FOR.A
INNOVATIONS IN VIDEO
and AUDIO TECHNOLOGY

OPERATION MANUAL

FA-90RU

Remote Control Unit

7th Edition

(Version 5.0.1 - Higher)

FOR-A COMPANY LIMITED

Precautions

Important Safety Warnings

[Power]

 Caution	Operate unit **only** on the specified supply voltage.
	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.
	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]

	**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.
 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.
 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]

 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]

 Caution	To rack mount or ground the unit, or to install rubber feet, **do not** use screws or materials other than those supplied. 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]

 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

FA-90RU 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
FA-90RU	1	
Rack Mount Brackets	1 set	
AC Cord	1	
Operation Manual	1	

Check

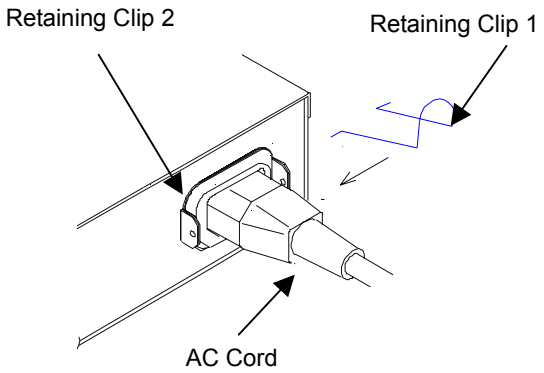
Check to ensure no damage has occurred during shipment. If damage has occurred, or items are missing, inform your supplier immediately.

Rack Mounting

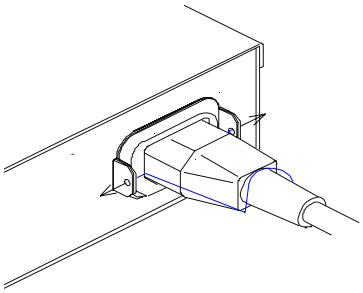
The FA-90RU can be mounted to EIA standard rack units. When rack mounting a unit, remove the rubber feet and use the accessory rack mount brackets (rack ears).

Installing the AC Cord Retaining Clips

1) Securely plug the AC cord into the AC inlet
2) Attach Retaining Clip 1 from the side of the AC cord.



3) Install the both ends of Retaining Clip 1 into the holes of Retaining Clip 2.



The installation is now complete.

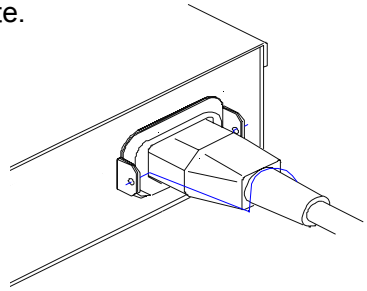


Table of Contents

1. Prior to Starting

1-1. Welcome

Congratulations! By purchasing FA-90RU 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. About the FA-90RU

FA-90RU are the Remote Controller units, which can control FA-9000/9100/9100RPS Frame Synchronizer remotely.

- Remote control of FA-9000/9100/9100RPS and optional units (FA-90UD, FA-90CC, FA-90DE-D, FA-91DE-ED, FA-90DV, FA-90HDV, FA-91LG, FA-91ALC and FA-91FRC).
- 30 user events for saving / loading setting
- Multiplex control from multiple FA-90RU
- Selectable two control modes (MULTI and PRIORITY)
- Up to 100 units of FA-9000/9100/9100RPS configurable.

NOTE
To connect FA-90RU to FA-9000, the version of FA-9000 must be 1.5.1 or higher. The version is displayed on the menu display at startup. If the version of your FA-9000 is older than 1.5.1, please contact your FOR-A supplier.

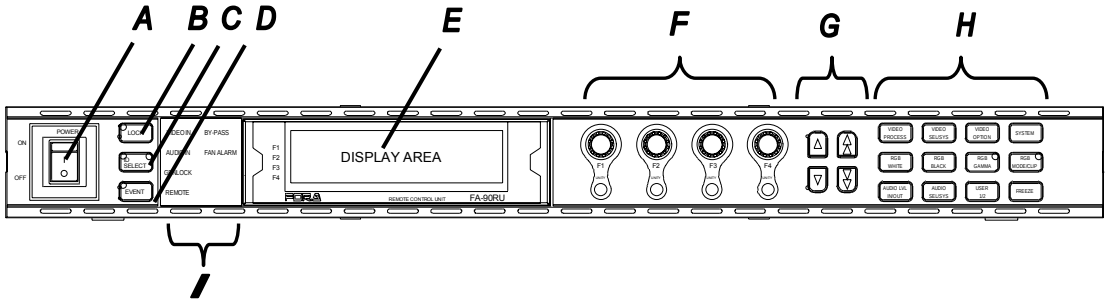
1-3. About This Manual

This manual is intended to help the user easily operate the FA-90RU 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

Connectors and indicators located on the front panel of the FA-90RU are as shown and described in the figure and text below.

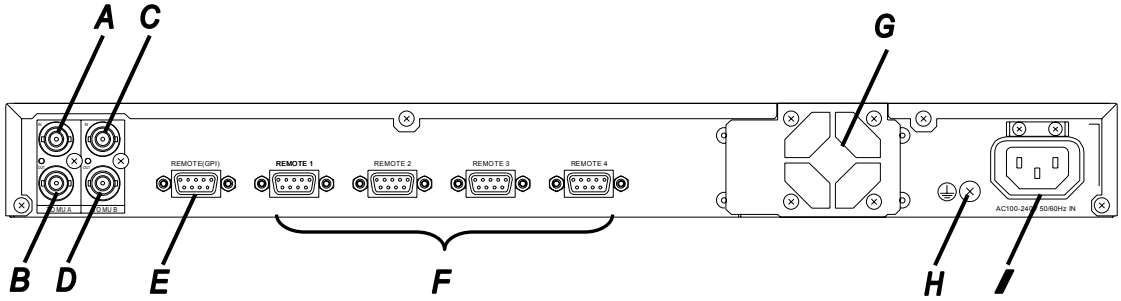


Item	Name	Description		
A	POWER switch	Used to turn unit power ON / OFF. Power is applied when the switch is set to "|" position.		
B	LOCK button	Lights up when pressed, and the front panel buttons and controls except the LOCK button are disabled. To enable the front panel buttons and controls, press and hold the LOCK button for several seconds.		
C	ID Select button	Used to select the FA-9000/9100/9100RPS ID number.		
D	EVENT button	Used to save and load events.		
E	Menu display	Used to display menus and make operational settings (fluorescent display).		
F	Controls (F1-F4) UNITY buttons	Used to select menus and change operational settings. See section 3-3. "Menu Operations" for details. Press the UNITY button to return to the default settings.		
G	Arrow buttons	Single-arrow buttons		Used to move within menus (parameters). (Unlit when there is no (more) option.)
		Double-arrow buttons		Used to move between menus. (Unlit when there is no (more) option.)
H	Menu buttons	Used to select menus.		
I	Status Indicator	VIDEO IN	Lit green	A video signal set at menu is present.
			Unlit	No video signal set at menu is present.
		AUDIO IN	Lit green	Audio signal is present.
			Unlit	No audio signal is present.
		GENLOCK	Lit green	FA-9000/9100/9100RPS signal is synced to external reference signal input.
			Unlit	No external reference signal is present.
		REMOTE	Lit green	The FA-9000/9100/9100RPS is in the REMOTE operation mode.
			Flash	Communication problem with the main unit.
			Unlit	The FA-9000/9100/9100RPS is in the front panel (LOCAL) operation mode.
		BY-PASS	Lit red	Lit red when set to BY-PASS.
			Unlit	Unlit when set to OPERATE.
		FAN ALARM	Lit red	A fan failure has occurred in the FA-9000/9100/9100RPS. Turn off the power of the unit and consult your supplier if a fan replacement is required.
			Unlit	Cooling fans are working properly.

NOTE
If the REMOTE indicator flashes, check the connection with the main unit referring to the section 2-3. “Connecting with FA-9000/9100/9100RPS”. All the indicators tell us about the state of FA-9000/9100/9100RPS. If the FA-90RU is not connected with the FA-9000/9100/9100RPS properly, only the REMOTE indicator flashes or all indicators remain unlit. The RGB WHITE, RGB BLACK, RGB GAMMA, and RGB MODE/CLIP menu buttons are available with the FA-90CC option. The VIDEO OPTION menu button is available with the FA-90UD, FA-90DV, FA-90HDV or FA-91LG option.

2-2. Rear Panel

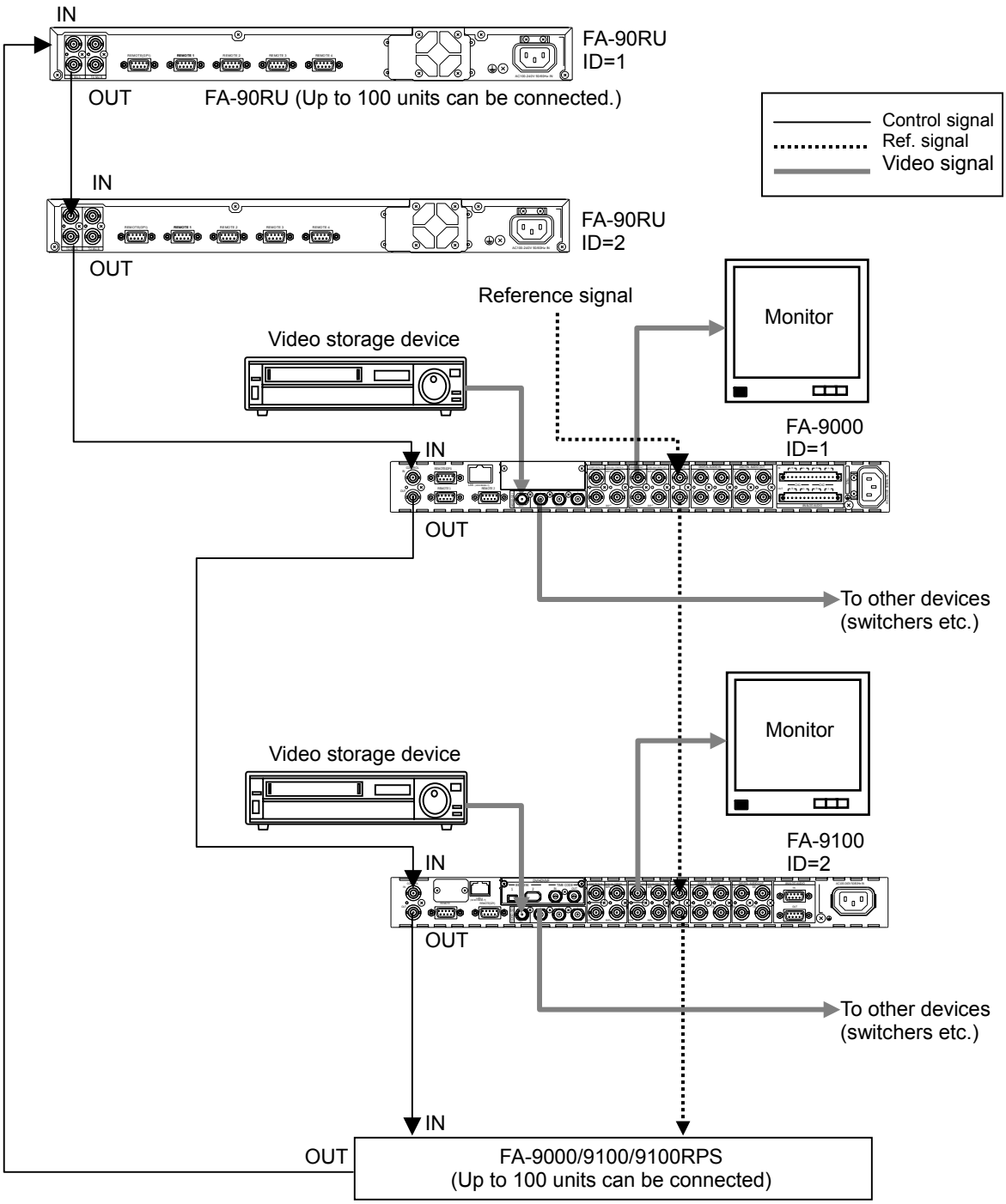
Connectors and indicators located on the rear panel of the FA-90RU are as shown and described in the figure and text below.



Item	Name	Description
A	TO MU A IN	Used to connect to the FA-9000/9100/9100RPS CONTROL OUT connector.
B	TO MU A OUT	Used to connect to the FA-9000/9100/9100RPS CONTROL IN connector.
C	TO MU B IN	BNC port for system expansion (not used).
D	TO MU B OUT	BNC port for system expansion (not used).
E	REMOTE (GPI)	GPI port for system expansion (not used).
F	REMOTE1 - 4	RS422 port for system expansion (not used).
G	Cooling Fan	Used to air cool unit to prevent overheating. Do not block fan intake with other equipment or objects. This fan serves to prevent overheating from heat generated inside the unit. It blows air out through the rear of the unit, so make sure that the fan vents are not blocked.
H	Ground Terminal	Used to ground unit and protect operators from electrical shock.
I	AC IN (100-240VAC, 50/60Hz)	Used for connection to AC power source via accessory power cord.

2-3. Connecting with FA-9000/9100/9100RPS

Up to 100 units of FA-9000/9100/9100RPS can be connected to the FA-90RU in daisy chain by using 75 ohm BNC cables.



IMPORTANT
Two BNC cables (RG-59A/U or higher) are required even to connect a single device to the FA-90RU. The Genlock loopthrough connector of the last unit must be 75 Ω terminated if reference connection to other equipment is not made. Do not set a same ID between MUs and between RUs.

3. Front Panel Operations

3-1. Power ON

Turn on the power of the FA-9000/9100/9100RPS and FA-90RU after all system connections are complete. The menu screens as below will be displayed.

```
-    MU SELECT    -
SELECTED ID:1
UNIT  :FA-9100RPS
NAME  :
STATE:Connected
```

FA-9100RPS is ready for connection.

```
-    MU SELECT    -
SELECTED ID:1
UNIT  :
NAME  :
STATE:Disconnected
```

The device is not ready for connection.

3-2. ID Setting (For Connecting Multiple FA-90RU)

If you are connecting multiple FA-90RU in your system, it is necessary to set IDs for each FA-90RU. To set the ID, first, press and hold the ID SELECT button. The RU ID SELECT menu is displayed. Use the F1 to set ID number. All FA-90RU ID numbers in the system must be unique.
The setting range of ID number is 1 to 100.

```
-    RU ID SELECT    -
SELECT ID:1
```

Menu Button

ID SELECT

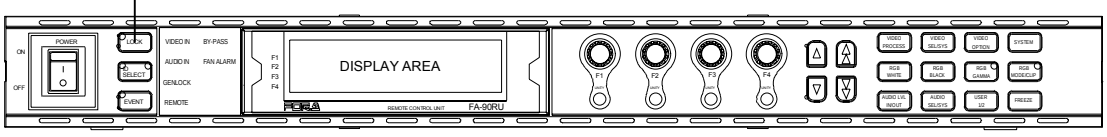
IMPORTANT
If you are connecting multiple FA-90RU, make sure not to set duplicate ID for FA-90RU. The duplicate ID numbers obstruct the proper operation.

3-3. Menu Operations

This section explains how to select menus and change parameter values.

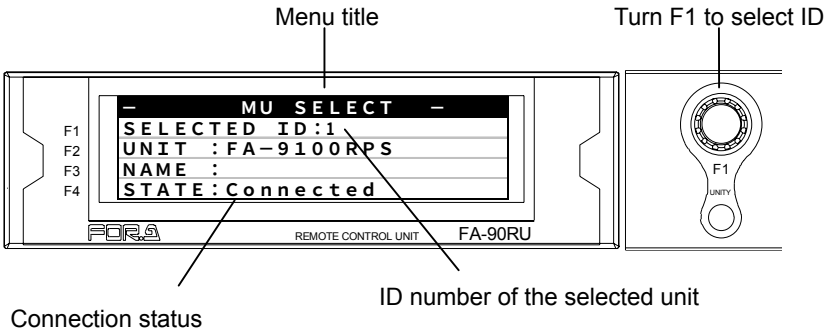
IMPORTANT
Before starting operations, make sure that the front panel controls are not locked (disabled). The LOCK button is lit when the front panel is disabled. To enable, press and hold the LOCK button for several seconds.

Lock button



3-3-1. Selecting FA-9000/9100/9100RPS

Turn F1 to select an ID number of the FA-9000/9100/9100RPS to control.



The connection statuses are indicated as shown below.

Indication	Connection
Connecting…	FA-90RU is going to connect to the selected FA-9000/9100/9100RPS.
Connected	The FA-90RU is connected to the selected FA-9000/9100/9100RPS and ready for remote control.
Disconnected	The FA-90RU cannot connect to the selected FA-9000/9100/9100RPS.
Ring Disconnected	A connection error has occurred.
MU is in Local Mode	The selected FA-9000/9100/9100RPS is operated in local mode.

IMPORTANT

If you are connecting multiple FA-9000/9100/9100RPS units, make sure that the ID numbers of FA-9000/9100/9100RPS units are not overlapped. The system will not work properly if multiple units have the same ID number.

If “Disconnected” is displayed, check the ID number of the FA-9000/9100/9100RPS. All buttons, except the LOCK button and ID SELECT button, are disabled while “Disconnected” is displayed. Also, check the cable connection between FA-9000/9100/9100RPS and FA-90RU.

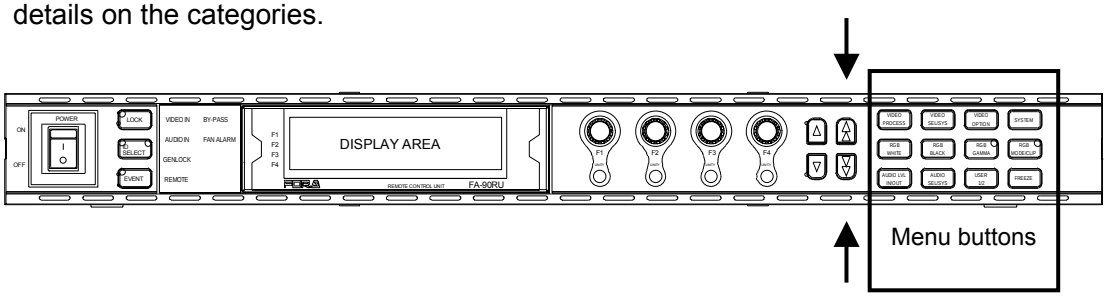
If the message "MU is in Local Mode" is displayed, you cannot control FA-9000/9100/9100RPS from FA-90RU. Make sure REMOTE/LOCAL setting in FA-9000/9100/9100RPS is set to **REMOTE**.

See FA-9000/9100/9100RPS Operation Manual for details about the ID number and REMOTE/LOCAL settings.

You cannot set the user name of FA-9000/9100/9100RPS on FA-90RU. See FA-9000/9100/9100RPS Operation Manual for user name setting.

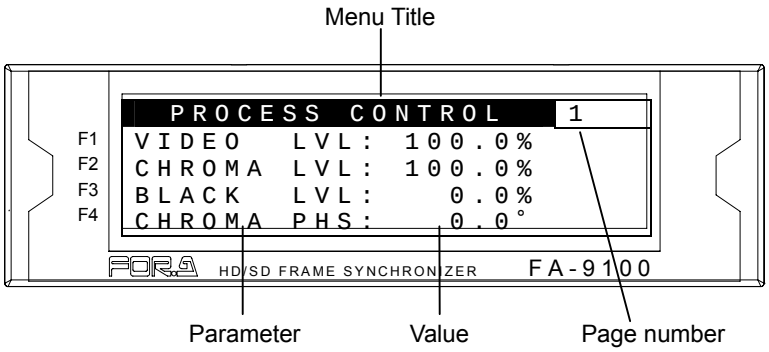
3-3-2. Accessing Menus

Pressing a menu button displays the menu marked on the button on the menu display. Menus are divided in categories. Each menu button allows you to access corresponding one, two or three categories. Pressing the menu button once will light up the button green and displays the first menu in the first category of the button. Pressing the button twice will light up the button orange and displays the first menu in the second category. Pressing the button three times will light up the button red and displays the first menu in the third category. The double-arrow buttons work in the same manner.
In each category, there are one or more menus. See next section "Menu Buttons" for the details on the categories.



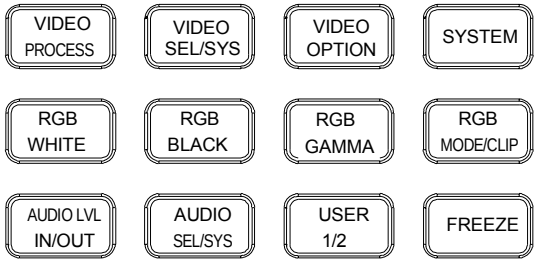
To display menus that are not accessible by the menu buttons or the double-arrow buttons in categories, select the category first by a menu button and then select the menu using single-arrow buttons.

When a menu button is pressed, the button lights up, and the menu is displayed on the screen as shown below. In the example below, the VIDEO PROCESS menu button is pressed, and the PROCESS CONTROL menu is displayed.



NOTE
Some menu buttons can be used to access two different menus. To access the first menu, press the button once (the button lights up green). Press the button once more to display the second menu (the button lights up orange). Use the double arrow button to move between menus.

3-3-3. Menu Buttons



Menu Button	Category 1 (lit green)	Category 2(lit orange)	Category 3 (lit red)
VIDEO PROCESS	PROCESS CONTROL	—	—
RGB WHITE	*###(RGB) WHITE LEVEL	—	—
RGB BLACK	*###(RGB) BLACK LEVEL	—	—
RGB GAMMA	*###(RGB) GAMMA LEVEL	*###(RGB) GAMMA SETTING	—
RGB MODE/ CLIP	*###(RGB) CORR MODE SELECT	*###(RGB) CLIP SETTING	—
VIDEO SEL/SYS	VIDEO INPUT SELECT COMPONENT MODE SEL	SD SYSTEM PHASE SD SYSTEM POSITION HD SYSTEM PHASE HD SYSTEM POSITION FRAME DELAY SETTING HD/SD LINE MASK SEL FREEZE SETTING VIDEO SYSTEM SET	—
VIDEO OPTION	** MODE SELECT ** OUTPUT MODE ** EFFECT ** H/V ADJUST ** CROP ADJUST ** SIDE CUT COLOR	# DV/HDV OPERATE MODE # TIMECODE SELECT # TC GENERATE SET # DV AUDIO OUTPUT # VTR CONTROL	## LOGO CONTROL ## LOGO INSERT ## LOGO SOURCE ## LOGO PORT ###ALC CONTROL ###ALC SETUP
SYSTEM	OPERATE/BY-PASS TEST SIGNAL PANEL SETUP REMOTE MODE CTRL MU SELECT CTRL MU STATUS GPI SETTING	—	—
AUDIO LVL IN/OUT	ANALOG IN LEVEL ANALOG IN GAIN AES IN GAIN SDI IN GAIN *** DOLBY IN GAIN *** DOLBY Downmix GAIN # DV/HDV IN GAIN	MASTER OUT GAIN ANALOG OUT LEVEL ANALOG OUT GAIN	—
AUDIO SEL/SYS	AUDIO OUTPUT SEL ASRC INPUT SEL *** DOLBY DEC INPUT SEL **** DOLBY ENC INPUT SEL **** AES OUTPUT SELECT **** SDI OUTPUT SELECT	AUDIO SYSTEM SET AUDIO EMBED SDI GROUP SELECT AES IN HYST SYNCHRO DIGI AUDIO OUT MODE AUDIO DELAY SETTING AUD DELAY UNIT AUD DELAY MULTIPLY AUD DELAY OFFSET ANALOG INPUT TERM OUTPUT STEREO MODE OUTPUT POLARITY *** DOLBY DEC SETTINGS **** DOLBY ENC SETTINGS	—
USER 1/2	USER SHORT CUT 1	USER SHORT CUT 2	—

* This menu and menu button are enabled only when the FA-90CC is installed.
** This menu and menu button are enabled only when the FA-90UD is installed.
*** This menu and menu button are enabled only when the FA-90DE-D or FA-91DE-ED is installed.
**** This menu and menu button are enabled only when the FA-91DE-ED is installed.
# This menu and menu button are enabled only when the FA-90DV or FA-90-HDV is installed.
This menu and menu button are enabled only when FA-91LG is installed.
This menu and menu button are enabled only when FA-91ALC is installed.

3-3-4. Arrow Buttons

◆ **Double-arrow buttons (up and down)**
The double-arrow buttons are used to select menu categories (the same as menu buttons). Holding down the double-arrow button displays the menu categories one after another. When it comes to the last menu category, the light goes off.

◆ **Single-arrow buttons (up and down)**
The single-arrow buttons are used to select a menu within categories. Holding down the single-arrow button displays the menus in the category one after another if there are more than one menu.
When it comes to the last menu, the light goes off.

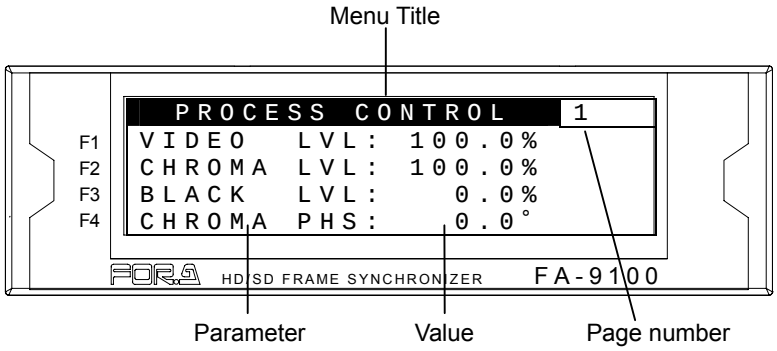
◆ **Single-arrow buttons after using menu buttons**
Pressing the single-arrow buttons after selecting a category using menu buttons enables to select menus in the category.
When it comes to the last menu, the light goes off.

◆ **Single-arrow buttons after using double-arrow buttons**
Pressing the single-arrow button after using the double-arrow buttons enables to select menus in the category and also menus across the categories.
When it comes to the last menu, the light goes off.

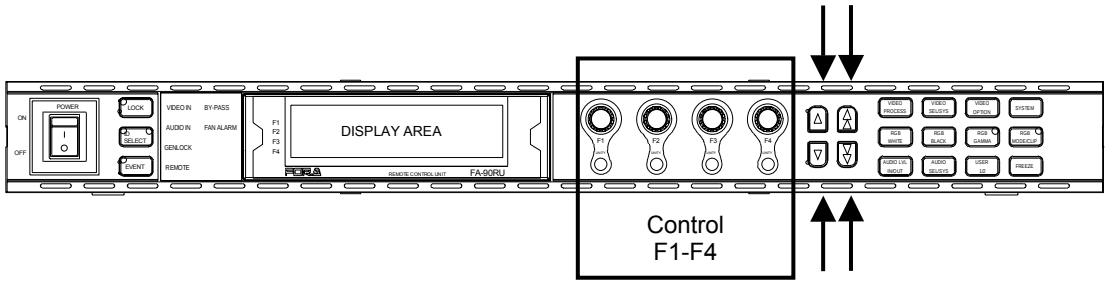
◆ **Sequential setting display**
Press the double-up-arrow button until it stops. The FA-9100/RPS Information (default screen) is displayed. Then hold down the single-down-arrow button. It displays all settings of menus one after another.

3-3-5. Changing Settings

Once the desired menu is displayed, use the controls (F1-F4) to change the settings.



For example, if you wish to change the VIDEO LEVEL (see the figure above) parameter, turn F1 (see the figure below) clockwise or counterclockwise. In the same way, turn F2 to change the CHROMA LEVEL parameter and F4 to change the CHROMA PHASE parameter.

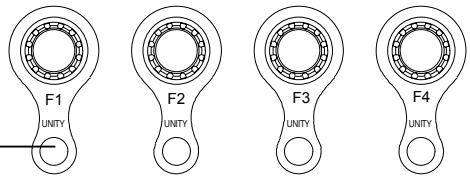


If there are more than five parameters in the menu, press the single arrow buttons on the front panel to move between parameters. If the menu consists of multiple pages, use the double arrow buttons on the front panel to move between pages. (The arrow buttons are unlit if there are no parameters or pages to choose.)

3-3-6. Default Settings

Press the UNITY button below each control (F1-F4) to reset the parameter to the default value. The indicator lights up orange. The indicator also lights up when the parameter is reset using the control.

Press the UNITY button to reset the parameter. The indicator lights up orange.

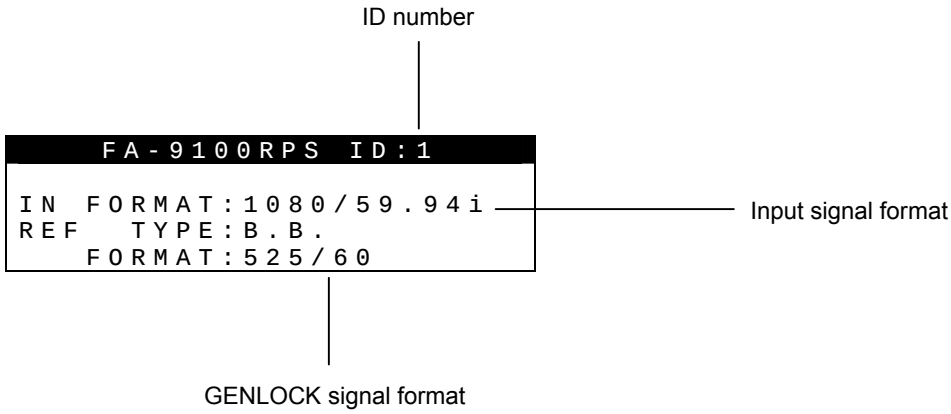


The UNITY buttons work differently from the above mentioned in the following menus: TC GENERATE SET (4-15-3), VTR CONTROL (4-15-5), ALC CONTROL (4-16-1), LOGO CONTROL (4-17-1), LOGO SOURCE (4-17-3), LOGO PORT (4-17-4), CTRL MU SELECT (4-23) and AUDIO DELAY SETTING (4-26-22). See each section for details.

4. Menu Description

4-1. FA-9000/9100/9100RPS Infomation

Press the double arrow button until it stops, then the ID number of the unit, the signal format for the input video signal, and the signal type for the input to the GENLOCK will be displayed. It displays "None" if there is no input signal or it cannot detect any input signal.



4-2. PROCESS CONTROL

```
PROCESS CONTROL  1
VIDEO   LVL: 100.0%
CHROMA  LVL: 100.0%
BLACK   LVL:   0.0%
CHROMA  PHS:   0.0°
```

Menu Button

VIDEO PROCESS

Parameter	Default	Setting Range (Steps)	Description
VIDEO LVL (Video Level)	100.0%	0.0 to 200.0% (0.1%)	Adjusts the video level.
CHROMA LVL (Chroma Level)	100.0%	0.0 to 200.0% (0.1%)	Adjusts the chrominance level.
BLACK LVL (Black Level)	0.0%	-20.0 to 100.0% (0.1%)	Adjusts the black level.
CHROMA PHS (Chroma Phase)	0.0°	-179.8 to 180.0° (0.2°)	Adjusts the chrominance phase.

The following menu appears when MODE SELECT is set to **SEPIA** (FA-90CC or FA-91ALC option is required).

```
PROCESS CONTROL  1
VIDEO   LVL: 100.0%

BLACK   LVL:   0.0%
```

Note
When a logo is inserted to video using the FA-91LG option, CHROMA LVL, BLACK LVL and CHROMA PHS settings for the video are also applied to the logo image.

4-3. Color Correction (FA-90CC/FA-91ALC)

IMPORTANT
Before adjusting WHITE LEVEL, BLACK LEVEL and GAMMA LEVEL, select a signal type (mode) at CORR MODE SELECT. (See section 4-3-5.) When FA-91ALC is used, the Color Correction menu can be manually set when the OPERATE item in ALC SETUP is set to **OFF** or **HOLD**.

4-3-1. WHITE LEVEL

Menu Button

RGB
WHITE

Parameter	Default	Setting Range (Steps)	Description
RED, GREEN, BLUE (RGB White Level)	100.0%	0.0 to 200.0% (0.5%)	Adjusts the white level of R, G, and B components separately.
GROUP ADJUST (Group Adjustment)	100.0%	0.0 to 200.0% (0.5%)	Adjusts the white level of all R, G, and B by the same amount using one control.

Disabled when MODE SELECT is set to **SEPIA**. (The button is disabled.) See section 4-3-5 “CORR MODE SELECT.”

When FA-91ALC is used, WHITE LEVEL can be adjusted when the OPERATE item in ALC SETUP menu is set to **OFF** or **HOLD**.

4-3-2. BLACK LEVEL

Menu Button

RGB
BLACK

Parameter	Default	Setting Range (Steps)	Description
RED, GREEN, BLUE (RGB Black Level)	100.0%	0.0 to 200.0% (0.5%)	Adjusts the black level of R, G, and B components separately.
GROUP ADJUST (Group Adjustment)	100.0%	0.0 to 200.0% (0.5%)	Adjusts the black level of all R, G, and B by the same amount using one control.

Disabled when MODE SELECT is set to **SEPIA**. (The button is disabled.)

When FA-91ALC is used, BLACK LEVEL can be adjusted when the OPERATE item in ALC SETUP menu is set to **OFF** or **HOLD**.

4-3-3. GAMMA LEVEL

Menu Button

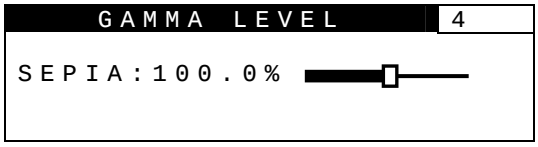
RGB
GAMMA

Parameter	Default	Setting Range (Steps)	Description
RED, GREEN, BLUE (GBR GAMMA)	100.0 %	0 to 200% (0.5%)	Adjusts the gamma applied for G, B, and R components separately.
GROUP ADJUST (Group Adjustment)	100.0 %	0 to 200% (0.5%)	Adjusts the gamma applied for all R, G, and B by the same amount using one control.

If CORR MODE SELECT is set to **SEPIA**, set Y level of Gamma in the MODE SETTING submenu as shown below.

When FA-91ALC is used, GAMMA LEVEL can be adjusted when the OPERATE item in ALC SETUP menu is set to **OFF** or **HOLD**.

When SEPIA MODE is selected for CORR MODE SELECT:

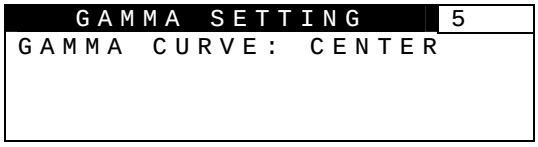


Menu Button

RGB
GAMMA

Parameter	Default	Setting Range (Steps)	Description
SEPIA	100.0 %	0 to 200% (0.5%)	Sets the Y component level of GAMMA.

4-3-4. GAMMA SETTING



Menu Button

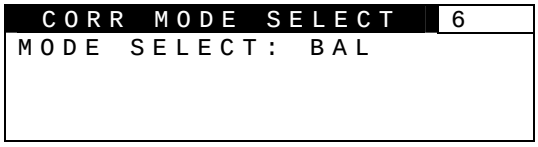
RGB
GAMMA

Parameter	Default	Setting Range (Steps)	Description
GAMMA CURVE (Gamma Curve)	Center	CENTER, BLACK, WHITE	Selects the gamma curve type.

See FA-9000/9100/9100RPS Operation Manual for details.

When FA-91ALC is used, GAMMA SETTING can be selected when the OPERATE item in ALC SETUP menu is set to **OFF**.

4-3-5. CORR MODE SELECT



Menu Button

RGB
MODE/CLIP

Parameter	Default	Setting Range (Steps)	Description
CORR MODE SELECT (Correction Mode)	BAL	BAL, DIF, SEPIA	Selects the correction mode from Balanced (RGB), Differential (YPbPr), or Sepia.

If MODE SELECT is set to **SEPIA**, WHITE LEVEL (see 4-3-1) and BLACK LEVEL (see 4-3-2) cannot be set.

When FA-91ALC is used, CORR MODE SELECT can be selected when the OPERATE item in ALC SETUP menu is set to **OFF**.

The following submenu is displayed if MODE SELECT is set to **SEPIA**.

```
 CORR MODE SELECT  6
MODE SELECT: SEPIA

SEPIA LEVEL:  25.0%
SEPIA COLOR:-160.0°
```

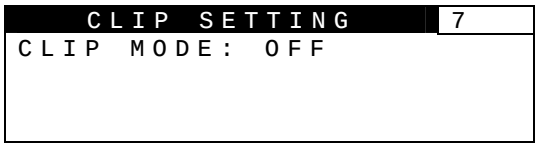
Parameter	Default	Setting Range (Steps)	Description
SEPIA LEVEL	25.0%	0 to 100% (0.1%)	Adjusts the color level for the SEPIA mode.
SEPIA COLOR	-160.0°	-180° to 179.9° (0.1°)	Adjusts the color for the SEPIA mode.

If MODE SELECT (MODE SELECT) is set to **SEPIA**, CHROMA LVL and CHROMA PHS under PROCESS CONTROL (see 4-2) cannot be set.

4-4. Color Gamut Control (FA-90CC/FA-91ALC)

4-4-1. CLIP SETTING

First select color space under CLIP MODE, and then enter the submenu to set WHITE LEVEL, BLACK LEVEL, and CHROMA LEVEL parameters respectively.



Menu Button

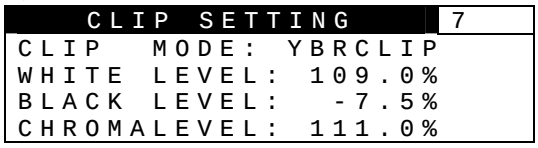
RGB
MODE/CLIP

Parameter	Default	Setting Range (Steps)	Description
CLIP MODE (Clip Mode)	OFF	OFF, YBRCLIP, GBRCLIP, VBSCLIP	Selects the clip mode from YBRCLIP, GBRCLIP, and VBSCLIP (composite clip).

The settings for YBRCLIP, GBRCLIP, and VBSCLIP are saved separately.

Proc Amp such as VIDEO LEVEL, CHROMA LEVEL and BLACK LEVEL are performed after the gamut correction. For this reason, PROCESS CONTROL should be set before the GBR CLIP. See FA-9000/9100/9100RPS Operation Manual for details.

◆ YBR CLIP



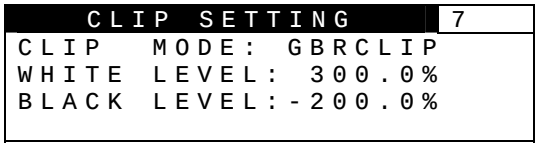
Menu Button

RGB
MODE/CLIP

Parameter	Default	Setting Range (Steps)	Description
WHITE LEVEL (YPbPr White Clip)	109.0%	50.0 to 109.0% (0.5%)	Sets the upper threshold of Y signal.
BLACK LEVEL (YPbPr Black Clip)	-7.5%	-7.5 to 50.0% (0.5%)	Sets the lower threshold of Y signal.
CHROMALEVEL (YPbPr Chroma Clip)	111.0%	50.0 to 111.0% (0.5%)	Sets both upper and lower thresholds of PbPr signals simultaneously.

If CLIP MODE is set to **YBRCLIP**, the YPbPr clip menu is displayed
See FA-9000/9100/9100RPS Operation Manual for details.

◆ GBR CLIP



Menu Button

RGB
MODE/CLIP

Parameter	Default	Setting Range (Steps)	Description
WHITE LEVEL (GBR White Clip)	300.0%	50 to 300% (0.5%)	Sets the upper threshold of GBR color space.
BLACK LEVEL (GBR Black Clip)	-200.0%	-200 to 50% (0.5%)	Sets the lower threshold of GBR color space.

If CLIP MODE is set to **GBRCLIP**, the GBR clip menu is displayed
See FA-9000/9100/9100RPS Operation Manual for details.

◆ **VBS CLIP**

```
CLIP SETTING  7
CLIP  MODE: VBSCLIP
WHITE LEVEL: 150.0%
BLACK LEVEL: -50.0%
```

Menu Button

RGB
MODE/CLIP

Parameter	Default	Setting Range (Steps)	Description
WHITE LEVEL (VBS White Clip)	150.0%	50 to 150% (0.5%)	Sets the upper threshold of VBS (analog composite) color space.
BLACK LEVEL (VBS Black Clip)	-50.0%	-50 to 50% (0.5%)	Sets the lower threshold of VBS (analog composite) color space.

If CLIP MODE is set to **VBSCLIP**, the VBS clip menu is displayed
See FA-9000/9100/9100RPS Operation Manual for details.

4-5. VIDEO INPUT SELECT

```
VIDEO INPUT SELECT  8
INPUT  : SDI
FORMAT : 1080/59.94i
```

Menu Button

VIDEO
SEL/SYS

Parameter	Default	Setting Range	Description
INPUT (Input Video Signal Select)	SDI	Composite, Component, SDI DV (HDV) (*1)	Selects the video input signal.
FORMAT (Input Video Signal Format)	—	—	Displays the signal format present. If no signal is present or detected, “None” is displayed.

(*1) Available only if the FA-90DV and/or FA-90HDV option is installed.

4-6. COMPONENT MODE SEL

```
COMPONENT MODE SEL  9
INPUT :YPbPr(SMPTE)
OUTPUT:YPbPr(SMPTE)
```

Menu Button

VIDEO
SEL/SYS

Parameter	Default	Setting Range	Description
INPUT (Component Input Select)	YPbPr (SMPTE)	YPbPr (SMPTE), YPbPr (BETACAM), RGB, Y/C	Selects the signal format input to HD/SD ANALOG COMPONENT IN connector.
OUTPUT (Component Output Select)	YPbPr (SMPTE)	YPbPr (SMPTE), YPbPr (BETACAM), RGB, Y/C, Composite *	Selects the signal format output from HD/SD ANALOG COMPONENT OUT. *Composite is selectable only in FA-9100/FA-9100RPS.

Note that when OUTPUT is set to **Composite** or **Y/C**, the composite output setting (COMPST) in section 4-13-2. "OUTPUT MODE" for the up/down converter is applied to this output.

4-7. SYSTEM PHASE

4-7-1. SD SYSTEM PHASE (FA-9100/9100RPS)

Menu Button

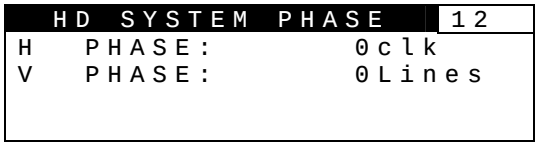
VIDEO
SEL/SYS

The system phase parameters cannot be set in some cases even when a reference signal is present. See FA-9100/FA9100RPS operation manual for details.

Parameter	Default	Setting Range (Steps)	Description
SC PHASE (Subcarrier Phase)	0.0°	-179.8 to 180.0° (0.2°)	Adjusts the subcarrier phase of the system referring to genlock signal. This setting is applied to SD output video. (Black Burst only)
H PHASE (Horizontal Phase)	0 clk	-1024 to 1023 clk (1 clk)	Adjusts the horizontal phase of the system referring to genlock signal. This setting is applied to SD output video.
V PHASE (Vertical Phase)	0 Lines	-512 to 511 Lines (1 Lines)	Adjusts the vertical phase of the system referring to genlock signal. This setting is applied to SD output video.

V PHASE cannot be set when SYNCHRO MODE is set to **LINE**. All settings above cannot be made when SYNCHRO MODE is set to **INPUT**. (See section 4-12.)

4-7-2. HD SYSTEM PHASE (FA-9100/9100RPS)



Menu Button

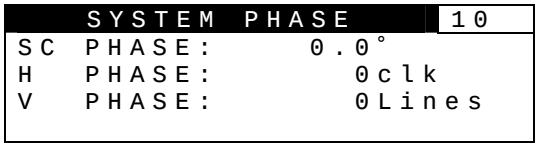
VIDEO
SEL/SYS

The system phase parameters cannot be set in some cases even when a reference signal is present. See FA-9100/FA9100RPS operation manual for details.

Parameter	Default	Setting Range (Steps)	Description
H PHASE (Horizontal Phase)	0 clk	-1024 to 1023 clk (1 clk)	Adjusts the horizontal phase of the system referring to genlock signal. This setting is applied to HD output video
V PHASE (Vertical Phase)	0 Lines	-512 to 511 Lines (1 Lines)	Adjusts the vertical phase of the system referring to genlock signal. This setting is applied to HD output video.

V PHASE cannot be set when SYNCHRO MODE is set to **LINE**. All settings above cannot be made when SYNCHRO MODE is set to **INPUT**. (See section 4-12.)

4-7-3. SYSTEM PHASE (FA-9000)



Menu Button

VIDEO
SEL/SYS

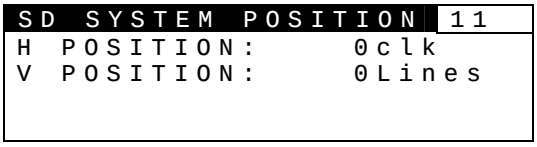
Parameter	Default	Setting Range (Steps)	Description
SC PHASE (Subcarrier Phase)	0.0°	-179.8 to 180.0° (0.2°)	Adjusts the subcarrier phase of the system referring to genlock signal. This setting is applied to output video.
H PHASE (Horizontal Phase)	0 clk	-1024 to 1023 clk (1 clk)	Adjusts the horizontal phase of the system referring to genlock signal. This setting is applied to output video.
V PHASE (Vertical Phase)	0 Lines	-512 to 511 Lines (1 Lines)	Adjusts the vertical phase of the system referring to genlock signal. This setting is applied to output video.

Available only if a reference signal is present.

V PHASE cannot be set when SYNCHRO MODE is set to **LINE**. All settings above cannot be made when SYNCHRO MODE is set to **INPUT**. (See section 4-12.)

4-8. SYSTEM POSITION

4-8-1. SD SYSTEM POSITION (FA-9100/9100RPS)



Menu Button

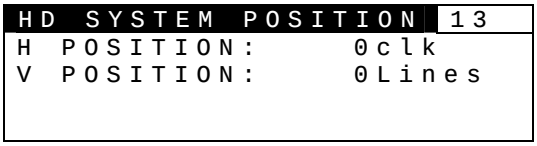
VIDEO
SEL/SYS

Parameter	Default	Setting Range (Steps)	Description
H POSITION (*1) (Horizontal Position)	0 clk	-764 to 764 clk (1 clk)	Adjusts horizontal position of SD output video.
V POSITION (*2) (Vertical Position)	0 Lines	-512 to 511 Lines (1 Lines)	Adjusts vertical position of SD output video.

These settings are applied to the SDTV output signals.

(*1) H POSITION cannot be set when SYNCHRO MODE is set to **INPUT**. (See section 4-12.)
(*2) V POSITION cannot be set when SYNCHRO MODE is set to **LINE** or **INPUT**. (See section 4-12.)

4-8-2. HD SYSTEM POSITION (FA-9100/9100RPS)



Menu Button

VIDEO
SEL/SYS

Parameter	Default	Setting Range (Steps)	Description
H POSITION (*1) (Horizontal Position)	0 clk	-764 to 764 clk (1 clk)	Adjusts horizontal position of HD output video.
V POSITION (*2) (Vertical Position)	0 Lines	-512 to 511 Lines (1 Lines)	Adjusts vertical position of HD output video.

These settings are applied to the HDTV output signals.

(*1) H POSITION cannot be set when SYNCHRO MODE is set to **INPUT**.(See section 4-12.)
(*2) V POSITION cannot be set when SYNCHRO MODE is set to **LINE** or **INPUT**. (See section 4-12.)

4-8-3. SYSTEM POSITION (FA-9000)

```
SYSTEM PHASE      11
H POSITION:       0clk
V POSITION:       0Lines
```

Menu Button

VIDEO
SEL/SYS

Parameter	Default	Setting Range (Steps)	Description
H POSITION (Horizontal Position)	0 clk	-764 to 764 clk (1 clk)	Adjusts horizontal position of output video.
V POSITION (Vertical Position)	0 Lines	-512 to 511 Lines (1 Lines)	Adjusts vertical position of output video.

(*1) H POSITION cannot be set when SYNCHRO MODE is set to **INPUT**. (See section 4-12.)
(*2) V POSITION cannot be set when SYNCHRO MODE is set to **LINE** or **INPUT**. (See section 4-12.)

4-9. FRAME DELAY SETTING

```
FRAME DELAY SETTING  14
DELAY:    OFF
```

Menu Button

VIDEO
SEL/SYS

Parameter	Default	Setting Range (Steps)		Description
DELAY	OFF	FA-9000	OFF, ON	One frame delay is added if set to ON in FA-9000.
		FA-9100 FA-9100RPS	OFF, 1-4 (1 FRAME)	

SYSTEM POSITION is displayed as title in this menu when FA-9000 is controlled.

IMPORTANT

The video delay is automatically forced to the following values if SCENE CUT DET item is set to **ON** in the ALC SETUP menu. (See section 4-16-2.)

525/60(NTSC), 625/50(PAL), 1080/59.94i, 50i, 23.98PsF, 24PsF: 2 frames
720/59.94p, 50p: 3 frames

4-10. HD/SD LINE MASK SEL

```
HD/SD LINE MASK SEL  15
SD LINE:    OFF
HD LINE:    OFF
```

Menu Button

VIDEO
SEL/SYS

Parameter	Default	Setting Range	Description
SD LINE (SD LINE Mask)	OFF	OFF, 1, 1-2 to 1-30	Sets to which line the SD-SDI signal is masked.
HD LINE (HD LINE Mask)	OFF	OFF, 1, 1-2 to 1-30	Sets to which line the HD-SDI signal is masked.

4-11. FREEZE SETTING

```
FREEZE SETTING        16
FREEZE SELECT:  Frame
FIELD  SELECT:  Odd
AUTO   FREEZE:  OFF
STROBE FREEZE:  0
```

Menu Button

VIDEO
SEL/SYS

Parameter	Default	Setting Range	Description
FREEZE SELECT (Freeze Select)	Frame	Frame, Field	Selects a mode between frame freeze and field freeze. (*1)(*4)(*5)
FIELD SELECT (Freeze Field Select)	Odd	Odd, Even	Selects a field between odd and even when field freeze is set. (*4)
AUTO FREEZE (Auto Freeze)	OFF	OFF, ON	If set to ON, last received normal field (still image) of video input signal is frozen to compensate for input dropout due to signal loss, noise or low level. (*2) (*4)
STROBE FREEZE (Strobe Freeze)	0	0 to 255	Sets strobe rate in fields during the field or frame freeze (*3) (*4)

(*1) The FIELD SELECT item determines which field (odd or even) image is frozen.

(*2) Off video random noise is measured as a signal loss.
If a video is frozen, set AUTO FREEZE to OFF or input a correct signal to return to normal display.

(*3) If set to 0, STROBE FREEZE is disabled. If set to 1 to 255, the image is strobe-frozen in frame freeze mode. If you wish to freeze the image in field freeze mode, Set FORCE FIELD to **ON** and select a field at FIELD SELECT in the section 4-12. "VIDEO SYSTEM SET."

(*4) If SYNCHRO MODE in section 4-12. "VIDEO SYSTEM SET" is set to **LINE** or **INPUT**, FREEZE SELECT and FIELD SELECT cannot be set, AUTO FREEZE is automatically returned to **OFF** and STROBE FREEZE to **0**.

(*5) FREEZE SELECT is automatically set to **Frame** when the input video format is 720/59.94p or 720/50p.

4-12. VIDEO SYSTEM SET

```
VIDEO SYSTEM SET      17
FORCE FIELD  :  OFF
FIELD SELECT:  Odd
B/W          :  OFF
VITS         :  OFF
```

Menu Button

VIDEO
SEL/SYS

Parameter	Default	Setting Range	Description
FORCE FIELD (Half-Field Display)	OFF	OFF, ON	Selects display mode between half-field and frame. (*2) **OFF:** Field display **ON:** Half-field display
FIELD SELECT (Output Field Select)	Odd	Odd, Even	Selects field between even and odd if FORCED FIELD is set to **ON**.
B/W (Black and White Video Output)	OFF	OFF, ON	Selects output video mode between black and white, and color. **OFF:** Color **ON:** Black and white
VITS (VITS signal)	OFF	OFF, ON	If set to ON, the input VITS signal is passed through (*1). If set to OFF, VITS signal is not passed through and horizontal blanking is applied from 1 to 20H for NTSC and 1 to 23H for PAL. .

(*1) Note that VITS may not be passed in some cases even if set to **ON**.
See FA-9000/9100/9100RPS Operation Manual for details.

(*2) If SYNCHRO MODE in VIDEO SYSTEM SET is set to **LINE** or **INPUT** (See section 4-12. "VIDEO SYSTEM SET."), FORCED FIELD is automatically set to **OFF**.

NOTE

When a logo is inserted to video using the FA-91LG option, B/W setting for the video is also applied to the logo image.

```
VIDEO SYSTEM SET  18
SYNCHRO MODE:  FRAME
ANCI DATA    :  Blank
NR LEVEL     :  OFF
```

Menu Button

VIDEO
SEL/SYS

Parameter	Default	Setting Range	Description
SYNCHRO MODE (*1) (Synchro Mode)	FRAME	FRAME, LINE, INPUT	Sets I/O delay mode. **FRAME:** Frame delay, max. 1-frame. **LINE:** If Composite(NTSC) input: max. 6-line If Composite(PAL) input: max. 7-line If Y/C input: max. 5-line If Component input: max. 5-line If HD/SD SDI input: max. 5-line **INPUT:** Minimum delay (Video signal is output regardless of reference signal) (*2) (*3)
ANCI DATA (Ancillary Data)	Blank	Blank, Pass	**Blank:** Blanks the ancillary data area of output signal except embedded audio. **Pass:** Passes through ancillary data including audio. (*4)
NR LEVEL (Noise Reduction)	OFF	OFF, 1,2,3,4	Enables or disables noise reduction filter by reducing frame-recursive 3D noise in video and sets its reduction level. (*5)

(*1) SYNCHRO MODE is automatically set to **FRAME**, if FA-91FRC is installed and OUTPUT in MODE SELECT menu (See section 4-13-1) is set to **FRC**.

(*2) FA-9000/9100/9100RPS does not operate as a frame synchronizer, if SYNCHRO MODE is set to **INPUT**.

(*3) If SYNCHRO MODE in section 4-12. "VIDEO SYSTEM SET" is set to **LINE** or **INPUT,** FORCE FIELD is automatically set to the default value. If SYNCHRO MODE is changed to **LINE** or **INPUT** during video freeze, the video freeze is cancelled.

(*4) Note that Ancillary Data may not be passed in some cases even if set to **Pass**. See FA-9000/9100/9100RPS Operation Manual for details.

(*5) If the input image has noises, set to **1** (low) first and then increase step by step up to **4** (high) while monitoring the processed image. As a rule, the higher the level, the more noises you can reduce, however, the resolution of images becomes degraded, and it can create a blurry trail in the moving images.

IMPORTANT

An external reference signal must be synchronized with the input video when SYNCHRO MODE is set to **LINE**. Otherwise, the system doesn't work properly.

```
VIDEO SYSTEM SET  19
NTSC SETUP  :  OFF
BACK COLOR  :  OFF
3D COMB  :  Adaptive 3D
```

Menu Button

VIDEO
SEL/SYS

Parameter	Default	Setting Range	Description
NTSC SETUP (NTSC Setup)	OFF	OFF, ON	Selects between 0IRE setup and 7.5IRE setup depending on the analog signal used. This setting is applied to Composite, Y/C, and SD Analog Component signals.

BACK COLOR (Background Color)	OFF	OFF, BLACK, BLUE, RED, MAGENTA, GREEN, CYAN, YELLOW	Selects a matte to be output if a signal loss occurs. If set to **OFF**, a black video will appear on the screen.
3D COMB* (*1)	Adaptive3D	Adaptive3D, Adaptive2D, Trap Only	Selects the comb filter type. In FA-9100/RPS this setting is applied to Composite signal only.

(*1) 3D COMB filter mode

Adaptive 3D: Effective for video with less movements such as background images.

Adaptive 2D: Effective for video with movements. The Y/C separation is performed while minimizing image distortions caused by the movements.

Trap Only: Effective for video with quick and large movement. The Y/C separation is performed without line correlation so as to process images with motions properly.

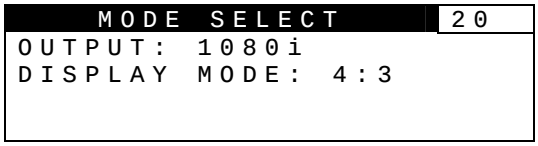
4-13. UP/DOWN CONVERTER (FA-90UD Option)

This chapter is for FA-9000 and FA-9100/FA-9100RPS with version less than 4.0.0.

IMPORTANT

The standard settings of converter are made in both MODE SELECT menu and in OUTPUT MODE menu. Note that any conversions are not processed if set to **THROUGH** in OUTPUT MODE menu, because **THROUGH** setting takes precedence over any other converter settings.

4-13-1. MODE SELECT



Menu Button

VIDEO
OPTION

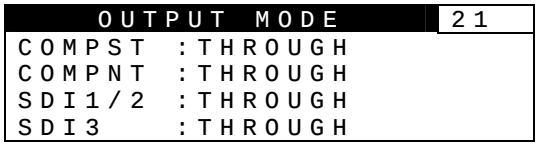
Parameter	Default	Setting Range	Description
OUTPUT (Output Setting)	1080i	1080i, 720p, 1080/24PsF(*1), ASPECT, IP CONVERT	**1080i, 720p, 1080/24PsF:** Selecting one of these formats determines which format is applied to the up-converted SD signal **ASPECT:** Select **ASPECT** if you want to change only the aspect ratio of the image. Set the ratio with H SIZE and V SIZE. **IP CONVERT:** Select **IP-CONVERT** if you want to convert signal between interlaced and progressive. (*2)
DISPLAY MODE (Display Mode)	4:3	4:3, 13:9, 14:9, 16:9, SQUEEZE	Selects aspect ratio of the video output on the monitor. If **SQUEEZE** is selected, image expands horizontally on the sides to fill the screen. (*3)

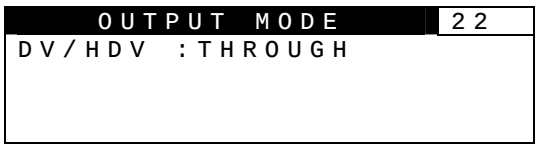
(*1) 1080/24PsF can be set in FA-9100 version 3.0.0 and later.

(*2) If you wish to set OUTPUT to **IP CONVERT**, be sure **NOT** to set OUTPUT MODE (see 4-13-2) to **THROUGH**. If set to **THROUGH**, the signal does not pass through the FA-90UD, and **IP CONVERT** is not applied to the output result.
IP conversions cannot be performed when 1080/24PsF signals (1080/23.98PsF or 1080/24PsF) are input.
See FA-9000/9100/9100RPS Operation Manual for details.

(*3) Be sure **NOT** to set OUTPUT MODE (see 4-13-2) to **THROUGH**. If set to **THROUGH**, the signal does not pass through the FA-90UD, and the setting here is not applied to the output result.

4-13-2. OUTPUT MODE





Menu Button

VIDEO
OPTION

Parameter	Default	Setting Range	Description
COMPST (Composite Output Setting)	THROUGH	THROUGH, DOWN	Used to set output mode for the signal output from the COMPOSITE OUT connector. **THROUGH:** The FA-90UD is not used. The input signal is directly output without any conversion. **DOWN:** Outputs SDTV signal regardless of input signal format.
COMPNT (Component Output Setting)	THROUGH	THROUGH, SDTV, HDTV, UP/DOWN	Used to set output mode for the signal output from the COMPONENT OUT connector. **THROUGH:** The FA-90UD is not used. The input signal is directly output without any conversion. **SDTV:** Outputs an SDTV signal regardless of the input signal. **HDTV:** Outputs an HDTV signal regardless of the input signal. **UP/DOWN:** Outputs an HDTV signal when an SDTV signal is input. Outputs an SDTV signal when an HDTV signal is input. Note that the COMPST setting above is applied to the output signal instead of this COMPNT setting, if COMPONENT MODE SEL (see 4-6) is set to **Composite** or **Y/C**.
SDI1/2 (HD/SD-SDI Output Setting [OUT1,2])	THROUGH	THROUGH, SDTV, HDTV, UP/DOWN	Used to set output mode for the signals output from the HD/SD-SDI OUT1/2 and HD/SD-SDI OUT3 connectors respectively. **THROUGH:** The FA-90UD is not used. The input signal is directly output without any conversion. **SDTV:** Outputs an SDTV signal regardless of the input signal. **HDTV:** Outputs an HDTV signal regardless of the input signal. **UP/DOWN:** Outputs an HDTV signal when an SDTV signal is input. Outputs an SDTV signal when an HDTV signal is input.
SDI 3 (HD/SD-SDI Output Setting [OUT3])	THROUGH	THROUGH, SDTV, HDTV, UP/DOWN	
DV/HDV (DV/HDV Output Setting) (*1)	THROUGH	THROUGH, SDTV, HDTV, UP/DOWN	Sets output mode for the video output from the DV/HDV (IEEE1394) connectors. **THROUGH:** The FA-90UD is not used. The input signal is directly output without any conversion. **SDTV:** Outputs an SDTV (DV) signal regardless of the input signal. **HDTV:** Outputs an HDTV (HDV) signal regardless of the input signal. **UP/DOWN:** Outputs an HDV signal when an SDTV is input. Outputs a DV signal when an HDTV is input.

(*1) Available only if the FA-90DV or FA-90HDV option installed. DV/HDV signals cannot be output if 1080/23.98PsF or 1080/24PsF signals are input. See FA-9000/9100/9100RPS Operation Manual for details.

4-13-3. EFFECT

```
EFFECT                    23
MOTION SENSE    :  OFF
ENHANCE         :  OFF
SUPER BLACK     :  CLIP
```

Menu Button

VIDEO
OPTION

Parameter	Default	Setting Range	Description
MOTION SENSE (*1)	OFF	OFF, ON	Makes motion smoother if an input image has any motion.
ENHANCE	OFF	OFF, 1 to 4	Used to sharpen the output video image. **1 to 4:** low to high
SUPER BLACK	CLIP	CLIP, PASS	Selects super black is clipped or passed.

Be sure NOT to set OUTPUT MODE (see 4-13-2) to **THROUGH**. If set to **THROUGH**, the signal does not pass through the FA-90UD, and the settings here are not applied to the output result.

(*1) The MOTION SENSE setting is automatically set to **ON** when the frame rates of video input and video output are different by the OUTPUT setting in MODE SELECT menu. (See 4-13-1.)

4-13-4. H/V ADJUST

```
H/V ADJUST                24
H SIZE      :  100.0%
V SIZE      :  100.0%
H POSITION:       0Pixel
V POSITION:       0Line
```

Menu Button

VIDEO
OPTION

Parameter	Default	Setting Range (Steps)	Description
H SIZE (Horizontal Size)	100.0%	50.0 to 150.0% (0.1%)	Used to adjust width of the video displayed on the monitor. (*1)
V SIZE (Vertical Size)	100.0%	50.0 to 150.0% (0.1%)	Used to adjust height of the video displayed on the monitor. (*1)
H POSITION (Horizontal Position)	0 Pixel	Variable (*2) (1 Pixel)	Used to adjust horizontal position of the video displayed on the monitor.
V POSITION (Vertical Position)	0 Line	Variable (*2) (1 Line)	Used to adjust vertical position of the video displayed on the monitor.

Be sure NOT to set OUTPUT MODE (see 4-13-2) to **THROUGH**. If set to **THROUGH**, the signal does not pass through the FA-90UD, and the settings here are not applied to the output result.

(*1) If set to smaller than the original size, set the background color under SIDE CUT COLOR (see 4-13-6).

(*2) The following items are related each other. When you change one of them, the setting or the setting range of the other items would be dynamically changed.
-Video input signal format
-OUTPUT and DISPLAY MODE in MODE SELECT (See section 4-13-1.)
-H SIZE and V SIZE in H/V ADJUST (See section 4-13-4.)
-All items in CROP ADJUST (See section 4-13-5.)

4-13-5. CROP ADJUST

```
CROP ADJUST          25
CROP LEFT   :0Pixel
CROP RIGHT  :0Pixel
CROP TOP    :0Line
CROP BOTTOM:0Line
```

Menu Button

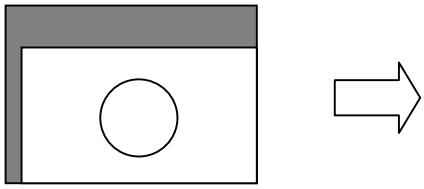
VIDEO
OPTION

Parameter	Default	Setting Range (Steps)	Description
CROP LEFT	0 Pixel	Variable (*1) (1 Pixel)	Crops the left side of the video.
CROP RIGHT	0 Pixel	Variable (*1) (1 Pixel)	Crops the right side of the video.
CROP TOP	0 Line	Variable (*1) (1 Line)	Crops the top side of the video.
CROP BOTTOM	0 Line	Variable (*1) (1 Line)	Crops the bottom side of the video.

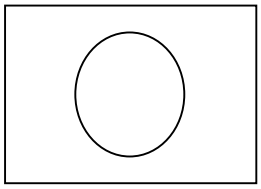
Be sure NOT to set OUTPUT MODE (see 4-13-2) to **THROUGH**. If set to **THROUGH**, the signal does not pass through the FA-90UD, and the settings here are not applied to the output result.

(*1) The following items are related each other. When you change one of them, the setting or the setting range of the other items would be dynamically changed.
-Video input signal format
-OUTPUT and DISPLAY MODE in MODE SELECT (See section 4-13-1.)
-H SIZE and V SIZE in H/V ADJUST (See section 4-13-4.)
-All items in CROP ADJUST (See section 4-13-5.)

If the output image is not covering the entire screen after the up/down conversion, follow the method below.



In this case,
adjust CROP LEFT
and CROP TOP



Note that the image may appear slightly different, because the image is expanded or contracted to fit the screen.

4-13-6. SIDE CUT COLOR

```
SIDE CUT COLOR       26
RED     :   0
GREEN   :   0
BLUE    :   0
```

Menu Button

VIDEO
OPTION

Parameter	Default	Setting Range	Description
RED, GREEN, BLUE (Side Cut Color)	0	0 to 255	Sets background color of side cut area appeared by UP/DOWN CONV SET setting. (See 4-13-1. “MODE SELECT.”) Adjustable for R, G and B components respectively.

4-14. UP/DOWN/FRAME RATE CONVERTER (FA-90UD / FA-91FRC)

This chapter is for FA-9100/FA-9100RPS with version 4.0.0 and higher.

IMPORTANT

The standard settings of converter are made in both MODE SELECT menu and in OUTPUT MODE menu. Note that any conversions are not processed if set to **THROUGH** in OUTPUT MODE menu, because **THROUGH** setting takes precedence over any other converter settings.

4-14-1. MODE SELECT

The items displayed in the MODE SELECT menu vary by the OUTPUT selection as shown below.

```
MODE SELECT          20
OUTPUT        :Up/Down
UP CONV FMT   :1080i
ASPECT RATIO:4:3
```

(When Up/Down is selected:)

```
MODE SELECT          20
OUTPUT        :FRC
FRC FMT       :1080/23psf
ASPECT RATIO:4:3
GENLOCK SEL   :THRU OUT
```

(When FRC is selected:)

```
MODE SELECT          20
OUTPUT        :ASPECT
```

(When other is selected:)

Parameter	Default	Setting Range	Description
OUTPUT (Output Setting)	Up/Down	Up/Down ASPECT, IP CONVERT, FRC (*1)	Selects conversion mode. See "FA-9100/ 9100RPS operation manual" for details. **Up/Down**: Performs up/down-conversion. **ASPECT**: Changes only the aspect ratio. **IP CONVERT**: Converts signal between interlaced and progressive. **FRC**: Performs frame rate conversion.

(*1) "FRC" is displayed only when FA-91FRC is installed.

◆ **If OUTPUT is set to Up/Down:**

Parameter	Default	Setting Range	Description
UP CONV FMT	1080i	1080i, 720p, 1080/24PsF	Selects output signal format when up-converting signal from SD SDI to HD SDI. **1080i**: Up-converts signal to 1080/59.94i or 1080/50i. **720p**: Up-converts signal to 720/59.94p or 720/50p. **1080/24PsF**: Up-converts signal to 1080/23.98PsF or 1080/24PsF.
ASPECT RATIO	4:3	4:3, 13:9, 14:9, 16:9, SQUEEZE	Selects aspect ratio of the video output on the monitor. If **SQUEEZE** is selected, the image is expanded horizontally on the sides to fill the screen.

◆ **If OUTPUT is set to FRC:**

Parameter	Default	Setting Range	Description
FRC FMT	525/60	525/60, 625/50, 1080/59.94i, 1080/50i, 720/59.94p, 720/50p, 1080/23.98PsF, 1080/24PsF	Selects output signal format in FRC mode. See "FA-9100/ 9100RPS operation manual" for details.
ASPECT RATIO	4:3	4:3, 13:9, 14:9, 16:9, SQUEEZE	Selects aspect ratio of the video output on the monitor. If SQUEEZE is selected, the image is expanded horizontally on the sides to fill the screen. In some input/output format combinations, aspect ratio is fixed and cannot be selected displaying the message "NOT ADJUST."
GENLOCK SEL	THRU OUT	THRU OUT, FRC OUT	Selects signal processing type in FRC mode. See "FA-9100/ 9100RPS operation manual" for details. **THRU OUT**: The signal **before** (the same frame rate as input) frame rate conversion is synchronized to reference signal. **FRC OUT**: The signal **after** frame rate conversion is synchronized to reference signal.

◆ **If OUTPUT is set to IP CONVERT:**

Note that the IP conversion cannot be performed when 1080/24PsF (1080/23.98PsF or 1080/24PsF) or SD signal is input.

◆ **If OUTPUT is set to ASPECT:**

Select aspect ratio in H SIZE and V SIZE. See section 4-14-4. "H/V ADJUST."

4-14-2. OUTPUT MODE

```
OUTPUT MODE          21
COMPST  :THROUGH
COMPNT  :THROUGH
SDI1/2  :THROUGH
SDI3    :THROUGH
```

```
OUTPUT MODE          22
DV/HDV  :THROUGH
```

Menu Button

VIDEO

OPTION

See "FA-9100/ 9100RPS operation manual" for details.

Parameter	Default	Setting Range	Description
COMPST (Composite Output Setting) (*1)	THROUGH	THROUGH, DOWN	Sets output mode for the signal output from the COMPOSITE OUT connector.
COMPNT (Component Output Setting)	THROUGH	THROUGH, SDTV, HDTV, UP/DOWN	Sets output mode for the signal output from the HD/SD ANALOG COMPONENT OUT connector.

SDI1/2 (HD/SD-SDI Output Setting [OUT1,2])	THROUGH	THROUGH, SDTV, HDTV, UP/DOWN	Sets output mode for the signals output from the HD/SD-SDI OUT1/2 connectors.
SDI 3 (HD/SD-SDI Output Setting [OUT3])	THROUGH	THROUGH, SDTV, HDTV, UP/DOWN	Sets output mode for the signals output from the HD/SD-SDI OUT3 connector.
DV/HDV (DV/HDV Output Setting) (*2)	THROUGH	THROUGH, SDTV, HDTV, UP/DOWN	Sets output mode for the video output from the DV/HDV (IEEE1394) connectors.

(*1) COMPST is automatically set to **DOWN** in some cases when FA-91FRC is installed. (See "FA-9100/ 9100RPS operation manual.")

(*2) Available only when the FA-90DV and/or FA-90HDV option installed. DV/HDV signals cannot be output if 1080/23.98PsF or 1080/24PsF signals are input.

◆ Converter Settings and Input/Output Signal Formats

COMPOSITE OUT

Menu	OUTPUT MODE	MODE SELECT	Input signal format	Output signal format
Item	COMPST	OUTPUT		
Setting	Through	---	SDTV	Passes through the input signal.
			HDTV	Outputs Black Burst signal with the same frame rate.
	Down	Up/Down	---	Outputs the SD signal.
		Aspect, IP Convert	SDTV	Outputs the SD signal.
			HDTV	Outputs the Black Burst signal with the same frame rate.
		FRC	---	Output the SD signal if set to **SDTV**. Outputs the Black Burst signal with the same frame rate as the HDTV if set to **HDTV**.

HD/SD ANALOG COMPONENT OUT and SDI OUT1-3

Menu	OUTPUT MODE	MODE SELECT	Input signal format	Output signal format
Item	COMPNT, SDI1/2, SDI3	OUTPUT		
Setting	**Through**	---	---	**Passes through the input signal.**
	SDTV	Up/Down	---	**Outputs the SD signal.**
		Aspect	---	Outputs the aspect-ratio-converted signal.
		IP Convert	HDTV	Outputs the IP-converted signal.
			SDTV	Passes through the input signal.
		FRC	---	Outputs the signal of the specified output format.

(Continued to the next page)

Menu	OUTPUT MODE	MODE SELECT	Input signal format	Output signal format
Item	COMPNT	OUTPUT		
Setting	**HDTV**	Up/Down	---	**Outputs the HD signal of the specified output format.**
		Aspect	---	Outputs the aspect-ratio-converted signal.
		IP Convert	HDTV	Outputs the IP-converted signal.
			SDTV	Passes through the input signal.
		FRC	---	Outputs the signal of the specified output format.
	Up/Down	Up/Down	**SDTV**	**Outputs the HD signal of the specified output format.**
			HDTV	**Outputs the SD signal.**
		Aspect	---	Outputs the aspect-ratio-converted signal.
		IP Convert	HDTV	Outputs the IP-converted signal.
			SDTV	Passes through the input signal.
		FRC	---	Outputs the signal of the specified output format.

DV/HDV (If using as output)

Menu	OUTPUT MODE	MODE SELECT	Input signal format	Output signal format
Item	DV/HDV	OUTPUT		
Setting	**Through**	---	---	**Passes through the input signal.**
	SDTV	Up/Down	---	**Outputs the DV signal.**
		Aspect	---	Outputs the aspect-ratio-converted signal.
		IP Convert	HDTV	Outputs the IP-converted HDV signal.
			SDTV	Outputs the DV signal without IP conversion.
		FRC	---	Outputs the signal of the specified output format.
	HDTV	Up/Down	---	**Outputs the HDV signal.**
		Aspect	---	Outputs the aspect-ratio-converted signal.
		IP Convert	HDTV	Outputs the IP-converted HDV signal.
			SDTV	Outputs the DV signal without IP conversion.
		FRC	---	Outputs the signal of the specified output format.
	Up/Down	Up/Down	**SDTV**	**Outputs the HDV signal.**
			HDTV	**Outputs the DV signal.**
		Aspect	---	Outputs the aspect-ratio-converted signal.
		IP Convert	HDTV	Outputs the IP-converted HDV signal.
			SDTV	Outputs the DV signal without IP conversion.
		FRC	---	Outputs the signal of the specified output format.

4-14-3. EFFECT

```
        EFFECT          23
MOTION SENSE    :  OFF
ENHANCE         :  OFF
SUPER BLACK     :  CLIP
```

Menu Button

VIDEO
OPTION

Parameter	Default	Setting Range	Description
MOTION SENSE (*1)	OFF	OFF, ON	Makes motion smoother if an input image has any motion.
ENHANCE	OFF	OFF, 1 to 4	Used to sharpen the output video image. **1 to 4:** low to high
SUPER BLACK	CLIP	CLIP, PASS	Selects super black is clipped or passed.

Be sure NOT to set OUTPUT MODE (see 4-14-2) to **THROUGH**. If set to **THROUGH**, the signal does not pass through the FA-90UD, and the settings here are not applied to the output result.

(*1) The MOTION SENSE setting is automatically set to **ON** when the frame rates of video input and video output are different by the OUTPUT setting in MODE SELECT menu. (See 4-14-1.)

4-14-4. H/V ADJUST

```
       H/V ADJUST       24
H SIZE      :  100.0%
V SIZE      :  100.0%
H POSITION:       0Pixel
V POSITION:       0Line
```

Menu Button

VIDEO
OPTION

Parameter	Default	Setting Range (Steps)	Description
H SIZE (Horizontal Size)	100.0%	50.0 to 150.0% (0.1%)	Used to adjust width of the video displayed on the monitor. (*1)
V SIZE (Vertical Size)	100.0%	50.0 to 150.0% (0.1%)	Used to adjust height of the video displayed on the monitor. (*1)
H POSITION (Horizontal Position)	0 Pixel	Variable (*2) (1 Pixel)	Used to adjust horizontal position of the video displayed on the monitor.
V POSITION (Vertical Position)	0 Line	Variable (*2) (1 Line)	Used to adjust vertical position of the video displayed on the monitor.

Be sure NOT to set OUTPUT MODE (see 4-14-2) to **THROUGH**. If set to **THROUGH**, the signal does not pass through the FA-90UD, and the settings here are not applied to the output result.

(*1) If set to smaller than the original size, set the background color under SIDE CUT COLOR (see 4-14-6).

(*2) The following items are related each other. When you change one of them, the setting or the setting range of the other items would be dynamically changed.
-Video input signal format
-OUTPUT and DISPLAY MODE in MODE SELECT (See section 4-14-1.)
-H SIZE and V SIZE in H/V ADJUST (See section 4-14-4.)
-All items in CROP ADJUST (See section 4-14-5.)

4-14-5. CROP ADJUST

```
CROP ADJUST          25
CROP LEFT   :0Pixel
CROP RIGHT  :0Pixel
CROP TOP    :0Line
CROP BOTTOM:0Line
```

Menu Button

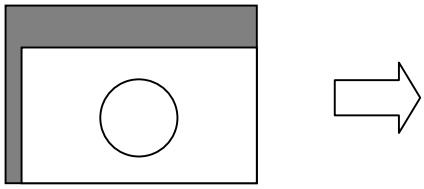
VIDEO
OPTION

Parameter	Default	Setting Range (Steps)	Description
CROP LEFT	0 Pixel	Variable (*1) (1 Pixel)	Crops the left side of the video.
CROP RIGHT	0 Pixel	Variable (*1) (1 Pixel)	Crops the right side of the video.
CROP TOP	0 Line	Variable (*1) (1 Line)	Crops the top side of the video.
CROP BOTTOM	0 Line	Variable (*1) (1 Line)	Crops the bottom side of the video.

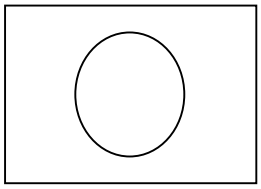
Be sure NOT to set OUTPUT MODE (see 4-14-2) to **THROUGH**. If set to **THROUGH**, the signal does not pass through the FA-90UD, and the settings here are not applied to the output result.

(*1) The following items are related each other. When you change one of them, the setting or the setting range of the other items would be dynamically changed.
-Video input signal format
-OUTPUT and DISPLAY MODE in MODE SELECT (See section 4-14-1.)
-H SIZE and V SIZE in H/V ADJUST (See section 4-14-4.)
-All items in CROP ADJUST (See section 4-14-5.)

If the output image is not covering the entire screen after the up/down conversion, follow the method below.



In this case,
adjust CROP LEFT
and CROP TOP



Note that the image may appear slightly different, because the image is expanded or contracted to fit the screen.

4-14-6. SIDE CUT COLOR

```
SIDE CUT COLOR       26
RED    :   0
GREEN  :   0
BLUE   :   0
```

Menu Button

VIDEO
OPTION

Parameter	Default	Setting Range	Description
RED, GREEN, BLUE (Side Cut Color)	0	0 to 255	Sets background color of side cut area appeared by UP/DOWN CONV SET setting. (See 4-14-1. “MODE SELECT.”) Adjustable for R, G and B components respectively.

4-15. DV/HDV CODEC (FA-90DV, FA-90HDV Option)

4-15-1. DV/HDV OPERATE MODE

```
DV/HDV OPERATE MODE 27
MODE   :DV In
IN DET:Auto
MODEL  :None
STATUS:Disconnected
```

Menu Button

VIDEO
OPTION

Parameter	Default	Setting Range		Description
MODE (I/O Setting)	DV In	DV In (*1), HDV In (*1) (*5), DV/HDV Out (*2)		**DV In:** Accepts a video stream from a DV device. **HDV In:** Accepts a video stream from an HDV device. **DV/HDV Out:** Outputs a video stream to a DV/HDV device.
IN DET (Input Format Select) (*3)	Auto	MODE = DV In (*4)	Auto, 525/60, 625/50,	Sets the signal format input from the DV device. **Auto:** Signal format is auto-detected.
		MODE = HDV In	Auto, 1080/59.94i, 1080/50i, 720/59p 720/50p	Selects a signal format input from the HDV device. **Auto:** Signal format is auto-detected.
MODEL (Model Info)	-	-		Displays the model name of the connected DV/HDV device.
STATUS (Status Display)	-	-		Displays the connection status to the DV/HDV device. **Disconnected:** Not connected. **Connected:** Connected properly. **Connection Error:** A connection error occurred. Verify the connection. **Too Many Plugged:** Disconnect other DV/HDV device that is not being used. **Mode Set Error:** The MODE setting has failed. Set the mode again.

If the main unit (FA-9000/9100/9100RPS) does not connect to the DV/HDV device properly, turn off the main unit and turn on again.

(*1) VIDEO INPUT (see 4-5) must be set to **DV** (**HDV**).

(*2) If DV/HDV OUT is selected, the IN DET item changes to the FORMAT item and it displays the output signal format.

(*3) The video images may not be properly displayed if the input signal is different from that set at IN DET. In addition, if the input signal is not detected properly with AUTO setting, set a specific signal format to IN DET.

(*4) Set to **525/60** or **625/50** when connecting to the nonlinear editing device.

(*5) This is displayed when FA-90HDV is installed.

4-15-2. TIMECODE SELECT

```
TIMECODE SELECT  28
INPUT        :LTC In
LTC OUT      :Enable
DV/HDV OUT   :Enable
```

Menu Button

VIDEO
OPTION

Parameter	Default	Setting Range	Description
INPUT (Time Code Select)	LTC In	LTC In, DV/HDV In, Internal (*2)	Selects the time code. (*1) **LTC In:** Uses the time code input from the TIMECODE IN connector on the rear panel. **DV/HDV In:** Uses the time code embedded in the DV/HDV input. **Internal:** Uses the time code generated in FA-9000/9100/9100RPS.
LTC OUT (LTC TC Output)	Enable	Enable, Disable	**Enable:** Outputs the time code signal from the TIMECODE connector on the rear panel. **Disable:** Does not output the time code signal from the TIMECODE connector on the rear panel.
DV/HDV OUT (DV/HDV TC Output)	Enable	Enable, Disable	**Enable:** Embeds the time code data onto the DV/HDV output. **Disable:** Does not embed the time code data onto the DV/HDV output.

(*1) Output video may be distorted when TIMECODE SELECT is changed.

(*2) INPUT is automatically set to **Internal** and the time code input from TIMECODE IN cannot be used when the frame rates of input video and output video setting are different.

4-15-3. TC GENERATE SET

```
TC GENERATE SET  29
RESET      : Off
PRESET     :00:00:00:00
TC FORMAT  :NonDropFrame
```

Menu Button

VIDEO
OPTION

Parameter	Default	Setting Range	Description
RESET (TC Reset)	Off	Off, On	Pressing the F1 UNITY button resets time code to 00:00:00:00.
PRESET (TC Preset)	00:00:00:00	00:00:00:00 to 23:59:59:29	Pressing the F2 UNITY button resets time code to a preset value. Holding down the F2 UNITY button for a while changes the preset value.
TC FORMAT (TC Format Setting)	NonDropFrame	NonDropFrame, DropFrame	Selects the time code format. **NonDropFrame:** Counts every single video frame without any time correction. **DropFrame:** Counts video frames accurately in relationship to real time by performing drop frame correction.

TC GENERATE SET sets up the time code generated in FA-9000/FA-9100/FA-9100RPS when INPUT is set to **Internal** in the section 4-15-2. "TIMECODE SELECT."

When changing the PRESET value, the display as shown below appears. Use controls F1 to F4 to set hour, minute, second and frame individually. To return to the previous display, press and hold down the F2 UNITY button (flashing) for a while.

```
TC GENERATE SET  29
PRESET     :00:00:00:00
```

4-15-4. DV AUDIO OUTPUT

```
DV AUDIO OUTPUT  30
SAMPLING RATE :48kHz
```

Menu Button

VIDEO
OPTION

Parameter	Default	Setting Range	Description
SAMPLING RATE	48kHz	48kHz, 44.1kHz, 32kHz	Sets the audio sampling frequency for DV output. (*1)

(*1) Output video may be distorted when DV AUDIO OUTPUT is changed.

4-15-5. VTR CONTROL

```
VTR CONTROL  31
STATUS       :PAUSE
```

Menu Button

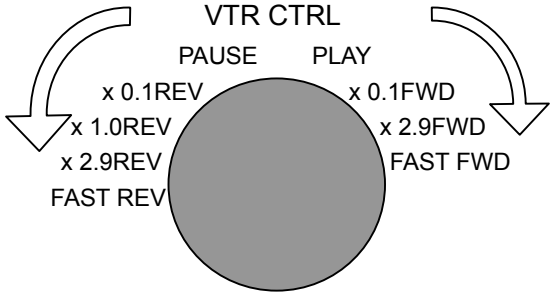
VIDEO
OPTION

Parameter	Display / Control	Description
STATUS (Control Status)	PAUSE, PLAY, STOP, REC (*1), REC STANDBY(*1), (FAST, 2.9, 1.0, 0.1) REV, (FAST, 2.9, 0.1) FWD, CAN'T CONTROL(*3) CASSETTE OUT(*3)	Controls the connected DV or HDV device or displays the control status. F1 is used for REV, PAUSE, PLAY and FWD operations. F1 UNITY is used for PAUSE and F2 UNITY is used for STOP. (*2)

(*1) Status display only. The REC operation cannot be preformed from FA-9000/9100/ 9100RPS.
(*2) In clockwise: PLAY -> FWD (0.1 times) -> FWD (2.9 times) -> FAST FWD

In counter-clockwise: PAUSE -> REV (0.1 times) -> REV (1.0 times) -> REV (2.9 times) -> FAST REV

(*3) This operation is available only when a nonlinear editing device with video cassette tapes is connected.



4-16. AUTO LEVEL CONTROLLER (FA-91ALC)

Auto Level Controller allows you to automatically adjust video signal levels according to input video. Although the ALC performs an auto-adjustment to optimize image quality, it can also be customized to suit for the video material by using menu.

IMPORTANT
Auto Level Controller is available only when the FA-91ALC is installed. FA-91LG and FA-91ALC options cannot be used at the same time. See section 4-18. "LG/ALC Selection" for details.

4-16-1. ALC CONTROL

Menu Button (Lit red)

VIDEO
OPTION

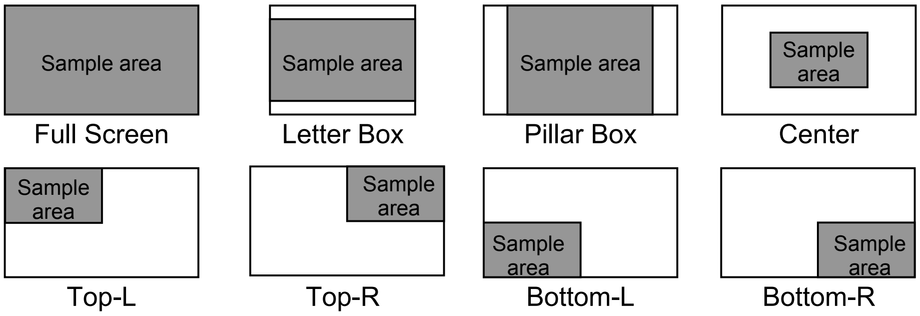
Parameter	Default	Setting Range	Description
OPERATE	OFF	OFF, AUTO, HOLD	**AUTO**: Enables Auto Level Controller . **HOLD**: Stops Auto Level Controller . The video levels are held at their last set level if changing OPERATE from **AUTO** to **HOLD**. **OFF**: Disables Auto Level Controller . The video levels return to the state before ALC is applied if changing OPERATE from **AUTO** to **OFF**. Setting to **OFF** enables the manual level control. See "FA-9100/9100RPS operation manual" for details.
LEVEL	Standard	Darker, Dark, Standard, Bright, Brighter, User1, User2, User3, User4, User5,	Selects a level for automatic control. Available options are 10: Five fixed options and five custom options. **Darker** < **Dark** < **Standard** < **Bright** < **Brighter** (Each levels are fixed) **User1** to **User5**: Custom levels To use custom levels, select an option from **User1** to **User5**, press and hold the F2 UNITY button, then select a submenu for setting. (See "Customizing User Level" in the FA-9100/ 9100RPS operation manual.)
SAMPLE AREA	Full Screen	Full Screen to Bottom Right Area1, Area2	Specifies a sample area for automatic control. The sampling data are used for subsequent calculation of the level control. Available options are 10: Eight fixed options and two custom options. ● Fixed Areas **Full Screen, Letter Box, Pillar Box, Center, Top-L, Top-R, Bottom-L, Bottom-R** (See "Sample Area (Fixed Type)" in the next page.) ● Custom Areas **Area1**, **Area2** To use custom areas, select an option between Area1 and Area2, press and hold F3 UNITY button, then select a submenu for setting. (See "Customizing Sample Area" in the FA-9100/ 9100RPS operation manual.)

AREA DISPLAY	OFF	OFF, ON	Sets sample area display ON/OFF. If set to **ON**, the sample area appears as a semi-transparent white rectangle in all output video. To turn the display off, press F4 UNITY. To turn the display on, press and hold F4 UNITY. The sample area is not marked at startup. AREA DISPLAY is automatically set to **OFF** when changing OPERATE to **OFF**.

IMPORTANT
The Auto Level Controller will provide optimal results in many cases, but it does not always yield optimal results. Sample Area determines the area where the sample data are obtained and the level adjustments are applied to the whole area of images.

◆ **Sample Area (Fixed Type)**

Eight available sample areas are as shown below. Data are continuously sampled within each area. (See section 10-2. "Customizing Sample Area" in the FA-9100/9100RPS operation manual for Area1 and Area2.)



4-16-2. ALC SETUP

```
ALC SETUP          32
DULLNESS       :3
SCENE CUT DET:OFF
GAMMA MODE     :ON
```

Menu Button (Lit red)

VIDEO OPTION

Parameter	Default	Setting Range	Description
DULLNESS (Filtering strength)	3	1 to 5	Sets the filtering strength for calculating mean distance applied to the histograms created using the sample data. The larger the value, the results are more stable but less subservient to inputs. The lower the value, the results are less stable but more subservient to inputs.
SCENE CUT DET(*1) (Cut detection)	OFF	OFF, ON	When set to ON, the cut transitions are detected and the images around them are adjusted accordingly even if there are sharp luminance changes.
GAMMA MODE	ON	OFF, ON	When set to ON, video levels are adjusted using the GAMMA LEVEL settings. (See section 4-3-3. "GAMMA LEVEL".)

(*1) Two or three frames are delayed with cut detection. The amount of delay depends on the input signal format.

525/60 (NTSC), 625/50(PAL):	2 frames
1080/59.94i, 50i, 23.98PsF, 24PsF:	2 frames
720/59.94p, 50p:	3 frames

A pop-up message appears if the SCENE CUT DET is set to **ON** and the cut detection delay and the delay set in FRAME DELAY SETTING (See section 4-9.) are different. To apply the cut detection delay to FRAME DELAY SETTING, press F3 (SET). In this case, however, audio I/O delay is not automatically changed. Change the audio delay manually as needed. (See section 4-26-25 "AUDIO DELAY OFFSET.")

4-16-3. ALC PORT

IMPORTANT
The ALC port (LAN2 on the FA-9100/RPS rear panel) is a dedicated LAN (10/100BASE-T) port used for ALC upgrading and other purposes. Normally leave the network settings unchanged and use the port at the factory default settings. Change the network settings only when necessary.

```
        ALC PORT          39
MENU:IP ADDRESS
       192.168.0.1
```

Menu Button

VIDEO
OPTION

Parameter	Default	Item	Description
MENU (Network settings)	IP ADDRESS	IP ADDRESS, SUBNETMASK, GATEWAY, PORT NO.	Configures the network settings for the ALC port (LAN2). After changing the setting, press F3 to confirm the change for each item.

Turn F1 to select the item. Each time you turn F1, the menu display is successively changed in the order of IP ADDRESS, SUBNETMASK, GATEWAY and PORT NO. Display the item you wish to change and press F1 UNITY.

When pressing F1 UNITY at IP ADDRESS menu, the display as shown below appear. Use F1 to F4 to change the numbers. And then press F3 UNITY to confirm the change. To cancel the setting, press F4.

```
        ALC PORT          39
MENU:IP ADDRESS CHANGE
       192.168.0.1

F3:SET  F4:CANCEL
```

The message "Now Restarting" appears when you change the setting. Wait until the message disappears and then start the next setting.

Parameter	Default	Setting Range	Description
IP ADDRESS	192.168.0.1	0.0.0.0 to 255.255.255.255	Changes IP address using F1 to F4.

Subnetmask, Gateway and Port No. can be changed in the same way.

◆ SUBNET MASK, GATEWAY and PORT NO.

```
        ALC PORT          39
MENU:SUBNET MASK
     255.255.255.0
```

```
        ALC PORT          39
MENU:GATEWAY
         0.0.0.0
```

```
        ALC PORT          39
MENU:PORT NO.
           1234
```

Parameter	Default	Setting Range	Description
SUBNET MASK	255.255.255.0	0.0.0.0 to 255.255.255.255	Changes Subnetmask using F1 to F4.
GATEWAY	0.0.0.0	0.0.0.0 to 255.255.255.255	Changes Gateway using F1 to F4.
PORT NO.	1234	1 to 65534	Changes IP address using F1.

4-17. LOGO GENERATOR (FA-91LG Option)

IMPORTANT

LOGO GENERATOR is available only when the FA-91LG option installed. See the FA-91LG separate manual for more details about how to set up and insert a logo.

FA-91LG and FA-91ALC options cannot be used at the same time. See section 4-18. "LG/ALC Selection" for details.

4-17-1. LOGO CONTROL

```
    LOGO CONTROL      32
LOGO ID     :1 FORA
KEY LEVEL  :100%
H POSITION:    0Pixel
V POSITION:    0Line
```

Menu Button (Lit red)

VIDEO
OPTION

Parameter	Default	Setting Range	Description
LOGO ID (Logo channel selection)	1	1 to 8	Selects a logo channel used to superimpose over video. Logo source and logo channel assignments are made in the LOGO SOURCE menu. Once a logo source is assigned to a logo channel, the title of logo source is displayed to the right of the LOGO ID number.
KEY LEVEL	100%	0 to 100% (1%)	Sets key level of each logo source. 100% represents full opacity. The key level value is saved with logo source.
H POSITION	0Pixel	Varies by format (1Pixel)	Sets horizontal and vertical logo position on video. Specify the upper left corner of logo image. Setting range varies by the video format. The position settings are saved with logo source.
V POSITION	0Line	Varies by format (1Line)	

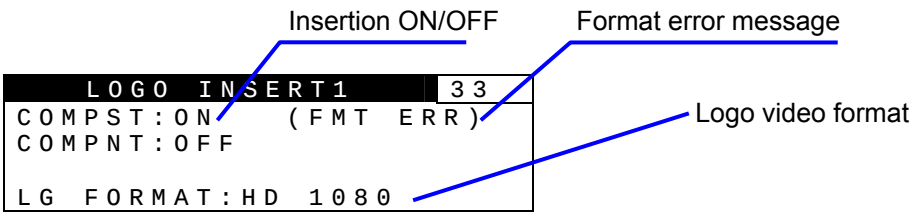
The submenu as shown below appears if you change LOGO ID.

```
    LOGO CONTROL      32
LOGO ID     :2


F3:SET  F4:CANCEL
```

To change the LOGO ID, turn F1 to change the number and then press F3.
To cancel the operation, press F4.

4-17-2. LOGO INSERT

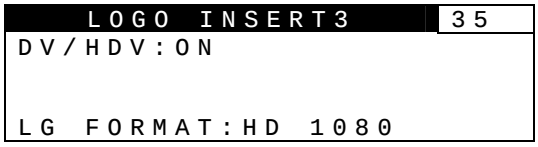



```
    LOGO INSERT2      34
SDI1/2:ON
SDI 3  :ON

LG FORMAT:HD 1080
```

Menu Button (Lit red)

VIDEO
OPTION



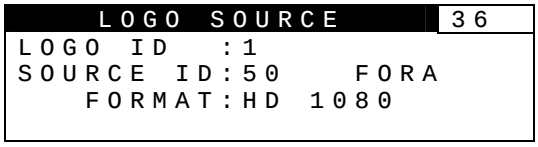
Parameter	Default	Setting Range	Description
COMPST	OFF	OFF, ON	Sets whether the logo insertion is performed for COMPOSITE OUT.
COMPNT	OFF	OFF, ON	Sets whether the logo insertion is performed for COMPONENT OUT.
SDI1/2	OFF	OFF, ON	Sets whether the logo insertion is performed for HD/SD-SDI OUT1, 2 and 3.
SDI 3	OFF	OFF, ON	
DV/HDV	OFF	OFF, ON	Sets whether the logo insertion is performed for DV/HDV(IEEE1394). (Available only when FA-90DV/HDV option is installed.)
LG FORMAT (Display only)	—	—	Displays logo video format.

IMPORTANT

The video formats of logo source and output video are different, the format error message "FMT ERR" will be displayed to the right of the ON/OFF setting. (See LOGO INSERT1 menu in the previous page.) The logo image will not be inserted to the output where "FMT ERR" is displayed.

When the FA-90UD option is installed, a logo cannot be inserted to the outputs where the MODE SELECT is set to **ASPECT** (See section 4-13-1 or 4-14-1.) and the OUTPUT MODE item (See section 4-13-2 or 4-14-2.) is set to **THROUGH**. However, a logo can be inserted to the aspect-converted outputs.

4-17-3. LOGO SOURCE



Menu Button (Lit red)

VIDEO
OPTION

Item	Description
LOGO ID	Selects a logo channel to be assigned to a source.
SOURCE ID (Source selection)	Selects a logo source for the selected logo channel (LOGO ID). The logo source data must be transported before displaying the logo sources in the menu. See the FA-91LG separate manual for how to transport logo data.
FORMAT (Display only)	Displays the video format of the logo source. SD 525 represents 525/60. SD 625 represents 625/50. HD 1080 represents 1080/59.94i, 1080/50i, 1080/24PsF and 1080/23.98PsF. HD 720 represents 720/59.94p and 720/50p.

The submenu as shown below appears if you change SOURCE ID.

```
      LOGO SOURCE        36
LOGO ID   :1
SOURCE ID:50    FORA
FORMAT:HD 1080
F3:SET F4:CANCEL
```

To change the SOURCE ID, turn F1 to change the number and then press F3.
To cancel the operation, press F4.

4-17-4. LOGO PORT

IMPORTANT

The logo port (LAN2 on the FA-9100/RPS rear panel) is a dedicated LAN (10/100BASE-T) port for transporting logo data. Normally leave the network settings unchanged and use the port at the factory default settings. Change the network settings in the FA-9100/RPS only when necessary. You cannot change the network settings from the FA-90RU.

See the FA-91LG separate manual for the network settings in the computer from which the logo data is sent.

```
      LOGO PORT          39
MENU:IP ADDRESS
      192.168.0.1
```

Menu Button

VIDEO
OPTION

Parameter	Default	Item	Description
MENU (Network settings)	IP ADDRESS	IP ADDRESS, SUBNETMASK, GATEWAY, PORT NO.	Configures the network settings for the logo port (LAN2). After changing the setting, press F3 to confirm the change for each item.

Turn F1 to select the item to display the setting. Each time you turn F1, the menu display is successively changed in the order of IP ADDRESS, SUBNETMASK, GATEWAY and PORT NO.

```
      LOGO PORT          39
MENU:IP ADDRESS
      192.168.0.1
```

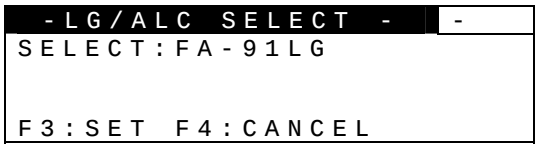
```
      LOGO PORT          39
MENU:SUBNET MASK
     255.255.255.0
```

```
      LOGO PORT          39
MENU:GATEWAY
         0.0.0.0
```

```
      LOGO PORT          39
MENU:PORT NO.
           1234
```

4-18. LG/ALC Selection

FA-91LG (hereafter called LG) and FA-91ALC (hereafter called ALC) options cannot be used at the same time. Select either of them for use in the LG/ALC SELECT menu below. To display the menu, press and hold down the **VIDEO OPTION** button for a while.



Menu Button (Press and hold)

VIDEO OPTION

Turn **F1** to select **LG** or **ALC**. Then press **F3 UNITY** to confirm the setting. To cancel the change, press **F4 UNITY**.

IMPORTANT

The message "Now Restarting…" appears in the menu display when changing the LG/ALC selection. Wait until the message disappears before operating.

The LG/ALC menu cannot be set when sending or deleting logo image files from the FA-91LG control software on the PC. In these cases, a message appears in the menu display. Wait until the message clears from the menu display.

4-19. OPERATE/BY-PASS

Menu Button

SYSTEM

Parameter	Default	Setting Range	Description
SELECT	OPERATE	OPERATE, BY-PASS	**OPERATE:** Outputs processed signal **BYPASS:** Bypasses input signal directly to each output. For SDI signals, the bypassed input is output only from SDI OUTPUT1.

4-20. TEST SIGNAL

Menu Button

SYSTEM

Parameter	Default	Setting Range	Description
VIDEO (Video Test Signal)	OFF	OFF, COLOR BAR	Uses an internal color bar.
AUDIO (Audio Test Signal)	OFF	OFF, 1kHz Tone	Uses an internally generated signal (1kHz Tone)(*1)

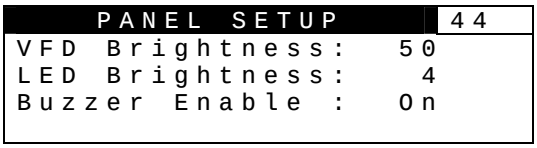
(*1) The settings such as gain, except the ANALOG OUTPUT GAIN parameter (see 4-26-10), cannot be changed while using the test signal. To change the settings, set this parameter to OFF and select the test signal in the AUDIO OUTPUT SELECT menu (see 4-26-11).

Regardless of this setting, a test signal is not sent to a channel pair that outputs non-audio (such as Dolby or SDI signal), but non-audio data is continued to output. If non-audio is selected while outputting a test signal, the test signal is switched to non-audio output.

NOTE

The SYSTEM menu button flashes green while using any one or both of the video and audio test signals.

4-21. PANEL SETUP



Menu Button

SYSTEM

Parameter	Default	Setting Range	Description
VFD Brightness	50	10 to 50	Sets brightness of the menu display. **10 to 50:** dark to bright
LED Brightness	4	1 to 8	Sets the brightness of all LED indicators on the front panel. **1 to 8:** dark to bright
Buzzer Enable (Buzzer Setting)	On	On, Off	Selects whether the buzzer sounds or not when the buttons are operated.

4-22. REMOTE MODE

The REMOTE MODE is used to select a control mode to control FA-9000/9100/9100RPS from MULTI or PRIORITY modes.

Menu Button

SYSTEM

◆ **MULTI Mode**

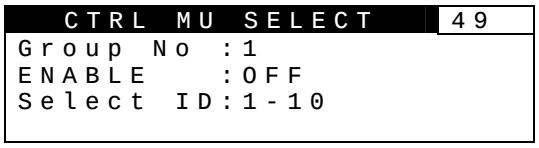
This mode enables to control FA-9000/9100/9100RPS from multiple FA-90RUs. The settings that are set on the FA-9000/9100/9100RPS are shared by the connected FA-90RU units.

◆ **PRIORITY Mode**

This mode gives the priority to the FA-90RU of the smallest ID number to enable the connection with the FA-9000/9100/9100RPS among the multiple FA-90RU units that are connected to the same FA-9000/9100/9100RPS. As long as the FA-90RU which has the smallest ID number is connected to the FA-9000/9100/9100RPS, other FA-90RU cannot establish a connection with the FA-9000/9100/9100RPS. When the FA-90RU which has the priority is connected to another FA-9000/9100/9100RPS, the FA-90RU of the next smallest ID number is enabled to establish a connection with the FA-9000/9100/9100RPS.

4-23. CTRL MU SELECT

The CTRL MU SELECT is used to enable or disable the control of the multiple FA-9000/9100/9100RPS over the FA-90RU. It is used to prevent an operation error or give permission to some specific FA-90RU units to control the FA-9000/9100/9100RPS units. Up to 8 groups of unit can be set.



Menu Button

SYSTEM

Parameter	Default	Setting Range	Description
Group No	1	1-8	Selects a group.
ENABLE	OFF	OFF, ON	Sets to enable/disable the selected group. If all groups are set to **OFF**, the limitation is cancelled and all connected FA-9000/9100/9100RPS units can be controlled.
Select	1-100	1-100	Selects available FA-9000/9100/9100RPS by ID numbers using F3 and F4 for the selected group. To control one FA-9000/9100/9100RPS, turn F4 fully counter-clockwise to erase ID display.

IMPORTANT

FA-90RU is not operative unless its connection with a FA-9000/9100/9100RPS is established. There is a case you cannot establish a connection with any FA-9000/9100/9100RPS, if any group set in CTRL MU SELECT is enabled and the connection with the selected FA-9000/9100/9100RPS is unable to be established because of physical disconnection or any other reasons.

In this case, first, you must disable the control for all groups. To disable the control for all groups at once, press and hold the SYSTEM button for a while. It will set the ENABLE under CTRL MU SELECT to off for all groups. Once you disable the control, make connections with available FA-9000/9100/9100RPS and set CTRL MU SELECT again.

4-23-1. CTRL MU SELECT Setting Example

For example, assume that the FA-9000/9100/9100RPS units of ID numbers 1 to 30 are currently connected to the FA-90RU unit. To control FA-9000/9100/9100RPS of ID numbers 1 to 5 in Group 1, ID numbers 10 to 12 in Group 2 and ID number 30 in Group 3, set Group 1-3 in the CTRL MU SELECT menu as shown below and set other groups disabled (ENABLE to OFF).

```
  CTRL MU SELECT   49
Group No  :1
ENABLE    :ON
Select ID:1-5
```

```
  CTRL MU SELECT   49
Group No  :2
ENABLE    :ON
Select ID:10-20
```

```
  CTRL MU SELECT   49
Group No  :3
ENABLE    :ON
Select ID:30
```

4-24. CTRL MU STATUS

This CTRL MU STATUS is used to check the setting of the CTRL MU SELECT set in section 4-23. After completing the steps described in section 4-23-1 “CTRL MU SELECT,” the menu display appears as below.

```
  CTRL MU STATUS   50
NO.1:1-5     NO.5:OFF
NO.2:10-12   NO.6:OFF
NO.3:30      NO.7:OFF
NO.4:OFF     NO.8:OFF
```

4-25. GPI SETTING

The REMOTE (GPI) connector is used for GPI input/output. See FA-9000/9100/9100RPS Operation Manual for details.

4-25-1. GPI 1 - 7 SETTING

```
GPI 1 SETTING      51
I/O        : INPUT
FUNCTION:  None
```

```
GPI 7 SETTING      57
I/O        : INPUT
FUNCTION:  None
```

Menu Button

SYSTEM

Parameter	Default	Setting Range	Description
I/O (Input/Output)	INPUT	INPUT, OUTPUT	Selects between GPI input and output for GPI1 to 7 ports individually.

The options of FUNCTION differ depending on **INPUT** or **OUTPUT** set at I/O.

If I/O is set to INPUT

```
GPI 1 SETTING      51
I/O        : INPUT
FUNCTION:  BYPASS
```

Parameter	Default	Setting Range	Description
FUNCTION	None	None, BYPASS, FRM FRZ, FLD FRZ, TEST CB, LGINSCOMPST (*1), LGINSCOMPNT (*1), LGINSSDI1/2 (*1), LGINSSDI3 (*1) LGINSDV/HDV (*2) LGLOGOID1-8 (*1), EVENT00-30	Assigns a function for the selected port (GPI1-7). (*1) Available when FA-91LG option installed. (*2) Available when FA-91LG option and FA-90DV/HDV option installed.

NOTE

When the same function is applied to multiple ports, the assigned function will be active if any one of the ports (pins) is ON (shorted to the ground).

◆ **If I/O is set to OUTPUT**

```
GPI 2 SETTING      52
I/O        : OUTPUT
FUNCTION:  FREEZE
```

Parameter	Default	Setting Range	Description
FUNCTION	None	None, FREEZE, VIDEO IN, AUDIO IN REF IN, FAN ALARM (*1) POWER1 ALARM (*2), POWER2 ALARM (*2)	Assigns a function to the port GPI 1 to 7 respectively.

◆ INPUT FUNCTION

Function	Type	Description
None	--	No function
BYPASS	Level	Selects OPERATE/BY-PASS Shorted to GND for BY-PASS OPEN for OPERATE
FRM FRZ	Level	Selects frame freeze ON/OFF. Shorted to GND for FRAME FREEZE ON OPEN for FRAME FREEZE OFF
FLD FRZ	Level	Selects field freeze ON/OFF. Shorted to GND for FIELD FREEZE ON OPEN for FIELD FREEZE OFF
TEST CB	Level	Selects test signal ON/OFF. Shorted to GND for TEST SIGNAL ON OPEN for TEST SIGNAL OFF
LG INS COMPST	Level	Selects logo insert ON/OFF for COMPOSITE OUT Shorted to GND for LOGO INSERT ON OPEN for LOGO INSERT OFF
LG INS COMPNT	Level	Selects logo insert ON/OFF for COMPONENT OUT. Shorted to GND for LOGO INSERT ON OPEN for LOGO INSERT OFF
LG INS SDI1/2	Level	Selects logo insert ON/OFF for SDI1/2 OUT. Shorted to GND for LOGO INSERT ON OPEN for LOGO INSERT OFF
LG INS SDI3	Level	Selects logo insert ON/OFF for SDI 3 OUT. Shorted to GND for LOGO INSERT ON OPEN for LOGO INSERT OFF
LG INS DV/HDV	Level	Selects logo insert ON/OFF for DV/HDV OUT. Shorted to GND for LOGO INSERT ON OPEN for LOGO INSERT OFF
LG LOGO ID1 to LG LOGO ID8	Pulse	Sets LOGO1 (LOGO2 to LOGO8) to the output logo. （It is set to LOGO ID in the LOGO CONTROL menu. See section 4-17-1.）
EVENT00 to EVENT30	Pulse	Loads EVENT00 (EVENT01 to EVENT30).

See FA-9000 or 9100/9100RPS Operation Manual for details about GPI input/output circuit.

Logo operations are available when FA-91LG is installed to FA-9100/RPS.

◆ OUTPUT FUNCTION

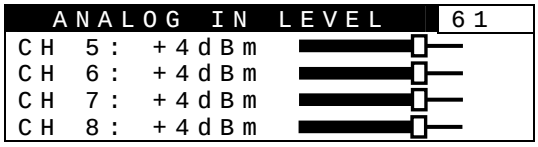
Function	Description
None	No function
FREEZE	FREEZE ON: Low FREEZE OFF: High (Open Collector)
VIDEO IN	Signal present: Low Signal not present: High (Open Collector)
REF IN	Signal present: Low Signal not present: High (Open Collector)
FAN ALARM (*1)	Fan abnormal: Low Fan normal: High (Open Collector)
POWER1 ALARM (*2) POWER2 ALARM (*2)	Power abnormal: Low Power normal: High (Open Collector)

See the FA-9000 or 9100/9100RPS operation manual for GPI input/output circuit.

(*1) FAN ALARM goes to low (active), if one or more cooling fans fail.
(*2) These alarms are only for FA-9100RPS.

4-26. AUDIO SETTING

4-26-1. ANALOG IN LEVEL



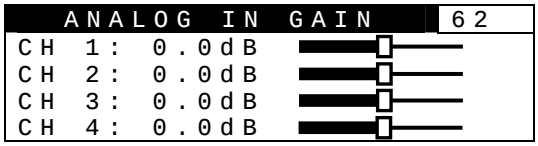
Menu Button

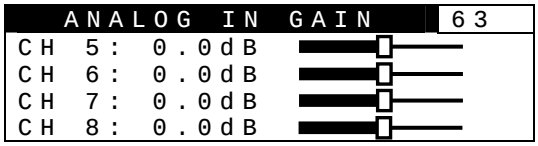
AUDIO LVL
IN/OUT

Parameter	Default	Setting Range	Description
CH 1-8 (Analog Audio Input Level)	+4 dBm	-10 dBm, 0 dBm, +4 dBm, +8 dBm	Sets the analog audio input level

This parameter sets the reference level for when performing the A/D conversion, and it corresponds to the DIG REF LVL parameter in the AUDIO SYSTEM SET menu (see 4-26-17). See FA-9000/9100/9100RPS Operation Manual for details.

4-26-2. ANALOG IN GAIN





Menu Button

AUDIO LVL
IN/OUT

Parameter	Default	Setting Range (Steps)	Description
CH 1-8 (Analog Audio Input Gain)	0.0 dB	-20.0 to +20.0 dB (0.1 dB)	Sets the analog audio input gain.

4-26-3. AES IN GAIN

Menu Button

AUDIO LVL
IN/OUT

Parameter	Default	Setting Range (Steps)	Description
CH 1-8 (AES/EBU Input Gain)	0.0 dB	-20.0 to +20.0 dB (0.1 dB)	Sets the AES/EBU input gain.

4-26-4. SDI IN GAIN

Menu Button

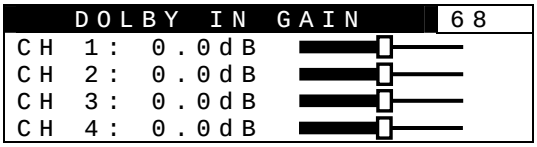
AUDIO LVL
IN/OUT

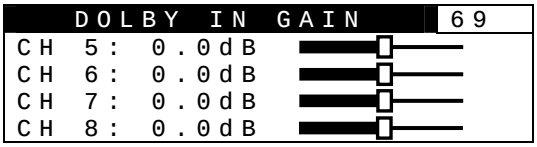
Parameter	Default	Setting Range (Steps)	Description
CH 1-8 (SDI Embedded Audio Input Gain)	0.0 dB	-20.0 to +20.0 dB (0.1 dB)	Set the SDI embedded audio input gain.

4-26-5. DOLBY IN GAIN

IMPORTANT

DOLBY INPUT GAIN is available only if the FA-90DE-D or FA-91DE-ED option is installed.





Menu Button

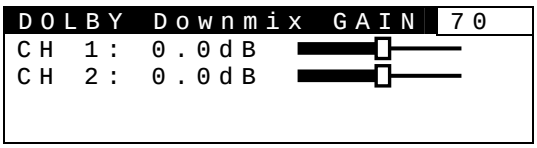
AUDIO LVL
IN/OUT

Parameter	Default	Setting Range (Steps)	Description
CH 1 - 8 (Dolby Audio Input Gain)	0.0 dB	-20.0 to +20.0 dB (0.1 dB)	Sets the audio gain for the decoded Dolby input signal.

4-26-6. DOLBY DOWNMIX GAIN

IMPORTANT

DOLBY DOWNMIX GAIN is available only if the FA-90DE-D or FA-91DE-ED option is installed.



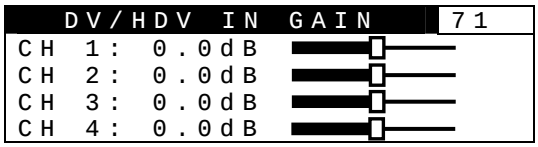
Menu Button

AUDIO LVL
IN/OUT

Parameter	Default	Setting Range (Steps)	Description
CH 1 - 2 (Dolby Downmix Audio Input Gain)	0.0 dB	-20.0 to +20.0 dB (0.1 dB)	Sets the gain for the downmixed audio of the decoded Dolby input.

4-26-7. DV/HDV IN GAIN

IMPORTANT
DV/HDV IN GAIN is available only if the FA-90DV and/or FA-90HDV option installed.

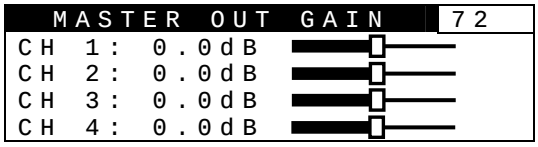


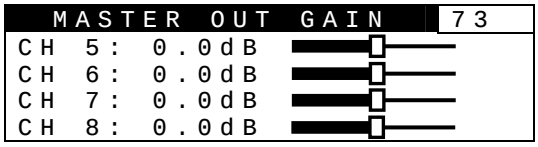
Menu Button

AUDIO LVL
IN/OUT

Parameter	Default	Setting Range (Steps)	Description
CH 1 to 4 (DV/HDV embedded audio input gain)	0.0 dB	-20.0 to +20.0 dB (0.1 dB)	Sets input gain of DV/HDV embedded audio.

4-26-8. MASTER OUT GAIN





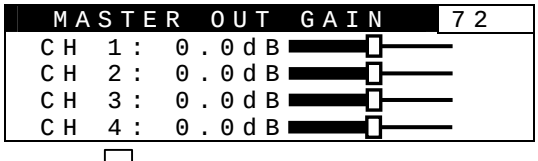
Menu Button

AUDIO LVL
IN/OUT

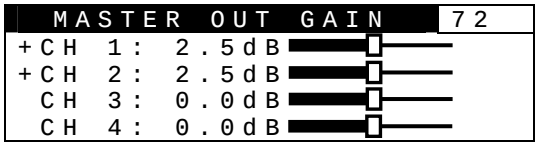
Parameter	Default	Setting Range (Steps)	Description
CH 1-8 (Master Audio Output Gain)	0.0 dB	-20.0 to +20.0 dB (0.1dB)	Sets the master audio output gain. This setting is applied to all audio outputs (ANALOG, AES/EBU, and SDI EMBEDDED AUDIO).

The gain for analog audio output can be finely adjusted in the ANALOG OUTPUT GAIN menu (see 4-26-10).

The multiple channels can be adjusted simultaneously. Briefly press the UNITY button for the desired channel. A "+" is displayed at the left of the corresponding parameter name. Repeat this step until a "+" is displayed for all desired channels. Any channel with a "+" can be adjusted simultaneously by using one of the corresponding controls.

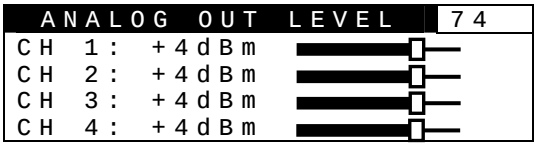


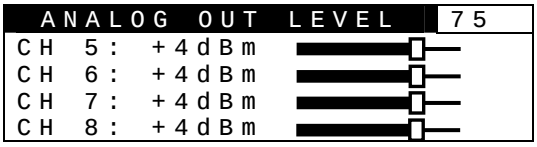
Use F1 or F2 to change both CH1 and CH2 simultaneously



Simultaneous change of multiple channels is allowed only in the same page. So simultaneous change of CH1 to CH4 or CH5 to CH8 is possible, however that of CH1 and CH5 is not possible.

4-26-9. ANALOG OUT LEVEL



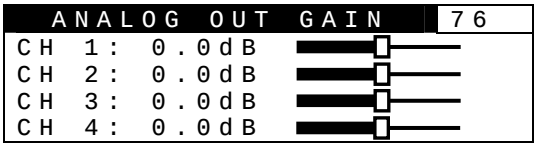


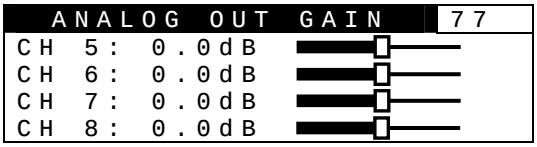
Menu Button

AUDIO LVL
IN/OUT

Parameter	Default	Setting Range	Description
CH 1-8 (Analog Audio Output Level)	+4 dBm	-10 dBm, 0 dBm, +4 dBm, +8 dBm	Sets the analog audio output level.

4-26-10. ANALOG OUT GAIN





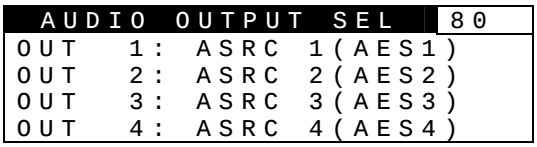
Menu Button

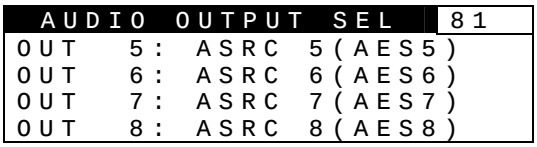
AUDIO LVL
IN/OUT

Parameter	Default	Setting Range (Steps)	Description
CH 1-8 (Analog Audio Output Gain)	0.0 dB	-20.0 to +20.0 dB (0.1dB)	Sets the analog audio output gain.

Used for fine adjustment after the MASTER OUTPUT GAIN setting (see 4-26-8).

4-26-11. AUDIO OUTPUT SEL





Menu Button

AUDIO
SEL/SYS

Parameter	Default	Setting Range	Description
OUT 1-8 (Audio Output Select)	ASRC 1-8	ASRC 1-8, ANALOG 1-8, AES 1-8, SDI 1-8, DOLBY1-8, DV/HDV1-2, DV3-4, Downmix1-2, 500Hz Tone, 1kHz Tone, SILENCE	Selects source audio for output bus 1 to 8 respectively. The internal output bus 1 to 8 supply audio to analog, digital, and embedded audio CH1-8 simultaneously. **ASRC1-8:** Uses the audio signals selected at the previous ASRC INPUT SELECT menu (see 4-26-12). **ANALOG1-8:** Uses the input analog audio signals. **AES 1-8:** Uses the input AES/EBU signals. **SDI 1-8:** Uses the embedded audio signal input with the SDI bitstream. **DV(HDV)1-4**: Uses the embedded audio of the DV/HDV input. **DOLBY1-8:** Uses the decoded Dolby audio input. **Downmix1-2:** Uses the downmixed audio from the decoded Dolby input. **500Hz Tone:** Uses an internal 500Hz Tone. **1kHz Tone:** Uses an internal 1kHz Tone. **SILENCE:** Outputs silent audio.

NOTE

Note that due to the internal connection, the status of analog channels set for OUT1 to 8 at AUDIO OUTPUT SEL is indicated “N/A”.

DOLBY1-8 and Downmix1-2 are displayed when the Dolby option card (FA-90DE-D and/or FA-91DE-ED) is installed. DV/HDV1-2 and DV3-4 are displayed when the FA-90DV and/or FA-90HDV option installed.

TIPS

Select ASRC 1-8 for AUDIO OUTPUT SEL if following signals are used for audio source.

- Audio signals at the sampling rate of other frequencies than 48kHz.
- Audio signals not synchronized with the external reference.

If a value other than ASRC is selected for AUDIO OUTPUT SEL when using these audio sources, this may result in noise or other audio problems due to sampling errors.

TIPS

[ASRC Circuit Delay]

The ASRC circuit has a processing delay time. It depends on the audio sampling rate.

Sampling Rate	Delay Time
32kHz	1.17msec
44.1kHz	1.03msec
48kHz	1.00msec

4-26-12. ASRC INPUT SEL

```
ASRC INPUT SEL  82
CH 1/2:    AES 1/2
CH 3/4:    AES 3/4
CH 5/6:    AES 5/6
CH 7/8:    AES 7/8
```

Menu Button

AUDIO
SEL/SYS

Parameter	Default	Setting Range (Steps)	Description
CH 1/2-7/8 (Source Select)	AES 1/2-7/8	AES 1/2-7/8, SDI 1/2-7/8, DV/HDV 1/2, DV 3/4	Selects source audio for CH1/2 to 7/8 processed in sampling rate converter. Source audio can be selected up to 4 pairs (8channels) from 10 pairs (20 channels) of SDI/DV/HDV embedded audio and AES/EBU inputs.

Up to 4-pair of channels (8 channels total) can be selected for audio source. The mixed selection of AES/EBU and SDI embedded audio is possible.

DV/HDV1-2 / DV-3-4 are not displayed when FA-90DV and/or FA-90HDV are not installed.

4-26-13. DOLBY DEC INPUT SEL

IMPORTANT

DOLBY DEC INPUT SEL is available only if the FA-90DE-D or FA-91DE-ED option is installed.

```
DOLBY DEC INPUT SEL  83
Input   :AES 1/2
Stream  :Dolby E 24bit
Program : 5.1+2
```

Menu Button

AUDIO
SEL/SYS

Parameter	Default	Setting Range	Description
Input (Dolby Decoder Input Select)	AES 1/2	AES 1/2-7/8, SDI 1/2-7/8	Selects a signal input to the Dolby decoder option.
Item	Display		Description
Stream (Bitstream)	Dolby D 32Bit, Dolby D 16Bit 1ch, Dolby D 16Bit 2ch, Dolby D 16bit 1/2ch, Dolby E 24bit, Dolby E 20bit, Dolby E 16bit, PCM		Displays the bit width of Dolby Decoder input.
Program (Program configuration)	(When Dolby-E is input:) 5.1+2, 5.1, 5.1+2*1, 4*2, 3*2, 8*1, 6*1, Other (When Dolby Digital is input) 3/2L, 3/2, 3/1, 2/0, 1+1, 1/0, Other		Displays the program configuration of Dolby Decoder input.

IMPORTANT

The Stream and Program items show "PCM" when there is no decoder input.

The Program item shows "5.1" when Dolby E7.1 or Dolby E7.1Screen is input. In this case, however, audio signals are properly decoded.

4-26-14. DOLBY ENC INPUT SEL

IMPORTANT
DOLBY ENC INPUT SEL is available only if the FA-91DE-ED option is installed.

```
DOLBY ENC INPUT SEL  84
CH1(1L)    :Process1
CH2(1R)    :Process2
CH3(1C)    :Process3
CH4(1LFE):Process4
```

```
DOLBY ENC INPUT SEL  85
CH5(1Ls)   :Process5
CH6(1Rs)   :Process6
CH7(2L)    :Process7
CH8(2R)    :Process8
```

Menu Button

AUDIO
SEL/SYS

Parameter	Default	Setting Range	Description
CH1-8 (Dolby Encoder Input Select)	Process	Process1-8, 1kHz Tone, SILENCE	Selects a signal input to the Dolby encoder option.

4-26-15. AES OUTPUT SELECT

IMPORTANT
AES OUTPUT SELECT is available only if the FA-91DE-ED option is installed.

```
AES OUTPUT SELECT  86
CH  1/2        :Process
CH  3/4        :Process
CH  5/6        :Process
CH  7/8        :Process
```

Menu Button

AUDIO
SEL/SYS

Parameter	Default	Setting Range	Description
AES1/2-7/8 (AES Output Select)	Process	Process, Dolby	Selects for AES OUTPUT whether to output the Dolby encode or audio input signal that is processed.

4-26-16. SDI OUTPUT SELECT

IMPORTANT
SDI OUTPUT SELECT is available only if the FA-91DE-ED option is installed.

```
SDI OUTPUT SELECT  87
CH  1/2        :Process
CH  3/4        :Process
CH  5/6        :Process
CH  7/8        :Process
```

Menu Button

AUDIO
SEL/SYS

Parameter	Default	Setting Range	Description
SDI1/2-7/8 (SDI Output Select)	Process	Process, Dolby	Selects for SDI OUTPUT whether to output the Dolby encode or audio input signal that is processed.

4-26-17. AUDIO SYSTEM SET

```
AUDIO SYSTEM SET  90
MASTER MUTE :  OFF
DIGI REF LVL:-20dBFS
```

Menu Button: AUDIO SEL/SYS

Parameter	Default	Setting Range	Description
MASTER MUTE (Muster Mute)	OFF	OFF, ON	Sets MASTER MUTE to ON to mute all outputs. (*1)
DIGI REF LVL (Digital Reference Level)	-20dBFS	-20 dBFS, -18dBFS	Sets the reference level for the digital audio signals. (*2)

(*1) Disabled when outputting an audio test signal (see section 4-20. "TEST SIGNAL") even if set to **ON**.

(*2) Sets the reference level for when performing the AD/DA conversion. It corresponds to the parameter values set in the ANALOG IN LEVEL menu (see 4-26-1) and ANALOG OUT LEVEL menu (see 4-26-9). See FA-9000/9100/9100RPS Operation Manual for details.

4-26-18. AUDIO EMBED

```
AUDIO EMBED  91
SDI 1/2:  OVERWRITE
SDI  3 :  OVERWRITE
```

Menu Button: AUDIO SEL/SYS

Parameter	Default	Setting Range (Steps)	Description
SDI 1/2 (Audio Embed)	OVERWRITE	DELETE, OVERWRITE, THROUGH	Sets embedded audio output for HD/SD-SDI OUT. **DELETE:** Deletes and not passes through the input embedded audio. **OVERWRITE:** Embeds other audio into the SDI bitstream. **THROUGH:** Passes through the embedded audio. (*1)
SDI 3 (Audio Embed)			

The same setting is applied to SDI OUT1 and 2. SDI OUT3 is set separately. **DELETE** is automatically set in some cases when FA-91FRC is installed (See "FA-9100/9100RPS operation manual.")

(*1) If set to **THROUGH**, be sure to set the ANCI DATA (see section 4-12. "VIDEO SYSTEM SET") to **Pass**.

4-26-19. SDI GROUP SELECT

```
SDI GROUP SELECT  92
SDI IN    :Group 12--
SDI 1/2   :Group 12--
SDI  3    :Group 12--
```

Menu Button: AUDIO SEL/SYS

Parameter	Default	Setting Range (Steps)	Description
SDI IN (EMBEDDED AUDIO INPUT GROUP SETTING)	Group 12--	Group 12--, Group --34, Group 1-3-, Group -2-4, Group 1--4, Group -23-	Selects which groups of embedded audio input is used. Up to 2 groups (8 channels total) can be selected in FA-9100 and FA-9100RPS.

SDI OUT1/2, 3 (EMBEDDED AUDIO OUTPUT GROUP SETTING)	Group 12--	Group 12--, Group --34, Group 1-3-, Group -2-4, Group 1--4, Group -23-	Selects audio groups in the SDI bitstream to which the audio source is embedded.

Same setting is applied to both SDI OUT1 and 2. SDI OUT3 can be set independently.

4-26-20. AES IN HYST SYNCHRO

```
AES IN HYST SYNCHRO 93
CH 1/2: OFF
CH 3/4: OFF
CH 5/6: OFF
CH 7/8: OFF
```

Menu Button

AUDIO
SEL/SYS

Parameter	Default	Setting Range	Description
CH 1/2-7/8 (AES/EBU Input Hysteresis Synchronization Mode)	OFF	OFF, Group A, Group B	If set to **Group A** or **Group B**, the input differential hysteresis is set to the same for multiple channel pairs when the synchronized AES/EBU signals are read directly from buffer (not via the ASRC).

A channel-pair of the lowest number in a group becomes a Master, and other pairs become Slaves. If a signal loss occurs in the Master pair, the channel-pair of the second lowest number becomes Master.

Examples)

If all channel-pairs (CH1/2 to 7/) are set to Group A:
The CH1/2 becomes the master of Group A and other pairs become its slaves and are synchronized with the CH1/2 when reading from buffer.

If CH1/2 and CH3/4 are set to Group A and CH5/6 and CH7/8 are set to Group B:
The CH1/2 becomes the master of Group A and the CH5/6 becomes the master of Group B.

The FA-9100/RPS can reduce ±25% phase difference of AES/EBU audio signals between input and output frame timing of the audio sample. If the AES/EBU phase difference exceeds ±25%, the phase of the AES/EBU output may advance or delay by one sample due to the sampling with hysteresis, even if the phases of pair channels are matched and the signal phase is properly locked to the FA-9100/RPS.

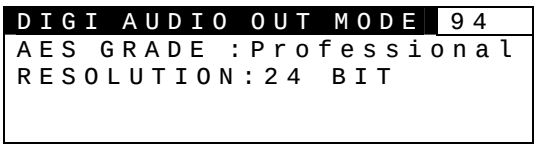
This makes it difficult to match phases of multiple AES/EBU audio pairs. However, with the AES Hysteresis Synchronize function above, you can match the phases of multiple AES/EBU audio pairs, even if the AES/EBU phase difference exceeds ±25%. In this case, the phases of audio signals in the same group are always the same although they may advance or delay by one sample.

Use this function only under the following special conditions:

- The built-in SRC (Sampling Rate Converter) is not used.
- The AES/EBU input pairs are synchronized and phase-locked each other.
- The sample timing phases of these AES/EBU pairs must be matched.
- The AES/EBU phase difference between input and sample timing of audio output exceeds ±25%.

Note that the function does not work if the built-in SRC is used. The SRC is easier for use with the same conditions.

4-26-21. DIGI AUDIO OUT MODE

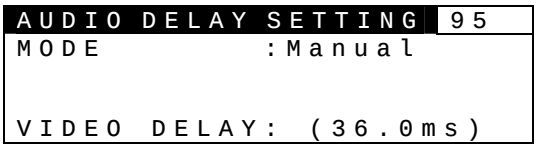


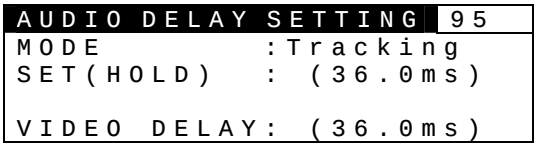
Menu Button

AUDIO
SEL/SYS

Parameter	Default	Setting Range	Description
AES GRADE (Grade Setting)	Professional	Professional, Consumer	Selects professional or consumer audio application. **Professional:** Optimized for professional use. **Consumer:** Optimized for consumer use.
RESOLUTION (Output Bit Depth)	24BIT	24BIT, 20BIT, 16BIT	Selects output audio resolution.

4-26-22. AUDIO DELAY SETTING



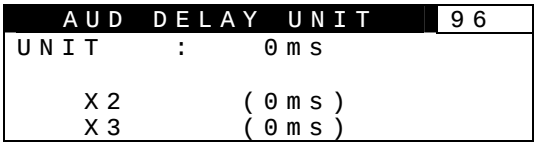


Menu Button

AUDIO
SEL/SYS

Parameter	Default	Setting Range (Steps)	Description
MODE	Manual	Manual, Tracking	Sets the audio delay mode. If F2 Unity button is pressed when set to **Tracking**, the delay counter is held and it displays the amount of current delay.

4-26-23. AUDIO DELAY UNIT



Menu Button

AUDIO
SEL/SYS

Parameter	Default	Setting Range (Steps)	Description
UNIT (Delay Unit)	0 ms	0-360 ms (1ms)	Sets the delay unit. This setting is common to all channels.

Available only if AUDIO DELAY SETTING (see 4-26-22) is set to **Manual**.

See section 4-26-24. “AUDIO DELAY MULTIPLY” before setting.

See both section 4-26-24. “AUDIO DELAY MULTIPLY” and section 4-26-25. “AUDIO DELAY OFFSET” if you wish to set delay for each channel individually.

4-26-24. AUDIO DELAY MULTIPLY

```
AUD DELAY MULTIPLY 97
CH  1: X1   (0ms)
CH  2: X1   (0ms)
CH  3: X1   (0ms)
CH  4: X1   (0ms)
```

```
AUD DELAY MULTIPLY 98
CH  5: X1   (0ms)
CH  6: X1   (0ms)
CH  7: X1   (0ms)
CH  8: X1   (0ms)
```

Menu Button

AUDIO
SEL/SYS

Parameter	Default	Setting Range	Description
CH1-8 (Audio Delay Multiply)	x 0	x 0, x 1, x 2, x 3	Sets the multiply-factor of delay for each channel. The delay for each channel can be set individually by multiplying the value set at section 4-26-22. “AUDIO DELAY SETTING” with this factor (0 to 3).

Available only if AUDIO DELAY SETTING (see 4-26-22) is set to **Manual**.

4-26-25. AUDIO DELAY OFFSET

```
AUD DELAY OFFSET 99
CH  1:    0.000ms
CH  2:    0.000ms
CH  3:    0.000ms
CH  4:    0.000ms
```

```
AUD DELAY OFFSET 100
CH  5:    0.000ms
CH  6:    0.000ms
CH  7:    0.000ms
CH  8:    0.000ms
```

Menu Button

AUDIO
SEL/SYS

Parameter	Default	Setting Range (Steps)	Description
CH1-8 (Audio Delay Offset)	0.000 ms	0.000-10.000 ms (0.125 ms)	Adjusts the delay finely.

NOTE

Audio Delay = Delay unit × Delay Multiply + Delay Offset

(See 4-26-22) (See 4-26-24) (See 4-26-25)

Total Delay = Audio Delay + ASRC Circuit Delay + Processing Delay

(See above) (See 4-26-11) (Approx. 1msec)

4-26-26. ANALOG INPUT TERM

```
ANALOG INPUT TERM  101
CH1/2:     600Ω
CH3/4:     600Ω
CH5/6:     600Ω
CH7/8:     600Ω
```

Menu Button

AUDIO
SEL/SYS

Parameter	Default	Setting Range	Description
CH 1/2-7/8 (ANALOG INPUT TERMINATION)	600Ω	600Ω, Hi-Z	Sets the impedance for the analog input. **600 Ω:** 600 Ω **Hi-Z:** high impedance

4-26-27. OUTPUT STEREO MODE

```
OUTPUT STEREO MODE  102
CH1/2:    STEREO
CH3/4:    STEREO
CH5/6:    STEREO
CH7/8:    STEREO
```

Menu Button

AUDIO
SEL/SYS

Parameter	Default	Setting Range	Description
CH 1/2-7/8 (Output Stereo Mode)	STEREO	STEREO, SWAP, MONO-LEFT, MONO-RIGHT, MONO-SUM	Sets the stereo mode for the audio output CH1/2-7/8 individually. **STEREO:** Outputs the left audio input signal to LEFT and right audio input signal to RIGHT. **SWAP:** Outputs the left audio input signal to RIGHT and right audio input signal to LEFT. **MONO-LEFT:** Outputs the left audio input signal to both LEFT and RIGHT. **MONO-RIGHT:** Outputs the right audio input signal to both LEFT and RIGHT. **MONO-SUM:** Combines the left and right audio input signals, divide the combined signals by two, and then outputs to both LEFT and RIGHT. The level is (LEFT+RIGHT)/2.

This setting is common to all analog and digital outputs.

4-26-28. OUTPUT POLARITY

```
OUTPUT POLARITY  103
CH 1:  NORMAL
CH 2:  NORMAL
CH 3:  NORMAL
CH 4:  NORMAL
```

```
OUTPUT POLARITY  104
CH 5:  NORMAL
CH 6:  NORMAL
CH 7:  NORMAL
CH 8:  NORMAL
```

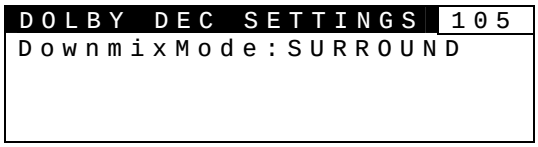
Menu Button

AUDIO
SEL/SYS

Parameter	Default	Setting Range	Description
CH 1-8 (Output Polarity)	NORMAL	NORMAL, INVERT	Selects the audio channel output polarity between normal and invert.

4-26-29. DOLBY DEC SETTINGS

IMPORTANT
DOLBY DEC SETTINGS is available only if the FA-90DE-D or FA-91DE-ED option is installed.



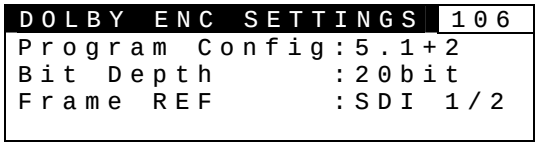
Menu Button

AUDIO
SEL/SYS

Parameter	Default	Setting Range	Description
Downmix Mode (Dolby Downmix Mode)	SURROUND	SURROUND, STEREO, MONO	Selects the mode to downmix the decoded Dolby input. **SURROUND:** Converts to two-channel audio. This audio output can be divided to Stereo and Surround (Ls+Rs) afterwards. **STEREO:** Converts to stereo. **MONO:** Converts to monaural.

4-26-30. DOLBY ENC SETTINGS

IMPORTANT
DOLBY ENC SETTINGS is available only if the FA-91DE-ED option is installed.



Menu Button

AUDIO
SEL/SYS

Parameter	Default	Setting Range	Description
Program Config (When Bit Depth is set to **20bit**)	5.1+2	5.1+2, 5.1, 5.1+2*1, 4*2, 3*2, 8*1, 6*1	Sets the configuration for Dolby Encode. (The setting range varies depending on the bit depth.)
Program Config (When Bit Depth is set to **16bit**)	5.1	5.1, 3*2, 6*1	Sets the configuration for the Dolby encoding. (The setting range varies depending on the bit depth.)
Bit Depth	20bit	20bit, 16bit	Sets the bit depth for the Dolby encoded output. Enabled if Program Config is set to the value supporting16bit.
Frame REF	SDI1/2	SDI1/2, SDI3	Selects which video output is synchronized with the Dolby encode output.

4-27. USER 1/2

Two frequently used menus can be assigned to the USER1/2 button. Once a menu is assigned to the button, pressing the button once (lit green) opens the menu assigned to USER1. Pressing the button again (lit orange) opens the menu assigned to USER2. The FA-9000/9100/9100RPS Information (see 4-1) is assigned to the USER1/2 button at the factory default setting.

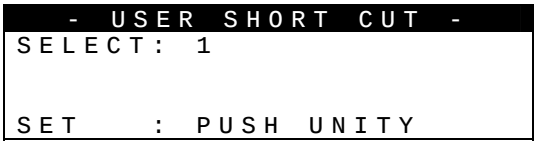
4-27-1. Assigning a Menu

1) Display the menu that you wish to assign to the button.

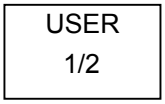
2) Press and hold down the USER1/2 button. The button lights up red and the USER SHORT CUT menu is displayed.

3) Turn F1 to select SELECT1 (USER1, green indication) or SELECT2 (USER2, orange indication)

4) Press the UNITY button below F1 to apply the assignment. To cancel the setting, press the USER1/2 button again.



Menu Button

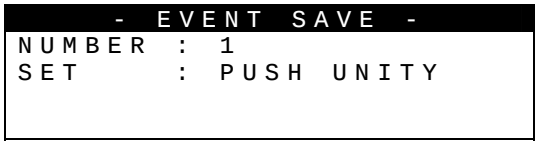


5. Event

The parameter values of FA-9000/9100/9100RPS and optional boards can be saved as events. Up to 30 events can be saved.

IMPORTANT
Events are saved in FA-90RU when controlled from the FA-90RU.
Events are saved in FA-9000/9100/9100RPS when controlled from FA-9000/9100/9100RPS.

5-1. EVENT SAVE



Menu Button

Press the EVENT button twice to open the EVENT SAVE menu (The button turns on orange). Use F1 to select the desired event number. Press the F2 UNITY button to save the current parameter value.

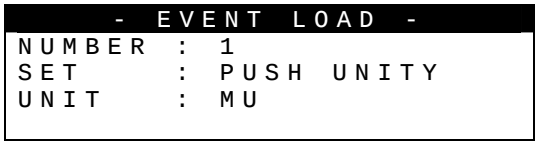
The following settings are not saved to events.

Button status: BY-PASS, LOCK and FREEZE buttons (See 2-1)

Menu setting:

AREA DISPLAY	(4-16-1. ALC CONTROL)
* ALC PORT	(4-16-3. ALC PORT)
* LOGO PORT	(4-17-4. LOGO PORT)
* SELECT	(4-19. OPERATE/BY-PASS)
* PANEL SETUP	(4-21. PANEL SETUP)
* REMOTE MODE	(4-22. REMOTE MODE)
* CTRL MU SELECT	(4-23. CTRL MU SELECT)
* GPI SETTING	(4-25. GPI SETTING)
AUDIO MASTER MUTE	(4-26-17. AUDIO SYSTEM SET)

5-2. EVENT LOAD



Menu Button

Press the EVENT button once to open the EVENT SAVE menu. (The button turns on green.) Use F1 to select the desired event number. Press the F2 UNITY button to load the parameter value of the selected event. Loading NUMBER 0 returns all settings to factory defaults. Note that, in this case, the items with asterisk (*) in the "settings not saved to events" shown above are not returned to the factory default settings.
F3 can also be used to load the parameter value of the saved event. There are options of MU and RU. Select MU to load the event saved in FA-9000/9100/9100RPS. Select RU to load the event saved in FA-90RU.

NOTE
Wait about 15 seconds and **do not change** any settings **until** the loading is complete.

6. If Problems Occur

If any of the following problems occur during operation of your FA-90RU, proceed as indicated below to see if the problem can be corrected before assuming a unit malfunction has occurred.

Problem	Check	Action
Cannot control at front panel.	Lit LOCK indicator (indicator is lit when set to **LOCK**).	Press and hold the LOCK button for several second to release the lock.
Cannot connect to the FA-9000/9100/9100RPS.	CONTROL setting in FA-9000/9100/9100RPS	Set CONTROL to **REMOTE**.
	CONTROL IN/ CONTROL OUT BNC connectors	Check the connections between the IN and OUT connectors.
	FA-9000/9100/9100RPS ID number	Check the ID number of FA-9000/9100/9100RPS.
		Verify that multiple units do not have the same ID number.
	FA-90RU ID number	Verify that multiple units do not have the same ID number.
	CTRL MU SELECT	Verify that the registered ID number is selectable.
Cannot change settings.	OPERATE/BY-PASS setting	Set OPERATE/BY-PASS to **OPERATE**.
	REMOTE MODE	If it is set to **PRIORITY mode**, verify that another FA-90RU, which has priority, is connected.
Video is frozen.	FREEZE setting	Set FREEZE to **OFF**.
Cannot output video.	VIDEO INPUT SELECT setting	Verify that input signal matches the VIDEO INPUT SELECT setting.
	Acceptable signal formats of the device connected.	FA-9000/9100/9100RPS automatically outputs multi-format video signal. Verify that the supplied signal can be accepted at the device connected.

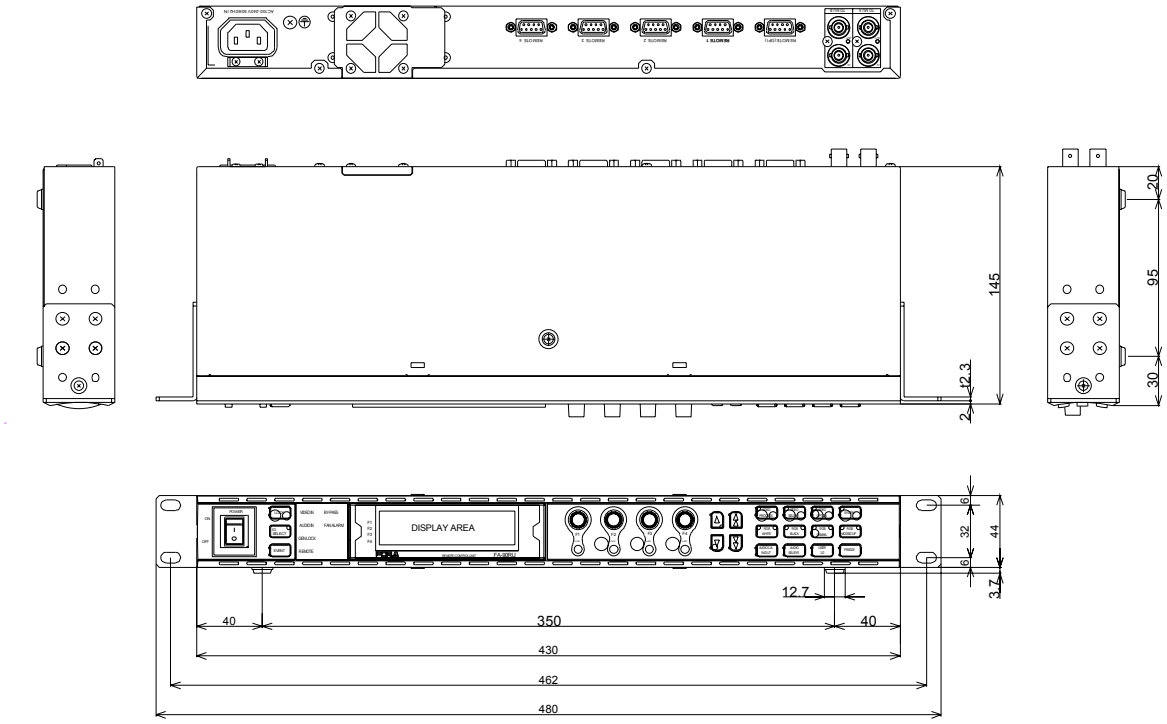
7. Specifications & Dimensions

7-1. Specifications

Interfaces	
RS-422	9-pin D-sub x 4, female (not used)
GPI	9-pin D-sub x 1, male (not used)
TO MUA	BNC x 2 (IN/OUT) (for daisy-chain connection)
TO MUB	BNC x 2 (IN/OUT) (for daisy-chain connection) (not used)
Temperature	0°C - 40°C
Humidity	30% - 90% (no condensation)
Power	100 VAC -240VAC ± 10%; 50/60 Hz
Consumption	2.0VA (11W) at 100VAC 2.4VA (12W) at 200VAC
External Dimensions	430 (W) x 44 (H) x 145 (D) mm
Weight	2.2Kg
Consumables	
Power unit	JBW12-2R5 Change every 5 years at normal temperature.
Cooling fan	109P0405 M6D01 Change every 5 years at normal temperature.

7-2. External Dimensions

(All dimensions in mm)



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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FOR-A COMPANY LIMITED

Head Office : 3-8-1 Ebisu, Shibuya-ku, Tokyo 150-0013, Japan
Overseas Division Phone: +81 (0)3-3446-3936, Fax: +81 (0)3-3446-1470
Japan Branch Offices : Osaka/Okinawa/Fukuoka/Hiroshima/Nagoya/Sendai/Sapporo
R&D/Production : Sakura Center/Sapporo Center

FOR-A America Corporate Office

11125 Knott Ave., Suite #A, Cypress, CA 90630, USA
Phone: +1 714-894-3311 Fax: +1 714-894-5399

FOR-A America East Coast Office

Two Executive Drive, Suite 670, Fort Lee Executive Park, Fort Lee NJ 07024, USA
Phone: +1 (201) 944-1120 Fax : +1 (201) 944-1132

FOR-A America Distribution & Service Center

2400 N.E. Waldo Road, Gainesville, FL 32609, USA
Phone: +1 352-371-1505 Fax: +1 352-378-5320

FOR-A Corporation of Canada

346A Queen Street West, Toronto, Ontario M5V 2A2, Canada
Phone: +1 416-977-0343 Fax: +1 416-977-0657

FOR-A Latin America & the Caribbean

5200 Blue lagoon Drive,
Suite 760, Miami, FL 33126, USA
Phone: +1-305-931-1700 Fax: +1-305-264-7890

FOR-A UK Limited

UNIT C71, Barwell Business Park, Leatherhead Road, Chessington Surrey, KT9 2NY, UK
Phone: +44 (0)20-8391-7979 Fax: +44 (0)20-8391-7978

FOR-A Italia S.r.l.

Viale Europa 50 20093, Cologno Monzese (MI), Milan, Italy
Phone: +39 02-254-3635/6 Fax: +39 02-254-0477

FOR-A Corporation of Korea

801 Dangsan Bld., 53-1 Dangsan-Dong, Youngdeungpo-Gu, Seoul 150-800, Korea
Phone: +82 (0)2-2637-0761 Fax: +82 (0)2-2637-0760

FOR-A China Limited

708B Huateng Building, No. 302, 3 District, Jinsong, Chaoyang, Beijing 100021, China
Phone: +86 (0)10-8721-6023 Fax: +86 (0)10-8721-6033

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