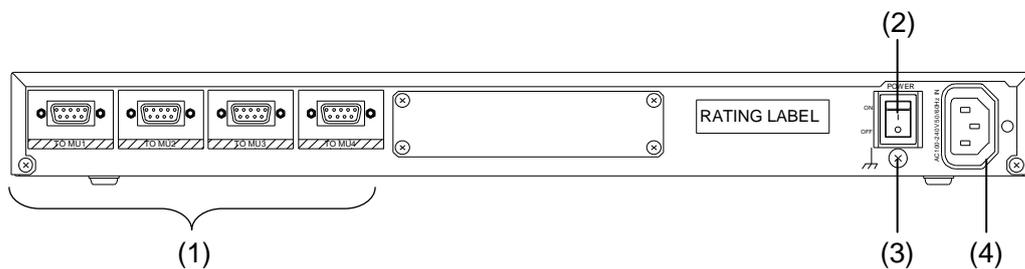
(1) TO MU 1-4 (9-pin D-sub)

Used for connection to MUs (DCC-70HS, DCC-100 UFM-100DCC, and UFM-30DCC). Up to 4 MUs can be connected with DCC-OUA at a time.

(2) Power switch

Used to turn unit power ON/OFF.

(3) Ground terminal

Used to ground unit and protect operators from electrical shock.

(4) AC IN

Used for connection to AC power source via accessory power cord.

2-3. Internal Dipswitch Settings

The DCC-OUA is fully inspected prior to shipment and can be operated based on the default settings made at the factory. Dipswitch settings should be used only when setting the error buzzer to off. Setting made here is effective after the unit is turned on.

(1) First turn off and disconnect power from the OU.
(2) Next, remove all screws securing top panel to unit body and remove panel.
(3) Internal dipswtich settings

Dipswitch SW1 Settings (CONTROL BOARD (E3197), Location: S5)

1	Not used Normally: OFF. Do not change.
2	Buzzer ON/OFF ON=Buzzer OFF OFF=Buzzer ON Normally: OFF.
3	Not used Normally: OFF. Do not change.
4	Not used Normally: OFF. Do not change.
5	Not used Normally: OFF. Do not change.
6	Not used Normally: OFF. Do not change.
7	Not used Normally: OFF. Do not change.
8	Not used Normally: OFF. Do not change.

Dipswitch SW2 Settings (CONTROL BOARD (E3197), Location: T5)

1	Not used Normally: OFF. Do not change.
2	Not used Normally: OFF. Do not change.
3	Not used Normally: OFF. Do not change.
4	Not used Normally: OFF. Do not change.

3. Connection

Up to 4 main units (any combinations of DCC-70HS, DCC-100, UFM-100DCC, and UFM-30DCC) can be connected to a single DCC-OUA. However, DCC-OUA can control only one MU at a time. Which MU settings are applied to is selected using $\boxed{1}$ to $\boxed{4}$ buttons on the OU front panel.

MU1 #1（Example: DCC-70HS）

DCC-OUA

RATING LABEL

To MU #2 MU #3 MU #4
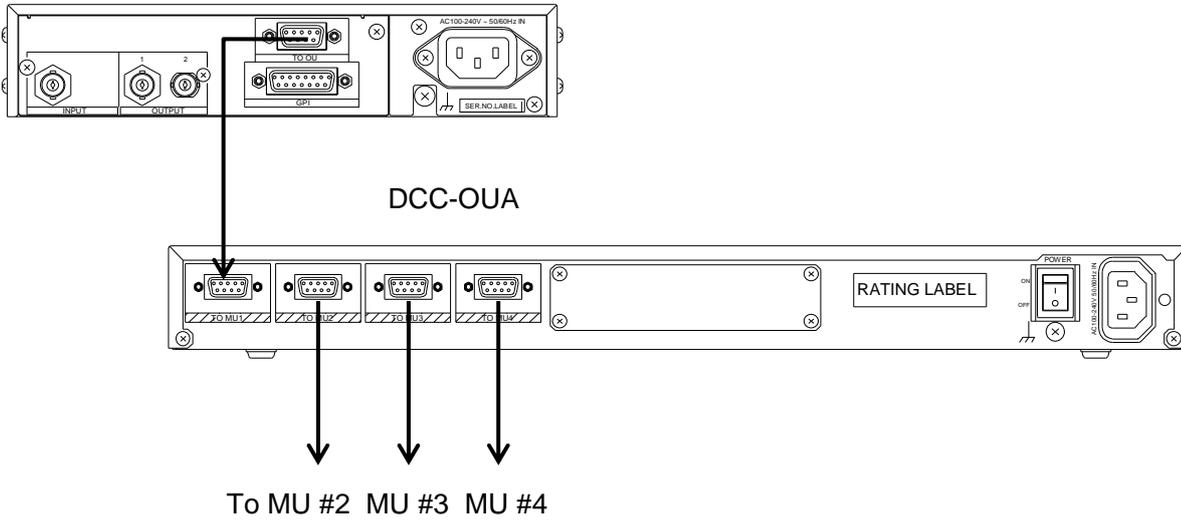
4. Initial Settings

In order to operate DCC-OUA, the model type setting for every MU (MU1-MU4) must be made.

4-1. Model Type Setting

(1) Hold down the $\boxed{1}$, $\boxed{2}$, $\boxed{3}$, or $\boxed{4}$ button for at least 5 seconds.
(2) The model name is displayed on the MEMORY/SET display panel.
(3) Select a proper model type from DCC-70HS, DCC-100, and UFM-30DCC using $\boxed{+}$ and $\boxed{-}$ buttons.
(4) Once the setting is complete, press the $\boxed{1}$, $\boxed{2}$, $\boxed{3}$, or $\boxed{4}$ button again to exit the model type setting mode.

NOTE
If the control model type is changed, it takes about 5 seconds to save the setting. During saving, you cannot operate DCC-OUA.

Model Name	Model Type	Remarks
DCC-700	DCC-70HS	Previous model
DCC-700H	DCC-70HS	Previous model
DCC-70HS	DCC-70HS	
DCC-100	DCC-100	
UFM-100DCC	DCC-100	
UFM-30DCC	UFM-30DCC	

*The factory default is DCC-70HS.

4-2. Functions Available for Different Models

Once the model type settings (see 4-1) have been made, the functions available for different models are automatically set.

Item	Model Type Setting		
	DCC-70HS	DCC-100 (UFM-100DCC)	UFM-30DCC
INPUT select	×	○	×
CLIP setting	YPbPr Clip only	○	○
SPLIT setting	×	○	○
GAMMA CURVE select	×	○	○

○: available   ×: not available

NOTE
To connect DCC-100 / UFM-100DCC with DCC-OUA, the SW2-1 dipswitch in DCC-100 / UFM-100DCC must be set to ON. See DCC-100 and UFM-100DCC Operation Manual for details.

5. Operation

Once you have completed all required system connections and made any required internal dipswitch settings, power on your OU and MU.

5-1. Process Control and Color Correction

The steps for the process control and color correction settings are described as follows.

(1) Select an MU by pressing one of the $\boxed{1}$ - $\boxed{4}$ buttons.
(2) Press $\boxed{\text{INPUT}}$ and select an input signal using $\boxed{+}$ and $\boxed{-}$ buttons. Once the selection is made, press the $\boxed{\text{INPUT}}$ button again. (Disabled when the model type is set to DCC-70HS or UFM-30DCC.)

NOTE
If the INPUT setting is changed, it takes about 5 seconds to save the setting. During saving, you cannot operate DCC-OUA.

(3) Select a mode by pressing one of the $\boxed{\text{BAL}}$, $\boxed{\text{DIF}}$, and $\boxed{\text{SEPIA}}$ buttons. The mode button lights up.
(4) Use the controls to make settings.
(5) If necessary, set SPLIT and check the operation (DCC-100, UFM-100DCC, and UFM-30DCC only).

◆ **Process Control**
The following process control settings are available.

VIDEO LEVEL	Adjusts the video level.
Y LEVEL	Adjusts the luminance level.
C LEVEL	Adjusts the chroma level. (Adjusts the sepia level in Sepia Mode.)
SETUP/BLACK	Adjusts the setup level.
HUE	Adjusts the hue. (Adjusts the sepia color in Sepia Mode.)

*The process control settings are disabled when the signal is bypassed, or during the model type setting or clip setting.

◆ **Color Correction**
The following color correction settings are available.

WHITE LEVEL	Adjusts the white level in RGB. (Disabled in Sepia Mode)
BLACK LEVEL	Adjusts the black level in RGB. (Disabled in Sepia Mode)
GAMMA	Adjusts the gamma level in RGB. (Only the Y signal can be set using the G control in Sepia Mode. R and B are disabled.)

The $\boxed{\text{GROUP ADJ}}$ button affects how WHITE LEVEL, BLACK LEVEL, and GAMMA controls respond. When the $\boxed{\text{GROUP ADJ}}$ button is turned OFF (indicator unlit), RGB controls operate independently and settings for all components are separately made. When ON (indicator lit), controls do not operate independently. Turning any one control in the WHITE LEVEL, BLACK LEVEL, and GAMMA section changes all control settings in this section by the same degree.

NOTE
The color correction settings are disabled when the signal is bypassed, or during the model type setting or clip setting.

Operational Tips

● If you have a digital monitor, make adjustment while checking the difference between the input signal and the signal that the color correction is applied.

● The LED indicator above each control indicates the setting status.

Center	If the center LED is lit, the value is UNITY.
Left	If the left LED is lit, the value is less than UNITY.
Right	If the right LED is lit, the value is greater than UNITY.

Pressing the UNITY button below each control resets the value to the default. Pressing the button again returns the default value to the previous value.

IMPORTANT
Note that the process control and color correction settings are not retained after DCC-OUA is powered off, and all these settings are reset to unity (factory default) when DCC-OUA is powered on again. On the other hand, the clip settings are retained even after the OU power is lost.
If a setting range for process control and color correction is too small, check the clip level setting.
Also note that even after the MU is powered off, process control and color correction settings are retained unless the DCC-OUA is on.

● An error buzzer will sound if the value exceeds the minimum or maximum values. The error buzzer can be turned off by changing the dipswitch setting. (See section "2-3 Internal Dipswitch Settings" for details.)

5-2. Channel Selection (Dual Channel mode)

When performing color correction using the UFM-30DCC in Dual Channel mode, select a process channel as shown in the procedure below.

(1) Select an MU (UFM-30DCC) by pressing one of the 1 - 4 buttons.
(2) When the LED at the center of the selected button lights up, Channel 1 is selected.
    To select Channel 2, press the same button again. (The LED at the center of the button blinks.)

NOTE
To use the UFM-30DCC in dual channel mode, the dual channel option is required.

5-3. YPbPr Clip Settings

In order to make the clip settings, first you need to change the mode from Color Correction Mode to Clip Mode.

(1) Select an MU by pressing one of the 1 - 4 buttons.
(2) Hold down the CLIP button for at least 5 seconds.
(3) A buzzer sounds and the CLIP button flashes to indicate that you are in Clip Mode.
(4) Select the DIF button on the right end of the front panel. To disable, press the button again. (DCC-100, UFM-100DCC, and UFM-30DCC only)
(5) The following process control settings are available.

Y LEVEL	White clipping of Y signal
C LEVEL	White clipping of C signal
SETUP/BLACK	Black clipping of Y signal

(6) Adjust the clip setting while viewing the three indicators above the controls and the value on the MEMORY/SET display panel. (See section 5-3-1, "Clip Settings and Indicators" for details.) Pressing the UNITY button below the value resets the clip value to the default.
(7) Repeat step (4) and (5) to make the adjustments.
(8) Once the setting is complete, press the CLIP button to return to Color Correction Mode.

IMPORTANT

It takes about 5 seconds to save setting. The setting data cannot be saved if the unit power is turned off before returning to color correction mode.

Note that the clip settings are retained after returning to Color Correction Mode. For this reason the level cannot be set to higher than the clip level.

The clip settings are retained after the OU is powered off, and the clip settings are also retained in the OU individually for each MU when the multiple MUs are configured.

YPbPr clip adjustment cannot be made in DCC-OUA if DCC-70HS is in GBR clip mode or in Composite clip mode. In this case, change the clip mode to YPbPr on the DCC-70HS front panel.

5-3-1. Clip Settings and Indicators

Relationships between the indicators, controls, and clip settings are as shown below.

① Y White Clip Level
Setting range: 50% to 109%
Default (UNITY): 109%
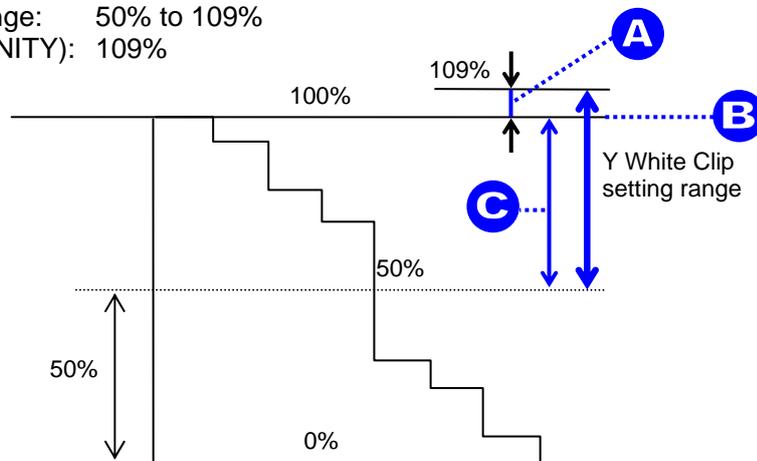
SMPTE 100% color bars when 100% white
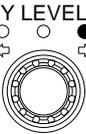
	Controls and Indicators		Display Panel
A	Y LEVEL	Lit orange Flashes at 109% (UNITY).	101% to 109%
B	Y LEVEL	Lit green	100%
C	Y LEVEL	Lit orange Flashes at 50%	50% to 99%
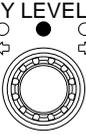
② Y Black Clip Level
　Setting range:　　-8% to 50%
　Default (UNITY):　-8%

SMPTE 100% color bars when 100% black
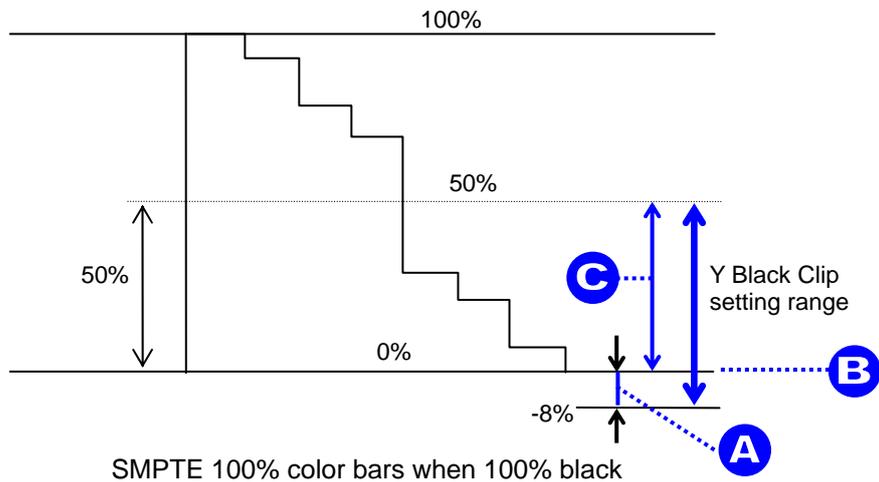
	Controls and Indicators		Display Panel
A	SETUP/BLACK	Lit orange Flashes at -8% (UNITY)	-8% to -1%
B	SETUP/BLACK	Lit green	0%
C	SETUP/BLACK	Lit orange Flashes at 50%	1% to 50%
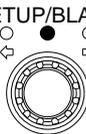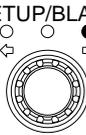
③ C White Clip Level
   Setting range: 50% to 111%
   Default (UNITY): 111%
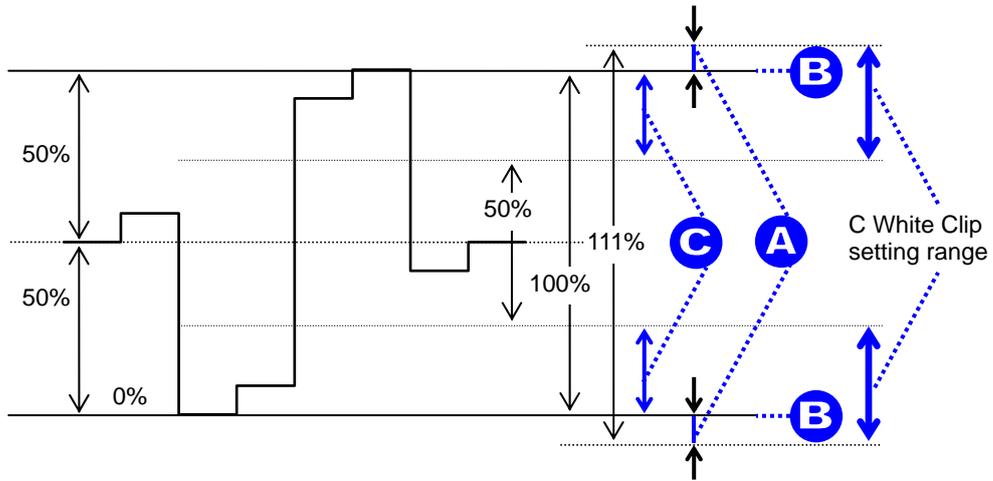
SMPTE 100% color bars when color 700mVp-p
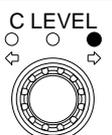
	Controls and Indicators		Display Panel
A	C LEVEL	Lit orange Flashes at 111% (UNITY)	100% to 111%
B	C LEVEL	Lit green	100%
C	C LEVEL	Lit orange Flashes at 50%	50% to 100%
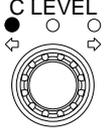
12

5-4. GBR Clip Settings

```
┌─────────────────────────────────────────────────────────────────────┐
│                            IMPORTANT                                  │
├─────────────────────────────────────────────────────────────────────┤
│ The GBR Clip operation is available in controlling DCC-100, UFM-100DCC, and │
│ UFM-30DCC.                                                            │
└─────────────────────────────────────────────────────────────────────┘
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In order to make the clip settings, first you need to change the mode from Color Correction Mode to Clip Mode.

(1) Select an MU by pressing one of the 1 - 4 buttons.
(2) Hold down the CLIP button for at least 5 seconds.
(3) A buzzer sounds and the CLIP button flashes to indicate that you are in Clip Mode.
(4) Select the BAL button on the right end of the front panel. To disable, press the button again.
(5) The following process control settings are available.

Y LEVEL	White clipping of GBR signal
SETUP/BLACK	Black clipping of GBR signal

(6) Adjust the clip setting while viewing the three indicators above the controls and the value on the MEMORY/SET display panel. (See section 5-4-1, "Clip Settings and Indicators" for details.) Pressing the UNITY button below the value resets the clip value to the default.
(7) Once the setting is complete, press the CLIP button to return to Color Correction Mode.

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┌─────────────────────────────────────────────────────────────────────┐
│                              NOTE                                     │
├─────────────────────────────────────────────────────────────────────┤
│ It takes about 5 seconds to save setting. The setting data cannot be saved if the unit │
│ power is turned off before returning to color correction mode.        │
└─────────────────────────────────────────────────────────────────────┘
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5-4-1. Clip Settings and Indicators
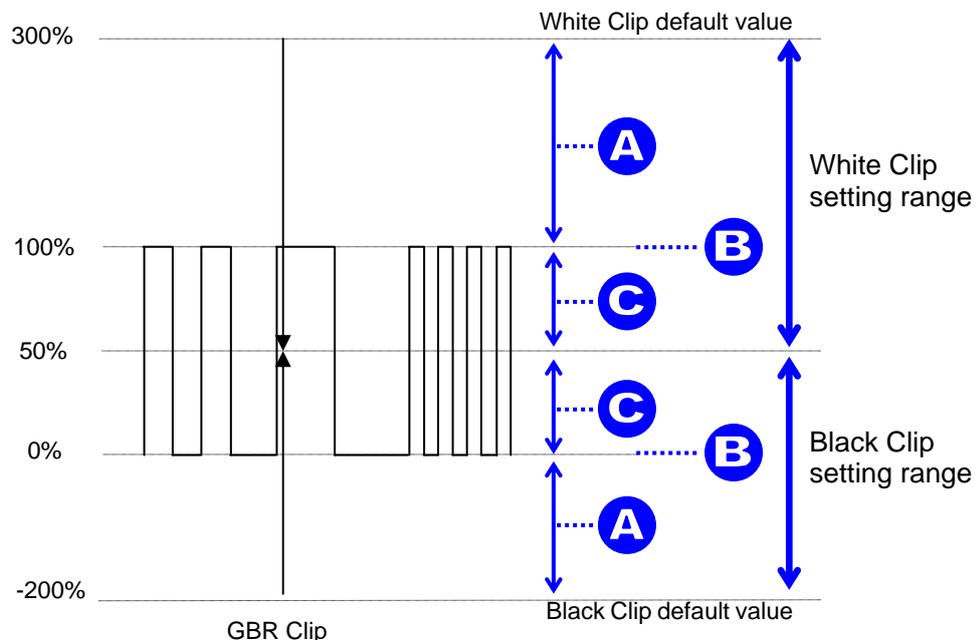
① RGB WHITE LEVEL (YLEVEL)
   Setting range: 50% to 300%
   Default (UNITY): 300%

	Controls and Indicators		Display Panel
A	Y LEVEL	Lit orange Flashes at 300% (UNITY)	RW 101% to RW 300%
B	Y LEVEL	Lit green	RW 100%
C	Y LEVEL	Lit orange Flashes at 50%	RW 50% to RW 99%

② RGB BLACK LEVEL (SETUP/BLACK)
   Setting range: -200% to 50%
   Default (UNITY): -200%

	Controls and Indicators		Display Panel
A	SETUP/BLACK	Lit orange Flashes at -200% (UNITY)	RB -200% to RB -1%
B	SETUP/BLACK	Lit green	RB 0%
C	SETUP/BLACK	Lit orange Flashes at 50%	RB 1% to RB 50%

5-5. Composite (VBS) Clip Settings

IMPORTANT
The Composite (VBS) Clip operation is available in controlling DCC-100, UFM-100DCC, and UFM-30DCC.

In order to make the clip settings, first you need to change the mode from Color Correction Mode to Clip Mode.

(1) Select an MU by pressing one of the $\boxed{1}$ - $\boxed{4}$ buttons.
(2) Hold down the $\boxed{\text{CLIP}}$ button for at least 5 seconds.
(3) A buzzer sounds and the $\boxed{\text{CLIP}}$ button flashes to indicate that you are in Clip Mode.
(4) Select the $\boxed{\text{SEPIA}}$ button on the right end of the front panel. To disable, press the button again.
(5) The following process control settings are available.

Y LEVEL	White clipping of Composite (VBS) signal
SETUP/BLACK	Black clipping of Composite (VBS) signal

(6) Adjust the clip setting while viewing the three indicators above the controls and the value on the MEMORY/SET display panel. (See section 5-5-1, "Clip Settings and Indicators" for details.) Pressing the $\boxed{\text{UNITY}}$ button below the value resets the clip value to the default.
(7) Once the setting is complete, press the $\boxed{\text{CLIP}}$ button to return to Color Correction Mode.

NOTE
If the control model type is changed, it takes about 5 seconds to save the setting. During saving, you cannot operate DCC-OUA.

5-5-1. Clip Settings and Indicators
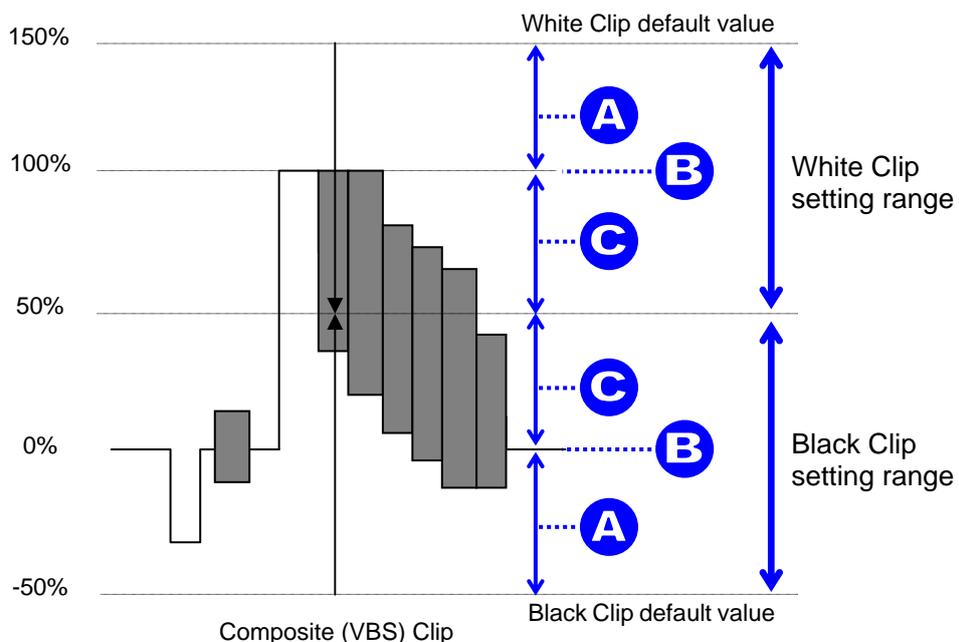
Composite (VBS) Clip

① Composite (VBS) WHITE LEVEL (Y LEVEL)
    Setting range: 50% to 150%
    Default (UNITY): 150%

	Controls and Indicators		Display Panel
A	Y LEVEL ○ ○ ●	Lit orange Flashes at 150% (UNITY)	VW 101% to VW 150%
B	Y LEVEL ○ ● ○	Lit green	VW 100%
C	Y LEVEL ● ○ ○	Lit orange Flashes at 50%	VW 50% to VW 99%

② Composite (VBS) BLACK LEVEL (SETUP/BLACK)
    Setting range: -50% to 50%
    Default (UNITY): -50%

	Controls and Indicators		Display Panel
A	SETUP/BLACK ● ○ ○	Lit orange Flashes at -50% (UNITY)	VB -50% to VB -1%
B	SETUP/BLACK ○ ● ○	Lit green	VB 0%
C	SETUP/BLACK ○ ○ ●	Lit orange Flashes at 50%	VB 1% to VB 50%

5-6. Display Panel

5-6-1. Menu List

The setting of each item is displayed on the 8-digit display panel.

Item	Display	
MU selection from MU1-MU4 (*1)	DCC-70HS DCC-100 UFM30DCC	
EVENT MEMORY SAVE	SAVE 00 - SAVE 99	
EVENT MEMORY LOAD	LOAD 00 - LOAD 99	
INPUT	If the model type is DCC-70HS or UFM-30DCC	No display
	If the model type is DCC-100	COMPOSIT SD-SDI
CLIP	If the model type is DCC-70HS	YBR ON
	If the model type is DCC-100 or UFM-30DCC	RGB ON/OFF YBR ON/OFF VBS ON/OFF
SPLIT	OFF, MODE1, MODE2, MODE3 (available only when the model type is set to DCC-100 or UFM-30DCC.)	
VIDEO LEVEL	VL 0% - VL 200% (UNITY 100%)	
Y LEVEL	YL 0% - YL 200% (UNITY 100%)	
C LEVEL (when in BAL/DIF Correction Mode)	CL 0% - CL 200% (UNITY 100%)	
SEPIA LEVEL (when in SEPIA Correction Mode)	SL 0% - SL 100% (UNITY 25%)	
SETUP/BLACK	SB -25% - SB 25% (UNITY 0%)	
HUE (when in BAL/DIF Correction Mode)	HUE-180° - HUE 180° (UNITY 0°)	
SEPIA COLOR (when in SEPIA Correction Mode)	SC-180° - SC 180° (UNITY -160°)	

Item	Display
WHITE LEVEL R	WR 0% - WR 200% (UNITY 100%)
WHITE LEVEL G	WG 0% - WG 200% (UNITY 100%)〉
WHITE LEVEL B	WB 0% - WB 200% (UNITY 100%)
BLACK LEVEL R	BR 0% - BR 200% (UNITY 100%)
BLACK LEVEL G	BG 0% - BG 200% (UNITY 100%)
BLACK LEVEL B	BB 0% - BB 200% (UNITY 100%)
GAMMA LEVEL R	GR 0% - GR 200% (UNITY 100%)
GAMMA LEVEL G	GG 0% - GG 200% (UNITY 100%)
GAMMA LEVEL B	GB 0% - GB 200% (UNITY 100%)
*GAMMA CURVE WHITE	GAMMA W
*GAMMA CURVE CENTER	GAMMA C
*GAMMA CURVE BLACK	GAMMA B
CORRECTION MODE BAL	BALANCE
CORRECTION MODE DIF	DIFFERENTIAL (scrolled display)
CORRECTION MODE SEPIA	SEPIA
*RGB CLIP WHITE CLIP (Y LEVEL) adjustment	RW 50% - RW 300% (UNITY 300%)
*RGB CLIP BLACK CLIP (SETUP/BLACK) adjustment	RB -200% - RB 50% (UNITY -200%)
YBR CLIP Y WHITE CLIP (Y LEVEL) adjustment	YW 50% - YW 109% (UNITY 109%)
YBR CLIP Y BLACK CLIP (SETUP/BLACK) adjustment	YB -8% - YB 50% (UNITY -8%)
YBR CLIP CROMA CLIP (C LEVEL) adjustment	CW 50% - CW 111% (UNITY 111%)
*VBS CLIP WHITE CLIP (Y LEVEL) adjustment	VW 50% - VW 150% (UNITY 150%)
*VBS CLIP BLACK CLIP (SETUP/BLACK) adjustment	VB -50% - VB 50% (UNITY -50%)
CLIP MEMORY SAVE	CLIP1-CLIP9
CLIP MEMORY LOAD	CLIP1-CLIP9
Channel selection in Dual Channel mode (*1)	Connect1 Connect2
Version information (*1) (Hold down the GROUP ADJ button for at least 5 seconds for displaying the version information. To cancel, press the button again.)	DCC-OUA Ver2.00 or later

*Available in controlling DCC-100, UFM-100DCC, and UFM-30DCC.
(*1) UFM-30DCC is supported with DCC-OUA Ver2.00 or later.
       Dual Channel control is supported with DCC-OUA Ver3.00 or later

5-6-2. SELECT Button

Repeatedly pressing the SELECT button displays the settings one after the other.

5-6-2-1. When in Correction Mode

When in BALANCE or DIFFERENTIAL Correction Mode, repeatedly pressing the SELECT button displays the settings one after the other in the following order.
    VIDEO LEVEL→Y LEVEL→C LEVEL→SETUP/BLACK→HUE→
    WHITE LEVEL R→WHITE LEVEL G→WHITE LEVEL B→
    BLACK LEVEL R→BLACK LEVEL G→BLACK LEVEL B→
    GAMMA LEVEL R→GAMMA LEVEL G→GAMMA LEVEL B

When in SEPIA Correction Mode, repeatedly pressing the SELECT button displays the settings one after the other in the following order.
    VIDEO LEVEL→Y LEVEL→SEPIA LEVEL→SETUP/BLACK→SEPIA COLOR→
    →GAMMA LEVEL G

5-6-2-2. When in Clip Mode

When in RGB Clip Mode, repeatedly pressing the SELECT button displays the settings one after the other in the following order.
    RGB WHITE CLIP→RGB BLACK CLIP
*DCC-100, UFM-100DCC, and UFM-30DCC only

When in YPbPr Clip Mode, repeatedly pressing the SELECT button displays the settings one after the other in the following order.
    Y WHITE CLIP→CHROMA CLIP→Y BLACK CLIP

When in Composite (VBS) Clip Mode, repeatedly pressing the SELECT button displays the settings one after the other in the following order.
    Composite WHITE CLIP→Composite BLACK CLIP
*DCC-100, UFM-100DCC, and UFM-30DCC only.

NOTE

Repeatedly pressing the SELECT button displays the settings one after the other. When it reaches the end, it returns to the top item. If the control is turned while displaying settings using the SELECT button, the changed setting is displayed. Pressing the SELECT button after that displays the next setting of the setting displayed before the control is turned.

Example: Pressing the SELECT button and adjusting SETUP/BLACK while Y LEVEL (YL 100%) is displayed shows "SB 10%". Pressing the SELECT button after that displays "HUE14 °."

5-7. Event Memory

5-7-1. About Event Memory

Event Memory allows you to save the DCC-OUA settings and load them when needed.
The EVENT MEMORY can store 99 (1-99) correction settings and 9 clip settings, all of which are common among MUs (MU1 to MU4). Which MU is selected is not saved to the events, so that, for example, you can save an event when connecting to MU1, and then switch the connection to MU2, 3 or 4 and load this event to it.
Note that "Event 0" is reserved for the factory default set, so it cannot be overwritten.

5-7-2. Saving Color Correction Settings

Once the setting is made, follow the instructions below for saving the setting.

(1) Press the SAVE button. A bleep sounds and the event memory number flashes.
To cancel saving the settings, press CLEAR.
(2) Select the memory number from SAVE1 to SAVE99 (cannot be saved to 0) using the ⊟ and ⊞ buttons.

A bleep sounds every time the button is pressed. Press ⊞ and ⊟ to increment and decrement the memory number. Holding down ⊞ or ⊟ for several seconds quickly increases or decreases the number. Pressing ⊟ and ⊞ at the same time sets the memory number to 0.

(3) Press the SAVE button. After a bleep, the event memory number lights up and the data is saved to the memory.

NOTE
It takes about 5 seconds to save correction data. During saving, you cannot operate DCC-OUA.

- Press the CLEAR button to clear the event memory number from the display panel.
- If any of the loaded value is changed, the event memory number is cleared from the display panel.

5-7-3. Loading Correction Mode Settings

Follow the instructions below for loading the correction mode settings. Note that the current settings will be lost after loading the settings.

(1) Select an MU to be controlled by pressing one of the 1 - 4 buttons.
(2) Press the LOAD button. A bleep sounds and the event memory number flashes.
To cancel, press CLEAR.
(3) Select the memory number from LOAD0 to LOAD99 using the ⊟ and ⊞ buttons. (If set to 0, all settings are loaded with the value of UNITY settings.)

A bleep sounds every time the button is pressed. Press ⊞ and ⊟ to increment and decrement the memory number. Holding down ⊞ or ⊟ for several seconds quickly increases or decreases the number. Pressing the ⊟ and ⊞ buttons at the same time sets the memory number to LOAD0.

(4) Press the LOAD button. After a bleep, the event memory number lights up and the data is loaded from the memory.
- Press the CLEAR button to clear the event memory number from the display panel.
- If any of the loaded value is changed, the event memory number is cleared from the display panel.

5-7-4. Saving Clip Setting

Separately from the event memory for ordinary corrections, nine events (clip number: CLIP0-CLIP9) are specially provided for the clip level settings.
Note that "CLIP0" is reserved for the factory default set, so it cannot be overwritten.

(1) Press the SAVE button in Clip Mode. (See section 5-3 to 5-5 for Clip Mode.)
(2) All three indicators above the controls are turned off and the clip number (CLIP0-CLIP9) flashes on the display panel. (The clip setting cannot be made in this status.)
(3) Select the destination clip number from [CLIP0] to [CLIP9] (cannot be saved to [CLIP0]) using the − and + buttons.
(4) Press the SAVE button again to save the data.

NOTE
It takes about 5 seconds to save clip data. During saving, you cannot operate DCC-OUA.

● To cancel, press CLEAR. The setting is displayed on the display panel again.

5-7-5. Loading Clip Setting

(1) Press the LOAD button in Clip Mode.
(2) All three indicators above the controls are turned off and the clip number (CLIP0-CLIP9) flashes on the display panel. (The clip setting cannot be made in this status.)
(3) Select the clip number you wish to load using the − and + buttons.
(4) Press the LOAD button again to load the data. (Loading [CLIP0] resets all three clip levels to the defaults.) To cancel, press CLEAR. The setting is displayed on the display panel again. Selecting "CLIP0" loads factory default.

NOTE
If you wish to clear the display after saving or loading event data, press CLEAR. The display does not cleared by pressing SELECT after the event operation.

6. Specifications and Dimensions

6-1. Specifications

Proc Amp

Video Level	0 to 200%
Y Level	0 to 200%
Chroma level	0 to 200%
Setup Level	±150mV or more
HUE	±180°

Color Correction (in Balanced / Differential/Sepia mode)

White Level (RGB)	0% to 200% (input signal)
Black Level (RGB)）	0% to 200% (input signal)
Gamma Level (RGB)	75% to 125% (input signal)
Gamma Curve*	WHITE, CENTER, BLACK

YBR Clip

Y LEVEL Clip	Approx. 50% to 109%
SETUP/BLACK Clip	Approx. -8% to 50%
C LEVEL Clip	Approx. 50% to 111%

GBR Clip

WHITE Clip	Approx. 50% to 300%
BLACK Clip	Approx. -200% to 50%

Composite (VBS) Clip*

WHITE Clip	Approx. 50% to 150%
BLACK Clip	Approx. -50% to 50%

Event Memory (Memory is shared by all MUs)

99 (For color correction), 9 (For clip), 1 (clip default value, read only) event data

Temperature	10°C to 40°C
Humidity	30% to 90% (no condensation)
Power	AC100 to 240V ±10%, 50/60Hz
Consumption	17VA (8.5W)
Weight	Approx. 2.0kg
Dimensions	430 (W) x 44 (H) x 120 (D) mm, EIA 1RU

* This function is available when controlling DCC-100, UFM-100DCC, and UFM-30DCC.

6-2. External Dimensions

(All dimensions in mm.)

39 · 352 · 39

430

462

480
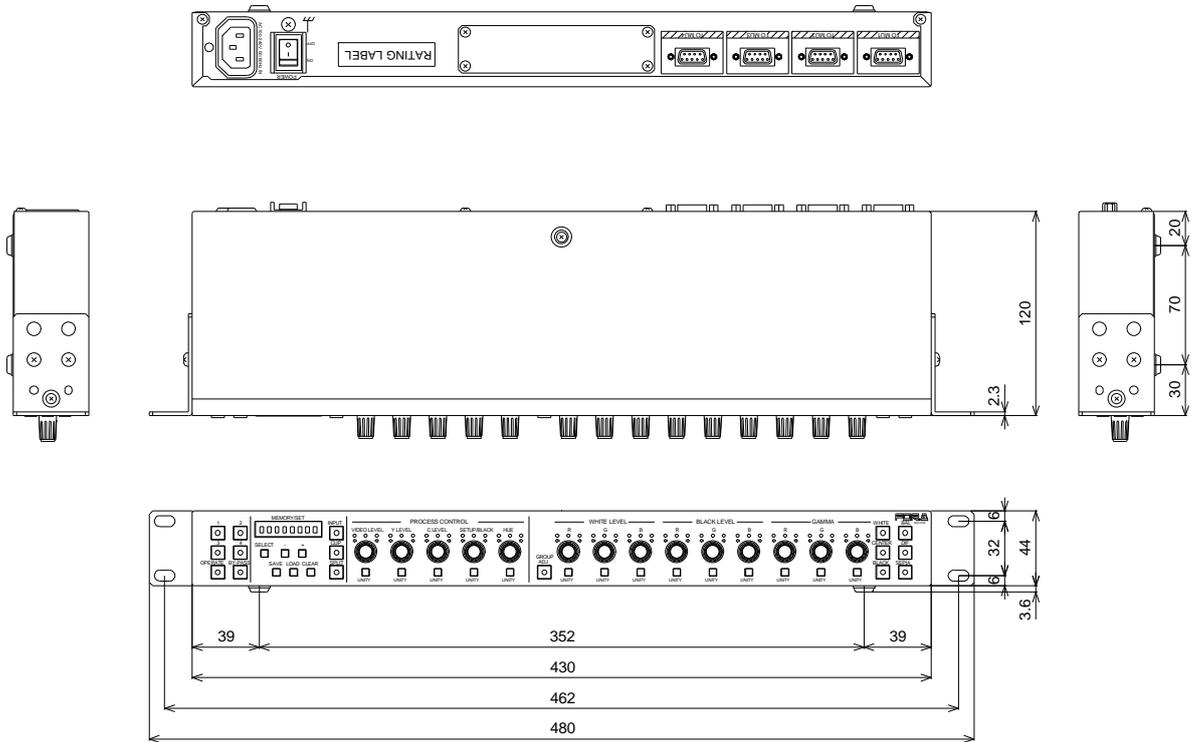
Warning

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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*The contents of this manual are subject to change without notice.