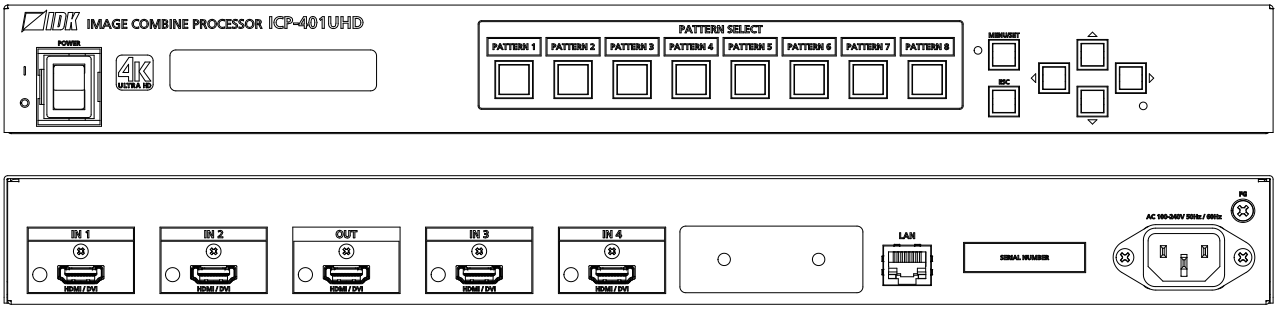
4K@60/HDCP 2.2 Multi-window Processor

ICP-401UHD

<User Guide>

Ver.1.4.0



- Thank you for choosing our product.
- To ensure the best performance of this product, please read this user guide fully and carefully before using it and keep this manual together with the product for future reference as needed.

IDK Corporation

Trademarks

- HDBaseT™ and the HDBaseT Alliance Logo are trademarks of the HDBaseT Alliance.
- The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc. in the United States and other countries.
- SDVoE™ and SDVoE logo are trademarks of SDVoE Alliance.
- All other company and product names mentioned in this document are either registered trademarks or trademarks of their respective owners. In this document, the “®” or “™” marks may not be specified.
-

Before reading this manual

- Some information contained in this User guide such as exact product appearance, diagrams, menu operations, and so on may differ depending on the product version.
- This User guide is subject to change without notice. You can download the latest version from IDK's website at: www.idkav.com

The reference manual consists of the following two volumes:

- User guide (this document):
  Provides explanations and procedures for operations, installation, connections among devices, I/O adjustment and settings.
- Command guide: Please download the command guide from the website above.
  Provides explanations and procedures for external control using RS-232C and LAN communications.

FCC STATEMENT

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the 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.

CE MARKING

This equipment complies with the essential requirements of the relevant European health, safety and environmental protection legislation.

WEEE MARKING

Waste Electrical and Electronic Equipment (WEEE), Directive 2002/96/EC
(This directive is only valid in the EU.)
This equipment complies with the WEEE Directive (2002/96/EC) marking requirement. The left marking indicates that you must not discard this electrical/electronic equipment in domestic household waste.

Safety Instructions

Read all safety and operating instructions before using this product. Follow instructions and heed warnings/cautions.
Instructions and warnings/cautions for all products are provided. Some of them may not be applicable to your product.

Warning	Indicates the presence of a hazard that may result in death or serious personal injury if the warning is ignored or the product is handled incorrectly.
Caution	Indicates the presence of a hazard that may cause minor personal injury or property damage if the caution is ignored or the product is handled incorrectly.

Symbol	Description	Example
Caution	This symbol is intended to alert the user. (Warning and caution)	**Hot surfaces Caution**
Prohibited	This symbol is intended to prohibit the user from specified actions.	**Do not disassemble**
Instruction	This symbol is intended to instruct the user.	**Unplug**

Warning

For lifting heavy products:

Instruction	**● Lifting must be done by two or more personnel.** To avoid injury: When lifting the product, bend your knees, keep your back straight and get close to it with two or more persons.

For installing and connecting products:

Prohibited	**● Do not place the product in unstable place.** Install the product in a horizontal and stable place, as this may fall or tip over and cause injury. **● Secure the product if installing in the locations with vibration.** Vibration may move or tip over the product unexpectedly, resulting in injury.

⚠ Warning

 Instruction	**● Installation work must be performed by professionals.** The product is intended to be installed by skilled technicians. For installation, please contact a system integrator or IDK. Improper installation may lead to the risk of fire, electric shock, injury, or property damage. **● Insert the power plug into an outlet that is unobstructed.** Unobstructed access to the plug enables unplugging the product in case of any extraordinary failure, abnormal situation or for easy disconnection during extended periods of non-use. **● Insert the power plug into an appropriate outlet completely.** If the plug is partially inserted, arching may cause the connection to overheat, increasing the risk of electric shock or fire. Do not use a damaged plug or connect to a loose outlet. **● Unplug the product from an AC power source during installation or service.** When connecting peripheral devices to this product, unplug all involved devices from outlets. Ground potential differences may cause fire or other difficulties. **● The product must be earthed.** To reduce the risk of electric shock, ensure the product is connected to a mains socket outlet with a protective earthing connection. **● For PoE/PoH, use category cables meeting IEEE802.3af/at.** Otherwise, it may cause problems or a fire.

For operating products:

 Prohibited	**● Keep out any foreign objects.** To avoid fire or electric shock, do not permit foreign objects, such as metal and paper, to enter the product from vent holes or other apertures. **● For power cable/plug and Category cable,** **・ Do not scratch, heat, or modify, including splicing or lengthening them.** **・ Do not pull, place heavy objects on them, or pinch them.** **・ Do not bend, twist, tie or clamp them together forcefully.** Misuse of the power cable and plug may cause fire or electric shock. If power cables/plugs become damaged, contact your IDK representative.
 Do not disassemble	**● Do not repair, modify or disassemble.** Since the product includes circuitry that uses potentially lethal, high voltage levels, disassembly by unauthorized personnel may lead to the risk of fire or electric shock. For internal inspection or repair, contact your IDK representative.
 Do not touch	**● Do not touch the product and connected cables during electric storms.** Contact may cause electric shock.
 Instruction	**● Clean the power plug regularly.** If the plug is covered in dust, it may increase the risk of fire.

If the following problem occurs:

 Unplug	**● Unplug immediately if the product smokes, makes unusual noise, or produces a burning odor.** **● Unplug immediately if the product is damaged by falling or having been dropped.** **● Unplug immediately if water or other objects are directed inside.** If you continue to use the product under these conditions, it may increase the risk of electric shock or fire. For maintenance and repair, contact your IDK representative.

⚠ Caution

For installing and connecting products:

 **Prohibited**	**● Do not place the product in a location where it will be subjected to high temperatures.** If the product is subjected to direct sunlight or high temperatures while under operation, it may affect the product's performance and reliability and may increase the risk of fire. **● Do not store or operate the product in dusty, oil smoke filled, or humid place.** Placing the product in such environment may increase the risk of fire or electric shock. **● Do not block the vent holes.** If ventilation slots are blocked, it may cause the product to overheat, affecting performance and reliability and may increase the risk of fire. **● Do not place or stack heavy items on the product.** Failure to observe this precaution may result in damage to the product itself as well as other property and may lead to the risk of personal injury. **● Do not exceed ratings of outlet and wiring devices.** Exceeding the rating of an outlet may increase the risk of fire and electric shock.
 **No wet hands**	**● Do not handle power plug with wet hands.** Failure to observe this precaution may increase the risk of electric shock.
 **Instruction**	**● Use and store the product within the specified temperature/humidity range.** If the product is used outside the specified range of temperature and humidity continuously, it may increase the risk of fire or electric shock. **● Do not place the product at elevations of 1.24 mi. (2,000 m) or higher above sea level.** Failure to do so may shorten the life of the internal parts and result in malfunctions. **● When mounting the product into the rack, provide sufficient cooling space.** Mount the product in a rack meeting EIA standards, and maintain spaces above and below for air circulation. For your safety as required, attach an L-shaped bracket in addition to the panel mount bracket kit to improve mechanical stability. **● Never insert screws without the rubber feet into the threaded holes on the bottom of the product.** Never insert screws alone into the threaded holes on the bottom of the product. Doing so may lead to damage when the screws contact electric circuitry or components inside the product. Reinstall the originally supplied rubber feet using the originally supplied screws only.

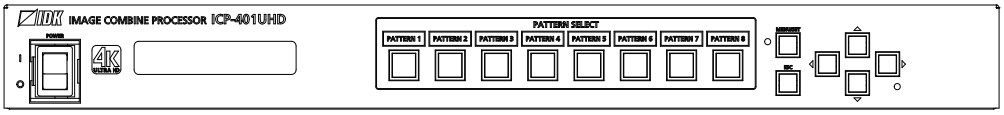
For operating products:

 **Hot surfaces Caution**	**For products with the hot surfaces caution label only:** **● Do not touch the product's hot surface.** If the product is installed without enough space, it may cause malfunction of other products. If you touch product's hot surface, it may cause burns.
 **Prohibited**	**● Use only the supplied power cable and AC adapter.** **● Do not use the supplied power cable and AC adapter with other products.** If non-compliant adapter or power cables are used, it may increase the risk of fire or electric shock.
 **Unplug**	**● If the product won't be used for an extended period of time, unplug it.** Failure to observe this precaution may increase the risk of fire. **● Unplug the product before cleaning.** To prevent electric shock.
 **Instruction**	**● Do not prevent heat release.** If cooling fan stops, power off the product and contact us. Failure to do so may raise internal temperature and increase the risk of malfunction, fire, or electric shock. **● Keep vents clear of dust.** If the vent holes near the cooling fan or near the fan are covered with dust, internal temperature rises and it may increase the risk of malfunction. Clean the vent holes and near the fan as needed. If dust accumulates inside of the product, it may increase the risk of fire or electric shock. Periodic internal cleaning, especially before humid rainy season, is recommended. For internal cleaning, contact your IDK representative.

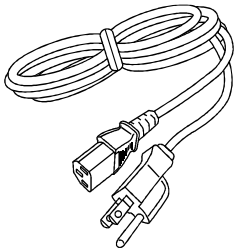
Table of Contents

1 Included items

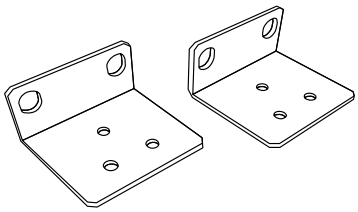
Ensure that all items illustrated below are included in the package.
If any items are missing or damaged, please contact IDK.



One (1) ICP-401UHD



One (1) power cord, 6 ft. (1.8 m)



Two (2) rack mounting brackets

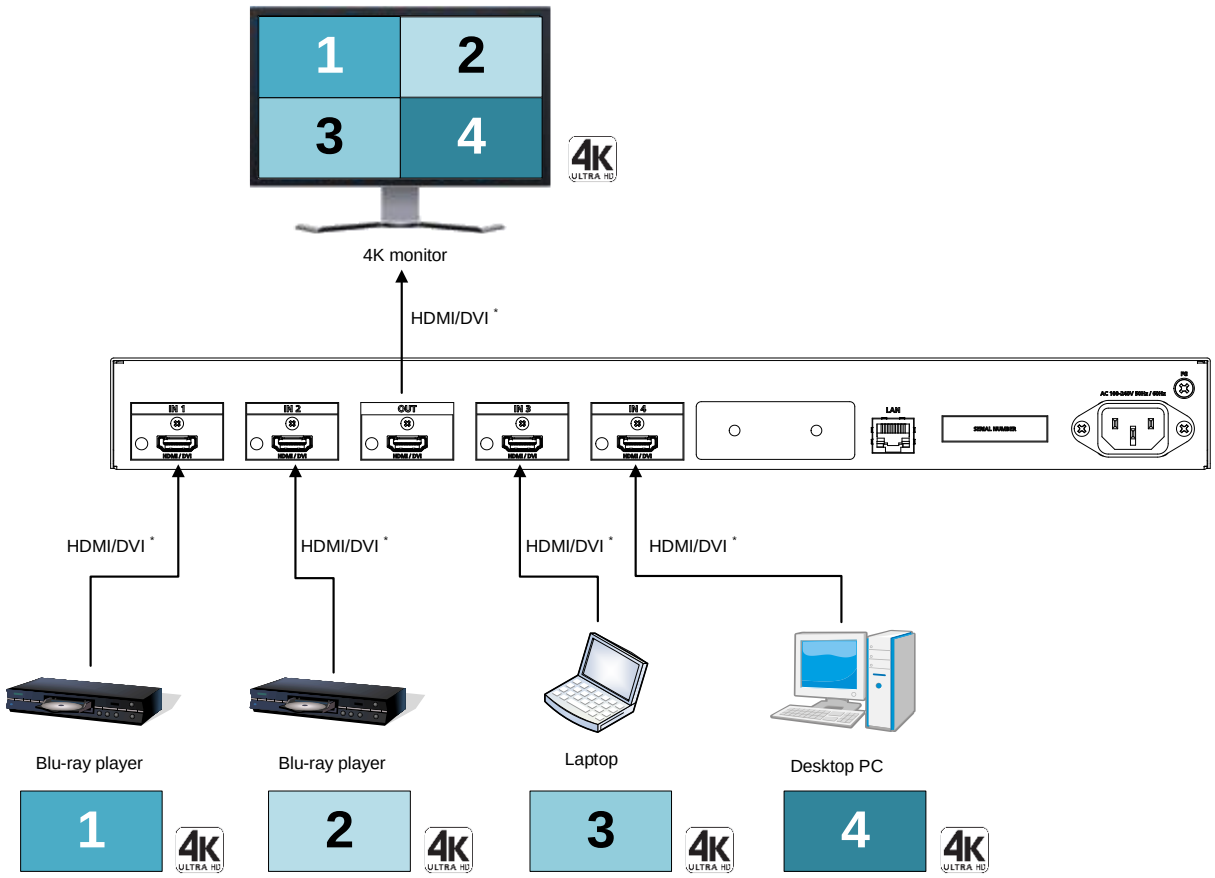
Six (6) M4 screws

[Fig. 1.1] Included items

2 Product outline

The ICP-401UHD 4K@60 is a multi-window processor that simultaneously displays up to four images on a single screen with any layout setup. Up to four input sources are supported via HDMI inputs.
The ICP-401UHD can be operated as a truly seamless switcher with four inputs and one output in single-window display mode.

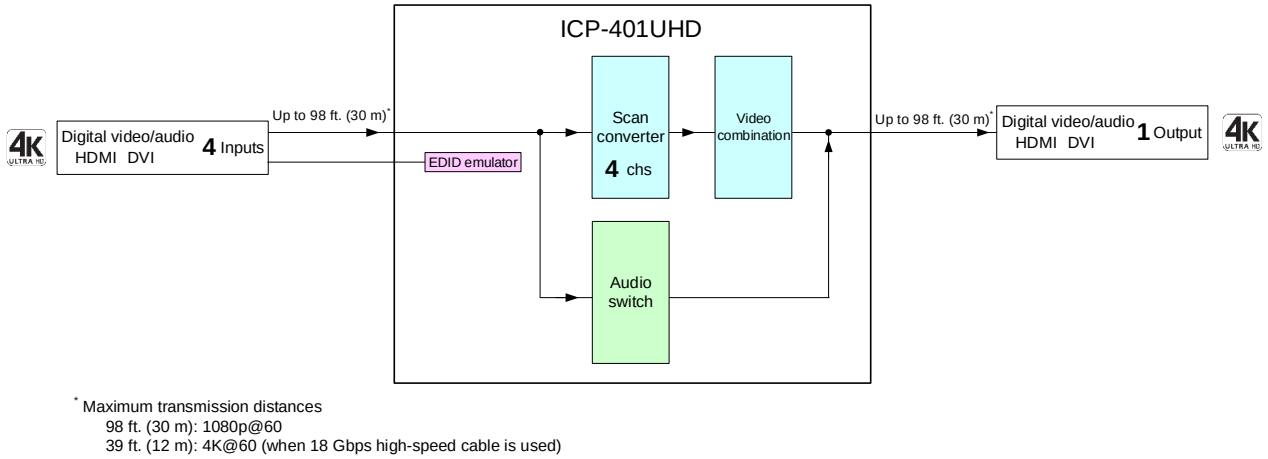
The ICP-401UHD includes LAN ports as communication ports for remote control.



* Maximum transmission distances
98 ft. (30 m): 1080p@60
39 ft. (12 m): 4K@60 (when 18 Gbps high-speed cable is used)

[Fig. 2.1] Four-window processing

3 Features



[Fig. 3.1] Diagram

■ **Video**
- Up to 4K@60 (4:4:4)
- HDCP 1.4/2.2
- Motion adaptive interlaced/progressive conversion
- Scan conversion
- Aspect ratio control
- Truly seamless switching (single-window display mode)
- Anti-snow

■ **Audio**
- Volume adjustment (Input/Output)

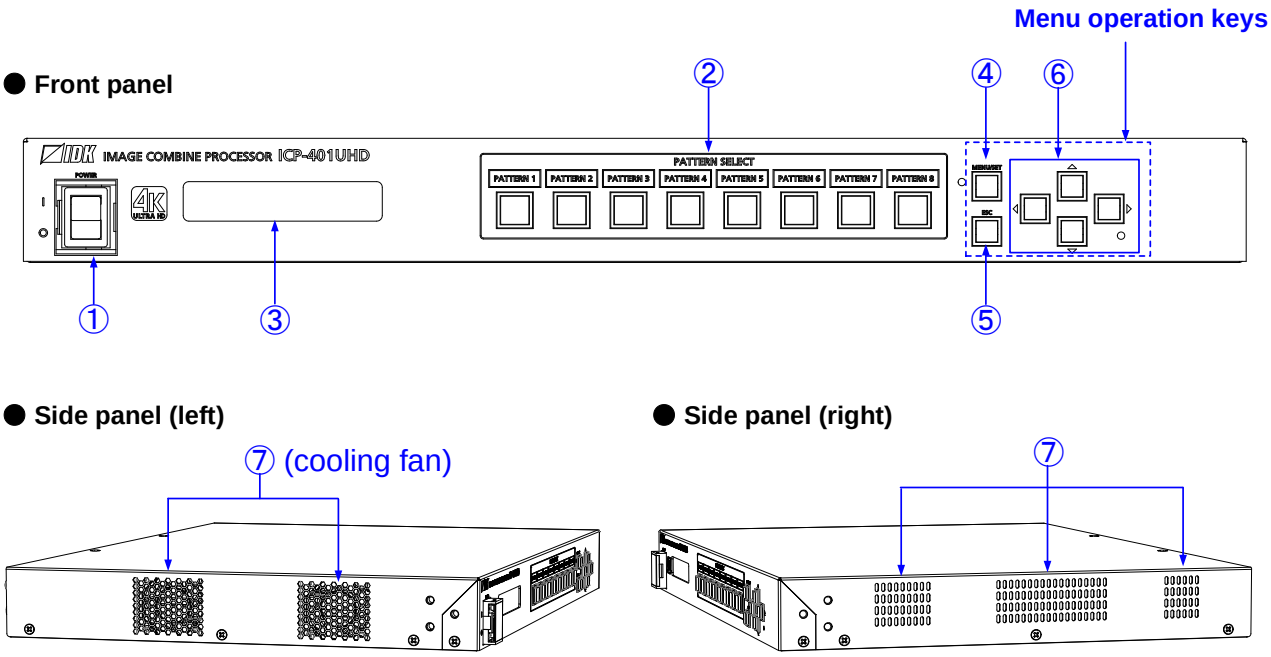
■ **Video combination**
- Multiviewing capability with unrestricted overlay placement up to four video on a single screen
- Window settings
  - Background color
  - Display priority
  - Displaying/hiding
  - Position/size
  - Title character
- CUT/FADE switching effect
- 32 window layout patterns

■ **Control input**
- LAN

■ **Others**
- EDID emulation
- All functions and configuration settings accessible through browser
- Preset memory
- Last memory
- Connection Reset
- Front key function lock

4 Panels

4.1 Front/side panels

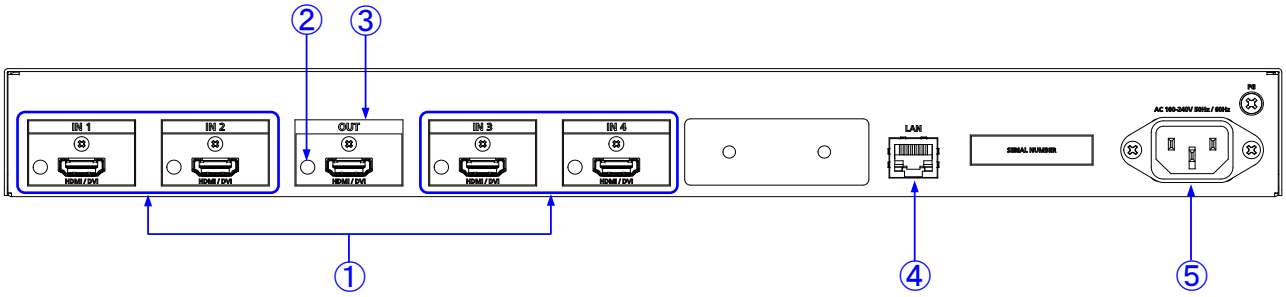


[Fig. 4.1] Front/side panel drawings

[Table 4.1] Front/side panel features

#	Feature	Description
①	Power switch	Powers ON/OFF the ICP
②	Window layout keys (PATTERN SELECT)	Selects a registered window layout pattern. 【See: 7.2 Selecting window layout】
③	VFD screen	Displays menus and settings.
④	MENU/SET key	Selects menus and edits/controls/save settings. 【See: 7.3 Menu operation】
⑤	ESC key	Ends the current menu setting.
⑥	Arrow keys (▲, ▼, ◄, ►)	Switch menu, move cursor, and change setting values.
⑦	Ventilation holes	Prevents internal temperature raise. Do not block ventilation holes.

4.2 Rear panel



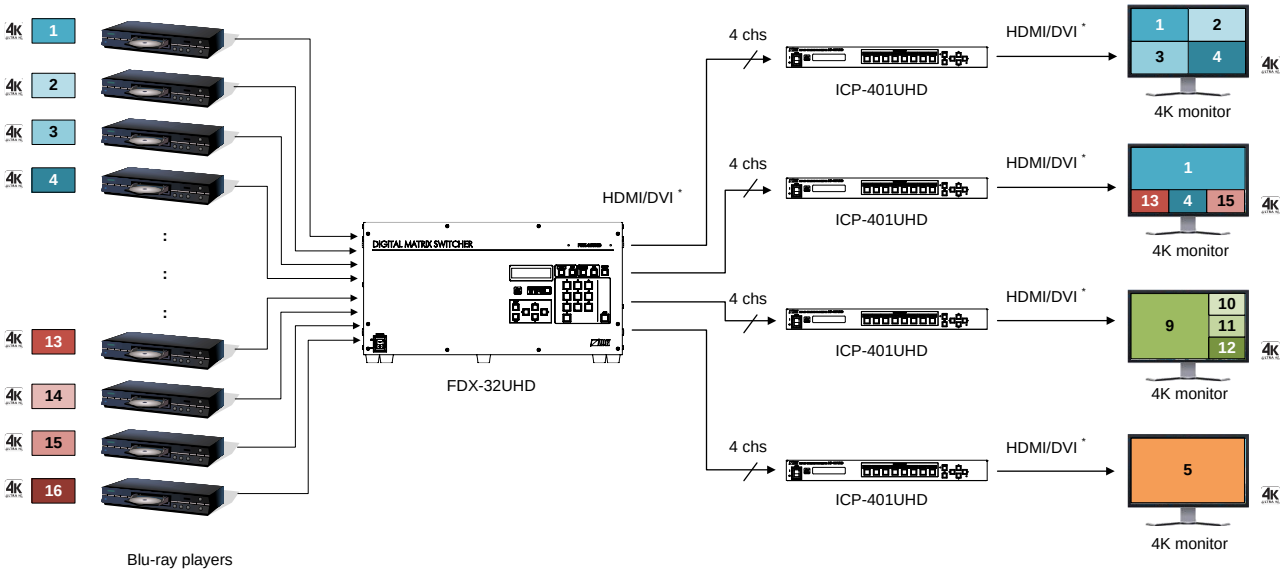
[Fig. 4.2] Rear panel drawing

[Table 4.2] Rear panel features

#	Feature	Description
①	HDMI input connectors	Input connectors for HDMI and DVI signals, interface with source devices such as Blu-ray players.
②	HDMI cable fixing holes (Not used)	Not used.
③	HDMI output connector	Output connector for HDMI and DVI signal, interfaces with sink devices such as LC monitor or projector.
④	LAN connector	For external control by communication commands or web browsers
⑤	Power supply connector	For use with provided power cable.

5 System Configuration Example

Example: The ICP receives video signals that are output from the FDX-32UHD and outputs them as follows:



* Maximum transmission distances
98 ft. (30 m): 1080p@60
39 ft. (12 m): 4K@60 (when 18 Gbps high-speed cable is used)

[Fig. 5.1] System configuration

6 Precautions

Before connecting to external devices, follow the precautions below.

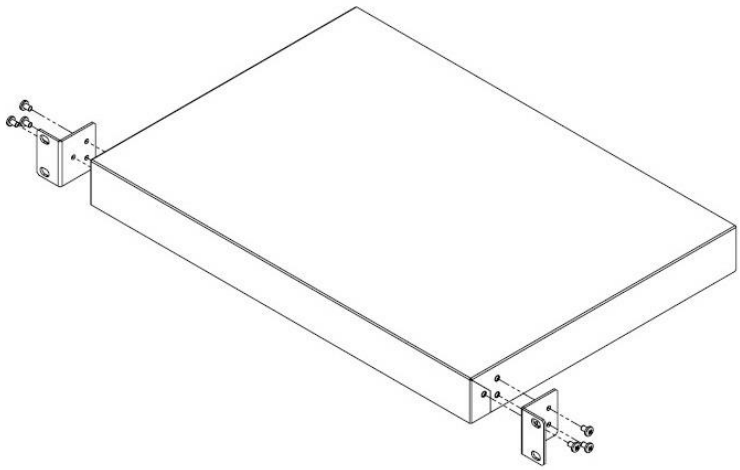
6.1 Installation

When installing the ICP, please observe the following precautions.

- Do not block vent holes. To provide adequate ventilation, maintain sufficient clearances around the ICP (1.2 in. (30 mm) or more).
- When the ICP needs to be mounted in an EIA rack, or an enclosed space, ensure that sufficient ventilation or cooling is provided and that the ambient temperature will not exceed 104°F (40°C). If inadequately vented, the product's service life, operation and reliability may be affected.

■ **Attaching rack mounting brackets**

Attach the rack mounting brackets to the ICP chassis using the supplied M4 screws.



[Fig. 6.1] Attaching rack mounting brackets

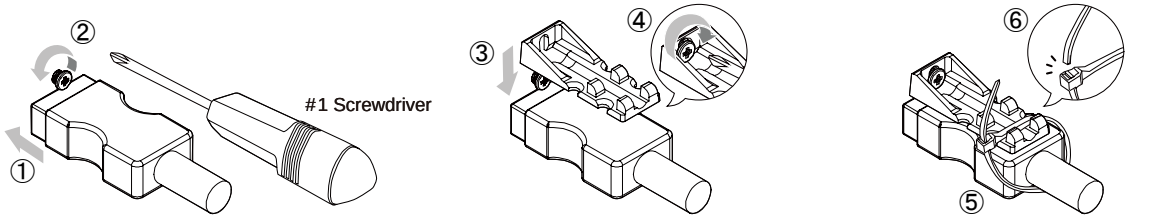
Note:

The standard screw tightening torque is 1.47 N·m (about 15.0 kgf·cm).

6.2 Cabling

When connecting the ICP to external devices, please observe the following precautions.

- Read manuals for the external devices.
- Before you connecting cables to the ICP or an external device, dissipate static electricity by touching grounded metal such as racks before handling signal cables. Failure to observe this precaution may result in ESD (electrostatic discharge) damage.
- Power all units off before connecting cables.
- Be sure to fully seat all plugs and connections and dress cables to reduce stress on connectors.
- Use the cable lacing bracket to secure a standard HDMI cable as shown.



① Plug the HDMI cable into the HDMI connector.

② Loosen the HDMI connector screw (about six turns).
The screw does not need to be removed.

③ Place the bracket on the screw.

④ Tighten the screw to secure the bracket.

⑤ Place the tie wrap around the cable and tighten the tie wrap as above.

⑥ Cut excess length.

[Fig. 6.2] Cable Lacing Bracket (FB-01 For IDK products only)

6.2.1 Cables

Use the correct HDMI cable or HDMI-DVI conversion cable depending on the system configuration.

For 4K format video, the maximum TMDS data rate (transmission speed) is 18 Gbps. If a high-speed HDMI cable that supports up to 10.2 Gbps rate is used, video cannot be displayed stably. Select an appropriate 18 Gbps high-speed cable depending on the 4K format.
The maximum distance may change depending on cable type and characteristics of source and sink devices.

[Table 6.1] 18 Gbps high-speed cable for 4K format

	TMDS data rate (Gbps)								
	RGB, YCbCr 4:4:4			YCbCr 4:2:2			YCbCr 4:2:0		
4K format	24 bit	30 bit	36 bit	24 bit	30 bit	36 bit	24 bit	30 bit	36 bit
3840x2160p (24/25/30)	10.2 Gbps	18 Gbps	18 Gbps	10.2 Gbps	10.2 Gbps	10.2 Gbps	N/A	N/A	N/A
4096x2160 (24/25/30)	10.2 Gbps	18 Gbps	18 Gbps	10.2 Gbps	10.2 Gbps	10.2 Gbps	N/A	N/A	N/A
3840x2160p (50/59.94/60)	18 Gbps	N/A	N/A	18 Gbps	18 Gbps	18 Gbps	10.2 Gbps	18 Gbps	18 Gbps
4096x2160 (50/59.94/60)	18 Gbps	N/A	N/A	18 Gbps	18 Gbps	18 Gbps	10.2 Gbps	18 Gbps	18 Gbps

18 Gbps: 18 Gbps high-speed cable; 10.2 Gbps: 10.2 Gbps cable

Note:
If a cable is extended and a cable joint (JJ) is used, video may be interrupted or may not be output.

7 Basic Operation

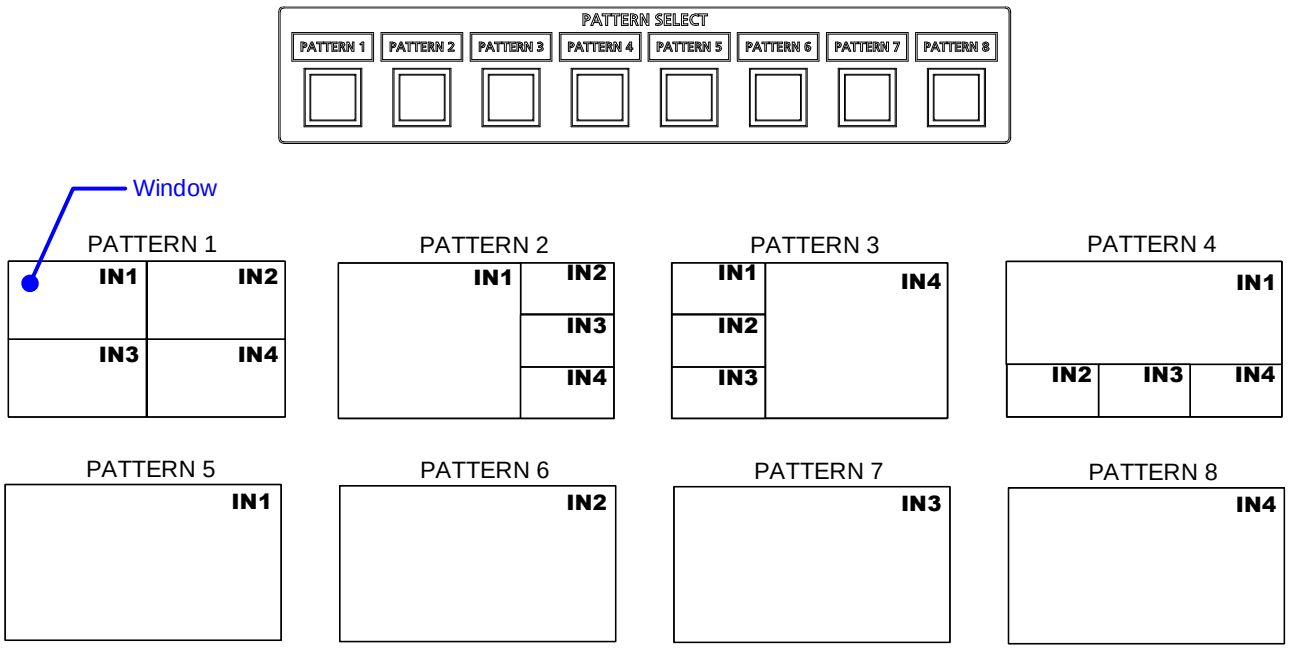
7.1 Power up period

After powering on the ICP from a power-off condition, there is a short initialization delay before the WEB browser is fully operational and before the first communication command can be received and executed.

- Receiving front panel operation : 9 seconds
- Receiving WEB browser operation : 25 seconds
- Receiving communication command : 10 seconds

7.2 Selecting window layout pattern

You can select a desired window layout from the following eight patterns:



[Fig. 7.1] Sample window layout

Tip:

Up to 32 patterns can be registered.

Patterns 1 to 8 : Can be set from PATTERN SELECT key, front panel menu, or command

Patterns 9 to 32 : Can be set from front panel menu or command

Note:

Once a PATTERN SELECT key is pressed, saved settings listed in "**[Table 8.1] Settings to be saved in window pattern**" will be applied.

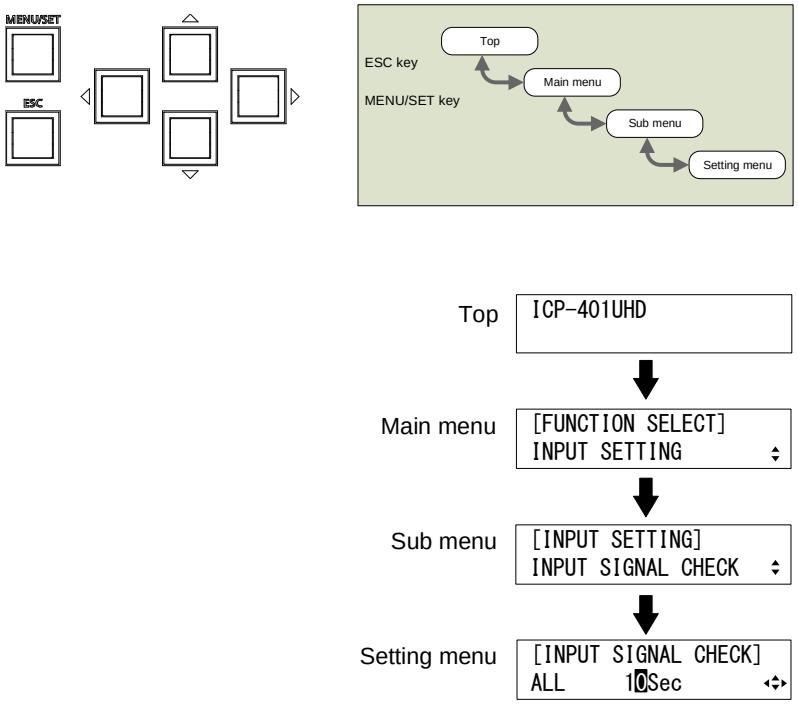
7.3 Menu operation

You can use the VFD screen and front panel keys to view and control settings.

Press the “MENU/SET” key to apply settings and to change the menu level.
Press the “ESC” key to go back to the previous screen.
Use the “▲” and “▼” keys to select channels and use the “▲” and “▼” keys to select the menu item.

In the setting screen, use “▲”, “▼”, “▲” and “▼” keys to move the cursor and select the setting. The applied values are saved automatically after the session.

【See: 8.1 Menu list】



[Fig. 7.2] Menu level

Tips:

- The “MENU/SET” key LED is illuminated only for settable menu.
- For some setting screens, the set value is applied from the “MENU/SET” key. When the “MENU/SET” key flashes, press the key to apply the setting value. After the setting has been applied, the key will illuminate without flashing.
- We offer an optional cover for menu operation keys to prevent accidental key presses.
- Please contact us as needed.

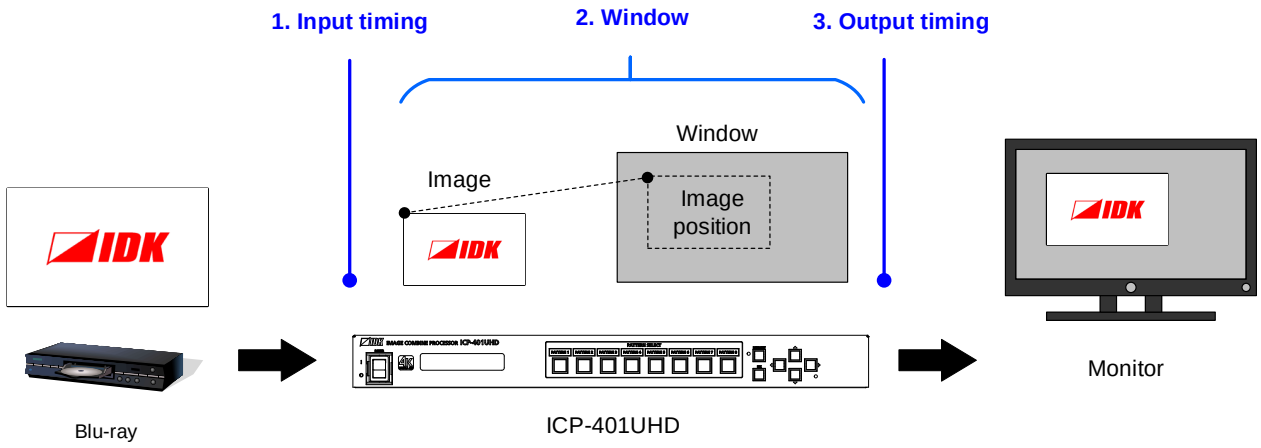
Note:

To avoid losing settings, do not interrupt power to the ICP while “NOW SAVING” is displayed; otherwise, the setting information may be lost.

7.4 Cropping and Positioning input video

Input video can be cropped and the cropped image can be displayed by setting input timing, window and output timing.

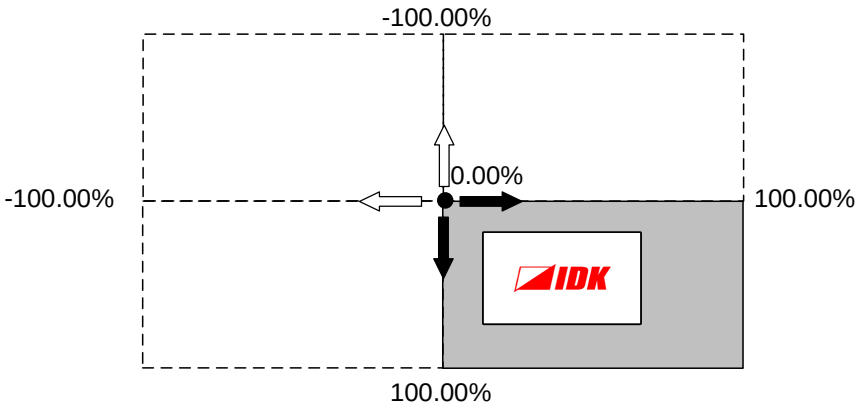
1. Input timing
   Sets starting position, size, and aspect ratio of the input image.
2. Window
   Sets display position and size of the window.
   Sets display starting position and size of the image displayed in the window.
3. Output timing
   Sets aspect ratio, display position, and size of the output image.



Function	Setting item
8.3 Input timing	8.3.1 Start position 8.3.2 Active area 8.3.3 Aspect ratio
8.4 Window setting	8.4.1 Window position 8.4.2 Window size 8.4.3 Window's video start position 8.4.4 Window's video size
8.7 Output timing	8.7.2 Aspect ratio of sink device 8.7.4 Display position 8.7.5 Display size

[Fig. 7.3] Setting items for trimming and layout setup

“%” is used for those settings except for aspect ratio. Those settings can be set by 0.01% based on video and window sizes.

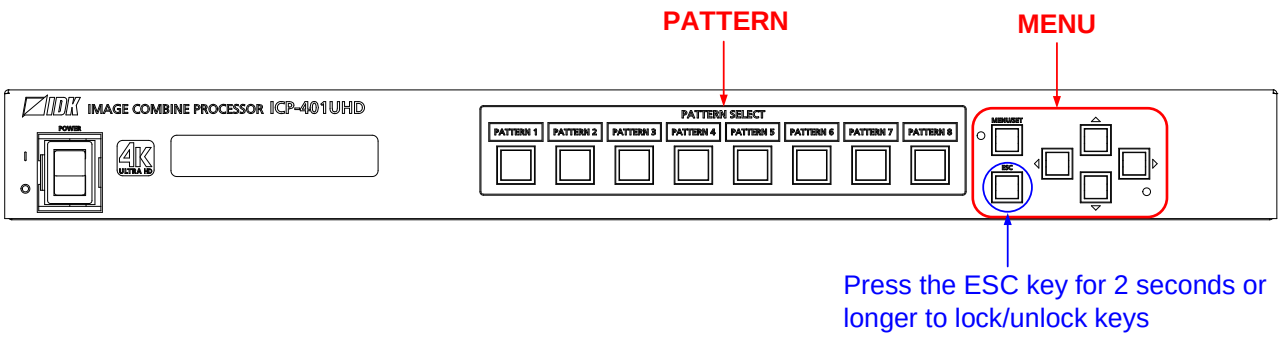


[Fig. 7.4] Cropping and positioning

7.5 Locking/unlocking front key function

Press and hold the “ESC” key for two seconds or longer to lock or unlock the desired key function. You will hear a beep tone and then one of the following messages is displayed for one second.

【See: 8.12.1 Key function lock】



[Fig. 7.5] Locking/Unlocking

Tip:

If menu operation keys are locked, the “ESC” key is also locked.

If pressing the “ESC” key for two seconds or longer, menu operation keys and “ESC” key are unlocked.

7.6 Initialization

All settings will be reset to factory default values by powering on the ICP while pressing the “ESC” key.
Press and hold the “ESC” key until you hear a long beep sound.
Note that after returning to factory default, the previous setting values cannot be restored.

[Table 7.1] Factory default

[1/4]

Menu	Factory default		See
INPUT SETTING			
INPUT SIGNAL CHECK	For	Each input channel	P.34
	Default	10Sec	
INPUT HDCP	For	ALL, each input channel	P.35
	Default	HDCP 2.2	
INPUT TIMING			
INPUT POSITION	For	Each input channel	P.36
	Default	H: 0.00%, V: 0.00%	
INPUT SIZE	For	Each input channel	P.36
	Default	H: 100.00%, V: 100.00%	
INPUT ASPECT	For	Each input channel	P.37
	Default	AUTO	
INPUT CONTRAST	For	Each input channel	P.37
	Default	R: 100%, G: 100%, R: 100%	
INPUT BRIGHTNESS	For	Each input channel	P.38
	Default	100%	
INPUT BLANK COLOR	For	ALL, Each input channel	P.38
	Default	R: 0, G: 0, B: 0	
WINDOW SETTING			
WINDOW POSITION	For	Each input channel	P.39
	Default	H: 0.00%, V: 0.00%	
WINDOW SIZE	For	Each input channel	P.39
	Default	H: 100.00%, V: 100.00%	
VIEW POSITION	For	Each input channel	P.40
	Default	H: 0.00%, V: 0.00%	
VIEW SIZE	For	Each input channel	P.40
	Default	H: 100.00%, V: 100.00%	
WINDOW BACKGROUND	For	ALL, Each input channel	P.41
	Default	R: 0, G: 0, B: 0	
WINDOW PRIORITY	For	—	P.41
	Default	IN1>IN2>IN3>IN4	
CAPTION ENABLE	For	Each input channel	P.42
	Default	OFF	
CAPTION STRING	For	Each input channel	P.42
	Default	INPUT1, INPUT2, INPUT3, INPUT4	

[2/4]

Menu	Factory default		See
WINDOW SETTING (Cont'd)			
WINDOW ENABLE	For	Each input channel	P.43
	Default	ON	
WINDOW FADE OUT-IN	For	—	P.43
	Default	OFF	
PATTERN MEMORY			
PATTERN LOAD	For	—	P.44
	Default	—	
PATTERN SAVE	For	—	P.44
	Default	—	
PATTERN EDIT	For	—	P.45
	Default	—	
PATTERN LINK	For	—	P.45
	Default	OFF	
PATTERN START UP	For	—	P.45
	Default	LAST MEMORY	
OUTPUT SETTING			
OUTPUT MODE	For	—	P.46
	Default	AUTO	
OUTPUT HDMI MODE	For	—	P.46
	Default	OFF	
OUTPUT HPD MASK	For	—	P.47
	Default	OFF	
OUTPUT DEEP COLOR	For	—	P.47
	Default	24Bit	
OUTPUT HDCP	For	—	P.48
	Default	AUTO	
OUTPUT TIMING			
OUTPUT RESOLUTION	For	—	P.49
	Default	AT	
OUTPUT ASPECT	For	—	P.50
	Default	AUTO	
OUTPUT TEST PATTERN	For	—	P.50
	Default	OFF	
OUTPUT POSITION	For	—	P.51
	Default	H: 0.00%, V: 0.00%	
OUTPUT SIZE	For	—	P.51
	Default	H: 100.00%, V: 100.00%	
OUTPUT BACKGROUND	For	—	P.52
	Default	R: 0, G: 0, B: 0	

[3/4]

Menu	Factory default		See
AUDIO			
AUDIO MUTE	For	—	P.53
	Default	OFF	
INPUT LEVEL	For	Each input channel	P.53
	Default	0dB	
OUTPUT LEVEL	For	—	P.53
	Default	0dB	
AUDIO SELECT	For	—	P.54
	Default	AUTO	
TEST TONE	For	—	P.54
	Default	OFF	
EDID			
EDID DATA	For	Each input channel	P.56
	Default	45:2160p (50/59.94/60 4:4:4)	
EDID SAVE	For	Each input channel	P.59
	Default	45:2160p (50/59.94/60 4:4:4)	
EDID DEEP COLOR	For	Each input channel	P.59
	Default	24Bit	
EDID LINEAR PCM	For	Each input channel	P.60
	Default	48kHz	
EDID WXGA SELECT	For	Each input channel	P.60
	Default	1360 x 768	
LAN			
IP ADDRESS	For	—	P.61
	Default	192.168.1.199	
SUBNET MASK	For	—	P.61
	Default	255.255.255.0	
CONTROL PORT	For	—	P.62
	Default	Port number: 1100 8-connection setting: OFF (Up to 4 connections available)	
MAC ADDRESS	For	—	P.62
	Default	—	
PRESET MEMORY			
PRESET LOAD	For	—	P.63
	Default	—	
PRESET SAVE	For	—	P.63
	Default	—	
PRESET EDIT	For	—	P.64
	Default	—	
PRESET START UP	For	—	P.64
	Default	LAST MEMORY	

[4/4]

Menu	Factory default		See
OTHERS			
OPERATION LOCK	For	MENU, PATTERN	P.65
	Default	LOCK	
BUZZER	For	—	P.66
	Default	ON	
POWER SAVE	For	—	P.66
	Default	ON	
CEC LINK	For	—	P.66
	Default	OFF	
TOP DISPLAY	For	—	P.67
	Default	OFF	
INPUT STATUS	For	—	P.68
	Default	—	
MONITOR STATUS	For	—	P.69
	Default	—	
SYSTEM STATUS	For	—	P.70
	Default	—	
VERSION	For	—	P.71
	Default	—	

Note:

Settings of PATTERN 1 are set for ”WINDOW POSITION”, “WINDOW SIZE”, “WINDOW PRIORITY”, and “WINDOW ENABLE”.

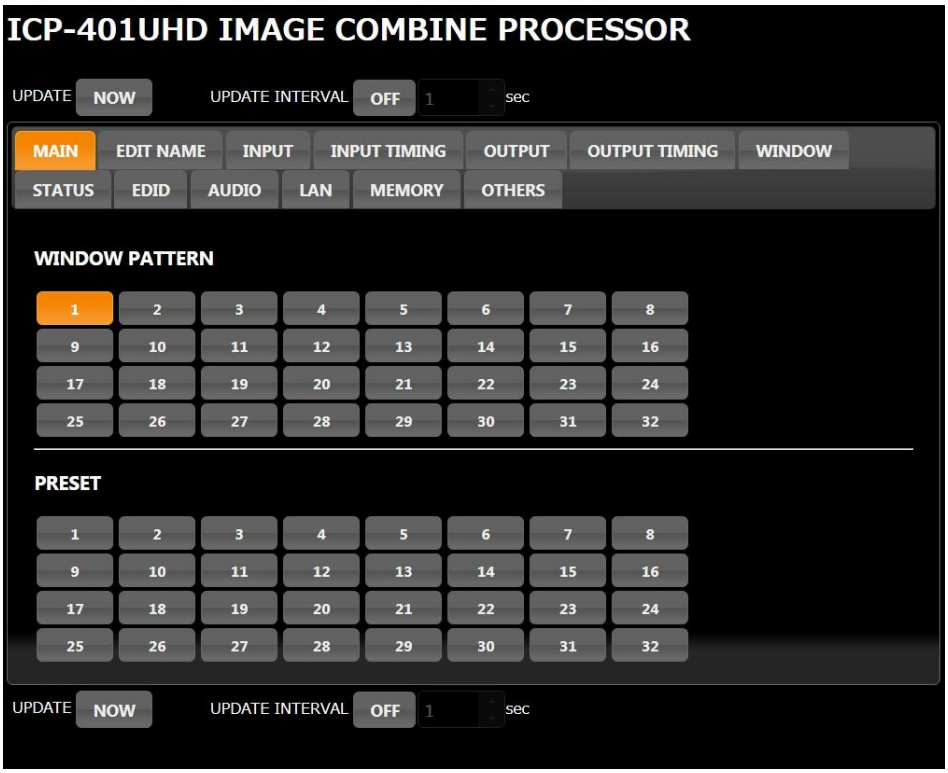
7.7 Control from WEB browser

To control the ICP from a WEB browser, enter the IP address that is programmed into the ICP in the address bar of the WEB browser to display the WEB menu. Note that the default IP address for all ICP switching devices is: 192.168.1.199

【See: 8.10.1 IP address】
【See: 8.10.2 Subnet mask】
【8.10.3TCP port number】

[Table 7.2] Example URL

Port number of WEB browser	URL to be entered into address bar
1100, 6000 to 6999	http://192.168.1.199



[Fig. 7.6] WEB browser page

JavaScript is used for the ICP WEB browser. When you set the ICP from WEB browser menu, enable JavaScript before setting up. Refer to each browser's help menu if you do not know how to enable JavaScript.

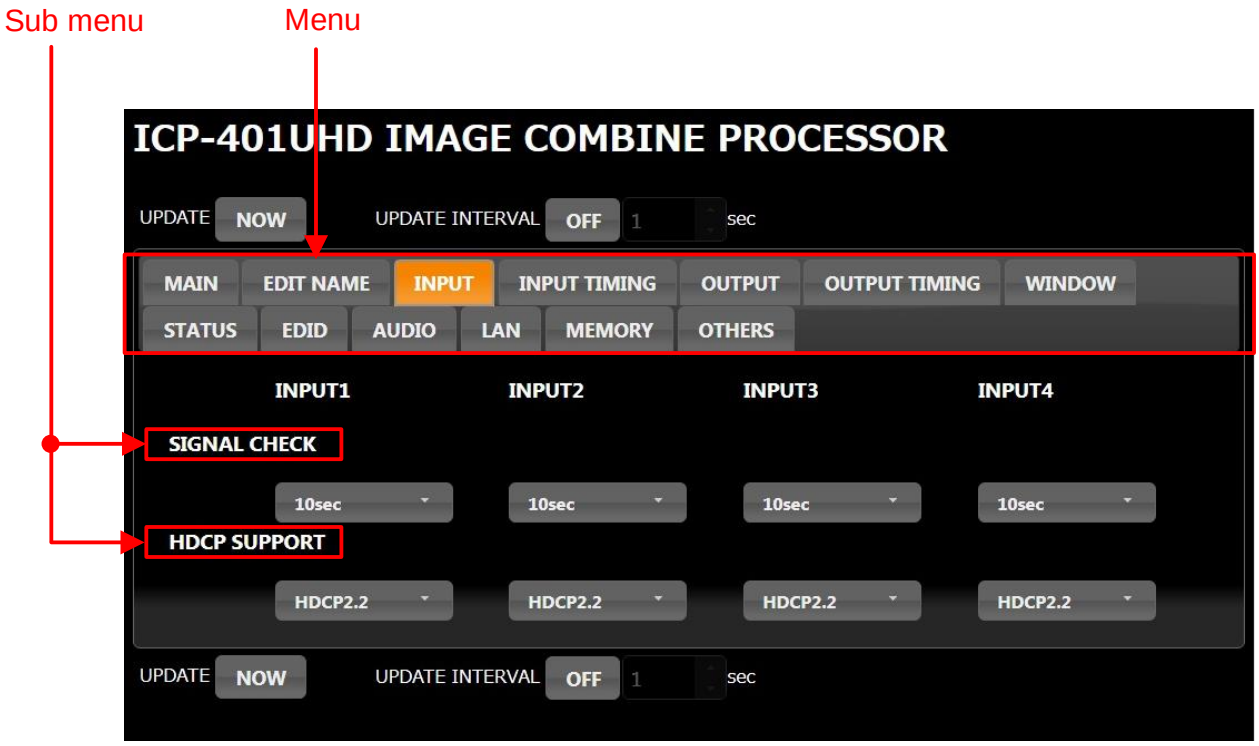
Tip:

IDK tests the ICP under the following environment:

OS : Windows 7 Professional

WEB browser : Microsoft Internet Explorer 11
Google Chrome 70
Mozilla Firefox 60 ESR

7.7.1 WEB menu



[Fig. 7.7] WEB menu

① Select the desired item from the menu to display setting items in the submenu.
② Set items in the submenu by referring to the table below.

[Table 7.3] Form control

Form control	Example	Description
Set/execution button	UPLOAD SAVE	Click the button to execute the desired operation.
Pull down list	10sec	Use the down button to select or execute the desired value.
Arrow button	1	Use the up/down buttons to select and execute the desired value. You also can enter the value directly.
Slider		Drag a single handle to execute the desired value.
Window layer order	INPUT1 INPUT2 INPUT3 INPUT4	If you change the order, drag and drop the target contents.

7.7.2 Operations can be set only from WEB menu

The following settings can be set only from WEB menu:

- Editing names of displayed item
- Updating WEB browser
- Backing up and restoring all settings

■ Editing names of displayed items

The following item names can be edited from the [EDIT NAME] menu:

TITLE : Up to 40 one-byte alphanumeric characters
PATTERN, I/O channel, and PRESET : Up to 10 one-byte alphanumeric characters

[Fig. 7.8] Editing name

■ **Refreshing WEB browser**

Manually : Click the [NOW] button on [UPDATE].

Automatically : Set [UPDATE INTERVAL] to [ON] and specify the desired interval (1 to 100 sec by 1 sec). To disable the automatic updating feature, set [UPDATE INTERVAL] to [OFF] (set by default). The [EDIT NAME] and [LAN] are not updated automatically.

[Fig. 7.9] Updating manually and automatically

■ **Baking up and restoring all settings**

You can backup all saved settings in a PC from [OTHERS] > [BACKUP & RESTORE].

Click the [BACKUP] button.

You also can restore the backup file by selecting the desired file and clicking the [RESTORE] button.

Do not operate other web menus and power off the ICP until the restoring is completed.

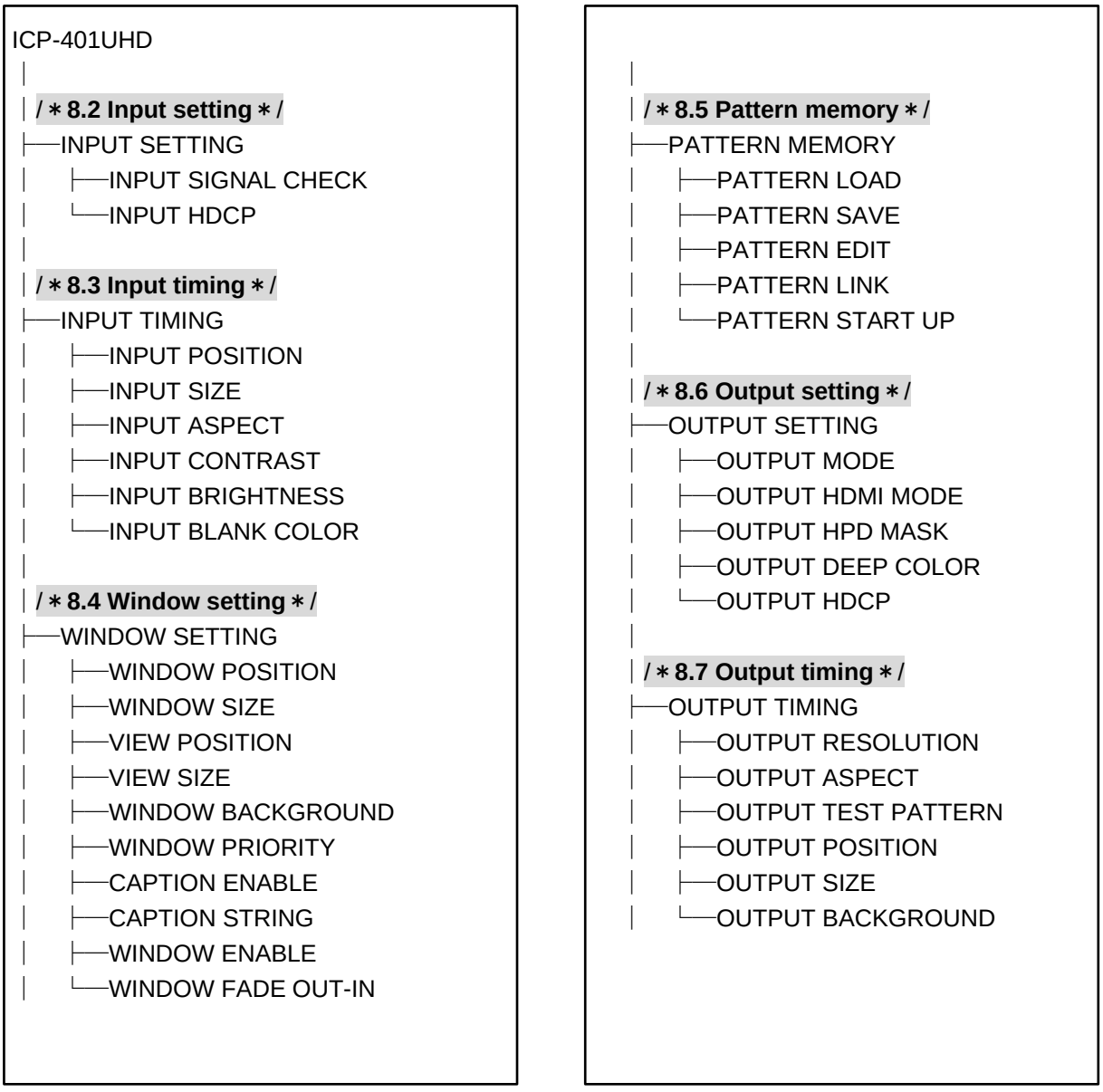
[Fig. 7.10] Backing up and restoring all settings

8 Menu

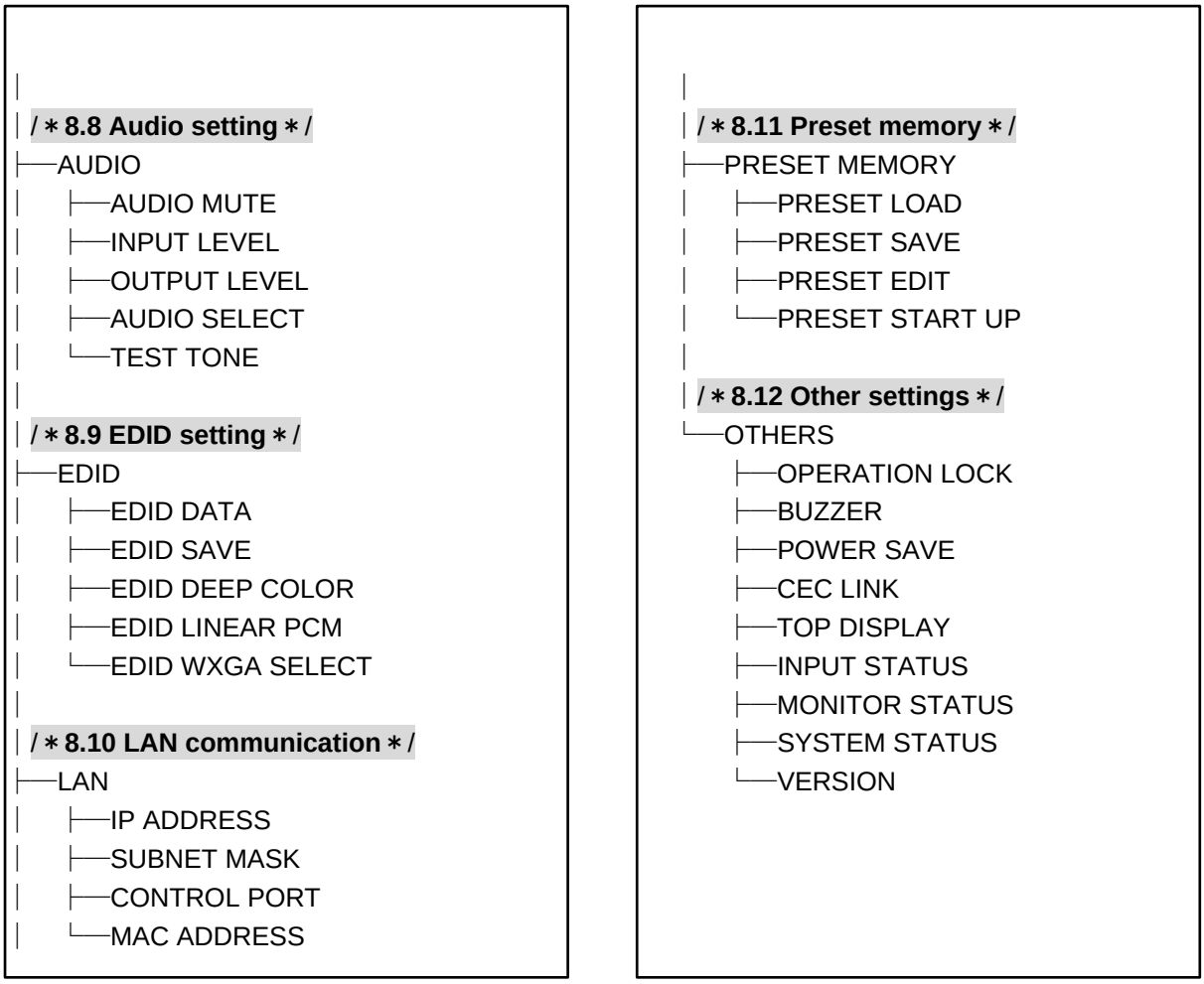
8.1 Menu list

Menu tree structure for the ICP

Top
├──Main menu
│　　├──Sub menu
│　　├──



[Fig. 8.1] Menu list (1/2)



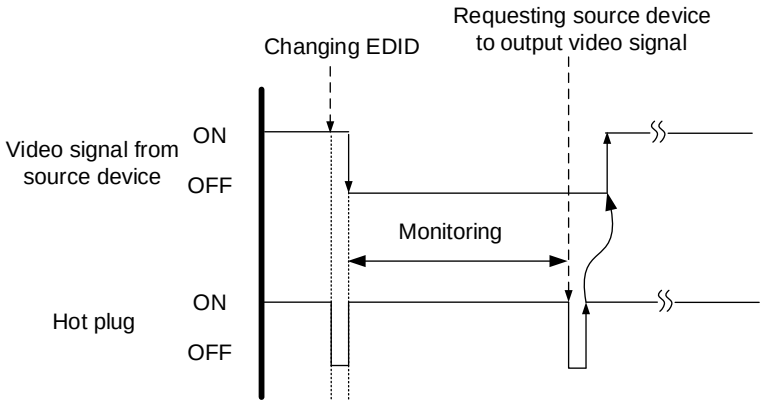
[Fig. 8.2] Menu list (2/2)

8.2 Input setting

8.2.1 No-signal input monitoring

Menu	Top→INPUT SETTING→INPUT SIGNAL CHECK
Setting for	Each input channel
Setting value	OFF, 3Sec to 15Sec (by 1Sec)　[Default] 10Sec

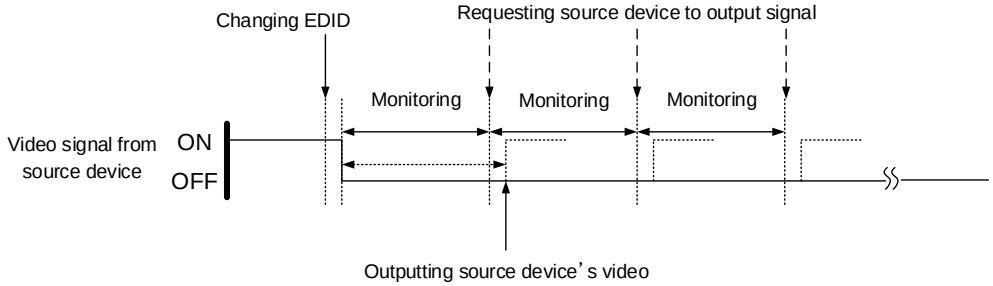
If you change the EDID settings of the ICP or power the ICP off/on, the source device may not output a video signal. Use this menu to set the monitoring time which is from when a source device stops outputting signal to when the ICP requests the source device to output video signal.



[Fig. 8.3] Monitoring absence of input signal

Note:
If you are using the monitor power-saving or dual monitor features on your PC, set this feature to “OFF”. This will avoid unpredictable operation.

When using this feature, ensure that the “monitoring time” is set for a value greater than the amount of time needed for the source to provide an output signal.



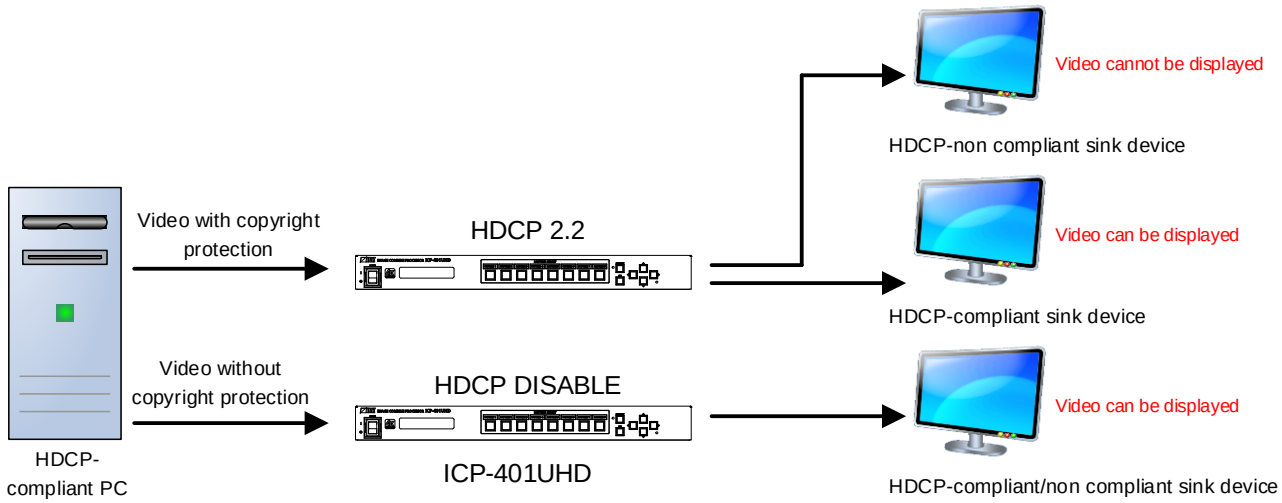
[Fig. 8.4] Repeating output reset

8.2.2 HDCP input setting

Menu	Top→INPUT SETTING→INPUT HDCP
Setting for	ALL, each input channel
Setting value	

- HDCP 2.2 : Supports HDCP 2.2 and HDCP 1.4 [Default]
- HDCP 1.4 : Supports HDCP 1.4
- DISABLE : Not support HDCP

Some source devices negotiate with the connected device to determine if it supports HDCP encryption. After this negotiation, the source device decides whether they encrypt HDCP signal or not. This process takes place with some source device, even if the content being presented is not copyright protected. The ICP is HDCP compliant, if it is connected to a display device that does not support HDCP, video may not be displayed. Under these circumstances and if the content is not protected, the problem can be solved by setting this menu to “DISABLE.”



[Fig. 8.5] HDCP-compliant and HDCP-non compliant sink device

Notes:

- HDCP2.2 (stream type 0) contents can be displayed on sink devices supporting HDCP1.4.
- HDCP2.2 (stream type 1) contents can be displayed on sink devices supporting HDCP2.2 but cannot be displayed on sink devices supporting HDCP1.4.

8.3 Input timing

8.3.1 Start position

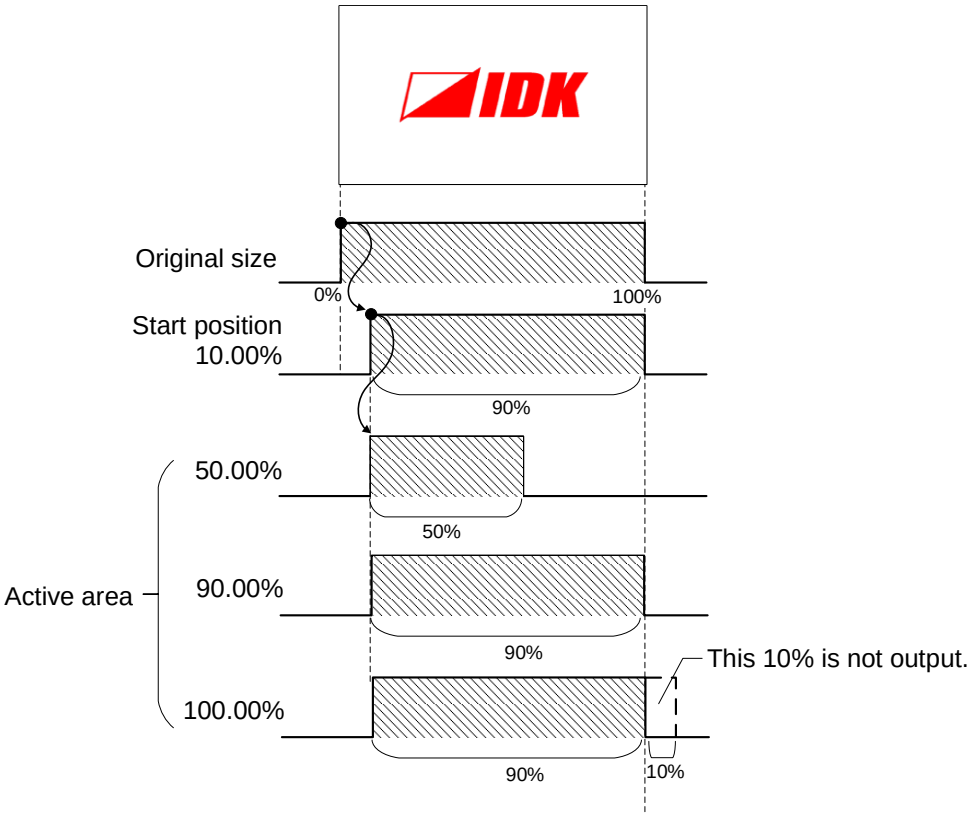
Menu	Top→INPUT TIMING→INPUT POSITION
Setting for	Each input channel
Setting value	H : 0.00% to 100.00% (by 0.01%) [Default] 0.00%
	V : 0.00% to 100.00% (by 0.01%) [Default] 0.00%

You can set the horizontal/vertical starting position.

8.3.2 Active area

Menu	Top→INPUT TIMING→INPUT SIZE
Setting for	Each input channel
Setting value	H : 0.00% to 100.00% (by 0.01%) [Default] 100.00%
	V : 0.00% to 100.00% (by 0.01%) [Default] 100.00%

You can set the horizontal/vertical active area of input video.
The total number of active area from the set start position must be less than 100%. If either of those values from start positions exceeds 100%, this exceeded area is not displayed.
Select “H&V” in the front panel to change the settings of both horizontal and vertical sizes from the current setting values.



[Fig. 8.6] Start position and active area

8.3.3 Aspect ratio

Menu	Top→INPUT TIMING→INPUT ASPECT
Setting for	Each input channel
Setting value	

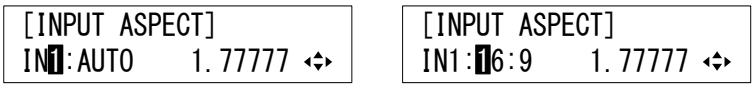
- AUTO [Default]
- FULL
- 4:3
- 5:3
- 5:4
- 16:9
- 16:10
- 16:9 LETTER BOX
- 64:27
- 256:135
- FINE

You can set the aspect ratio for each video input.

AUTO: Normally set this function to “AUTO”. The video is displayed at the aspect ratio that is automatically detected depending on the input signal.

FULL: Video is displayed in full screen mode.

FINE: You can specify the desired aspect ratio from “0.33333” to “3.00000” (horizontal;/vertical).



[Fig. 8.7] Aspect ratio (Left: AUTO, Right: “16:9”)

8.3.4 Contrast

Menu	Top→INPUT TIMING→INPUT CONTRAST
Setting for	Each input channel
Setting value	R/G/B: 0% to 200% [Default] R/G/B: 100%

You can set the contrast of video image.

Select “A” in the front panel to change the settings of “R” (leftmost), “G” and “B” relatively from the current setting values.

8.3.5 Brightness

Menu	Top→INPUT TIMING→INPUT BRIGHTNESS
Setting for	Each input channel
Setting value	0% to 200%　[Default] 100%

You can set the brightness level for each input signal.

8.3.6 Blank color

Menu	Top→INPUT TIMING→INPUT BLANK COLOR
Setting for	ALL, Each input channel
Setting value	R/G/B: 0 to 255　[Default] R/G/B: 0 (Black)

You can set the color for when no video is input.
Select “A” in the front panel to change the settings of “R” (leftmost), “G” and “B” relatively from the current setting values.

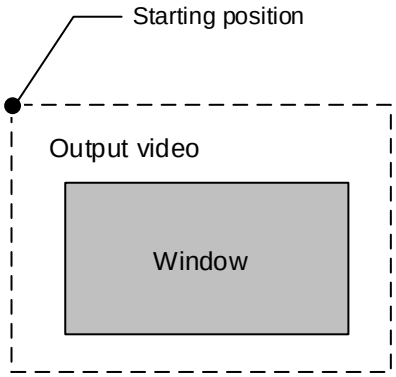
8.4 Window setting

8.4.1 Window position

Menu	Top→WINDOW SETTING→WINDOW POSITION
Setting for	Each input channel
Setting value	H : 0.00% to 100.00% (by 0.01%) [Default] 0.00%
	V : 0.00% to 100.00% (by 0.01%) [Default] 0.00%

You can set the window display position.

【See: 7.4 Cropping and Positioning input video】



[Fig. 8.8] Window position

8.4.2 Window size

Menu	Top→WINDOW SETTING→WINDOW SIZE
Setting for	Each input channel
Setting value	H : 20.00% to 100.00% (by 0.01%) [Default] 100.00%
	V : 20.00% to 100.00% (by 0.01%) [Default] 100.00%

You can set the window display size based on the output size (100%), and it starts from the upper left.

Select “H&V” in the front display to set the horizontal and vertical output sizes relatively. Select either of “H” or “V” to set the output size separately.

【See: 7.4 Cropping and Positioning input video】

8.4.3 Window's video start position

Menu	Top→WINDOW SETTING→VIEW POSITION
Setting for	Each input channel
Setting value	H : -400.00% to 400.00% (by 0.01%) [Default] 0.00%
	V : -400.00% to 400.00% (by 0.01%) [Default] 0.00%

You can set the horizontal and vertical window' video start positions based on the original video size (100%), and it starts from the upper left.

【See: 8.4.4 Window's video size】

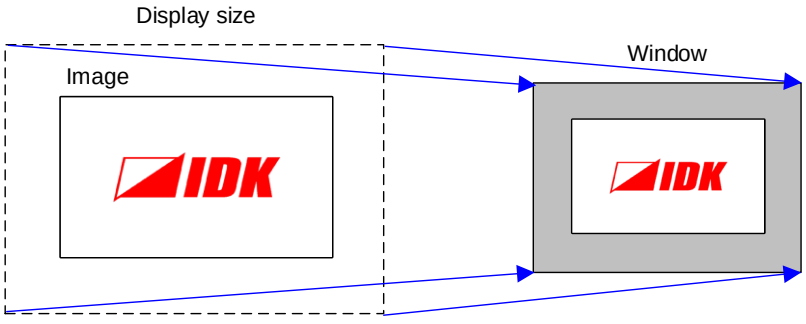
8.4.4 Window's video size

Menu	Top→WINDOW SETTING→VIEW SIZE
Setting for	Each input channel
Setting value	H : 20.00% to 400.00% (by 0.01%) [Default] 100.00%
	V : 20.00% to 400.00% (by 0.01%) [Default] 100.00%

You can set the horizontal and vertical window's video display sizes based on the original video size (100%), and it starts from the upper left.

Horizontal and vertical window display sizes to 100.00% : Displayed fully
Horizontal and vertical window display sizes to less than 100.00% : Enlarged
Horizontal and vertical window display sizes to more than 100.00% : Shrinked
If the horizontal and vertical display sizes are set to the same value, the aspect ratio is kept.

Select "H&V" in the front display to set the horizontal and vertical output sizes relatively. Select either of "H" or "V" to set the output size separately.



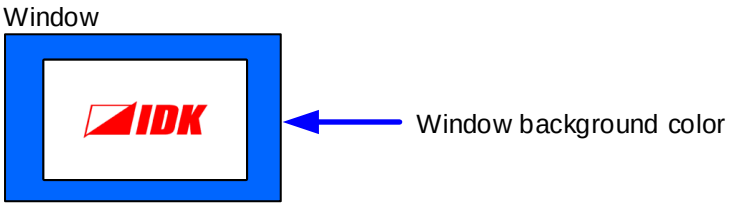
[Fig. 8.9] Window display size

8.4.5 Window background color

Menu	Top→WINDOW SETTING→WINDOW BACKGROUND
Setting for	ALL, Each input channel
Setting value	R/G/B: 0 to 255 [Default] R/G/B: 0 (Black)

You can set the window background color.

Select “A” in the front panel to change the settings of “R” (leftmost), “G” and “B” relatively from the current setting values.

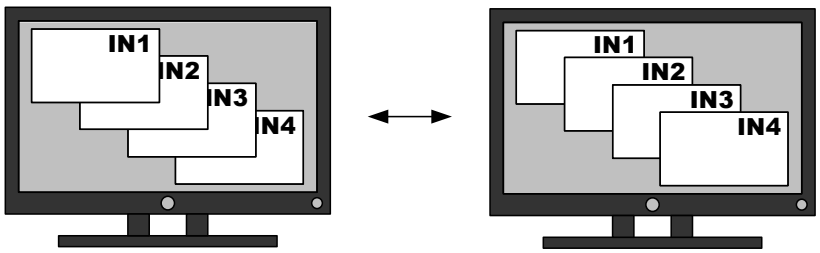


[Fig. 8.10] Window background color (Example: Blue)

8.4.6 Window layer order

Menu	Top→WINDOW SETTING→WINDOW PRIORITY
Setting value	・Priority 1 (Front) IN1 to IN4 [Default] IN1
	・Priority 2 IN1 to IN4 [Default] IN2
	・Priority 3 IN1 to IN4 [Default] IN3
	・Priority 4 (Back) IN1 to IN4 [Default] IN4

You can set the window layer order.



IN1>IN2>IN3>IN4 IN4>IN3>IN2>IN1

[Fig. 8.11] Layer order

8.4.7 Window overlay titling

Menu	Top→WINDOW SETTING→CAPTION ENABLE
Setting for	Each input channel
Setting value	OFF : Disabled (Not display) [Default]
	ON : Enabled (Display)

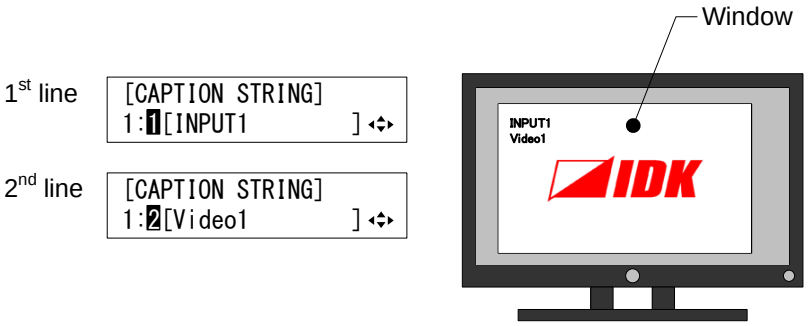
You can enable/disable the window overlay titling.
If there is no space for the titling, the title cannot be displayed.

【See: 8.4.8 Editing window overlay titling】

8.4.8 Editing window overlay titling

Menu	Top→WINDOW SETTING→CAPTION STRING
Setting for	Each input channel
Setting value	Title [Default] INPUT1, INPUT2, INPUT3, INPUT4

You can name the title using up to 16 characters x 2 lines in ASCII codes (0x20 to 0x7D).
Press the MENU/SET key to apply setting.

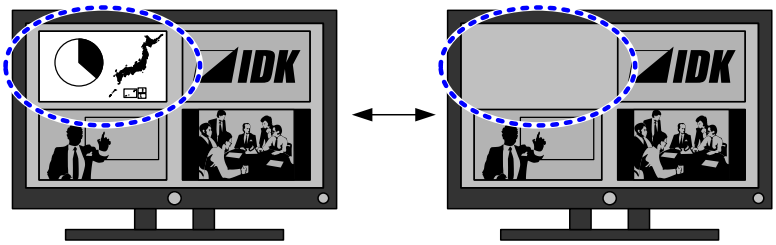


[Fig. 8.12] Editing overlay titling (Example: IN1)

8.4.9 Window hiding

Menu	Top→WINDOW SETTING→WINDOW ENABLE
Setting for	Each input channel
Setting value	ON : Display [Default]
	OFF : Not display

You can display/hide each window.



[Fig. 8.13] Hiding window

8.4.10 Window transition effect

Menu	Top→WINDOW SETTING→WINDOW FADE OUT-IN
Setting value	OFF : Cut [Default]
	ON : Fade out/in

You can select either a cut or fade effect.

Note:
If selecting “OFF (Cut)”, PATTERN 1 to PATTERN 4 are switched with a black frame while PATTERN 5 to PATTERN 8 are switched seamlessly.

8.5 Pattern memory

8.5.1 Recalling window layout pattern

Menu	Top→PATTERN MEMORY→PATTERN LOAD
Setting value	01 to 32: Pattern memory 1 to 32

You can recall a window pattern that is registered in the pattern memory.
Press the MENU/SET key to apply setting.

8.5.2 Saving window layout pattern

Menu	Top→PATTERN MEMORY→PATTERN SAVE
Setting value	01 to 32: Pattern memory 1 to 32

You can save the settings of the current window layout pattern to a pattern memory.
Press the MENU/SET key to apply setting.

[Table 8.1] Settings to be saved in window pattern

Menu	Setting
Window setting	Window position, Window size, Window's video start position, Window's video size, Window background color, Window layer order, Editing window overlay titling, Window hiding
Pattern memory	Linking Window layout pattern and preset memory

Note:
Do not power off the ICP while "Saving" is displayed, otherwise the setting information may be lost.

8.5.3 Editing window layout pattern name

Menu	Top→PATTERN MEMORY→PATTERN EDIT
Setting value	01 to 32: Pattern memory 1 to 32 Pattern name

You can name window layout pattern using up to 10 characters in ASCII codes (0x20 to 0x7D).
Press the MENU/SET key to apply setting.

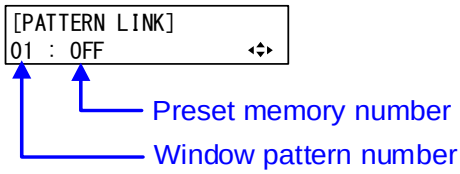
Note:
Do not power off the ICP while “Saving” is displayed, otherwise the setting information may be lost.

8.5.4 Linking Window layout pattern and preset memory

Menu	Top→PATTERN MEMORY→PATTERN LINK
Setting value	OFF, PRESET 01 to PRESET 32 [Default] OFF

You can assign a preset memory to a window layout pattern.

【See: 8.11.1 Recalling preset memory】



[Fig. 8.14] Assigning preset memory

8.5.5 Window pattern at startup

Menu	Top→PATTERN MEMORY→PATTERN START UP
Setting value	LAST MEMORY : Last window pattern [Default] DEFAULT MEMORY: Display IN1 video (settings in “**[Table 8.1] Settings to be saved in window pattern**” are initialized) PATTERN 01 to 32 : One of registered window pattern 1 to 32

You can select a window pattern for when the ICP is powered.

Tip:
When the window pattern setting is changed from menu operation or communication command, the settings are saved in the ICP.

8.6 Output setting

8.6.1 Output mode

Menu	Top→OUTPUT SETTING→OUTPUT MODE
Setting value	AUTO : Automatic mode [Default] (Automatically selects appropriate mode and color space for the sink device)
	HDMI RGB : HDMI RGB mode
	HDMI 422 : HDMI YCbCr4:2:2 mode
	HDMI 444 : HDMI YCbCr4:4:4 mode
	HDMI 420 : HDMI YCbCr4:2:0 mode; enabled only if the "**8.7.1 Output resolution**" is set to "28:2160p@59/29:4K DCI@59"
	DVI : DVI mode; Enable only if set to "15:1920x1080 to 25:1080p@59".

You can set video signal mode and color space to be output to the sink device.

Tip:

For "AUTO", if the sink device supports 4K@60Hz YCbCr4:2:0 and 4K@60Hz is set for output resolution, video is output at YCbCr4:2:0. In any other case, it is output at RGB.

8.6.2 Sink device EDID check

Menu	Top→OUTPUT SETTING→OUTPUT HDMI MODE
Setting value	OFF : In case of EDID load error, the sink device is treated as a DVI device [Default]
	ERROR : In case of EDID load error, the sink device is treated as a HDMI device
	ALWAYS : Always treats sink device as a HDMI device

The ICP acquires EDID from the sink device and determines if the sink device is an HDMI device or DVI device in order to output HDMI signals.

Notes:

- If setting this menu to "OFF" or "ERROR", set the EDID resolution to a value other than "EXTERNAL" and set the EDID according to the resolution of the target sink device. Otherwise, the source device cannot acquire EDID and problems may occur.
- This menu is available if the output mode is set to a value other than "DVI".

【See: 8.6.1 Output mode】
【See: 8.9.1 EDID Resolution】

8.6.3 Hot plug ignoring duration

Menu	Top→OUTPUT SETTING→OUTPUT HPD MASK
Setting value	OFF: Not ignoring request signals [Default] 2 to 15 Sec

Time for ignoring the video output request signals sent from the sink device.
If the request signals are repeated in a short cycle, the ICP processes video output from the first cycle.
As a result, video may not be output. This problem can be solved by setting the ignoring time.

8.6.4 Deep Color

Menu	Top→OUTPUT SETTING→OUTPUT DEEP COLOR
Setting value	24Bit [Default], 30Bit

You can select the color depth of HDMI signal.
“30Bit”: signals are output with “30 bit/pixel (10 bit/component)” only if a sink device supporting Deep Color is connected.
Since the transmission clock of “30 bit/pixel (10 bit/component)” is faster than that of “24 bit/pixel (8 bit/component)”, noise may occur if a poor-quality cable or long cable is connected. In those cases, the noise may be removed by selecting “24Bit”.
For 2560x1440, 2560x1600, 3840x2160, and 4096x2160, the color depth is “24 bit/pixel (8 bit/component)”.

8.6.5 HDCP output

Menu　Top→OUTPUT SETTING→OUTPUT HDCP

Setting value

- AUTO : Once channel with HDCP input is selected, HDCP is always output regardless of input signal status. [Default]
- AUTO(HDCP1.4) : Encrypts HDCP only if input signal has HDCP 1.4
- INPUT ONLY : Encrypts HDCP only if input signal has HDCP

You can set the HDCP output for when an HDCP-compliant sink device is connected.
Normally set this function to “AUTO”.

If a sink device which does not support HDCP is connected, the ICP outputs video signals which do not have HDCP regardless of this menu’s setting.

Notes:

- HDCP2.2 (stream type 0) contents can be displayed on sink devices supporting HDCP1.4.
- HDCP2.2 (stream type 1) contents can be displayed on sink devices supporting HDCP2.2 but cannot be displayed on sink devices supporting HDCP1.4.

8.7 Output timing

8.7.1 Output resolution

Menu　Top→OUTPUT TIMING→OUTPUT RESOLUTION

Setting value

- AT : AUTO [Default]
- 15 : 1920x1080 : VESAHD@60 (1920x1080)
- 16 : 1920x1200@60 : WUXGA@60 (1920x1200)
- 22 : 1080i@50 : 1080i@50 (1920x1080)
- 23 : 1080i@59 : 1080i@59.94 (1920x1080)
- 24 : 1080p@50 : 1080p@50 (1920x1080)
- 25 : 1080p@59 : 1080p@59.94 (1920x1080)
- 26 : 2160p@29 : 2160p@29.97 (3840x2160)
- 27 : 4K DCI@29 : 4096x2160p@29.97(4096x2160)
- 28 : 2160p@59 : 2160p@59.94 (3840x2160)
- 29 : 4K DCI@59 : 4096x2160p@59.94 (4096x2160)

The optimal resolution will be selected automatically if you set this menu to “AT”.
Press the MENU/SET key to apply setting.

Numbers following “@” represent the vertical sync frequency.
1080i/1080p/2160p/4096x2160 are timing formats relating to the CEA-861 standard.
Others are timing formats meeting either the VESA DMT standard or the VESA CVT standard.
For VESAHD@60 and WUXGA@60, only Reduced Blanking is supported.

8.7.2 Aspect ratio of sink device

Menu	Top→OUTPUT TIMING→OUTPUT ASPECT
Setting value	

- AUTO [Default]
- 4:3
- 5:3
- 5:4
- 16:9
- 16:10
- 64:27
- 256:135
- FINE

You can set the aspect ratio of the connected sink device.

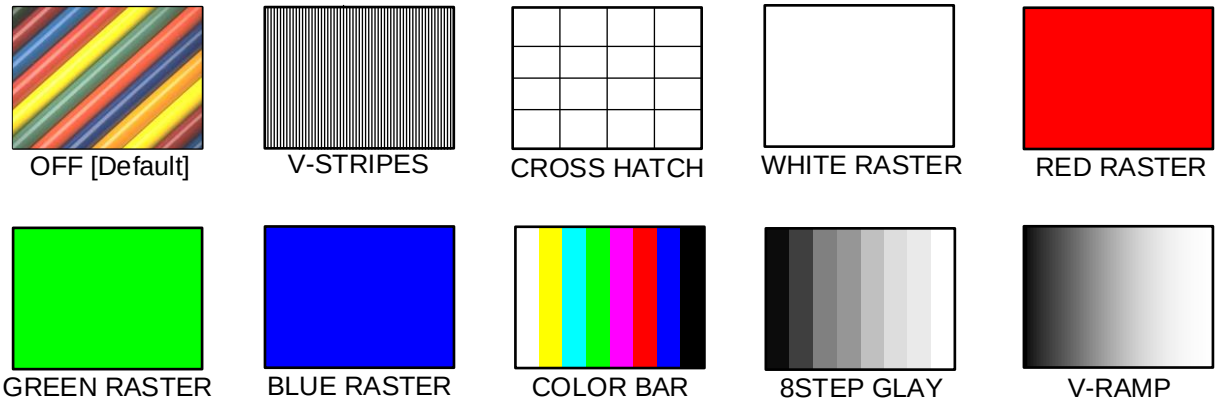
If you select “AUTO,” the aspect ratio of the resolution selected in “**8.7.1 Output resolution**” will be applied. If aspect ratios of the target sink device and the resolution selected in “**8.7.1 Output resolution**” are different from each other, you can select an aspect ratio for the sink device of: “4:3”, “5:4”, “5:3”, “16:9”, “16:10”, “64:27”, “256:135”, and “FINE”.

If you select “FINE”, you can specify the aspect ratio range of 0.33333 to 3.00000.

8.7.3 Test pattern

Menu	Top→OUTPUT TIMING→OUTPUT TEST PATTERN
Setting value	[Fig. 8.15] Test pattern

The resolution that is set in “**8.7.1 Output resolution**” will be applied while a test pattern is displayed. Test pattern is output on full screen with the resolution set in “**8.7.1 Output resolution**”.



[Fig. 8.15] Test pattern

8.7.4 Display position

Menu	Top→OUTPUT TIMING→OUTPUT POSITION
Setting value	H : -400.00% to 400.00% (by 0.01%) [Default] 0.00%
	V : -400.00% to 400.00% (by 0.01%) [Default] 0.00%

You can set the horizontal and vertical display positions based on the output video (100%), and it starts from the upper left.

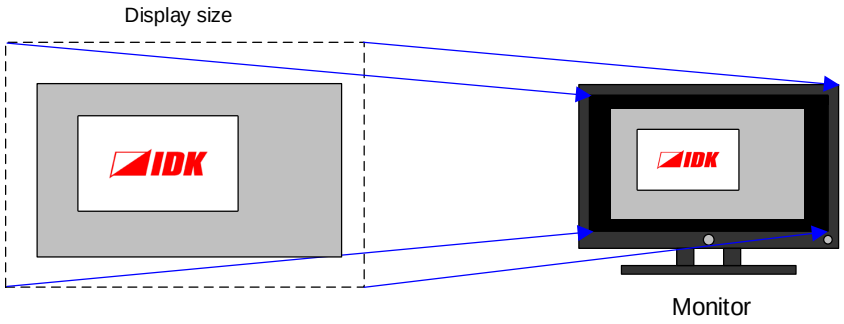
8.7.5 Display size

Menu	Top→OUTPUT TIMING→OUTPUT SIZE
Setting value	H : 20.00% to 400.00% (by 0.01%) [Default] 100.00%
	V : 20.00% to 400.00% (by 0.01%) [Default] 100.00%

You can set the horizontal and vertical window display sizes based on the window size (100%), and it starts from the upper left.

Horizontal and vertical sizes are set to 100.00% : Displayed fully
Horizontal and vertical sizes are set to values less than 100.00% : Enlarged
Horizontal and vertical sizes are set to more than 100.00% : Shrinked
If the horizontal and vertical sizes are set to the same value, the aspect ratio is kept.

Select “H&V” in the front display to set the horizontal and vertical output sizes relatively. Select either of “H” or “V” to set the output size separately.



[Fig. 8.16] Display size

8.7.6 Background color

Menu	Top→OUTPUT TIMING→OUTPUT BACKGROUND
Setting value	R/G/B: 0 to 255 [Default] R/G/B: 0 (Black)

You can set the background color for blanking area when “**8.7.4 Display position**” and “**8.7.5 Display size**” are set.

Select “A” in the front panel to change the settings of “R” (leftmost), “G” and “B” relatively from the current setting values.

Monitor

[Fig. 8.17] Background color (Example: Blue)

8.8 Audio setting

HDMI digital audio supports 2-channel LPCM.
When multi-channel LPCM is input, only Front Left and Front Right can be output. Other audio formats are not supported.

8.8.1 Audio output mute

Menu	Top→AUDIO→AUDIO MUTE
Setting value	OFF [Default] ON

You can mute/unmute the output audio.

8.8.2 Audio input level

Menu	Top→AUDIO→INPUT LEVEL
Setting for	Each input channel
Setting value	-60dB to 10dB [Default] 0dB

You can set the audio input level for each input channel separately to correct the gap in audio input levels of each input signal.

8.8.3 Audio output level

Menu	Top→AUDIO→OUTPUT LEVEL
Setting value	-60dB to 10dB [Default] 0dB

You can set the audio output level.

8.8.4 Selecting audio input channel

Menu	Top→AUDIO→AUDIO SELECT
Setting value	AUTO : Audio of the frontmost video is output [Default]
	OFF : No audio
	IN1 : Input channel 1
	IN2 : Input channel 2
	IN3 : Input channel 3
	IN4 : Input channel 4

You can select the input channel that outputs audio.

【See: 8.4.6 Window layer order】

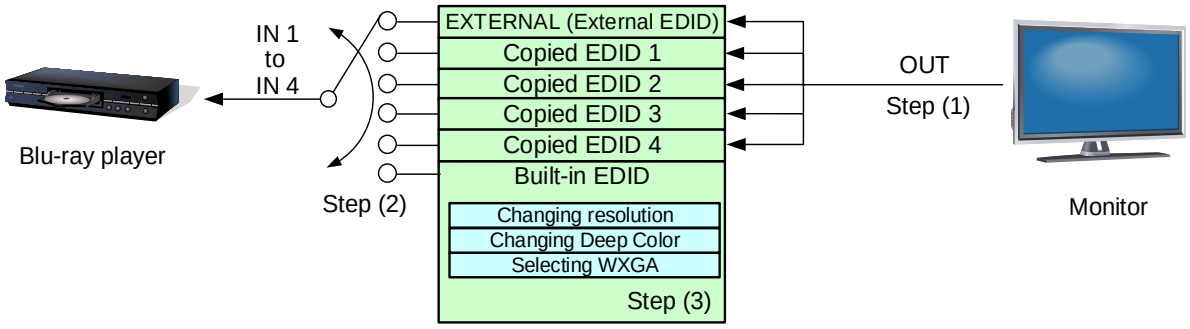
8.8.5 Test tone

Menu	Top→AUDIO→TEST TONE
Setting value	OFF [Default], 1000Hz, 400Hz

You can output test tone.

8.9 EDID setting

You can set or customize EDID to be sent to the source device. Change the setting as needed.



[Fig. 8.18] Setting EDID

Step 1: If you use external EDID or copied EDID, copy the target EDID from the sink device.
【See: 8.9.2 Copying EDID】

Step 2: Set the EDID that will be sent to the source device.
【See: 8.9.1 EDID Resolution】

Step 3: If you use built-in EDID, customize the data as usage.
【See: 8.9.3 Deep Color】
【See: 8.9.4 LPCM】

8.9.1 EDID Resolution

Menu	Top→EDID→EDID DATA
Setting for	Each input channel
Setting value	[Table 8.2] Maximum resolution of EDID

You can set the resolution requested to be output from the source device.
This setting will also be applied for controlling output resolution when AV devices (such as Blu-ray players) are connected via HDMI.
“05” to “46” are the built-in EDID.

Timing of 720p, 1080i, 1080p, and 2160p is the same as that of HD signal meeting the CEA-861 standard. For other resolutions, timings meet the VESA DMT or VESA CVT standards.
Select the maximum resolution supported by the connected sink device. The lower resolutions are also supported.
For PCs, select the maximum resolution supported by the connected PC.

Press the MENU/SET key to apply setting.

[Table 8.2] Maximum resolution of EDID

[1/2]

Setting value	Maximum resolution	Pixels	Standard	Remarks
00	EXTERNAL (External EDID)	–	–	If no acquired data, the default is 45.
01	Copied EDID1	–	–	If no acquired data, the default is 45.
02	Copied EDID2	–	–	If no acquired data, the default is 45.
03	Copied EDID3	–	–	If no acquired data, the default is 45.
04	Copied EDID4	–	–	If no acquired data, the default is 45.
05	1080p (59.94/60)	1920×1080	HDTV	
06	720p	1280×720		
07	1080i	1920×1080		
08	1080p (24/25/30/50)	1920×1080		
09	SVGA	800×600	VESA	
10	XGA	1024×768		
11	VESA720	1280×720	CVT	For DVI device input
12	WXGA	1280×768	VESA	
13	WXGA	1280×800		MAC supported
14	Quad-VGA	1280×960		
15	SXGA	1280×1024		

[2/2]

Setting value	Maximum resolution	Pixels	Standard	Remarks
16	WXGA	1360×768, 1366×768	VESA	The number of pixels can be set in "**8.9.5 WXGA**"
17	SXGA+	1400×1050		
18	WXGA+	1440×900		
19	WXGA++	1600×900		(RB)
20	UXGA	1600×1200		
21	WSXGA+	1680×1050		
22	VESA1080	1920×1080	CVT	(RB), for DVI device input
23	WUXGA	1920×1200	VESA	(RB)
24	QWXGA	2048×1152		(RB)
25	WQHD	2560×1440		(RB)
26	WQXGA	2560×1600		(RB)
41	2160p (24/25/30)	3840×2160	UHDTV	
42	4096×2160 (24/25/30)	4096×2160	DCI	
43	2160p (50/59.94/60, 4:2:0)	3840×2160	UHDTV	YCbCr4:2:0 supported
44	4096×2160 (50/59.94/60, 4:2:0)	4096×2160	DCI	YCbCr4:2:0 supported
45	2160p (50/59.94/60, 4:4:4)	3840×2160	UHDTV	YCbCr4:4:4, YCbCr4:2:2, YCbCr4:2:0 supported [Default]
46	4096×2160 (50/59.94/60, 4:4:4)	4096×2160	DCI	YCbCr4:4:4, YCbCr4:2:2, YCbCr4:2:0 supported

(RB): Reduced Blanking

Notes:

- For 4096x2160 ("42", "44", "46"):
  The source device may select 3840x2160 (30p, YCbCr 4:4:4) depending on the EDID definition.
  First set built-in EDID and then select 4096x2160 in the source device side.
- For YCbCr4:2:0 ("43", "44"):
  The source device may select 3840x2160 (30p, YCbCr 4:4:4) depending on the EDID definition. First set built-in EDID and then select YCbCr 4:2:0 in the source device side.

[Table 8.3] Maximum resolution and supported pixels

Pixels / Max. resolution		640×480	800×600	1024×768	1280×720	1280×768	1280×800	1280×960	1280×1024	1360×768*	1366×768*	1400×1050	1440×900	1600×900	1600×1200	1680×1050	1920×1080	1920×1200	2048×1152	2560×1440	2560×1600	2160p30	4096×2160p30	2160p60	4096×2160p60
00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
05	1080p (59.94/60)	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N
06	720p	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
07	1080i	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
08	1080p (24/25/30/50)	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N
09	800×600	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
10	1024×768	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
11	1280×720	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
12	1280×768	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
13	1280×800	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
14	1280×960	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
15	1280×1024	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
16	1360×768	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N
17	1400×1050	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N
18	1440×900	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N
19	1600×900	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N
20	1600×1200	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N
21	1680×1050	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N
22	1920×1080	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N
23	1920×1200	Y	Y	Y	N	N	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N
24	2048×1152	Y	Y	Y	N	N	N	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N
25	2560×1440	Y	Y	Y	N	N	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N
26	2560×1600	Y	Y	Y	N	N	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N
41	2160p (24/25/30)	Y	Y	Y	N	N	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N
42	4096×2160 (24/25/30)	Y	Y	Y	N	N	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N
43	2160p (50/59.94/60, 4:2:0)	Y	Y	Y	N	N	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	P	N
44	4096×2160 (50/59.94/60, 4:2:0)	Y	Y	Y	N	N	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	P	P
45	2160p (50/59.94/60, 4:4:4)	Y	Y	Y	N	N	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	N
46	4096×2160 (50/59.94/60, 4:4:4)	Y	Y	Y	N	N	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Y: Supported, P: Only YCbCr 4:2:0, N: Not supported, —: Not used

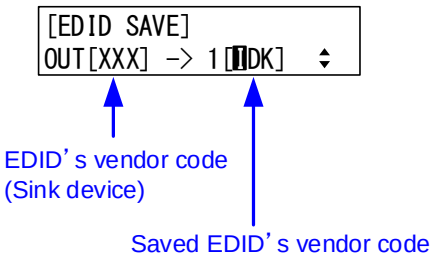
* Set the EDID supported pixels of 1360x768 and 1366x768 in “8.9.5 WXGA”. 1360x768 is set by default.

8.9.2 Copying EDID

Menu	Top→EDID→EDID SAVE

EDID of the sink device is loaded and registered to the ICP.
The copied EDID will be treated as built-in EDID if "**8.9.1 EDID Resolution**" is set for "01" to "04".
Press the MENU/SET key to execute the copy.

"45:2160p (50/59.94/60, 4:4:4)" is saved by default.
The EDID's vendor code is displayed as the copied EDID name.



[Fig. 8.19] Default EDID saving

8.9.3 Deep Color

Menu	Top→EDID→EDID DEEP COLOR
Setting for	Each input channel
Setting value	24Bit [Default], 30Bit

You can set the color depth to be output from the source device.
The setting will be applied only if built-in EDID ("05" to "46") is selected for "**8.9.1 EDID Resolution**".

If you select "30Bit", compared to "24Bit", "30Bit" is transmitted using a higher clock frequency, which may cause noise if a cable with a bad quality or a long cable is connected. In such a case, the noise may be removed by setting the color to "24Bit".
Press the MENU/SET key to apply setting.

8.9.4 LPCM Audio

Menu	Top→EDID→EDID LINEAR PCM
Setting for	Each input channel
Setting value	32kHz 44.1kHz 48kHz [Default] 88.2kHz 96kHz 192kHz

You can set the maximum sampling frequency of LPCM that is output from the source device.
The setting will be applied only if built-in EDID (“05” to “46”) is selected for “**8.9.1 EDID Resolution**”.
Press the MENU/SET key to apply setting.

8.9.5 WXGA

Menu	Top→EDID→EDID WXGA SELECT
Setting for	Each input channel
Setting value	1360x768 [Default], 1366x768

If the selected built-in EDID includes WXGA, you can select a resolution (1360x768 or 1366x768) of WXGA.
The setting will be applied only if built-in EDID (“05”, “08” and “16” to “22”) is selected for
“**8.9.1 EDID Resolution**”.
Press the MENU/SET key to apply setting.

【See: [Table 8.2] Maximum resolution of EDID】
【See: [Table 8.3] Maximum resolution and supported pixels】

8.10 LAN communication

The ICP can be accessed and controlled through LAN communication.

The ICP does not support automatic acquisition of IP address using DHCP (Dynamic Host Configuration Protocol). If you use the ICP in a network with DHCP, keep a fixed IP address. If controlling peripheral devices connected over LAN from the ICP, keep multiple fixed IP addresses.

8.10.1 IP address

Menu	Top→LAN→IP ADDRESS
Setting value	0.0.0.0 to 255.255.255.255 [Default] 192.168.1.199

You can set the IP address.
Press the MENU/SET key to apply setting.

8.10.2 Subnet mask

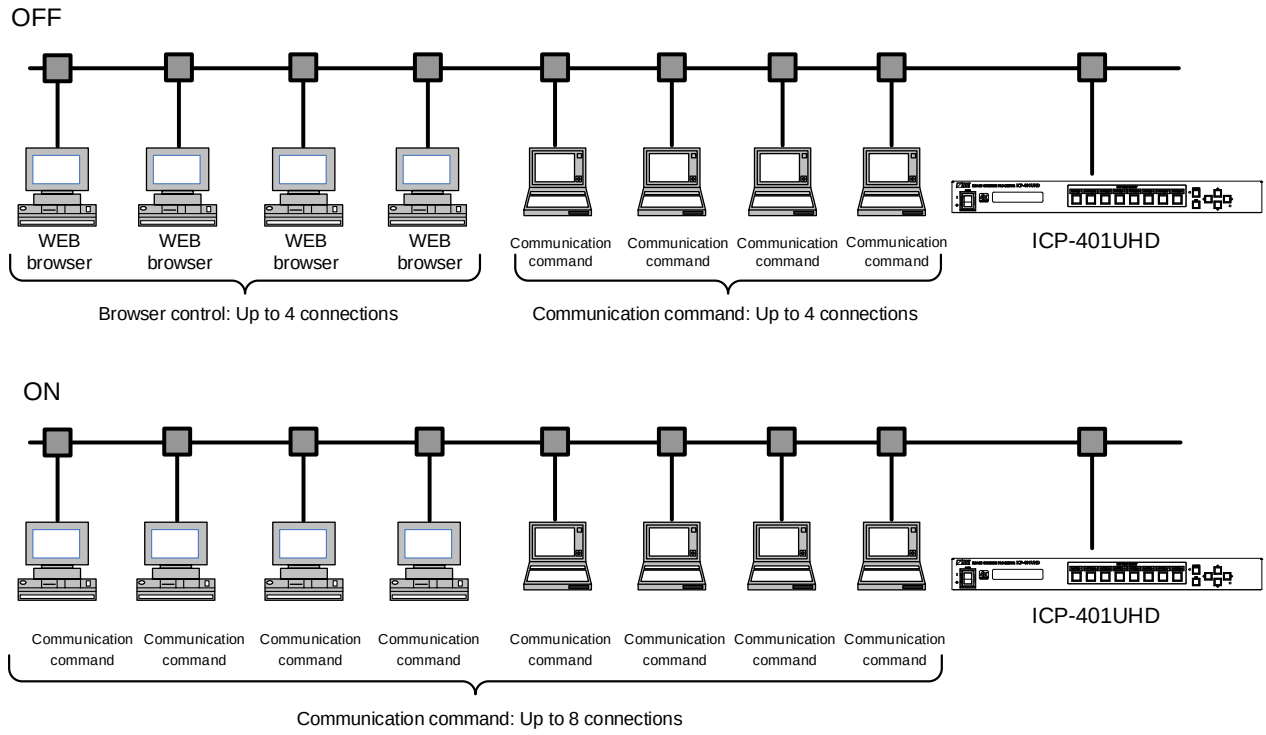
Menu	Top→LAN→SUBNET MASK
Setting value	0.0.0.0 to 255.255.255.254 [Default] 255.255.255.000

You can set the subnet mask.
Press the MENU/SET key to apply setting.

8.10.3 TCP port number

Menu	Top→LAN→CONTROL PORT
Setting value	1 : 1100, 6000 to 6999 : TCP port number [Default] 1100
	2 : OFF : Up to 4 connections can be used [Default]
	2 : ON : Up to 8 connections can be used

You can set the TCP port number to control the ICP externally.
"OFF" : Connections will be divided into 4 for WEB browser control (HTTP port number is fixed 80) and 4 for communication command control at maximum.
"ON" : Connections will be assigned to 8 communication command controls at maximum.
For communication command control, set the port number to a value from "1100", "6000" to "6999".
Press the MENU/SET key to apply setting.



[Fig. 8.20] Connection setting

8.10.4 MAC address

Menu	Top→LAN→MAC ADDRESS

You can display the MAC address.

8.11 Preset memory

8.11.1 Recalling preset memory

Menu	Top→PRESET→PRESET LOAD
Setting value	01 to 32: The number of preset memory 1 to 32

You can recall settings saved in the preset memory.
Once you recall a setting, output video settings will be updated.
Press the MENU/SET key to apply setting.

8.11.2 Saving preset memory

Menu	Top→PRESET MEMORY→PRESET SAVE
Setting value	01 to 32: The number of preset memory 1 to 32

You can save the current settings into the preset memory.
Up to 32 preset memories can be saved and named (up to 10 characters in ASCII codes, 20 to 7D).
If you do not need to name the memory, you can skip the step.
Press the MENU/SET key to apply setting.

[Table 8.4] Settings saved in preset memory

Menu	Description
Input timing	Start position, Active area, Aspect ratio, Contrast, Brightness, Blank color
Window setting	Editing window overlay titling
Output timing	Output resolution, Aspect ratio of sink device, Test pattern, Display position, Display size, Background color
Audio setting	Audio input level, Audio output level, Selecting audio input channel, Test tone

Note:
Do not power off the ICP while “Saving” is displayed, otherwise the setting information may be lost.

8.11.3 Editing preset memory name

Menu	Top→PRESET MEMORY→PRESET EDIT
Setting value	01 to 32: The number of preset memory 1 to 32 ASCII code

You can name preset memory using up to 10 characters in ASCII codes.
Press the MENU/SET key to apply setting.

Note:
Do not power off the ICP while “Saving” is displayed, otherwise the setting information may be lost.

8.11.4 Start-up setting

Menu	Top→PRESET MEMORY→PRESET START UP
Setting value	[Table 8.5] Start-up setting

You can set which settings will be applied at start-up

[Table 8.5] Start-up setting

Item	Setting value	Startup operation
Last channel	LAST MEMORY [Default]	Starts with the settings last time the ICP powered off.
Preset memory	PRESET MEMORY 01 to PRESET MEMORY 32	Starts with the settings saved in the preset memory. For settings that are not saved in the preset memory, settings last time the ICP powered off will be applied.
Default setting	DEFAULT MEMORY	The default of settings listed in “**8.11.2 Saving preset memory**” will be applied.

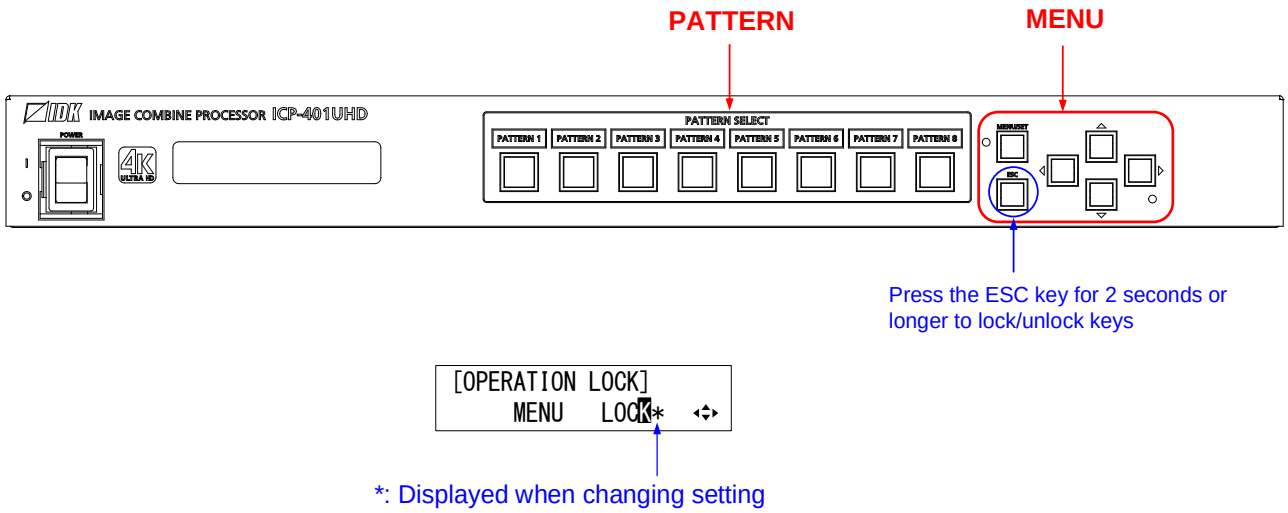
8.12 Other settings

8.12.1 Key function lock

Menu	Top→OTHERS→OPERATION LOCK
Setting for	MENU, PATTERN
Setting value	LOCK [Default], UNLOCK

You can set the key function lock.
PATTERN: PATTERN SELECT keys will be locked/unlocked
MENU: MENU/SET, ESC, and arrow keys will be locked/unlocked

【See: 7.5 Locking/unlocking front key function】



[Fig. 8.21] Locking/Unlocking

8.12.2 Beep

Menu	Top→OTHERS→BUZZER
Setting value	OFF, ON [Default]

You can enable/disable the audible beep (sounding every time you press a front panel key).

8.12.3 Power saving

Menu	Top→OTHERS→POWER SAVE
Setting value	OFF, ON [Default]

If you select “ON” and no key function is operated for 10 seconds, the display brightness is reduced to approximately 25%. When you operate any key, the luminance returns to 100%.

8.12.4 CEC connection

Menu	Top→OTHERS→CEC LINK
Setting value	OFF [Default], IN1, IN2, IN3, IN4

You can set the CEC connection for when CEC-supported device is connected to HDMI input connector. Press the MENU/SET key to apply setting.

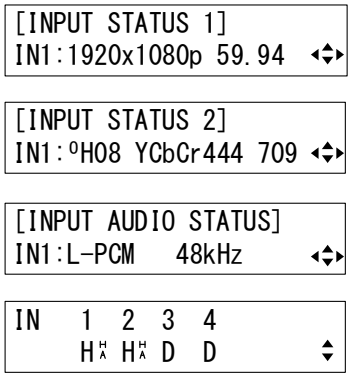
8.12.5 Top page

Menu Top→OTHERS→TOP DISPLAY

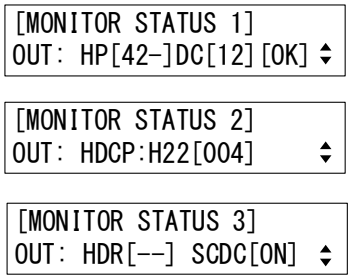
● **OFF [Default]**

● **ON**

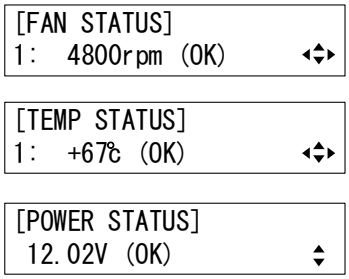
Input signal status



Sink device status



System status



[Fig. 8.22] Top page of VFD screen

You can change the status displayed in the top page.
ON: One page of input signal status (4 pages), sink device status (3 pages), and system status (3 pages) is displayed.
Pages can be switched using "▲" and "▼" keys.

【See: 8.12.6 Input signal status】
【See: 8.12.7 Sink device status】
【See: 8.12.8 System status】

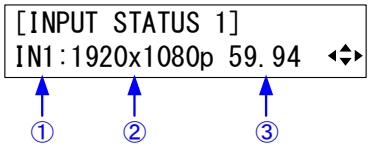
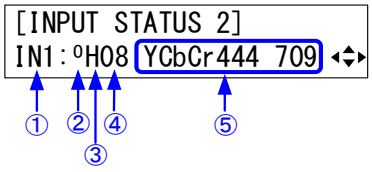
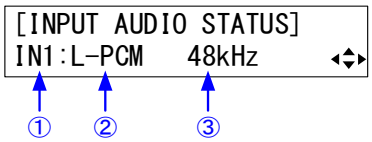
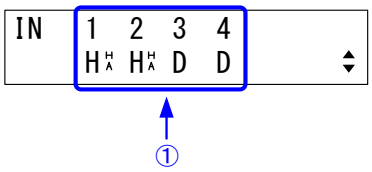
8.12.6 Input signal status

Menu　Top→OTHERS→INPUT STATUS

You can view the input signal status that is input from HDMI input connector.

【See: 8.12.5 Top page】

[Table 8.6] Input signal status

	Display	Description
Input signal status 1		① Input channel number ② Input resolution ③ Input vertical sync frequency When no signal is input, “No Signal” is displayed.
Input signal status 2		① Input channel number ② Stream type 0 : HDCP 2.2 stream type 0 1 : HDCP 2.2 stream type 1 ③ Input signal and HDCP d : DVI signal, without HDCP D : DVI signal, with HDCP h : HDMI signal, without HDCP H : HDMI signal, with HDCP ④ Color depth 08 : 24 bit/pixel (8 bit/component) 10 : 30 bit/pixel (10 bit/component) 12 : 36 bit/pixel (12 bit/component) ⑤ Color space When no signal is input, “No Signal” is displayed.
Input signal status 3		① Input channel number ② Input audio signal L-PCM :LPCM COMPRESSED AUDIO: Compressed audio ③ Input sampling frequency “No Signal” : No signal is input “No Audio” : No audio is input
Input signal status 4		① Input signal H : HDMI signal D : DVI signal H : With HDCP A : With audio input

8.12.7 Sink device status

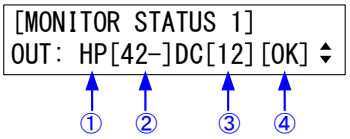
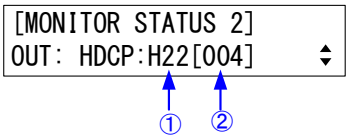
Menu Top→OTHERS→MONITOR STATUS

You can view the status of sink device connected to output connectors.

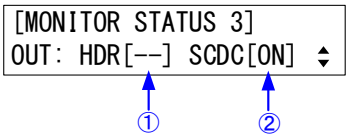
【See: 8.12.5 Top page】

[Table 8.7] Sink device status

[1/2]

	Display	Description
Sink device status 1		① Audio HC : Compressed audio supported HP : Compressed audio not supported (LPCM only) D : DVI monitor ② Color space (x : Actual value to be displayed) 4xx : YCbCr 4:4:4 supported -xx : YCbCr 4:4:4 not supported x2x : YCbCr 4:2:2 supported x-x : YCbCr 4:2:2 not supported xx0 : YCbCr 4:2:0 supported xx- : YCbCr 4:2:0 not supported ③ Color depth 8 : 24 bit/pixel (8 bit/component) 10 : 30 bit/pixel (10 bit/component) 12 : 36 bit/pixel (12 bit/component) ④ Reading EDID OK : Completed RD : Error CS : Checksum error When no sink device is connected, “UNCONNECTED” is displayed.
Sink device status 2		① HDCP H22 : HDCP2.2 supported H14 : HDCP1.4 supported OFF : HDCP not supported --- : Not connected ② HDCP authorization 000 : None 001 : Being authorized 002 : Being authorized 003 : Being authorized 004 : Completed correctly 005 : Error When no sink device is connected, “UNCONNECTED” is displayed.

[2/2]

	Display	Description
Sink device status 3		① HDR ON : HDR supported --- : HDR not supported ② SCDC ON : SCDC supported --- : SCDC not supported When no sink device is connected, "UNCONNECTED" is displayed.

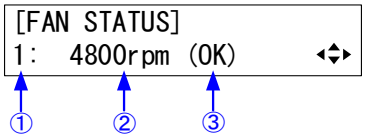
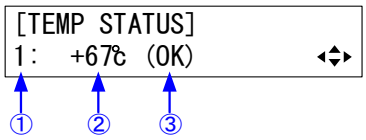
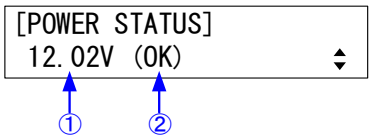
8.12.8 System status

Menu Top→OTHERS→SYSTEM STATUS

You can view the system status of system.

【See: 8.12.5 Top page】

[Table 8.8] System status

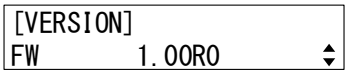
	Display	Description
System status 1		① FAN number (1, 2) ② Rotation speed ③ FAN status OK : No problem detected NG : Problem detected
System status 2		① Temperature sensor(1, 2) ② Temperature ③ Temperature status OK : No problem detected NG : Problem detected
System status 3		① Power supply voltage ② Power supply voltage status OK : No problem detected NG : Problem detected

8.12.9 Viewing version information

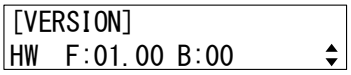
Menu Top→OTHERS→VERSION

You can view the firmware and hardware versions.
The version information is displayed on two pages, and you can switch pages by pressing "▲" and "▼" keys.

Firmware version



Hardware version



[Fig. 8.23] Viewing versions

9 Product specification

Item			Description
Input	Video	HDMI/DVI	4 inputs HDMI Deep Color (*1)/DVI 1.0 TMDS single link, HDCP 1.4/2.2 TMDS clock: 25 MHz to 300 MHz, TMDS data rate: 0.75 Gbps to 18 Gbps EDID emulation Connector: Female HDMI Type A (19-pin)
		Format	VGA to 4K (Dot clock: 25 MHz to 600 MHz) 480p / 720p / 1080i / 1080p / 4K (Up to 4K@60 (4:4:4))
	Audio	Digital	4 inputs 2-channel LPCM Sampling frequency: 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit Reference level: -20 dBFS, Max. input level: 0 dBFS Connector: Female HDMI Type A (19-pin)
Output	Video	HDMI/DVI	1 output HDMI Deep Color (*1)/DVI 1.0 TMDS single link, HDCP 1.4/2.2 TMDS clock: 74.175 MHz to 296.703 MHz, TMDS data rate: 2.225 Gbps to 17.802 Gbps Connector: Female HDMI Type A (19-pin)
		Format	VESAHD / WUXGA *VESAHD / WUXGA, only Reduced Blanking is supported. 1080i / 1080p / 4K (3840 x 2160) / 4K (4096 x 2160)
	Audio	Digital	1 output 2-channel LPCM Sampling frequency: 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit Reference level: -20 dBFS, Max. output level: 0 dBFS Connector: Female HDMI Type A (19-pin)
Maximum transmission distances		Digital input	98 ft. (30 m) (1080p@60), 39 ft. (12 m) (4K@60) (*2)
		Digital output	98 ft. (30 m) (1080p@60), 39 ft. (12 m) (4K@60) (*2)
Functions		Scan Converter	Video combination, 32 window layout patterns, Motion adaptive interlaced/progressive conversion, Aspect ratio control, Picture adjustment (brightness, contrast, display position, display size, etc.), Truly seamless switching (single-window display mode), Seamless switching with one black frame (multi-window display mode) (*3)
		Others	All functions and configuration settings accessible through browser, Preset memory (32 settings), Last memory, Anti-snow (*4), Connection Reset (*5), Front key function lock
External control		LAN	1 port/RJ-45 10Base-T/100Base-TX (Auto Negotiation), Auto MDI/MDI-X
General		Power	100 - 240 VAC ± 10%, 50 Hz/60 Hz ± 3 Hz
		Power consumption	About 54 Watts
		Dimensions	16.9 (W) × 1.7 (H) × 11.8 (D)" (430 (W) × 44 (H) × 300 (D) mm) (EIA 1U) (Excluding connectors and the like)
		Weight	8.6 lbs. (3.9 kg)
		Temperature	Operating: 32°F to 104°F (0°C to +40°C) Storage : -4°F to +176°F (-20°C to +80°C)
		Humidity	Operating/Storage: 20% to 90% (Non Condensing)

*1 30 bit/pixel (10 bit/component) Deep Color is supported while x.v.Color, 3D, ARC and HEC are not supported.
WQHD, WQXGA of input signal and 4K format of I/O signal: 24 bit/pixel (8 bit/component) is supported.

*2 The maximum cable distance varies depending on the connected devices and was measured under following conditions:
・1080p@60: when IDK's AWG 24 cable was used and signals of 1080p@60 24 bit/pixel (8 bit/component) was input or output.
・4K@60 : when IDK's 18 Gbps supported cable was used and signals of 4K@60 24 bit/pixel (8 bit/component) was input or output
The maximum cable distance depends on the connected devices. The distance may not be extended with some device combinations, cabling method, or other manufacturer's cable. Video may be disturbed or may not be output even if signals are within the range mentioned above.

*3 Seamless switching with a black frame

*4 The anti-snow feature automatically fixes snow noise that is a specific symptom of HDCP-compliant signals and mainly occurs at start-up. This feature does not work when snow noise has already occurred during startup or when it occurs due to a bad condition of the transmission line.

*5 For digital systems, some problems, such as an HDCP authentication error, can often be recovered by physically disconnecting and reconnecting the digital cables. However, the Connection Reset feature will fix these problems automatically without the need to physically plug and unplug the cables. It creates the same condition as if the cable were physically disconnected and reconnected. This feature only works for the ICP's output. If other devices are connected between the ICP's output and sink device, this feature may be invalid.

10 Troubleshooting

This chapter recommends what to do if you have problems operating the ICP.

In case the ICP does not work correctly, please check the following items first.

- Are the ICP and all devices plugged in and powered on normally?
- Are cables connected correctly?
- Are there no loose connections?
- Are correct cables supported by devices being used?
- Are specifications of connected devices matched to each other?
- Are settings of the sink device correct?
- Are there any nearby objects that may cause noise?

If the problem still cannot be solved, perform the following actions. Refer to manuals of connected devices as well, since they may possibly be the cause of the problem.

Problem	Cause/Check item/Solution	Page
● Video output		
Video is not output.	If there are no problems with cable connections, first check [1] and [2] below.	－
	[1] Is the output resolution setting of this device set to the input resolution supported by the sink device? If the EDID resolution is set to 1080i, the video may not be output to the sink device that does not support the interlaced signals. Vertical sync frequency: For TV output resolutions, video of 59.94 Hz or 60Hz may not be output. PC output resolutions may not be output to LCD TVs and plasma TVs.	49
	[2] Are signals output from the source device? If the input resolution is displayed in “INPUT STATUS”, check [3] to [6]; if “No Signal” is displayed, check [7] and [8].	68
	[3] If the display device does not support HDCP, video is not output when signal with content protection is input. Some HDMI/DVI devices check if the connected device is HDCP compliant and determines whether to output HDCP signal or not. Since the ICP is HDCP compliant, video may not be output if the ICP is connected to a sink device that does not support HDCP. In this case, disable HDCP input from the input device in “**8.2.2 HDCP input setting**”.	69 35

Problem	Cause/Check item/Solution	Page
● Video output (Cont'd)		
Video is not output.	[4] If a long cable is connected for input or output, replace it with a 16 ft. (5 m) or shorter cable. Even though a 16 ft. (5 m) or longer cable can be connected for digital I/O of the ICP, HDCP authorization or EDID acquisition may fail depending on the cable quality and the connected device.	—
	[5] Are signals that are not supported being input?	56
	[6] Change the setting of Hot plug ignoring duration.	47
	[7] Is the set no-signal input monitoring time too short?	34
	[8] If the source device has multiple output connectors, check the video output settings of the source device.	—
Video is interrupted or has noise.	When high-speed signal (high resolution: such as UXGA, WUXGA, QWXGA, WQHD, WQXGA, 1080p, 4K; DEEP COLOR signal) is input or output, video may not be displayed or noise may appear depending on the cable quality and the connected device. Change the resolution to a lower level and/or disable Deep Color. You can check the resolution and color depth of the input signal in input signal status and you can also limit resolution and color depth of input signal according to the EDID setting.	56 59
Deep Color signal is not output.	Does the sink device support Deep Color? If not, video is output at 24 bit/pixel (8 bit/component) even if Deep Color signal is input.	59
Video blinks.	If interlace signal is input to a sink device that does not support interlace signals, the video may blink. Check the output resolution of the sink device.	49
Video edges (top/bottom/right/left) are cut out.	Some sink devices overscan input video, and the video may be cut out. Check the display setting of the sink device.	—

Problem	Cause/Check item/Solution	Page
● Video output (Cont'd)		
Video looks shrunken horizontally or vertically.	Some sink devices display input video with full screen mode, and the aspect ratio cannot be kept. Check the display setting of the sink device. With some resolutions, full-screen display cannot be avoided. In that case, change the output resolution of the source device.	ー
Black bars appear on PC images. Only part of the PC image is displayed, and the rest of the images is displayed by moving the mouse.	If the PC has the Panel Fit function, select "Scale Full Screen". If the resolution that is set for the PC and the resolution that is actually output from the PC are not matched, those problems may occur. Check the resolution of the PC and the EDID resolution setting.	56
The dual monitor function cannot be set or it is canceled automatically.	When the no-signal input monitoring function works, the dual monitor function may not be enabled correctly. In this case, turn off this monitoring function.	34
Video is displayed in purple or green.	Some sink devices do not find the color space of the input video correctly, and the video may be displayed in purple or green. Set the correct color space in the output mode to solve this problem.	46
● Keys		
	Is key function locked?	23
	Power-up takes a time after the ICP is powered "ON".	19
● Communication command control		
The ICP cannot be controlled by the PC using communication command control	Are IP address and subnet mask of LAN communication set correctly? For using WEB browser, check if the setting for TCP port connection is enabled for WEB browser.	61 62
	Power-up takes a time after the ICP is powered "ON".	19
● Web browser control		
The ICP cannot be controlled by the PC over web browser	Is the connection setting of the TCP port valid for the web browser?	62

If additional assistance is required, please perform the following tests and then contact us.

- Does the same problem occur at all connectors?
- Connect the devices using genuine cables without connecting the ICP.
  The problem still cannot be solved? Please contact us for assistance.

User Guide of ICP-401UHD

Ver.1.4.0

Issued on: 3 February 2023

Headquarters IDK Corporation
7-9-1 Chuo, Yamato-shi, Kanagawa-pref.
242-0021 JAPAN
TEL: +81-46-200-0764 FAX: +81-46-200-0765
Email: idk_eng@idk.co.jp **URL:** www.idkav.com

USA IDK America Inc.
72 Grays Bridge Road Suite 1-C, Brookfield, CT 06804
TEL: +1-203-204-2445
Email: sales@idkav.com **URL:** www.idkav.com

Europe IDK Europe GmbH
Lise-Meitner-Str. 6, D-40878 Ratingen
TEL: +49-2102-578-301-0
Email: info@idkav.eu **URL:** www.idkav.com

Product information Arvanics Corporation
Support 7-9-1 Chuo, Yamato-shi, Kanagawa-pref.
242-0021 JAPAN
TEL: +81-46-259-6920 FAX: +81-46-259-6930
Email: info@arvanics.com **URL:** www.arvanics.com