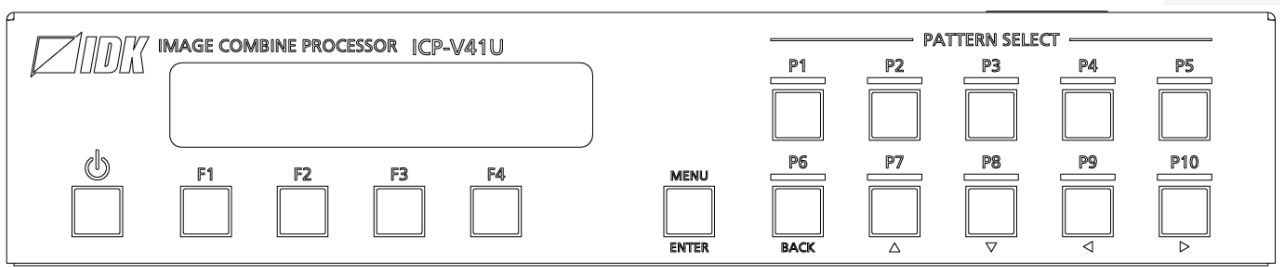


Multi-Window Video Processor

ICP-V41U

User Guide

Ver.1.1.0



Thank you for choosing our product.

Please thoroughly familiarize yourself with this guide before installing this equipment. We recommend keeping this manual together with the equipment for future reference as needed.

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

About technical documentation

■ Please read the following guides before connecting this equipment to a power source.

| | |
|--|--|
| 1. Safety Instructions Contains important safety instructions for the product to help ensure your own personal safety and protect the product and working environment from potential damage. | Provided with the product. |
| 2. Setup Guide Contains setup information and precautions for installing the product and connecting cables. | Download from www.idkav.com |

■ Please refer to the following guides as needed.

| | |
|---|--|
| 3. Operation Guide Describes how to configure and use the equipment. | Download from www.idkav.com |
| 4. User Guide Contains detailed explanation of functions, setting values, and restrictions. | |
| 5. Command Guide Contains information on controlling the equipment using communication commands through RS-232C or LAN communication. | |

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- 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.
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FCC STATEMENT

Note: 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.

(Class A)

Supplier's Declaration of Conformity
47 CFR § 2.1077 Compliance Information

Unique Identifier

Type of Equipment: 4K@60 Multi-Window Video Processor

Model Name: ICP-V41U

Responsible Party – U.S. Contact Information

Company Name: IDK America Inc.

Address: 72 Grays Bridge Road Suite 1-C, Brookfield, CT 06804

Telephone number: +1-203-204-2445

URL: www.idkav.com**FCC Compliance Statement**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

(FCC SDoC)

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 | <ul style="list-style-type: none"> • Lifting must be done by two or more personnel. <p>To avoid injury: When lifting the product, bend your knees, keep your back straight and get close to it with two or more persons.</p> |
|-----------------|--|





For installing and connecting products:

| | |
|----------------|--|
| Prohibited | <ul style="list-style-type: none"> • Do not place the product in unstable place. <p>Install the product in a horizontal and stable place, as this may fall or tip over and cause injury.</p> <ul style="list-style-type: none"> • Secure the product if installing in the locations with vibration. <p>Vibration may move or tip over the product unexpectedly, resulting in injury.</p> |
|----------------|--|


Warning

| | |
|---|--|
|  Instruction | <ul style="list-style-type: none"> • 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, arcing 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 electrically earthed/grounded. 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 | <ul style="list-style-type: none"> • 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, <ul style="list-style-type: none"> • 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. <p>Misuse of the power cable and plug may cause fire or electric shock. If power cables/plugs become damaged, contact your IDK representative.</p> |
|  Do not disassemble | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • Do not touch the product and connected cables during electric storms. Contact may cause electric shock. |
|  Instruction | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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. <p>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.</p> |
|--|--|







Caution

For installing and connecting products:

| | |
|---|---|
|  <p>Prohibited</p> | <ul style="list-style-type: none"> • 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. |
|  <p>No wet hands</p> | <ul style="list-style-type: none"> • Do not handle power plug with wet hands. Failure to observe this precaution may increase the risk of electric shock. |
|  <p>Instruction</p> | <ul style="list-style-type: none"> • 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 | <p>For products with the hot surfaces caution label only:</p> <ul style="list-style-type: none"> • Do not touch the product's hot surface. <p>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.</p> |
|  Prohibited | <ul style="list-style-type: none"> • Use only the supplied power cable and AC adapter. • Do not use the supplied power cable and AC adapter with other products. <p>If non-compliant adapter or power cables are used, it may increase the risk of fire or electric shock.</p> |
|  Unplug | <ul style="list-style-type: none"> • If the product won't be used for an extended period of time, unplug it. <p>Failure to observe this precaution may increase the risk of fire.</p> <ul style="list-style-type: none"> • Unplug the product before cleaning. <p>To prevent electric shock.</p> |
|  Instruction | <ul style="list-style-type: none"> • Do not prevent heat release. <p>If cooling fan stops, power off the product and contact IDK. Failure to do so may raise internal temperature and increase the risk of malfunction, fire, or electric shock.</p> <ul style="list-style-type: none"> • Keep vents clear of dust. <p>If the vent holes near the cooling fan or near the fan are covered with dust, internal temperatures increase and 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.</p> |

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About this Guide

This guide describes features, notes, and configurations of the ICP-V Multi-Window Video Processor.

Conventions

- The following terms are used in this guide.

OUT A : OUT 1A connector

OUT 1 : OUT 1A output channel

INOFF : Input channel OFF

W1 : Window1

W2 : Window2

W3 : Window3

W4 : Window4

- The following symbols are used in this guide.

[] : Menus and messages displayed on the front display and a WEB GUI.

“ ” : Reference

- The following notifications are used in this guide.

WARNING : Indicates a hazardous situation which, if not avoided, may result in malfunction or a fire.

Note : Addresses practices not related to personal injury, such as restrictions and attention.

About this Product

The ICP-V41U is a multi-window processor that simultaneously displays up to four windows on a single screen with customizable window layouts.

With four (4) HDMI video inputs, and a single HDMI scaled output, the ICP-V can support video resolutions, in and out, up to 4K@60 (4:4:4).

Audio signals can be distributed simultaneously as well as embedded/de-embedded for breakaway audio routing. The ICP-V support both HDMI digital audio and analog audio in and out.

The ICP-V can be configured and controlled remotely using RS-232C or LAN.

External devices can be controlled via RS-232C, LAN, CEC, or contact closure by registering control commands.

Basic menus and Advanced menus

The menu consists of basic and advanced menus.

The advanced menus are not displayed by default. To display advanced menus, set [SYSTEM SETTINGS] → [ADVANCED MENU] to [ON].

【Advanced menu display (P.84)】

○: Basic menu

●: Advanced menu

| ○ | OUTPUT IMAGE | Output video | 17 |
|---|-----------------------|---|----|
| ○ | RESOLUTION | Output resolution | 19 |
| ● | ASPECT RATIO | Aspect ratio for sink device | 20 |
| ○ | WINDOW POSITION | Window image position | 20 |
| ○ | WINDOW SIZE | Window image size | 21 |
| ○ | WINDOW IMAGE POSITION | Image position in the window | 22 |
| ○ | WINDOW IMAGE SIZE | Image size in the window | 22 |
| ● | WINDOW PRIORITY | Window priority | 23 |
| ○ | WINDOW ENABLE | Window displayed/hide | 23 |
| ● | WINDOW BACKGROUND | Window background | 23 |
| ● | OVERLAY TEXT POSITION | Overlay text position | 24 |
| ● | OVERLAY TEXT SIZE | Overlay text size | 24 |
| ● | BORDER SIZE | Window border size | 25 |
| ● | BORDER COLOR | Window border color | 26 |
| ○ | BACKGROUND COLOR | Background color | 26 |
| ○ | TEST PATTERN | Test pattern | 27 |
| ○ | IMAGE INITIALIZATION | Initialization of output image settings | 28 |

| ○ | OUTPUT SETTINGS | Output | 29 |
|---|------------------------|--|----|
| ○ | SIGNAL OUTPUT | Video synchronous signal output | 29 |
| ○ | VIDEO MUTE | Video mute | 29 |
| ● | NO SIGNAL OUTPUT | Video synchronous signal output for when no video signal input | 29 |
| ● | NO SIGNAL IMAGE | Video output for when no signal is input | 29 |
| ● | HDCP AUTHENTICATION | HDCP authentication | 30 |
| ● | HDCP RETRY | HDCP retries | 30 |
| ○ | CONNECTION RESET | Connection Reset | 31 |
| ● | SIGNAL FORMAT | Signal format | 31 |
| ● | DEEP COLOR | Deep Color | 32 |
| ● | SWITCHING EFFECT | Window transition effect | 32 |
| ● | SWITCHING EFFECT SPEED | Window transition speed | 32 |
| ● | FOLLOW SINK EDID | Automatic determining sink device EDID | 33 |
| ● | HOTPLUG MASK | Hot plug ignoring duration | 33 |
| ● | CEC CONNECTION | CEC connection | 34 |

| | | | |
|---|------------------------|---|----|
| ⦿ | INPUT IMAGE | Input resolution | 35 |
| | ⦿ ASPECT RATIO | Aspect ratio | 35 |
| | ⦿ ASPECT RATIO CONTROL | Aspect ratio keeping process | 36 |
| | ⦿ IMAGE POSITION | Image position | 37 |
| | ⦿ IMAGE SIZE | Image size | 37 |
| | ⦿ IMAGE INITIALIZATION | Video setting initialization | 38 |
| ⦿ | INPUT SETTINGS | Input | 39 |
| | ⦿ NO INPUT MONITORING | Hot plug output for when there is no active video input signal | 39 |
| | ⦿ HDCP INPUT | HDCP input | 41 |
| ⦿ | AUTO SWITCHING | Input channel automatic switching | 42 |
| | ⦿ SIGNAL ON PRIORITY | Automatic switching priority for when a video input signal is detected | 42 |
| | ⦿ SIGNAL OFF PRIORITY | Automatic switching priority for when there is no active video input signal | 42 |
| | ⦿ IGNORING DURATION | Ignoring duration after automatic switching | 43 |
| | ⦿ SWITCHING MODE | Switching mode of automatic switching | 43 |
| ⦿ | PICTURE ADJUSTMENT | Picture adjustment | 44 |
| | ⦿ OUTPUT BRIGHTNESS | Output brightness | 44 |
| | ⦿ OUTPUT CONTRAST | Output contrast | 44 |
| | ⦿ OUTPUT GAMMA | Output gamma | 44 |
| | ⦿ OUTPUT SETTING INIT. | Output image quality setting initialization | 44 |
| | ⦿ INPUT SHARPNESS | Input sharpness | 45 |
| | ⦿ INPUT BRIGHTNESS | Input brightness | 45 |
| | ⦿ INPUT CONTRAST | Input contrast | 45 |
| | ⦿ INPUT SATURATION | Input saturation | 45 |
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| | ○ SIGNAL OUTPUT | Audio output | 47 |
| | ○ AUDIO LEVEL | Audio level | 47 |
| | ○ MUTE | Mute | 47 |
| | ⦿ LIP SYNC | Lip Sync | 47 |
| | ⦿ SAMPLING FREQUENCY | Sampling frequency | 48 |
| | ⦿ MULTI AUDIO | Multi-channel audio output | 48 |
| | ⦿ DOWNMIX | Downmix | 49 |
| | ○ TEST TONE | Test tone | 49 |
| ○ | INPUT AUDIO SETTINGS | Input audio | 50 |
| | ○ SOURCE SELECTION | Input audio | 50 |
| | ○ AUDIO LEVEL | Audio level | 50 |
| | ⦿ LIP SYNC | Lip Sync | 50 |
| | ⦿ STABLE WAIT | Stable wait (Audio signal) | 50 |

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|---|-----------------------|--------------------------|----|
| ○ | EDID SETTINGS | EDID | 51 |
| ○ | EDID SELECTION | EDID selection | 51 |
| ○ | RESOLUTION | Resolution | 52 |
| ○ | SINK DEVICE EDID COPY | Copying EDID | 53 |
| ● | SIGNAL FORMAT | Signal format | 53 |
| ● | FRAME RATE | Frame rate | 53 |
| ● | DEEP COLOR | Deep Color | 54 |
| ● | Linear PCM | LPCM audio | 54 |
| ● | AAC | AAC audio | 55 |
| ● | Dolby Digital | Dolby Digital audio | 55 |
| ● | Dolby Digital Plus | Dolby Digital Plus audio | 55 |
| ● | Dolby TrueHD | Dolby TrueHD audio | 55 |
| ● | DTS | DTS audio | 55 |
| ● | DTS-HD | DTS-HD audio | 55 |
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| ● | COMMUNICATION MODE | Operation mode | 58 |

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| ○ | LAN SETTINGS | LAN | 59 |
| ○ | IP ADDRESS | IP address | 59 |
| ○ | SUBNET MASK | Subnet mask | 59 |
| ○ | GATEWAY ADDRESS | Gateway address | 59 |
| ○ | MAC ADDRESS | MAC address | 59 |
| ○ | COMMAND DESTINATION | Control command destination | 59 |
| ● | AUTO DISCONNECT | Automatic disconnection time (Timeout) | 60 |

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| ○ | CONTROL COMMAND | Control commands | 61 |
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| ○ | COMMAND LINK | Command link | 70 |
| ○ | EXECUTE CTRL COMMAND | Command execution | 71 |
| ○ | INITIALIZATION | Initializing registered command data, reply command, and link | 71 |
| ○ | INVALID DURATION | Ignoring duration after control command execution | 71 |
| ○ | ILLUMINATE FN. BUTTON | Illuminating function buttons | 72 |
| ○ | BLINKING DURATION | Function button blinking duration | 72 |

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| ○ | USER PRESET | User preset | 73 |
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| ● | EDIT CROSSPOINT | Editing crosspoint memory | 74 |
| ○ | RECALL CROSSPOINT | Recalling crosspoint memory | 74 |
| ○ | STORE PRESET SETTINGS | Saving preset memory | 75 |
| ○ | RECALL PRESET SETTINGS | Recalling preset memory | 73 |
| ○ | STORE PATTERN | Saving pattern memory | 76 |
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| ○ | BITMAP | Bitmap | 78 |
| ○ | BITMAP OUTPUT | Bitmap output | 79 |
| ● | BACKGROUND COLOR | Background color | 79 |
| ● | ASPECT RATIO | Aspect ratio | 79 |
| ● | IMAGE POSITION | Image position | 80 |
| ● | INPUT ASSIGN | Assigning input channel | 80 |
| ● | START-UP BITMAP | Start-up bitmap output | 80 |
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| ● | SYSTEM START-UP | Start-up status | 82 |
| ● | FUNCTION CMD.EXE. | Control command execution | 82 |
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| ○ | SYSTEM SETTINGS | Configuring ICP-V | 83 |
| ○ | FUNCTION ASSIGNMENT | Function button assignment | 83 |
| ○ | BUTTON LOCK TARGET | Grouping button security lockout | 83 |
| ○ | ALARM | Abnormality detection alarm | 84 |
| ○ | ADVANCED MENU | Advanced menu display | 84 |
| ● | LUMINANCE CONTROL | Automatic brightness adjustment of front display | 84 |
| ● | BUTTON HOLD TIME | Button press and hold time | 84 |
| ● | TOP PAGE | Top page | 85 |
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|---|-----------------------|--------------------------|----|
| ○ | VIEW STATUS | Status | 86 |
| ○ | OUTPUT STATUS | Output signal status | 86 |
| ○ | SINK DEVICE EDID | Viewing sink device EDID | 89 |
| ○ | INPUT STATUS | Input signal status | 90 |
| ○ | HARDWARE CHECK RESULT | System check | 91 |
| ○ | VERSION | Device information | 91 |

Menu

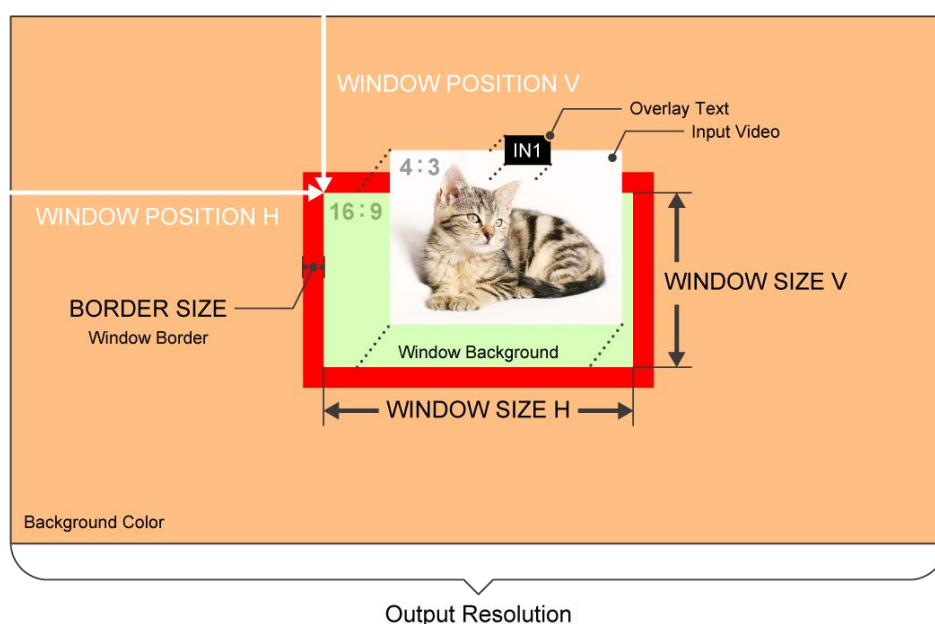
The table below is used in this chapter.

For advanced menus, **Advanced** is mentioned in the table.

| Menu | Manu name and menu hierarchy | Advanced | Command |
|-----------|------------------------------|--------------------------|---------|
| Parameter | Target to be set | | |
| Value | Setting value | Default value is shaded. | |

Output video

The images are output in the following order: Background color, window background, window border, input video, and overlay text.



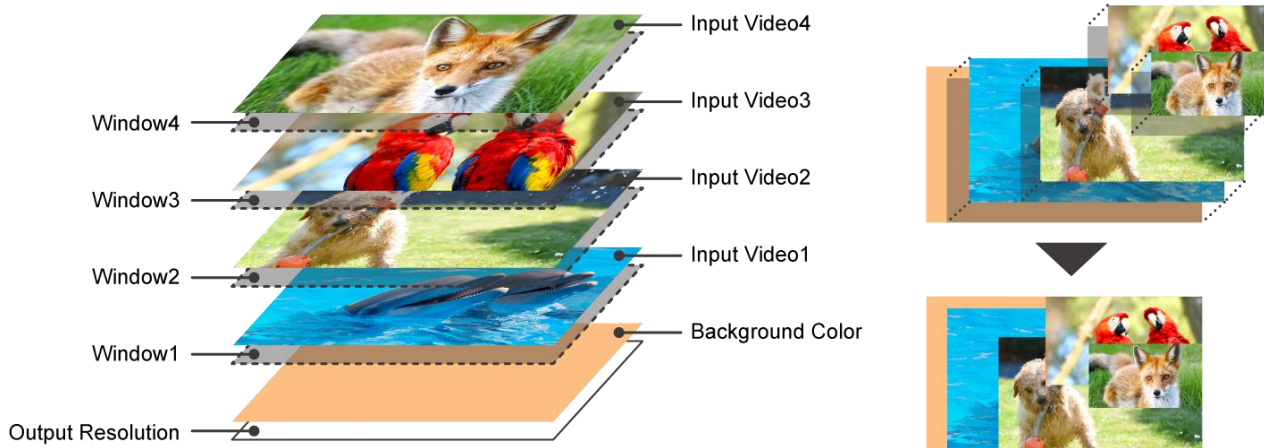
The aspect ratio of input video is kept based on the window size.

If “**Window background (P.23)**” is set to [ON], the window background is displayed for areas to which no input image is displayed.



Up to four windows are displayed simultaneously.

Images are displayed in the order below. The window display order can be changed in “**Window priority (P.23)**”.



The following settings are set by 0.1% from the front panel. Some output resolution settings may not be adjusted by 1 pixel. To adjust the following menus by 1 pixel, set them from the WEB browser or commands by 0.01%.

【Window image position (P.20)】

【Window image size (P.21)】

【Image position in the window (P.22)】

【Image size in the window (P.22)】

Output resolution

| Menu | OUTPUT IMAGE→RESOLUTION | | | @GOT/@SOT |
|-----------|-------------------------|---------------|-----------|-----------|
| Parameter | OUT1 | | | |
| Value | A (AUTO-A) | 1080p 60Hz | 2560x1600 | (WQXGA) |
| | 4096x2160 60Hz | 1080p 59.94Hz | 2560x1440 | (WQHD) |
| | 4096x2160 59.94Hz | 1080p 50Hz | 2048x1152 | (QWXGA) |
| | 4096x2160 50Hz | 1080i 60Hz | 1920x1200 | (WUXGA) |
| | 4096x2160 30Hz | 1080i 59.94Hz | 1920x1080 | (VESAHD) |
| | 4096x2160 29.97Hz | 1080i 50Hz | 1680x1050 | (WSXGA+) |
| | 4096x2160 25Hz | 720p 60Hz | 1600x1200 | (UXGA) |
| | 4096x2160 24Hz | 720p 59.94Hz | 1600x900 | (WXGA++) |
| | 4096x2160 23.98Hz | 720p 50Hz | 1440x900 | (WXGA+) |
| | 3840x2160 60Hz | 576p 50Hz | 1400x1050 | (SXGA+) |
| | 3840x2160 59.94Hz | 480p 59.94Hz | 1366x768 | (WXGA) |
| | 3840x2160 50Hz | | 1360x768 | (WXGA) |
| | 3840x2160 30Hz | | 1280x1024 | (SXGA) |
| | 3840x2160 29.97Hz | | 1280x960 | (QuadVGA) |
| | 3840x2160 25Hz | | 1280x800 | (WXGA) |
| | 3840x2160 24Hz | | 1280x768 | (WXGA) |
| | 3840x2160 23.98Hz | | 1024x768 | (XGA) |

Press the MENU/ENTER button to accept the set value.

[A]: Automatically selects the optimal resolution from EDID of the sink device connected to OUT A.

[4096x2160]/[3840x2160]/[1080p]/[1080i]/[720p]/[576p]/[480p]: Meets CTA-861.

Other resolutions: Meets VESA DMT/VESA CVT.

[2560x1600]/[2560x1440]/[2048x1152]/[1920x1200]/[1920x1080]: Reduced Blanking

For [A], the automatically selected resolution is displayed as follows:



If the output resolution is not optimal, [*] appears to the right of the resolution.



In this case, one of the following problem occurs.

- No optimal resolution can be output.
(The closest resolution to EDID of the sink device is output.)
- The sink device EDID cannot be read or "**Automatic determining sink device EDID (P.33)**" is set to [OFF].
(Signal is output at the last resolution. If the sink device EDID has not been read after initialization, signal is output at [1080p 59.94Hz].)

Aspect ratio for sink device

| | | | |
|-----------|---|----------|-----------|
| Menu | OUTPUT IMAGE→ASPECT RATIO | Advanced | @GUM/@SUM |
| Parameter | OUT1 | | |
| Value | RESOLUTION, FULL, 4:3, 5:3, 5:4, 16:9, 16:10, 256:135 | | |

[RESOLUTION]: Outputs video based on aspect ratio that is set in “**Output resolution (P.19)**”.

[FULL] : Outputs video on full-screen.

If the aspect ratio of the sink device and the resolution that is output from the ICP-V are not the same, the output video is displayed at the selected aspect ratio.

Window image position

| | | |
|-----------|-------------------------------------|-----------|
| Menu | OUTPUT IMAGE→WINDOW POSITION | @GOP/@SOP |
| Parameter | OUT1 | |
| | W1, W2, W3, W4 | |
| | H (Horizontal), V (Vertical) | |
| Value | -400.0% to +100.0% (0.0%) (by 0.1%) | |

The image position in the window can be set as ratio to the output resolution with reference to the upper left (0%). Its lower right is 100% of the output video.

For horizontal +: Right direction -: Left direction

For vertical +: Downward direction -: Upward direction



Window image size


| | | |
|-----------|---|-----------|
| Menu | OUTPUT IMAGE→WINDOW SIZE | @GOP/@SOP |
| Parameter | OUT1 | |
| | W1, W2, W3, W4 | |
| | H (Horizontal), V (Vertical), HV (Horizontal/Vertical properly) | |
| Value | 20.0% to 400.0% (100.0%) (by 0.1%) | |


The ratio to the output resolution can be set with reference to the upper left.



If the image size increases because of changing this setting, the color space may be converted from YUV 4:4:4 to YUV 4:2:2. To avoid this conversion, select a smaller value, set “**Output resolution (P.19)**” to a value other than [4096x2160]/[3840x2160], or set “**Window displayed/hide (P.23)**” to [OFF].

When the color space is converted to YUV 4:2:2, the font color of the values is changed as below and the following message is shown.

[IMAGE SIZE] 
OUT1W1: H100.0% V100.0%

[IMAGE SIZE] 
OUT1W1: H**100.0%** V**100.0%**

WEB browser [OUTPUT IMAGE]

The color space format for scaling is limited to YUV422.

Image position in the window

| | | |
|-----------|-------------------------------------|-----------|
| Menu | OUTPUT IMAGE→WINDOW IMAGE POSITION | @GQP/@SQP |
| Parameter | OUT1 | |
| | W1, W2, W3, W4 | |
| | H (Horizontal), V (Vertical) | |
| Value | -400.0% to +100.0% (0.0%) (by 0.1%) | |

The image position in the window can be set as the ratio to the window with reference to the upper left (0%). Its lower right is 100% of the output video.

For horizontal +: Right direction -: Left direction
For vertical +: Downward direction -: Upward direction

Image area that exceeds the window (out of the window) is not displayed.

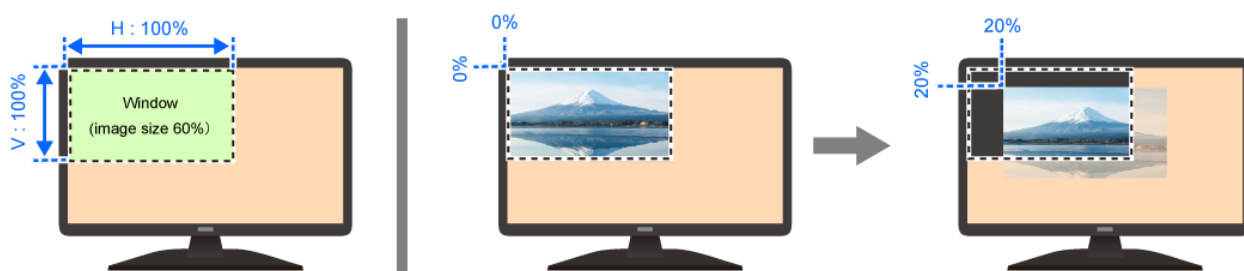
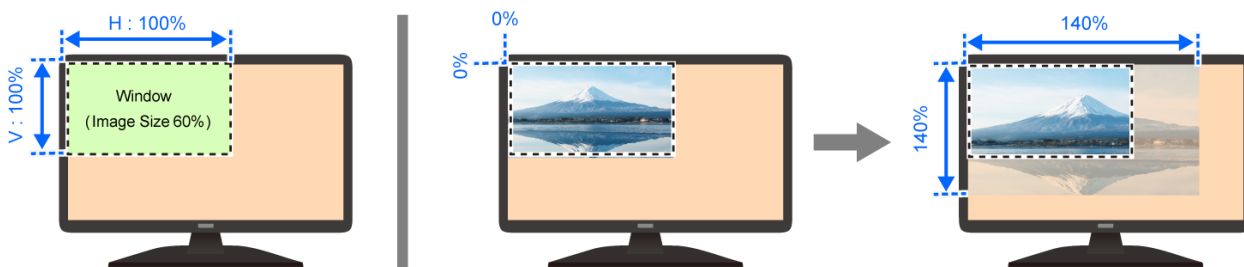


Image size in the window

| | | |
|-----------|---|-----------|
| Menu | OUTPUT IMAGE→WINDOW IMAGE SIZE | @GQP/@SQP |
| Parameter | OUT1 | |
| | W1, W2, W3, W4 | |
| | H (Horizontal), V (Vertical), HV (Horizontal/Vertical properly) | |
| Value | 20.0% to 400.0% (100.0%) (by 0.1%) | |

The ratio to the window can be set with reference to the upper left.

Image area that exceeds the window (out of the window) is not displayed.



Window priority

You can set the priority of windows to be displayed.

| | | | |
|-----------|------------------------------------|----------|-----------|
| Menu | OUTPUT IMAGE→WINDOW PRIORITY | Advanced | @GWP/@SWP |
| Parameter | OUT1 | | |
| Value | W1, W2, W3, W4 (W1 > W2 > W3 > W4) | | |

Press the MENU/ENTER button to accept the set value.

If windows are layered, the window of the highest priority is displayed on the top.

The leftmost has the highest priority. (Default: W1 > W2 > W3 > W4).

| | |
|--------------------------|---|
| [WINDOW PRIORITY] | ↔ |
| OUT1 : W1 > W2 > W3 > W4 | |

Window displayed/hide

You can hide the window.

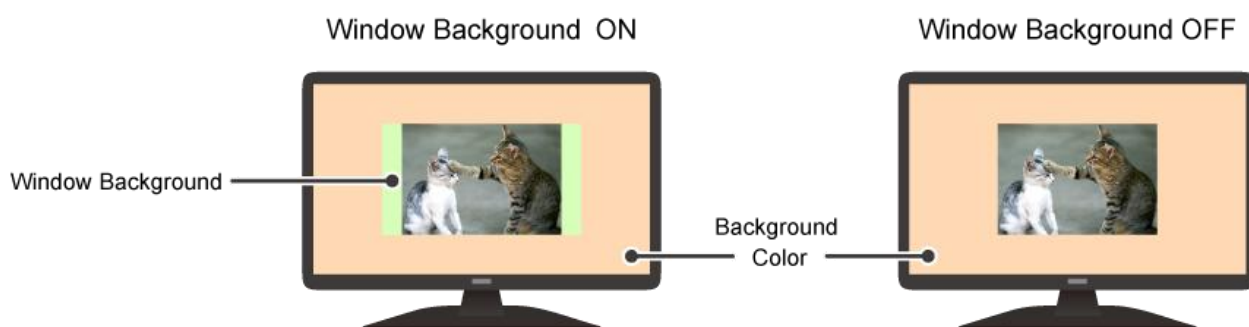
| | | |
|-----------|----------------------------|-----------|
| Menu | OUTPUT IMAGE→WINDOW ENABLE | @GWV/@SWV |
| Parameter | OUT1 | |
| | W1, W2, W3, W4 | |
| Value | ON, OFF | |

Window background

You can set the background that is displayed on each window.

| | | | |
|-----------|--------------------------------|---|-----|
| Menu | OUTPUT IMAGE→WINDOW BACKGROUND | Advanced | N/A |
| Parameter | OUT1 | | |
| | W1, W2, W3, W4 | | |
| | Background color | R (Red), G (Green), B (Blue), RGB (Red/Green/Blue properly) | |
| Value | ON, OFF | 0 to 255 | |

If [OFF] is selected, only input video is displayed.



Overlay text position

You can display/hide the overlay text on each window.

| | | | |
|-----------|--|----------|-----------|
| Menu | OUTPUT IMAGE→OVERLAY TEXT POSITION | Advanced | @GTO/@STO |
| Parameter | OUT1 W1, W2, W3, W4 | | |
| Value | OFF, TOP-LEFT, TOP-CENTER, TOP-RIGHT, BOTTOM-LEFT, BOTTOM-CENTER, BOTTOM-RIGHT | | |

If selecting a value other than [OFF], input channels are displayed as the overlay text. The input channel name can be edited from the WEB browser.



Overlay text size

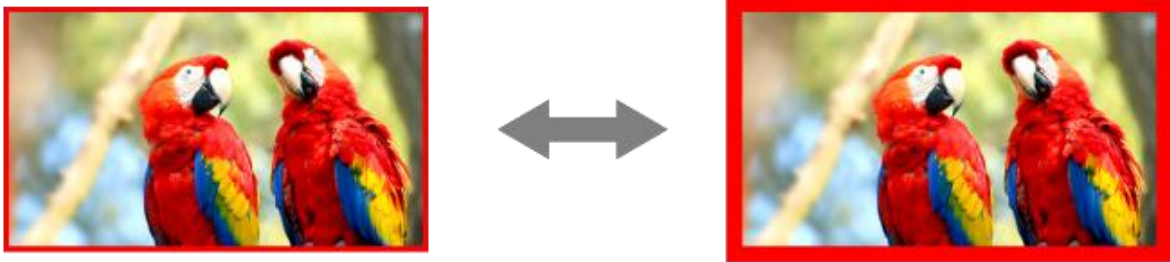
You can set the overlay text size to be displayed on the window.

| | | | |
|-----------|--------------------------------|----------|-----|
| Menu | OUTPUT IMAGE→OVERLAY TEXT SIZE | Advanced | N/A |
| Parameter | OUT1 W1, W2, W3, W4 | | |
| Value | SMALL, LARGE | | |

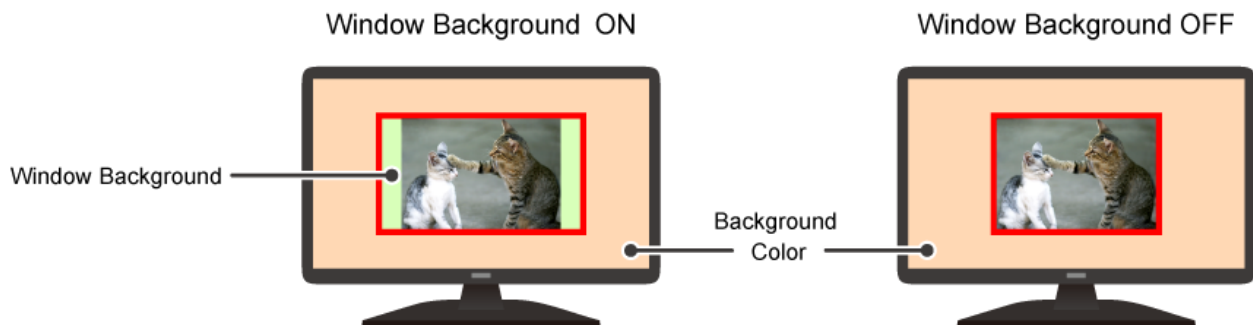
Window border size

| | | | |
|-----------|--------------------------|----------|-----------|
| Menu | OUTPUT IMAGE→BORDER SIZE | Advanced | @GFW/@SFW |
| Parameter | OUT1 | | |
| | W1, W2, W3, W4 | | |
| Value | 0 pixel to 15 pixel | | |

The same window border size is applied to left, right, top, and bottom.



If “**Window background (P.23)**” is set to [ON], the border is displayed outside of the window. If it is set to [OFF], the border is displayed outside of the input video.



Window border color

| | | | |
|-----------|---|----------|-----------|
| Menu | OUTPUT IMAGE→BORDER COLOR | Advanced | @GFC/@SFC |
| Parameter | OUT1 | | |
| | W1, W2, W3, W4 | | |
| | R (Red), G (Green), B (Blue), RGB (Red/Green/Blue properly) | | |
| Value | 0 to 255 | | |

Window Border Color : Black



Window Border Color : Red



Background color

| | | |
|-----------|---|-----|
| Menu | OUTPUT IMAGE→BACKGROUND COLOR | N/A |
| Parameter | OUT1 | |
| | R (Red), G (Green), B (Blue), RGB (Red/Green/Blue properly) | |
| Value | 0 to 255 | |

Default: Black



Set to orange



Test pattern

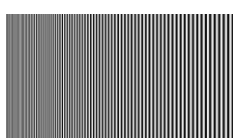
You can set the test patterns to be displayed at the resolution that is set in “**Output resolution (P.19)**”.

| Menu | OUTPUT IMAGE→TEST PATTERN | | @GTP/@STP |
|-----------|--|-----------------|-----------|
| Parameter | OUT1 | | |
| | Pattern | Scrolling | |
| Value | OFF (Input video), HORIZONTAL ZEBRA*, VERTICAL ZEBRA*, HORIZONTAL STRIPE, VERTICAL STRIPE, CROSS HATCH, BLUE RASTER, GREEN RASTER, RED RASTER, 50% WHITE RASTER, 100% WHITE RASTER, HORIZONTAL RAMP*, VERTICAL RAMP*, H-GRAY SCALE*, V-GRAY SCALE*, H-COLOR BAR*, V-COLOR BAR* | OFF, SLOW, FAST | |

*Navigation buttons: Changes values of adjustable features or navigates the menus/submenus.



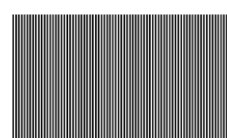
HORIZONTAL
ZEBRA



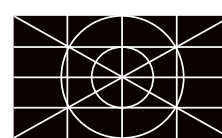
VERTICAL
ZEBRA



HORIZONTAL
STRIPE



VERTICAL
STRIPE



CROSS
HATCH



BLUE
RASTER



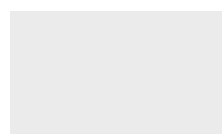
GREEN
RASTER



RED
RASTER



50% WHITE
RASTER



100% WHITE
RASTER



HORIZONTAL
RAMP



VERTICAL
RAMP



H-GRAY
SCALE



V-GRAY
SCALE



H-COLOR
BAR



V-COLOR
BAR

[ZEBRA]: Helps checking residual images.

Initialization of output image settings

| | | |
|-----------|-----------------------------------|-----|
| Menu | OUTPUT IMAGE→IMAGE INITIALIZATION | N/A |
| Parameter | OUT1 | |
| | W1, W2, W3, W4 | |
| Value | YES, NO | |

Select [YES] and press the MENU/ENTER button to initialize the settings.

【Window image position (P.20)】

【Window image size (P.21)】

【Image position in the window (P.22)】

【Image size in the window (P.22)】

Note

To restore settings, make a backup copy.

Output

Video synchronous signal output

| | | |
|-----------|-------------------------------|-----------|
| Menu | OUTPUT SETTINGS→SIGNAL OUTPUT | @GVO/@SVO |
| Parameter | OUT1A | |
| Value | ON, OFF | |

[ON] : Outputs video synchronous signal.

[OFF] : Stops outputting video synchronous signal and DDC 5 V signal electrically.

For some connected sink devices, the device switches into standby mode.

Video mute

| | | |
|-----------|----------------------------|-----------|
| Menu | OUTPUT SETTINGS→VIDEO MUTE | @GDB/@SDB |
| Parameter | OUT1A | |
| Value | ON, OFF | |

[ON]: Mutes output video (outputs black video signal).

Video synchronous signal output for when no video signal input

You can set the video output signal when an input channel without video signal is selected or [OFF] is set to an input channel.

| | | | |
|-----------|----------------------------------|----------|-----|
| Menu | OUTPUT SETTINGS→NO SIGNAL OUTPUT | Advanced | N/A |
| Parameter | OUT1A | | |
| Value | ON, 0 s to 60 s | | |

[ON] : Outputs video synchronous signal.

[0 s] to [60 s] : Stops outputting video signal* and disconnects DDC 5 V signal.

*Only if the following conditions are met:

- If “**Window displayed/hidden (P.23)**” is set to [ON], an input channel with no video signal or [OFF] is selected for all windows.
- No test pattern or bitmap is output.

When video signal output stops and DDC 5 V signal is disconnected, a sink device may switch into standby mode.

Video output for when no signal is input

| | | | |
|-----------|---|----------|-----|
| Menu | OUTPUT SETTINGS→NO SIGNAL IMAGE | Advanced | N/A |
| Parameter | OUT1 | | |
| | W1, W2, W3, W4 | | |
| Value | BLUE, BLACK, BACKGROUND COLOR, BITMAP1, BITMAP2, BITMAP3, BITMAP4 | | |

[BLUE] : Outputs blue video signal.

[BLACK] : Outputs black video signal.

[BACKGROUND COLOR] : Outputs the color set in “**Window background (P.23)**”.

[BITMAP1] to [BITMAP4] : Outputs the bitmap saved to the ICP-V.

HDCP authentication

| | | | |
|-----------|--|----------|-----------|
| Menu | OUTPUT SETTINGS→HDCP AUTHENTICATION | Advanced | @GEN/@SEN |
| Parameter | OUT1A | | |
| Value | HDCP 2.2, HDCP 1.4, HDCP INPUT ONLY, DISABLE | | |

[HDCP 2.2] : HDCP 2.2 or HDCP 1.4 authentication depending on the sink device
Outputs signal with HDCP.

[HDCP 1.4] : HDCP 1.4 authentication
Outputs signal with HDCP.

[HDCP INPUT ONLY] : HDCP 2.2 or HDCP 1.4 authentication depending on the sink device
Outputs signal depending on HDCP presence of input signal.
If input signal is protected by HDCP, outputs signal with HDCP.
If input signal is not protected by HDCP, outputs signal without HDCP.

[DISABLE] : No HDCP authentication
Outputs signal without HDCP.
Displays video only if input signal is not protected by HDCP.

For sink devices that are not supported by HDCP, signal without HDCP is output; video is displayed only if input signal is not protected by HDCP.

If [HDCP INPUT ONLY] is set, HDCP presence of output signal changes depending on HDCP presence of input signal. Some sink devices may not be displayed temporarily.

If video signal with HDCP 2.2 Type 1 is input, set this setting to [HDCP 2.2] or [HDCP INPUT ONLY] and connect to a sink device supporting HDCP 2.2.

HDCP retries

You can set the number of HDCP retries.

| | | | |
|-----------|----------------------------|----------|-----|
| Menu | OUTPUT SETTINGS→HDCP RETRY | Advanced | N/A |
| Parameter | OUT1A | | |
| Value | ETERNITY, 0 to 100 | | |

Press the MENU/ENTER button to accept the set value.

[ETERNITY] : Retires automatically until HDCP authentication is succeeded.

If HDCP authentication error occurs repeatedly, set the number of retries.

[0] to [100] : Retries automatically until reaching the set number of retries.

If authentication error occurs more than the set times, the ICP-V determines the sink device as a non-HDCP compliant device. In this case, only non-HDCP video input signal can be displayed.

If “**HDCP authentication (P.30)**” is set to a value other than [DISABLE], HDCP authentication is performed.

Connection Reset

| | | |
|-----------|----------------------------------|------|
| Menu | OUTPUT SETTINGS→CONNECTION RESET | @HAU |
| Parameter | OUT1A | |
| Value | YES, NO | |

Select [YES] and press the MENU/ENTER button to perform this feature.

Signal format

| | | | |
|-----------|--|----------|-----|
| Menu | OUTPUT SETTINGS→SIGNAL FORMAT | Advanced | N/A |
| Parameter | OUT1A | | |
| Value | HDMI YCbCr 4:4:4 MODE, HDMI YCbCr 4:2:2 MODE, HDMI YCbCr 4:2:0 MODE, HDMI RGB MODE, DVI MODE | | |

If “**Automatic determining sink device EDID (P.33)**” is set to [ON] (default), video is output according to the priority below:

| Value | Output signal format | | | | |
|-----------------------|----------------------|-------------------|-------------------|-------------------|-----|
| | Higher priority ← | | | → Lower priority | |
| HDMI YCbCr 4:4:4 MODE | HDMI YCbCr 4:4:4 | HDMI YCbCr 4:2:2 | HDMI RGB | HDMI YCbCr 4:2:0* | DVI |
| HDMI YCbCr 4:2:2 MODE | HDMI YCbCr 4:2:2 | HDMI RGB | HDMI YCbCr 4:2:0* | DVI | |
| HDMI YCbCr 4:2:0 MODE | HDMI YCbCr 4:2:0* | | | | |
| HDMI RGB MODE | HDMI RGB | HDMI YCbCr 4:2:0* | DVI | | |
| DVI MODE | DVI | | | | |

*HDMI YCbCr 4:2:0 enabled only for 4K@50/59.94/60.

If “**Automatic determining sink device EDID (P.33)**” is set to [OFF], video is output at the selected mode.

[HDMI YCbCr 4:2:0 MODE] : Enable only if “**Output resolution (P.19)**” is set to 4K@50/59.94/60.

If the sink device does not support HDMI YCbCr 4:2:0 or the output resolution is 4K@30 or lower, video is output at the priority of [HDMI YCbCr 4:4:4 MODE].

[DVI MODE] : Enable only for resolutions 4K@30 or lower.

For 4K@50/59.94/60, video is output at the priority of [HDMI RGB MODE].

Note

If DVI signal is output, digital audio is not output.

Deep Color

| | | | |
|-----------|----------------------------|----------|-----|
| Menu | OUTPUT SETTINGS→DEEP COLOR | Advanced | N/A |
| Parameter | OUT1A | | |
| Value | 24-BIT COLOR, 30-BIT COLOR | | |

[24-BIT COLOR] : Video is output at 24-BIT COLOR.

[30-BIT COLOR] : Video is output at 30-BIT COLOR only if sink device supporting 30-BIT COLOR is connected.

If output resolution is 4K@50/59.94/60, video is output at HDMI YCbCr 4:2:2 or HDMI YCbCr 4:2:0 regardless of “**Signal format (P.31)**”.

If a device that does not support 30-BIT COLOR is connected, video is output at 24-BIT COLOR.

If “**Automatic determining sink device EDID (P.33)**” is set to [OFF], video is output at 30-BIT COLOR regardless of the connected sink device status.

This setting is applied only if HDMI signal is output. For DVI signals, video is output at 24-BIT COLOR regardless of this setting.

Note

If 30-BIT COLOR video signal is output, noise may be on video or signal may not be transmitted. In those cases, the noise may be removed by selecting [24-BIT COLOR].

Window transition effect

| | | | |
|-----------|--------------------------------------|----------|-----|
| Menu | OUTPUT SETTINGS→SWITCHING EFFECT | Advanced | N/A |
| Parameter | OUT1 | | |
| | W1, W2, W3, W4 | | |
| Value | FREEZE→FADE OUT-IN, FADE OUT-IN, CUT | | |

[FREEZE→FADE OUT-IN] : Image freezes and then fades out/in.

[FADE OUT-IN] : Image fades out/in.

[CUT] : Switched image instantly.

Several black frames are output at the time of input channel switching.

Window transition speed

You can set the fade out/in speed for if “**Window transition effect (P.32)**” is set to a value other than [CUT].

| | | | |
|-----------|--|----------|-----|
| Menu | OUTPUT SETTINGS→SWITCHING EFFECT SPEED | Advanced | N/A |
| Parameter | OUT1 | | |
| | W1, W2, W3, W4 | | |
| Value | 100ms to 2000ms (350ms) (by 10ms) | | |

Automatic determining sink device EDID

The following settings are determined automatically according to the ICP-V settings and sink device EDID.

【Output resolution (P.19)】

【Signal format (P.31)】

【Sampling frequency (P.48)】

| | | | |
|-----------|----------------------------------|----------|-----|
| Menu | OUTPUT SETTINGS→FOLLOW SINK EDID | Advanced | N/A |
| Parameter | OUT1A | | |
| Value | ON, OFF | | |

[ON] : Follows the ICP-V settings and sink device EDID to output the optimal video/audio automatically.

[OFF] : Follows the ICP-V settings to output video/audio.

Notes

- If [ON] is selected and EDID cannot be acquired or EDID has an error, the sink device is determined as a DVI device. This may be solved by setting this feature to [OFF].
- If [OFF] is selected and an input channel with an Bitstream audio is selected, the Bitstream audio is output regardless of the sink device EDID status. If the sink device does not support the format, noise audio occurs.

Hot plug ignoring duration

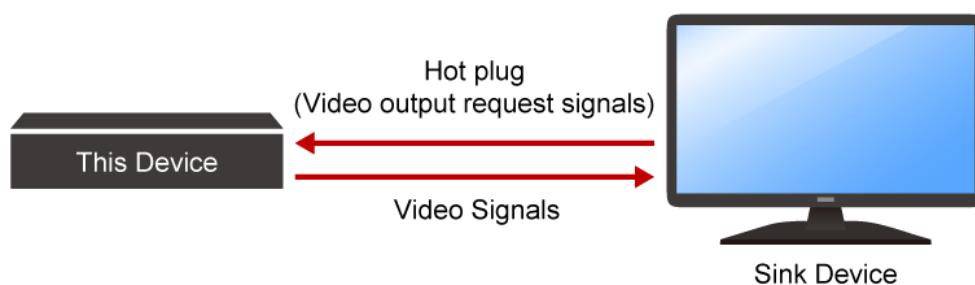
You can set the duration for ignoring video output request signals that are sent from the sink device.

| | | | |
|-----------|------------------------------|----------|-----|
| Menu | OUTPUT SETTINGS→HOTPLUG MASK | Advanced | N/A |
| Parameter | OUT1A | | |
| Value | OFF, 2s to 15s | | |

[OFF] : Always receives video output request signals from sink devices.

[2s] to [15s] : After receiving video output request signals, ignores these signals during the specified period.

If the signal request is repeated in a short cycle, the ICP-V resets the video output process. As a result, video may not be output. This problem can be solved by setting the ignoring duration.



CEC connection

| | | | |
|-----------|--|----------|-----------|
| Menu | OUTPUT SETTINGS→CEC CONNECTION | Advanced | @GCE/@SCE |
| Parameter | OUT1A | | |
| Value | NOT CONNECTED, IN1 to IN4, SELECTED CHANNEL, SELECTED CHANNEL2 | | |

Press the MENU/ENTER button to accept the set value.

[NOT CONNECTED] : Not connecting CEC

[IN1] to [IN4] : Connects to a desired input channel

[SELECTED CHANNEL] : Connects to the input channel that is selected for the Window1

[SELECTED CHANNEL2] : Connects to the input channel that is selected to the window having the highest priority

If you do not use CEC, select [NOT CONNECTED].

With CEC connection, if status of a sink device that is connected to an output connector is changed (for example, powering on/off) or CEC connection is changed, the ICP-V may change its EDID address according to the sink device address. In this case, the ICP-V disconnects the connection between the source device temporarily.

Input resolution

The size of the input image is increased or decreased while keeping the aspect ratio according to the settings of “**Aspect ratio (P.35)**” and “**Aspect ratio keeping process (P.36)**”.

The following settings are set by 0.1% from the front panel. Some output resolution settings may not be adjusted by 1 pixel. To adjust the following menus by 1 pixel, set them from the WEB browser or commands by 0.01%.

【Image position (P.37)】

【Image size (P.37)】

Aspect ratio

| Menu | INPUT IMAGE→ASPECT RATIO | Advanced | @GAP/@SAP |
|-----------|---|----------|-----------|
| Parameter | IN1 to IN4 | | |
| Value | AUTO-1, AUTO-2, THROUGH, FULL, 14:9 SIDE PANEL, 4:3 SIDE PANEL, 16:9 LETTER BOX, 14:9 LETTER BOX, 16:9, 14:9, 4:3 | | |

[AUTO-1]/[AUTO-2] : Follows “**Aspect ratio keeping process (P.36)**”.

When a letter box signal is input, video is output at the following aspect:

[AUTO-1] : 16:9 or 14:9

[AUTO-2] : 4:3

[THROUGH] : Does not increase or decrease the size of the input image.

[FULL] : Increases or decreases the size of the input image to display on the full window.

[14:9 SIDE PANEL] : 14:9 SIDE PANEL

[4:3 SIDE PANEL] : 4:3 SIDE PANEL

[16:9 LETTER BOX] : 16:9 LETTER BOX

[14:9 LETTER BOX] : 14:9 LETTER BOX

[16:9] : 16:9

[14:9] : 14:9

[4:3] : 4:3

Aspect ratio keeping process

You can set the mode for processing aspect ratio.

| | | | |
|-----------|---|----------|-----------|
| Menu | INPUT IMAGE→ASPECT RATIO CONTROL | Advanced | @GAR/@SAR |
| Parameter | IN1 to IN4 | | |
| Value | L-BOX/S-PANEL (Letter box/Side panel), S-CUT/TB-CUT (Side cut/Top bottom cut) | | |

[L-BOX/S-PANEL] : Full image: Increases or decreases the size of the input image without any cropping while keeping the aspect ratio. The lower layer image is displayed for no-image area.

[S-CUT/TB-CUT] : Full window: Increases or decreases the size of the input image to display the image on the full window while keeping the aspect ratio.

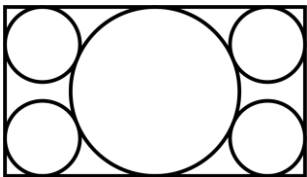
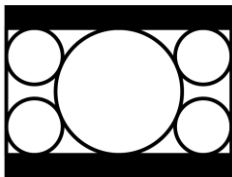
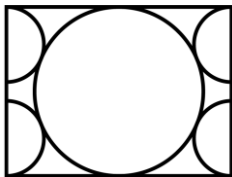
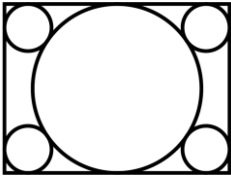
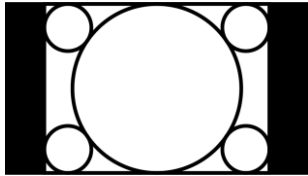
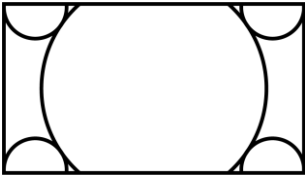
| Input video | Output video | |
|---|---|---|
| | L-BOX/S-PANEL | S-CUT/TB-CUT |
| 16:9 input image → 4:3 output | Letter box | Side cut |
|  |  |  |
| 4:3 input image → 16:9 output | Side panel | Top/Bottom cut |
|  |  |  |

Image position

You can change the position of the image to be displayed as follows:

Upper left of the window : 0%

Lower right of the window : 100%

Horizontal direction

Negative number : Shifts the image to the left.

Positive number : Shifts the image to the right.

Vertical direction

Negative number : Shifts the image to the upper direction.

Positive number : Shifts the image to the lower direction.

Image area that exceeds the window size cannot be displayed.

| Menu | INPUT IMAGE→IMAGE POSITION | Advanced | @GNW/@SNW |
|-----------|-------------------------------------|----------|-----------|
| Parameter | IN1 to IN4 | | |
| | H (Horizontal), V (Vertical) | | |
| Value | -400.0% to +100.0% (0.0%) (by 0.1%) | | |

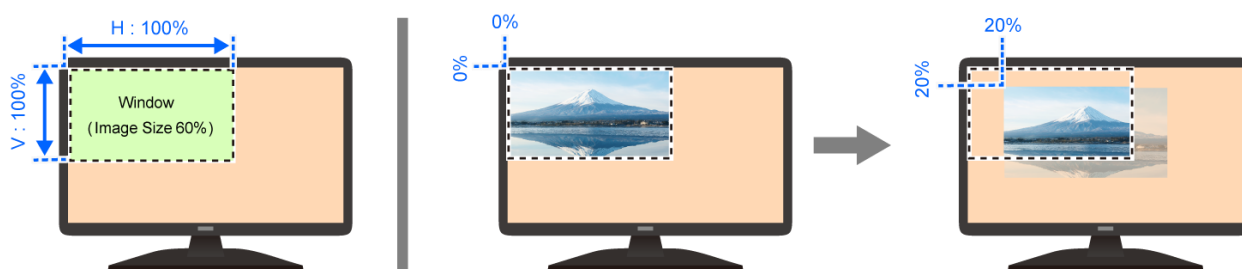
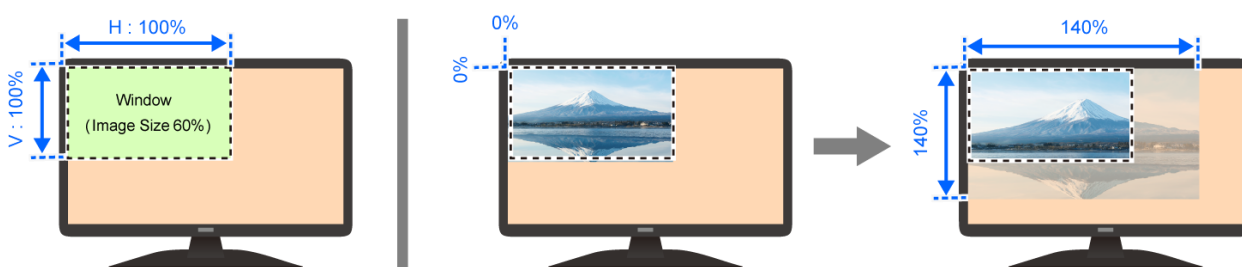


Image size

You can set the size of input image to the window size with reference to the upper left of the image (0%).

Image area that exceeds the window size cannot be displayed.

| Menu | INPUT IMAGE→IMAGE SIZE | Advanced | @GNW/@SNW |
|-----------|---|----------|-----------|
| Parameter | IN1 to IN4 | | |
| | H (Horizontal), V (Vertical), HV (Horizontal/Vertical properly) | | |
| Value | 20.0% to 400.0% (100.0%) (by 0.1%) | | |



Video setting initialization

| | | | |
|-----------|----------------------------------|----------|-----|
| Menu | INPUT IMAGE→IMAGE INITIALIZATION | Advanced | N/A |
| Parameter | IN1 to IN4 | | |
| Value | YES, NO | | |

Select [YES] and press the MENU/ENTER button to initialize the following settings.

【Aspect ratio (P.35)】

【Image position (P.37)】

【Image size (P.37)】

Note

To restore the settings, save the backup data.

Input

Hot plug output for when there is no active video input signal

The ICP-V requests the source device to output video signal by sending hot plug when no active video signal is input. You can enable/disable this feature and set the request interval.

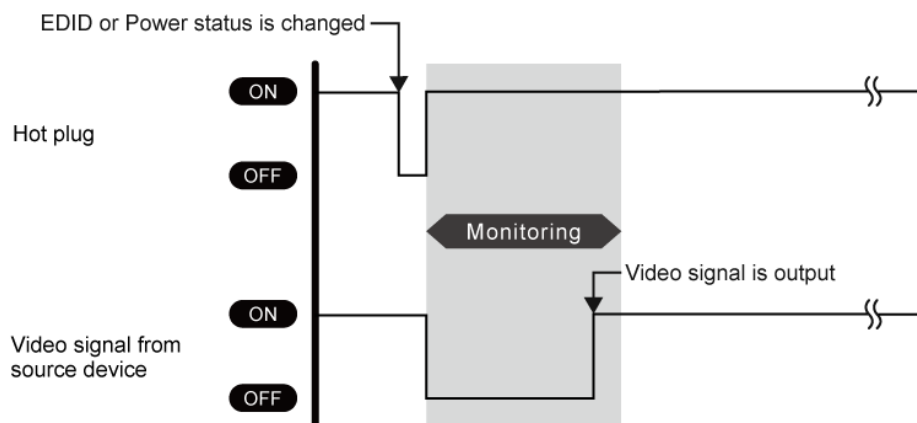
| | | | |
|-----------|---|----------|-----|
| Menu | INPUT SETTINGS→NO INPUT MONITORING | Advanced | N/A |
| Parameter | IN1 to IN4 | | |
| Value | OFF, 2000ms to 15000ms (10000ms) (by 100ms) | | |

[OFF] : Does not request the source device to output video signal even if there is no active input signal.

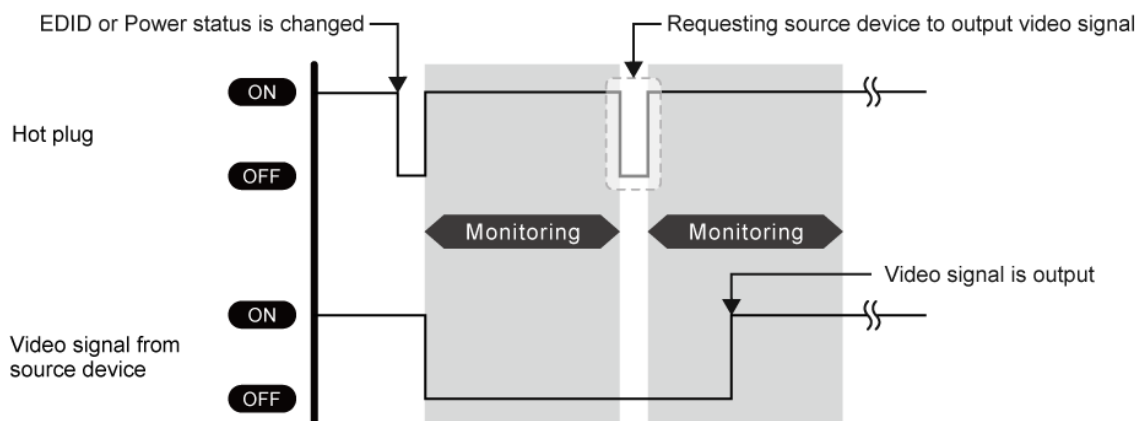
[2000ms] to [15000ms] : Requests the source device to output video signal after the specified monitoring time if there is no active input signal.

If the ICP-V is powered on or EDID is changed with the connected source device is powered on, the source device may stop outputting video signal. In this case, use this feature to request the source device to output video signal.

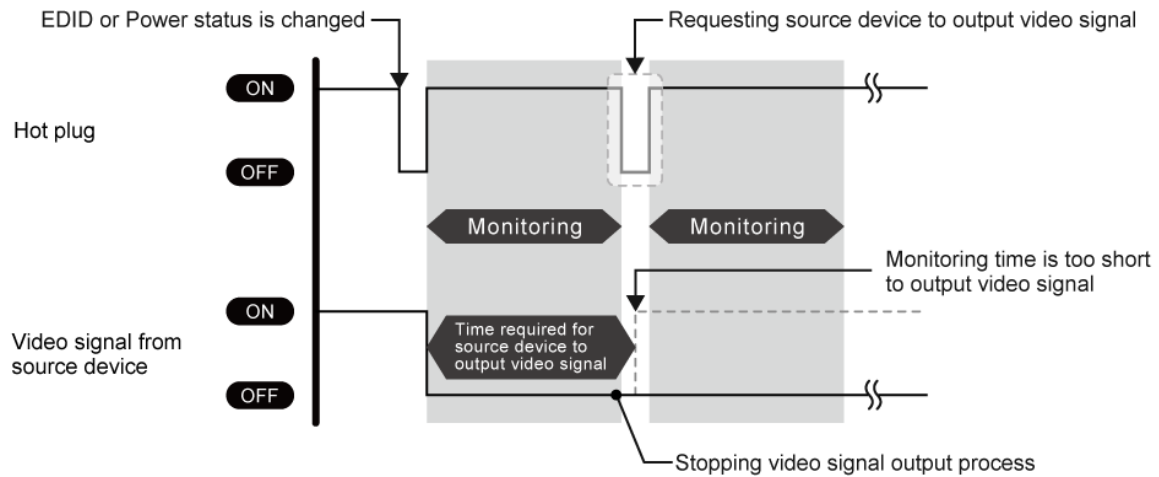
■ Example: Video signal is output within the specified monitoring time



■ Example: The source device stops outputting video signals → Hot plug request is needed.



■ **Example: The specified monitoring time is too short. → Set the longer monitoring time.**



If the interval is shorter than the time for source device output video signal, the source device repeats the video output process and does not output video signal. This problem can be solved by setting longer monitoring time.

Note

If the source device, such as a PC, disables the monitor power-saving or dual monitor features, set this setting to [OFF].

HDCP input

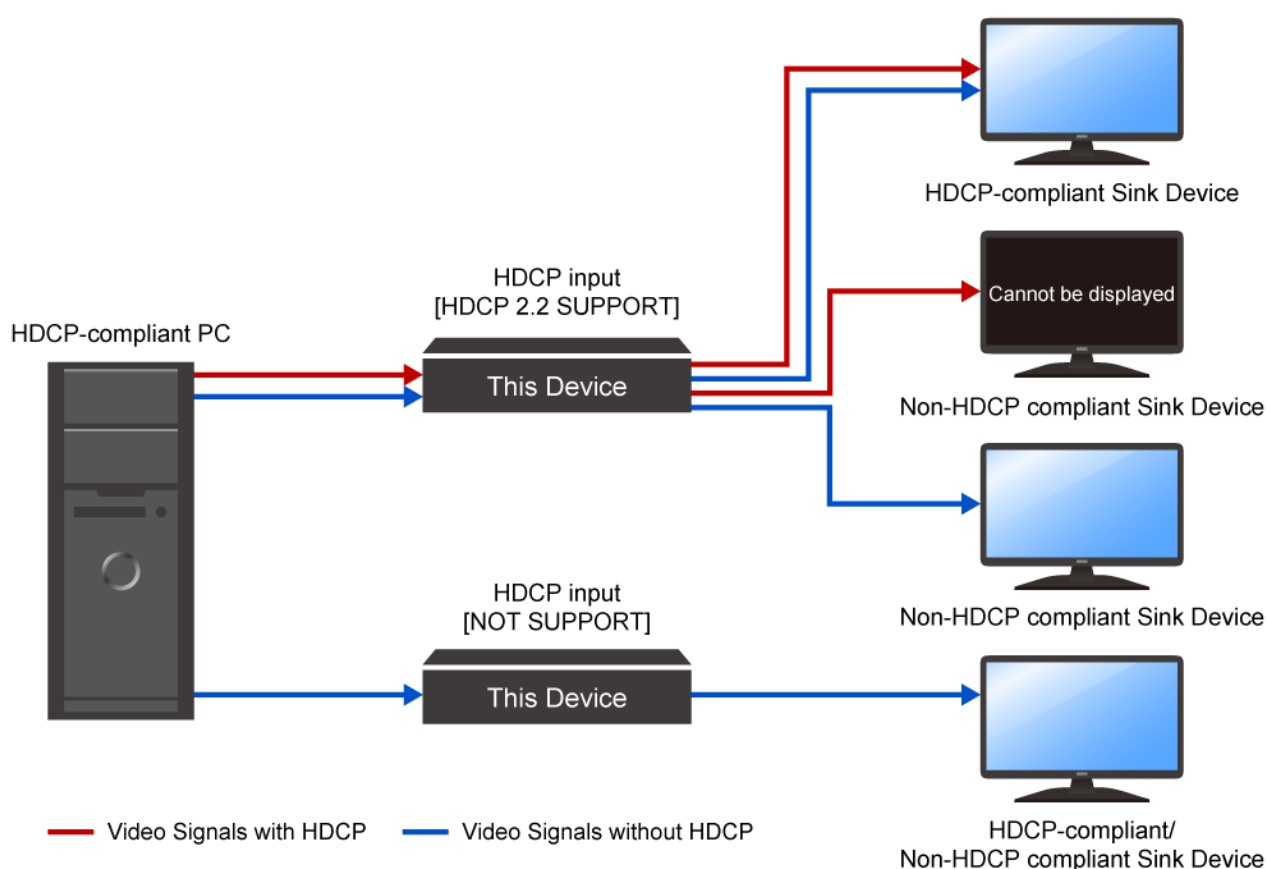
| | | | |
|-----------|---|----------|-----------|
| Menu | INPUT SETTINGS→HDCP INPUT | Advanced | @GHE/@SHE |
| Parameter | IN1 to IN4 | | |
| Value | HDCP 2.2 SUPPORT, HDCP 1.4 SUPPORT, NOT SUPPORT | | |

[HDCP 2.2 SUPPORT] : Operates as an HDCP 2.2 supported device.

[HDCP 1.4 SUPPORT] : Operates as an HDCP 1.4 supported device.

[NOT SUPPORT] : Operates as a non-HDCP compliant device.

Some source devices negotiate with the connected device to determine if HDCP encryption is supported. After this negotiation, the source device determines whether HDCP signal encryption is enforced or not. This process takes place with some source device, even if the content being presented is not copyright protected. The ICP-V is HDCP compliant, if it is connected to a display device that does not support HDCP, unprotected AV content may not be successfully displayed. Under these circumstances and if the content is indeed not protected, the problem can be solved by setting this menu to [NOT SUPPORT].



Note

HDCP 2.2 Type 0 video can be displayed on sink devices supporting HDCP 1.4.

HDCP 2.2 Type 1 video can be displayed on sink devices supporting HDCP 2.2 but cannot be displayed on sink devices supporting HDCP 1.4.

Input channel automatic switching

When video input signal is detected/disconnected, the ICP-V automatically switches input channel that has active video input signal to the one having highest priority of input channel that has active video input signal.

Automatic switching priority for when a video input signal is detected

You can set the priority for automatic switching at the time of video input signal is detected.

| | | | |
|-----------|---|----------|-----------|
| Menu | AUTO SWITCHING→SIGNAL ON PRIORITY | Advanced | @GAU/@SAU |
| Parameter | OUT1 | | |
| | W1, W2, W3, W4 | | |
| | IN1 to IN4 | | |
| Value | OFF (Disabled), 1 (Highest) to 4 (Lowest) | | |

Press the MENU/ENTER button to accept the set value.

If the priority of the detected input channel is lower than the priority of the selected input channel, automatic switching is not performed.

If the same priority is set to several input channels, the last detected input channel will have the first priority.

To enable automatic switching for every time detecting a video input signal, set all input channel to the same priority other than [OFF].

Automatic switching priority for when there is no active video input signal

You can set the priority for automatic switching at the time of video input signal of the current selected input is disconnected.

| | | | |
|-----------|---|----------|-----------|
| Menu | AUTO SWITCHING→SIGNAL OFF PRIORITY | Advanced | @GOF/@SOF |
| Parameter | OUT1 | | |
| | W1, W2, W3, W4 | | |
| | IN1 to IN4, INOFF | | |
| Value | OFF (Disabled), 1 (Highest) to 5 (Lowest) | | |

Press the MENU/ENTER button to accept the set value.

If the same priority is set to several input channels, the smallest number input channel will have the first priority or [INOFF] order.

Ignoring duration after automatic switching

You can set the time for disabling automatic switching temporarily after automatic input channel switching is performed.

| | | | |
|-----------|----------------------------------|----------|-----|
| Menu | AUTO SWITCHING→IGNORING DURATION | Advanced | N/A |
| Parameter | OUT1 | | |
| | W1, W2, W3, W4 | | |
| Value | 0s000ms to 999s999ms | | |

If video input signal is detected or disconnected in a short interval, the automatic switching is performed repeatedly. To avoid undesired automatic switching, set the ignoring duration.

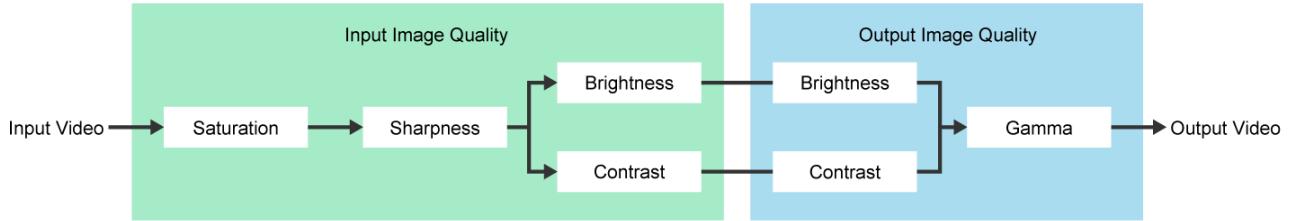
Switching mode of automatic switching

You can set which signals will be switched when automatic switching is performed.

| | | | |
|-----------|-------------------------------------|----------|-----------|
| Menu | AUTO SWHITCING→SWITCHING MODE | Advanced | @GAD/@SAD |
| Parameter | OUT1 | | |
| | W1 | | |
| Value | V&A (Video and Audio), VIDEO, AUDIO | | |

Picture adjustment

You can adjust the following items of input and output image quality.



Output brightness/contrast/gamma

| | | | |
|-----------|--------------------------------------|----------|-----|
| Menu | PICTURE ADJUSTMENT→OUTPUT BRIGHTNESS | Advanced | N/A |
| Parameter | OUT1 | | |
| Value | 80% to 120% (100%) | | |

| | | | |
|-----------|--|----------|-----|
| Menu | PICTURE ADJUSTMENT→OUTPUT CONTRAST | Advanced | N/A |
| Parameter | OUT1 | | |
| | R (Red), G (Green), B (Blue), RGB (Red/Green/Blue) | | |
| Value | 0% to 200% (100%) | | |

| | | | |
|-----------|---------------------------------|----------|-----|
| Menu | PICTURE ADJUSTMENT→OUTPUT GAMMA | Advanced | N/A |
| Parameter | OUT1 | | |
| Value | 0.1 to 3.0 (1.0) (by 0.1) | | |

Output image quality setting initialization

You can initialize the following settings: Output brightness, contrast, and gamma.

| | | | |
|-----------|---|----------|-----|
| Menu | PICTURE ADJUSTMENT→OUTPUT SETTING INIT. | Advanced | N/A |
| Parameter | OUT1 | | |
| Value | YES, NO | | |

Select [YES] and press the MENU/ENTER button to initialize the settings.

Note

To restore settings, make a backup copy.

Input sharpness/brightness/contrast/saturation

| | | | |
|-----------|------------------------------------|----------|-----|
| Menu | PICTURE ADJUSTMENT→INPUT SHARPNESS | Advanced | N/A |
| Parameter | IN1 to IN4 | | |
| Value | -5 to +15 (0) | | |

| | | | |
|-----------|-------------------------------------|----------|-----|
| Menu | PICTURE ADJUSTMENT→INPUT BRIGHTNESS | Advanced | N/A |
| Parameter | IN1 to IN4 | | |
| Value | 80% to 120% (100%) | | |

| | | | |
|-----------|--|----------|-----|
| Menu | PICTURE ADJUSTMENT→INPUT CONTRAST | Advanced | N/A |
| Parameter | IN1 to IN4 | | |
| | R (Red), G (Green), B (Blue), RGB (Red/Green/Blue) | | |
| Value | 0% to 200% (100%) | | |

| | | | |
|-----------|-------------------------------------|----------|-----|
| Menu | PICTURE ADJUSTMENT→INPUT SATURATION | Advanced | N/A |
| Parameter | IN1 to IN4 | | |
| Value | 0% to 200% (100%) | | |

Input image quality setting initialization

You can initialize the following settings: input sharpness, brightness, contrast, and saturation

| | | | |
|-----------|--|----------|-----|
| Menu | PICTURE ADJUSTMENT→INPUT SETTING INIT. | Advanced | N/A |
| Parameter | IN1 to IN4 | | |
| Value | YES, NO | | |

Select [YES] and press the MENU/ENTER button to initialize the settings.

Note

To restore settings, make a backup copy.

Output audio

For digital and analog audio outputs, the audio that is selected to Window1 audio input channel is output. You can change the audio input channel selection from the WEB browser or command.

The following audio formats are supported:

- Digital audio input/output : Multi-channel audio and Bitstream audio
- Digital audio output and analog audio output : Downmixed audio

■ Inputting and outputting multi-channel LPCM signal

For digital audio, if multi-channel LPCM is input, the signal is output by setting “**Multi-channel audio output (P.48)**” to [ON].

For analog audio, audio signals of two channels that are selected in “**Downmix (P.49)**” or downmixed signal are output.

■ Inputting and outputting Bitstream audio

Bitstream audio cannot be output to an analog audio.

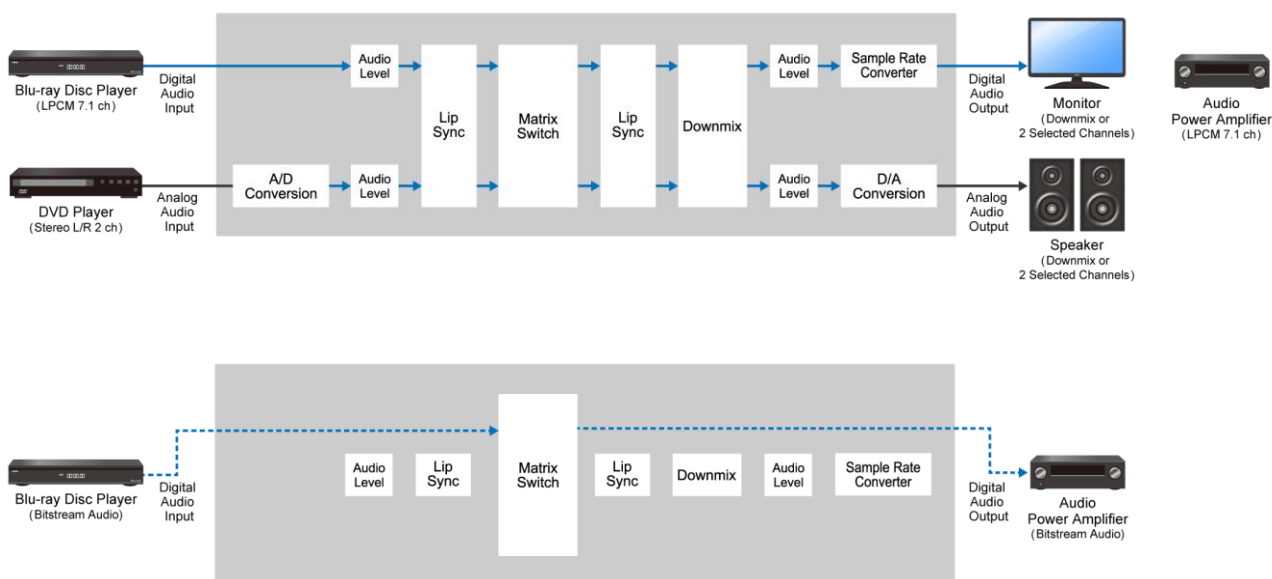
When a Bitstream audio is input, the following settings will be disabled.

【Audio level (P.47)】

【Lip Sync (P.47)】

【Sampling frequency (P.48)】

【Downmix (P.49)】



Audio output

| | | |
|-----------|-------------------------------------|-----------|
| Menu | OUTPUT AUDIO SETTINGS→SIGNAL OUTPUT | @GUC/@SUC |
| Parameter | OUT1A | |
| Value | ON, OFF | |

[OFF]: Stops outputting audio signal (audio packet)

Audio level

| | | |
|-----------|-----------------------------------|-----------|
| Menu | OUTPUT AUDIO SETTINGS→AUDIO LEVEL | @GAV/@SAV |
| Parameter | OUT1, ANALOG1 | |
| Value | -100dB to +10dB (0dB) | |

If you change the output level while “**Mute (P.47)**” is set to [ON], the mute function will be disabled.

If you set “**Top page (P.85)**” to [AUDIO VOLUME], you can change the level from the top page of the front panel.

Mute

You can mute/unmute the output audio.

| | | |
|-----------|----------------------------|----------|
| Menu | OUTPUT AUDIO SETTINGS→MUTE | @GAM/SAM |
| Parameter | OUT1, ANALOG1 | |
| Value | ON (Muted), OFF | |

Lip Sync

You can adjust the time gap between video (motion) and audio (sound).

| | | | |
|-----------|--------------------------------|----------|-----|
| Menu | OUTPUT AUDIO SETTINGS→LIP SYNC | Advanced | N/A |
| Parameter | OUT1 | | |
| Value | 0ms to 70ms | | |

The total delay of input and output Lip Sync is up to 70 ms in total.

【Lip Sync (P.50)】

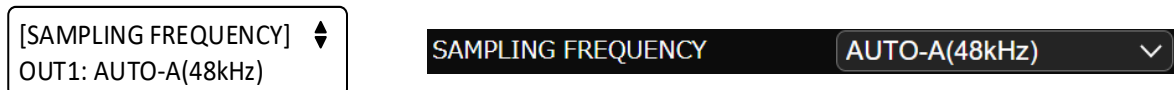
Sampling frequency

You can set the sampling frequency of digital output audio.

| | | | |
|-----------|---|----------|-----|
| Menu | OUTPUT AUDIO SETTINGS→SAMPLING FREQUENCY | Advanced | N/A |
| Parameter | OUT1 | | |
| Value | AUTO-A, 192kHz, 96kHz, 88.2kHz, 48kHz, 44.1kHz, 32kHz | | |

[AUTO-A]: Outputs signal at the optimal sampling frequency of the sink device EDID connected to OUT A.

If setting to AUTO, the output sampling frequency is shown at the right of the setting value.



If optimal sampling frequency is not output, the signal is output at 48 kHz and [*] is shown at the right of the sampling frequency.



If [*] is shown, the following problem occurs:

- EDID cannot be read from the sink device.
- There is no available sampling frequency in the sink device EDID.
- “**Automatic determining sink device EDID (P.33)**” is set to [OFF].

Multi-channel audio output

You can set digital output audio mode for when digital input audio is multi-channel LPCM.

| | | | |
|-----------|-----------------------------------|----------|-----|
| Menu | OUTPUT AUDIO SETTINGS→MULTI AUDIO | Advanced | N/A |
| Parameter | OUT1 | | |
| Value | ON, OFF | | |

[ON] : Outputs multi-channel LPCM audio.

[OFF] : Outputs 2-channel LPCM that is set in “**Downmix (P.49)**”.

If selecting [ON], connect a sink device that supports multi-channel audio. Otherwise, only some audio channels are output because the audio is not downmixed.

Downmix

You can set the downmix audio of digital and analog output audio if digital input audio is multi-channel LPCM.

| | | | |
|-----------|---|----------|-----|
| Menu | OUTPUT AUDIO SETTINGS→DOWNMIX | Advanced | N/A |
| Parameter | OUT1 | | |
| Value | DOWNMIX, CH1/CH2 STEREO, CH3/CH4 STEREO, CH5/CH6 STEREO, CH7/CH8 STEREO, CH1/CH2 MONO, CH3/CH4 MONO, CH5/CH6 MONO, CH7/CH8 MONO | | |

[DOWNMIX] : Outputs downmixed audio.

[STEREO] : Outputs the audio of the selected two channels.

[MONO] : Outputs the mono-mixed of the selected two channels.

For digital output audio, this feature is enabled if “**Multi-channel audio output (P.48)**” is set to [OFF].

Test tone

| | | | |
|-----------|---------------------------------|---|-----|
| Menu | OUTPUT AUDIO SETTINGS→TEST TONE | | N/A |
| Parameter | OUT1 | | |
| | Tone | Speaker | |
| Value | OFF | — | |
| | 400Hz, 1kHz | ALL, FRONT L/R, REAR L/R, REAR L/R CENTER, FRONT LEFT, FRONT RIGHT, LFE (LOW FREQUENCY EFFECT)*, FRONT CENTER, REAR LEFT, REAR RIGHT, REAR L CENTER, REAR R CENTER | |

*30 Hz test tone

Only specified channels of multi-channel audio (up to eight channels) can be output to the specified speakers.

Input audio

To enable multi-channel LPCM or Bitstream audio, set audio format and speaker configuration in “**EDID (P.51)**”.

If Bitstream audio is input, the following settings will be disabled:

【Audio level (P.50)】

【Lip Sync (P.50)】

Input audio

| | | |
|-----------|---------------------------------------|-----------|
| Menu | INPUT AUDIO SETTINGS→SOURCE SELECTION | @GAS/@SAS |
| Parameter | IN1 to IN4 | |
| Value | DIGITAL, ANALOG1 | |

[DIGITAL] : Digital input audio

[ANALOG1] : Analog input audio

Audio level

| | | |
|-----------|----------------------------------|-----------|
| Menu | INPUT AUDIO SETTINGS→AUDIO LEVEL | @GSO/@SSO |
| Parameter | IN1 to IN4, ANALOG1 | |
| Value | -100dB to +10dB (0dB) | |

This feature adjusts the volume gap when input channels are switched.

Lip Sync

You can set the time gap between video (motion) and audio (sound).

| | | | |
|-----------|-------------------------------|----------|-----|
| Menu | INPUT AUDIO SETTINGS→LIP SYNC | Advanced | N/A |
| Parameter | IN1 to IN4 | | |
| Value | 0ms to 70ms | | |

The total delay of input and output Lip Sync is up to 70 ms.

【Lip Sync (P.47)】

Stable wait (Audio signal)

This feature is for waiting until input audio becomes stable in order to avoid popping noise when digital audio source is turned on or the like.

| | | | |
|-----------|----------------------------------|----------|-----------|
| Menu | INPUT AUDIO SETTINGS→STABLE WAIT | Advanced | @GAW/@SAW |
| Parameter | IN1 to IN4 | | |
| Value | ON, OFF | | |

If initial sound cannot be output, disable this feature. In such a case, however, unstable input signal may become noise at the start.

EDID

A source device that is connected to an input connector obtains information of supported video and audio signals from the EDID. You can change the information to be sent to a source device.

EDID selection

You can set the EDID that will be sent to source device.

| | | |
|-----------|--|-----------|
| Menu | EDID SETTINGS→EDID SELECTION | @GED/@SED |
| Parameter | IN1 to IN4 | |
| Value | BUILT-IN EDID, EXTERNAL EDID OUT1A, COPY DATA1 to COPY DATA8 | |

Press the MENU/ENTER button to accept the set value.

[BUILT-IN EDID] : Uses built-in EDID. You can change the following EDID information:

- 【Resolution (P.52)】
- 【Signal format (P.53)】
- 【Frame rate (P.53)】
- 【Deep Color (P.54)】
- 【LPCM audio (P.54)】
- 【Bitstream audio (P.55)】
- 【Speaker configuration (P.56)】

[EXTERNAL EDID] : Uses EDID of the sink device that is connected to the output connector.
If EDID reading fails, the EDID is not changed.

[COPY DATA] : Uses EDID that is saved to the ICP-V in “**Copying EDID (P.53)**”.
Available only if there is effective data, the saved name is displayed.

Resolution

You can set the resolution of the ICP-V for if “**EDID selection (P.51)**” is set to [BUILT-IN EDID].

| Menu | EDID SETTINGS→RESOLUTION | @GVF/@SVF |
|-----------|---|-----------|
| Parameter | IN1 to IN4 | |
| Value | See the table below. 3840x2160@60Hz 4:4:4 | |

Press the MENU/ENTER button to accept the set value.

| Resolution Value | 640x480 | 800x600 | 1024x768 | 1280x720 | 1280x768 | 1280x800 | 1280x960 | 1280x1024 | 1360x768 | 1366x768 | 1400x1050 | 1440x900 | 1600x900 | 1600x1200 | 1680x1050 | 1920x1080 | 1920x1200 | 2048x1152 | 2560x1440 | 2560x1600 | 3840x2160 (30Hz) | 4096x2160 (30Hz) | 3840x2160 (60Hz) | 4096x2160 (60Hz) |
|----------------------|---------|---------|----------|----------|----------|----------|----------|-----------|----------|----------|-----------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------------|------------------|------------------|------------------|
| 800x600 (SVGA) | Y | Y | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N |
| 1024x768 (XGA) | Y | Y | Y | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N |
| 1280x720 (VESA720) | Y | Y | Y | Y | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N |
| 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 |
| 1280x768 (WXGA) | Y | Y | Y | Y | Y | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N |
| 1280x800 (WXGA) | Y | Y | Y | Y | Y | Y | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N |
| 1280x960 (QuadVGA) | Y | Y | Y | Y | Y | Y | Y | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N |
| 1280x1024 (SXGA) | Y | Y | Y | Y | Y | Y | Y | Y | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N |
| 1360x768 (WXGA) | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | N | N | N | N | N | N | N | N | N | N | N | N | N | N |
| 1366x768 (WXGA) | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | N | N | N | N | N | N | N | N | N | N | N | N | N | N |
| 1400x1050 (SXGA+) | Y | Y | Y | Y | N | Y | Y | Y | Y | Y | Y | N | N | N | N | N | N | N | N | N | N | N | N | N |
| 1440x900 (WXGA+) | Y | Y | Y | Y | N | Y | Y | Y | Y | Y | Y | Y | N | N | N | N | N | N | N | N | N | N | N | N |
| 1600x900 (WXGA++) | Y | Y | Y | Y | N | Y | Y | Y | Y | Y | Y | Y | Y | N | N | N | N | N | N | N | N | N | N | N |
| 1600x1200 (UXGA) | Y | Y | Y | Y | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | N | N | N | N | N | N | N | N | N | N |
| 1680x1050 (WSXGA+) | Y | Y | Y | Y | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | N | N | N | N | N | N | N | N | N |
| 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 |
| 1920x1080 (VESA1080) | Y | Y | Y | N | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | N | N | N | N | N | N | N | N |
| 1080p | Y | Y | Y | N | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | N | N | N | N | N | N | N | N |
| 1920x1200 (WUXGA) | Y | Y | Y | N | N | Y | Y | Y | N | N | Y | Y | Y | Y | Y | Y | Y | N | N | N | N | N | N | N |
| 2048x1152 (QWUXGA) | Y | Y | Y | N | N | N | Y | Y | N | N | Y | Y | Y | Y | Y | Y | Y | Y | N | N | N | N | N | N |
| 2560x1440 (WQHD) | Y | Y | Y | N | N | N | N | Y | N | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | N | N | N | N | N |
| 2560x1600 (WQXGA) | Y | Y | Y | N | N | N | N | Y | N | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | N | N | N | N |
| 3840x2160@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 |
| 3840x2160@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 |
| 3840x2160@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 | N |
| 4096x2160@30 | Y | Y | Y | N | N | N | N | Y | N | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | N |
| 4096x2160@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 |
| 4096x2160@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 YCbCr4:2:0, N: Not supported

Timing of [720p]/[1080i]/[1080p]/[3840x2160]/[4096x2160] meets the CTA-861 standard.

For other resolutions, timing parameters meet the VESA DMT or VESA CVT standard.

Copying EDID

EDID of sink device is read and saved to the ICP-V.

You can name the EDID at the time of saving by using ASCII code 20 to 7D (Up to 10 characters).

| | | | |
|-----------|-------------------------------------|-------------------------------------|-----|
| Menu | EDID SETTINGS→SINK DEVICE EDID COPY | | N/A |
| Parameter | No.1 to No.8 | | |
| | Output connector | EDID name | |
| Value | OUT1A | ASCII 20 to 7D (Up to 10characters) | |

Press the MENU/ENTER button to accept the set value.

EDID of the sink device connected to the selected output connector is read and saved.

To use the saved EDID, set “**EDID selection (P.51)**”.

If no sink device is connected to the selected output connector, a message, [UNCONNECTED], appears and data cannot be saved.

Signal format

You can set the signal format of the ICP-V for if “**EDID selection (P.51)**” is set to [BUILT-IN EDID].

| | | | |
|-----------|-----------------------------|----------|-----|
| Menu | EDID SETTINGS→SIGNAL FORMAT | Advanced | N/A |
| Parameter | IN1 to IN4 | | |
| Value | HDMI, DVI | | |

Press the MENU/ENTER button to accept the set value.

[HDMI] : Sets the ICP-V as an HDMI device.

[DVI] : Sets the ICP-V as an DVI device. Audio signal is not supported.

If selecting [DVI], the following settings will be disabled:

【Deep Color (P.54)】

【LPCM audio (P.54)】

【Bitstream audio (P.55)】

【Speaker configuration (P.56)】

Frame rate

You can set the vertical synchronous frequency (frame rate) of the ICP-V for if “**EDID selection (P.51)**” is set to [BUILT-IN EDID].

| | | | |
|-----------|--------------------------|----------|-----|
| Menu | EDID SETTINGS→FRAME RATE | Advanced | N/A |
| Parameter | IN1 to IN4 | | |
| Value | 60Hz, 50Hz | | |

Press the MENU/ENTER button to accept the set value.

If selecting [50Hz], 60 Hz and 30 Hz vertical synchronous frequency of “**Resolution (P.52)**” will be 50 Hz and 25 Hz, respectively.

Deep Color

You can set the color depth of the ICP-V for if “**EDID selection (P.51)**” is set to [BUILT-IN EDID] and “**Signal format (P.53)**” is set to [HDMI].

| | | | |
|-----------|----------------------------|----------|-----|
| Menu | EDID SETTINGS→DEEP COLOR | Advanced | N/A |
| Parameter | IN1 to IN4 | | |
| Value | 24-BIT COLOR, 30-BIT COLOR | | |

Press the MENU/ENTER button to accept the set value.

If selecting [30-BIT COLOR] and the source device outputs video at 30 bit, it may cause noise on the video or signal may not be transmitted. In such a case, the problem may be solved by setting the color to [24-BIT COLOR].

LPCM audio

You can set the ICP-V’s maximum sampling frequency of the LPCM audio for if “**EDID selection (P.51)**” is set to [BUILT-IN EDID] and “**Signal format (P.53)**” is set to [HDMI].

| | | | |
|-----------|---|----------|-----|
| Menu | EDID SETTINGS→Linear PCM | Advanced | N/A |
| Parameter | IN1 to IN4 | | |
| Value | 192kHz, 176.4kHz, 96kHz, 88.2kHz, 48kHz, 44.1kHz, 32kHz | | |

Press the MENU/ENTER button to accept the set value.

Bitstream audio

You can set the ICP-V's maximum sampling frequency of the Bitstream audio for if “**EDID selection (P.51)**” is set to [BUILT-IN EDID] and “**Signal format (P.53)**” is set to [HDMI].

| | | | |
|-----------|--|----------|-----|
| Menu | EDID SETTINGS→AAC | Advanced | N/A |
| Parameter | IN1 to IN4 | | |
| Value | OFF, 96kHz, 88.2kHz, 48kHz, 44.1kHz, 32kHz | | |

| | | | |
|-----------|-----------------------------|----------|-----|
| Menu | EDID SETTINGS→Dolby Digital | Advanced | N/A |
| Parameter | IN1 to IN4 | | |
| Value | OFF, 48kHz, 44.1kHz, 32kHz | | |

| | | | |
|-----------|----------------------------------|----------|-----|
| Menu | EDID SETTINGS→Dolby Digital Plus | Advanced | N/A |
| Parameter | IN1 to IN4 | | |
| Value | OFF, 48kHz, 44.1kHz, 32kHz | | |

| | | | |
|-----------|---|----------|-----|
| Menu | EDID SETTINGS→Dolby TrueHD | Advanced | N/A |
| Parameter | IN1 to IN4 | | |
| Value | OFF, 192kHz, 176.4kHz, 96kHz, 88.2kHz, 48kHz, 44.1kHz | | |

| | | | |
|-----------|-----------------------------------|----------|-----|
| Menu | EDID SETTINGS→DTS | Advanced | N/A |
| Parameter | IN1 to IN4 | | |
| Value | OFF, 96kHz, 48kHz, 44.1kHz, 32kHz | | |

| | | | |
|-----------|---|----------|-----|
| Menu | EDID SETTINGS→DTS-HD | Advanced | N/A |
| Parameter | IN1 to IN4 | | |
| Value | OFF, 192kHz, 176.4kHz, 96kHz, 88.2kHz, 48kHz, 44.1kHz | | |

Press the MENU/ENTER button to accept the set value.

Speaker configuration

You can set the ICP-V's speaker configuration of multi-channel audio for if **"EDID selection (P.51)"** is set to [BUILT-IN EDID] and **"Signal format (P.53)"** is set to [HDMI].

| Menu | EDID SETTINGS→SPEAKER CONFIGURATION | | Advanced | N/A |
|-----------|-------------------------------------|--------------------|-----------------------------|-----|
| Parameter | IN1 to IN4 | | | |
| | Mode | Number of speakers | Speaker configuration | |
| Value | AUTO | 1 to 8 (2) | See the table below. | |
| | MANUAL | 1 to 8 | ON, OFF* *Only FL/FR: ON | |

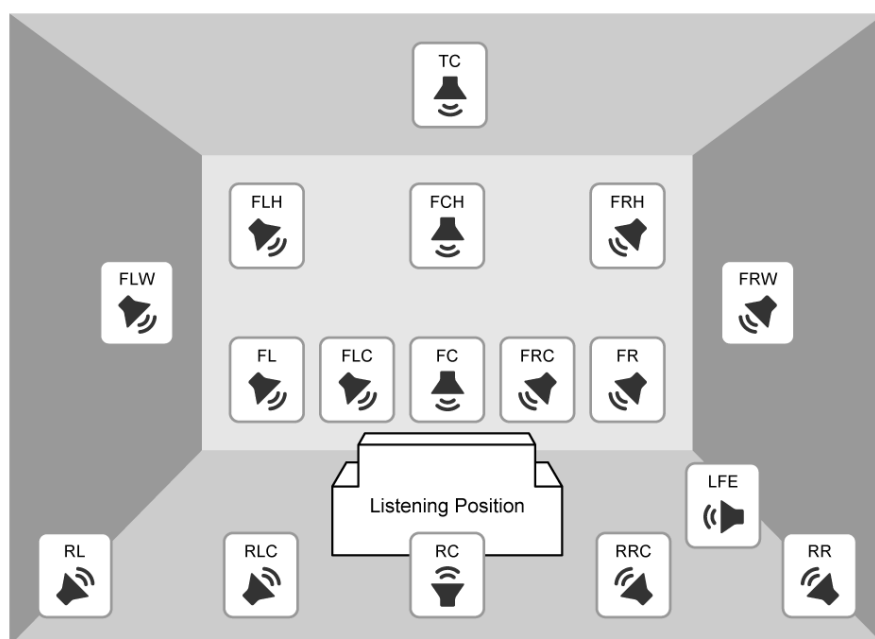
Press the MENU/ENTER button to accept the set value.

[AUTO] : Once the number of speakers is set, the speaker configuration will be set automatically.

[MANUAL] : Sets speaker configuration manually. Up to eight speakers can be used.

If the total number of the speakers exceeds the set value, a message, [DATA INVALID] appears on the front panel and the settings will not be applied.

| Number of speakers | FL/FR | LFE | FC | RL/RR | RC | FLC/FRC | RLC/RRC | FLW/FRW | FLH/FRH | TC | FCH |
|--------------------|-------|-----|-----|-------|-----|---------|---------|---------|---------|-----|-----|
| 1 | OFF | OFF | ON | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF |
| 2 | ON | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF |
| 3 | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF |
| 4 | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF |
| 5 | ON | ON | OFF | ON | OFF | OFF | OFF | OFF | OFF | OFF | OFF |
| 6 | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF | OFF |
| 7 | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| 8 | ON | ON | ON | ON | OFF | OFF | ON | OFF | OFF | OFF | OFF |



| | |
|-----|--------------------|
| FL | Front Left |
| FC | Front Center |
| FR | Front Right |
| FLC | Front Left Center |
| FRC | Front Right Center |
| RL | Rear Left |
| RC | Rear Center |
| RR | Rear Right |
| RLC | Rear Left Center |

| | |
|-----|----------------------|
| RRC | Rear Right Center |
| LFE | Low Frequency Effect |
| FLW | Front Left Wide |
| FRW | Front Right Wide |
| FLH | Front Left High |
| FCH | Front Center High |
| FRH | Front Right High |
| TC | Top Center |

RS-232C

RS-232C communication via the RS-232C connector is enabled if the ICP-V switches into standby mode or powered on status.

Communication setting

| | | | | |
|-----------|--|-----------------------|-----------------|----------------|
| Menu | RS-232C SETTINGS→PARAMETERS | | | @GCT/@SCT |
| Parameter | RS1 (RS-232C) | | | |
| | Baud rate [bps] | Data bit length [bit] | Parity check | Stop bit [bit] |
| Value | 4800, 9600, 14400, 19200, 38400, 57600, 115200 | 7, 8 | NONE, ODD, EVEN | 1, 2 |

Press the MENU/ENTER button to accept the set value.

Operation mode

| | | | |
|-----------|-------------------------------------|----------|-----------|
| Menu | RS-232C SETTINGS→COMMUNICATION MODE | Advanced | @GCF/@SCF |
| Parameter | RS1 (RS-232C) | | |
| Value | RECEIVER, TRANSMITTER | | |

Press the MENU/ENTER button to accept the set value.

[RECEIVER] : Receiver mode (Controlling the ICP-V from an external device)

[TRANSMITTER]: Transmitter mode (Controlling an external device from the ICP-V)

LAN

LAN communication via the LAN connector is enabled if the ICP-V switches into standby mode or powered on status.

Network

| | | |
|-------|--|-----------|
| Menu | LAN SETTINGS→IP ADDRESS | @GIP/@SIP |
| Value | 0.0.0.0 to 255.255.255.255 (192.168.1.199) | |

| | | |
|-------|--|-----------|
| Menu | LAN SETTINGS→SUBNET MASK | @GSB/@SSB |
| Value | 0.0.0.0 to 255.255.255.254 (255.255.255.0) | |

| | | |
|-------|--|-----------|
| Menu | LAN SETTINGS→GATEWAY ADDRESS | @GGW/@SGW |
| Value | 0.0.0.0 to 255.255.255.255 (192.168.1.200) | |

Press the MENU/ENTER button to accept the set value.

MAC address

| | | |
|-------|-------------------------------|------|
| Menu | LAN SETTINGS→MAC ADDRESS | @GMC |
| Value | Specific values of the device | |

Control command destination

| | | | | | |
|-----------|----------------------------------|----------------------------|---|--|-----------|
| Menu | LAN SETTINGS→COMMAND DESTINATION | | | | @GLG/@SLG |
| Parameter | DESTINATION 1 to DESTINATION 12 | | | | |
| | Destination IP address | PJLink protocol connection | Destination connection number* ¹ | PJLink protocol password* ² | |
| Value | 192.168.1.198 | ON, OFF | 1 to 65535 (1100) | ASCII 20,30 to 39, 41 to 5A,61 to 7A (Up to 32 characters) | |

*¹ Cannot be set for PJLink protocol connection. The port number is fixed at 4352.

*² If password authentication is not needed, you can skip this setting.

Press the MENU/ENTER button to accept the set value.

Up to 12 connections for control command destination can be set.

If a control command is set [ON] for [LAN DESTINATION 1] to [LAN DESTINATION 12] in “**Registering/Editing control command (P.62)**” and it is executed, the command data is sent to the destination.

Automatic disconnection time (Timeout)

You can set the time to disconnect LAN communication automatically.

| | | | | |
|-----------|--|---------------------------------------|----------|-----------|
| Menu | LAN SETTINGS→AUTO DISCONNECT | | Advanced | @GLD/@SLD |
| Parameter | SERVER (Receiving commands) | CLIENT (Sending commands) | | |
| Value | NOT DISCONNECT, 1 s to 180 s (30 s) | NOT DISCONNECT, 1 s to 180 s (3 s) | | |

[NOT DISCONNECT] : Does not disconnect LAN communication.

[1 s] to [180 s] : Disconnect LAN communication when the set time passes.

■ SERVER (Receiving commands)

Up to eight connections from an external device to the ICP-V can be set.

The ICP-V disconnects the LAN communication if the ICP-V does not receive a command for the specified time.

■ CLIENT (Sending commands)

Up to 12 connections from the ICP-V to an external device can be set.

The ICP-V disconnects LAN communication when the specified time passes after sending a command.

If selecting [NOT DISCONNECT], the ICP-V does not disconnect the communication from its side.
Communication may not be disabled if exceeding the connection limit.

Control commands

The ICP-V can control external devices by using the registered control commands that are lined to function button operation, and so on.

- **Controlling external devices via RS-232C/LAN communication**

Example: Powering on/off

To control external devices via RS-232C communication, set “**Operation mode (P.58)**” of the connector to [TRANSMITTER].

To control external devices via LAN communication, set the command destination in “**Control command destination (P.59)**”.

- **Controlling external devices via contact closure (Contact closure)**

Example: Pulling up/down a screen

- **Controlling external devices via CEC**

- **Controlling the ICP-V using Loop Back**

- **Controlling external devices using PJLink via a connector supporting LAN communication**

For controlling a projector

The ICP-V supports PJLink Class1.

To enable PJLink, set [PJLINK] of the LAN communication connector to [ON] in “**Control command destination (P.59)**”, and set the password as needed.

■ Screen display during control command execution

- When control command is executed, the MEMO (Note) saved to the control command will be displayed.
- When reply command is received, the MEMO (Note) saved to the return command will be displayed.
- When a control command with displaying received data from the external device is executed, the received data will be displayed.
- If full received data cannot be displayed on the front display, it will be scrolling displayed.

Examples:

- (1) Control command: Saved as [SCREEN UP] in MEMO and displayed when control command is executed.
- (2) Reply command: Saved as [SCREEN OK] in MEMO and displayed when the reply command is received.
- (3) Control command with displays received data from an external device is executed and [%1LAMP=1000 1↵] is received.
- (4) Reply command could not be received and retry over error occurs.

(1) Control command only

SEND: SCREEN UP

(2) Control command (Upper)
Reply command (Lower)

SEND: SCREEN UP
REPLY: SCREEN OK

(3) Received data is displayed.

SEND: PROJECTOR LAMP
REPLY: %1LAMP=1000 1↵

(4) Reply command could not be
received and a retry over error
occurs.

SEND: SCREEN UP
RETRY OVER ERROR

Registering/Editing control command

The ICP-V can control external devices by using the following controlling:

- I/F:RS-232C/LAN
- I/F:CONTACT CLOSURE
- I/F:CEC (For powering ON/OFF sink device only)

| | | |
|-----------|---|-----------|
| Menu | CONTROL COMMAND→COMMAND REGISTER/EDIT | @GEC/@SEC |
| Parameter | CMD 1 to CMD 64 | |
| Value | I/F: RS-232C/LAN, CONTACT CLOSURE, CEC Varies depending on controlling. See the table below. | |

■ [RS-232C/LAN]

| Value | | |
|---|--|---|
| DELAY | 0s000ms to 999s999ms | Waiting time for execution of control commands. |
| RS1(RS-232C)* ¹ | ON (Sending command), | Communication port for sending command data (RS-232C, LOOP BACK, LAN) Command data can be sent to multiple communication ports simultaneously. |
| LOOP BACK | OFF (Not sending command) | |
| LAN DESTINATION1 to LAN DESTINATION12* ² | | |
| INPUT MODE | ASCII, HEX | Inputting command data format |
| DATA | Up to 30 bytes ASCII (0A, 0D, 20 to 7D), HEX (00 to FF) | Command data |
| DATA SIZE | 0 to 30 BYTE | Command data size to be sent |
| REPLY DISPLAY | OFF (Received data is not displayed. Checking if it matches the reply command), ASCII (Received data is displayed in ASCII), HEX (Received data is displayed in hex) | Checking if it matches the reply command Received data display mode ([ASCII]/[HEX]) on front display |
| DELIMITER* ³ | NONE* ⁴ (Not check), 00 to FF (Hex) | Received data delimiter Received data until delimiter is reached as active data |
| REPLY1 to REPLY32* ⁵ | CHECK (Enabled), NOT CHECK (Disabled) | Checking if the received data matches the reply command |
| TIME OUT* ⁶ * ⁷ | 0s000ms to 99s999ms | Time from sending command data to receiving data |
| RETRY* ⁶ * ⁷ | 0 to 99 (times) | The number of retries to resend the command again if there is no valid reply command. |
| INTERVAL* ⁶ * ⁷ | 0s000ms to 99s999ms | The interval of retries to resend the command again if there is no valid reply command. |
| ERROR | EXEC (Executing next control command), STOP (Stopping executing control command) | The process if no valid replay command is replied after executing command for the set number of [RETRY]. |
| MEMO | ASCII 20 to 7D (Up to 14 characters) (values other than 2C (,)) | Characters displayed in the front display at the time of control command execution. |

*¹ If setting to [ON], set “**Operation mode (P.58)**” to [TRANSMITTER].

*² If setting to [ON], set “**Control command destination (P.59)**”.

*³ Available if setting [REPLY DISPLAY] to a value other than [OFF].

*⁴ If setting to [NONE], all data within the set time in [TIME OUT] will be valid data.

*⁵ Available if setting [REPLY DISPLAY] to [OFF].

*⁶ You can skip this setting, if setting only [LOOP BACK] to [ON].

*⁷ You can skip this setting, if setting all [REPLY1] to [REPLY32] to [NOT CHECK].

Press the MENU/ENTER button to accept the set value.

To check loop back execution

The ICP-V sends a communication command back to the ICP-V itself using the loop back function. It replies [OK] if processed normally while replying [NG] if parameter or command is incorrect. To check if control is proceeded normally, set [REPLY31] and [REPLY32] to [CHECK] (enabled).

■ [CONTACT CLOSURE]

| Value | | |
|--------------------------------|--|--|
| DELAY | 0s000ms to 999s999ms | Waiting time from execution to the contact closure control. |
| CONTACT CLOSURE1 CH1 to CH3 | — (Not controlling contact closure), ON (Contact closure ON), OFF (Contact closure OFF), TGL (Toggle) | Contact closure ON/OFF state Toggle operation: Reverses the contact closure state |
| PULSE | NONE (Keeping state), 100ms to 9990ms (by 10ms) | Time to restore the contact closure after control. |
| MEMO | ASCII 20 to 7D (Up to 14 characters) (values other than 2C (,)) | Characters displayed in the front display at the time of control command execution. |

Press the MENU/ENTER button to accept the set value.

■ [CEC]

| Value | | |
|-----------|---|---|
| DELAY | 0s000ms to 999s999ms | Waiting time from execution to CEC control of control commands. |
| OUT1A CEC | — (Not controlling CEC), POWER ON, POWER OFF | Power of the sink device controlled via CEC |
| ERROR | EXEC (Executing next control command), STOP (Stopping executing control command) | When no reply from the connected sink device |
| MEMO | ASCII 20 to 7D (Up to 14 characters) (values other than 2C (,)) | Characters displayed in the front display at the time of control command execution. |

Press the MENU/ENTER button to accept the set value.

■ [PJLink]

Register the following commands for [DATA] in “[RS-232C/LAN] (P.63)”.

| PJLink command (Class1) | | | | | | | | | | Description |
|-------------------------|---|---|---|---|---|------|---|------|------|--|
| % | 1 | P | O | W | R | (SP) | 0 | (CR) | | Power off (Standby) |
| % | 1 | P | O | W | R | (SP) | 1 | (CR) | | Power on (Lamp on) |
| % | 1 | P | O | W | R | (SP) | ? | (CR) | | Get power status |
| % | 1 | I | N | P | T | (SP) | 1 | ●* | (CR) | Switch input to RGB |
| % | 1 | I | N | P | T | (SP) | 2 | ●* | (CR) | Switch input to VIDEO |
| % | 1 | I | N | P | T | (SP) | 3 | ●* | (CR) | Switch input to DIGITAL |
| % | 1 | I | N | P | T | (SP) | 4 | ●* | (CR) | Switch input to STORAGE |
| % | 1 | I | N | P | T | (SP) | 5 | ●* | (CR) | Switch input to NETWORK |
| % | 1 | I | N | P | T | (SP) | ? | (CR) | | Get input selection settings |
| % | 1 | A | V | M | T | (SP) | 1 | 0 | (CR) | Switch off video mute |
| % | 1 | A | V | M | T | (SP) | 1 | 1 | (CR) | Switch on video mute |
| % | 1 | A | V | M | T | (SP) | 2 | 0 | (CR) | Switch off audio mute |
| % | 1 | A | V | M | T | (SP) | 2 | 1 | (CR) | Switch on audio mute |
| % | 1 | A | V | M | T | (SP) | 3 | 0 | (CR) | Video + audio mute off |
| % | 1 | A | V | M | T | (SP) | 3 | 1 | (CR) | Video + audio mute on |
| % | 1 | A | V | M | T | (SP) | ? | (CR) | | Get mute settings |
| % | 1 | E | R | S | T | (SP) | ? | (CR) | | Get error status |
| % | 1 | L | A | M | P | (SP) | ? | (CR) | | Get time and status of lamp |
| % | 1 | I | N | S | T | (SP) | ? | (CR) | | Get list of switching input |
| % | 1 | N | A | M | E | (SP) | ? | (CR) | | Get projector name |
| % | 1 | I | N | F | 1 | (SP) | ? | (CR) | | Get manufacture name |
| % | 1 | I | N | F | 2 | (SP) | ? | (CR) | | Get product name |
| % | 1 | I | N | F | O | (SP) | ? | (CR) | | Get other information (optional of manufacturer) |

(SP): space, (CR): delimiter, ●: Command characters

*Input number (1 to 9) of the projector to be controlled. Selectable number depends on the controlled projector.

PJLink specifications regulate that projectors are required to reply the reply commands within two seconds after receiving the PJLink command. However, some projectors have different specifications. Check the manual of your projector and apply the response time indicated in the manual if there is one listed.

Registering/Editing reply command

You can register the expected value to be received data as a reply command data, and you also can set the ICP-V operation when the received data from external device and reply command data are matched.

| Menu | CONTROL COMMAND→REPLY REGISTER/EDIT | | @GRC/@SRC |
|------------|---|--|-----------|
| Parameter | REPLY1 to REPLY32 | | |
| Value | | | |
| PROCESS | EXEC (Continuing execution), RETRY (Resending reply commands), STOP (Stopping execution) | Operation when the received data and reply command data are matched. | |
| PJLink | ON, OFF | PJLink command preset for reply command data | |
| INPUT MODE | ASCII, HEX | Reply command data input mode ([ASCII]/[HEX]) | |
| DATA | Up to 30 bytes ASCII (0A, 0D, 20 to 7D), HEX (00 to FF) | Reply command data | |
| DATA SIZE | 0 to 30 BYTE | Size of reply command data | |
| MASK | 00 to FF Available if [INPUT MODE] is set to [HEX] Available if [INPUT MODE] is set to [ASCII] (FF fixed) | Mask data Each bit of the received data is ANDed to each bit of mask data, and the result will be compared with the reply command data. | |
| MEMO | ASCII 20 to 7D (Up to 14 characters) (values other than 2C (.)) | Characters to be displayed on the front display when received data and reply data are matched. | |

Press the MENU/ENTER button to accept the set value.

If using a reply command, set the reply command number to [CHECK] in “[RS-232C/LAN] (P.63)”.

To check loop back execution

The ICP-V sends a communication command back to the ICP-V itself using the loop back function. It replies [OK] if processed normally while replying [NG] if parameter or command is incorrect. To check if control is proceeded normally, the following [REPLY31: OK] and [REPLY32: NG] are used. Do not edit or delete them.

| Reply command | REPLY31 | REPLY32 |
|---------------|---------|---------|
| PROCESS | EXEC | STOP |
| PJLink | OFF | OFF |
| INPUT MODE | ASCII | ASCII |
| DATA | OK | NG |
| DATA SIZE | 2BYTE | 2BYTE |
| MASK | FF | FF |
| MEMO | OK | NG |

■ [PJLink]

To check the received data from a projector, register the following commands for [DATA].

Received data from a projector is replies as follows:

First six bytes : Sent command data

Seventh byte : [=]

Eighth byte or later bytes : Result

| PJLink reply command (Class1) | | | | | | | | | | | Description |
|-------------------------------|---|---|---|---|---|---|---|---|------|--------|--------------------------|
| % | 1 | ● | ● | ● | ● | = | O | K | (CR) | | Terminated normally |
| % | 1 | ● | ● | ● | ● | = | E | R | R | 1 (CR) | Undefined command |
| % | 1 | ● | ● | ● | ● | = | E | R | R | 2 (CR) | Invalid parameter |
| % | 1 | ● | ● | ● | ● | = | E | R | R | 3 (CR) | Not acceptable |
| % | 1 | ● | ● | ● | ● | = | E | R | R | 4 (CR) | Malfunction of projector |

(CR): delimiter, ●: Command characters

| Reply command for status | | | | | | | | | | | Description | | |
|--|---|---|---|---|---|---|-----------|----------|-----|-----|-------------|----------|---------------------------|
| Reply command to power status commands | | | | | | | | | | | | | |
| % | 1 | P | O | W | R | = | 0 | (CR) | | | | | Standby |
| % | 1 | P | O | W | R | = | 1 | (CR) | | | | | Power ON |
| % | 1 | P | O | W | R | = | 2 | (CR) | | | | | Cooling |
| % | 1 | P | O | W | R | = | 3 | (CR) | | | | | Warming up |
| Reply command to input status commands | | | | | | | | | | | | | |
| % | 1 | I | N | P | T | = | 1 | ●*1 (CR) | | | | | RGB selected |
| % | 1 | I | N | P | T | = | 2 | ●*1 (CR) | | | | | VIDEO selected |
| % | 1 | I | N | P | T | = | 3 | ●*1 (CR) | | | | | DIGITAL selected |
| % | 1 | I | N | P | T | = | 4 | ●*1 (CR) | | | | | STORAGE selected |
| % | 1 | I | N | P | T | = | 5 | ●*1 (CR) | | | | | NETWORK selected |
| Get mute settings | | | | | | | | | | | | | |
| % | 1 | A | V | M | T | = | 3 | 0 (CR) | | | | | Video + audio mute OFF |
| % | 1 | A | V | M | T | = | 1 | 1 (CR) | | | | | Video mute ON |
| % | 1 | A | V | M | T | = | 2 | 1 (CR) | | | | | Audio mute ON |
| % | 1 | A | V | M | T | = | 3 | 1 (CR) | | | | | Video + audio mute ON |
| Get error status | | | | | | | | | | | | | |
| % | 1 | E | R | S | T | = | ●*2 | ●*3 | ●*4 | ●*5 | ●*6 | ●*7 (CR) | See the annotation below. |
| Get time and status of lamp | | | | | | | | | | | | | |
| % | 1 | L | A | M | P | = | ●*8 (SP) | ●*9 (CR) | | | | | See the annotation below. |
| Get list of input switching | | | | | | | | | | | | | |
| % | 1 | I | N | S | T | = | ●*10 (CR) | | | | | | See the annotation below. |
| Get projector name | | | | | | | | | | | | | |
| % | 1 | N | A | M | E | = | ●*11 (CR) | | | | | | See the annotation below. |
| Get manufacturer name | | | | | | | | | | | | | |
| % | 1 | I | N | F | 1 | = | ●*12 (CR) | | | | | | See the annotation below. |
| Get product name | | | | | | | | | | | | | |
| % | 1 | I | N | F | 2 | = | ●*12 (CR) | | | | | | See the annotation below. |
| Get other information (optional) | | | | | | | | | | | | | |
| % | 1 | I | N | F | O | = | ●*12 (CR) | | | | | | See the annotation below. |

(SP): space, (CR): delimiter, ●: Command characters

*1 Input number: 1 to 9

The selectable input numbers vary depending on connected projectors.

*2 Fan error (0: Error not detected or no detect error function, 1: Warning, 2: Error)

*3 Lamp error (0: Error not detected or no detect error function, 1: Warning, 2: Error)

*4 Temperature error (0: Error not detected or no detect error function, 1: Warning, 2: Error)

*5 Cover open error (0: Error not detected or no detect error function, 1: Warning, 2: Error)

*6 Filter error (0: Error not detected or no detect error function, 1: Warning, 2: Error)

*7 Other errors (0: Error not detected or no detect error function, 1: Warning, 2: Error)

*8 Accumulated time of lamp: 0 to 99999

For projectors that do not count the accumulated time, the value is 0 at all times.

*9 Whether the lamp illuminates or not (0 or 1).

0: Not illuminated, 1: Illuminated

For devices containing multiple lamps, accumulated time and lightning state for each device are replied in sequence. For example, if a device contains three lamps, the following command is replied: %1LAMP=accumulated time 1(SP) lightning state 1(SP) accumulated time 2(SP) lightning state 2(SP) accumulated time 3(SP) lightning state 3 CR

*10 Input switchable source number: 11 to 59 (same as that of %INPT command).

For devices containing multiple inputs, multiple statuses separated with a (SP) are sent.

For example, for a device having two inputs, %1INST= source number 1(SP) source number 2CR is sent.

*11 20 to FF in hex: Up to 64 characters

*12 20 to 7F in hex: Up to 32 characters

■ Mask data

The received data from external device and mask data are compared by a bit with AND to determine the match.

If comparing them by all bits, set the mask data to [FF].

If [INPUT MODE] is set to [ASCII] at the time of reply command registration, the mask data is fixed at [FF] automatically.

Example: [0] of ASCII codes ([30] in hex) is replied:

| | Binary | | | Binary | Hexadecimal |
|--|----------|---|------|----------|--------------|
| Received data from an external device | 00110000 | & | MASK | 11111111 | = 30 |
| Reply command data registered in the ICP-V | 00110000 | | | | = 30 matched |

Front display

```
DATA01: 30 00 00 00 00
MASK01: FF FF FF FF FF ↔
```

If using bits that specify the matching condition, set the bit to [1] and set other bits to [0].

Example: the seventh bit of the received data is used:

| | Binary | | | Binary | Hexadecimal |
|--|----------|---|--------|----------|--------------|
| Received data from an external device | 11111111 | & | (MASK) | 01000000 | = 40 |
| Reply command data registered in the ICP-V | 01000000 | | | | = 40 matched |

| | Binary | | | Binary | Hexadecimal |
|--|----------|---|--------|----------|------------------|
| Received data from an external device | 10111111 | & | (MASK) | 01000000 | = 00 |
| Reply command data registered in the ICP-V | 01000000 | | | | = 40 not matched |

Front display

```
DATA01: 40 00 00 00 00
MASK01: 40 FF FF FF FF ↔
```

Command link

You can link registered control commands to execution conditions.

| Menu | CONTROL COMMAND→COMMAND LINK | | @GCC/@SCC |
|-----------|---|-----------------------------------|-------------------|
| Parameter | F1 to F9 | | POWER ON, STANDBY |
| | TOGGLE | STARTUP | — |
| Value | ON | AUTO, A (Plane A), B (Plane B) | — |
| | OFF | — | |
| Parameter | [TOGGLE] is set to [OFF]: 1st to 10th [TOGGLE] is set to [ON] : A-1st to A-10th B-1st to B-10th | | 1st to 10th |
| Value | OFF, CMD 1 to CMD 64 | | |

Press the MENU/ENTER button to accept the set value.

[F1] to [F9] : Execution condition: The function button

Executed only if “**Function button assignment (P.83)**” is set to [COMMAND] or [DISPLAY POWER].

[POWER ON] : Execution condition: The ICP-V is powered on.

[STANDBY] : Execution condition: The ICP-V switches into standby mode.

[TOGGLE] : Set to [ON] to execute another plane.

[STARTUP] : Set the plane to be executed at the time of ICP-V starts up. Available only if [TOGGLE] is set to [ON].

If setting to [AUTO], the last plane is used at the next start-up.

Up to 10 control commands can be linked to an execution condition, such as pressing a function button, powering ON the ICP-V, and so on.

Function buttons can be toggled (Planes A and B), and you can specify which plane is executed at start-up.

Command execution

| | | |
|-------|--------------------------------------|------|
| Menu | CONTROL COMMAND→EXECUTE CTRL COMMAND | @EXC |
| Value | CMD 1 to CMD 64, F1 to F9 | |

Press the MENU/ENTER button to execute control commands.

Only executable command can be selected.

Commands cannot be executed in the following conditions:

- Function button to which no control command is linked
- The control command is set to [RS-232C/LAN], but [DATA SIZE] is set to [0].
- The control command is set to [RS-232C/LAN], but all the communication ports are set to [OFF].
- The control command is set to [RS-232C/LAN], but the communication RS-232C “**Operation mode (P.58)**” is set to [RECEIVER].
- The control command is set to [CONTACT CLOSURE] and they are all set to [—] (Not controlled).
- The control command is set to [CEC] and they are all set to [—] (Not controlled).

Registered control commands can be executed from communication commands or WEB browser.

Commands assigned to F1 to F4 can also be executed from front buttons.

Initializing registered command data, reply command, and link

| | | |
|-----------|--|------|
| Menu | CONTROL COMMAND→INITIALIZATION | @DEC |
| Parameter | CMD 1 to CMD 64 (Control command), REPLY1 to REPLY32 (Reply command), F1 to STANDBY (Control command association) | |
| Value | YES, NO | |

Select [YES] and press the MENU/ENTER button to initialize the settings.

【Registering/Editing control command (P.62)】

【Registering/Editing reply command (P.66)】

【Command link (P.70)】

Note

To restore settings, make a backup copy.

Ignoring duration after control command execution

| | | |
|-------|----------------------------------|-----|
| Menu | CONTROL COMMAND→INVALID DURATION | N/A |
| Value | 0s000ms to 999s999ms | |

Right after control command execution is completed, the next command can be executed. Use this feature to prevent repeated execution caused by pressing the control command execution button twice.

During invalid operation time, all button operations are disabled.

The next operation will be executed after the previous control command is completed and the set ignoring duration time passed.

Illuminating function buttons

You can set the illuminating function for function buttons on the WEB browser and on the front panel.

| | | |
|-----------|---------------------------------------|-----|
| Menu | CONTROL COMMAND→ILLUMINATE FN. BUTTON | N/A |
| Parameter | F1 to F9 | |
| Value | REGISTERED, EXECUTION | |

Two planes (A and B, toggled) can be linked to a button.

| Value | If you register a command for one plane | If you register commands for both two planes |
|------------|--|--|
| REGISTERED | Illuminates if a control command is registered. | Illuminates if A will be executed at the next press; blinks if B will be executed at the next press. |
| EXECUTION | Illuminates while a control command is being executed. (If execution duration is 500 ms. or shorter, the button LED illuminates for 500 ms. (0.5 sec.)) | Illuminates if A will be executed at the next press; turned off if B will be executed at the next press. |

Enabled if “**Function button assignment (P.83)**” is set to [COMMAND] or [DISPLAY POWER].

Function button blinking duration

The function buttons blink for the specified duration while the linked command are being executed.

| | | |
|-----------|--|-----|
| Menu | CONTROL COMMAND→BLINKING DURATION | N/A |
| Parameter | F1 to F4 | |
| Value | EXECUTION (Blinks while a control command is being executed), OFF (Not blink), 1s to 1000s | |

If setting to [1s] to [1000s], the button continues to blink if the command execution is not completed even after the specified duration.

Enabled if “**Function button assignment (P.83)**” is set to [COMMAND] or [DISPLAY POWER].

User preset

You can save, edit, and recall the three following user presets:

- Crosspoint memory : Input channel selection of video/audio
- Preset memory : Input channel selection of video/audio and output video settings and the like
- Pattern memory : Window position, size settings and the like

Crosspoint memory

You can save and recall the input channel selection of video and audio.

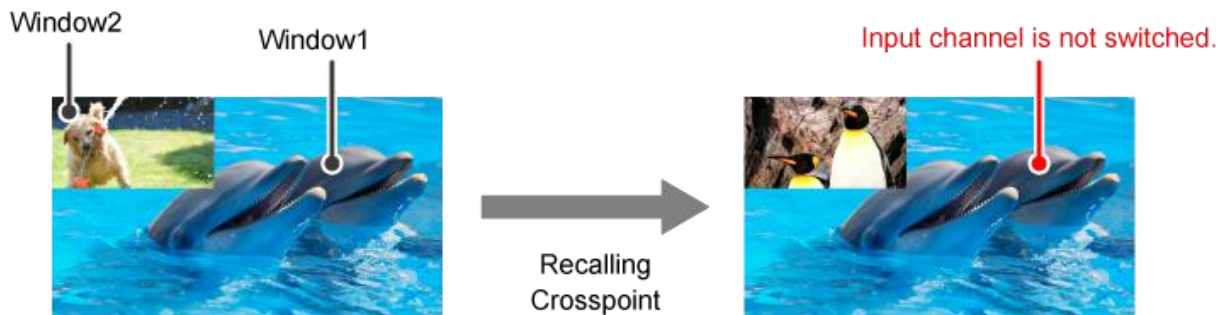
Once crosspoint memory is recalled, input channels of video and audio are switched according to the saved input channel selection.

The default values is [N/A] (No input channel selection information) for all.

An output channel with [N/A] (No input channel selection information) setting keeps the current input channel selection.

You can recall the crosspoint memory with the current input channel selection kept for specified output channels by setting “**Editing crosspoint memory (P.74)**” to [N/A].

■ **Example: Window1 is set to [N/A](No input channel selection information)**



Saving crosspoint memory

| | | | |
|-----------|------------------------------|--------------------------------------|------|
| Menu | USER PRESET→STORE CROSSPOINT | | @SCM |
| Parameter | Crosspoint memory number | Crosspoint memory name | |
| Value | No.1 to No.16 | ASCII 20 to 7D (Up to 10 characters) | |

Press the MENU/ENTER button to save the crosspoint memory.

Editing crosspoint memory

| | | | | |
|-----------|-----------------------------|------------------|---|-----------|
| Menu | USER PRESET→EDIT CROSSPOINT | | Advanced | @GCM/@ECM |
| Parameter | No.1 to No.16 | | | |
| | OUT1 | | | |
| | W1 | W2, W3, W4 | NAME | |
| | VIDEO, AUDIO | VIDEO | — | |
| Value | N/A, 1 to 4, OFF | N/A, 1 to 4, OFF | ASCII 20 to 7D (Up to 10 characters) | |

Press the MENU/ENTER button to save the crosspoint memory.

[N/A]: Keeps the current input channel selection.

The input channel is not switched even after recalling the crosspoint memory.

Recalling crosspoint memory

| | | | |
|-----------|-------------------------------|--|------|
| Menu | USER PRESET→RECALL CROSSPOINT | | @RCM |
| Parameter | Crosspoint memory number | | |
| Value | No.1 to No.16 | | |

Press the MENU/ENTER button to recall the crosspoint memory.

Preset memory

You can save and recall the settings and input channel selection information of video and audio.

Nothing is saved to the preset memory by default.

The output settings that saved in the preset memory can be recalled with the current input channel selections kept or recalled together with a saved crosspoint memory.

Saving preset memory

| | | | |
|-----------|-----------------------------------|--------------------------------------|------|
| Menu | USER PRESET→STORE PRESET SETTINGS | | @SPM |
| Parameter | Preset memory number | Preset memory name | |
| Value | No.1 to No.9 | ASCII 20 to 7D (Up to 10 characters) | |

Press the MENU/ENTER button to save the preset memory.

The following settings and input channel selection information are saved to the preset memory:

- 【Output video (P.17)】 (Window image position, Window image size, Image position in the window, Image size in the window, Window priority, Window displayed/hide, Window background, Overlay text position, Overlay text size, Window border size, Window border color, Background color)
- 【Output (P.29)】 (Video output for when no signal is input)
- 【Picture adjustment (P.44)】 (Output brightness/contrast/gamma)
- 【Output audio (P.46)】 (Audio output, Audio level, Mute)
- 【Bitmap (P.78)】 (Bitmap output, Background color, Aspect ratio, Image position)

Recalling preset memory

| | | | |
|-----------|------------------------------------|--|------|
| Menu | USER PRESET→RECALL PRESET SETTINGS | | @RPM |
| Parameter | Preset memory number | Input channel selection information | |
| Value | No.1 to No.9 | N/A, PRESET, CP_MEMORY1 to CP_MEMORY16 | |

Press the MENU/ENTER button to recall the preset memory.

Only saved preset memory number is available.

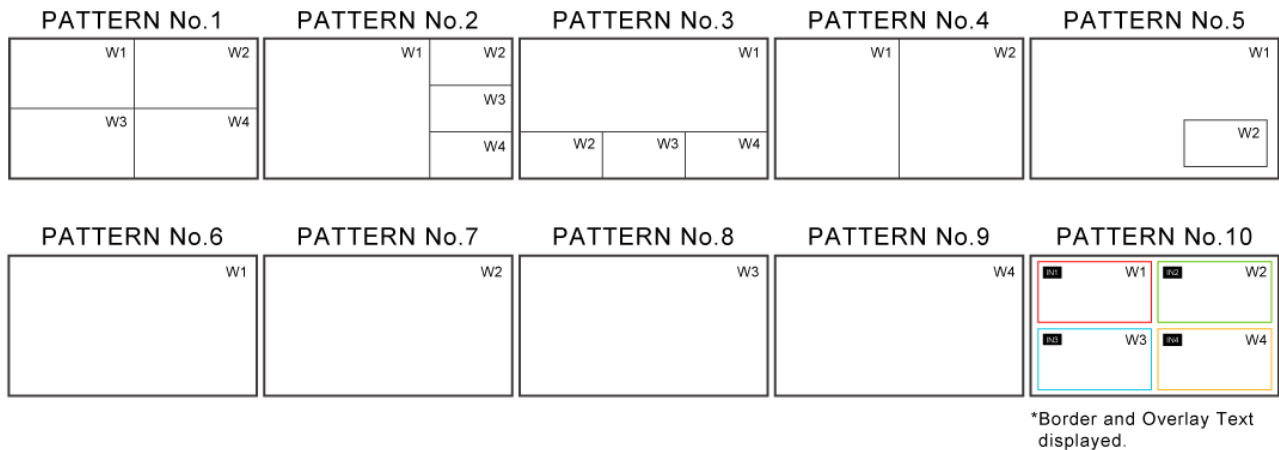
[N/A] : Does not recall input channel selection information, keeps the current input channel selection information.

[PRESET] : Recalls the input channel selection information saved in the preset memory

[CP_MEMORY]: Recalls the input channel selection information saved in the crosspoint memory

Pattern memory (Window configuration)

The following preset window configurations are saved by default:



After initialization, the ICP-V starts with PATTERN No.1.

Settings other than video/audio input channel selection information can be recalled or can be recalled together with a saved crosspoint memory.

If all window sizes are the same before and after a layout is recalled, layouts can be recalled seamlessly. For other cases, some black frames are output.

Saving pattern memory

| Menu | USER PRESET→STORE PATTERN | | | @SWM |
|-----------|---------------------------|----------------|---|------|
| Parameter | Pattern memory number | Output channel | Pattern memory name | |
| Value | No.1 to No.32 | OUT1 | ASCII 20 to 7D (Up to 10 characters) | |

Press the MENU/ENTER button to save the pattern memory.

The following output video settings are saved to the pattern memory:

- 【Output video (P.17)】 (Window image position, Window image size, Image position in the window, Image size in the window, Window priority, Window displayed/hide, Window background, Overlay text position, Overlay text size, Window border size, Window border color, Background color)
- 【Bitmap (P.78)】 (Bitmap output)

Recalling pattern memory

| | | | | |
|-----------|----------------------------|----------------|-------------------------------------|------|
| Menu | USER PRESET→RECALL PATTERN | | | @RWM |
| Parameter | Pattern memory number | Output channel | Input channel selection information | |
| Value | No.1 to No.32 | OUT1 | N/A, CP_MEMORY1 to CP_MEMORY16 | |

Press the MENU/ENTER button to recall the pattern memory.

[N/A] : Does not recall input channel selection information, keeps the current input channel selection information.

[CP_MEMORY]: Recalls the input channel selection information saved in the crosspoint memory

Start-up memory

You can set the user preset that is recalled when the ICP-V is powered ON.

| | | |
|-------|---|-----|
| Menu | USER PRESET→START-UP MEMORY | N/A |
| Value | LAST MEMORY, CROSS POINT 1 to CROSS POINT 16, PRESET MEMORY 1 to PRESET MEMORY 9, PATTERN MEMORY 1 to PATTERN MEMORY 32 | |

[LAST MEMORY] : Recalls settings of that before the ICP-V switches into standby mode or powered off status.

[CROSS POINT] : Recalls the selected crosspoint memory. For settings other than input channel selection information, the last settings before powered OFF are recalled.

[PRESET MEMORY] : Recalls the selected preset memory (including input channel selection information). For settings that are not saved in the preset memory, last settings before the ICP-V switches into standby mode or powered off status are recalled. Only saved preset memory numbers are available.

[PATTERN MEMORY] : Recalls the selected pattern memory.
For settings that are not saved in the pattern memory, last settings before the ICP-V switches into standby mode or powered off status are recalled.

Bitmap

Up to four bitmap files can be saved to the ICP-V, and one of the saved files can be output on the start-up screen and window separately.

Features:

- Image can be displayed at the same size.
- Image size can be increased while keeping the aspect ratio.
- Image size can be increased to full-window size.
- Background color can be set for each bitmap.
- Bitmap can be assigned to input channels and displayed as an input video.

Bitmap size cannot be decreased. If a bitmap is bigger than window, only part of the bitmap is displayed.

■ Saving bitmap file

A bitmap file selected from an WEB browser can be saved to the ICP-V.

IDK's logo is saved by **factory** default.

The screenshot shows the ICP-V web interface with the following settings:

- BITMAP OUTPUT:** OFF
- BACKGROUND COLOR:** BITMAP1, R: 0, G: 0, B: 0, 0 - 255, RGB LINK
- ASPECT RATIO:** AUTO
- IMAGE POSITION:** CENTER
- INPUT ASSIGN:** INOFF, OFF
- START-UP BITMAP:** OFF
- MEMORY MODE:** 2K (4 BITMAPS), SET
- SEND BITMAP:** BITMAP1, Choose File, No file chosen, SEND (highlighted with a yellow box)
- BITMAP AREA:**
 - BITMAP1 (2048x1152): EMPTY
 - BITMAP2 (2048x1152): EMPTY
 - BITMAP3 (2048x1152): EMPTY
 - BITMAP4 (2048x1152): EMPTY

Notes

- Do not power off the ICP-V while the message, [Writing Bitmap Please Wait...] appears on the front panel display. The settings may be deleted.
- The stored bitmap file is not deleted even after initialization or it cannot be backed up.

■ Supported bitmap file

To store bitmap files, the ICP-V supports DIB (Device Independent Bitmap) with a header generally used for Windows. These files need to meet the following requirements:

- File header : BITMAPFILEHEADER
- Information header : BITMAPCOREHEADER (for OS/2), BITMAPINFOHEADER (for Windows)
- The number of colors : 2 colors (monochrome, 1 bit), 16 colors (4 bits), 256 colors (8 bits), 16.77 million colors (TRUE COLOR, 24 bits)
- Size of an image: : [MEMORY MODE] [2K (4 BITMAPS)] : 2048x1152 or smaller
[MEMORY MODE] [4K (1 BITMAPS)] : 4096x2160 or smaller
- Compression format : No compression (BI_RGB), 8 bit-run-length compression (BI_RLE8), 4 bit-run-length compression (BI_RLE4)

Bitmap output

| | | |
|-----------|---|-----------|
| Menu | BITMAP→BITMAP OUTPUT | @GBM/@SBM |
| Parameter | OUT1 | |
| | W1, W2, W3, W4 | |
| Value | OFF, BITMAP 1 ON, BITMAP 2 ON, BITMAP 3 ON, BITMAP 4 ON | |

Only numbers to which bitmap is saved can be selected.

Background color

| | | | |
|-----------|--|----------|-----|
| Menu | BITMAP→BACKGROUND COLOR | Advanced | N/A |
| Parameter | OUT1 | | |
| | W1, W2, W3, W4 | | |
| | Bitmap number 1 to 4 | | |
| | R (Red), G (Green), B (Blue), RGB (Red/Green/Blue) | | |
| Value | 0 to 255 | | |

Only numbers to which bitmap is saved can be selected.

If a bitmap is displayed, this menu setting will be applied instead of “**Window background (P.23)**” settings.

Aspect ratio

| | | | |
|-----------|----------------------|----------|-----|
| Menu | BITMAP→ASPECT RATIO | Advanced | N/A |
| Parameter | OUT1 | | |
| | W1, W2, W3, W4 | | |
| | Bitmap number 1 to 4 | | |
| Value | AUTO, THROUGH, FULL | | |

Only numbers to which bitmap is saved can be selected.

[AUTO] : Keeps the aspect ratio of the bitmap.

[THROUGH]: Does not increase the bitmap size.

[FULL] : Increases the image to full-window size.

For no image area, the lower-layer video is displayed.

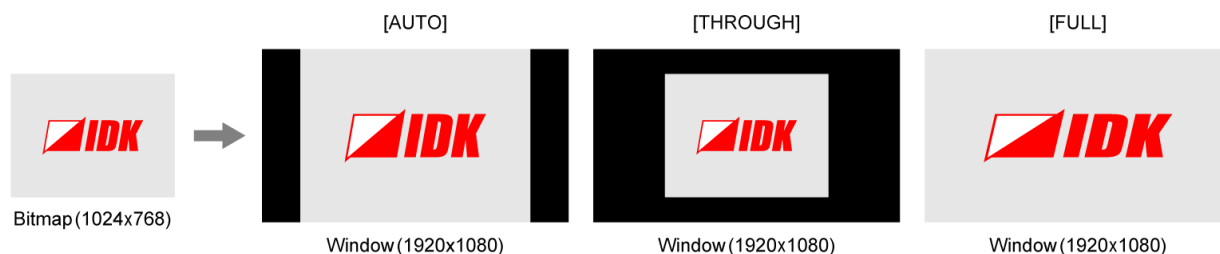


Image position

| | | | |
|-----------|--|----------|-----|
| Menu | BITMAP→IMAGE POSITION | Advanced | N/A |
| Parameter | OUT1 | | |
| | W1, W2, W3, W4 | | |
| | Bitmap1 to 4 | | |
| Value | CENTER, TOP-LEFT, BOTTOM-LEFT, TOP-RIGHT, BOTTOM-RIGHT | | |

Only numbers to which bitmap is saved can be selected.



Assigning input channel

You can set which bitmap is output for when input channel is selected.

| | | | |
|-----------|---|----------|-----|
| Menu | BITMAP→INPUT ASSIGN | Advanced | N/A |
| Parameter | OUT1 | | |
| | W1, W2, W3, W4 | | |
| | IN1 to IN4, INOFF | | |
| Value | OFF, BITMAP 1 ON, BITMAP 2 ON, BITMAP 3 ON, BITMAP 4 ON | | |

Press the MENU/ENTER button to accept the set value.

Only numbers to which bitmap is saved can be selected.

Start-up bitmap output

You can set which bitmap is output at the time of ICP-V start-up.

| | | | |
|-----------|---|----------|-----|
| Menu | BITMAP→START-UP BITMAP | Advanced | N/A |
| Parameter | OUT1 | | |
| Value | OFF, BITMAP 1 ON, BITMAP 2 ON, BITMAP 3 ON, BITMAP 4 ON | | |

Only numbers to which bitmap is saved can be selected.

If selecting a value other than [OFF], the bitmap is displayed for 11 seconds.

Bitmap memory mode

| | | | |
|-------|-------------------------------|----------|-----|
| Menu | BITMAP→MEMORY MODE | Advanced | N/A |
| Value | 2K (4 BITMAPS), 4K (1 BITMAP) | | |

Press the MENU/ENTER button to accept the set value.

[2K (4 BITMAPS)] : Up to four 2048x1152 or smaller bitmaps

[4K (1 BITMAP)] : Up to one 4096x2160 or smaller bitmap

Once the memory mode is switched, the registered bitmap is deleted, and the following settings will be initialized:

【Bitmap output (P.79)】

【Assigning input channel (P.80)】

【Start-up bitmap output (P.80)】

【Video output for when no signal is input (P.29)】

Notes

- Bitmap data cannot be backed up. Save the bitmap again after switching the memory mode.
- Settings of “**Video output for when no signal is input (P.29)**” are initialized only if BITMAP1, BITMAP2, BITMAP3, or BITMAP4 is selected.

Start-up settings

You can specify the settings for when the ICP-V is powered ON or starts up.

Start-up status

You can set the status for when the ICP-V is powered ON.

| | | | |
|-------|-----------------------------------|----------|-----|
| Menu | POWER ON SETTINGS→SYSTEM START-UP | Advanced | N/A |
| Value | AUTO, ON, OFF | | |

[AUTO] : Becomes last status before powered OFF.

[ON] : Starts up the ICP-V.

[OFF] : Becomes standby status.

Control command execution

Control command linked to function buttons can be executed when the ICP-V starts up.

| | | | |
|-----------|-------------------------------------|----------|-----|
| Menu | POWER ON SETTINGS→FUNCTION CMD.EXE. | Advanced | N/A |
| Parameter | F1 to F9 | | |
| Value | ON, OFF | | |

You can specify which plane (A/B) to be executed in “**Command link (P.70)**” [STARTUP].

Button security lockout

You can set the button security lockout when the ICP-V starts up.

| | | | |
|-------|-------------------------------|----------|-----|
| Menu | POWER ON SETTINGS→BUTTON LOCK | Advanced | N/A |
| Value | AUTO, LOCK, UNLOCK | | |

[AUTO] : Starts up with the status before the ICP-V is powered OFF or switched into standby mode.

[LOCK] : Buttons are locked.

[UNLOCK] : Buttons are unlocked.

You can set the target buttons in “**Grouping button security lockout (P.83)**”.

Configuring ICP-V

Function button assignment

You can set the function to be executed when a function button is pressed.

| | | |
|-----------|---|-----------|
| Menu | SYSTEM SETTINGS→FUNCTION ASSIGNMENT | @GFA/@SFA |
| Parameter | F1 to F9 | |
| Value | COMMAND, DISPLAY POWER, CROSSPOINT No.1 to CROSSPOINT No.16, PRESETMEMORY No.1 to PRESETMEMORY No.9 | |

- [COMMAND] : Executes the control command that is set in “**Command link (P.70)**”.
 Front button operation is not available during command execution.
 “**Illuminating function buttons (P.72)**” is set to [REGISTERD] and “**Function button blinking duration (P.72)**” is set to [OFF].
- [DISPLAY POWER] : Executes the linked control command.
 If the function of [DISPLAY POWER] is linked, another function button to which [DISPLAY POWER] is linked can be executed even during command.
 “**Illuminating function buttons (P.72)**” is set to [EXECUTION] and “**Function button blinking duration (P.72)**” is set to [EXECUTION].
- [CROSSPOINT] : Recalls saved crosspoint memories.
- [PRESETMEMORY] : Recalls saved preset memories.
 Available buttons blinks in amber.

Grouping button security lockout

| | | |
|-----------|------------------------------------|-----|
| Menu | SYSTEM SETTINGS→BUTTON LOCK TARGET | N/A |
| Parameter | CHANNEL, MENU, F BUTTON, STANDBY | |
| Value | LOCK, UNLOCK | |

- [PATTERN] : Pattern selection buttons
- [MENU] : MENU/ENTER button, BACK button, Navigation buttons (△▽◀▶)
- [F BUTTON] : Function buttons
- [STANDBY] : Power button

Abnormality detection alarm

You can enable/disable the alarm display feature on the front panel.

| | | |
|-------|------------------------------|-----|
| Menu | SYSTEM SETTINGS→ALARM | N/A |
| Value | ON (Enabled), OFF (Disabled) | |

If setting to [ON] and an abnormality is detected, an alarm is displayed and the front display blinks.

```
***** ALARM *****
VOLTAGE TEMP
```

[VOLTAGE]: Abnormality in internal power voltage is detected.

[TEMP] : Abnormality in internal temperature is detected.



WARNING

If an alarm is displayed on the front display, stop using the ICP-V immediately and contact us for support options. If you do not stop using, it may damage the ICP-V or result in fire.

Advanced menu display

You can enable/disable the advanced menus.

| | | |
|-------|-------------------------------|-----|
| Menu | SYSTEM SETTINGS→ADVANCED MENU | N/A |
| Value | ON (Enabled), OFF (Disabled) | |

For details of advanced menus, see “**Basic menus and Advanced menus (P.13)**”.

Automatic brightness adjustment of front display

| | | | |
|-------|-----------------------------------|----------|-----|
| Menu | SYSTEM SETTINGS→LUMINANCE CONTROL | Advanced | N/A |
| Value | ON, OFF | | |

If setting to [ON], the brightness is reduced after 10 seconds of inactivity. Once any front panel operation is performed the brightness returns to the high brightness.

Button press and hold time

You can set how long the function button is pressed and held for executing the linked command.

| | | | |
|-----------|----------------------------------|----------|-----|
| Menu | SYSTEM SETTINGS→BUTTON HOLD TIME | Advanced | N/A |
| Parameter | F1 BUTTON to F4 BUTTON | | |
| Value | 0ms to 5000ms (by 100ms) | | |

This feature prevents undesired operation by touching a button.

Top page

You can set the information to be displayed on the front display.

| | | | |
|-------|--|----------|-----|
| Menu | SYSTEM SETTINGS→TOP PAGE | Advanced | N/A |
| Value | NORMAL, OUTPUT STATUS, INPUT STATUS, AUDIO LEVEL | | |

[NORMAL]

Model name

ICP-V41U

[OUTPUT STATUS]

Output signal status

[OUT1A RESOLUTION]

3840x2160p 59.94Hz AAA

⬆ ⬇ ⬆

Up/Down buttons : Detailed
information

[INPUT STATUS]

Input signal status

IN1 2 3 4

H₁ D H₁

◀ ▶

Up/Down buttons : Detailed
information
Right/Left buttons : Input

[AUDIO LEVEL]

Output audio level

[OUTPUT LEVEL]

OUT1: 0dB

⬆ ⬇ ⬆

Up/Down buttons : Audio level
Right/Left buttons : Output

Initialization of all settings

You can initialize all settings or settings except for RS-232C and LAN communication settings.

| | | | |
|-----------|--------------------------------|----------|------|
| Menu | SYSTEM SETTINGS→INITIALIZATION | Advanced | @CLR |
| Parameter | ALL, NORMAL | | |
| Value | YES, NO | | |

Select [YES] and press the MENU/ENTER button to initialize the settings and reboot the ICP-V.

[ALL] : Initializes all settings.

[NORMAL]: Initializes settings except for RS-232C and LAN communication settings.

【RS-232C (P.58)】 (Communication setting)

【LAN (P.59)】 (Network, Automatic disconnection time (Timeout))

Note

To restore settings, make a backup copy.


Status

You can view the statuses of I/O channel and the ICP-V.

Output signal status

| | | |
|------|---------------------------|------|
| Menu | VIEW STATUS→OUTPUT STATUS | @GSS |
|------|---------------------------|------|

■ Resolution of output video signals and error code

[OUT1A RESOLUTION] 
3840x2160p 59.94Hz AAA

[3840x2160p 59.94Hz] : Horizontal resolution x Vertical resolution, Vertical synchronous frequency

[SIGNAL STOPPED] : Video synchronous signal output stopped

[UNCONNECTED] : No sink device connected

Error code : From left, video output, digital audio output, analog audio output

If there is no error for output, no error code is displayed.

If “**Window displayed/hide (P.23)**” is set to [ON] and two or more windows have an error, errors are displayed in the ascending order of the window number.

Errors of each window are shown in the WEB browser.

Error code for video output


| Code | Description |
|------|---|
| 1 | Video mute is set to [ON]. 【Video mute (P.29)】 |
| 2 | DDC 5 V signal is not input or no source device is connected. |
| 3 | No video signal is input. <ul style="list-style-type: none"> May be solved by changing “Hot plug output for when there is no active video input signal (P.39)” to longer. Signal quality may be decreased due to cable length or cabling. May be solved by limiting source device video output of EDID. 【Resolution (P.52)】 【Deep Color (P.54)】 |
| 4 | Video output of source device is in a Mute status. |
| 5 | Signal with HDCP is input, but the sink device does not support HDCP. <ul style="list-style-type: none"> May be solved by setting “HDCP input (P.41)” to [NOT SUPPORT]. |
| 6 | The source device does not output required information (packets) for outputting video. |
| 7 | Video signal that is not supported, such as out of dot clock range, is input. <ul style="list-style-type: none"> May be solved by limiting source device video output of EDID. 【EDID selection (P.51)】 |
| A | Input selection is set to [OFF]. |

Error code for digital and analog audio output

| Code | Description |
|------|---|
| 1 | Audio mute is set to [ON]. 【Mute (P.47)】 |
| 2 | DDC 5 V signal is not input or no source device is connected. |
| 3 | No audio signal is input. <ul style="list-style-type: none"> ▪ DVI signal does not include audio. ▪ Limited to DVI signal input in EDID setting. 【Signal format (P.53)】 |
| 4 | Audio output of source device is in a Mute status. |
| 6 | The source device does not output required information (packets) for outputting video or audio. |
| 7 | Bitstream audio is input, but the sink device does not support the format. <ul style="list-style-type: none"> ▪ Can be solved by limiting audio output of the source device EDID. 【EDID selection (P.51)】 【Bitstream audio (P.55)】 |
| 8 | Audio signal output is set to [OFF]. 【Audio output (P.47)】 |
| 9 | DVI signal is output. DVI signal does not include audio. <ul style="list-style-type: none"> ▪ “Signal format (P.31)” is set to [DVI MODE]. ▪ The sink device may not support audio. ▪ EDID reading may be failed. Can be solved by setting “Automatic determining sink device EDID (P.33)” to [ON]. |
| A | Input selection is set to [OFF]. |


*Input status of analog audio signal cannot be detected. Even if any error code is not displayed, audio may sometimes not be output when analog input is selected.

■ Output video signal format

[OUT1A VIDEO FORMAT] 
HDMI 444 8bpc LIMITED

| | |
|------------------|---|
| [HDMI] | : HDMI signal |
| [DVI] | : DVI signal |
| [444] | : YCbCr 4:4:4 |
| [422] | : YCbCr 4:2:2 |
| [420] | : YCbCr 4:2:0 |
| [RGB] | : RGB |
| [8bpc] | : 24 bit/pixel (8 bit/component) |
| [10bpc] | : 30 bit/pixel (10 bit/component) |
| [12bpc] | : 36 bit/pixel (12 bit/component) |
| [LIMITED] | : Limited range |
| [FULL] | : Full range |
| [SIGNAL STOPPED] | : Video synchronous signal output stopped |
| [UNCONNECTED] | : No sink device is connected. |

■ Output audio signal format

[OUT1A AUDIO FORMAT] 
L-PCM 48kHz 24bit M

| | |
|---------------------|--|
| [L-PCM 48kHz 24bit] | : LPCM, Sampling frequency, Bit length |
| [M] | : Multi-channel audio |
| [COMPRESSED] | : Bitstream audio (Such as Dolby Digital, DTS) |
| [NO SIGNAL] | : No audio is output. |
| [SIGNAL STOPPED] | : Video synchronous signal output stopped |
| [UNCONNECTED] | : No sink device is connected. |

■ HDCP output, authentication status

[OUT1A HDCP STATUS] 
HDCP2.2 Type0

| | |
|-------------------------|---|
| [HDCP2.2] | : With HDCP 2.2 output |
| [HDCP2.2 Type1] | : With HDCP 2.2 Type 1 output |
| [HDCP2.2 Type0] | : With HDCP 2.2 Type 0 output |
| [HDCP1.4] | : With HDCP 1.4 output |
| [NOT ENCRYPTED] | : Without HDCP output |
| [DURING AUTHENTICATION] | : HDCP authentication |
| [HDCP RETRY] | : HDCP authentication being retried |
| [HDCP RETRY OVER] | : HDCP authentication retry over |
| [SIGNAL STOPPED] | : Video synchronous signal output stopped |
| [UNCONNECTED] | : No sink device is connected. |

Viewing sink device EDID

You can view EDID of the sink device that is connected to an output connector.

| | | |
|------|------------------------------|------|
| Menu | VIEW STATUS→SINK DEVICE EDID | @GES |
|------|------------------------------|------|

For a sink device that does not support HDMI, only sink device name, recommended resolution, and supported video signal format are displayed.

If video synchronous signal output is stopped, [UNCONNECTED] is displayed on the front display. If the ICP-V cannot read EDID from connected sink devices or the data is invalid, [EDID READ ERROR] is displayed. If EDID check sum error causes, [E] is displayed for the sink device name and recommended resolution.

■ Sink device name and recommended resolution

[OUT1A] MONITOR NAME ⬆⬇⬆
3840x2160p 594.00MHz

■ Supported video signal format

[OUT1A] HDMI ⬆⬇⬆
RGB/YCbCr422/444

[OUT1A] ⬆⬇⬆
DVI

[HDMI] : HDMI supported
[RGB] : RGB supported
[YCbCr 420] : YCbCr 4:2:0 supported
[422] : YCbCr 4:2:2 supported
[444] : YCbCr 4:4:4 supported
[DVI] : DVI supported (Only RGB supported)

■ Supported color depth

[OUT1A] ⬆⬇⬆
8/10/12 bpc

■ Supported audio sampling frequency

[OUT1A] ⬆⬇⬆
32/44.1/48/96kHz

■ Supported audio signal format

[OUT1A] 16/20/24BIT ⬆⬇⬆
8CHANNEL COMPRESSED

Audio bit length, Number of audio channels, Bitstream audio supported/not supported
[COMPRESSED]: Bitstream audio supported

Input signal status

You can view the input signal statuses.

| | | |
|------|--------------------------|------|
| Menu | VIEW STATUS→INPUT STATUS | @GSS |
|------|--------------------------|------|

■ Statuses of all input connectors

IN1 2 3 4

◀ ▶

H A D H

- [H] : HDMI signal
- [D] : DVI signal
- No character : No signal is input.
- Upper right [H] : HDCP protected
- Lower right [A] : Audio is embedded.

■ Resolution of input video signal

[IN1 RESOLUTION]

↕

3840x2160p 59.94Hz

- [3840x2160p 59.94Hz] : Horizontal resolution x Vertical resolution, Vertical synchronous frequency
- [NO SIGNAL] : No signal is input.

■ Signal format of input video

[IN1 VIDEO FORMAT]

↕

HDMI 444 8bpc LIMITED

- [HDMI] : HDMI signal
- [DVI] : DVI signal
- [NO SIGNAL] : No signal is input.
- [444] : YCbCr 4:4:4
- [422] : YCbCr 4:2:2
- [420] : YCbCr 4:2:0
- [RGB] : RGB
- [8bpc] : 24 bit/pixel (8 bit/component)
- [10bpc] : 30 bit/pixel (10 bit/component)
- [12bpc] : 36 bit/pixel (12 bit/component)
- [LIMITED] : Limited range
- [FULL] : Full range
- : No information

■ Signal format of input audio


[IN1 AUDIO FORMAT]

↕

L-PCM 48kHz 24bit M

- [L-PCM 48kHz 24bit] : LPCM, Sampling frequency, Bit length
- [M] : Multi-channel audio
- [COMPRESSED] : Bitstream audio (Such as Dolby Digital, DTS)
- [NO SIGNAL] : No audio is input.

■ HDCP status

[IN1 HDCP STATUS] 
HDCP2.2 Type0

[HDCP2.2 Type1] : HDCP 2.2 Type 1 input
[HDCP2.2 Type0] : HDCP 2.2 Type 0 input
[HDCP1.4] : HDCP 1.4 input
[NOT ENCRYPTED] : Without HDCP input
[NO SIGNAL] : No signal is input.

System check

You can view the statuses of the internal supply voltage and internal temperature can be displayed.

| | | |
|------|-----------------------------------|------|
| Menu | VIEW STATUS→HARDWARE CHECK RESULT | @GHC |
|------|-----------------------------------|------|

[SYSTEM STATUS]
GOOD

[SYSTEM STATUS]
VOLTAGE TEMP

[GOOD] : No abnormality is detected.
[VOLTAGE] : Abnormality in internal supply voltage is detected.
[TEMP] : Abnormality in internal temperature is detected.

Note

If “**Abnormality detection alarm (P.84)**” is set to [ON] and abnormality is detected, an alarm is displayed on the front display.



If an alarm is displayed on the front display, stop using the ICP-V immediately and contact us for support options. If you do not stop using, it may damage the ICP-V or result in fire.

Device information

You can view the model name and firmware version.

| | | |
|------|---------------------|------|
| Menu | VIEW STATUS→VERSION | @GIV |
|------|---------------------|------|

[VERSION]
ICP-V41U 01.00.00

Factory default list

| Menu | | Default |
|-----------------------|------------------------|--|
| OUTPUT IMAGE | RESOLUTION | A (AUTO-A) |
| | ASPECT RATIO | RESOLUTION |
| | WINDOW POSITION | H: 0.0%, V: 0.0% |
| | WINDOW SIZE | H: 100.0%, V: 100.0% |
| | WINDOW IMAGE POSITION | H: 0.0%, V: 0.0% |
| | WINDOW IMAGE SIZE | H: 100.0%, V: 100.0% |
| | WINDOW PRIORITY | W1 > W2 > W3 > W4 |
| | WINDOW ENABLE | ON |
| | WINDOW BACKGROUND | ON, R: 0, G: 0, B: 0 |
| | OVERLAY TEXT POSITION | OFF |
| | OVERLAY TEXT SIZE | LARGE |
| | BORDER SIZE | 0 pixel |
| | BORDER COLOR | R: 0, G: 0, B: 0 |
| | BACKGROUND COLOR | R: 0, G: 0, B: 0 |
| | TEST PATTERN | TEST PATTERN: OFF, PATTERN SCROLL: OFF |
| | IMAGE INITIALIZATION | --- |
| OUTPUT SETTINGS | SIGNAL OUTPUT | ON |
| | VIDEO MUTE | OFF |
| | NO SIGNAL OUTPUT | ON |
| | NO SIGNAL IMAGE | BLUE |
| | HDCP AUTHENTICATION | HDCP 2.2 |
| | HDCP RETRY | ETERNITY |
| | CONNECTION RESET | --- |
| | SIGNAL FORMAT | HDMI YCbCr 4:4:4 MODE |
| | DEEP COLOR | 24-BIT COLOR |
| | SWITCHING EFFECT | FREEZE→FADE OUT-IN |
| | SWITCHING EFFECT SPEED | 350ms |
| | FOLLOW SINK EDID | ON |
| | HOTPLUG MASK | OFF |
| | CEC CONNECTION | NOT CONNECTED |
| | | |
| INPUT IMAGE | ASPECT RATIO | AUTO-1 |
| | ASPECT RATIO CONTROL | L-BOX/S-PANEL |
| | IMAGE POSITION | H: 0.0%, V: 0.0% |
| | IMAGE SIZE | H 100.0%, V 100.0% |
| | IMAGE INITIALIZATION | --- |
| INPUT SETTINGS | NO INPUT MONITORING | 10000ms |
| | HDCP INPUT | HDCP 2.2 SUPPORT |
| AUTO SWITCHING | SIGNAL ON PRIORITY | OFF |
| | SIGNAL OFF PRIORITY | OFF |
| | IGNORING DURATION | 0s000ms |
| | SWITCHING MODE | V&A |
| PICTURE ADJUSTMENT | OUTPUT BRIGHTNESS | 100% |
| | OUTPUT CONTRAST | R: 100%, G: 100%, B: 100% |
| | OUTPUT GAMMA | 1.0 |
| | OUTPUT SETTING INIT. | --- |
| | INPUT SHARPNESS | 0 |
| | INPUT BRIGHTNESS | 100% |
| | INPUT CONTRAST | R: 100%, G: 100%, B: 100% |
| | INPUT SATURATION | 100% |
| | INPUT SETTING INIT. | --- |
| OUTPUT AUDIO SETTINGS | SIGNAL OUTPUT | ON |
| | AUDIO LEVEL | 0dB |
| | MUTE | OFF |
| | LIP SYNC | 0ms |
| | SAMPLING FREQUENCY | AUTO-A |
| | MULTI AUDIO | OFF |
| | DOWNMIX | DOWNMIX |
| | TEST TONE | TEST TONE: OFF, SPEAKER: ALL |
| | | |
| INPUT AUDIO SETTINGS | SOURCE SELECTION | DIGITAL |
| | AUDIO LEVEL | 0dB |
| | LIP SYNC | 0ms |
| | STABLE WAIT | ON |

| Menu | | Default |
|-------------------|------------------------|---|
| EDID SETTINGS | EDID SELECTION | BUILT-IN EDID |
| | RESOLUTION | 3840x2160@60 4:4:4 |
| | SINK DEVICE EDID COPY | All: Not saved |
| | SIGNAL FORMAT | HDMI |
| | FRAME RATE | 60Hz |
| | DEEP COLOR | 24-BIT COLOR |
| | Linear PCM | 48kHz |
| | AAC | OFF |
| | Dolby Digital | OFF |
| | Dolby Digital Plus | OFF |
| | Dolby TrueHD | OFF |
| | DTS | OFF |
| | DTS-HD | OFF |
| | SPEAKER CONFIGURATION | AUTO, 2 |
| RS-232C SETTINGS | PARAMETERS | BPS: 9600, LENGTH: 8, PARITY: NONE, STOP: 1 |
| | COMMUNICATION MODE | RS1: RECEIVER |
| LAN SETTINGS | IP ADDRESS | 192.168.1.199 |
| | SUBNET MASK | 255.255.255.0 |
| | GATEWAY ADDRESS | 192.168.1.200 |
| | MAC ADDRESS | --- |
| | COMMAND DESTINATION | IP: 192.168.1.198, PJLink: OFF, PORT: 1100, PASSWORD: 20 (spaces) |
| | AUTO DISCONNECT | SERVER: 30s, CLIENT: 3s |
| CONTROL COMMAND | COMMAND REGISTER/EDIT | All: Not registered |
| | REPLY REGISTER/EDIT | REPLY1 to REPLY30: Not registered, REPLY31: OK, REPLY32: NG |
| | COMMAND LINK | All: Not registered |
| | EXECUTE CTRL COMMAND | --- |
| | INITIALIZATION | --- |
| | INVALID DURATION | 0s000ms |
| | ILLUMINATE FN. BUTTON | REGISTERED |
| | BLINKING DURATION | OFF |
| USER PRESET | STORE CROSSPOINT | All: N/A |
| | EDIT CROSSPOINT | --- |
| | RECALL CROSSPOINT | --- |
| | STORE PRESET SETTINGS | All: Not saved |
| | RECALL PRESET SETTINGS | PRESET |
| | STORE PATTERN | See " Pattern memory (Window configuration) (P.76) ". |
| | RECALL PATTERN | N/A |
| | START-UP MEMORY | LAST MEMORY |
| BITMAP | BITMAP OUTPUT | OFF |
| | BACKGROUND COLOR | R: 0, G: 0, B: 0 |
| | ASPECT RATIO | AUTO |
| | IMAGE POSITION | CENTER |
| | INPUT ASSIGN | OFF |
| | START-UP BITMAP | OFF |
| | MEMORY MODE | 4K (1 BITMAP) |
| POWER ON SETTINGS | SYSTEM START-UP | AUTO |
| | FUNCTION CMD.EXE. | OFF |
| | BUTTON LOCK | AUTO |
| SYSTEM SETTINGS | FUNCTION ASSIGNMENT | COMMAND |
| | BUTTON LOCK TARGET | LOCK |
| | ALARM | ON |
| | ADVANCED MENU | OFF |
| | LUMINANCE CONTROL | ON |
| | BUTTON HOLD TIME | 0ms |
| | TOP PAGE | NORMAL |
| | INITIALIZATION | |
| VIEW STATUS | OUTPUT STATUS | --- |
| | SINK DEVICE EDID | --- |
| | INPUT STATUS | --- |
| | HARDWARE CHECK RESULT | --- |
| | VERSION | --- |

| Menu | | Window preset | |
|--------------|-----------------------|-------------------------------|-------------------------------|
| | | No.1 | No.2 |
| OUTPUT IMAGE | WINDOW POSITION | W1 H: 0.0%, V: 0.0% | W1 H: 0.0%, V: 0.0% |
| | | W2 H: 50.0%, V: 0.0% | W2 H: 66.67%, V: 0.0% |
| | | W3 H: 0.0%, V: 50.0% | W3 H: 66.67%, V: 33.34% |
| | | W4 H: 50.0%, V: 50.0% | W4 H: 66.67%, V: 66.67% |
| | WINDOW SIZE | W1 H: 50.0%, V: 50.0% | W1 H: 66.67%, V: 100.0% |
| | | W2 H: 50.0%, V: 50.0% | W2 H: 33.34%, V: 33.34% |
| | | W3 H: 50.0%, V: 50.0% | W3 H: 33.34%, V: 33.34% |
| | | W4 H: 50.0%, V: 50.0% | W4 H: 33.34%, V: 33.34% |
| | WINDOW IMAGE POSITION | W1 to W4 H: 0.0%, V: 0.0% | W1 to W4 H: 0.0%, V: 0.0% |
| | WINDOW IMAGE SIZE | W1 to W4 H: 100.0%, V: 100.0% | W1 to W4 H: 100.0%, V: 100.0% |
| | WINDOW PRIORITY | W1 > W2 > W3 > W4 | W1 > W2 > W3 > W4 |
| | WINDOW ENABLE | W1 to W4: ON | W1 to W4: ON |
| BITMAP | WINDOW BACKGROUND | W1 to W4 ON, R: 0, G: 0, B: 0 | W1 to W4 ON, R: 0, G: 0, B: 0 |
| | OVERLAY TEXT POSITION | W1 to W4: OFF | W1 to W4: OFF |
| | OVERLAY TEXT SIZE | W1 to W4: LARGE | W1 to W4: LARGE |
| | BORDER SIZE | W1 to W4: 0 pixel | W1 to W4: 0 pixel |
| | BORDER COLOR | W1 to W4 R: 0, G: 0, B: 0 | W1 to W4 R: 0, G: 0, B: 0 |
| | BITMAP OUTPUT | W1 to W4: OFF | W1 to W4: OFF |

| Menu | | Window preset | |
|--------------|-----------------------|-------------------------------|----------------------------------|
| | | No.3 | No.4 |
| OUTPUT IMAGE | WINDOW POSITION | W1 H: 0.0%, V: 0.0% | W1 H: 0.0%, V: 0.0% |
| | | W2 H: 0.0%, V: 66.67% | W2 H: 50.0%, V: 0.0% |
| | | W3 H: 33.34%, V: 66.67% | W3 H: 0.0%, V: 0.0% |
| | | W4 H: 66.67%, V: 66.67% | W4 H: 0.0%, V: 0.0% |
| | WINDOW SIZE | W1 H: 100.0%, V: 66.67% | W1 H: 50.0%, V: 100.0% |
| | | W2 H: 33.34%, V: 33.34% | W2 H: 50.0%, V: 100.0% |
| | | W3 H: 33.34%, V: 33.34% | W3 H: 100.0%, V: 100.0% |
| | | W4 H: 33.34%, V: 33.34% | W4 H: 100.0%, V: 100.0% |
| | WINDOW IMAGE POSITION | W1 to W4 H: 0.0%, V: 0.0% | H: 0.0%, V: 0.0% |
| | WINDOW IMAGE SIZE | W1 to W4 H: 100.0%, V: 100.0% | H: 100.0%, V: 100.0% |
| | WINDOW PRIORITY | W1 > W2 > W3 > W4 | W1 > W2 > W3 > W4 |
| | WINDOW ENABLE | W1 to W4: ON | W1: ON, W2: ON, W3: OFF, W4: OFF |
| BITMAP | WINDOW BACKGROUND | W1 to W4 ON, R: 0, G: 0, B: 0 | W1 to W4 ON, R: 0, G: 0, B: 0 |
| | OVERLAY TEXT POSITION | W1 to W4: OFF | W1 to W4: OFF |
| | OVERLAY TEXT SIZE | W1 to W4: LARGE | W1 to W4: LARGE |
| | BORDER SIZE | W1 to W4: 0 pixel | W1 to W4: 0 pixel |
| | BORDER COLOR | W1 to W4 R: 0, G: 0, B: 0 | W1 to W4 R: 0, G: 0, B: 0 |
| | BITMAP OUTPUT | W1 to W4: OFF | W1 to W4: OFF |

| Menu | | Window preset | |
|--------------|-----------------------|--|--|
| | | No.5 | No.6 |
| OUTPUT IMAGE | WINDOW POSITION | W1 H: 0.0%, V: 0.0% W2 H: 75.0%, V: 75.0% W3 H: 40.0%, V: 75.0% W4 H: 5.0%, V: 75.0% | W1 H: 0.0%, V: 0.0% W2 H: 0.0%, V: 0.0% W3 H: 0.0%, V: 0.0% W4 H: 0.0%, V: 0.0% |
| | WINDOW SIZE | W1 H: 100.0%, V: 100.0% W2 H: 20.0%, V: 20.0% W3 H: 20.0%, V: 20.0% W4 H: 20.0%, V: 20.0% | W1 H: 100.0%, V: 100.0% W2 H: 100.0%, V: 100.0% W3 H: 100.0%, V: 100.0% W4 H: 100.0%, V: 100.0% |
| | WINDOW IMAGE POSITION | W1 to W4 H: 0.0%, V: 0.0% | H: 0.0%, V: 0.0% |
| | WINDOW IMAGE SIZE | W1 to W4 H: 100.0%, V: 100.0% | H: 100.0%, V: 100.0% |
| | WINDOW PRIORITY | W4 > W3 > W2 > W1 | W1 > W2 > W3 > W4 |
| | WINDOW ENABLE | W1: ON, W2: ON, W3: OFF, W4: OFF | W1: ON, W2: OFF, W3: OFF, W4: OFF |
| | WINDOW BACKGROUND | W1 to W4 ON, R: 0, G: 0, B: 0 | W1 to W4 ON, R: 0, G: 0, B: 0 |
| | OVERLAY TEXT POSITION | W1 to W4: OFF | W1 to W4: OFF |
| | OVERLAY TEXT SIZE | W1 to W4: LARGE | W1 to W4: LARGE |
| | BORDER SIZE | W1 to W4: 0 pixel | W1 to W4: 0 pixel |
| | BORDER COLOR | W1 to W4 R: 0, G: 0, B: 0 | W1 to W4 R: 0, G: 0, B: 0 |
| BITMAP | BITMAP OUTPUT | W1 to W4: OFF | W1 to W4: OFF |

| Menu | | Window preset | |
|--------------|-----------------------|--|--|
| | | No.7 | No.8 |
| OUTPUT IMAGE | WINDOW POSITION | W1 H: 0.0%, V: 0.0% W2 H: 0.0%, V: 0.0% W3 H: 0.0%, V: 0.0% W4 H: 0.0%, V: 0.0% | W1 H: 0.0%, V: 0.0% W2 H: 0.0%, V: 0.0% W3 H: 0.0%, V: 0.0% W4 H: 0.0%, V: 0.0% |
| | WINDOW SIZE | W1 H: 100.0%, V: 100.0% W2 H: 100.0%, V: 100.0% W3 H: 100.0%, V: 100.0% W4 H: 100.0%, V: 100.0% | W1 H: 100.0%, V: 100.0% W2 H: 100.0%, V: 100.0% W3 H: 100.0%, V: 100.0% W4 H: 100.0%, V: 100.0% |
| | WINDOW IMAGE POSITION | W1 to W4 H: 0.0%, V: 0.0% | W1 to W4 H: 0.0%, V: 0.0% |
| | WINDOW IMAGE SIZE | W1 to W4 H: 100.0%, V: 100.0% | W1 to W4 H: 100.0%, V: 100.0% |
| | WINDOW PRIORITY | W2 > W3 > W4 > W1 | W3 > W4 > W1 > W2 |
| | WINDOW ENABLE | W1: OFF, W2: ON, W3: OFF, W4: OFF | W1: OFF, W2: OFF, W3: ON, W4: OFF |
| | WINDOW BACKGROUND | W1 to W4 ON, R: 0, G: 0, B: 0 | W1 to W4 ON, R: 0, G: 0, B: 0 |
| | OVERLAY TEXT POSITION | W1 to W4: OFF | W1 to W4: OFF |
| | OVERLAY TEXT SIZE | W1 to W4: LARGE | W1 to W4: LARGE |
| | BORDER SIZE | W1 to W4: 0 pixel | W1 to W4: 0 pixel |
| | BORDER COLOR | W1 to W4 R: 0, G: 0, B: 0 | W1 to W4 R: 0, G: 0, B: 0 |
| BITMAP | BITMAP OUTPUT | W1 to W4: OFF | W1 to W4: OFF |

| Menu | | Window preset | |
|--------------|-----------------------|--|--|
| | | No.9 | No.10 to 32 |
| OUTPUT IMAGE | WINDOW POSITION | W1 H: 0.0%, V: 0.0% W2 H: 0.0%, V: 0.0% W3 H: 0.0%, V: 0.0% W4 H: 0.0%, V: 0.0% | W1 H: 0.42%, V: 0.42% W2 H: 50.42%, V: 0.42% W3 H: 0.42%, V: 50.42% W4 H: 50.42%, V: 50.42% |
| | WINDOW SIZE | W1 H: 100.0%, V: 100.0% W2 H: 100.0%, V: 100.0% W3 H: 100.0%, V: 100.0% W4 H: 100.0%, V: 100.0% | W1 H: 49.18%, V: 49.18% W2 H: 49.18%, V: 49.18% W3 H: 49.18%, V: 49.18% W4 H: 49.18%, V: 49.18% |
| | WINDOW IMAGE POSITION | W1 to W4 H: 0.0%, V: 0.0% | W1 to W4 H: 0.0%, V: 0.0% |
| | WINDOW IMAGE SIZE | W1 to W4 H: 100.0%, V: 100.0% | W1 to W4 H: 100.0%, V: 100.0% |
| | WINDOW PRIORITY | W4 > W3 > W2 > W1 | W1 > W2 > W3 > W4 |
| | WINDOW ENABLE | W1: OFF, W2: OFF, W3: OFF, W4: ON | W1 to W4: ON |
| | WINDOW BACKGROUND | W1 to W4 ON, R: 0, G: 0, B: 0 | W1 to W4 ON, R: 0, G: 0, B: 0 |
| | OVERLAY TEXT POSITION | W1 to W4: OFF | W1 to W4: TOP-LEFT |
| | OVERLAY TEXT SIZE | W1 to W4: LARGE | W1 to W4: LARGE |
| | BORDER SIZE | W1 to W4: 0 pixel | W1 to W4: 3 pixel |
| | BORDER COLOR | W1 to W4 R: 0, G: 0, B: 0 | W1 R: 255, G: 0, B: 0 W2 R: 0, G: 255, B: 0 W3 R: 0, G: 0, B: 255 W4 R: 255, G: 255, B: 0 |
| BITMAP | BITMAP OUTPUT | W1 to W4: OFF | W1 to W4: OFF |

License

The following table shows the licensed third-party software packages used by the ICP-V.

Transferring, copying, disassembling, decompiling, or reverse-engineering the included software other than open source software that is licensed by GPL, LGPL, or other licenses are prohibited.

| OSS | License | URL |
|----------|--------------|---|
| FreeRTOS | MIT | https://github.com/aws/amazon-freertos/blob/main/LICENSE |
| lwIP | Modified BSD | https://savannah.nongnu.org/projects/lwip/ |
| jQuery | MIT | https://jquery.com/license/ |

Specification

Product specification

| ICP-V41U | | |
|--------------------|-------------------|---|
| Video/Audio input | HDMI | 4 inputs HDMI/DVI 1.0 TMDS single link, HDCP 1.4/2.2 TMDS clock: Up to 300 MHz, TMDS data rate: Up to 18 Gbps Deep Color ^{*1} 640x480@60 to 2560x1600@60 Reduced Blanking 480p, 576p to 3840x2160@24/25/30/50/59.94/60 (4:4:4), 3840x2160@50/59.94/60 (4:2:0), 4096x2160@24/25/30/50/59.94/60 (4:4:4), 4096x2160@50/59.94/60 (4:2:0) Color depth: 24/30 bits *For all supported video signals, see the table below. LPCM: Up to 8 channels Sampling frequency: 32/44.1/48/88.2/96/176.4/192 kHz Reference level: -20 dBFS, Max. input level: 0 dBFS CEC Connector: HDMI Type A (19-pin) Maximum distances ^{*2} : 98 ft. (30 m) (1080p@60), 39 ft. (12 m) (4K@60) |
| | Analog audio | 1 input Stereo LR Input impedance: 24 kΩ unbalanced Reference level: -10 dBu, Max. input level: +10 dBu Connector: Captive screw (3-pin) |
| Video/Audio output | HDMI | 1 output HDMI/DVI 1.0 TMDS single link, HDCP 1.4/2.2 TMDS clock: Up to 297 MHz, TMDS data rate: Up to 17.82 Gbps Deep Color ^{*1} 1024x768@60 to 2560x1600@60 Reduced Blanking 480p, 576p to 3840x2160@24/25/30/50/59.94/60 (4:4:4), 3840x2160@50/59.94/60 (4:2:0), 4096x2160@24/25/30/50/59.94/60 (4:4:4), 4096x2160@50/59.94/60 (4:2:0) Color depth: 24/30 bits *For all supported video signals, see the table below. LPCM: Up to 8 channels Sampling frequency: 32/44.1/48/88.2/96/192 kHz Reference level: -20 dBFS, Max. output level: 0 dBFS CEC Connector: HDMI Type A (19-pin) Maximum distances ^{*2} : 98 ft. (30 m) (1080p@60), 39 ft. (12 m) (4K@60) |
| | Analog audio | 1 output Stereo L/R Output impedance: 50 Ω unbalanced Reference level: -10 dBu, Max. output level: +10 dBu Connector: Captive screw (3-pin) |
| Control I/F | RS-232C | 1 port/Connector: Captive screw (3-pin) |
| | LAN | 1 port 10Base-T/100Base-TX (Auto Negotiation), Auto MDI/MDI-X, Connector: RJ-45 |
| | Contact closure | 3 ports/Dry-contact closure input up to DC 24 V 1 A, Connector: Captive screw (6-pin) |
| Functions | Video | Resolution conversion, Frame rate conversion, Seamless switching with one black frame, Picture adjustment, Image quality adjustment, Four video combinations, Text overlay, Window border configuration, User provided bitmap image display, Each video output OFF, Built-in library of test patterns |
| | Audio | Volume level adjustment (Input/Output), Embedding, De-embedding, Audio Downmix, Lip Sync, Test tone |
| | Control | WEB browser, External command execution (64 individual commands), PjLink controller (Class1), CEC (Power control of sink device) ^{*3} , CEC through (Connector: HDMI), Unsolicited notification |
| General | Others | Audio breakaway for independent audio and video switching, Automatic input switching, EDID emulation, Audio input enable/disable, HDCP input enabling/disabling, Status display, System check, Crosspoint memory (16 settings), Preset memory (9 settings), Pattern memory (32 settings), Last memory, Anti-Snow, Connection Reset ^{*4} , Button security lockout, Standby switch |
| | Power | DC 12 V 2.0 A |
| | Power consumption | AC adapter: 100 - 240 VAC ±10%, 50 Hz/60 Hz ±3 Hz, DC 12 V 5 A 60.0 W 31 W |
| | Dimensions | 8.3 (W) × 1.7 (H) × 9.8 (D)" (210 (W) × 42 (H) × 250 (D) mm) (Excluding connectors and the like) |
| | Weight | 3.7 lbs. (1.7 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 | 20% to 90% (Non Condensing) |

^{*1} x.v.Color/3D/HDR/ARC/HEC are not supported.

^{*2} The maximum specified distances may not be achievable with some device combinations, cabling method, or other manufacturer's cable. For the same reasons, video signal disturbances or interruptions may occur, even if signals are within the specified distance (cable length) parameters.

The maximum cable length varies depending on the connected devices. The specifications have been qualified under following conditions:

• HDMI (1080p@60) : When IDK's 24 AWG cable was used and signal of 1080p@60 24 bits was transmitted.

• HDMI (4K@60) : When IDK's 18 Gbps supported cable was used and signal of 3840x2160@60 24 bits was transmitted.

^{*3} Sink device needs to support CEC. Some sink devices cannot be controlled from the ICP-V through CEC.

^{*4} 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 correct 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-V's output. Connecting other devices between the ICP-V's outputs and sink devices, may interfere with the operation of this feature.

Supported video signals

| Signal | Resolution | Frame Rate [Hz] | Pixel Clock [MHz] | Color Depth [bits] | INPUT | OUTPUT |
|-----------------|------------|-----------------|-------------------|--------------------|-------|--------|
| | | | | | HDMI | HDMI |
| 640x480@60 | 640x480 | 59.94 | 25.18 | 24/30 | ○ | — |
| 800x600@60 | 800x600 | 60.32 | 40.00 | 24/30 | ○ | — |
| 1024x768@60 | 1024x768 | 60.00 | 65.00 | 24/30 | ○ | ○ |
| 1280x768@60 | 1280x768 | 59.87 | 79.50 | 24/30 | ○ | ○ |
| 1280x800@60 | 1280x800 | 59.81 | 83.50 | 24/30 | ○ | ○ |
| 1280x960@60 | 1280x960 | 60.00 | 108.00 | 24/30 | ○ | ○ |
| 1280x1024@60 | 1280x1024 | 60.02 | 108.00 | 24/30 | ○ | ○ |
| 1360x768@60 | 1360x768 | 60.02 | 85.50 | 24/30 | ○ | ○ |
| 1366x768@60 | 1366x768 | 59.79 | 85.50 | 24/30 | ○ | ○ |
| 1400x1050@60 | 1400x1050 | 59.98 | 121.75 | 24/30 | ○ | ○ |
| 1440x900@60 | 1440x900 | 59.89 | 106.50 | 24/30 | ○ | ○ |
| 1600x900@60 | 1600x900 | 59.95 | 118.25 | 24/30 | ○ | ○ |
| 1600x1200@60 | 1600x1200 | 60.00 | 162.00 | 24/30 | ○ | ○ |
| 1680x1050@60 | 1680x1050 | 59.95 | 146.25 | 24/30 | ○ | ○ |
| 1920x1080@60 RB | 1920x1080 | 59.93 | 138.50 | 24/30 | ○ | ○ |
| 1920x1200@60 RB | 1920x1200 | 59.95 | 154.00 | 24/30 | ○ | ○ |
| 2048x1152@60 RB | 2048x1152 | 60.00 | 162.00 | 24/30 | ○ | ○ |
| 2560x1440@60 RB | 2560x1440 | 59.95 | 241.50 | 24/30 | ○ | ○ |
| 2560x1600@60 RB | 2560x1600 | 59.97 | 268.50 | 24/30 | ○ | ○ |
| 480p | 720x480 | 59.94 | 27.00 | 24/30 | ○ | ○ |
| 576p | 720x576 | 50.00 | 27.00 | 24/30 | ○ | ○ |
| 720p@50 | 1280x720 | 50.00 | 74.25 | 24/30 | ○ | ○ |
| 720p@59.94 | 1280x720 | 59.94 | 74.18 | 24/30 | ○ | ○ |
| 720p@60 | 1280x720 | 60.00 | 74.25 | 24/30 | ○ | ○ |
| 1080i@50 | 1920x1080 | 25.00 | 74.25 | 24/30 | ○ | ○ |
| 1080i@59.94 | 1920x1080 | 29.97 | 74.18 | 24/30 | ○ | ○ |
| 1080i@60 | 1920x1080 | 30.00 | 74.25 | 24/30 | ○ | ○ |
| 1080p@50 | 1920x1080 | 50.00 | 148.50 | 24/30 | ○ | ○ |
| 1080p@59.94 | 1920x1080 | 59.94 | 148.35 | 24/30 | ○ | ○ |
| 1080p@60 | 1920x1080 | 60.00 | 148.50 | 24/30 | ○ | ○ |
| 3840x2160@23.98 | 3840x2160 | 23.98 | 296.70 | 24/30 | ○ | ○ |
| 3840x2160@24 | 3840x2160 | 24.00 | 297.00 | 24/30 | ○ | ○ |
| 3840x2160@25 | 3840x2160 | 25.00 | 297.00 | 24/30 | ○ | ○ |
| 3840x2160@29.97 | 3840x2160 | 29.97 | 296.70 | 24/30 | ○ | ○ |
| 3840x2160@30 | 3840x2160 | 30.00 | 297.00 | 24/30 | ○ | ○ |
| 3840x2160@50 | 3840x2160 | 50.00 | 594.00 | 24/30* | ○ | ○ |
| 3840x2160@59.94 | 3840x2160 | 59.94 | 593.41 | 24/30* | ○ | ○ |
| 3840x2160@60 | 3840x2160 | 60.00 | 594.00 | 24/30* | ○ | ○ |
| 4096x2160@23.98 | 4096x2160 | 23.98 | 296.70 | 24/30 | ○ | ○ |
| 4096x2160@24 | 4096x2160 | 24.00 | 297.00 | 24/30 | ○ | ○ |
| 4096x2160@25 | 4096x2160 | 25.00 | 297.00 | 24/30 | ○ | ○ |
| 4096x2160@29.97 | 4096x2160 | 29.97 | 296.70 | 24/30 | ○ | ○ |
| 4096x2160@30 | 4096x2160 | 30.00 | 297.00 | 24/30 | ○ | ○ |
| 4096x2160@50 | 4096x2160 | 50.00 | 594.00 | 24/30* | ○ | ○ |
| 4096x2160@59.94 | 4096x2160 | 59.94 | 593.41 | 24/30* | ○ | ○ |
| 4096x2160@60 | 4096x2160 | 60.00 | 594.00 | 24/30* | ○ | ○ |

RB: Reduced Blanking

*For RGB/YCbCr 4:4:4, only 24 bit is supported.

For best results, please confirm that the source device(s) video output can be configured to match the listed formats above. For questions regarding other input video signals, please contact your IDK representative.

Troubleshooting

This chapter provides recommendations in case difficulties are encountered during ICP-V setup and operation.

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

- Are the ICP-V and all devices connected to an active power source and are they powered on?
- Are signal cables connected correctly?
- Are there any loose or partially mated connections?
- Are the interconnecting cables specified correctly to support adequate bandwidth?
- Are specifications of connected devices matched to each other?
- Are configuration settings for the connected devices correct?
- Is there any nearby equipment that may cause electrical noise/RF interference?

Use the ICP-V built-in status display features to check for input signal presence and format. Also use the status display features to check for the presence of connected sink devices as well as for EDID and HDCP compatibility.

If difficulties persist, please refer to the peripheral device manuals as well, since connected equipment may be the cause of the trouble.

If the trouble persists, please contact us after checking the following items.

- Does the problem occur with all the signal connectors?
- Does the problem occur when you connect the source and display devices directly, bypassing the ICP-V?

Multi-Window Video Processor

ICP-V41U

User Guide



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