FOR.A
INNOVATIONS IN VIDEO
and AUDIO TECHNOLOGY

OPERATION MANUAL

FA-1010

Frame Synchronizer

FA-10PS
FA-10AES-BL
FA-10AES-UBL
FA-10AES-UBLC
FA-10ANA-AUD
FA-10GPI
FA-10RU*
FA-10DCCRU*
FA-AUX30*

5th Edition - Rev. 8

Software Version 4.09 - Higher

FOR-A COMPANY LIMITED

Edition Revision History

Edit.	Rev.	Date	Description	Section/Page
-	-	2013/07/31	Provisional	
1	-	2013/08/30	First edition	
1	1	2013/09/02	Corrected one dimension.	7-1
1	2	2013/09/18	Added Audio functions.	4-3, etc.
2	-	2013/11/18	Added supported formats and Web GUI control.	5, 9-1, etc.
3	-	2014/01/10	Added FA-10GPI and FA-10ANA-AUD options	4-4, 6, etc.
3	1	2014/02/07	Corrected the adjustable genlock-video signal phase range under the AVDL/AVDL(Minimum) mode description. Added SNMP description.	4-2-4-1, 10
3	2	2014/05/12	Changed the table for SDI Multiplexer description	4-2-10
4	-	2014/06/25	Added Luminance level (Video Process Amplifier) Added video process bypass and split display settings	4-2-6, etc. 4-2-6 to 4-2-8, etc.
5	-	2015/02/02	Supported 3G Level-B Dual-Stream. Added 4KFS mode. Changed from AVDL(Minimum) to Line(Minimum). Changed default value of Line Sync/AVDL V Phase. Corrected factual errors on GPI input/output circuits.	4-2-1, 4-2-4, 10 4-2-4 4-2-4, 13 4-2-4-2 8-2, 8-3
5	1	2015/02/23	Added 3G SDI Output Payload ID in Video System. Added Input Video Payload ID Status in Video Status	4-2-4, 4-2-4-6 4-2-14
5	2	2015/03/19	Corrected factual errors	
5	3	2015/04/02	Corrected Input / Output Video Formats.	13-1
5	4	2015/05/11	Changed the Video System page image.	4-2-4
5	5	2015/07/07	Added notes on Sync Mode 4KFS settings. Added optional card external dimensions.	4-2-4-1, etc. 13-2
5	6	2015/09/30	Ancillary data setting description changed.	4-2-10
5	7	2017/01/20	Changed 4KFS to 4K Mode. Added Sync Mode and adjustable timing explanation. Corrected FA-10GPI input/output circuits.	4-2, 5-1 4-2-4-1 8-1 to 8-3
5	8	2017/05/30	Supported Windows® 10 operating system.	3-4-1, 3-5

Precautions

Important Safety Warnings

[Power]

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

[Grounding]

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

[Operation]

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

[Transportation]

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

[Circuitry Access]

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

[Potential Hazards]

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

[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. Doing so may cause damage to the internal circuits or components of the unit. If you remove the rubber feet that are attached to the unit, **do not** reinsert the screws that secure the rubber feet.

[Consumables]

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

Upon Receipt

Unpacking

FA-1010 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. Check to ensure no damage has occurred during shipment. If damage has occurred, or items are missing, inform your supplier immediately.

ITEM	QTY	REMARKS
FA-1010	1	
AC Cord	1 set	(Including AC cord retaining clip)
Rack Mount Brackets	1 set	EIA standard type (Including 4 screws)
CD-ROM	1	Windows GUI installation disc (Including operation manual (PDF))
Quick Setup Guide	1	

Option

ITEM	QTY	REMARKS
FA-10PS	1 set	Redundant power supply unit (Including AC cord and AC cord retaining clip).
FA-10AES-BL	1-4	Digital audio (balanced) I/O card
FA-10AES-UBL	1-4	Digital audio (unbalanced) I/O card
FA-10AES-UBLC	1-2	Digital audio (unbalanced) Output expansion cable * Requires FA-10AES-UBL option. * The FA-10AES-UBL functions as an input card when used with the FA-10AES-UBLC.
FA-10ANA-AUD	1	Analog audio I/O expansion cable
FA-10GPI	1-4	External I/O control card
FA-10RU	1	Remote control unit
FA-AUX30	1	GPI control unit

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* All other trademarks are trademarks or registered trademarks of their respective owners.

Rack Mounting

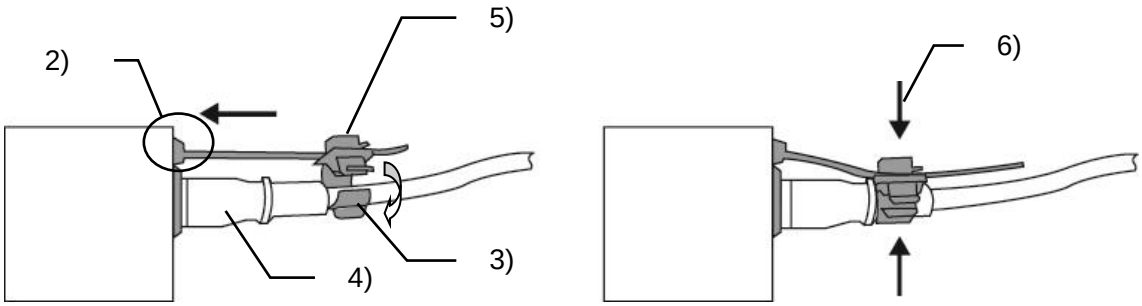
FA-1010 can be mounted to EIA standard rack units. When rack mounting a unit, remove the rubber feet and use the accessory rack mount brackets (rack ears).

Installing the AC Cord Retaining Clip

Secure the AC cord with the supplied ladder strap/retaining clip assembly to prevent accidental removal from the FA-1010.

◆ **Installing the clip**

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



◆ **Unpluging the AC cord**

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

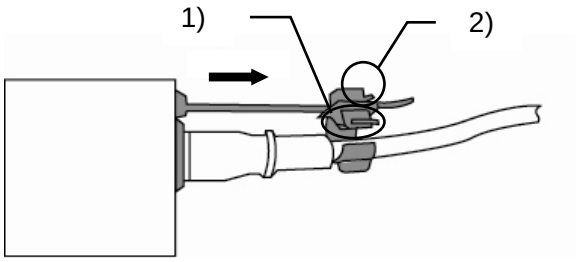


Table of Contents

1. Prior to Starting

1-1. Welcome

Congratulations! By purchasing an FA-1010 Frame Synchronizer you have entered the world of FOR-A and its many innovative products. Thank you for your patronage and we hope you will turn to FOR-A products again and again to satisfy your video and audio needs.
FOR-A provides a wide range of products, from basic support units to complex system controllers, which have been increasingly joined by products for computer video-based systems. Whatever your needs, talk to your FOR-A representative. We will do our best to be of continuing service to you.

1-2. Features

Developed as an all-round unit, the FA-1010 frame synchronizer comes equipped with 10 signal processing channels in a compact 1RU body. Color correction, 10x10 clean switching, and 3G-SDI Level A/B conversion functions and remapping/embedding of 160-channel embedded audio in 10 SDI signal inputs have been added as standard to the various frame synchronizer functions of the FA-1010. Moreover, by installing additional optional functions into the 4 built-in slots, the unit is able to function optimally under all types of video production scenes, including those for transmission, outside broadcasting, news reporting, production, editing and distribution.

Standard Features

- Color correction
- Powerful frame synchronizer
- Audio embedding/de-embedding
- 3G-SDI Level A/B conversion
- 10x10 clean switching
- Timecode insertion
- Pass-through of ancillary data such as closed captioning or time code data
- Other standard features
  - Video/Audio delay
  - Audio remapping
  - Audio down-mixing
  - Monitoring and control via dedicated GUI
  - Monitoring and control via Web GUI (Partial support)
  - SNMP monitoring

Optional Features

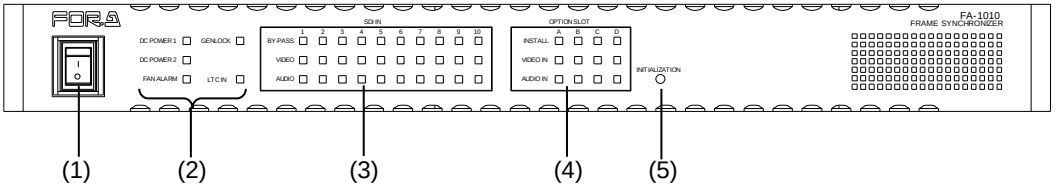
- Redundant power supply
- Digital audio input/output (balanced/unbalanced)
- Analog audio input/output
- External input/output control

1-3. About This Manual

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

2. Panel Descriptions

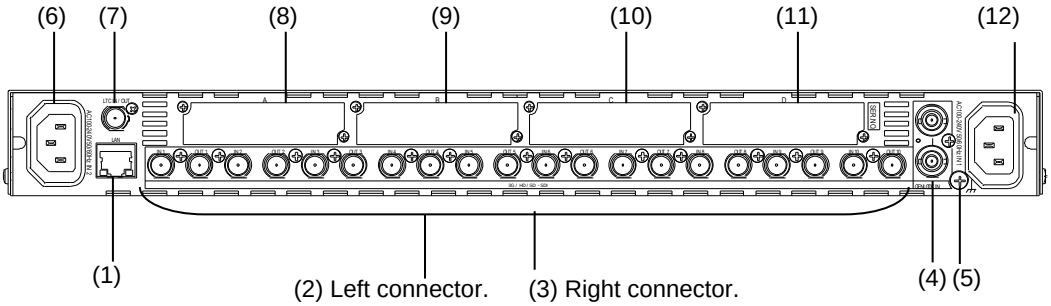
2-1. Front Panel



No	Name	Description		
1	Power switch	Used to turn the unit ON / OFF.		
2	Unit status indicator	DC POWER 1/2	Lit green	Power supply is normal.
			Lit red	A power failure has occurred.
		FAN ALARM	Lit green	All fans are operating normally.
			Lit red	One or more fans have failed.
		GENLOCK	Lit green	Genlock signal input is present.
			Unlit	No genlock signal input is present.
		LTC IN	Lit green	LTC input is present.
			Unlit	No LTC input is present.
3	SDI IN status indicator	BY-PASS	Lit green	Input signal is being bypassed.
			Unlit	No signal is being bypassed.
		VIDEO	Lit green	Video signal input is present.
			Unlit	No video signal input is present.
		AUDIO	Lit green	Embedded audio signal is present.
			Unlit	No embedded audio signal is present.
4	OPTION SLOT status indicator	INSTALL	Lit green	One or more option cards are found and recognized in option slots A to D.
			Unlit	No option card is installed or recognized.
		VIDEO IN	Lit green	Video signal input(s) is/are present in option slot(s).
			Unlit	No video signal input in option slots.
		AUDIO IN	Lit green	Audio signal input(s) is/are present in option slot(s).
			Unlit	No audio signal input in option slots.
5	INITIALIZATION button	Used to reinitialize the unit. Read the WARNING below before proceding. To reinitialize the unit, turn the unit on while holding down the INITIALIZATION button.		

WARNING
All setting data will initialize. Back up before executing a reinitialization.

2-2. Rear Panel



No	Name	Description
1	LAN	1000/100BASE-TX Ethernet LAN port. Used to connect to an external remote control unit or transfer data to an external device. RJ-45
2	SDI IN 1-10	3G/HD/SD-SDI video signal input connectors. Each IN/OUT connector (1 to 10) is allocated in pairs. The left connector of each pair is an input connector.
3	SDI OUT 1-10	3G/HD/SD-SDI video signal output connectors. Each IN/OUT (1 to 10) is allocated in pairs. The right connector of each pair is an output connector.
4	GENLOCK IN	Genlock signal input connector. Used for reference signal input (black burst or tri-level sync). The bottom connector is for a loop through. Terminate at 75 ohm when not in use.
5	Ground Terminal	Used to ground the unit to protect operators from static electricity and electrical shock.
6	AC IN 2	AC power source connector. (100-240V AC 50/60Hz)(optional)
7	LTC IN/OUT	Time code input/output connector
8	Option Slot A	Option card installation slot.
9	Option Slot B	Option card installation slot.
10	Option Slot C	Option card installation slot.
11	Option Slot D	Option card installation slot.
12	AC IN 1	AC power source connector. (100-240V AC 50/60Hz)

IMPORTANT
Internal cooling fans prevent overheating. Do not block the front, rear or side vents with other equipment or objects.

2-3. Internal Settings

IMPORTANT
Note that internal switch settings should remain unchanged from factory default settings under most operational circumstances. If you have accidentally changed the setting, refer to the MAIN card settings below to return to the factory default settings. Further note that adjustment and maintenance should only be performed by qualified technical personnel familiar with FOR-A equipment.

WARNING
Do not access internal cards or connect peripheral units with the unit power ON. Always power OFF all connected units / disconnect power cords prior to accessing the interior. To protect boards from electrostatic damage, do not touch board components.

2-3-1. Dipswitch Settings

The following dipswitch settings can be made on the MAIN CARD inside the FA-1010.

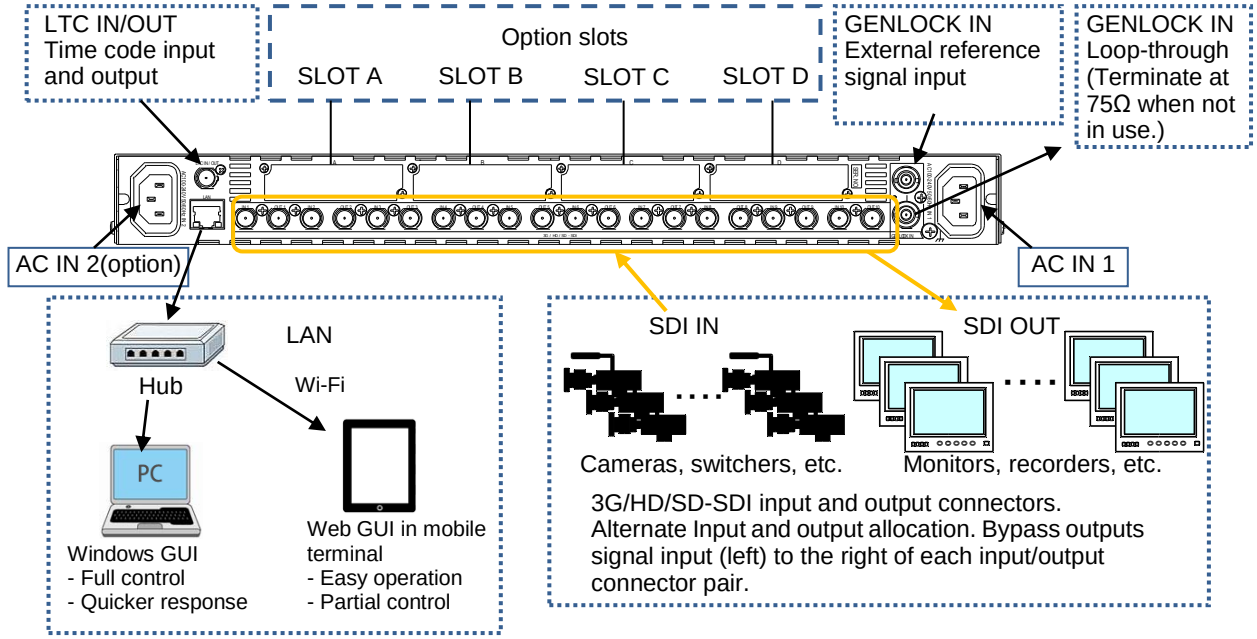
◆ **Dipswitch DS1 Settings**

	Pin No.	Default	Settings
DS1	1-8	OFF	Do not change
DS2	1	OFF	FA-10PS option not installed: OFF FA-10PS option installed: ON
	2	OFF	FA-10ANA-AUD option not installed: OFF FA-10ANA-AUD option installed: ON
	3-8	OFF	Do not change

3. System Setup

3-1. System Configuration

FA-1010 base system device connections are shown below with the 10 SDI inputs and outputs standard.



3-1-1. Option

Currently available options are as follows.

◆ **Option Cards**

Up to 4 option cards can be installed into SLOTS A to D to enhance your system.

Option card	Description
FA-10AES-BL	Digital audio (balanced) input/output option
FA-10AES-UBL	Digital audio (unbalanced) input/output option
FA-10AES-UBLC	Digital audio (unbalanced) output expansion option FA-10AES-UBL serves as input if FA-10AES-UBLC is installed.
FA-10ANA-AUD	Analog audio input/output expansion option (Installed into SLOT D.)
FA-10GPI	External GPI control option

◆ **FA-10RU (Remote Control Unit)**

Remote control hardware using Ethernet. Provides more intuitive operation than GUI.

3-2. Power-On

When the FA-1010 is powered on, all LEDs on the front panel including Alarm indicators light. Once startup is complete, current status is indicated.

3-2-1. Note on Powering Off

Do not turn the power of the unit off for at least 10 seconds whenever a setting is changed. The setting data may otherwise not save properly.

3-3. Control System Selection

The FA-1010 offers a choice of two control systems, appropriate for different purposes.

- Windows GUI - Enables full control over the FA-1010
  - Quicker response compared to Web GUI control
- Web GUI - Easy operation on tablet PC or PC
  - No space required

3-4. Windows GUI Setup

3-4-1. System Requirements

To install Product (software), your computer must meet the following requirements.

OS	Windows® 7 Professional (32/64 bit), 8.1, 10 Pro (32/64 bit)
CPU	Intel® Core™2 Duo processor 2 GHz or faster
Memory	2 GB or more
Display	Resolution of 1280 x 1024pixels or higher recommended Must be capable of full color (24-bit) display
Network port	Ethernet, at least one port 100BASE-TX/1000BASE-T
Network cable	100BASE-TX: Category 5 or better 1000BASE-T: Category 6, or enhanced category 5
Software	Microsoft® .NET Framework 4.0 Windows® Installer 3.1

* Mac OS is not supported.

3-4-2. Network Settings

Change the PC network settings for the connection with the FA-1010.
From the Startup menu, go to **Local Area Connection** > **General** > **Internet Protocol (TCP/IP)** > **General** > **Properties**, then set the IP address and Subnet mask as shown below.

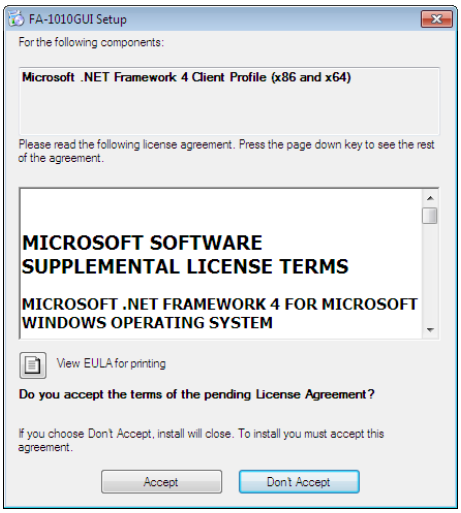
PC IP address	192.168.0.xxx (xxx is any number from 1 to 254 except for the number set for the FA-1010 unit and the gateway number.)
Subnet mask	255.255.255.0

* The default FA-1010 IP address is 192.168.0.10.

3-4-3. Installing Software

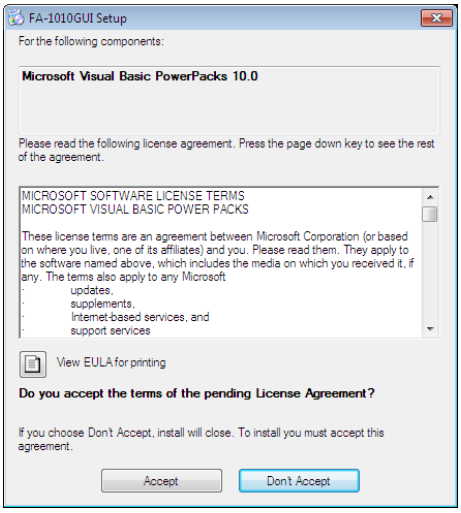
(1) Open the CD-ROM, and the **FA-1010GUI** folder. Double-click the **Setup** icon to start the setup wizard.

(2) If “Microsoft .NET Framework 4” is not installed on your PC, the screen as shown below appears. Click **Accept.**



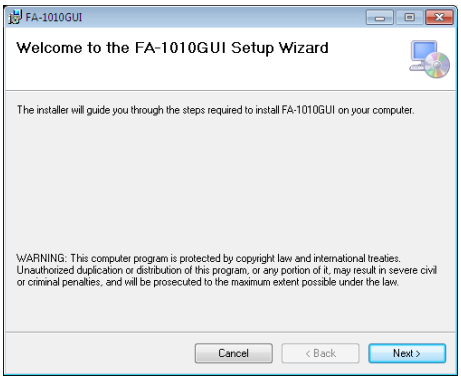
* If “Microsoft .NET Framework 4” is already installed on your PC, the screen will not appear.

(3) If “Microsoft Visual Basic Power Packs 10.0” is not installed on your PC, the screen as shown below appears. Click **Accept**.

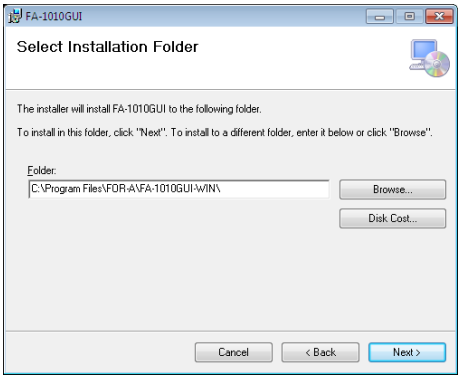


* If “Microsoft Visual Basic Power Packs 10.0” is already installed on your PC, the screen will not appear.

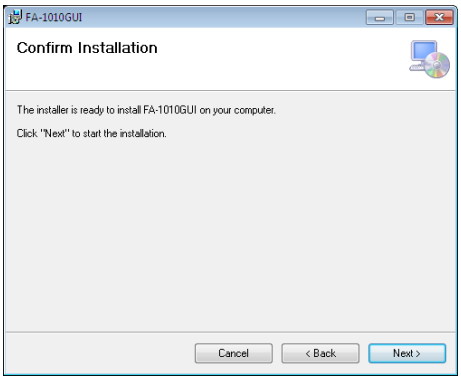
(4) Once the FA-1010GUI setup wizard starts, the screen as shown below appears. Click **Next** to continue the setup.



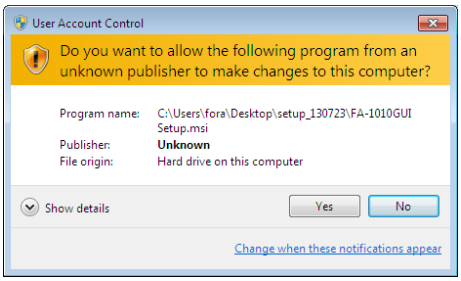
(5) Select the installation directory, then click **Next**.



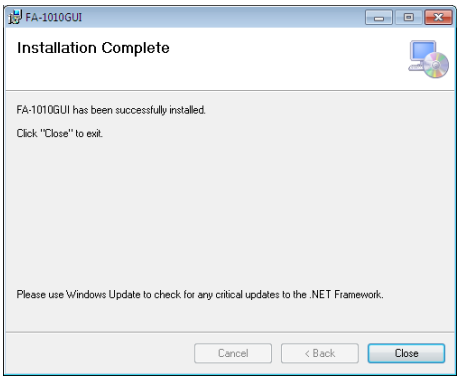
(6) A confirmation screen will appear. Click **Next** to start the installation.



(7) The user Account Control screen will appear. Click **Yes** to continue the installation.



(8) When installation is completed, the screen as shown below appears. Click **Close** to quit the setup wizard.



3-5. Web GUI Setup

1. Verify the connection between the FA-1010 and PC (or tablet PC).

2. Start a web browser on the PC.

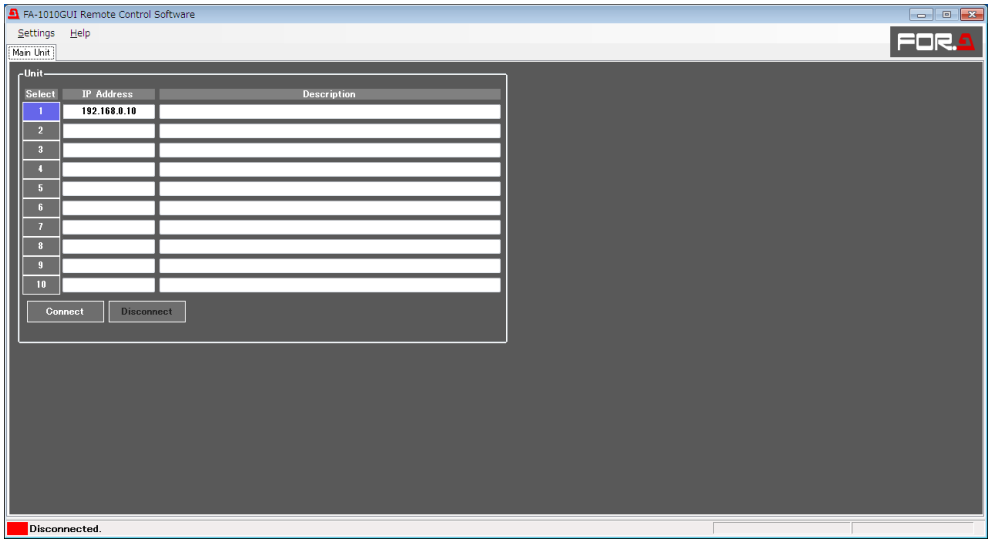
3. Enter the FA-1010 IP address into the web browser address bar.
   * The FA-1010 factory default IP address is “192.168.0.10”.

◆ **To use FA-1010 Web GUI, your computer must meet the following requirements.**

OS	iOS 6 or later Windows® 7 Professional (32, 64-bit), 8.1, 10 Pro (32/64 bit)
Web browser	Apple Safari 6 or later, Mozilla Firefox 24 or later, Windows® Internet Explorer 10 or later, Google Chrome 28 or later Microsoft Edge 38 or later
Network port	20 Mbps or faster (Complying with IEEE802.11a/g/n or IEEE802.3u/ab)
Display	1024 x 768 pixels, 32-bit or better

4. Windows GUI

This section describes Windows GUI, the dedicated FA-1010 control software that runs in a PC.
Refer to Section 3-4-2. “Network Settings” when establishing a PC connection.
When FA-1010 GUI starts up, a page as shown below opens.
Enter the FA-1010 IP address to register the unit. Up to 10 units can be registered.
Select a unit to connect under Select, then click Connect. A menu page opens.
* Simultaneous connections with multiple units are not possible.

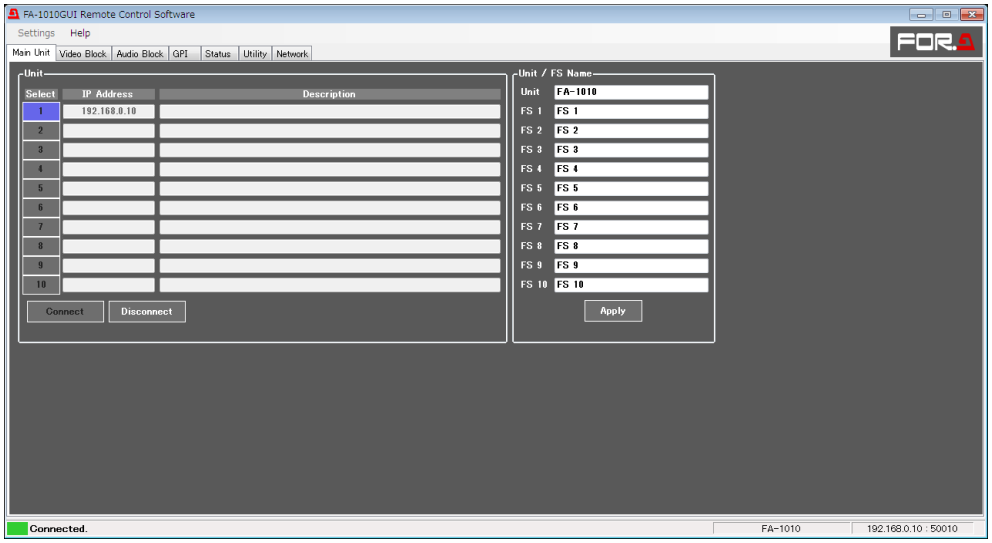


Item	Description
Select	Allows you to select an FA-1010 to connect or enter Unit and FS names.
IP Address	Allows you to enter the IP address of each FA-1010 unit.
Description	Allows you to enter a note.

Button	Description
Connect	Allows you to establish a connection with the selected FA-1010.
Disconnect	Allows you to release the connection.
Abort	Allows you to cancel the connection.

4-1. Main Unit

The Main Unit tab at the top of the screen allows you to open the Main Unit page as shown below.



Windows GUI allows you to register up to 10 FA-1010 units with unit names and FS names.

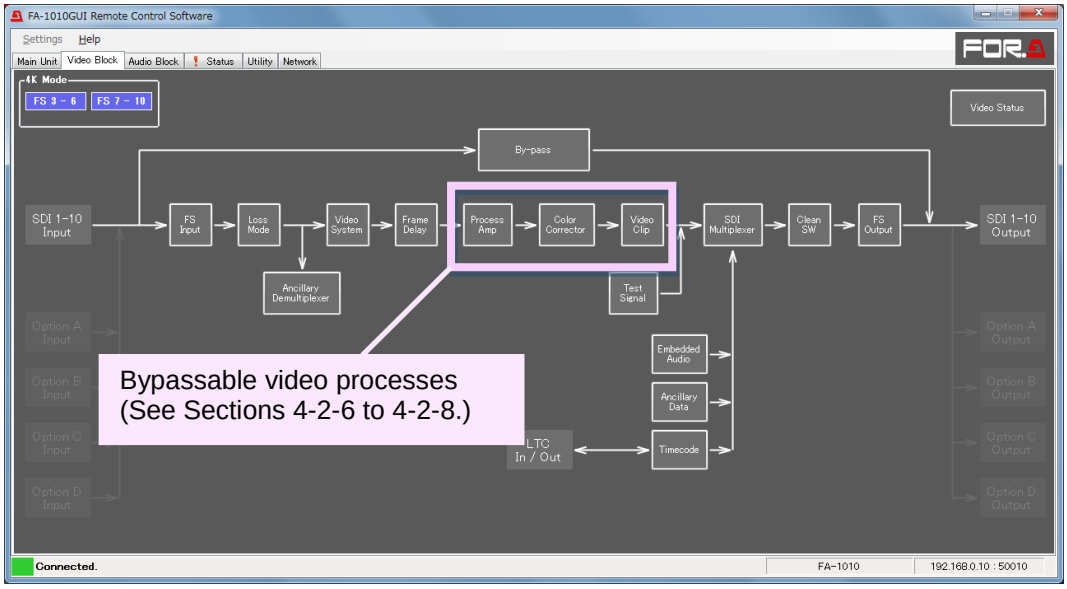
Item	Description
Select	Allows you to select an FA-1010 to connect or enter Unit and FS names. An FA-1010 unit selection cannot be changed while one unit is connected.
IP Address	Allows you to enter the IP address. The IP address cannot be changed while the unit is connected.
Description	Allows you to enter a note. Cannot be amended during connection.
Unit / FS Name	Allows you to enter the unit name and FS names for the selected FA-1010.

Button	Description
Connect	Allows you to establish a connection with the selected FA-1010.
Disconnect	Allows you to release the current connection to connect to another FA-1010 unit.
Apply	Allows you to apply settings.

* Unit/FS Name is visible and changeable only if an FA-1010 is connected.

4-2. Video Block (Video Signal Control)

Click the Video tab at the top of the page. The video block diagram will be displayed.
Each block in the diagram lets you go to the corresponding windows or dialog boxes that allow you to change various settings.



◆ **4K Mode**

If using a **4K** input signal, click **FS3-6** or **FS7-10** at the upper-left corner of the screen to enable 4K Mode. 4K Mode is disabled as factory default. Four FS buttons simultaneously light blue in 4K Mode.
If using an **SHV Dual Green** signal, click both **FS 3-6** and **FS 7-10** to enable 4K Mode (8 channels from FS3 to FS10 needed and software version 4.07 or higher required).

<4K Signal Input>
To process FS channels synchronously, set all 4 FS channels as shown below.

- Set **Sync Mode** to **Frame**.
- Set **System Phase** to the same settings.

If 4K input signals are synchronized with the external reference, **Sync Mode** can be set to other than **Frame**. In such cases, adjustable difference of 4 inputs vary depending on the Sync Mode setting. See Sec. 4-2-4-1. “Sync Mode” for more details.

Even if 4K signals are synchronized with the external reference, there may exists some small differences in clock levels. In such cases, frame skips/repeats do not occur simultaneously in 4 FS channels during processing and this results in image distortion. FA-1010 can correct the timing difference in 4 inputs, up to **2 lines** (**1 line** for 3G-SDI Level-B), to remove image distortion.

<SHV Dual Green Signal (3G-SDI Level-B-DS 8ch 8K Dual Green) Input>
Set all 8 FS channels (FS3 to FS10) as shown below.

- Set **Sync Mode** to **Frame**.
- Set **Sync Format** to **2x1080/59i (Level-B)**. (*1)
- Set **3G SDI Output Payload ID** in **Video System** to **Pass**. (*2)

*1 FA-1010 cannot recognize SHV Dual Green signals by Payload ID, because SHV signal formats are not Dual Link (1080/59p) but Dual Stream (2x1080/59i) of 3G-SDI Level-B. Manually specify the signal format.
*2 FA-1010 cannot add the Payload ID of SHV Dual Green (2x1080/59i). Pass Payload ID in inputs through to outputs.

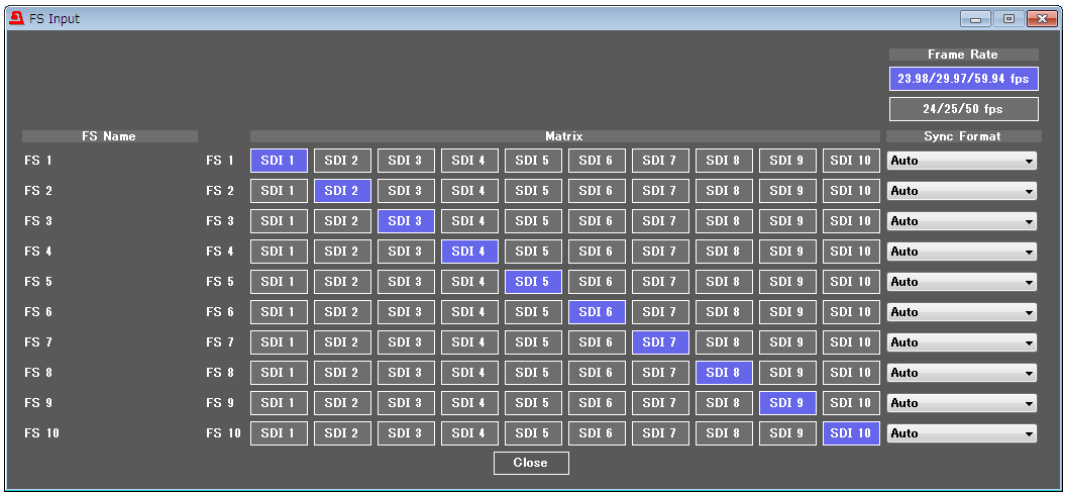
Apart from above settings, to enable SHV Dual Green mode, DID and SDID codes in FS3 input signals must be as follows:

DID: 0x52
SDID: 0x01

Even if SHV Dual Green signals are synchronized with the external reference, there may exists some small differences in clock levels. In such cases, frame skips/repeats do not occur simultaneously in 8 FS channels during processing and this results in image distortion and color shifting. FA-1010 can correct the timing difference in 8 inputs, up to **1 line** in 3G-SDI Level-B, to remove image distortion.

4-2-1. FS Input

The Video Input page allows you to assign input video signals to FS 1 to 10.

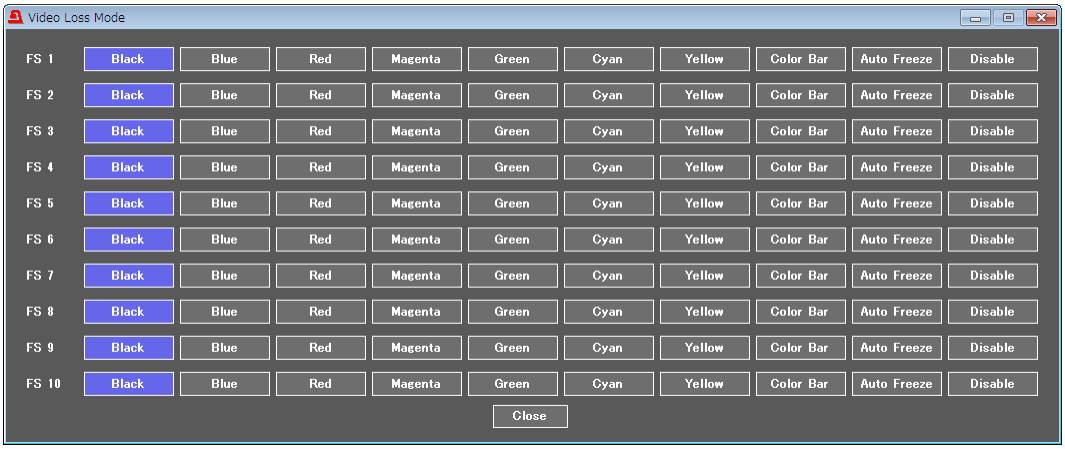


Item	Default	Setting range	Description
Frame Rate	23.98/ 29.97/ 59.94 fps	23.98/29.97/59.94 fps 24/25/50 fps	Allows you to select a frame rate for the format selected under Sync Format.
FS Name	-	-	Displays the names that have been set in the Main Unit page.
Matrix	-	SDI1-10	Allows you to select input video signals to input to FS 1 to 10.
Sync Format *1	Auto	When Frame rate is set to 23.98/29.97/59.94 fps Auto 525/60 1080/59i 1080/23PsF 1080/59p(Level-A) 1080/59p(Level-B) 2x1080/59i(Level-B) 720/59p When Frame rate is set to 24/25/50 fps Auto 625/50 1080/50i 1080/24PsF 1080/50p(Level-A) 1080/50p(Level-B) 2x1080/50i(Level-B) 720/50p	Allows you to select video signal input formats for FS 1 to 10. **Auto**: Automatically identifies the input format according to the Frame Rate setting. Select 2x1080/59i (Level-B) for slow-motion 2x speed signals (119.88i) and Super Hi-Vision Dual Green signals. (The same video data array and transmission format used.)

*1 With 4K Mode enabled (see Section 4-2. “Video Block”), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

4-2-2. Video Loss Mode

The Video Loss Mode page allows you to select an operation for video signal loss.

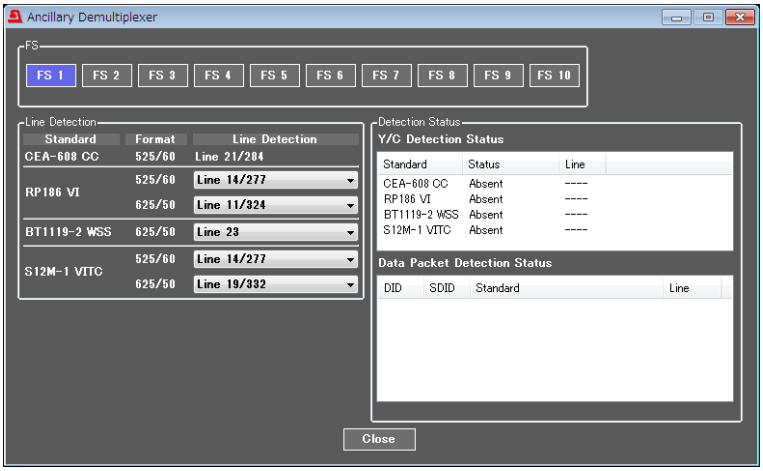


Item	Default	Setting range	Description
FS1-10 *1	Black	Black Blue Red Magenta Green Cyan Yellow Color Bar Auto Freeze *2 Disable	Allows you to select an operation for the time the video signal input selected under Input is lost. **Black – Yellow:** Outputs the selected back color. **Color Bar:** Outputs a color bar. **Auto Freeze:** Continues to output the image from one frame before the input signal loss. **Disable:** No signal output.

*1 With 4K Mode enabled (see Section 4-2. “Video Block”), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.
With 4K Mode enabled (see Section 4-2. “Video Block”), Loss mode (except Auto Freeze) is applied to all 4 FS video sources under the same FS group (FS3-6 or FS7-10) if video loss is detected for a single input.

*2 Auto Freeze is effective only if Sync Mode is set to Frame (see sec. 4-2-4-1. “Sync Mode”). If not, the operation will be the same as in Black (back color).

4-2-3. Ancillary Demultiplexer



Item	Default	Setting range	Description
FS	FS1	FS1-10	Allows you to select an FS to set its settings.

4-2-3-1. Line Detection

Allows you to specify a line to detect ancillary data in input signals.

Item	Format	Default	Setting range	Description
CEA-608 CC	525/60	21/284	21/284 fixed	Allows you to set a line number to detect ancillary data.
RP186 VI	525/60	14/277	12/275 to 19/282	
	625/50	11/324	8/321 to 22/335	
BT1119-2 WSS	625/50	23	8 to 23	
S12M-1 VITC	525/60	14/277	12/275 to 19/282	
	625/50	19/332	8/321 to 22/335	

◆ **Ancillary Data Types**

Data type	Description
CEA-608 CC	Closed caption data inserted as Y signals into line 21 of 525/60 analog and SDI signals.
S334-1 CC	Closed caption data inserted as data packets into the ancillary data space of 525/60 SDI signals.
RP186 VI	Aspect ratio data inserted into bit 3 of Chroma data in the SD-SDI V ANC data space.
BT1119-2 WSS	Aspect ratio data inserted as Y signals into line 23 of 625/50 analog signals.
S12M-1 VITC	Time code data inserted as SD-SDI Y signals.
S12M-1 ATC	Time code data inserted as data packets into the ancillary data space of SDI signals.
S2016-3 AFD	Aspect ratio data inserted as data packets into SDI V ANC data space.

4-2-3-2. Detection Status

Displays the status of ancillary data packets in input signals.

◆ Y/C Detection Status

Item	Description
Standard	Displays the selected ancillary data type for the selected FS.
Status	Displays the ancillary data detection status.
Line	Displays the line number in which ancillary data is detected.

◆ Data Packet Detection Status

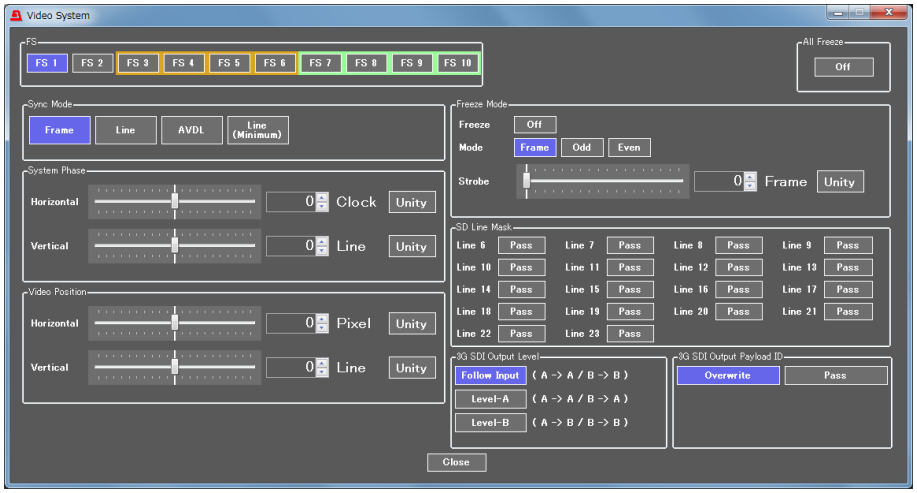
Item	Description
DID	Displays the detected DID data in hexadecimal format.
SDID	Displays the detected SDID data in hexadecimal format.
Standard	Displays the detected ancillary data type.
Line	Displays the line number in which ancillary data is detected.

* Refer to Section 11 “FA-1010 Ancillary Data Packet Name List” for details on Ancillary data displays under Detection Status.

IMPORTANT
Data status displays 2 line numbers for detected ancillary data to be inserted into 2 lines, even if the data is detected only in either line.

4-2-4. Video System

The Video System page allows you to change frame synchronization settings.



Item	Default	Setting range	Description
FS	FS1	FS1-10	Allows you to select an FS to set its settings.
All Freeze	OFF	ON OFF	Allows you to freeze all FS1 to FS10 output videos. Freeze operation in each FS1 to FS10 varies depending on the Freeze mode selection (see sec. 4-2-4-4. “Freeze Mode”).

4-2-4-1. Sync Mode

Item	Default	Setting range	Description
Sync Mode *1	Frame	Frame Line AVDL Line(Minimum)	**Frame**: Enables horizontal and vertical alignment of video signals to a genlock signal. Effective on both synchronous and asynchronous signals. **Line**: Locks the video signal (within ±1/2H) to a genlock signal. Output delay is as shown in the below table. Effective only when video signal is synchronous to the genlock signal. **AVDL/ Line(Minimum)**: Locks the video signal to a genlock signal with a delay depending on the format as shown in the below table. Effective only when video signal is synchronous to the genlock signal.

*1 With 4K Mode enabled (see Section 4-2. “Video Block”), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

For 3G Level-B signals, frame delays caused by FS control are different between video and ancillary data areas.

Format	Video area	Ancillary data area
1080/59p (50p)	16.7 ms (20 ms)	33.4 ms (40 ms)
2x1080/59i (50i)	33.4 ms (40 ms)	

IMPORTANT
FA-1010 adopts the following values for 1H when outputting 3G Level B video signals: 2200clk (14.83us) for 59.94Hz 2640clk (17.78us) for 50Hz

<Adjustable range per signal format>

Format	Adjustable range		
	Line	AVDL	Line(Minimum)
1080/59i	-1.5H to -0.5H	-6H to -0.5H	-1.2 H to -0.2 H (400 clk)
720/59p	-1.5H to -0.5H	-6H to -0.5H	-1.25 H to -0.25 H (400 clk)
1080/59p Level A	-1.5H to -0.5H	-6H to -0.5H	-1.2 H to -0.2 H (400 clk)
1050/50i	-1.5H to -0.5H	-6H to -0.5H	-1.15 H to -0.15 H (400 clk)
720/50p	-1.5H to -0.5H	-6H to -0.5H	-1.2 H to -0.2 H (400 clk)
1080/50p Level A	-1.5H to -0.5H	-6H to -0.5H	-1.15 H to -0.15 H (400 clk)
1080/23.98PsF	-1.5H to -0.5H	-6H to -0.5H	-1.15 H to -0.15 H (400 clk)
1080/24PsF	-1.5H to -0.5H	-6H to -0.5H	-1.15 H to -0.15 H (400 clk)
1080/59p Level B	-3.0H to -1.0H	-11H to -1.0H	-1.2 H to -0.2 H (400 clk)
1080/50p Level B	-3.0H to -1.0H	-11H to -1.0H	-1.15 H to -0.15 H (400 clk)
2x1080/59i (Level B)	-3H to -1H	-11H to -1H	-1.2 H to -0.2 H (400 clk)
2x1080/50i (Level B)	-3H to -1H	-11H to -1H	-1.15 H to -0.15 H (400 clk)
1080/59p Level A→B	-3.5H to -2.5H	-8H to -2.5H	-3.2 H to -2.2 H (-2H - 400 clk)
1080/50p Level A→B	-3.5H to -2.5H	-8H to -2.5H	-3.32 H to -2.32 H (-2H - 850 clk)
1080/59p Level B→A	-1.5H to -0.5H	-6H to -0.5H	-1.2 H to -0.2 H (400 clk)
1080/50p Level B→A	-1.5H to -0.5H	-6H to -0.5H	-1.15 H to -0.15 H (400 clk)
525/60	-1.5H to -0.5H	-6H to -0.5H	-1.4 H to -0.4 H (700 clk)
625/50	-1.5H to -0.5H	-6H to -0.5H	-1.4 H to -0.4 H (700 clk)

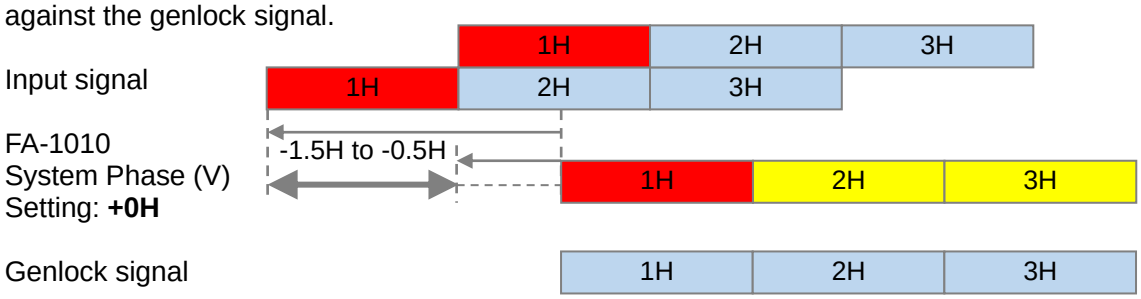
IMPORTANT

Note that 1080/59p or 1080/50p Level B output signal that is converted from Level A requires more delay than other output signal formats. In such casem, 3H delay is present in Line or AVDL Sync Mode, and 2H+400clk or 2H+850clk in Line(Minimum) Sync mode.

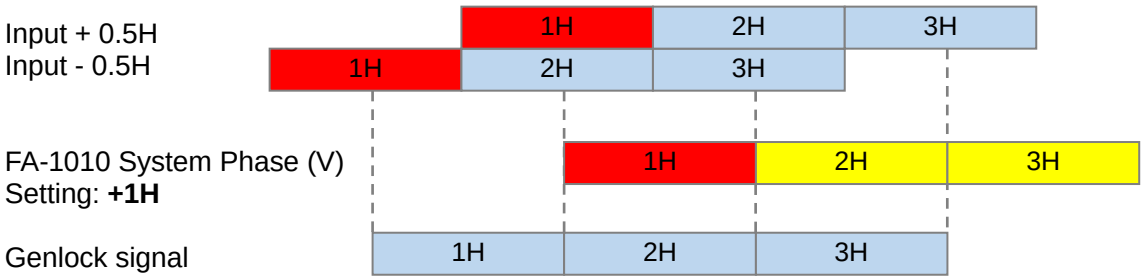
◆ **Notes on configuring the Line (AVDL) / Line (Minimum) sync system (in case of 1080 /59i)**

To synchronize input signals, the difference between input signal and the FA-1010 output timings must be **-1.5H** to **-0.5H**, if **Sync Mode** is set to **Line**. The difference must be **-6H** to **-0.5H**, if set to **AVDL**. Note that if in the up-stream process, there exists a device such as router in which input signals with various timings are switched simultaneously, **0.5H or more is required for the allowable margin of difference between the FA-1010 output timing and the most delayed input signal timing**.

Ex. 1) If the difference is **-1.5H to -0.5H**:
The input signals can be correctly adjusted by setting the FA-1010 System Phase to **±0H** against the genlock signal.



Ex. 2) If the difference is **-0.5H to -0.5H**:
The input signals can be correctly adjusted by setting the FA-1010 System Phase to **+1H** against the genlock signal.



In the same way, if the difference between input and the FA-1010 output timings is:
-**AVDL** mode: **6H** to **-0.5H**
-**Line (Minimum)** mode: **-1.2H** to **-0.2H**
Adjust **System Phase** so that the adjustable range can cover the difference.
If set to **Frame**, any timing differences can be correctly adjusted.

Table of Reference signals and Input formats that can lock

	Reference signal							
Input signal	525/60	1080/59i	720/59p	625/50	1080/50i	720/50p	1080/23PsF	1080/24PsF
525/60	✓✓✓	-	-	-	-	-	-	-
1080/59i	✓✓✓	✓✓✓	✓	-	-	-	-	-
720/59p	✓✓✓	✓✓✓	✓✓✓	-	-	-	-	-
1080/59p	✓✓✓	✓✓✓	✓✓✓	-	-	-	-	-
625/50	-	-	-	✓✓✓	-	-	-	-
1080/50i	-	-	-	✓✓✓	✓✓✓	✓	-	-
720/50p	-	-	-	✓✓✓	✓✓✓	✓✓✓	-	-
1080/50p	-	-	-	✓✓✓	✓✓✓	✓✓✓	-	-
1080/23PsF	-	-	-	-	-	-	✓✓✓	-
1080/24PsF	-	-	-	-	-	-	-	✓✓✓

✓✓✓: SYNCHRO can be set to FRAME, LINE, or AVDL.
✓: SYNCHRO can only be set to FRAME.
-: Unable to synchronize.

4-2-4-2. System Phase

The settings are not available if there is no reference signal input.

Item	Default	Setting range (Steps)	Description
Horizontal *1	0	± 1400 (1 Clock)	Allows you to adjust the horizontal and vertical phases of the system referring to genlock signal.
Vertical *1	0	± 600 (1 Line)	
Unity (button)	-	-	Allows you to reset the settings to default.

*1 With 4K Mode enabled (see Section 4-2. “Video Block”), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

4-2-4-3. Video Position

Adjustable when Sync Mode is set to Frame.

Item	Default	Setting range (Steps)	Description
Horizontal	0	± 200 (2 Pixel) *1	Adjusts the horizontal/vertical position of output videos.
Vertical	0	± 100 (1 Line)	
Unity (button)	-	-	Allows you to reset the settings to default.

*1 Horizontal SD format positions are adjustable in 4-pixel steps.
With 4K Mode enabled (see Section 4-2. "Video Block"), this parameter is automatically set to **0** for all FSs in the 4K Mode group.
This parameter is automatically set to **0** if 2x1080/59i (50i) Level B is input.

4-2-4-4. Freeze Mode

Adjustable when Sync Mode is set to Frame.

Item	Default	Setting range	Description
Freeze *1	On	Off, On	Allows you to turn Freeze **On/Off**.
Mode *1	Frame	Frame Odd, Even	Allows you to select an operation mode for Freeze.
Strobe *1, *2	0	0 - 255	Allows you to set the interval to refresh the images by the number of fields for the field or frame freeze. 0: Images will not be refreshed.
Unity (button)	-	-	Allows you to reset the settings to default.

*1 With 4K Mode enabled (see Section 4-2. "Video Block"), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

*2 Although if Freeze Mode is set to Strobe, normal Freeze is performed when 2x1080/59i (50i) Level B signals are input.

4-2-4-5. SD Line Mask

This setting is effective only if the input video format is SD-SDI. Ineffective for other video formats.

Item	Default	Setting range	Description
Line 6 - 23	Pass	Pass Blank	**Pass:** Outputs the selected line of the SD-SDI input signal without processing. **Blank:** Masks the selected SD-SDI output signal line.

4-2-4-6. 3G-SDI Output Level

This setting is effective only if the input video format is 3G-SDI. Ineffective for other video formats.

Item	Default	Setting range	Description
3G SDI Output *1	Follow Input	Follow Input Level-A Level-B	Allows you to select a 3G Level A / B conversion. Follow Input: A→A / B→B Level-A: A→A / B→A *2 Level-B: A→B / B→B

3G SDI Output Payload ID *3	Overwrite	Overwrite Pass	Allows you to select which Payload ID is inserted into G SDI output. (See Section 4-2-14. “Video Status”) **Overwrite**: Inserts a new Payload ID that matches to the output signal of 3G Level-A, 1080/59p(50p) Level-B or 2x1080/59i(50i) Level B, according to input signal and settings (based on SMPTE ST425-1). **Pass**: Inserts the Payload ID of input signal.

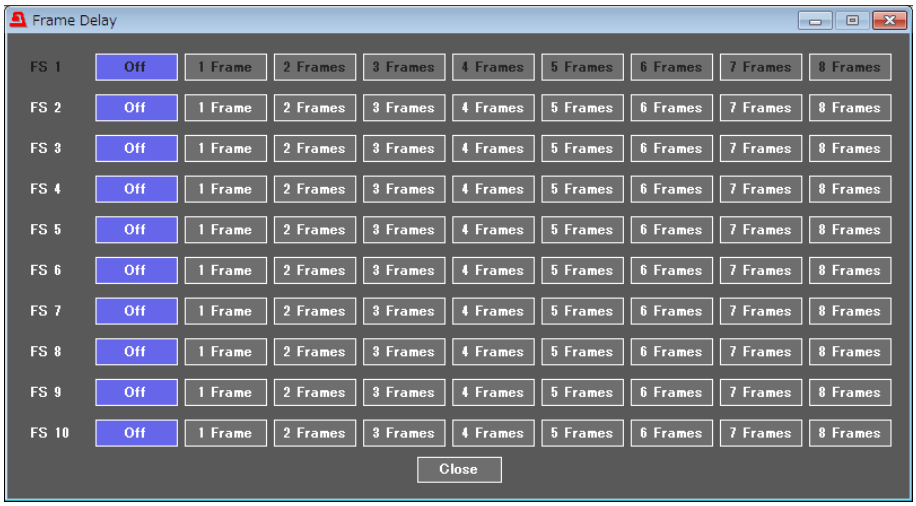
*1 With 4K Mode enabled (see Section 4-2. “Video Block”), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

*2 B→A conversions are unavailable if 2x1080/59i (50i) of 3G Level-B signals are input.

*3 If 3G SDI **A→B or B→A conversion** is processed, **Overwrite** is applied regardless of this setting.

4-2-5. Frame Delay

The Frame Delay page allows you to set frame delay for each FS separately.



* Settings are effective only if Sync Mode is set to Frame (see sec. 4-2-4-1. “Sync Mode”).

Item	Default	Setting range	Description
Frame Delay	Off	Off 1 - 8 Frames	Allows you to set the amount of frame delay for each FS.

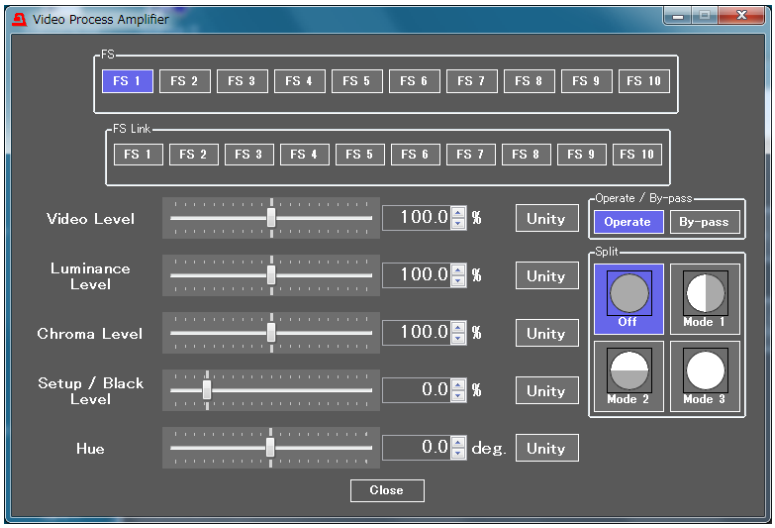
For 2x1080/59i (50i) of 3G Level-B signals, up to 5-frame delay can be added and 1 frame is equivalent to 33.4 ms (40 ms).

For 1080/59p (50p) of 3G Level-B signals, up to 8-frame delay can be added and 1 frame is equivalent to 16.7 ms (20 ms).

With 4K Mode enabled (see Section 4-2. “Video Block”), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

4-2-6. Video Process Amplifier

The Video Process Amplifier page allows you to set Process Amp settings for each FS separately.



Item	Default	Setting range	Description
FS	FS1	FS1-10	Allows you to select an FS for which to set Process Amp settings.
FS Link	-	FS1-10	Allows FS settings to be simultaneously adjusted. Designate a base FS from those selected under FS Link > FS. All other FS settings are adjusted in the same increments as those of the base FS.

Item	Default	Setting range (Steps)	Description
Video Level	100.0%	0.0 - 200.0% (0.1%)	Allows you to adjust the video level.
Luminance Level	100.0%	0.0 - 200.0% (0.1%)	Allows you to adjust the luminance level.
Chroma Level	100.0%	0.0 - 200.0% (0.1%)	Allows you to adjust the chrominance level.
Setup/Black Level	0.0%	-20.0 - 100.0% (0.1%)	Allows you to adjust the black level.
Hue	0.0°	-179.8° - 180.0° (0.2°)	Allows you to adjust the Chroma phase.
Unity (button)	-	-	Allows you to reset all settings in this page to default.

Chroma Level and Hue settings are ineffective if Correction Mode is set to Sepia (see sec. 4-2-7. “Color Corrector”).

With 4K Mode enabled (see Section 4-2. “Video Block”), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

The following two parameter items are shared settings for all **Video Process Amplifier**, **Color Corrector** and **Video Clip** pages. FS Link cannot be applied.

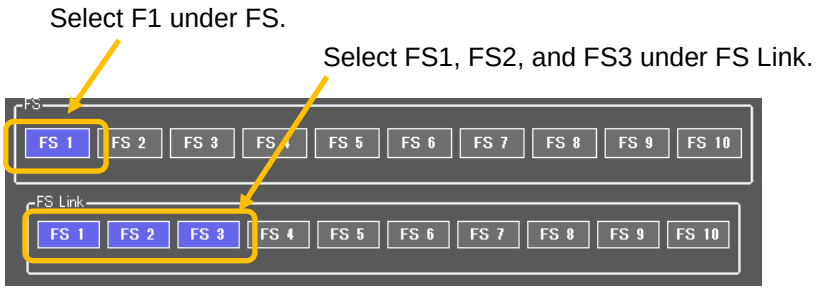
Item	Default	Setting range	Description
Operate / By-pass *1	Operate	Operate By-pass	Setting to **By-pass** skips the video process and disables the parameter settings.
Split	Off	Off Mode1 - 3	Allows you to select a split display mode for comparing images before and after correction. **Off**: Displays the image after correction. **Mode1**: Splits the screen vertically and displays images before and after correction. **Mode2**: Splits the screen horizontally and displays images before and after correction. **Mode3**: Displays the image before correction.

*1 With 4K Mode enabled (see Section 4-2. “Video Block”), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

IMPORTANT
In Link mode, the amount adjusted for the FS selected under FS will be applied to other FSs. The resulting setting values of Linked FSs may differ. If the adjusted value exceeds the upper/lower limit, the resulting setting value will be clipped at the limit. If the FS selected under FS is not selected under FS Link, Link mode settings are ineffective.

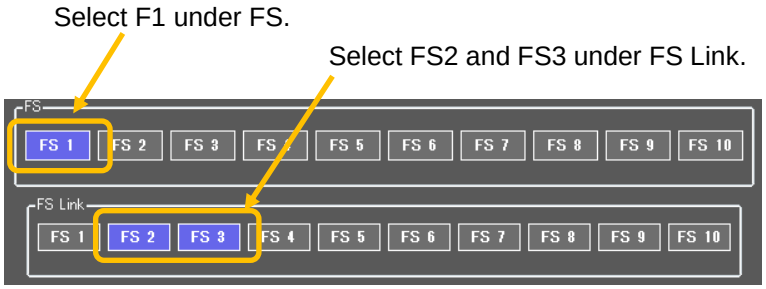
4-2-6-1. Link Mode Setting Example

Example 1: Linked



FS1 is selected under FS and FS Link.
The amount adjusted for the FS1 setting will be applied to FS2 and FS3.

Example 2: Unlinked

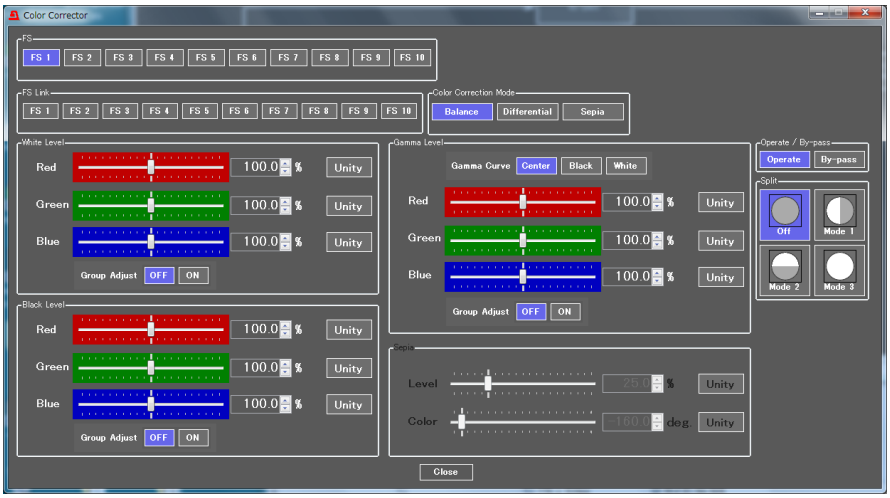


FS1 is selected only under FS.
Only FS1 settings will be adjusted.

IMPORTANT
Link mode is ineffective if an FS selected under FS is not selected under FS Link, or if Color Correction Mode and/or Video Clip Mode settings are different between selected FSs.

4-2-7. Color Corrector

The Color Corrector page allows you to separately adjust color correction settings for each FS.



Item	Default	Setting range	Description
FS	FS1	FS1-10	Allows you to select an FS for which to adjust color correction settings.
FS Link	-	FS1-10	Allows FS settings to be simultaneously adjusted. Designate a base FS from those selected under FS Link > FS. All other FS settings are adjusted in the same increments as those of the base FS.
Correction Mode *1	Balance	Balance Differential Sepia	Allows you to select a correction mode from Balance (RGB), Differential (YPbPr), or Sepia. **Balance:** RGB signal correction mode Allows you to adjust the white balance. Gray scale can be changed by adjusting R, G and B levels. **Differential:** Color difference signal mode Allows you to adjust contrast without changing white balance. R, G and B levels can be changed without affecting gray scale. This adjustment is effective for images with different color saturation levels. **Sepia:** Sepia mode Useful for creating black and white images. Sepia mode cannot be selected in Link mode.

*1 With 4K Mode enabled (see Section 4-2. “Video Block”), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

The following two parameter items are shared settings for all **Video Process Amplifier**, **Color Corrector** and **Video Clip** pages. FS Link cannot be applied.

Item	Default	Setting range	Description
Operate / By-pass *1	Operate	Operate By-pass	Setting to **By-pass** skips the video process and disables the parameter settings.
Split	Off	Off Mode1 - 3	Allows you to select a split display mode for comparing images before and after correction. **Off**: Displays the image after correction. **Mode1**: Splits the screen vertically and displays images before and after correction. **Mode2**: Splits the screen horizontally and displays images before and after correction. **Mode3**: Displays the image before correction.

*1 With 4K Mode enabled (see Section 4-2. “Video Block”), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

IMPORTANT
In Link mode, the amount adjusted for the FS selected under FS will be applied to other FSs. The resulting setting values of Linked FSs may differ. If the adjusted value exceeds the upper/lower limit, the resulting setting value will be clipped at the limit. If the FS selected under FS is not selected under FS Link, Link mode settings are ineffective.See Section 4-2-6-1. “Link Mode Setting Example” for further information on Link mode settings.

◆ White Level settings

Item	Default	Setting range (Steps)	Description
RED, GREEN, BLUE	100.0%	0.0 - 200.0% (0.5%)	Allows you to adjust the white level of R, G, and B components separately.
GROUP ADJUST (Group Adjustment)	OFF	OFF ON	Allows you to adjust the white level of R, G, and B components all together while retaining the proportion of the separately adjusted levels.
Unity (button)	-	-	Allows you to reset the settings to default.

With 4K Mode enabled (see Section 4-2. “Video Block”), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

◆ Black Level Settings

Item	Default	Setting range (Steps)	Description
RED, GREEN, BLUE	100.0%	0.0 - 200.0% (0.5%)	Allows you to adjust the black level of R, G, and B components separately.
GROUP ADJUST (Group Adjustment)	OFF	OFF ON	Allows you to adjust the black level of R, G, and B components all together while retaining the proportion of the separately adjusted levels.
Unity (button)	-	-	Allows you to reset the settings to default.

With 4K Mode enabled (see Section 4-2. “Video Block”), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

◆ Gamma Level Settings

Item	Default	Setting range (Steps)	Description
Gamma Curve	Center	Black Center White	Allows you to select a gamma curve type.
RED, GREEN, BLUE	100.0%	0.0 - 200% (0.5%)	Allows you to adjust the gamma level of R, G, and B components separately.
GROUP ADJUST (Group Adjustment)	OFF	OFF ON	Allows you to adjust the gamma level of R, G, and B components all together while retaining the proportion of the separately adjusted levels.
Unity (button)	-	-	Allows you to reset the settings to default.

With 4K Mode enabled (see Section 4-2. “Video Block”), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

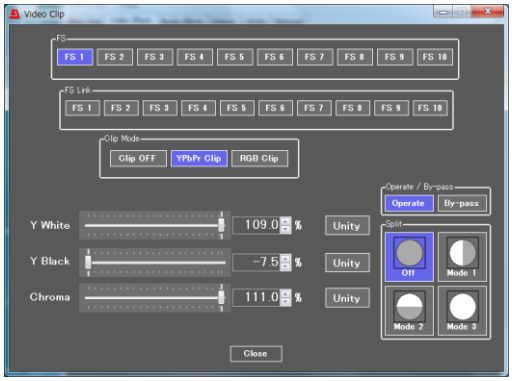
◆ **Sepia Settings**

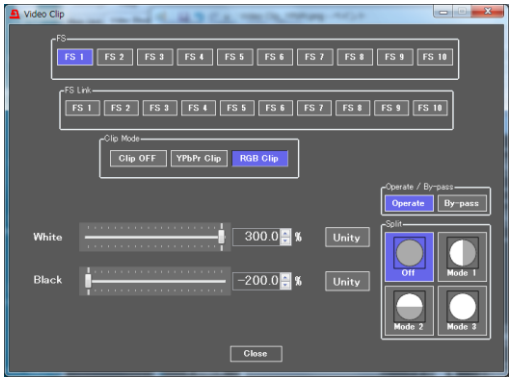
Item	Default	Setting range (Steps)	Description
Level	25.0%	0.0 - 100% (0.1%)	Allows you to adjust the color level in the Sepia mode.
Color	-160.0°	-179.8° - 180.0° (0.2°)	Allows you to adjust the color in the Sepia mode.
Unity (button)	-	-	Allows you to reset the settings to default.

Available only if Color Correction Mode is set to Sepia.

With 4K Mode enabled (see Section 4-2. “Video Block”), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

4-2-8. Video Clip





Item	Default	Setting range	Description
FS	FS1	FS1-10	Allows you to select an FS for which to adjust settings.
FS Link	-	FS1-10	Allows FS settings to be simultaneously adjusted. Designate a base FS from those selected under FS Link > FS. All other FS settings are adjusted in the same increments as those of the base FS.
Clip Mode *1	Clip OFF	Clip OFF YPbPr Clip RGB Clip	Selects a mode whether to clip signals in the **YPbPr** color space or **RGB** color space.

*1 With 4K Mode enabled (see Section 4-2. “Video Block”), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

IMPORTANT

In Link mode, the amount adjusted for the FS selected under FS will be applied to other FSs. The resulting setting values of Linked FSs may differ. If the adjusted value exceeds the upper/lower limit, the resulting setting value will be clipped at the limit. If the FS selected under FS is not selected under FS Link, Link mode settings are ineffective. See Section 4-2-6-1. “Link Mode Setting Example” for further information on Link mode settings.

◆ YPbPr Clip

Item	Default	Setting range (Steps)	Description
Y White (Y White Clip)	109.0%	50.0 - 109.0% (0.5%)	Sets the Y signal upper threshold.
Y Black (Y Black Clip)	-7.5%	-7.5 - 50.0% (0.5%)	Sets the Y signal lower threshold.
Chroma (YPbPr Chroma Clip)	111.0%	50.0 - 111.0% (0.5%)	Sets both the upper and lower thresholds of PbPr signals.
Unity (button)	-	-	Allows you to reset the settings to default.

With 4K Mode enabled (see Section 4-2. “Video Block”), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

◆ **RGB Clip**

Item	Default	Setting range (Steps)	Description
White (RGB White Clip)	300.0%	50 - 300% (0.5%)	Sets the upper threshold of RGB color space.
Black (RGB Black Clip)	-200.0%	-200 - 50% (0.5%)	Sets the lower threshold of RGB color space.
Unity (button)	-	-	Allows you to reset the settings to default.

With 4K Mode enabled (see Section 4-2. "Video Block"), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

The following two parameter items are shared settings for all **Video Process Amplifier**, **Color Corrector** and **Video Clip** pages. FS Link cannot be applied.

Item	Default	Setting range	Description
Operate / By-pass *1	Operate	Operate By-pass	Setting to **By-pass** skips the video process and disables the parameter settings.
Split	Off	Off Mode1 - 3	Allows you to select a split display mode for comparing images before and after correction. **Off**: Displays the image after correction. **Mode1**: Splits the screen vertically and displays images before and after correction. **Mode2**: Splits the screen horizontally and displays images before and after correction. **Mode3**: Displays the image before correction.

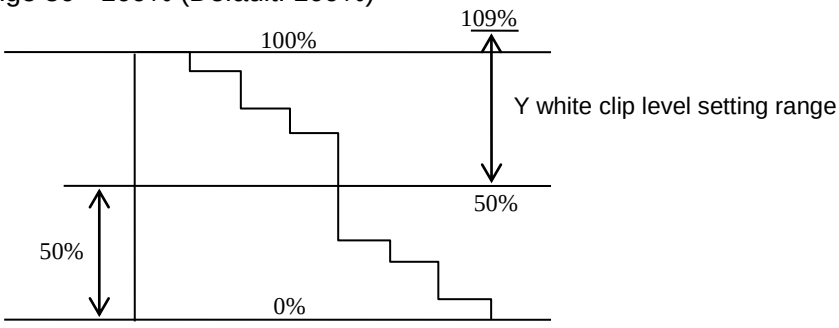
*1 With 4K Mode enabled (see Section 4-2. "Video Block"), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

◆ **Video Clip Setting Ranges**

Y Signal Settings

① Y White Clip Level

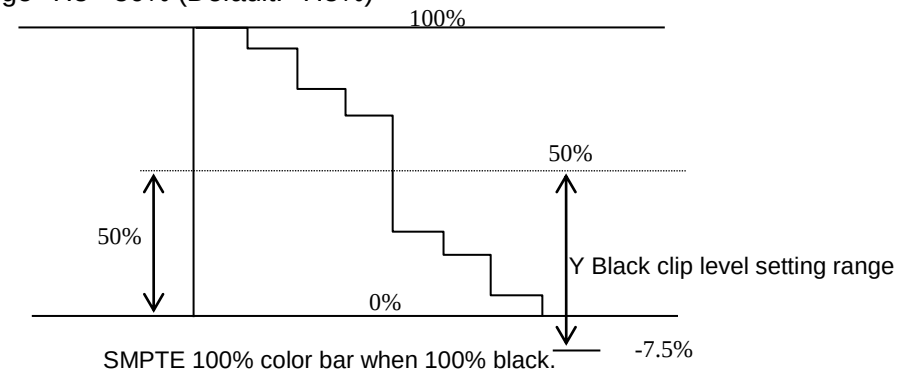
Setting range 50 - 109% (Default: 109%)



SMPTE 100% color bar when 100% white.

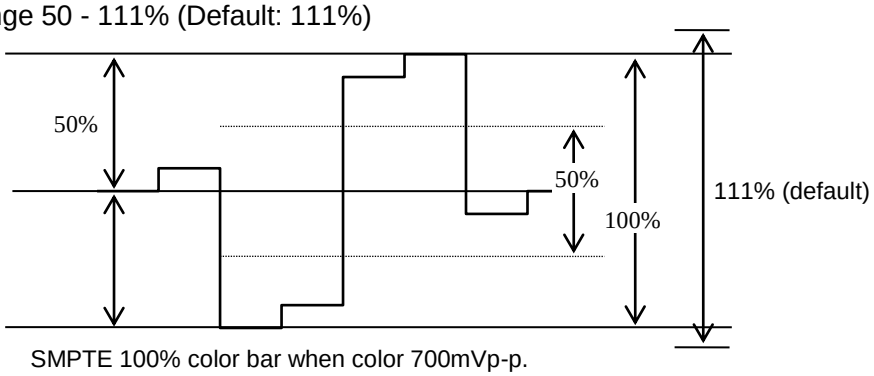
② Y Black Clip Level

Setting range -7.5 - 50% (Default: -7.5%)



SMPTE 100% color bar when 100% black.

③ C White Clip Level
Setting range 50 - 111% (Default: 111%)



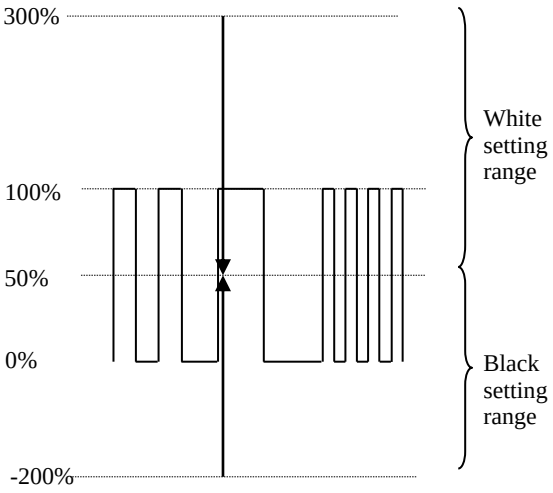
SMPTE 100% color bar when color 700mVp-p.

◆ **RGB CLIP**

To adjust the RGB clipping, select the RGB CLIP under CLIP MODE, and then set RGB White Clip and RGB Black Clip.

Once the “RGB CLIP” is selected, the YPbPr input video signal is converted into an RGB signal in the unit. The converted RGB signal is processed so as not to exceed the RGB gamut range set under the RGB White Clip and RGB Black Clip parameters in the menu.

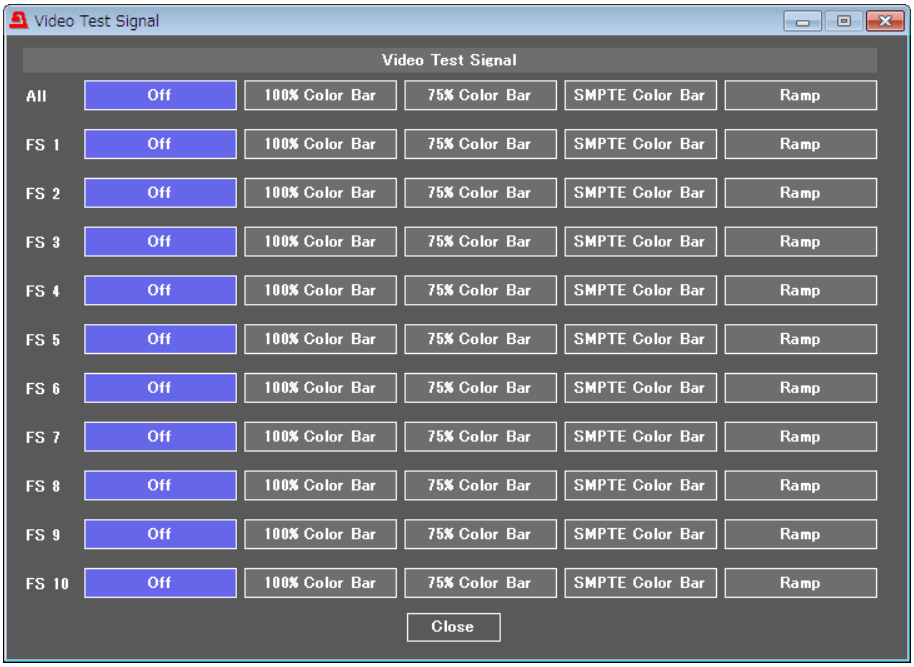
Then the processed RGB signal is converted again to YPbPr format. This correction is used to eliminate out-of RGB gamut problems.



RGB Clip Processing

4-2-9. Video Test Signal

The Video Test Signal page allows you to separately set test signal output for each FS.

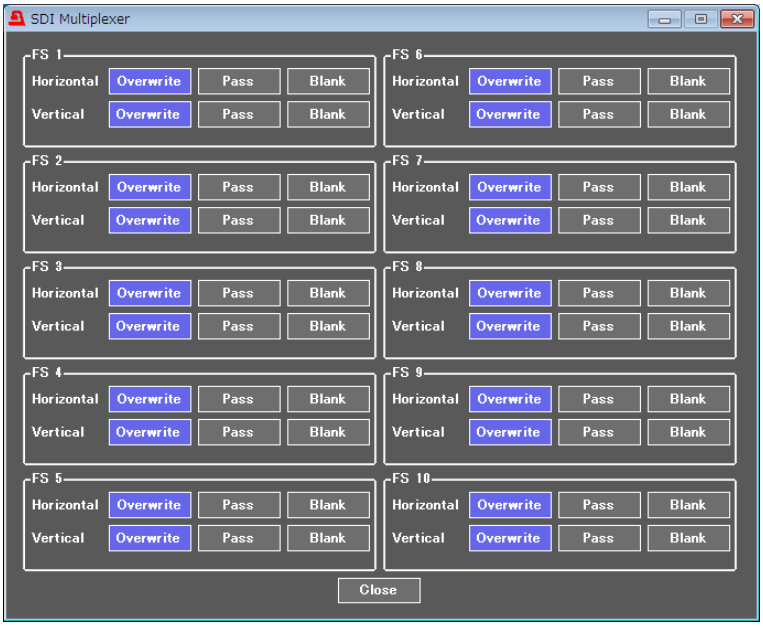


Item	Default	Setting range	Description
All	Off	Off 100% Color Bar 75% Color Bar SMPTE Color Bar Ramp	Allows you to set all FSs to generate the selected video test signal.
FS1-10 *1	Off	Off 100% Color Bar 75% Color Bar SMPTE Color Bar Ramp	Allows you to set each FS to generate the selected video test signal.

*1 With 4K Mode enabled (see Section 4-2. “Video Block”), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked

4-2-10. SDI Multiplexer

The SDI Multiplexer page allows you to separately select ancillary data output mode for each FS.



Item	Default	Setting range	Description
Horizontal	Overwrite	Overwrite Pass Blank	Allows you to embed signals into HANC data of FS1-10 output videos. **Overwrite**: Removes the embedded audio signals from the SDI input, then embeds the processed signals in the SDI output.*1 *2 Other HANC data will be embedded in the SDI after audio signals are embedded. **Pass**: Passes through the HANC data without processing. (Processed audio signals cannot be embedded.) *3 **Blank**: Deletes all HANC data, and embeds the processed audio signals.
Vertical	Overwrite	Overwrite Pass Blank	Allows you to embed signals into vertical ancillary data of FS1-10 output videos. **Overwrite**: Embeds the processed VANC data.*4 **Pass**: Embeds the VANC data without processing.*4 **Blank**: Deletes all VANC data.

*1 When 3G-Level B signals are output, all data except audio control packets and timecode is deleted in audio control packet lines. All ancillary data is deleted in Link B.

*2 When 3G-Level A/B or B/A conversions are applied (see 4-2-4-6. 3G-SDI Output Level), HANC data other than Audio and Time Code is deleted.

*3 When 3G-Level A/B or B/A conversions are applied (see 4-2-4-6. 3G-SDI Output Level), all HANC data is deleted.

*4 VANC data is passed through according to the following listed rules for 3G Level B signal conversions.

I/O video format	Passable input signal VANC data lines	VANC data output lines
3G-Level B In 3G-Level B Out	VANC data that is embedded in all lines except 7, 8, 569 and 570	The same lines as input.
3G-Level B In 3G-Level A Out	VANC data that is embedded in all lines except 7, 8, 569 and 570	Corresponding lines as input.
3G-Level A In 3G-Level B Out	VANC data that is embedded in all lines except 7 and 8	Corresponding lines as input.

*1 Corresponding Data Lines between 3G SDI Level-A and Level-B (from SMPTE 372)

Level-B line number			Level-A line number
Field 2	1123	Link A	1121
		Link B	1122
	1124	Link A	1123
		Link B	1124
	1125	Link A	1125
		Link B	1
Field 1	1	Link A	2
		Link B	3
	2	Link A	4
		Link B	5
	3	Link A	6
		Link B	7
	4	Link A	8
		Link B	9
	5	Link A	10
		Link B	11
	6	Link A	12
		Link B	13
	7	Link A	14
		Link B	15
	8	Link A	16
		Link B	17
	9	Link A	18
		Link B	19
	10	Link A	20
		Link B	21
	11	Link A	22
		Link B	23
	12	Link A	24
		Link B	25
	13	Link A	26
		Link B	27
	14	Link A	28
		Link B	29
	15	Link A	30
		Link B	31
	16	Link A	32
		Link B	33
	17	Link A	34
		Link B	35
	18	Link A	36
		Link B	37
	19	Link A	38
		Link B	39
	20	Link A	40
		Link B	41

Level-B line number			Level-A line number
Field 1	561	Link A	1122
		Link B	1123
	562	Link A	1124
		Link B	1125
	563	Link A	1
		Link B	2
Field 2	564	Link A	3
		Link B	4
	565	Link A	5
		Link B	6
	566	Link A	7
		Link B	8
	567	Link A	9
		Link B	10
	568	Link A	11
		Link B	12
	569	Link A	13
		Link B	14
	570	Link A	15
		Link B	16
	571	Link A	17
		Link B	18
	572	Link A	19
		Link B	20
	573	Link A	21
		Link B	22
	574	Link A	23
		Link B	24
	575	Link A	25
		Link B	26
	576	Link A	27
		Link B	28
	577	Link A	29
		Link B	30
	578	Link A	31
		Link B	32
	579	Link A	33
		Link B	34
	580	Link A	35
		Link B	36
	581	Link A	37
		Link B	38
	582	Link A	39
		Link B	40
	583	Link A	41
		Link B	42

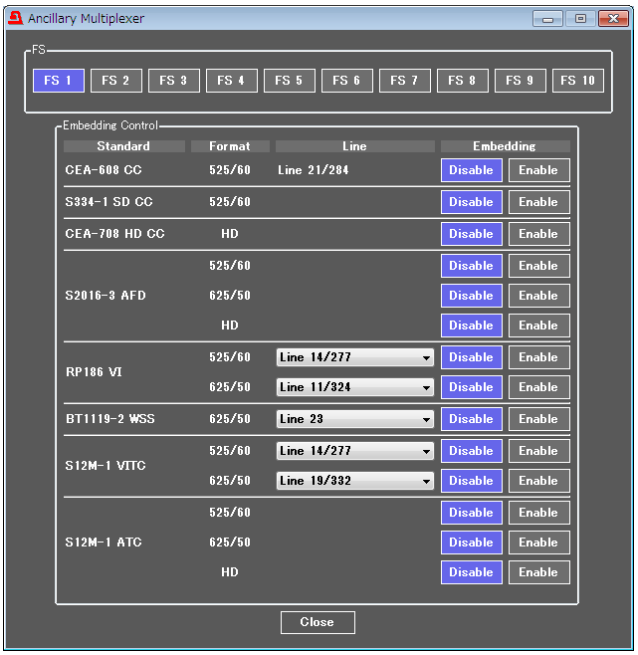
4-2-10-1. Embedded Audio Multiplexer

This page allows you to select whether to embed audio signals for each audio group.

Item	Default	Setting range	Description
FS 1-10	Enable (Blue)	Disable (Gray) Enable (Blue)	Allows you to select or unselect each FS Group to enable (blue) or disable (gray) embedded audio insertion.

IMPORTANT
In 3G-SDI Level B signals, up to 16 channels of embedded audio data can be received if they are embedded in Link A. Audio data embedded in Link B cannot be received. Audio data in 3G-SDI Level B output signals can also only be embedded into Link A.

4-2-10-2. Ancillary Data Multiplexer



Item	Default	Setting range	Description
FS	FS1	FS1-10	Allows you to select an FS to set its settings.

◆ Embedding Control

Item	Video format	Embedding Line settings		Embedding Settings	
		Default	Setting range	Default	Setting
CEA-608CC	525/60	Line 21/284	Line21/284 fixed	Disable	Disable Enable
S334-1 SD CC	525/60	-	-		
CEA-708 HD CC	HD (and 3G)	-	-		
S2016-3 AFD	525/60	-	-		
	625/50	-	-		
	HD (and 3G)	-	-		
RP186 VI	525/60	Line 14/277	Line 12/275 - 19/282		
	625/50	Line 11/324	Line 8/321 - 22/335		
BT1119-2 WSS	625/50	Line 23	Line 8 - 23		
S12M-1 VITC	525/60	Line 14/277	Line 12/275 - 19/282		
	625/50	Line 19/332	Line 8/321 - 22/335		
S12M-1 ATC *	525/60	-	-		
	625/50	-	-		
	HD (and 3G)	-	-		

* **Enable**: Allows you to embed TimeCode selected under Output in Sec. 4-2-10-3. “Timecode.”
Disable: Embeds no data because S12M-1ATC is deleted.
If set to **Enable** In case of HD or 3G, no HANC data except audio and timecode cannot be passed through from Line 9 to Line 571 of H ANC space.

◆ Ancillary Data Types

Data type	Description
CEA-608 CC	Closed caption data inserted as Y signals into line 21 of 525/60 analog and SDI signals.
S334-1 SD CC	Closed caption data inserted as data packets into the ancillary data space of 525/60 SDI signals.
CEA-708 HD CC	Closed caption data inserted as data packets into the ancillary data space of HD-SDI signals.
S2016-3 AFD	Aspect ratio data inserted as data packets into SDI V ANC data space.
RP186 VI	Aspect ratio data inserted into bit 3 of Chroma data in the SD-SDI V ANC data space.

BT1119-2 WSS	Aspect ratio data inserted as Y signals into line 23 of 625/50 analog signals.
S12M-1 VITC	Time code data inserted as SD-SDI Y signals. *1
S12M-1 ATC	Time code data inserted as data packets into the ancillary data space of SDI signals. *1

*1 The timecode selected under Output (see Section 4-2-10-3. Timecode) will be embedded.

4-2-10-3. Timecode

◆ Output

Item	Default	Setting range	Description
FS 1-10	Pass	Pass LTC In TCG Out	Allows you to select a timecode to embed to SDI output signals. *1 **Pass:** Uses the timecode embedded into SDI signals without processing. **LTC In:** Embeds and outputs the input timecode via the rear panel IN/OUT connector to the SDI output signal. **TCG Out**: Embeds the timecode generated by the Time Code Generator into SDI output signal.

*1 To embed a timecode into an SDI signal, set Embedding to Enable for S12M-1 VITC or S12M-1 ATC (see Section 4-2-10-2. “Ancillary Data Multiplexer”).

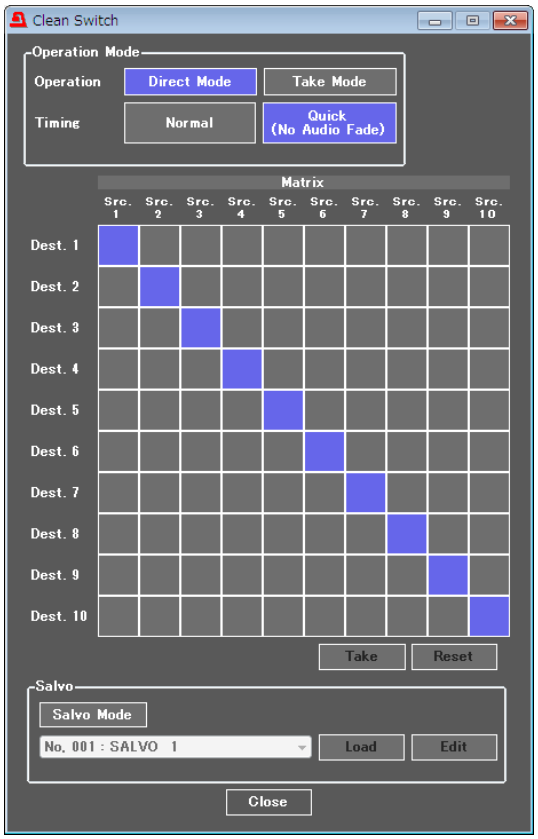
◆ LTC Input / Output Setting

Item	Default	Setting range	Description
BNC	Input	Input Output	Allows you to set the LTC IN/OUT connector on the rear panel for input or output use. Timecode is displayed above the input and output buttons. **Input:** Displays the input timecode above the button. **Output:** Outputs the Timecode generator count.

◆ Timecode Generator

Item	Default	Setting range	Description
Start (button)	-	-	Allows you to start counting the internally generated timecode.
Stop (button)	-	-	Allows you to stop counting the internally generated timecode.
Reset (button)	-	-	Allows you to reset the internally generated timecode to 00:00:00:00.
Preset (button)	-	-	Allows you to set the timecode to the Preset time.
Edit (button)	-	-	Allows you to edit Preset timecode settings.
Drop Frame	OFF	OFF ON	**OFF:** Outputs Non-drop frame timecode. **ON:** Outputs Drop frame timecode.

4-2-11. Clean Switch



Item	Default	Setting range	Description
Operation	Direct Mode	Direct Mode Take Mode Salvo Mode	Allows you to select the Clean switch operation mode. **Direct Mode:** Selecting a cross point immediately switches the cross point. **Take Mode:** The Take button switches multiple preset cross points simultaneously.
Timing	Normal	Normal Quick (No Audio Fade)	Allows you to select Clean switching mode. **Normal**: Normal switchover **Quick (No Audio Fade):** Switches signals 1 frame quicker than Normal mode without audio fade.
Matrix	Dest.1-Src.1 | Dest.10-Src.10	Src.1-10	Allows you to select signals to be output from Destination 1-10 (output signals assigned to FS1-10) from Src 1-10 (input signals assigned to FS1-10). The same signal can be selected for multiple Destinations.
Take (button)	-	-	Displayed in Take Mode. Allows you to simultaneously switch multiple cross points set in the Matrix.
Reset (button)	-	-	Displayed in Take Mode. Allows you to reset
Salvo Mode	Off	Off On	**On:** Multiple cross point matrices can be saved to select and use later.

4-2-11-1. Take Mode Operation

Take Mode allows you to simultaneously switch multiple channels.
Blue-highlighted crosspoints in the below figure are currently selected sources.
Source selection changes are displayed in yellow as pre-selections in the left figure.
Pressing the **Take** button switches crosspoints set as the pre-selections in yellow, and switches them blue as in the right figure.

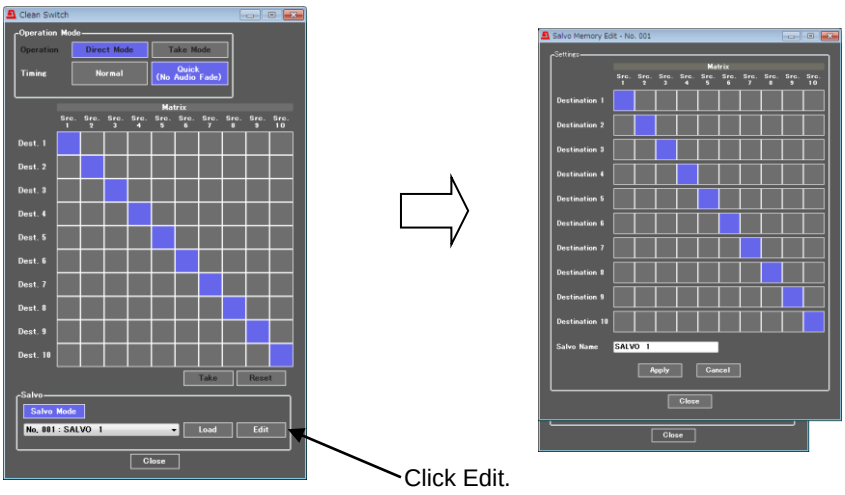
IMPORTANT
Switching source signals of which following settings are set differently may produce a noise in the video and/or audio signals. To perform shockless swithching, match the following settings for source signals (FSs) to be switched. - Sync Mode (See sec. 4-2-4-1. “Sync Mode”.) - System Phase (See sec. 4-2-4-2. “System Phase”.)

4-2-11-2. Salvo Mode

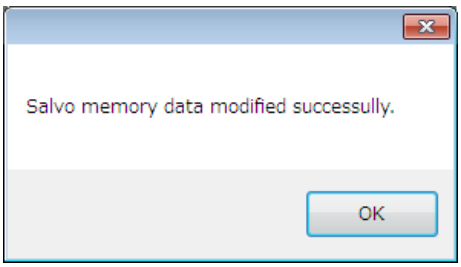
Salvo Mode allows you to preset 100 crosspoint matrices for later use.

◆ **Presetting Matrices**

1) Select Salvo Mode. Select a salvo number to register, and click **Edit** in the Salvo section. A Salvo Memory Edit screen as shown below on the right opens.

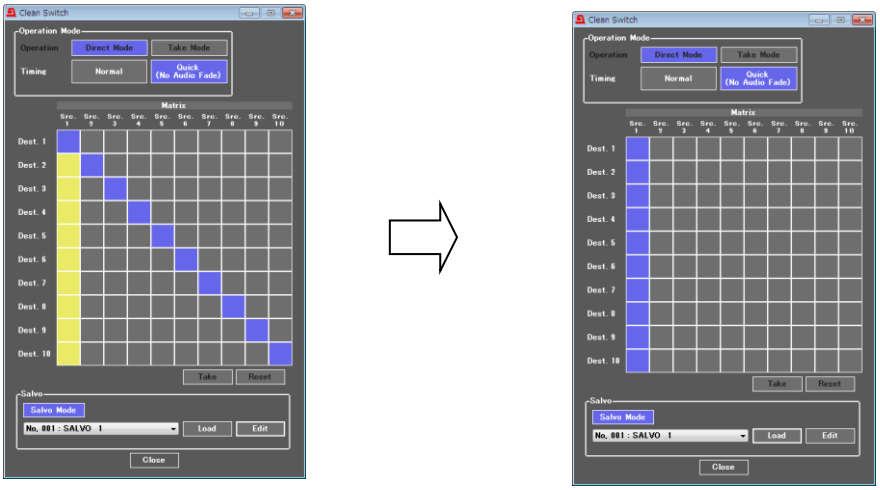


2) Set crosspoints to register.
3) Enter a name for the matrix in the Salvo Name setting box.
4) Click Apply. A message box as shown below appears, and the matrix is successfully registered.



◆ **Recalling Matrix**

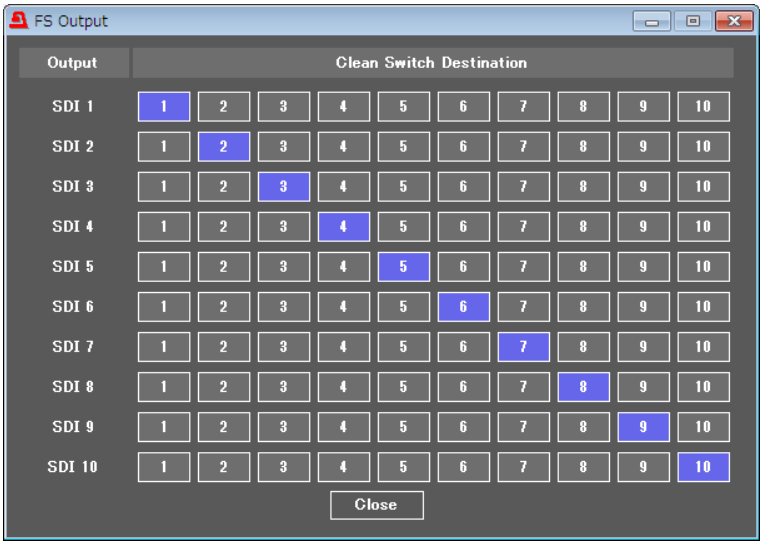
1) Select Salvo Mode, then select a salvo setting in the Salvo section at the bottom of the screen. Salvo crosspoint settings that are different from the current crosspoints are displayed in yellow as shown below on the left.
2) Click **Load** in the Salvo section to switch the crosspoints.



IMPORTANT
When switching crosspoints in Salvo mode, crosspoints cannot be changed arbitrarily.

4-2-12. FS Output

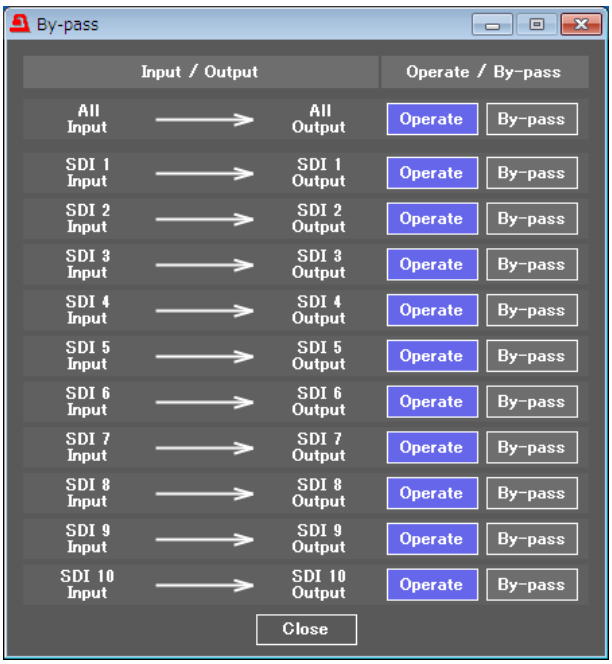
The FS Output page allows you to assign Clean Switch output signals to output connectors.



Item	Default	Setting range	Description
SDI 1 | SDI 10	Clean Switch Destination 1	Clean Switch Destination 1-10	Allows you to select a clean switch output video signal to be output for each output connector.

4-2-13. By-pass

The By-pass page allows you to set bypass outputs.
Input signals will be output to output connectors without being internally processed.



Item	Default	Setting range	Description
All Input-All Output	Operate	Operate By-pass	Allows you to set all inputs and outputs simultaneously regardless of other settings. **Operate**: Processes input signals. **By-pass**: By-passes input signals. e.g. Input 1 → Output 1, Input 10 → Output 10
SDI X Input→SDI X Output	Operate	Operate By-pass	Allows you to set the By-pass setting for each input connector. **Operate**: Processes input signals. **By-pass**: By-passes input signals. (X: connector number) By-pass cannot be set depending on FS Input and FS Output settings. See the “Important” note below.

* The front panel status LED for the by-passed input connector lights green.

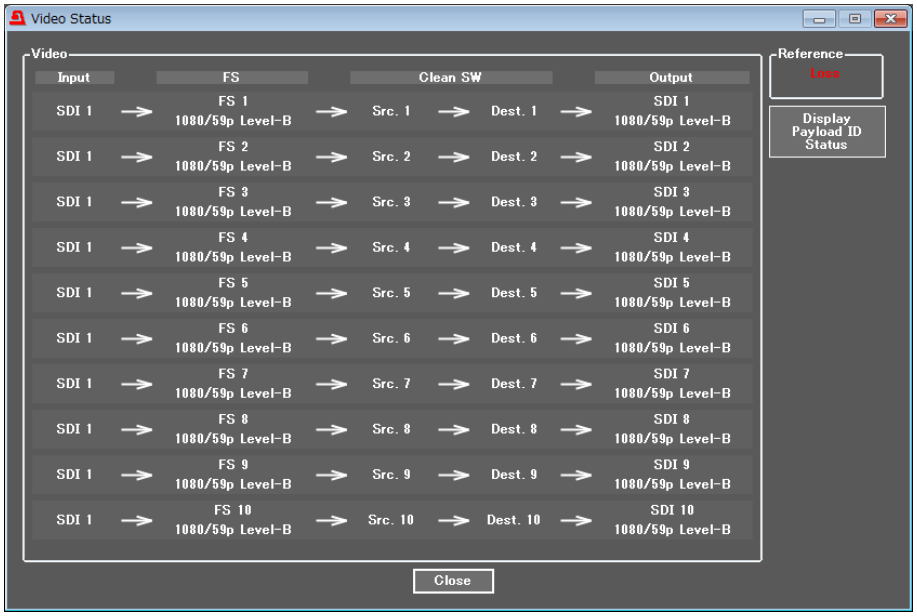
IMPORTANT

SDI input assigned to multiple FSs in the FS Input menu (see sec. 4-2-1) or to an FS assigned to multiple output connectors in the FS Output menu (see sec 4-2-12) cannot be set to By-pass. e.g., FS 1 and 2 assigned to SDI 1, FS 5 assigned to SDI 1, 2, 3, etc.

However, All Input-All Output bypasses all input signals from the input connector to the same (numbered) output connector.

4-2-14. Video Status

The Video Status page displays the video routing and output status of each output video signal.

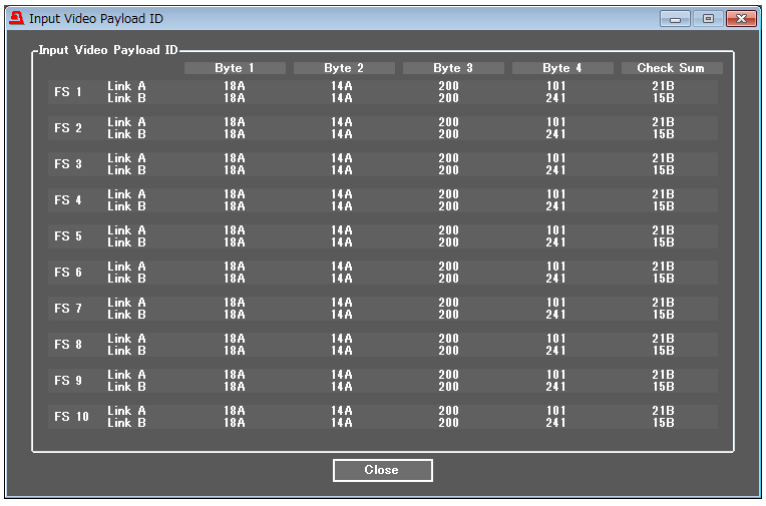


Signal paths change according to the FS Input, Clean Switch, and/or FS Output menu settings.

Display	Description	Ref.
Input	Displays input channels (SDI IN 1-10) assigned to FS 1-10 in the FS Input menu.	4-2-1. FS Input
FS	Displays FSs (1-10) and their signal formats assigned to Dest 1-10 in the Clean Switch menu.	4-2-11 Clean Switch
Clean Switch	Displays Clean Switch settings and their output signal assignments to output connectors (SDI OUT 1-10) in the FS Output menu.	4-2-12 FS Output
Output	Displays the signal format of output signals assigned to connectors SDI OUT 1-10.	
Reference	Displays the input genlock signal format.	

◆ Display Payload ID Status

Clicking **Display Payload ID Status** opens the window as shown below, in which 4-byte Payload ID data (4 bytes) and checksum are displayed.

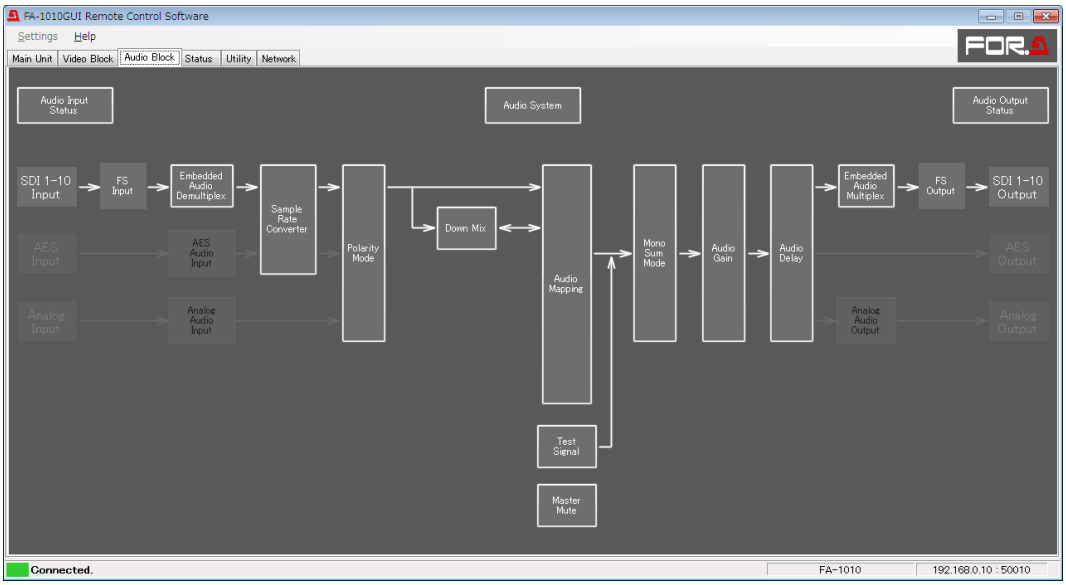


Payload ID and checksum values are 10-bit data (including parity bit) and displayed as three hexadecimal digits.

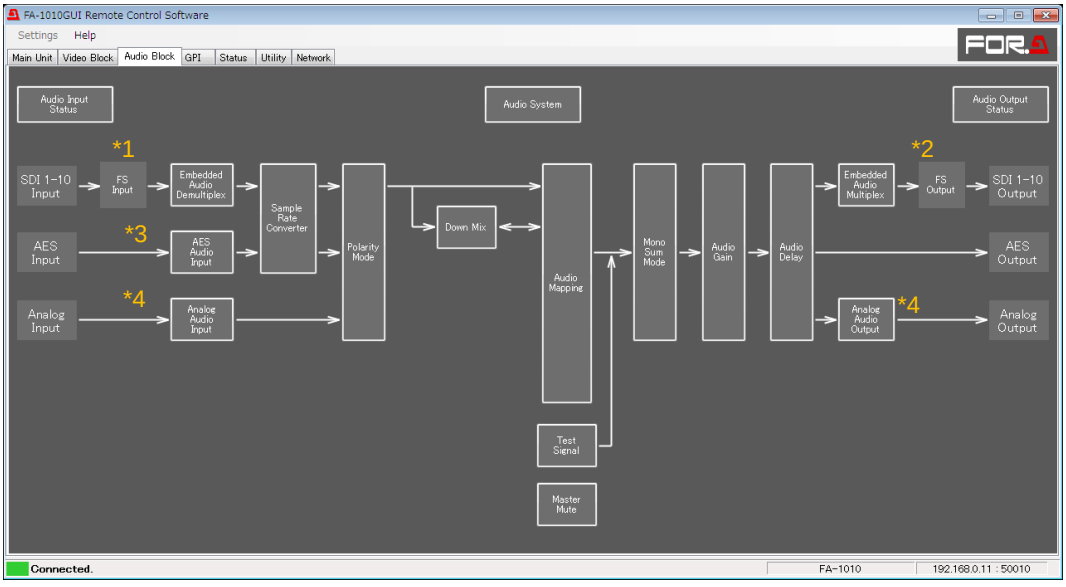
Display	Input signal format	Description
Link A	SD/HD	No information display
	3G Level A	Displays the Payload ID embedded in Y signal.
	3G Level B	Displays the Payload ID embedded in Link A.
Link B	SD/HD	No information display
	3G Level A	Displays the Payload ID embedded in C signal.
	3G Level B	Displays the Payload ID embedded in Link B.

4-3. Audio Block (Audio Signal Control)

Clicking the Audio Block tab opens the Audio block diagram. Click a block to open its corresponding setting page.



◆ When FA-10AES-BL/UBL option is installed



*1 FS Input Select cannot be selected. To change input selection, go to the Video Block FS Input menu. (See sec. 4-2-1. “FS Input”.)

*2 FS Output Select cannot be selected. To change input selection, go to the Video Block FS Output menu. (See sec. 4-2-12. “FS Output”.)

*3 Available only if the FA-10AES-BL/UBL option is installed.

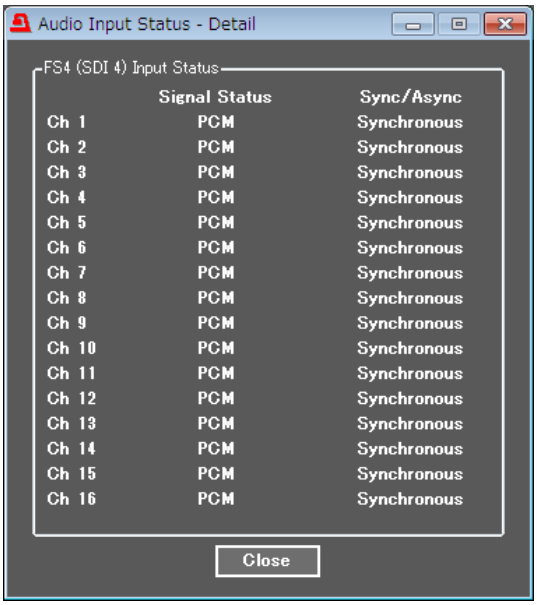
*4 Available only if the FA-10ANA-AUD option is installed.

4-3-1. Audio Input Status

Item	Display	Description
Embedded Audio	Loss PCM PCM (Silence) NON-PCM Blank By-pass	Displays the status of each audio input signal in FS1-10 and Slot A-D.
AES Audio	Loss PCM PCM (Silence) NON-PCM Output settings	
Analog Audio	Loss Present	
Detail (button)	-	Allows you to open the Audio Input Status-Detail page

* The installed FA-10AES-UBLC is displayed with the FA-10AES-UBLC to which it is connected as “FA-10AES-UBL/UBLC”. The status display of the slot where the FA-10AES-UBLC occupies does not change.

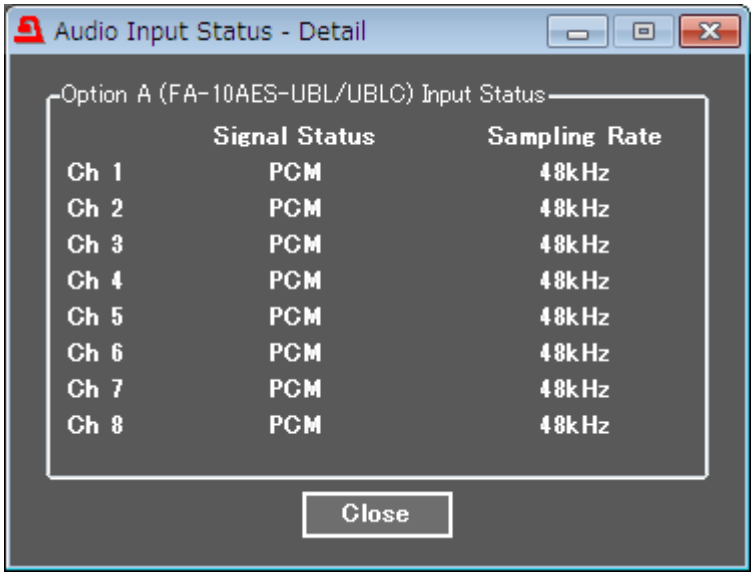
4-3-1-1. Audio Input Status - Detail



Item	Display	Description
Signal Status	Loss PCM PCM (Silence) *1 NON-PCM Blank By-pass	Displays the each audio channel signal information.
Sync/Async	Synchronous Asynchronous	Displays the sync/async status of each audio channel and video signals.

*1 The Silence state is determined according to the Digital Audio Silence Level and Digital/Analog Audio Silence Time settings. See Section 4-3-16. “Audio System” for details.

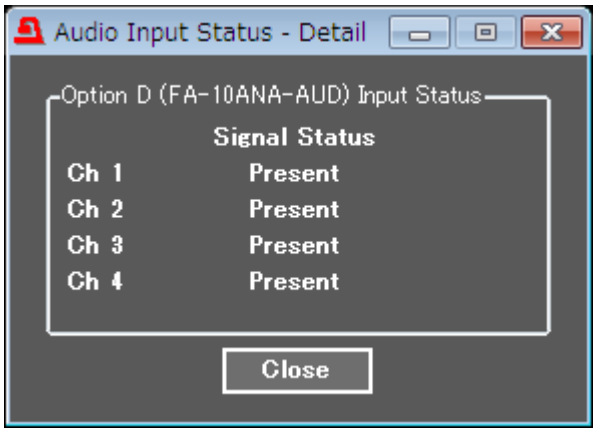
4-3-1-2. Audio Input Status – Detail (FA-10AES Option)



Item	Display	Description
Signal Status	Loss PCM PCM (Silence) *1 NON-PCM Output Settings	Displays the each audio channel signal information.
Sampling Rate	32kHz 44.1kHz 48kHz	Displays the sampling rate for each audio signal.

*1 The Silence state is determined according to the Digital Audio Silence Level and Digital/Analog Audio Silence Time settings. See Section 4-3-16. “Audio System” for details.

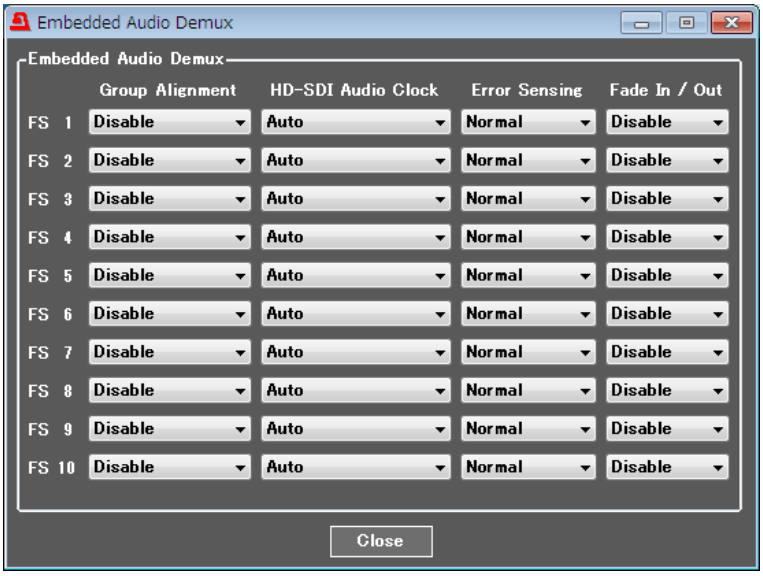
4-3-1-3. Audio Input Status – Detail (FA-10ANA-AUD Option)



Item	Display	Description
Signal Status	Loss *1 Present	Displays the each audio channel signal information.

*1 The Loss state is determined according to the Analog Audio Silence Level and Digital/Analog Audio Silence Time settings. See Section 4-3-16. “Audio System” for details.

4-3-2. Embedded Audio Demux



This page allows you to set Embedded audio demultiplexing for each FS.

Item	Default	Setting range	Description
Group Alignment	Disable	Enable Disable	Allows you to enable or disable automatic phase adjustment for FS1-10 input embedded audio groups. *1 **Enable:** Automatic adjustment **Disable:** No adjustment (normal setting)
HD-SDI Audio Clock	Auto	Auto Sync SDI Audio Clock	Allows you to select audio clock signal to use for de-embedding and processing audio data in HD-SDI input signal. **Auto**: De-embeds HD-SDI embedded audio data using the audio clock phase data in the embedded audio. Synchronous and asynchronous embedded audio signals from 4 audio groups can be de-embedded separately. Audio data will be processed as synchronous data if the audio clock phase data is incorrect, or jitter is too great. **Sync SDI**: All audio data in 4 audio groups are always processed as synchronous data without referring to the respective audio clock phase data. **AUD Clock**: Always uses audio clock phase data in HD-SDI embedded audio data to de-embed the audio data.
Error Sensing	Normal	Disable Normal Sensitive	The FA-1010 can detect audio status changes such as an input signal change, and automatically mute *2 and fade signals out. **Disable**: Disables mute function when change in audio status is detected. Normally not selected. * Refer to the important note on the next page. **Normal**: Mutes when a change on an SDI signal, ADP (Audio Data Packet), or DBN (Data Block Number) is detected. Normally selected. **Sensitive**: Mutes when a change on channel status, or EDP (Extended Data Packet) presence (only for SD-SDI), as well as the above items, is detected.
Fade In/Out	Disable	Disable Enable	**Disable:** Always passes audio signals without applying fade or mute processing. **Enable:** Fades out and mutes when an error occurs, and fades in after returning to normal state.

*1 **Enable** resets all group phase settings when an input audio status has changed in one group.
*2 Fades out when **Fade In/Out** is set to **Enable**.

IMPORTANT

Normally set Error Sensing to **Normal**.

Set to **Disable** for a specific program or duration when audio output has noise or is muted.

The FA-1010 fades out audio or resets the delay circuit when a status change (SDI signal input interruption, signal switchover (by a router, etc.) is detected. Faulty ancillary data in normal audio signals may also be detected as status changes.

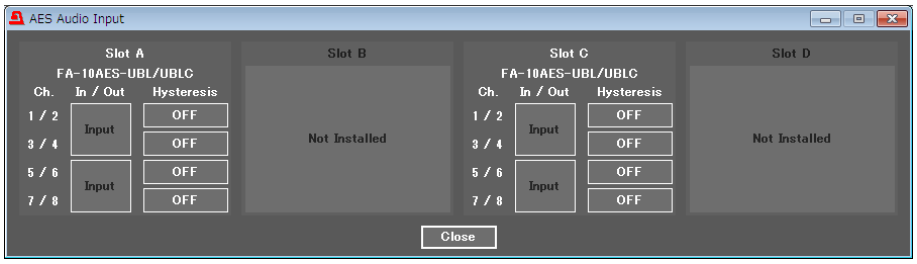
Audio signals with such faulty ancillary data may lead the FA-1010's automatic correction to improperly process the audio input and produce noise or mute the audio.

Note that disabling the automatic correction can prevent such improper processing, however, the following functions will also be disabled.

After a signal switchover by router or the recovery of an interrupted SDI signal, delay settings will lose their accuracy to within ±2 msec max.

Audio signal phases among audio groups will not match.

4-3-3. AES Audio Input (FA-10AES Option)



◆ **In/Out (Enabled if the FA-10AES-UBL option is installed.)**

FA-10AES-UBL terminals are input / output selectable.

Item	Default	Setting range	Description
Ch. 1/2-3/4	Input	Input Output	**Input:** Allows you to use AES 1/2, 3/4 terminals for input. **Output:** Allows you to use AES 1/2, 3/4 terminals for output.
Ch. 5/6-7/8	Input	Input Output	**Input:** Allows you to use AES 5/6, 7/8 terminals for input. **Output:** Allows you to use AES 5/6, 7/8 terminals for output.

* FA-10AES-BL terminals cannot change their input or output function.

* If the FA-10AES-UBLC option is installed, FA-10AES-UBL terminals are fixed to input, and cannot be changed.

◆ **Hysteresis**

Item	Default	Setting range	Description
Ch. 1/2-7/8	OFF	OFF Group A Group B	Synchronizes the AES input signals in group A or B per group. These settings are effective when using AES audio signals to output multi-channel audio signals such as surround sound.

The channel pair with the smallest channel numbers within a group is used as the reference pair and other channel pairs are synchronized to it. If there is no audio signal in the channel pair, the next channel pair will be the reference. Audio signals with a phase difference relative to the reference within ±0.25 of a sample period can be synchronized.

Setting Examples:

◆ **When setting all channel pairs Ch 1/2 to 7/8 to Group A**

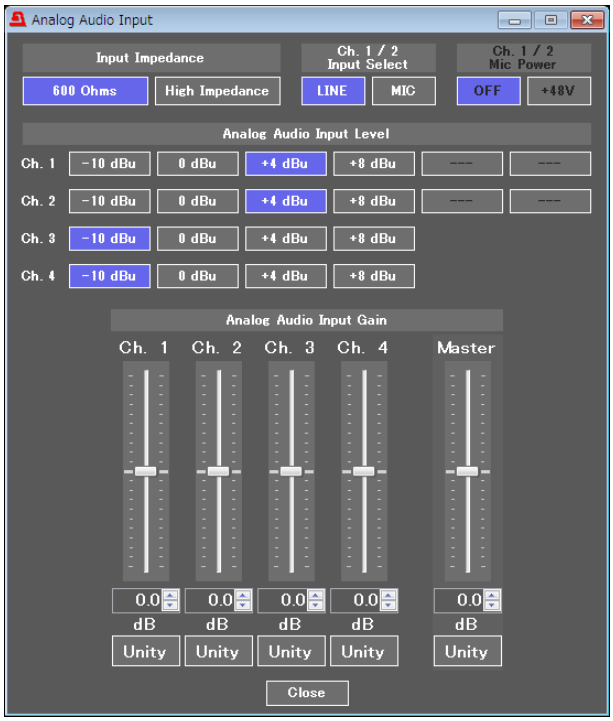
Ch 1/2 will be the reference. Other channel pairs will be synchronized to the word clock of Ch1/2.

◆ **When setting channels Ch1/2 to 3/4 to Group A, and channels Ch5/6 to 7/8 to Group B**

Ch 1/2 will be the reference pair for Group A, and Ch 5/6 the reference pair for Group B.

IMPORTANT
Channel pairs in an audio group must be synchronous and must have the same sampling rate. Changing the audio assignment of the reference channel pair may cause noise on other channel pairs in the same audio group.

4-3-4. Analog Audio Input (FA-10ANA-AUD Option)



Item	Default	Setting range	Description
Input Impedance	600 Ohms	600 Ohms High Impedance	Allows you to set the termination for all analog audio inputs.
Ch. 1/2 Input Select	LINE	LINE MIC	Allows you to select the input mode for Ch. 1 and Ch. 2 from Line and Microphone. The Input level changes depending on the selection. Ch.3 and Ch. 4 always operate in Line mode.
Ch. 1/2 Mic Power	OFF	OFF +48V	**+48V**: Outputs +48V power from the Ch.1 and Ch.2 analog audio input hot and cold pins. Effective only with the Microphone input. Always turns off when the unit starts up. *1

*1 Always turns off when performing an Event Load. Also turns off when a CSV file is loaded.

◆ Analog Audio Input Level

Item	Default	Setting range	Description
Ch.1-4 (in LINE mode)	+4dBu	-10dBu 0dBu +4dBu +8dBu	Allows you to set the input signal level for each analog audio channel.
Ch.1-2 (in MIC mode)	-45dBu	-55dBu -50dBu -45dBu -40dBu -35dBu -30dBu	

◆ **Analog Audio Input Gain**

Item	Default	Setting range	Description
Ch.1-4	0.0 dB	-20 - +20.0 dB (0.1 dB)	Allows you to set input gain for each analog audio channel.
Master	0.0 dB	-20 - +20.0 dB (0.1 dB)	Allows you to set an offset to the input gain for all analog audio channels.

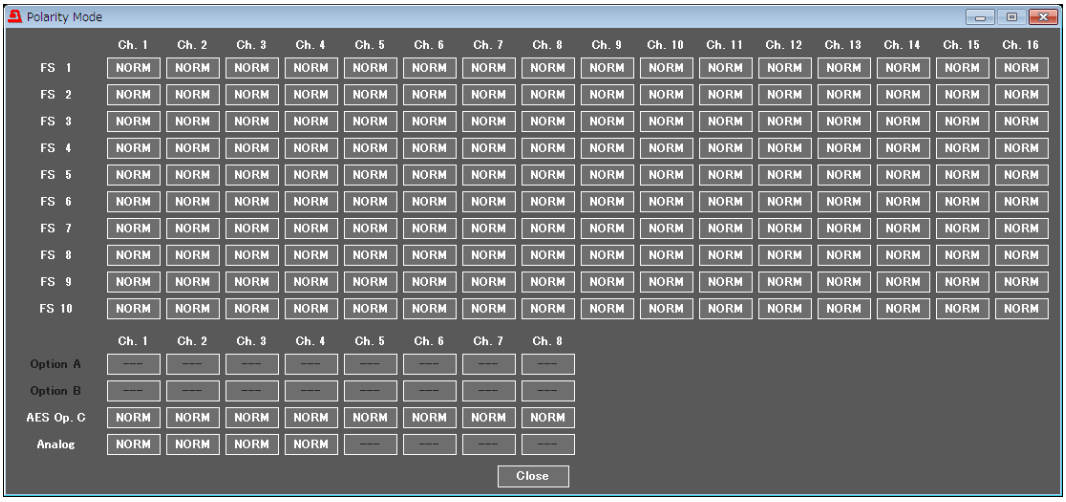
IMPORTANT
The input level significantly changes when the Input Select LINE / MIC setting is switched. **Make sure** no audio input signal is present when changing the **Input Select LINE/MIC setting**.

4-3-5. Sample Rate Converter (SRC)

Sample Rate Converter settings can be set for each FS channel pair separately.

Item	Default	Setting range	Description
FS 1-10	SRC In	Auto SRC In By-pass	Allows you to set the SRC circuit to pass or by-pass audio signals per channel pair. **Auto:** Sets the SRC circuit to pass signals. However, non-PCM audio signals will be by-passed. **SRC In:** Sets the SRC circuit to pass both PCM or NON-PCM signals. However, real NON-PCM signals cannot be output properly. **By-pass:** Sets the SRC circuit to by-pass signals. Set to **By-pass** to output asynchronous audio signals or Non-PCM signals. An audio clock must be selected under 4-3-14. “Embedded Audio Multiplex“ for the respective audio groups to embed audio signals to SDI output video signals.
AES Op. A-D	Auto	Auto SRC In By-pass	Allows you to set the SRC circuit to pass or by-pass audio signals per channel pair for option cards.

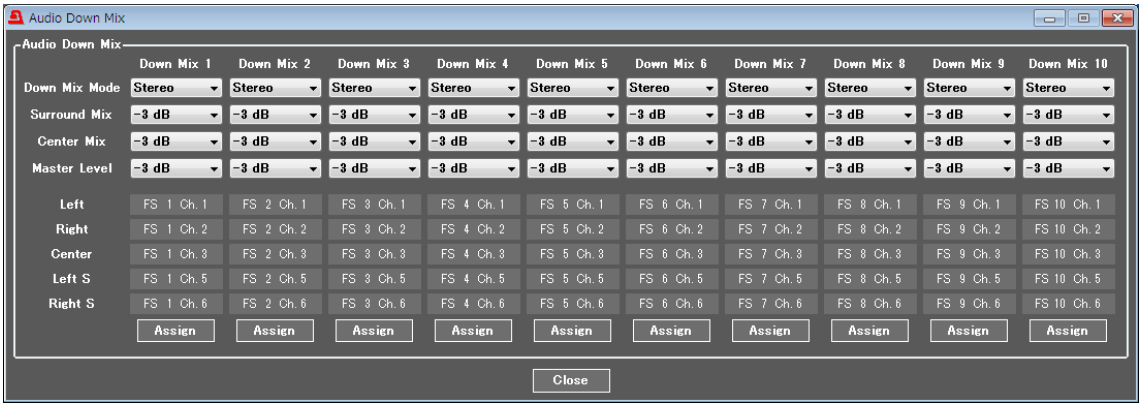
4-3-6. Polarity Mode



This page allows you to set polarity for each channel.

Item	Default	Setting range	Description
FS 1-10	NORM	NORM INV	Allows you to set the polarity for each channel of each FS. **INV:** Reverses the polarity.
AES Op. A-D			
Analog			

4-3-7. Down Mix



The following parameters for Down Mix 1 to 10 (One Down Mixer in each FS) can be separately set.

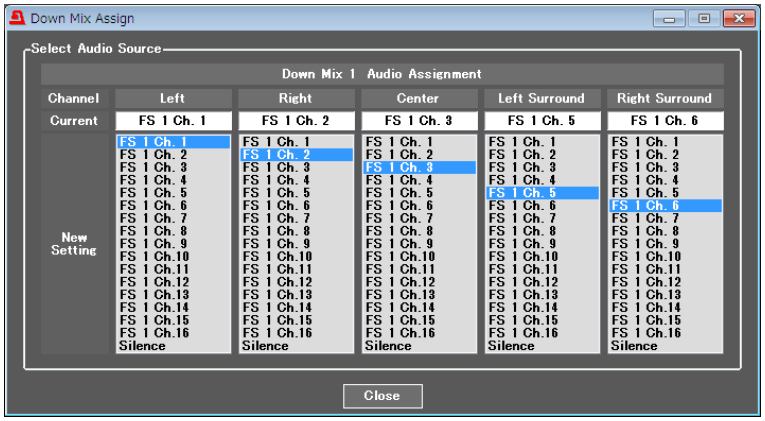
Item	Default	Setting range (Steps)	Description
Down Mix Mode	Stereo	Stereo Surround Monaural	Allows you to select a mode to downmix audio signals.
Surround Mix	-3dB	-3dB -6dB -9dB 0 (Off)	Allows you to set the Ls/Rs (surround channels) level. **0** : (-∞dB) Excludes surround channels from the downmix.
Center Mix	-3dB	-3dB -4.5 dB -6dB	Allows you to set the C (center channel) level. **-3dB**: The output level after the downmix retains the original center channel level. **-4.5dB, -6dB:** Used to reduce the audio level in case it becomes too loud due to the center channel audio mixing to both the right and left channels.
Master Level	-3dB	-3dB Auto	Allows you to set the level for the downmixed audio signals as a whole. If set to **Auto**, Down MIX Master Level changes according to the Downmix Mode and Surround Mix level selections. *1
Left Right Center Left S (Surround) Right S (Surround)	Left: FS1-10 Ch1 Right: FS1-10 Ch2 Center: FS1-10 Ch3 Left S: FS1-10 Ch5 Right S: FS1-10 Ch6	FS1 Ch1 to 16 | FS10 Ch1 to 16 Silence	Displays current audio input signals for downmixing.
Assign (button)	-	-	Allows you to open a window to assign audio signals to input for downmixing.

*1 If Master Level is set to Auto, Master Level changes as shown in the below table.

Down Mix Mode \ Surround Mix Level	-3dB	-6dB	-9dB	0 (-∞dB)
Stereo	approx.-7.7dB	approx.-6.9dB	approx.-6.3dB	approx.-4.6dB
Surround	approx.-9.9dB	approx.-8.7dB	approx.-7.7dB	approx.-4.6dB
Monaural	approx.-12.9dB	approx.-12.0dB	approx.-11.4dB	approx.-9.5dB

4-3-7-1. Down Mix Assign

Clicking an Assign button in the Down Mix page opens a window as shown below allowing audio signals to be assigned to down mix channels.



◆ Downmix Assign

Item	Default	Setting range	Description
Channel	-	-	Allows you to assign an audio signal for each channel; Left, Right, Center, Left S (Surround), and Right S (Surround).
Current	-	-	Displays currently selected audio signals.
New Setting	Left: FS1-10 Ch1 Right: FS1-10 Ch2 Center: FS1-10 Ch3 Left S: FS1-10 Ch5 Right S: FS1-10 Ch6	FS X Ch1 to 16 Silence	Allows you to select audio signals to input to downmixed audio channels. *1 *2

*1 An audio signal assigned to multiple channels may not output properly.

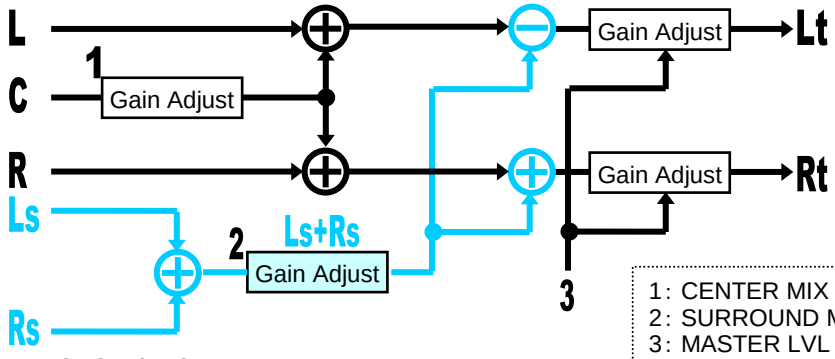
*2 Audio channels from different FSs cannot be down mixed.

e.g.) Down Mix 1 can only assign FS 1 audio channels.
Down Mix 10 can only assign FS 10 audio channels.

◆ **Down Mix Block Diagram**

<Surround Mix (Lt/Rt)>

Ls/Rs surround channels are summed to produce a mono surround channel and mixed to right and left channels by the 180 degree phase difference. (LFE channel is discarded.)

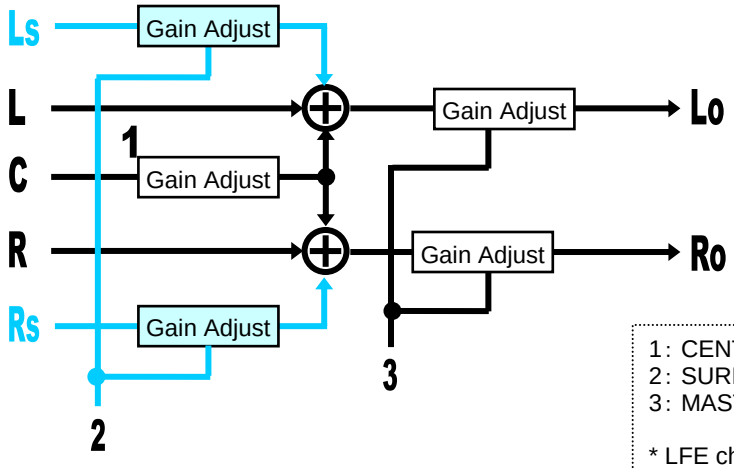


1: CENTER MIX level setting
2: SURROUND MIX level setting
3: MASTER LVL setting

* LFE channel is not subjected to the mix.

<Stereo Mix (Lo/Ro)>

For Stereo Monitors

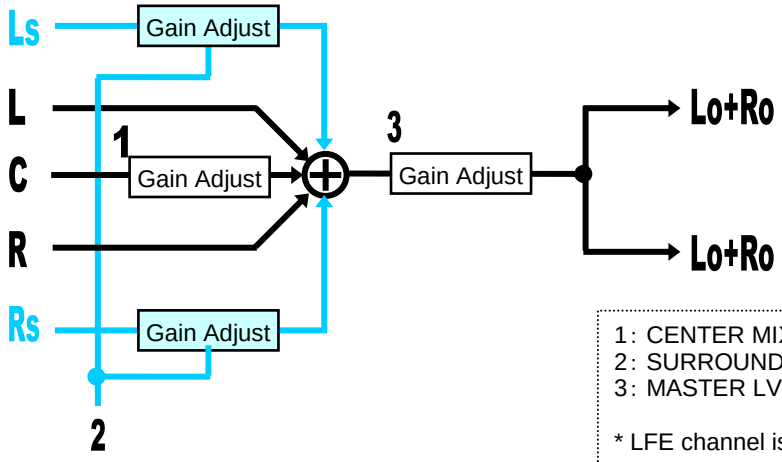


1: CENTER MIX level setting
2: SURROUND MIX level setting
3: MASTER LVL setting

* LFE channel is not subjected to the mix.

<Monaural Mix (Lo+Ro/Lo+Ro)>

For Monaural Monitors



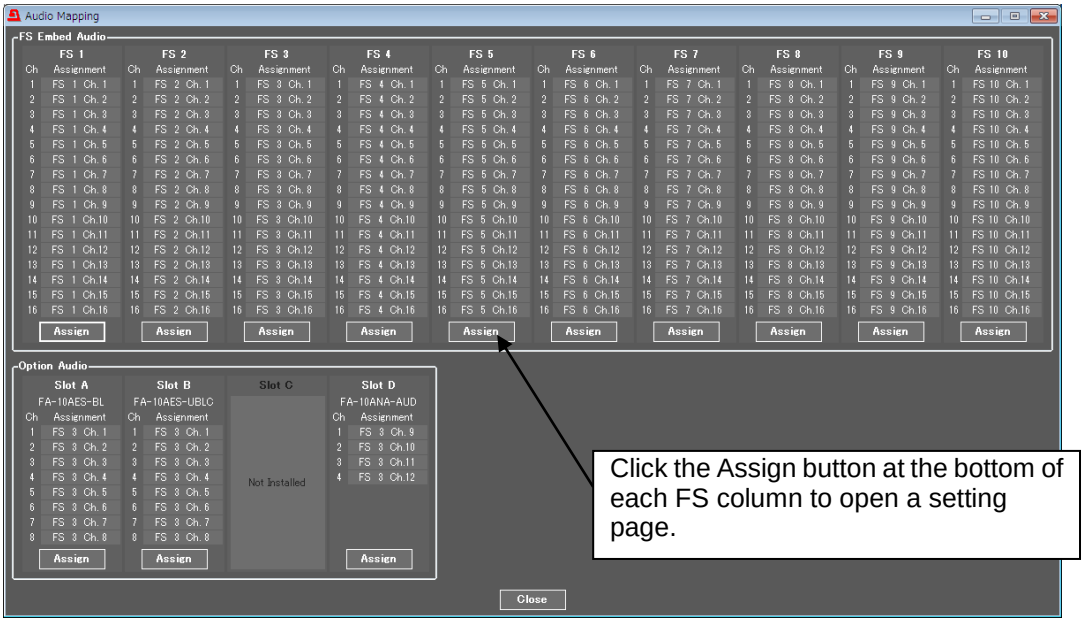
1: CENTER MIX level setting
2: SURROUND MIX level setting
3: MASTER LVL setting

* LFE channel is not subjected to the mix.

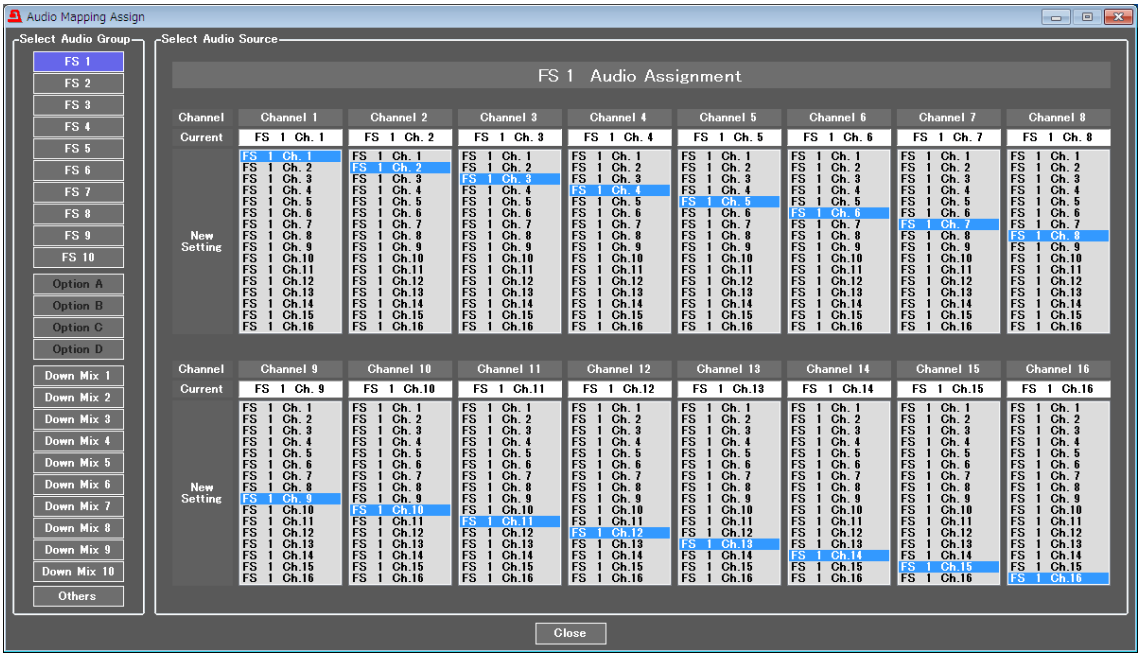
4-3-8. Audio Mapping

- SDI Mapping

The Audio Mapping block in the Audio Block diagram allows you to open the Audio Mapping page showing the FS signals mapping status.



Clicking **Assign** at the bottom of each FS column opens a corresponding FS setting page. Buttons in the **Select Audio Group** section at the left-hand side in a FS audio setting page are source group selection buttons. Clicking a source group selection button displays source channels in the **New Setting** boxes, and allow assignment.



◆ **FS1-10 Audio Assignment**

Item	Default	Setting range	Description
Channel	Channel 1	Channel 1 – 16	Allows you to select an audio signal to output for the selected FS.
Current	-	-	Displays the currently assigned audio channel.
New Setting	FS1-10 Ch1-16	FS1 Ch1-16 | FS10 Ch1-16 AES Op. A Ch.1-8 *1 | AES OP. D Ch.1-8*1 Analog Op.Ch1-4*2 Dowm Mix1 L Dowm Mix1 R | | Dowm Mix10 L Dowm Mix10 R Silence 500Hz Tone 1KHz Tone	Allows you to select an audio signal type and channel to output to respective audio channels. Channels of audio sources selected in the Select Audio Group section are displayed.

*1 Displayed if the FA-10AES-BL/UBL/UBLC option is installed in the option slot.
*2 Displayed if the FA-10ANA-AUD option is installed.

4-3-8-1. Audio Mapping (FA-10AES Option)

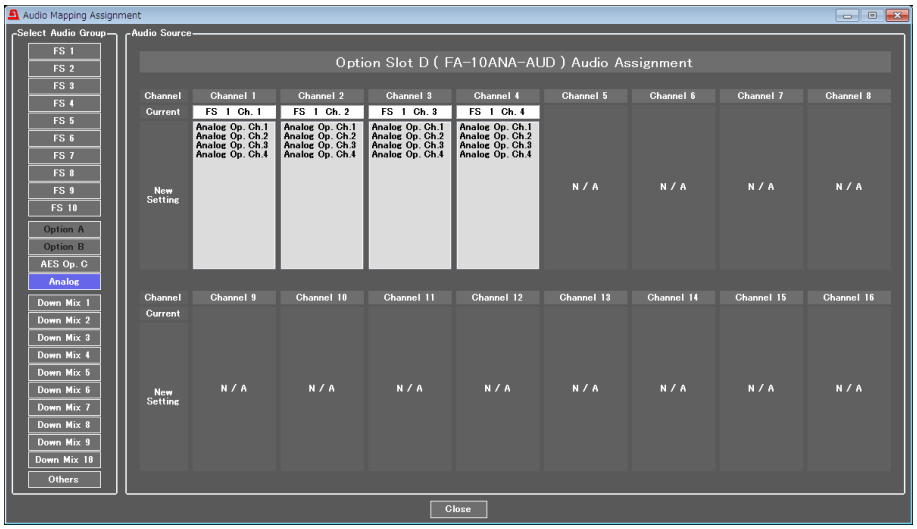
Clicking **Assign** at the bottom of each option column in the Audio Mapping page opens a corresponding option setting page.
AES option buttons also appear in the **Select Audio Group** section on the left-hand side in an FS/Option audio setting page. Clicking an AES option shortcut button displays and allows assignments of AES source channels in the **New Setting** boxes.

Item	Default	Setting range	Description
Channel	Channel 1	Channel 1 – 8	Allows you to select an audio signal to embed into respective AES option audio channels.
Current	-	-	Displays the currently assigned audio channel.
New Setting	FS1 Ch1-8	FS1 Ch1-16 | FS10 Ch1-16 AES Op. A Ch.1-8 *1 | AES OP. D Ch.1-8*1 Analog Op.Ch1-4*2 Dowm Mix1 L Dowm Mix1 R | | Dowm Mix10 L Dowm Mix10 R Silence 500Hz Tone 1KHz Tone	Allows you to select an audio signal to embed into respective AES audio channels. Channels of audio sources selected in the Select Audio Group section are displayed.

*1 Displayed if the FA-10AES-BL/UBL/UBLC option is installed in the option slot.
*2 Displayed if the FA-10ANA-AUD option is installed.

4-3-8-2. Audio Mapping (FA-10ANA-AUD Option)

Clicking **Assign** at the bottom of each option column in the Audio Mapping page opens a corresponding option setting page.
Analog option buttons also appear in the **Select Audio Group** section on the left-hand side in an FS/Option audio setting page. Clicking an Analog option shortcut button displays and allows assignments of Analog source channels in the **New Setting** boxes.



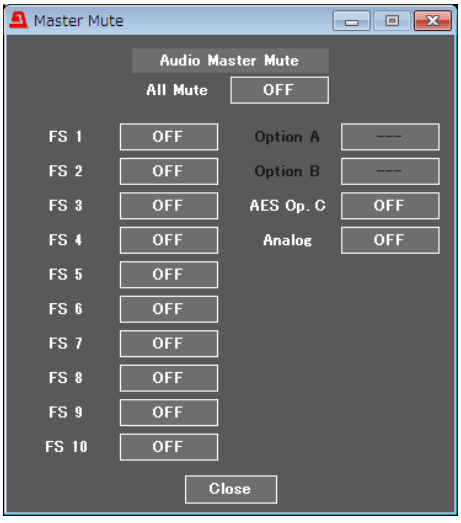
Item	Default	Setting range	Description
Channel	Channel 1	Channel 1 – 4	Allows you to select an audio signal to embed into respective Analog option audio channels.
Current	-	-	Displays the currently assigned audio channel.
New Setting	FS1 Ch1-4	FS1 Ch1-16 | FS10 Ch1-16 AES Op. A Ch.1-8 *1 | AES OP. C Ch.1-8*1 Analog Op.Ch1-4*2 Dowm Mix1 L Dowm Mix1 R | | Dowm Mix10 L Dowm Mix10 R Silence 500Hz Tone 1KHz Tone	Allows you to select an audio signal to embed into respective Analog audio channels. Channels of audio sources selected in the Select Audio Group section are displayed.

*1 Displayed if the FA-10AES-BL/UBL/UBLC option is installed in the option slot.
*2 Displayed if the FA-10ANA-AUD option is installed.

4-3-9. Audio Test Signal

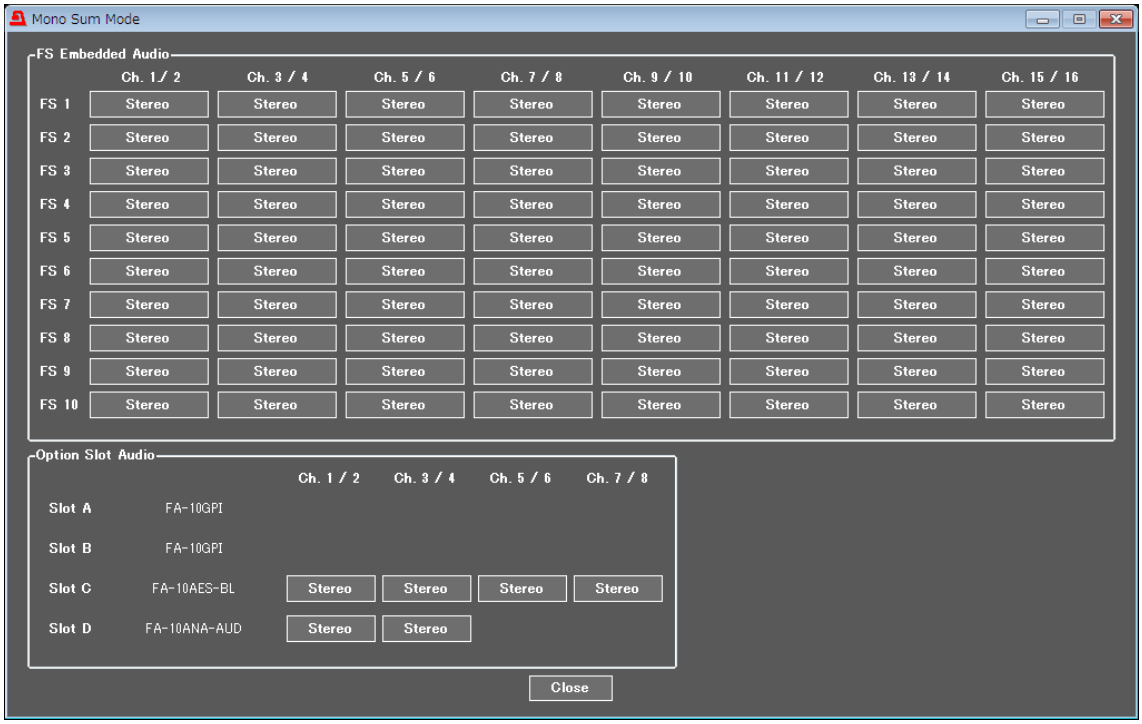
Item	Default	Setting range	Description
All	OFF	OFF 500Hz Tone 1kHz Tone	Allows you to output audio test signals in all FS and option card channels.
FS1-10 AES Op. A-D Analog	OFF	OFF 500Hz Tone 1kHz Tone	Allows you to output an internal embedded audio test signal in all FSs or respective option cards.

4-3-10. Master Mute



Item	Default	Setting range	Description
All Mute	OFF	ON OFF	**ON:** Mutes all FS 1 to 10 audio channels that are set to be internally processed.
FS1-10 AES Op. A-D Analog	OFF	ON OFF	**ON:** Mutes all audio channels of each FS or option card that are set to be internally processed.

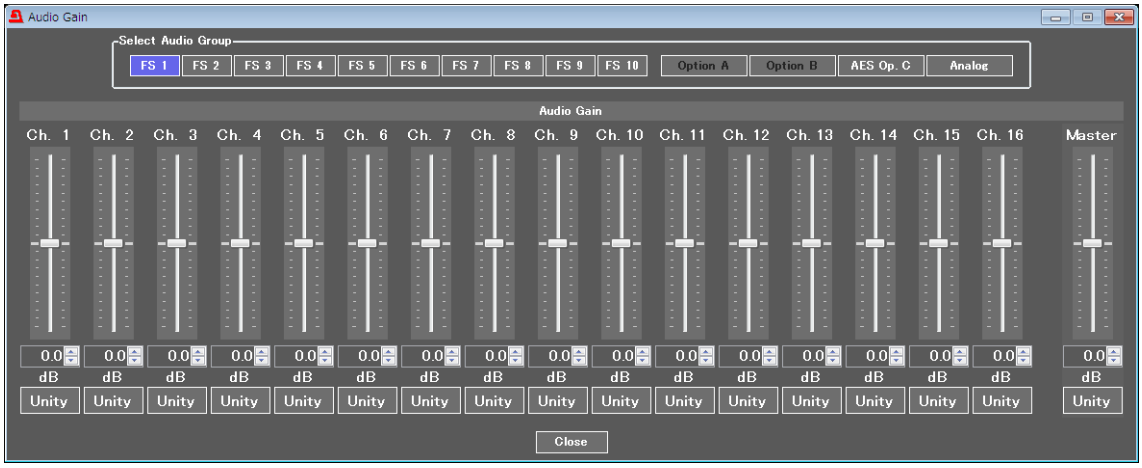
4-3-11. Mono Sum Mode



This page allows Mono Sum mode to be set for each channel pair.

Item	Default	Setting range	Description
FS 1-10 AES Op. A-D Analog	Stereo	Stereo Monaural	**Monaural:** Outputs each FS or option card channel pair signals in mono sum mode.

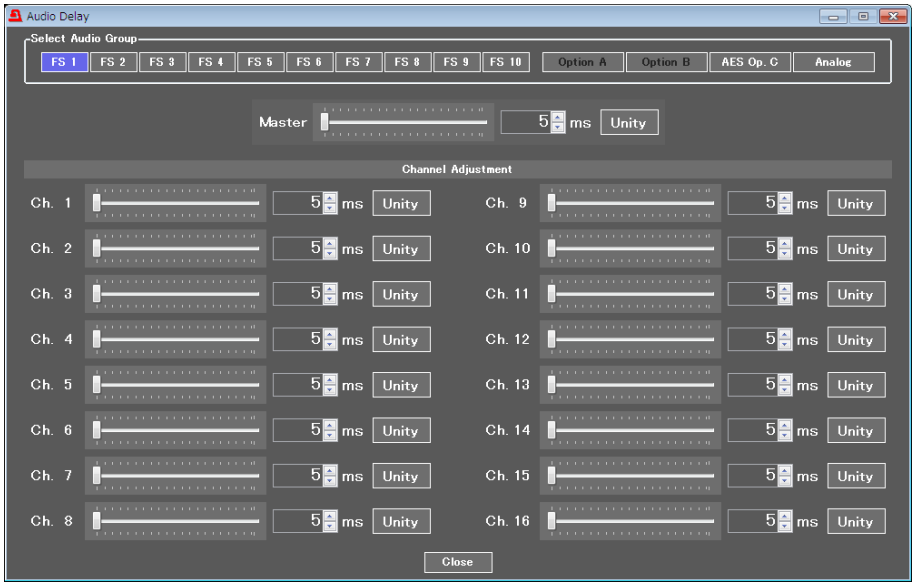
4-3-12. Audio Gain



◆ **Embedded Audio Gain (When FS1-10 is selected under Select Audio Group)**

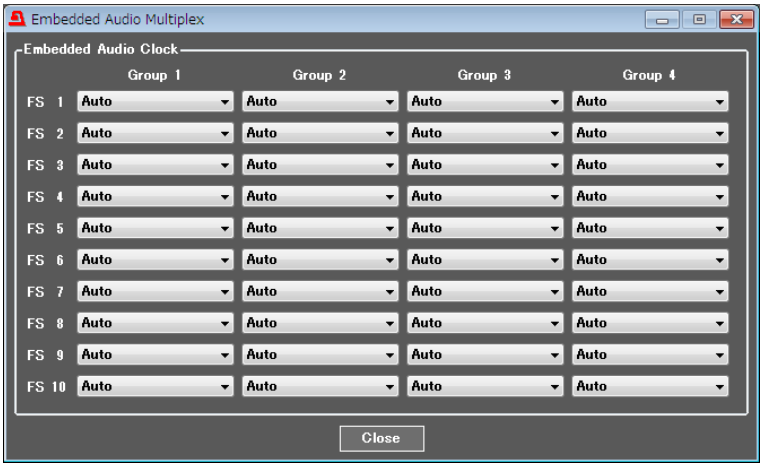
Item	Default	Setting range (Steps)	Description
FS Ch.1-16	0.0dB	-20.0 - +20.0 dB (0.1 dB)	Allows you to set audio gain for each audio channel selected under Select Audio Group for each FS.
AES Op. A-D Ch. 1-8	0.0dB	-20.0 - +20.0 dB (0.1 dB)	Allows you to set AES audio gain for each audio channel selected under Select Audio Group.
Analog Ch. 1-4	0.0dB	-20.0 - +20.0 dB (0.1 dB)	Allows you to set Analog audio gain for each audio channel selected under Select Audio Group.
Master	0.0dB	-20.0 - +20.0 dB (0.1 dB)	Allows you to set an output offset for all embedded audio channels in audio groups selected under Select Audio Group.

4-3-13. Audio Delay



Item	Default	Setting range	Description
Master	5 ms	5 – 1000 ms	Allows you to set the delay offset for all audio channels selected under Select Audio Group simultaneously.
FS Ch. 1-16	5 ms	5 – 1000 ms	Allows you to set a delay for each audio channel of the audio group selected under Select Audio Group of each FS.
AES Op. A-D Ch. 1-8	5 ms	5 – 1000 ms	Allows you to set a delay for each AES audio channel of the audio group selected under Select Audio Group.
Analog Ch. 1-4	5 ms	5 – 1000 ms	Allows you to set a delay for each Analog audio channel of the audio group selected under Select Audio Group.

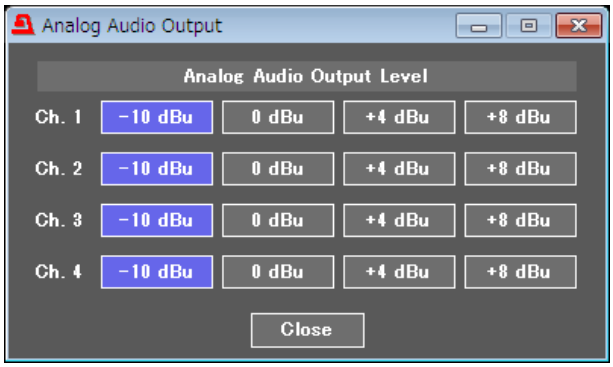
4-3-14. Embedded Audio Multiplex



FS1-10 Out Group Audio Clock

Item	Default	Setting range	Description
Group 1	Auto	Auto Reference clock CH 1/2 CH 3/4	Allows you to select an audio clock per group for SDI embedded audio output for FS1 to FS10 respectively. **Auto:** Automatically selects audio clock input in the NON-PCM signal channel, if an input NON-PCM signal is in the selected SDI embedded audio group. Automatically selects audio clock signal in the smallest numbered channel, if all signals in the audio group are NON-PCM. Automatically selects audio clock signal synchronized to the output video signal, if all signals in the audio group are PCM. **Reference clock**: Uses an audio clock synchronized with the output video signal. (Used to synchronize audio with the video signals processed in the SRC.) **CH 1/2 to 15/16:** An input audio clock in channels 1/2 to 15/16. To output asynchronous audio signals, select one input channel pair for each group. For SD-SDI outputs, **Reference clock** is automatically selected regardless of the setting.
Group 2	Auto	Auto Reference clock CH 5/6 CH 7/8	
Group 3	Auto	Auto Reference clock CH 9/10 CH 11/12	
Group 4	Auto	Auto Reference clock CH 13/14 CH 15/16	

4-3-15. Analog Audio Output (FA-10ANA-AUD Option)

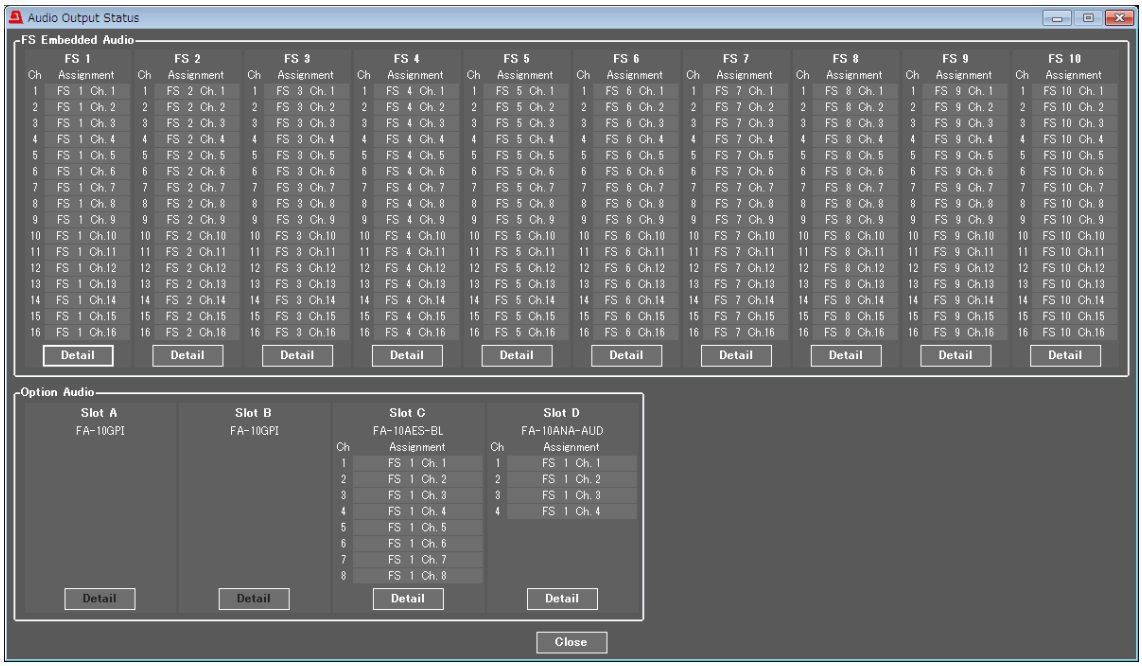


Item	Default	Setting range	Description
Ch.1-4	+4dBu	-10dBu 0dBu +4dBu +8dBu	Allows you to select the output level for each analog audio channel.

4-3-16. Audio System

Item	Default	Setting range	Description
Digital Audio Reference Level	-20 dBFS	-18 dBFS -20 dBFS	Allows you to select the reference level for digital audio signals.
Digital Audio Grade	Professional	Professional Consumer	Allows you to select an audio application for digital audio channels. **Professional**: Optimized for professional use **Consumer**: Optimized for consumer use.
Digital Audio Resolution	24 Bit	16 Bit 20 Bit 24 Bit	Allows you to select an audio word length for Digital Audio output signals.
Digital/Analog Audio Silence Time	2 sec	1 – 10sec	Allows you to set the duration to determine the audio signal is silent.
Digital/analog Audio Silence Level	-72 dBFS	-48 dBFS -54 dBFS -60 dBFS -66 dBFS -72 dBFS	Allows you to select the audio level to determine the audio signal is silent.
Analog Audio Silence Level	-60 dBFS		

4-3-17. Audio Output Status



◆ **FS Embedded Audio**

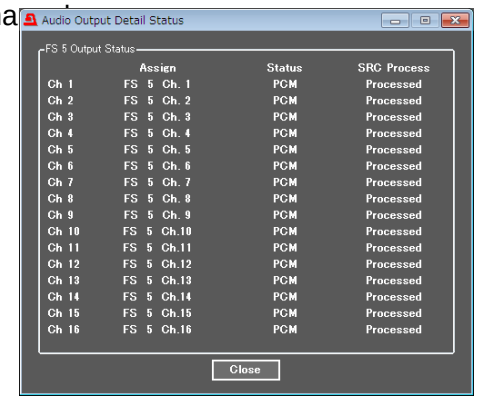
Item	Display	Description
Ch1 - Ch16	FS1-10 Ch.1-16 etc.	Displays source signals assigned to FS 1 to 10.

◆ **Option Audio**

Item	Display	Description
Ch1 - Ch8 etc.	FS1-10 Ch. 1-8 etc.	Displays source signals assigned to AES or analog audio output connectors.

◆ **Audio Output Status Details**

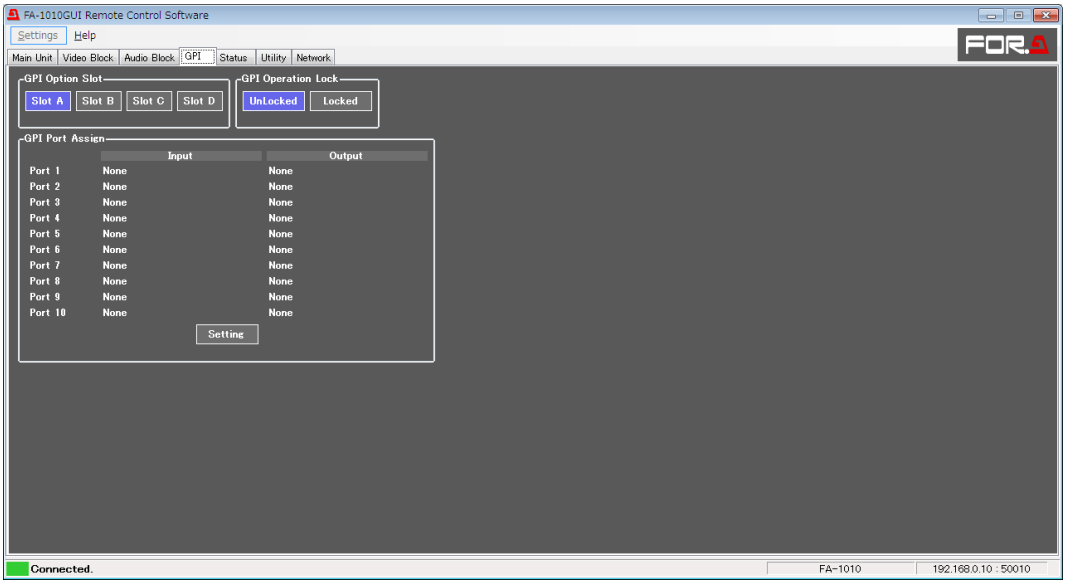
Clicking the Detail button at the bottom of each output group opens a window showing details for each cha



Item	Display	Description
Assign	-	Displays the assigned source signal.
Status	PCM PCM (Silence) NON-PCM Blank By-pass Silence	Displays the embedded audio signal type or status. **PCM:** Normal audio signal **PCM (Silence):** Mute signal **NON-PCM:** Compressed audio data such as AC3 **Blank:** No embedded audio **By-pass:** SDI input and output are relay by-passed. **Silence:** Mute signal (Analog)
SRC Process	Processed Bypassed	Displays whether the audio signal has been processed or not in the SRC.

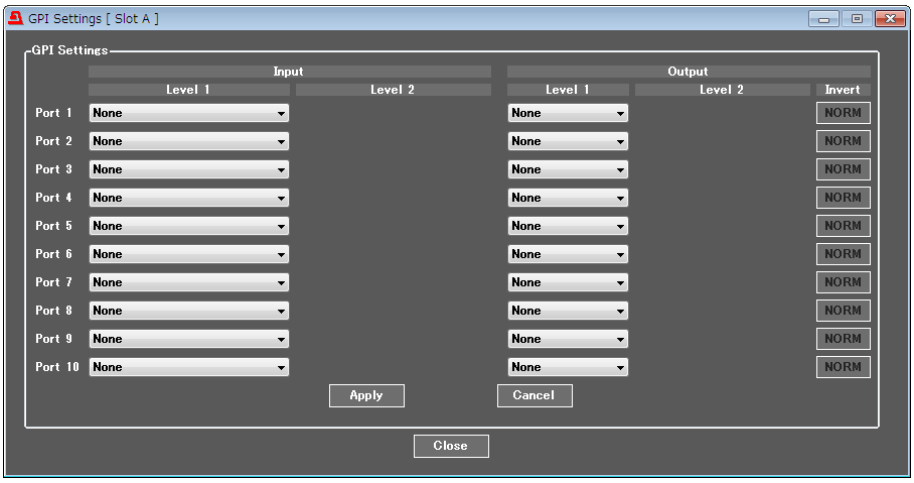
4-4. GPI (FA-10GPI Option)

Click the **GPI** tab at the top of the page to open the GPI page.



Item	Setting range	Description
GPI Option Slot	Slot A – D	Allows you to select a slot for which to set or verify settings.
GPI Operation Lock	Unlocked Locked	Locked: Disables the control via GPI. * To unlock GPI operation, select Unlocked in this page, or set the pin to which the GPI Lock function is assigned to ON for at least 1 second. Releasing the GPI Lock assignment from the pin while GPI operation is locked can also unlock GPI operation.
GPI Port Assign	-	Displays the current settings.
Setting (button)	-	Allows you to open the GPI settings window.

4-4-1. GPI Settings (FA-10GPI Option)



Allows you to assign a function for each port. The Level 2 menu option display changes according to the Level 1 selection.

Level 1	Level 2	
None	-	
Video Freeze	All Freeze Frame	
	All Freeze Odd	
	All Freeze Even	
	FS 1-10 Freeze On/Off *1	
	All Freeze On/Off	
SDI Relay By-pass	SDI 1-10 By-pass On/Off *1	
	All By-pass On/Off	
Time Code	Time Code Start	
	Time Code Stop	
	Time Code Reset	
	Time Code Preset	
Clean Switch System	Direct Mode	
	Take Mode	
	Take	
Clean Switch Destination	Destination 1-10	
Clean Switch Source	Source 1-10	
Salvo Recall	Salvo 1-100	
Event Load *2	Default	
	Event 1-100	
Video Test Signal	FS1-10, All Off	
	FS1-10, All 100% Color Bar	
	FS1-10, All SMPTE Color Bar	
	FS1-10, All Ramp	
Audio Test Signal	FS1-10	All Off All 500Hz Tone All 1kHz Tone
	AES A-D *3	
	Analog *4	
Other	GPI Lock	

1 If the GPI control is obstructed by other settings, an "" is displayed at the head of text.

*2 Once the GPI Event Loading is performed, next event loading is disabled for about 3 seconds.

*3 AES A-D features are displayed only if the FA-10AES-BL/UBL/UBLC option is installed in respective Slots A-D.

*4 The Analog features are displayed only if the FA-10ANA-AUD option is installed in Slot D.

◆ **Output**

Level 1	Level 2	
None	-	
Unit Alarm	FAN 1/2/3/4 Alarm	(A FAN is in alarm state.)
	FAN 1-4 Alarm	(The selected FAN is in alarm state.)
	DC Power 1/2 *1	(A DC power is in alarm state.)
	DC Power 1-2 *1	(The selected DC power is in alarm state.)
	Alarm	(An alarm has occurred.)
Video In	FS 1-10 Video In	(An video signal is present in the selected FS.)
	Reference In	(A reference signal is present in the selected FS.)
Audio In	FS 1-10 Audio In	(An audio signal is present in the selected FS.)
	Option A-D Audio In *2	(Audio signals are present in the selected option slot.)
Other	Input Function	(*3)

*1 DC Power 2 is displayed if the FA-10PS is installed.

*2 Option A-D Audio In are displayed if FA-10AES-BL/UBL/UBLC and/or FA-10ANA-AUD are installed in respective slots A-D.

*3 The output function varies depending on the Input setting of the port. Refer to the "Input Function Operation Characteristics of GPI Output" for details.

◆ **Invert**

Allows you to select the output logic for Unit Alarm selected under Level 1.

NORM (Normal): In an Alarm state, output is L (low).
INV (Invert):In an Alarm state, output is H (high).

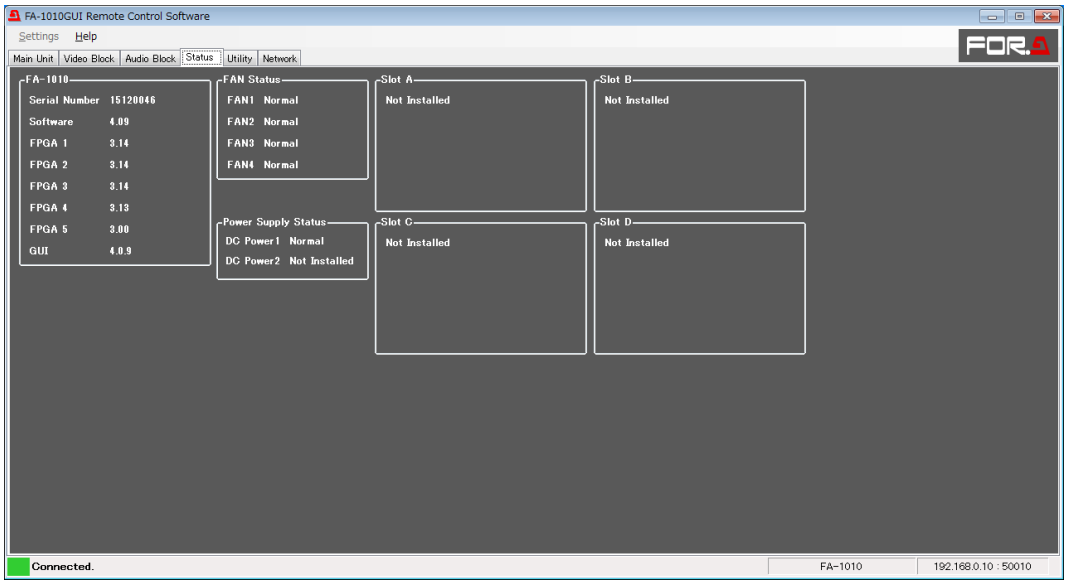
◆ **Input Function Operation Characteristics of GPI Output**

Input setting	Output Behavior (under Input Function)
All Freeze Frame	Outputs when Freeze Mode is set to Frame for all FSs 1-10.
All Freeze Odd	Outputs when Freeze Mode is set to Odd for all FSs 1-10.
All Freeze Even	Outputs when Freeze Mode is set to Even for all FSs 1-10.
FS 1-10 Freeze On/Off	Outputs when Freeze is set to On for the subject FS.
All Freeze On/Off	Outputs when Freeze is set to On for all FSs 1-10.
SDI 1-10 By-pass On/Off	Outputs when By-pass is set to On for the subject FS.
All By-pass On/Off	Outputs when By-pass is set to On for all FSs 1-10.
Time Code Start	Outputs when Time Code Starts.
Time Code Stop	Outputs when Time Code Stops.
Time Code Reset	No action.
Time Code Preset	No action.
Direct Mode	Outputs when Clean Switch is set to Direct Mode.
Take Mode	Outputs when Clean Switch is set to Take Mode.
Take	Outputs and does not output alternately when a Source is selected for a Destination in Take Mode so that Clean Switch is in the Take stand-by state.
Destination 1-10	Outputs when the subject Destination is selected.
Source 1-10	Outputs when the subject Source is selected.
Salvo 1-100	No action.
Event Load Default	Outputs and does not output alternately for about 3 seconds when an Event Load is performed.
Event 1-100	Outputs and does not output alternately for about 3 seconds when an Event Load is performed.
Video Test Signal FS1-10 Off	Outputs when Video Test Signal is set to Off for the subject FS.
Video Test Signal FS1-10 100% Color Bar	Outputs when Video Test Signal is set to 100% Color Bar for the subject FS.

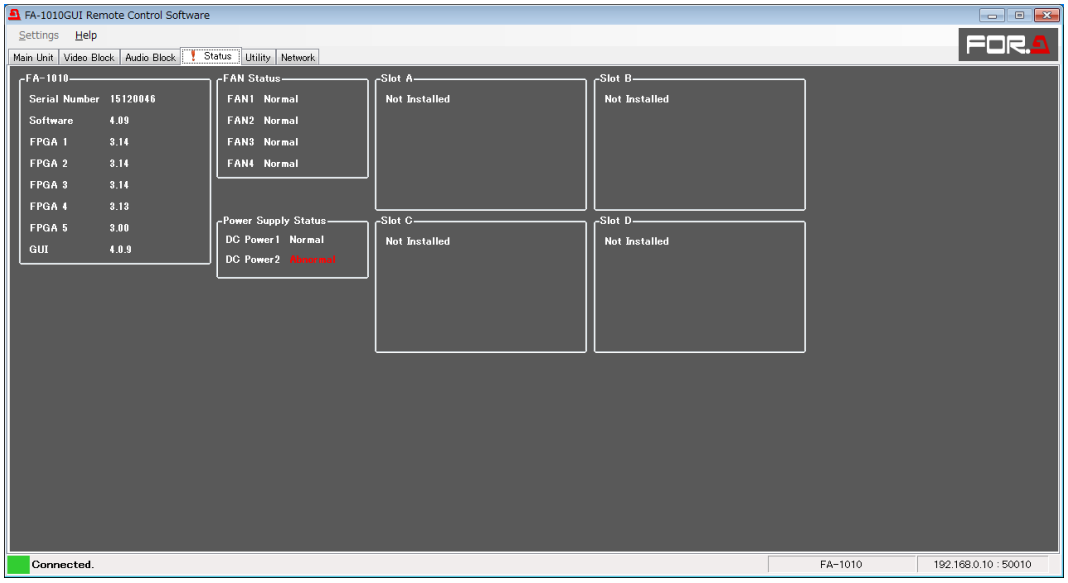
Video Test Signal FS1-10 SMPTE Color Bar	Outputs when Video Test Signal is set to SMPTE Color Bar for the subject FS.
Video Test Signal FS1-10 Ramp	Outputs when Video Test Signal is set to RAMP for the subject FS.
Video Test Signal All Off	Outputs when Video Test Signal All is set to Off.
Video Test Signal All 100% Color Bar	Outputs when Video Test Signal All is set to 100% Color Bar.
Video Test Signal All SMPTE Color Bar	Outputs when Video Test Signal All is set to SMPTE Color Bar.
Video Test Signal All Ramp	Outputs when Video Test Signal All is set to RAMP.
Audio Test Signal FS1-10 Off	Outputs when Audio Test Signal is set to Off for the subject FS.
Audio Test Signal FS1-10 500Hz	Outputs when Audio Test Signal is set to 500Hz for the subject FS.
Audio Test Signal FS1-10 1kHz	Outputs when Audio Test Signal is set to 1kHz for the subject FS.
Audio Test Signal AES A-D Off	Outputs when Audio Test Signal is set to Off for the subject AES.
Audio Test Signal AES A-D 500Hz	Outputs when Audio Test Signal is set to 500Hz for the subject AES.
Audio Test Signal AES A-D 1kHz	Outputs when Audio Test Signal is set to 1kHz for the subject AES.
Audio Test Signal Analog Off	Outputs when Audio Test Signal is set to Off for the Analog audio.
Audio Test Signal Analog 500Hz	Outputs when Audio Test Signal is set to 500Hz for the Analog audio.
Audio Test Signal Analog 1kHz	Outputs when Audio Test Signal is set to 1kHz for the Analog audio.
Audio Test Signal All Off	Outputs when Audio Test Signal All is set to Off.
Audio Test Signal All 500Hz	Outputs when Audio Test Signal All is set to 500Hz.
Audio Test Signal All 1kHz	Outputs when Audio Test Signal All is set to 1kHz.
GPI Lock	Outputs when GPI Lock is enabled.

4-5. Status

Click the **Status** tab at the top of the page to open the status page.



* An exclamation mark (!) is displayed on the Status tab, if an error occurs in a FAN or power supply unit.



◆ FA-1010

Item	Indication
Serial Number	Displays the serial number of the unit.
Software	Displays the software version.
FPGA 1- 5	Displays the version of each FPGA.
GUI	Displays the GUI version.

◆ **Fan Status**

Item	Indication	Description
FAN 1-4	Normal Stopped	Displays the status of FAN 1-4 respectively. **Normal**: Operating normally. **Stopped**: The FAN has stopped. Turn the unit power off, and contact your dealer for assistance.

◆ **Power Supply Status**

Item	Indication	Description
DC Power1 DC Power2	Normal Abnormal Not Installed	Displays the status of power supply units respectively. **Normal**: Normal **Abnormal**: Error state An error has occurred in the power supply. Replace the power supply unit. To do so, contact your dealer. **Not Installed**: The power supply unit is not installed.

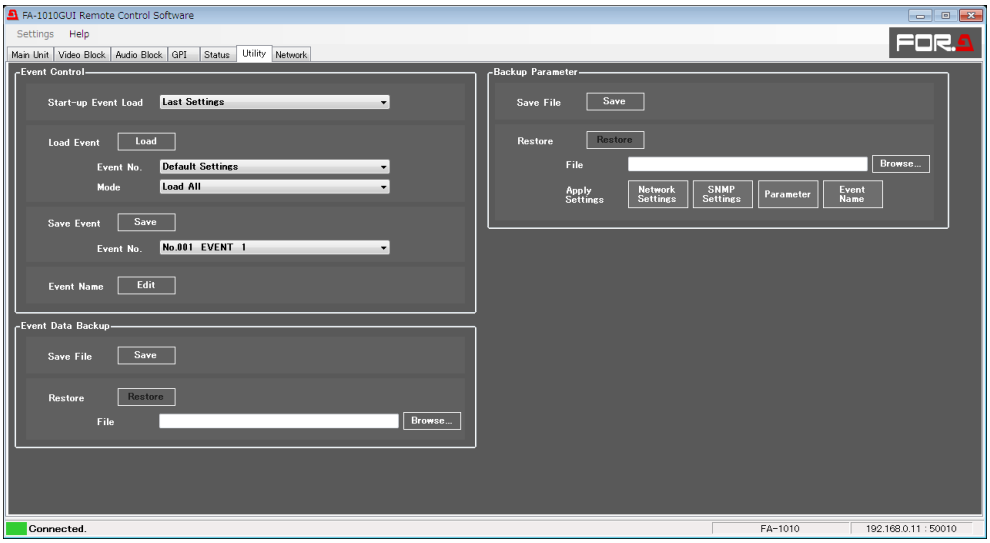
◆ **Slot A-D**

Item	Indication	Description
Slot A-D	FA-10AES-BL FA-10AES-UBL FA-10AES-UBL/UBLC FA-10ANA-AUD FA-10GPI	Displays the installation state and versions of installed option cards.

* The installed FA-10AES-UBLC is displayed with the FA-10AES-UBLC to which it is connected as "FA-10AES-UBL/UBLC". The status display of the slot where the FA-10AES-UBLC occupies does not change.

4-6. Utility

Click the **Utility** tab at the top of the page to open the Utility page.



4-6-1. Event Control

FA-1010 can save setting data in 100 event memories. The desired settings can be immediately recalled by loading a saved setting data.

Item		Default	Setting range	Description
Start-up Event Load		Last Setting	Last Setting Default Settings Event1-100	**Last Setting**: Starts up with the last set settings. **Default Settings**: Starts up with default settings. **Event1 to 100**: Starts up with the settings saved as an event among events 1 to 100.
Load Event	Load	-	-	The Load button allows you to load an event.
	Event No.	Default Settings	Default Settings Event1-100	Allows you to select an event number to be recalled.
	Mode	Load All	Load All Load FS(1-10) Only	Allows you to select how to load event data. *1 **Load All:** Loads all data in the event. **Load FS1-10 Only:** Loads only the selected FS event data.
Save Event	Save	-	-	The Save button allows you to save an event to the FA-1010.
	Event No.	Event 1	Event1-100	Allows you to select an event number to be saved
Event Name		-	-	The Event button allows you to open the Event Name setting screen. *2 (See sec. 4-6-1-1. “Event Name Edit”.)

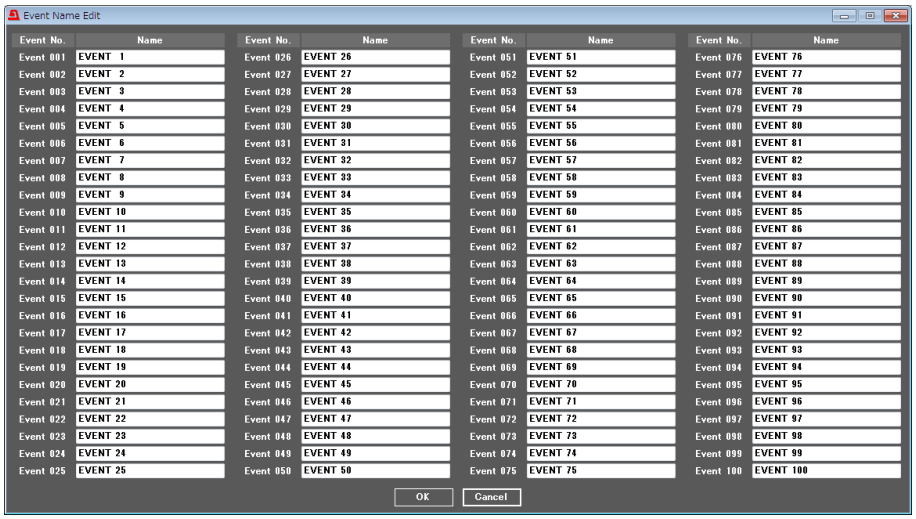
*1 See Section 9. “Menu List” for details on the event loading in different modes.

*2 Event names will be displayed for Event Load/Event Save settings.

WARNING
Note that selected Default Settings reset settings, and that all data except Event data and network settings will be lost every time the FA-1010 is powered on.

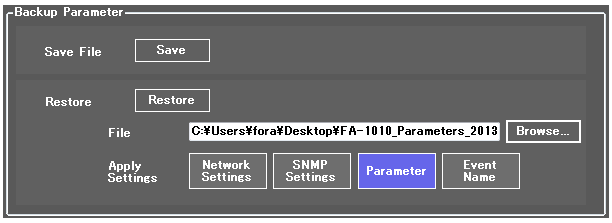
4-6-1-1. Event Name Edit

Events 1 to 100 can be named in this page.



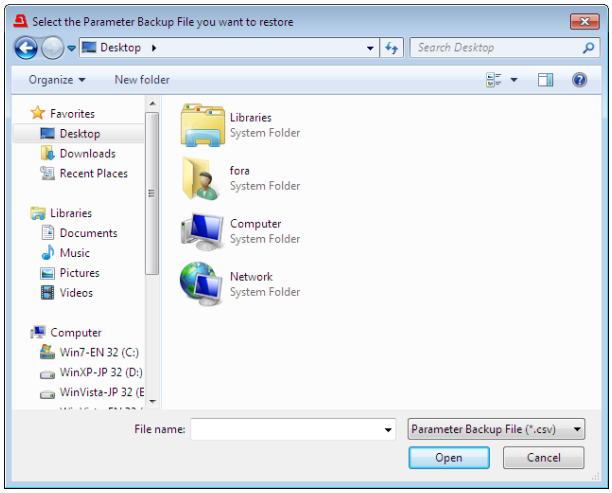
4-6-2. Backup Parameter

The FA-1010 settings can be saved to a file, and the saved settings in a file can be loaded.



◆ Saving the FA-1010 Settings to a File

Click **Save**. A window to save a file to as shown below opens.

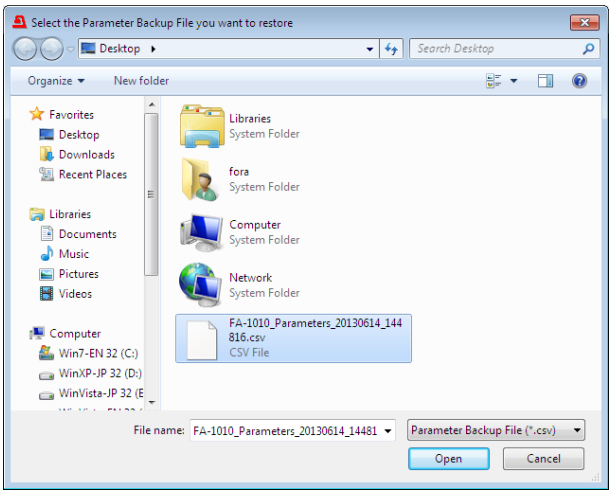


Specify the destination directory and file name, then click **Open**. A “Saving in progress” message box appears.
A “Saving complete” message box appears after the file is saved.

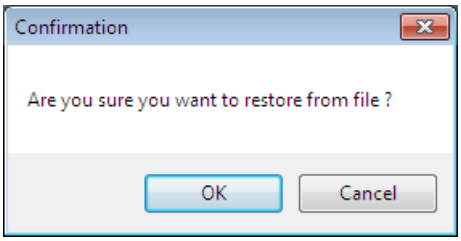
◆ **Loading the data saved in a file**

Press a button to select settings to load under Apply Setting. The button will light blue.
If no button is selected, no data will load.

Click **Browse.** A “Select the Parameter Backup File you want to restore” window opens.



Specify a destination directory, and click **Open**.
Click **Restore**. A confirmation message as shown below opens.



Click **OK** to start transferring file material to the FA-1010. To stop the file transfer, click **Cancel**.

* Some parameters such as By-pass and Freeze settings are not stored in any Backup Parameter.

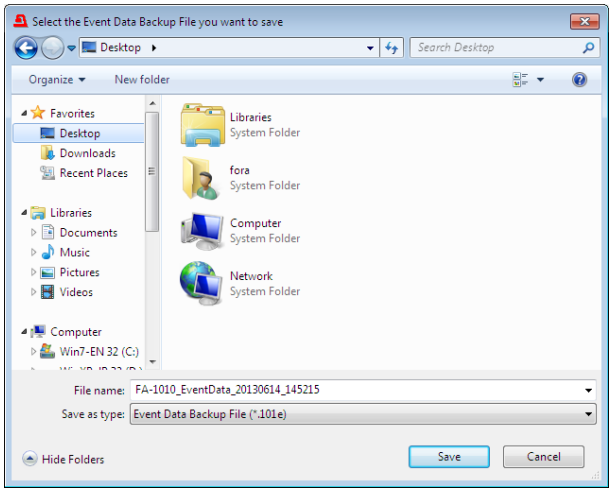
IMPORTANT
The FA-1010 uses the CSV file format to backup the configuration data which enables commercially available spreadsheet software to edit the data. However, Unit ID or event names that consist only of numbers may be recognized as numeric values by such software and appear differently after being recalled to the FA-1010. It is recommended that alphabetical values be included in names to enable editing using such software.

4-6-3. Event Data Backup

Event Memory data (Events1 through 100) can be saved in a file on the computer as a backup. The backup data can be moved to another FA-1010.

◆ **Save File**

Click **Save**. A window as shown below opens.

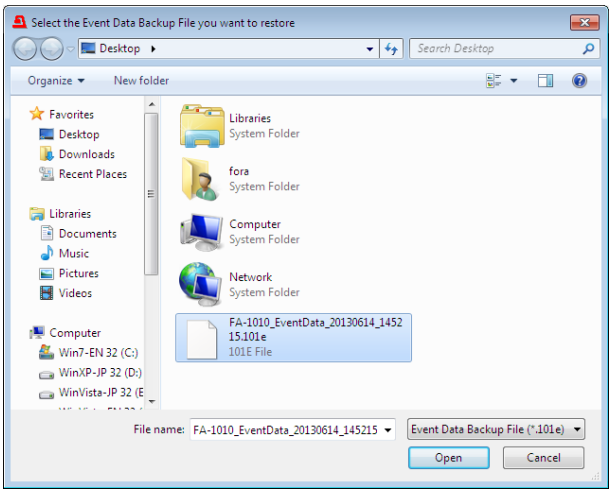


Specify a destination directory and file name, then click **Save**. A “Saving in progress” message box appears.

Once the file has been saved, a “Saving complete” message box appears.

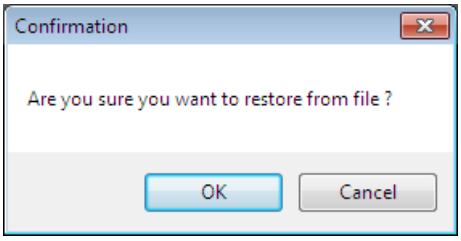
◆ **Restore File**

To load a backup file on the computer, click **Browse**. The “**Select the Event Data Backup File you want to restore”** window appears.



Specify the directory and the file name and click **Open**. The destination path will be displayed on screen.

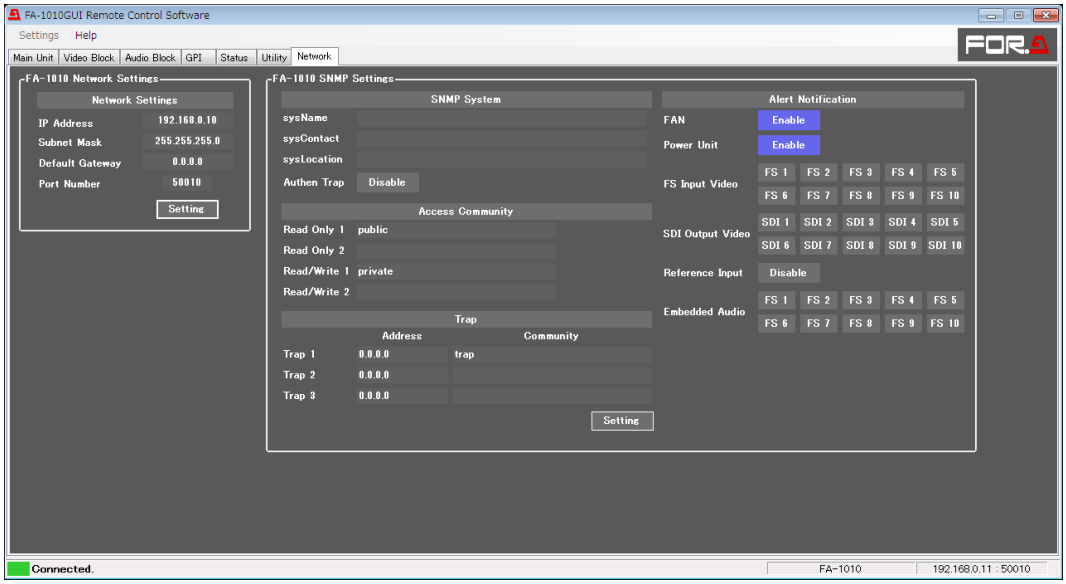
Click **Restore**. A confirmation dialog box as shown below appears.



Click **OK** to start loading. To stop the data upload, click **Cancel**.

4-7. Network

Clicking the Network tab at the top of the screen opens the FA-1010 Network Setting page.



4-7-1. Network Settings

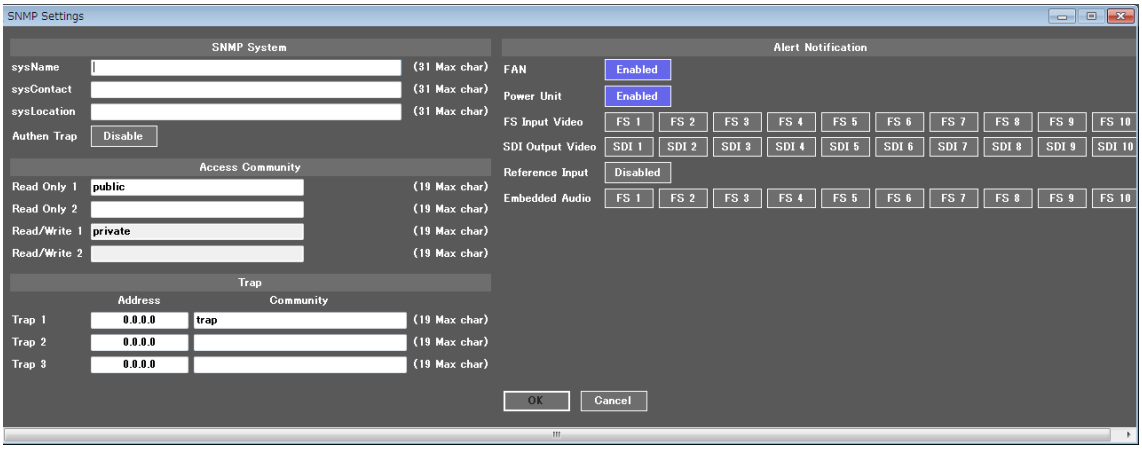
Clicking the Setting button in the FA-1010 Network Settings section displays the LAN port network settings page.

Item	Default	Description
IP Address	192.168.0.10	Allows you to set the LAN port IP address. A period “.” is used to separate each octet.
Subnet Mask	255.255.255.0	Allows you to set the LAN port subnet mask. A period “.” is used to separate each octet.
Default Gateway	0.0.0.0	Allows you to set the gateway. A period “.” is used to separate each octet.
Port Number	50010	Allows you to set the TCP port number for the Windows GUI connection.
OK (button)		Allows you to apply the settings to the FA-1010.

IMPORTANT
Clicing **OK** after changing a network setting opens a message box that asks you to restart the unit. In such case, close the message box, then restart the unit. Changes will take effect after the unit is restarted.

4-7-2. SNMP Settings

Clicking the Setting button in the FA-1010 SNMP Settings section displays the SNMP settings page.



◆ SNMP System

Item	Character limit (Alphanumeric and symbolic characters)	Description
SysName	31 char max	Allows you to set the device name.
SysContact	31 char max	Allows you to enter comments regarding the device location.
SysLocation	31 char max	Allows you to enter comments regarding the person in charge of the device.
Authen Trap	-	**Enable:** Sends a trap if authentication fails.

◆ Access Community

Item	Character limit (Alphanumeric and symbolic characters)	Description
Read Only1	19 char max	Read only SNMP community name
Read Only2	19 char max	Read only SNMP community name
Read/Write1	19 char max	Read/Write SNMP community name
Read/Write2	19 char max	Read/Write SNMP community name

◆ Trap

Item	Character limit (Alphanumeric and symbolic characters)	Description
Trap1 Address	---	The SNMP manager's IP address to which a trap is sent.
Trap2 Address	---	The SNMP manager's IP address to which a trap is sent.
Trap3 Address	---	The SNMP manager's IP address to which a trap is sent.
Trap1 Community	19 char max	The community name that sends a trap to Trap1 Address.
Trap2 Community	19 char max	The community name that sends a trap to Trap2 Address.
Trap3 Community	19 char max	The community name that sends a trap to Trap3 Address.
OK (button)		Allows you to apply SNMP System, Access Community, and Trap settings to the FA-1010.

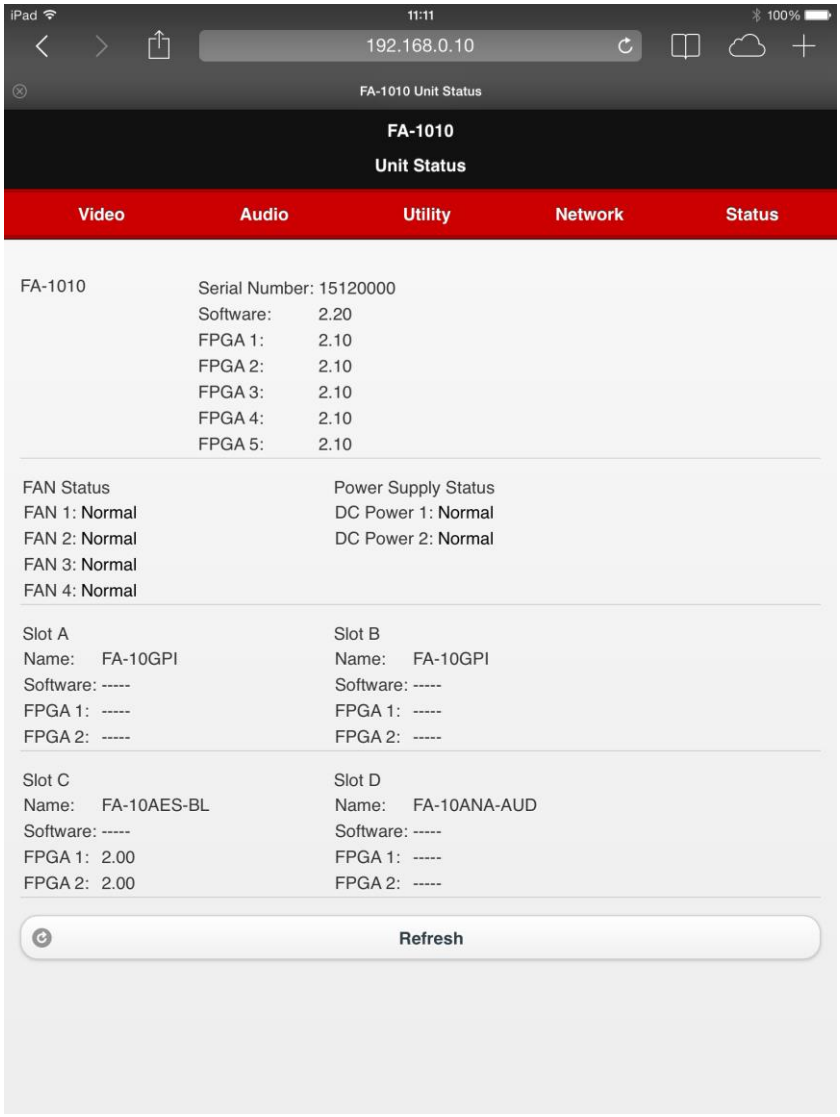
◆ **Alert Notification**

Item	Default	Setting range	Description
FAN	Enable	Disable Enable	**Enable:** Sends a trap when the fan state changes.
Power Unit (Only if FA-10PS is installed)	Enable	Disable Enable	**Enable:** Sends a trap when the power supply unit state changes.
FS Input Video	-	-	Allows you to select whether to send a trap when the SDI input signal changes for each channel.
SDI Output Video	-	-	Allows you to select whether to send a trap when the SDI output signal changes for each channel.
Reference Input	Disable	Disable Enable	**Enable:** Sends a trap when the reference signal changes.
Embedded Audio	-	-	Allows you to select whether to send a trap when the input embedded audio state changes for each FS.

5. Web GUI

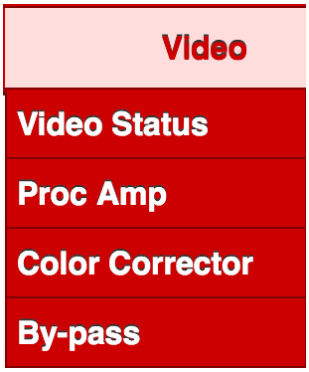
This section describes how to control the FA-1010 using the Web GUI.

Verify a computer is connected to the FA-1010 either with or without a cable.
Enter the FA-1010 IP address to a web browser address bar.
(Default FA-1010 IP address: 192.168.0.10.)
Once a connection is established, a display of the main unit's information as shown below opens up.
The Web GUI connection is now complete.



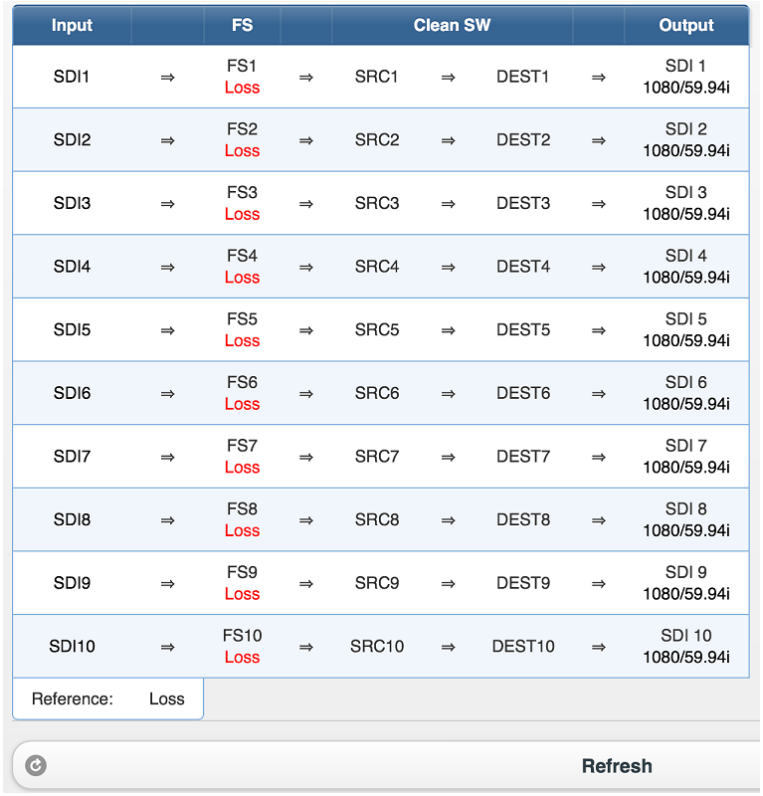
5-1. Video

Clicking the Video tab on the menu bar opens the dropdown menu as shown below.



5-1-1. Video Status

The Video status page displays the status of routing and output video signal.

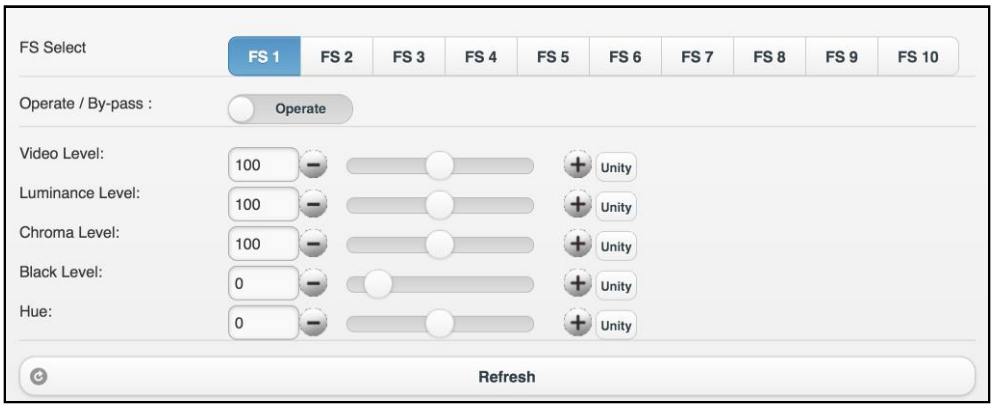


Signal paths change according to the FS Input, Clean Switch, and/or FS Output menu settings.

Display	Description	Ref.
Input	Displays input channels (SDI IN 1-10) assigned to FS 1-10 in the FS Input menu.	4-2-1. FS Input
FS	Displays FSs (1-10) and their signal formats assigned to Dest 1-10 in the Clean Switch menu.	4-2-11 Clean Switch
Clean Switch	Displays Clean Switch settings and their output signal assignments to output connectors (SDI OUT 1-10) in the FS Output menu.	4-2-12 FS Output
Output	Displays the signal format of output signals assigned to connectors SDI OUT 1-10.	
Reference	Displays the input genlock signal format.	

5-1-2. Proc Amp

This page allows you to set Process Amp settings for each FS.



Item	Default	Setting range (Steps)	Description
FS Select	-	-	Allows you to select an FS for which to adjust settings.
Operate / By-pass (Same setting as that in Color Corrector)	Operate	Operate Bypass	Setting to **By-pass** skips the video process and disables the parameter settings.
Video Level	100.0%	0.0 - 200.0% (0.1%)	Allows you to adjust the video level.
Chroma Level	100.0%	0.0 - 200.0% (0.1%)	Allows you to adjust the chrominance level.
Luminance Level	100.0%	0.0 - 200.0% (0.1%)	Allows you to adjust the luminance level.
Setup/Black Level	0.0%	-20.0 - 100.0% (0.1%)	Allows you to adjust the black level.
Hue	0.0°	-179.8° - 180.0° (0.2°)	Allows you to adjust the color phase.
Unity button	-	-	Allows you to reset the corresponding settings.

If Color Correction Mode (Section 4-2-7) is set to Sepia, Chroma Level and Hue settings cannot be changed.

With 4K Mode enabled (see Section 4-2. “Video Block”), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

5-1-3. Color Corrector

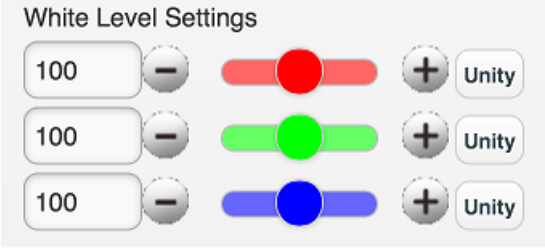
This page allows you to set Color Corrector settings.

Select an FS, then select the correction mode and turn the simultaneous RGB setting feature On/Off.

Item	Default	Setting range	Description
FS Select			Allows you to select an FS for which to adjust settings.
Operate / By-pass (Same setting as that in Proc Amp) *1	Operate	Operate Bypass	Setting to **By-pass** skips the video process and disables the parameter settings.
Color Correction Mode *1	Balance	Balance Differential Sepia	Allows you to select a correction mode from Balance (RGB), Differential, or Sepia. **Balance:** RGB signal correction mode Allows you to adjust the white balance. Gray scale can be changed by adjusting R, G and B levels **Differential:** Color difference signal mode Allows you to adjust contrast without changing white balance. R, G and B levels can be changed without affecting gray scale. This adjustment is effective for images with different color saturation levels. **Sepia:** Sepia mode Useful for creating black and white images. Sepia mode cannot be selected in Link mode.
Group Adjust	Off	Off On	Allows you to simultaneously adjust Red, Green and Blue components while retaining the proportion of the separately adjusted levels.

*1 With 4K Mode enabled (see Section 4-2. “Video Block”), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

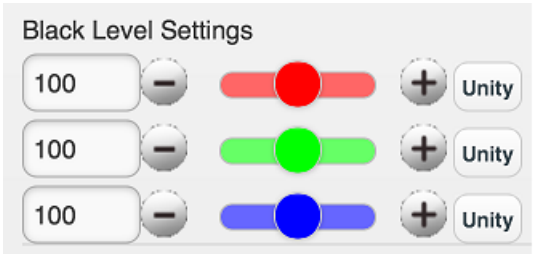
◆ White Level Settings



Item	Default	Setting range (Steps)	Description
Red, Green, Blue	100.0%	0.0 - 200.0% (0.5%)	Allows you to adjust the white level by separately adjusting R, G, and B components.
Unity button	-	-	Allows you to reset the settings to default.

With 4K Mode enabled (see Section 4-2. “Video Block”), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

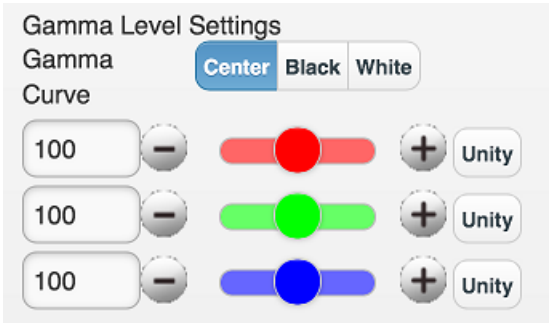
◆ Black Level Settings



Item	Default	Setting range (Steps)	Description
Red, Green, Blue	100.0%	0.0 - 200.0% (0.5%)	Allows you to adjust the black level by separately adjusting R, G, and B components.
Unity button	-	-	Allows you to reset the settings to default.

With 4K Mode enabled (see Section 4-2. “Video Block”), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

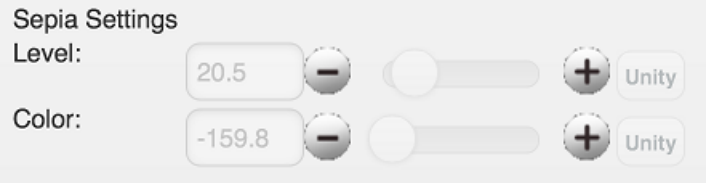
◆ Gamma Level Settings



Item	Default	Setting range (Steps)	Description
Red, Green, Blue	100.0 %	0.0 - 200% (0.5%)	Allows you to adjust the gamma level by separately adjusting R, G, and B components.
Unity button	-	-	Allows you to reset the settings to default.
Gamma Curve	Center	Center Black White	Allows you to select a gamma curve type from 3 types.

With 4K Mode enabled (see Section 4-2. “Video Block”), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

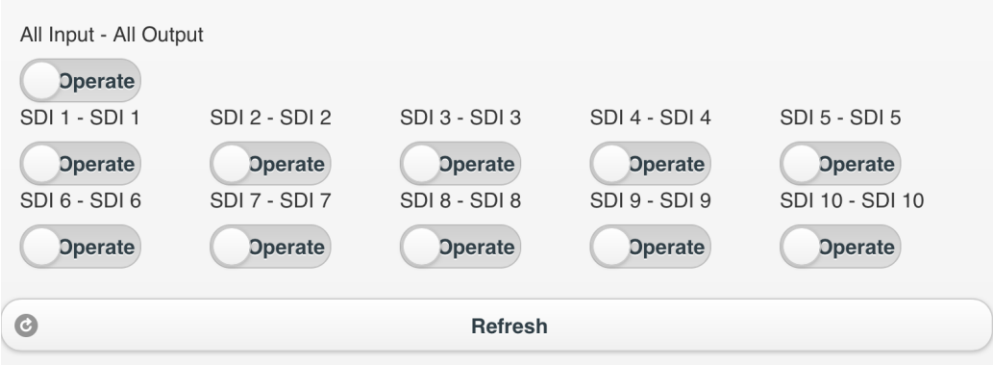
◆ Sepia Settings



Item	Default	Setting range (Steps)	Description
Level	25.0%	0.0 - 100% (0.1%)	Allows you to adjust the color level in the Sepia mode.
Color	-160.0°	-179.8° - 180.0° (0.2°)	Allows you to adjust the color in the Sepia mode.
Unity button	-	-	Allows you to reset the settings to default.

Effective only when Color Correction Mode is set to Sepia.
With 4K Mode enabled (see Section 4-2. “Video Block”), all 4 FS settings under the same FS group (FS3-6 or FS7-10) are linked.

5-1-4. By-pass



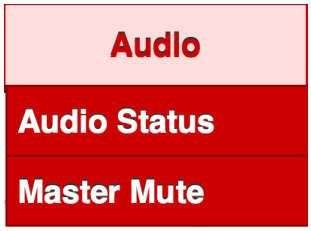
Item	Default	Setting range	Description
All Input-All Output	Operate	Operate By-pass	Allows you to set all inputs and outputs simultaneously regardless of other settings. **Operate**: Processes input signals. **By-pass**: By-passes input signals. e.g. Input 1 → Output 1, Input 10 → Output 10
SDI X -SDI X	Operate	Operate By-pass	Allows you to set the By-pass setting for each input connector. **Operate**: Processes input signals. **By-pass**: By-passes input signals. (X: connector number) By-pass cannot be set depending on FS Input and FS Output settings. See the important note below.
Refresh	-	-	

* The front panel status LED for the by-passed input connector lights green.

IMPORTANT
SDI input assigned to multiple FSs in the FS Input menu (see sec. 4-2-1) or to an FS assigned to multiple output connectors in the FS Output menu (see sec 4-2-12) cannot be set to By-pass. e.g., FS 1 and 2 assigned to SDI 1, FS 5 assigned to SDI 1, 2, 3, etc. However, All Input-All Output bypasses all input signals from the input connector to the same (numbered) output connector.

5-2. Audio

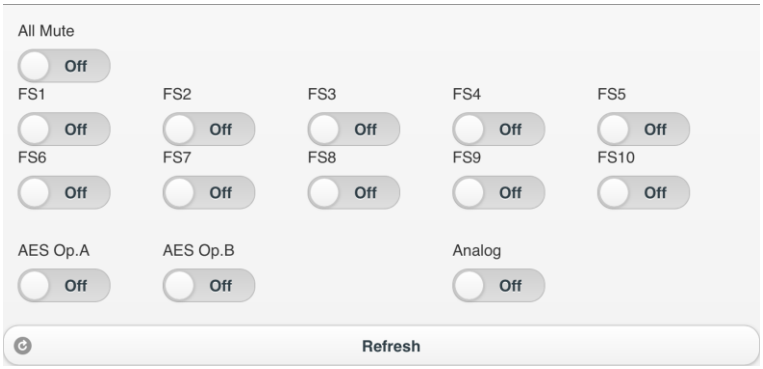
Clicking the Audio tab on the menu bar opens the dropdown menu as shown below.



5-2-1. Audio Status

Displays the audio signal assignment and status of each FS or option card.

5-2-2. Master Mute

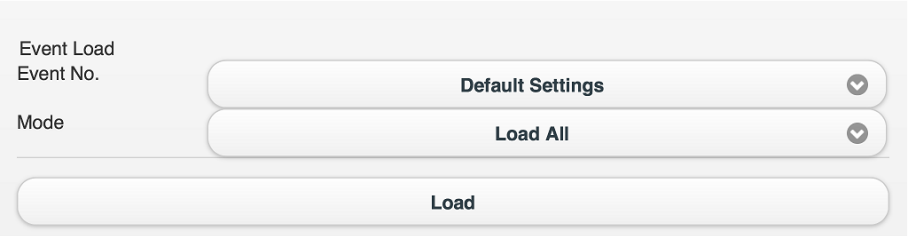


Item	Default	Setting range	Description
All	Off	On Off	**On**: Mutes all FS 1 to 10 audio channels that are set to be internally processed.
FS1-10	Off	On Off	**On**: Mutes all audio channels of each FS and option card that is set to be internally processed
AES Op. A-D			
Analog			

5-3. Utility

Clicking the Utility tab on the menu bar opens the dropdown menu as shown below.

5-3-1. Event Control

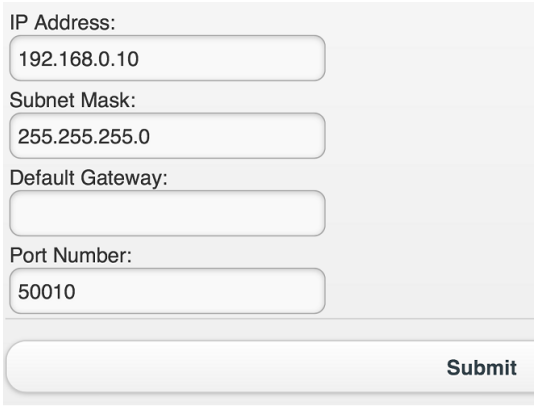


Item	Default	Setting range	Description
Event Load Event No.	Default Settings	Default Settings Event 1-100	Allows you to select an event to load. Clicking the arrow to the right opens a dropdown list.
Mode	Load All	Load All FS1 Only ⋮ FS10 Only	Allows you to select a loading mode. Clicking the arrow to the right opens a dropdown list. **Load All**: Allows you to load all saved event data. **FS 1-10 Only**: Allows you to load the selected FS event data.
Load button	-	-	Allows you to initiate the set event data loading.

5-4. Network

Clicking the Network tab on the menu bar opens the dropdown menu as shown below.

5-4-1. Network Settings

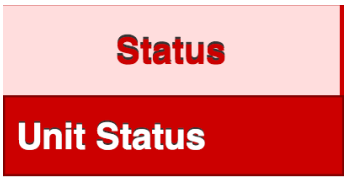


Item	Default	Description
IP Address	192.168.0.10	Allows you to set the LAN port IP address. A period "." is used to separate each octet.
Subnet Mask	255.255.255.0	Allows you to set the LAN port subnet mask. A period "." is used to separate each octet.
Default Gateway	0.0.0.0	Allows you to set the gateway. A period "." is used to separate each octet.
Port Number	50010	Allows you to set the TCP port number for the Windows GUI connection.
Submit button	-	Allows you to apply the settings to the FA-1010.

IMPORTANT
Clicing **Submit** after changing a network setting opens a message box that asks you to restart the unit. In such case, close the message box, then restart the unit. Changes take effect after the unit is restarted.

5-5. Status

Clicking the Status tab on the menu bar opens the dropdown menu as shown below.



5-5-1. Unit Status

◆ **FA-1010**

Item	Description
Serial Number	Displays the serial number of the unit.
Software	Displays the software version.
FPGA 1- 5	Displays the version of each FPGA.

◆ **FAN Status**

Item	Indication	Description
FAN 1-4	Normal Stopped	Displays the status of FAN 1-4 respectively. **Normal**: Operating normally. **Stopped**: The FAN has stopped. Turn the unit power off, and contact your dealer if a replacement is needed.

◆ **Power Supply Status**

Item	Indication	Description
DC Power1 DC Power2	Normal Abnormal Not Installed	Displays the status of power supply units respectively. **Normal**: Normal **Abnormal**: Error state. Turn the unit power off, and contact your dealer if a replacement is needed. **Not Installed**: The power supply unit is not installed.

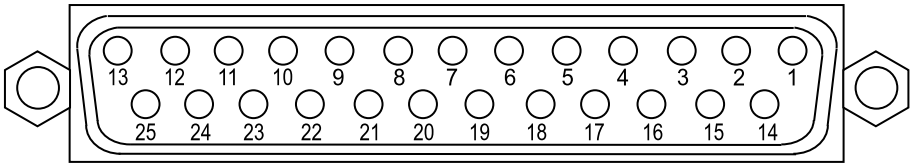
◆ **Option Slot Status**

Item	Indication	Description
Slot A-D	Name	Displays the type of installed option card.
	Software	Displays the software version.
	FPGA 1, 2	Displays the version of each FPGA.

6. Balanced AES Connection (FA-10AES-BL Option)

For balanced input and output, connect the hot and cold wires of an AES signal to plus and minus pins respectively.

◆ **Analog Audio IN/OUT Connector (25-pin D-sub, female, inch screws)**



◆ **Pin Assignments**

Pin No.	Setting
1	CH7/8 OUT+
2	CH7/8 OUT COM
3	CH5/6 OUT-
4	CH3/4 OUT+
5	CH3/4 OUT COM
6	CH1/2 OUT-
7	CH7/8 IN+
8	CH7/8 IN COM
9	CH5/6 IN-
10	CH3/4 IN+
11	CH3/4 IN COM
12	CH1/2 IN-
13	NC
14	CH7/8 OUT-
15	CH5/6 OUT+
16	CH5/6 OUT COM
17	CH3/4 OUT-
18	CH1/2 OUT+
19	CH1/2 OUT COM
20	CH7/8 IN-
21	CH5/6 IN+
22	CH5/6 IN COM
23	CH3/4 IN-
24	CH1/2 IN+
25	CH1/2 IN COM

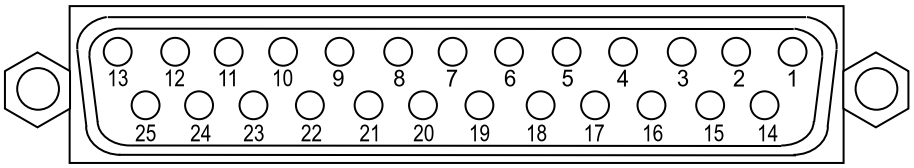
7. Analog Audio Connection (FA-10ANA-AUD Option)

For balanced input and output, connect the hot and cold wires of an analog audio signal to plus and minus pins respectively.

For unbalanced input, connect the analog audio signal line to the plus pin and route the ground line to the minus pin and COM pin.

For unbalanced output, connect the analog audio signal line to the plus pin and the ground line to the COM pin.

◆ **FA-10ANA-AUD Connector (25-pin D-sub, female, inch screws)**



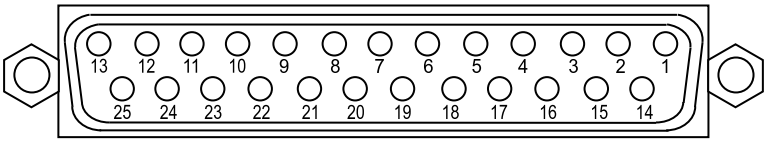
◆ **Pin Assignments**

Pin No.	Setting
1	CH4 OUT+
2	CH4 OUT COM
3	CH3 OUT-
4	CH2 OUT+
5	CH2 OUT COM
6	CH1 OUT-
7	CH4 IN+
8	CH4 IN COM
9	CH3 IN-
10	CH2 IN+
11	CH2 IN COM
12	CH1 IN-
13	NC
14	CH4 OUT-
15	CH3 OUT+
16	CH3 OUT COM
17	CH2 OUT-
18	CH1 OUT+
19	CH1 OUT COM
20	CH4 IN-
21	CH3 IN+
22	CH3 IN COM
23	CH2 IN-
24	CH1 IN+
25	CH1 IN COM

8. GPI Interface (FA-10GPI Option)

8-1. Pin Assignments

◆ **FA-10GPI connector 25-pin D-sub, female**

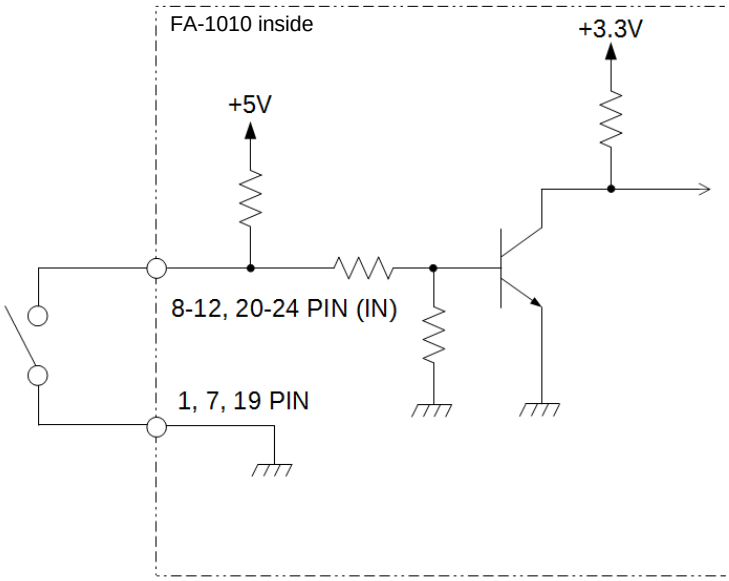


◆ **Pin Assignments**

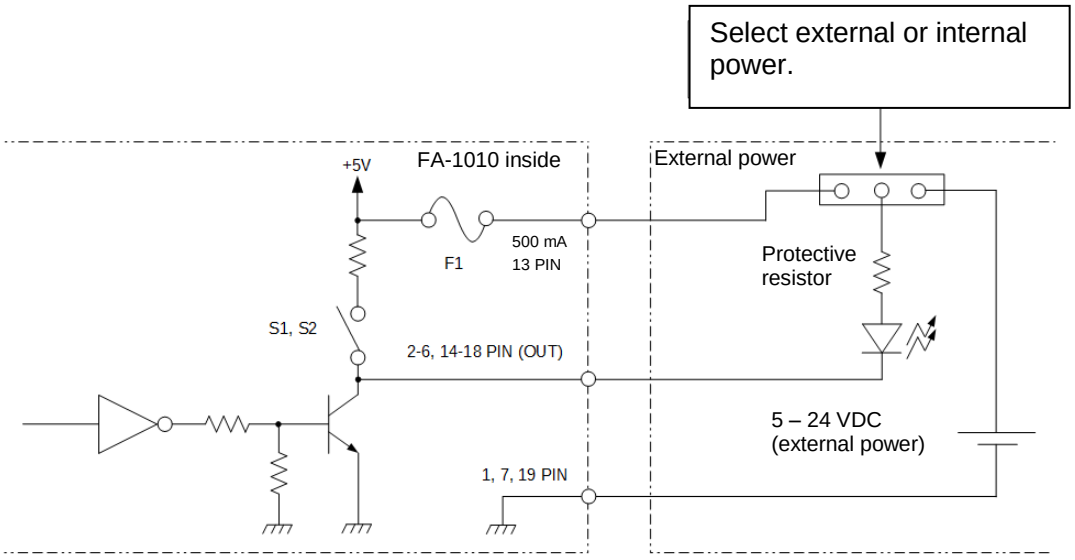
Pin No.	Setting
1	GND (ground)
2	GPI OUT 1 (output) (*1)
3	GPI OUT 2 (output) (*1)
4	GPI OUT 3 (output) (*1)
5	GPI OUT 4 (output) (*1)
6	GPI OUT 5 (output) (*1)
7	GND (ground)
8	GPI IN 1 (input)
9	GPI IN 2 (input)
10	GPI IN 3 (input)
11	GPI IN 4 (input)
12	GPI IN 5 (input)
13	DC OUT (+5 V output, maximum 500 mA DC)
14	GPI OUT 6 (output) (*1)
15	GPI OUT 7 (output) (*1)
16	GPI OUT 8 (output) (*1)
17	GPI OUT 9 (output) (*1)
18	GPI OUT 10 (output) (*1)
19	GND (ground)
20	GPI IN 6 (input)
21	GPI IN 7 (input)
22	GPI IN 8 (input)
23	GPI IN 9 (input)
24	GPI IN 10 (input)
25	NC

(*1) To use the internal power (500 mA, 5 VDC), change the relevant dipswitch of S1 and S2 on the FA-10GPI. See Sec. 8-3. "GPI Output Circuit" for more details.

8-2. GPI Input Circuit



8-3. GPI Output Circuit



IMPORTANT
As factory default, GPI outputs use an external power. To use an internal power, follow the instructions in the next page. Note that the allowed current for each GPI output circuit is **500 mA** and the external power supply should be **5 to 24 VDC**.

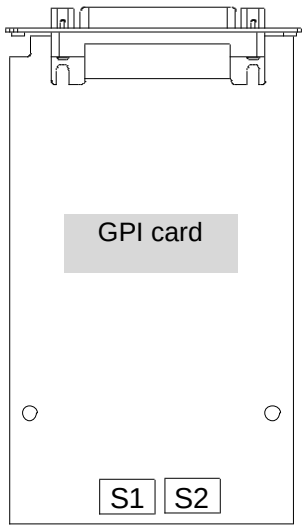
◆ **To Use the internal power (500 mA, 5 VDC) for GPI outputs**

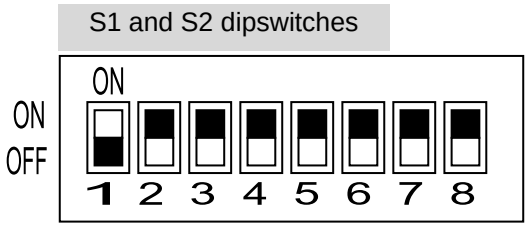
(1) Power OFF the FA-1010.

(2) Remove the FA-1010 top plate by removing 3 screws on the top and 4 screws at each side. Remove rack-ears if installed.

* Keep the removed screws, 11 in total, in a safe place for use when reinstalling the top plate.

(3) Change a dipswitch on the FA-10GPI to **ON** for the outputs. (See the table below.)
In the figure below, "□" indicates the switch position.
For example, when using the internal power for **GPI OUT 1**, Set **Pin 1** in **S1** to **ON**.





Dipswitch	Pin no.	Default setting	Signal
S1	1	OFF	GPI OUT 1 (output)
	2	OFF	GPI OUT 2 (output)
	3	OFF	GPI OUT 3 (output)
	4	OFF	GPI OUT 4 (output)
	5	OFF	GPI OUT 5 (output)
	6	OFF	GPI OUT 6 (output)
	7	OFF	GPI OUT 7 (output)
	8	OFF	GPI OUT 8 (output)
S2	1	OFF	GPI OUT 9 (output)
	2	OFF	GPI OUT 10 (output)

(4) Reinstall the top plate and power on the unit.

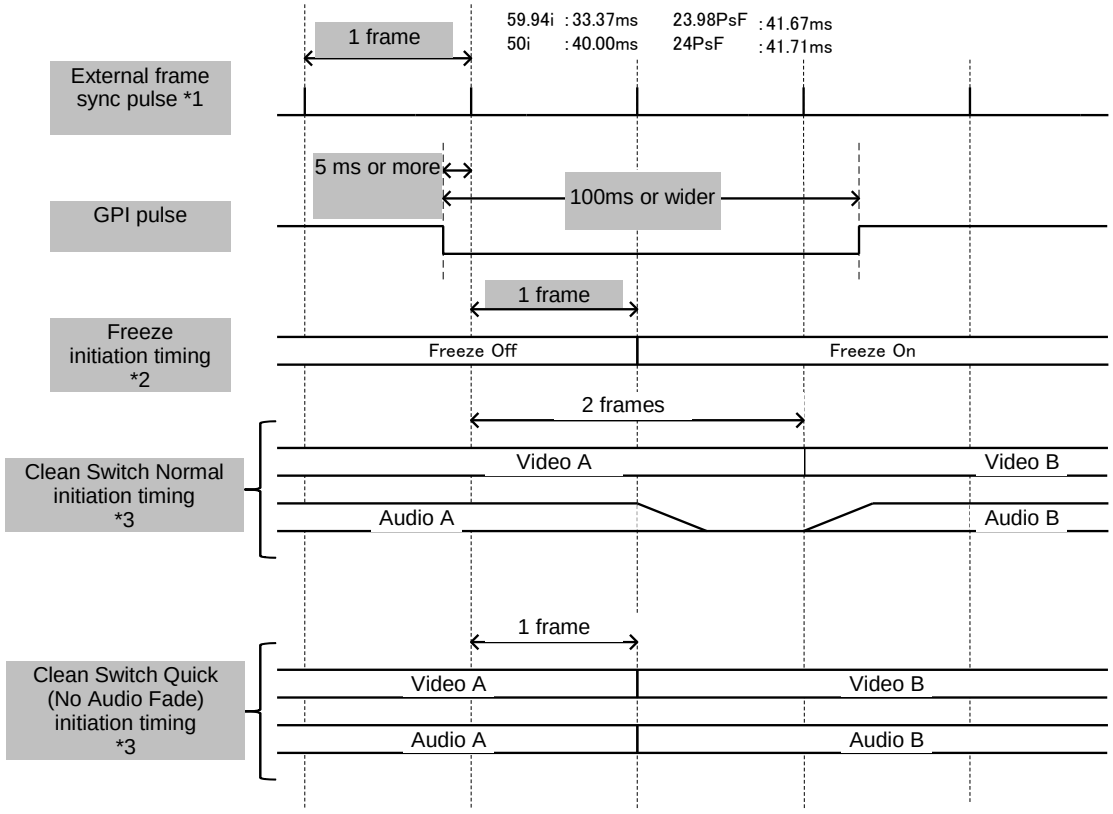
8-4. GPI Control Sensitivity

8-4-1. 59.94i/50i/24PsF/23.98Psf System

Input a GPI pulse of width 100 ms or more.
When the GPI pulse changes from High to Low 5ms ahead of the external frame sync pulse, control functions are processed under the following timing.

Control function	Duration from GPI pulse reception to processing
Freeze, Time Code	1 frame
Clean Switch Normal	2 frames
Clean Switch Quick (No Audio Fade)	1 frame

Other functions are processed within 1 frame + 30 ms.



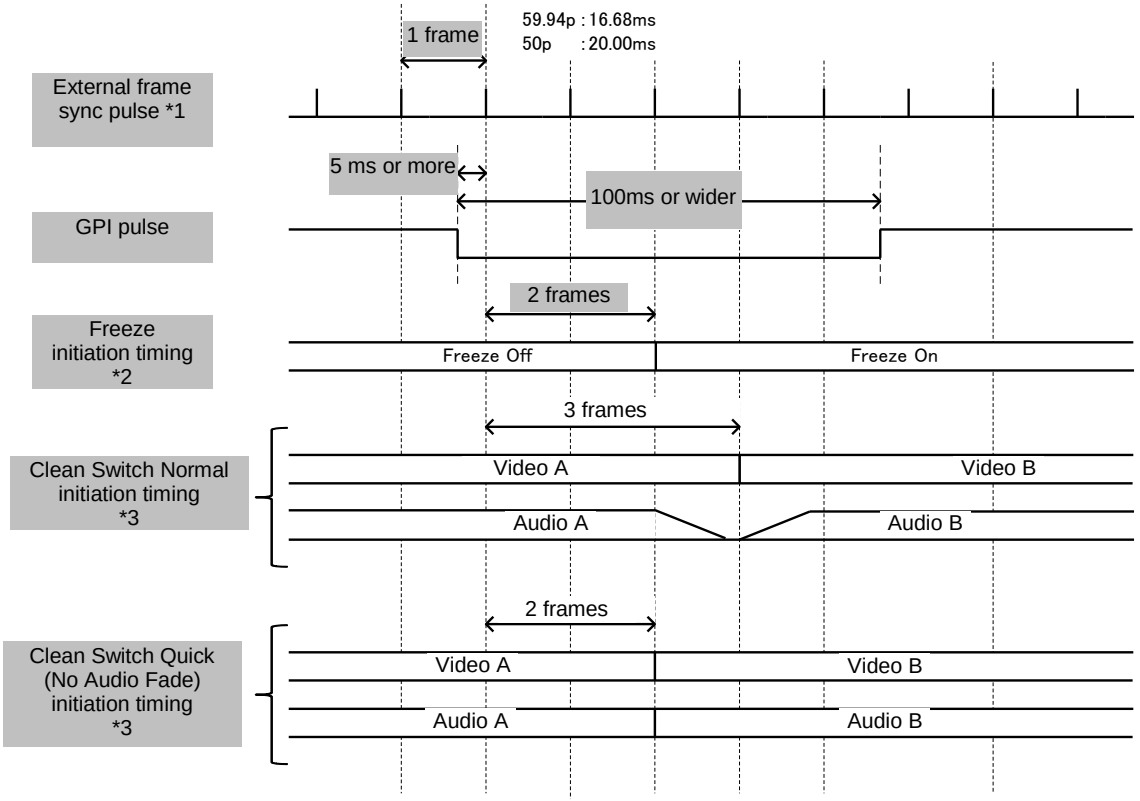
*1 If the external sync pulse input is absent, uses the internally generated frame pulse.
*2 Time Code and Video Test Signal initiation timings are the same as that of Freeze.
*3 The timing of Src.1-10 switching in Direct Mode, Take performance in Take Mode, or Load performance in Salvo Mode is shown.

8-4-2. 59.94p/50p System

Input a GPI pulse of width 100ms or more.
When the GPI pulse changes from High to Low 5ms ahead of the external frame sync pulse, control functions are processed under the following timing.

Control function	Duration from GPI pulse reception to processing
Freeze, Time Code	2 frames
Clean Switch Normal	3 frames
Clean Switch Quick (No Audio Fade)	2 frames

Other functions are processed within 2 frames + 30 ms.



*1 If the external sync pulse input is absent, uses the internally generated frame pulse.
*2 Time Code and Video Test Signal initiation timings are the same as that of Freeze.
*3 The timing of Src.1-10 switching in Direct Mode, Take performance in Take Mode, or Load performance in Salvo Mode is shown.

IMPORTANT
Leave at least 5-second intervals when performing sequential event memory loading.

9. Menu List

9-1. Video Block

Menu button	Menu	Event Loading	
		Load All	Load FS Only
FS Input	Frame Rate	Yes	Yes
	Matrix	Yes	Yes
	Sync Format	Yes	Yes
Loss Mode	Video Loss Mode	Yes	Yes
Ancillary Demultiplexer	Line Detection	Yes	Yes
	Detection Status	No	No
Video System	Sync Mode	Yes	Yes
	System Phase	Yes	Yes
	Video Position	Yes	Yes
	Freeze Mode	Yes	Yes
	SD Line Mask	Yes	Yes
	3G SDI Output	Yes	Yes
Frame Delay	Frame Delay	Yes	Yes
Process Amp	Bypass/Operate	No	No
	Video Level	Yes	Yes
	Luminance Level	Yes	Yes
	Chroma Level	Yes	Yes
	Setup/Black Level	Yes	Yes
	Hue	Yes	Yes
	Split	No	No
Color Corrector	Bypass/Operate	No	No
	Color Correction Mode	Yes	Yes
	White Level	Yes	Yes
	Black Level	Yes	Yes
	Gamma Level	Yes	Yes
	Sepia	Yes	Yes
	Split	No	No
Video Clip	Bypass/Operate	No	No
	Clip Mode	Yes	Yes
	YPbPr Clip	Yes	Yes
	RGB Clip	Yes	Yes
	Split	No	No
Test Signal	Video Test Signal	Yes	Yes
SDI Multiplexer	SDI Multiplexer	Yes	Yes
Embedded Audio	Embedded Audio		
Ancillary Data	Embedding Control	Yes	Yes
	Embedding Status	Yes	Yes
Timecode	Output	Yes	Yes
	LTC Input/Output Setting	Yes	No
	Timecode Generator	Yes	No
Clean SW	Operation Mode	Yes	No
	Matrix	Yes	No
FS Output	FS Output	Yes	No
By-pass	Relay By-pass	No	No
Video Status	Video Status	No	No
GPI Option	GPI Port Assign	No	No

9-2. Audio Block

Menu button	Menu	Event Loading	
		Load All	Load FS Only
Audio Input Status	Embedded Audio AES Audio Analog Audio	No No No	No No No
Embedded Audio Demultiplexer	Embedded Audio Demux	Yes	No
AES Audio Input	I/O Setup In Hysteresis	Yes Yes	No No
Analog Audio Input	Input Impedance Input Select Mic Power Analog Audio Input Level Analog Audio Input Gain	Yes Yes No Yes Yes	No No No No No
Sample Rate Converter	Sample Rate Converter	Yes	No
Polarity Mode	Polarity Mode	Yes	No
Down Mix	Down Mix Mode Down Mix Assign	Yes Yes	No No
Audio Mapping	FS Embedded Audio Assignment Option Audio Assignment	Yes Yes	No No
Test Signal	Audio Test Signal	Yes	No
Master Mute	Audio Master Mute	No	No
Mono Sum Mode	FS Embedded Audio Option Slot Audio	Yes Yes	No No
Audio Gain	Audio Gain	Yes	No
Audio Delay	Master Channel Adjustment	Yes Yes	No No
Embedded Audio Mux	Embedded Audio Clock	Yes	No
Audio System	Digital Audio Reference Level Digital Audio Grade Digital Audio Resolution Digital/Analog Audio Silence Time Digital/Analog Audio Silence Level	Yes Yes Yes Yes Yes	No No No No No
Audio Output Status	FS Embedded Audio Option Audio	No No	No No

10. About SNMP (Simple Network Management Protocol)

The FA-1010 can be remotely monitored using the SNMPv2C protocol. MIB (Management Information Base) required for the monitoring is included in the supplied CD-ROM. See Section 4-7-2 "SNMP Settings" for details about the SNMP network settings.

◆ SET/GET List

Object group	Item name	Object name in MIB file	Value	OID	Type	TRAP function	Note
OID : 1.3.6.1.4.1.20175.1.308.1.1. (Unit Info)							
Unit info.	Product Name	fa1010ProductName		1	OCTET STRING		
	Product Code	fa1010ProductCode		2	INTEGER		
	Unit Name	fa1010UnitName		3	OCTET STRING		
	Serial Number	fa1010SerialNumber		4	INTEGER		
	Soft Ver.	fa1010SoftwareVersion		10	OCTET STRING		
	FPGA1 Ver.	fa1010Fpga1Version		11	OCTET STRING		
	FPGA2 Ver.	fa1010Fpga2Version		12	OCTET STRING		
	FPGA3 Ver.	fa1010Fpga3Version		13	OCTET STRING		
	FPGA4 Ver.	fa1010Fpga4Version		14	OCTET STRING		
	FPGA5 Ver.	fa1010Fpga5Version		15	OCTET STRING		
OID : 1.3.6.1.4.1.20175.1.308.1.2. (Unit Status)							
Unit Status	Fan1 Status	fa1010Fan1Status	0: normal 1: stopped	1	INTEGER	✓	
	Fan2 Status	fa1010Fan2Status	0: normal 1: stopped	2	INTEGER	✓	
	Fan3 Status	fa1010Fan3Status	0: normal 1: stopped	3	INTEGER	✓	
	Fan4 Status	fa1010Fan4Status	0: normal 1: stopped	4	INTEGER	✓	
	Power1Status	fa1010Power1Status	-1: notInstalled 0: abnormal 1: normal	11	INTEGER	✓	
	Power2Status	fa1010Power2Status	-1: notInstalled 0: abnormal 1: normal	12	INTEGER	✓	
OID : 1.3.6.1.4.1.20175.1.308.1.2.41.1 (Option)							
Option info.	Type	fa1010OptionType	0: notInstalled 6: fa-10aes-bl 7: fa-10aes-ubl 8: fa-10aes-ublc 9: fa-10ana-aud 10: fa-10gpi 99: unknown	2.a	INTEGER		* 1
	Soft Ver.	fa1010OptionSoftVer		3.a	OCTET STRING		* 1
	FPGA1 Ver.	fa1010OptionFpga1Ver		4.a	OCTET STRING		* 1
	FPGA2 Ver.	fa1010OptionFpga2Ver		5.a	OCTET STRING		* 1
OID : 1.3.6.1.4.1.20175.1.308.1.3 (Video Status)							
OID : 1.3.6.1.4.1.20175.1.308.1.3.1.1 (SDI Status)							
SDI Status	Channel	fa1010SdiStatusChannel	1-10	1.b	INTEGER		* 2 * 3
	Input SDI Status	fa1010InputSdiStatus	0: loss 1: format525-60 2: format625-50 4: format1080-59i 5: format1080-50i 9: format1080-24psf 10: format1080-23psf 13: format1080-59pA 14: format1080-59pB 15: format1080-50pA 16: format1080-50pB 23: format720-59p 24: format720-50p 32: unknown 33: bypass 34: disable 35: none 36: invalid 39:format2x1080-59iB 40:format2x1080-50iB	2.b	INTEGER	✓	* 2
	Output SDI Status	fa1010OutputSdiStatus	0: loss 1: format525-60 2: format625-50 4: format1080-59i 5: format1080-50i 9: format1080-24psf 10: format1080-23psf 13: format1080-59pA 14: format1080-59pB 15: format1080-50pA 16: format1080-50pB 23: format720-59p 24: format720-50p 32: unknown 33: bypass 34: disable 35: none 36: invalid 39:format2x1080-59iB 40:format2x1080-50iB	3.b	INTEGER	✓	* 2

OID : 1.3.6.1.4.1.20175.1.308.1.3.2. (Reference Status)							
Ref Status	Reference Status	fa1010ReferenceStatus	0: loss 1: format525-60 2: format625-50 4: format1080-59i 5: format1080-50i 9: format1080-24psf 10: format1080-23psf 13: format1080-59pA 14: format1080-59pB 15: format1080-50pA 16: format1080-50pB 23: format720-59p 24: format720-50p 32: unknown 33: bypass 34: disable 35: none 36: invalid	-	INTEGER		
OID : 1.3.6.1.4.1.20175.1.308.1.4. (Audio Status)							
OID : 1.3.6.1.4.1.20175.1.308.1.4.1.3. (Input Embed Status)							
Audio Input Embed Status	Channel	fa1010InputEmbedChannel	1-10	0.b	INTEGER		* 2 * 3
	Ch1	fa1010InputEmbedStatusCh1	0: loss 1: pcm 2: pcm48k 3: pcm44k 4: pcm32k 5: pcmOther 6: silence 7: silence48k 8: silence44k 9: silence32k 10: silenceOther 11: nonPCM 12: asyncPCM 13: asyncNonPCM 14: present 15: bypass 16: outputSetting	1.b	INTEGER	✓	* 2
	Ch2	fa1010InputEmbedStatusCh2	Ditto	2.b	INTEGER	✓	* 2
	Ch3	fa1010InputEmbedStatusCh3	Ditto	3.b	INTEGER	✓	* 2
	Ch4	fa1010InputEmbedStatusCh4	Ditto	4.b	INTEGER	✓	* 2
	Ch5	fa1010InputEmbedStatusCh5	Ditto	5.b	INTEGER	✓	* 2
	Ch6	fa1010InputEmbedStatusCh6	Ditto	6.b	INTEGER	✓	* 2
	Ch7	fa1010InputEmbedStatusCh7	Ditto	7.b	INTEGER	✓	* 2
	Ch8	fa1010InputEmbedStatusCh8	Ditto	8.b	INTEGER	✓	* 2
	Ch9	fa1010InputEmbedStatusCh9	Ditto	9.b	INTEGER	✓	* 2
	Ch10	fa1010InputEmbedStatusCh10	Ditto	10.b	INTEGER	✓	* 2
	Ch11	fa1010InputEmbedStatusCh11	Ditto	11.b	INTEGER	✓	* 2
	Ch12	fa1010InputEmbedStatusCh12	Ditto	12.b	INTEGER	✓	* 2
	Ch13	fa1010InputEmbedStatusCh13	Ditto	13.b	INTEGER	✓	* 2
	Ch14	fa1010InputEmbedStatusCh14	Ditto	14.b	INTEGER	✓	* 2
	Ch15	fa1010InputEmbedStatusCh15	Ditto	15.b	INTEGER	✓	* 2
	Ch16	fa1010InputEmbedStatusCh16	Ditto	16.b	INTEGER	✓	* 2
OID : 1.3.6.1.4.1.20175.1.308.1.4.2.1. (Output Embed Status)							
Audio Output Embed Status	Channel	fa1010OutputEmbedChannel	1 to 10	0.b	INTEGER		* 2 * 3
	Ch1	fa1010OutputEmbedStatusCh1	0: pcm 1: silence 2: nonPCM 3: present 4: blank 5: bypass 6: inputSetting	1.b	INTEGER	✓	* 2
	Ch2	fa1010OutputEmbedStatusCh2	Ditto	2.b	INTEGER	✓	* 2
	Ch3	fa1010OutputEmbedStatusCh3	Ditto	3.b	INTEGER	✓	* 2
	Ch4	fa1010OutputEmbedStatusCh4	Ditto	4.b	INTEGER	✓	* 2
	Ch5	fa1010OutputEmbedStatusCh5	Ditto	5.b	INTEGER	✓	* 2
	Ch6	fa1010OutputEmbedStatusCh6	Ditto	6.b	INTEGER	✓	* 2
	Ch7	fa1010OutputEmbedStatusCh7	Ditto	7.b	INTEGER	✓	* 2
	Ch8	fa1010OutputEmbedStatusCh8	Ditto	8.b	INTEGER	✓	* 2
	Ch9	fa1010OutputEmbedStatusCh9	Ditto	9.b	INTEGER	✓	* 2
	Ch10	fa1010OutputEmbedStatusCh10	Ditto	10.b	INTEGER	✓	* 2
	Ch11	fa1010OutputEmbedStatusCh11	Ditto	11.b	INTEGER	✓	* 2
	Ch12	fa1010OutputEmbedStatusCh12	Ditto	12.b	INTEGER	✓	* 2
	Ch13	fa1010OutputEmbedStatusCh13	Ditto	13.b	INTEGER	✓	* 2
	Ch14	fa1010OutputEmbedStatusCh14	Ditto	14.b	INTEGER	✓	* 2
	Ch15	fa1010OutputEmbedStatusCh15	Ditto	15.b	INTEGER	✓	* 2
	Ch16	fa1010OutputEmbedStatusCh16	Ditto	16.b	INTEGER	✓	* 2

*1 “a” stands for slot numbers.

*2 “b” stands for FS channel numbers.

*3 Obtainable only with Traps.

◆ TRAP List

Object group	Item name	Object name in MIB file	OID	Type	Reference object	
OID : 1.3.6.1.4.1.20175.1.308.0. (TRAP)						
TRAP Display	FAN1	fa1010Fan1StateChangedTrap	1	INTEGER	fa1010Fan1Status	
	FAN2	fa1010Fan2StateChangedTrap	2	INTEGER	fa1010Fan2Status	
	FAN3	fa1010Fan3StateChangedTrap	3	INTEGER	fa1010Fan3Status	
	FAN4	fa1010Fan4StateChangedTrap	4	INTEGER	fa1010Fan4Status	
	Power1	fa1010Power1StateChangedTrap	11	INTEGER	fa1010Power1Status	
	Power2	fa1010Power2StateChangedTrap	12	INTEGER	fa1010Power2Status	
	SDI Input	fa1010SdiInputChangedTrap	101	INTEGER	fa1010SdiStatusChannel	fa1010InputSdiStatus
	SDI Output	fa1010SdiOutputChangedTrap	102	INTEGER	fa1010SdiStatusChannel	fa1010OutputSdiStatus
	Reference	fa1010ReferenceChangedTrap	111	INTEGER	fa1010ReferenceStatus	
	Emb IN Ch1	fa1010EmbedInputCh1Changed Trap	201	INTEGER	fa1010InputEmbedChannel	fa1010OutputEmbed StatusCh1
	Emb IN Ch2	fa1010EmbedInputCh2Changed Trap	202	INTEGER	fa1010InputEmbedChannel	fa1010OutputEmbed StatusCh2
	Emb IN Ch3	fa1010EmbedInputCh3Changed Trap	203	INTEGER	fa1010InputEmbedChannel	fa1010OutputEmbed StatusCh3
	Emb IN Ch4	fa1010EmbedInputCh4Changed Trap	204	INTEGER	fa1010InputEmbedChannel	fa1010OutputEmbed StatusCh4
	Emb IN Ch5	fa1010EmbedInputCh5Changed Trap	205	INTEGER	fa1010InputEmbedChannel	fa1010OutputEmbed StatusCh5
	Emb IN Ch6	fa1010EmbedInputCh6Changed Trap	206	INTEGER	fa1010InputEmbedChannel	fa1010OutputEmbed StatusCh6
	Emb IN Ch7	fa1010EmbedInputCh7Changed Trap	207	INTEGER	fa1010InputEmbedChannel	fa1010OutputEmbed StatusCh7
	Emb IN Ch8	fa1010EmbedInputCh8Changed Trap	208	INTEGER	fa1010InputEmbedChannel	fa1010OutputEmbed StatusCh8
	Emb IN Ch9	fa1010EmbedInputCh9Changed Trap	209	INTEGER	fa1010InputEmbedChannel	fa1010OutputEmbed StatusCh9
	Emb IN Ch10	fa1010EmbedInputCh10Changed Trap	210	INTEGER	fa1010InputEmbedChannel	fa1010OutputEmbed StatusCh10
	Emb IN Ch11	fa1010EmbedInputCh11Changed Trap	211	INTEGER	fa1010InputEmbedChannel	fa1010OutputEmbed StatusCh11
	Emb IN Ch12	fa1010EmbedInputCh12Changed Trap	212	INTEGER	fa1010InputEmbedChannel	fa1010OutputEmbed StatusCh12
	Emb IN Ch13	fa1010EmbedInputCh13Changed Trap	213	INTEGER	fa1010InputEmbedChannel	fa1010OutputEmbed StatusCh13
	Emb IN Ch14	fa1010EmbedInputCh14Changed Trap	214	INTEGER	fa1010InputEmbedChannel	fa1010OutputEmbed StatusCh14
	Emb IN Ch15	fa1010EmbedInputCh15Changed Trap	215	INTEGER	fa1010InputEmbedChannel	fa1010OutputEmbed StatusCh15
	Emb IN Ch16	fa1010EmbedInputCh16Changed Trap	216	INTEGER	fa1010InputEmbedChannel	fa1010OutputEmbed StatusCh16

11. FA-1010 Ancillary Data Packet Name List

FA-1010 Indication	DID/SDID (hexadecimal)	Description
S353MMPEG(V)	08/08	MPEG recoding data, VANC space (Picture rate information)
S353M MPEG(H)	08/0C	MPEG recoding data, HANC space (Other part of recording data set)
S305M SD-SDTI	40/01	ARIB STD-B17 Serial Data Transport Interface for Television
S305M HD-SDTI	40/02	ITU-R BT.1557, SMPTE 348M for HD-SDTI
S427 Lk Enc 1	40/04	SMPTE 427 Link Encryption Message 1
S427 Lk Enc 2	40/05	SMPTE 427 Link Encryption Message 2
S427 Lk Meta	40/06	SMPTE 427 Link Encryption Metadata
S352M VPID	41/01	BTA S-004C Video Payload Identification for Digital Interfaces
S2016-3 AFD-Bar	41/05	SMPTE 2016-3 AFD and Bar Data
S2016-4 PanScan	41/06	SMPTE 2016-3 Pan-Scan Data
RP2010 SCTE 104	41/07	SMPTE 2010 ANSI/SCTE 104 messages
S2031 SCTE VBI	41/08	SMPTE 2010 DVB/SCTE VBI data
ITU-R BT.1685	43/01	ITU-R BT.1685 Inter-station control data packets
RDD8 OP47(SDP)	43/02	SMPTE RDD 8 Subtitling Distribution packet(SDP)
RDD8 OP47(Mult)	43/03	SMPTE RDD 8 Transport of ANC packet in an ANC Multipacket
S346M	43/13	Time Division Multiplexing Video Signals and Generic Data over HD-SDI
RP214 KLV(V)	44/04	SMPTE RP 214 KLV Metadata transport in VANC space
RP214 KLV(H)	44/14	SMPTE RP 214 KLV Metadata transport in HANC space
RP223 UMID	44/44	SMPTE RP 223 Packing UMID and Program Identification Label Data into SMPTE 291M Ancillary Data Packets
S2020 Aud	45/01	SMPTE 2020-1 Compressed Audio Metadata
S2020AudPr1/2	45/02	SMPTE 2020-1 Compressed Audio Metadata
S2020AudPr3/4	45/03	SMPTE 2020-1 Compressed Audio Metadata
S2020AudPr5/6	45/04	SMPTE 2020-1 Compressed Audio Metadata
S2020AudPr7/8	45/05	SMPTE 2020-1 Compressed Audio Metadata
S2020AudPr9/10	45/06	SMPTE 2020-1 Compressed Audio Metadata
S2020AudPr11/12	45/07	SMPTE 2020-1 Compressed Audio Metadata
S2020AudPr13/14	45/08	SMPTE 2020-1 Compressed Audio Metadata
S2020 AudP15/16	45/09	SMPTE 2020-1 Compressed Audio Metadata
RP215 Film Xfer	51/01	RP215 Film Codes in VANC space
ARIB TRB.18	5F/CF	Color information packets standardized in ARIB TR-B18 “Color Frame Information for Component Interface of 525/60 Television System”
ARIB B.37	5F/D0 | 5F/DB	Closed caption data packets (for expansion) standardized in ARIB STD-B37 “Structure and Operation of Closed Caption Data Conveyed by Ancillary Data Packets”
ARIB B.37 Mob	5F/D0	Caption format used in digital television broadcasting for mobile receivers standardized in ARIB STD-B37“Structure and Operation of Closed Caption Data Conveyed by Ancillary Data Packets”
ARIB B.37 Ana	5F/DB	Analog signal closed caption data packets standardized in ARIB STD-B37 “Structure and Operation of Closed Caption Data Conveyed by Ancillary Data Packets”
ARIB B.37 SD	5F/DE	SD signal closed caption data packets standardized in ARIB STD-B37 “Structure and Operation of Closed Caption Data Conveyed by Ancillary Data Packets”
ARIB B.37 HD	5F/DF	HD signal closed caption data packets standardized in ARIB STD-B37 “Structure and Operation of Closed Caption Data Conveyed by Ancillary Data Packets”
ARIB TR-B.22	5F/E0	HD ancillary data packet for transmission standardized in ARIB TR-B22 “Operational Guidelines for Transport of the Ancillary Data for HDTV Contribution”
ARIB TRB23(1)	5F/FA	Dummy packet standardized in ARIB TR-B23 ” Operational Guidelines for Ancillary Data in Inter-Stationary Information Exchange”
ARIB TRB23(2)	5F/FB	User data 2 in user data packets standardized in ARIB TR-B23 “ Operational Guidelines for Ancillary Data in Inter-Stationary Information Exchange”

FA-1010 Indication	DID/SDID (hexadecimal)	Description
ARIB TRB23(1)	5F/FC	User data 1 in user data packets standardized in ARIB TR-B23 “ Operational Guidelines for Ancillary Data in Inter-Stationary Information Exchange”
ARIBB.35ProgEx	5F/FD	Trigger signal packets for data broadcasting standardized in ARIB STD-B35 “SD Data Program Exchange Specification for Digital Broadcasting”
ARIB B.39	5F/FE	Control signal packets for inter-studio transmission standardized in ARIB STD-B39 “Structure of Inter-Stationary Control Data Conveyed by Ancillary Data Packets”
ARIB B.15	5F/FF	Resource ID packets standardized in ARIB STD-B15 “Resource Identification Conveyed by Ancillary Data Packets for 52/60 and 1125/60 Television Systems”
SMPTE 12-2	60/60	ARIB STD-B41 for time code
S334-1CDP(708)	61/01	ITU-R BT.1619, SMPTE 334-1 closed captioning (EIA-708-B)
S334-1 CEA608	61/02	ITU-R BT.1619, SMPTE 334-1 EIA-608 data
S334-1 Teletxt	61/03	World System Teletext Description Packet
S334 SDE	61/04	Subtitling Data Essence (SDE)
334/207	62/01	ITU-R BT.1619, SMPTE RP207 DTV program description
S334-1 Future	62/02	ITU-R BT.1619, SMPTE 334-1 DTV data broadcasting
S334/RP208	62/03	ITU-R BT.1619, SMPTE RP208 VBI data
RP196/LTC	64/64	Time code
RP196/VITC	64/7F	Time code
RP165EDH	F4/00	SMPTE error detection indication

12. Troubleshooting

If any of the following problems occur while operating the FA-1010, follow the troubleshooting procedures below to see if the problem can be corrected before assuming a unit malfunction has occurred.

IMPORTANT
If the problem is not corrected by performing the procedures below, turn the unit off and then on again. If this still does not correct the problem, contact your dealer.

Problem	Check	Remedy
Unable to operate.	Is the unit powered on?	Turn the power of the unit on referring to Section 2-1. “Front Panel”.
	Is the cable properly connecting the FA-1010 to a PC?	Connect units referring to Section 2-2. “Rear Panel”.
	Is a proper cable being used to connect the FA-1010 to a PC?	Verify the cable is shorter than 100 m.
		Verify that a proper cable is being used as described in Section 3-4-1. “System Requirements”.
The GENLOCK status LED remains unlit.	Is a genlock signal properly being input to the GENLOCK IN connector?	Verify that a genlock signal is properly connected referring to Section 2-2. “Rear Panel”.
The POWER1 / POWER2 status LED is lit red.	Is the power cord properly connected? Normal state LED indications are as follows: PW1 ON -> lit green PW2 OFF -> lit red PW1 ON - > lit green PW2 absent -> unlit	Verify that the power cord is properly connected referring to Section 2-2. “Rear Panel”. If the red LED stays lit, the power supply unit may have a problem. Contact your dealer for assistance.
The FAN ALARM LED is lit red.	Is anything obstructing a fan from turning?	Remove the obstruction. If the red LED stays lit, a fan(s) may be experiencing a problem. Contact your dealer for assistance.
Button and text displays are partially missing.	Is the font set to larger than 100%?	Set the font size for the OS to 100%.
Forgot the IP address.		Open the top panel of the unit, then set Dipswitch DS2 pin 3 to ON. The unit can start up with the default IP address (192.168.0.10). Once the unit starts up, change the IP address in the Network settings, then return Dipswitch pin3 to OFF. Dipswitch settings must be conducted carefully. Refer to Section 2-3. “Internal Settings” for details.

13. Specifications and Dimensions

13-1. Specifications

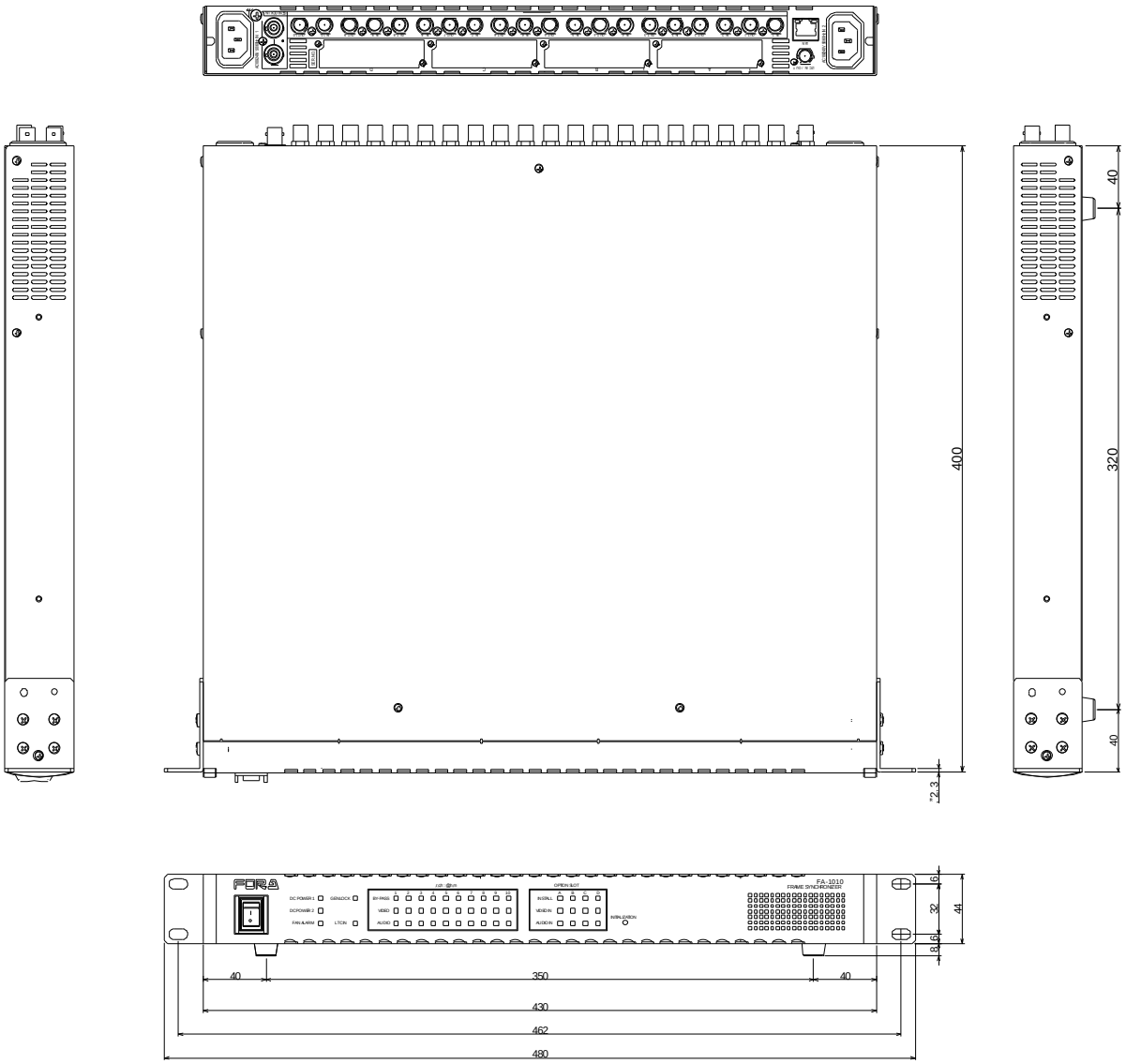
Input Video Formats	525/60, 625/50, 1080/59.94i, 1080/50i, 720/59.94p, 720/50p, 1080/59.94p(Level-A/B), 1080/50p(Level-A/B), 1080/23.98PsF, 1080/24PsF, 2x1080/59.94i(Level-B), 2x1080/50i(Level-B)
Output Video Formats	525/60, 625/50, 1080/59.94i, 1080/50i, 720/59.94p, 720/50p, 1080/59.94p(Level-A/B), 1080/50p(Level-A/B), 1080/23.98PsF, 1080/24PsF, 2x1080/59.94i(Level-B), 2x1080/50i(Level-B)
Video Input	3G/HD-SDI: 3 Gbps/1.5 Gbps or SD-SDI: 270 Mbps 75Ω BNC x 10
Video Output	3G/HD-SDI: 3 Gbps/1.5 Gbps or SD-SDI: 270 Mbps 75ΩBNC x 10
Video Processing	4:2:2 Digital Component
Quantization	3G/HD/SD-SDI: 10-bit
Genlock Input	BB: NTSC: 0.429 Vp-p / PAL: 0.45 Vp-p; or Tri-level Sync: 0.6 Vp-p, 75Ω BNC x 1, loop-through (Terminate with 75Ω terminator, if unused.)
Synchronizer mode	Frame Sync, Line Sync, AVDL, or Line(Minimum) mode
Video Delay	Maximum 8 frames (in Frame Sync mode)
Video Processing Functions	
Process Amp	Video level: 0.0% to 200.0% Chroma level: 0.0% to 200.0% Black level: -20.0% to 100.0% HUE: -179.8° to +180°
Video Clip	YPbPr mode RGB mode
Color Correction	Balance mode Differential mode Sepia mode
Audio Input	
Embedded Audio	3G/HD: 16 channels (Group 1 to 4), 48 kHz, 16/20/24-bit, synchronous/asynchronous, (Link A-embedded audio only in 3G Level B) SD: 16 channels (Group 1 to 4), 48 kHz, 16/20/24-bit, synchronous only
FA-10AES-BL Option (AES/EBU)	Balanced, 0.2-7 Vp-p, 110Ω, 25-pin D-Sub (female) x 1, input/output, 4 pairs of stereo channels, 32/44.1/48 kHz, 16-bit to 24-bit
FA-10AES-UBL Option (AES/EBU)	Unbalanced, 1.0 Vp-p, 75Ω, BNC x 4, input/output, Maximum 4 pairs of stereo channels, 32/44.1/48 kHz, 16-bit to 24-bit
FA-10ANA-AUD Option (Analog)	<Line input> 4 channels (2 pairs of stereo channels) balanced/unbalanced 25-pin D-Sub (female) x 1 (Shared with analog audio output) 600 ohm/high impedence, 48 kHz, 24-bit Input level: -10 dBu to +8 dBu <Mic input> 2 channels (1 pair of stereo channels) balanced/unbalanced (Shared with the analog audio input CH1/2 connector) 600 ohm/high impedence, 48 kHz, 24-bit Input level: -55 dBu to -30 dBu
Audio Output	
Embedded Audio	3G/HD: 16 channels (Group 1 to 4), 48 kHz, 16/20/24-bit, synchronous/asynchronous, (Link A-embedded audio only in 3G Level B) SD: 12 channels (Group 1 to 3), 48 kHz, 16/20/24-bit, synchronous only
FA-10AES-BL Option (AES/EBU)	Balanced, 3.3 Vp-p, 110Ω, 25-pin D-Sub (female) x 1, input/output, 4 pairs of stereo channels, 48 kHz, 16/20/24-bit
FA-10AES-UBL Option (AES/EBU)	Unbalanced, 1.0 Vp-p, 75Ω, BNC x 4, (Shared with the AES/EBU input) Maximum 4 pairs of stereo channels, 48 kHz, 16/20/24-bit

FA-10AES-UBLC Option (AES/EBU)	Unbalanced, 1.0 Vp-p, 75Ω, BNC x 4, (The FA-10AES-UBL functions as an input card when used with the FA-10AES-UBLC.) 4 pairs of stereo channels, 48 kHz, 16/20/24-bit
FA-10ANA-AUD Option (Analog)	4 channels (2 pairs of stereo channels) balanced/unbalanced 25-pin D-Sub (female) x 1 (Shared with analog audio input) 100 ohm or lower, 48 kHz, 24-bit Output level: -10 dBu to +8 dBu
Audio Delay	5 - 1,000 ms (adjustable in 1 ms steps)
Audio Processing Functions	Sampling rate converter (SRC) Gain control Down mix Channel re-mapping Channel mute
Interface	
Ethernet	100 Base-TX / 1000 Base-T, RJ-45 x 1
FA-10GPI Option	25-pin D-sub (female)
Temperature	0ºC to 40ºC
Humidity	30% to 90% (no condensation)
Power	100 VAC - 240 VAC ±10%, 50/60 Hz
Power Consumption	FA-1010: 80 VA(78 W) (at 100 - 120 VAC) 86VA(72 W) (at 220 - 240 VAC) with FA-10PS: 80 VA (76 W) (at 100 - 120 VAC) 103 VA (73 W)(at 220 - 240 VAC) Add the amount of power consumption of options installed: FA-10AES-BL: 4.3 VA (4.2 W) (at 100 - 120 VAC) 3.48 VA (3.8 W)(at 220 - 240 VAC) FA-10AES-UBL: 2.86 VA (3 W) (at 100 - 120 VAC) 3.12 VA (3.1 W)(at 220 - 240 VAC) FA-10GPI: 4.6 VA (4.8 W) (at 100 - 120 VAC) 4.1 VA (4.3 W)(at 220 - 240 VAC)
Dimensions	430 (W) x 400 (D) x 44 (H) mm
Weight	FA-1010: 7.0 kg (without options) FA-10AES-BL: 0.2 kg FA-10AES-UBL: 0.2 kg FA-10AES-UBLC: 0.1 kg FA-10ANA-AUD: 01 kg FA-10GPI: 0.2 kg
Consumables	(Recommended replacement timespans) Power unit (within 3 years) Cooling fan: P-1439-2 (FAN 1 - 4) (within 5 years)
Accessories	CD-ROM(Windows GUI installation disc (including operation manual)), AC cord, rack mount brackets
Options	◇FA-10PS: Redundant power supply unit ◇FA-10AES-BL: Digital audio balanced I/O option ◇FA-10AES-UBL: Digital audio unbalanced I/O option ◇FA-10AES-UBLC: Digital audio unbalanced output expansion cable ◇FA-10ANA-AUD: Analog audio input/output option ◇FA-10GPI: GPI 10 each input/ output option

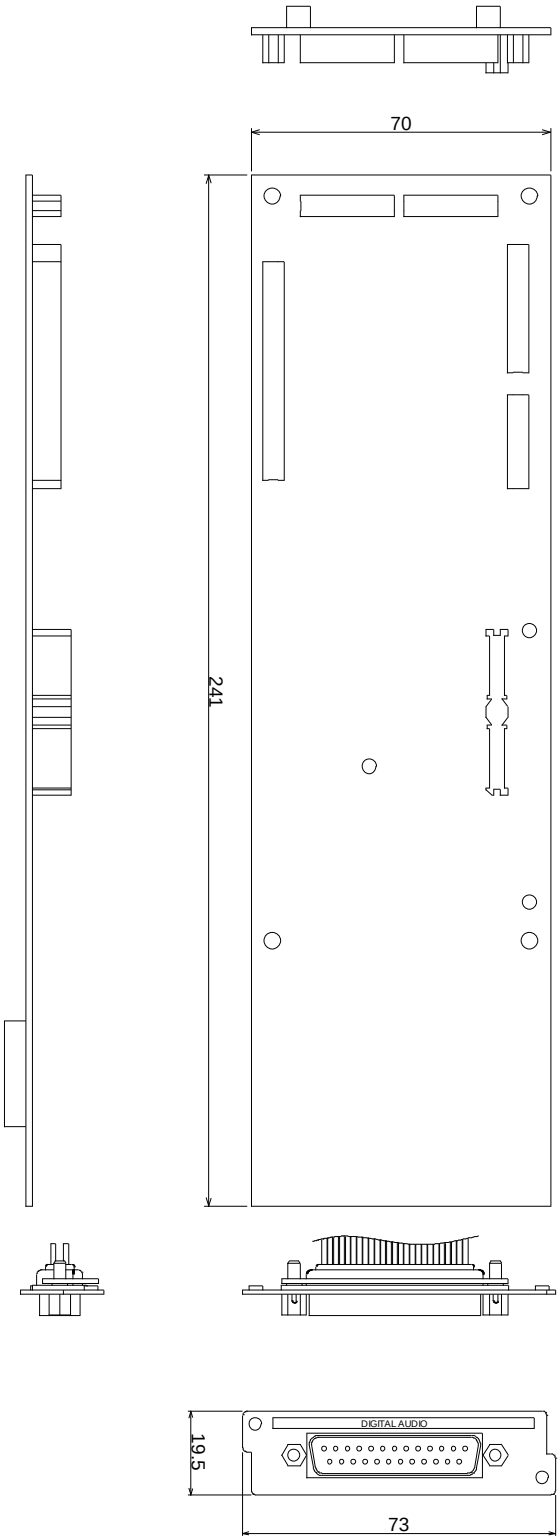
13-2. External Dimensions

13-2-1. FA-1010

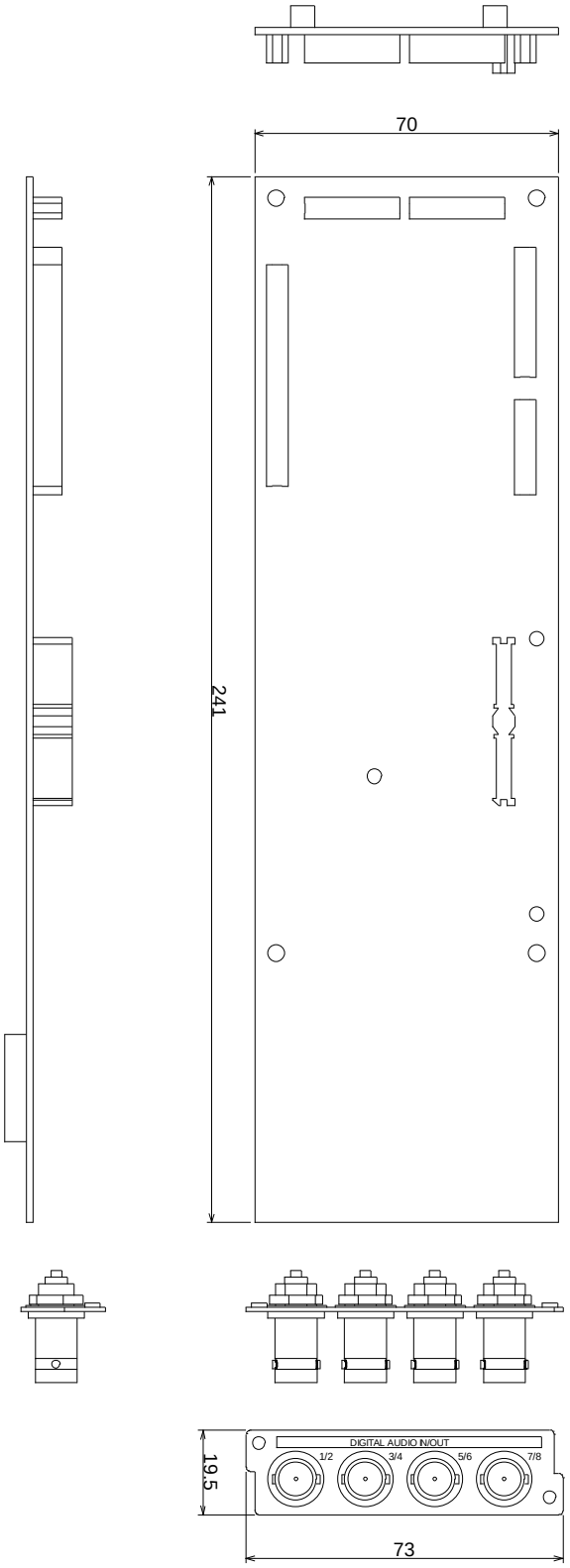
(All dimensions in mm.)



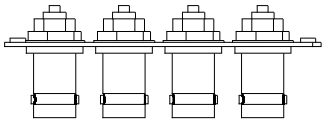
13-2-2. FA-10AES-BL (Option)

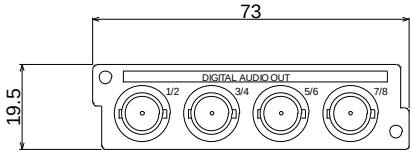


13-2-3. FA-10AES-UBL (Option)

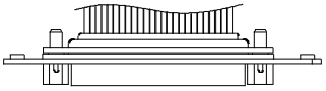


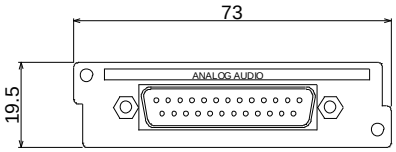
13-2-4. FA-10AES-UBLC (Option)



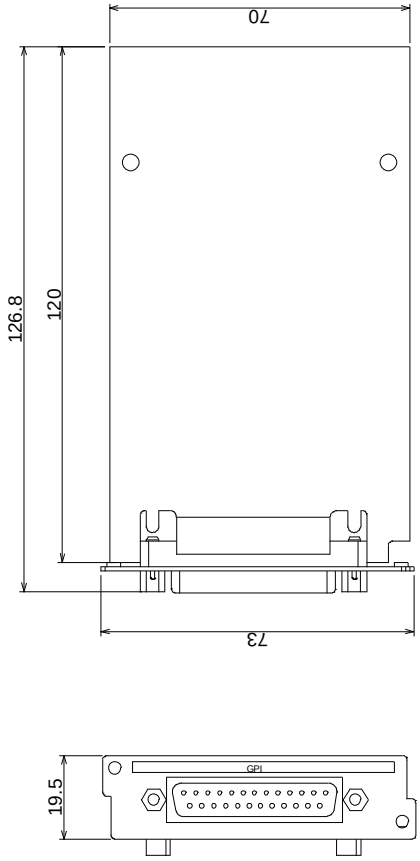


13-2-5. FA-10ANA-AUD (Option)





13-2-6. FA-10GPI (Option)



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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