4K@60/HDCP 2.2 Multi-window Processor

ICP-401UHD

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

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

■ **Specification**

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

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

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

*3 Seamless switching with a black frame

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

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

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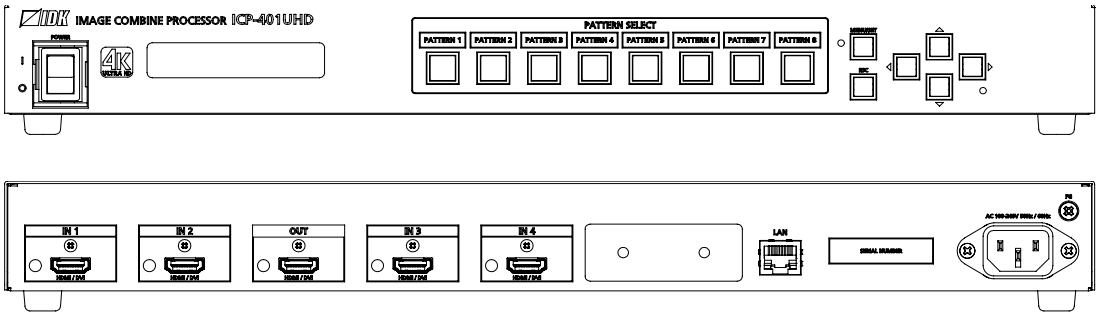
■ **Front & Rear Panels**



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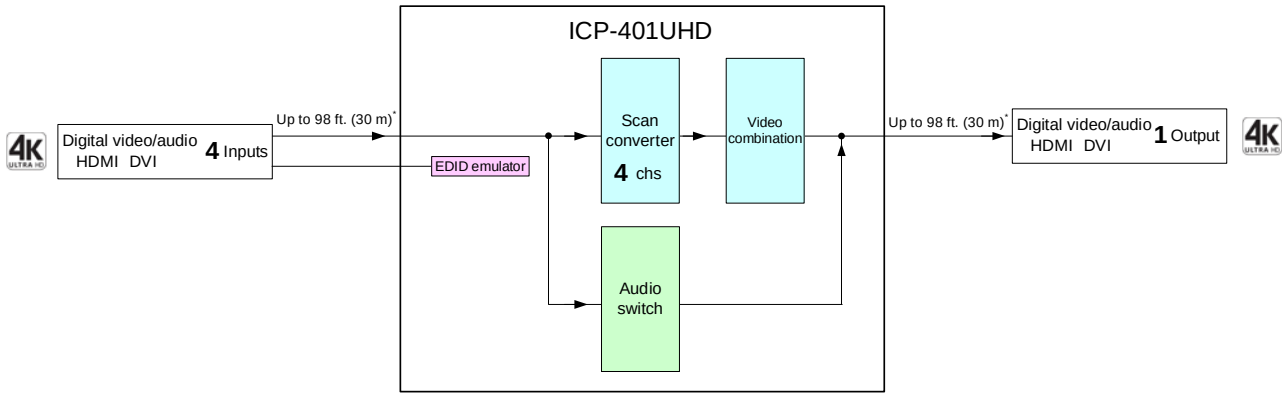
ICP-401UHD Diagram and Features

■ Diagram

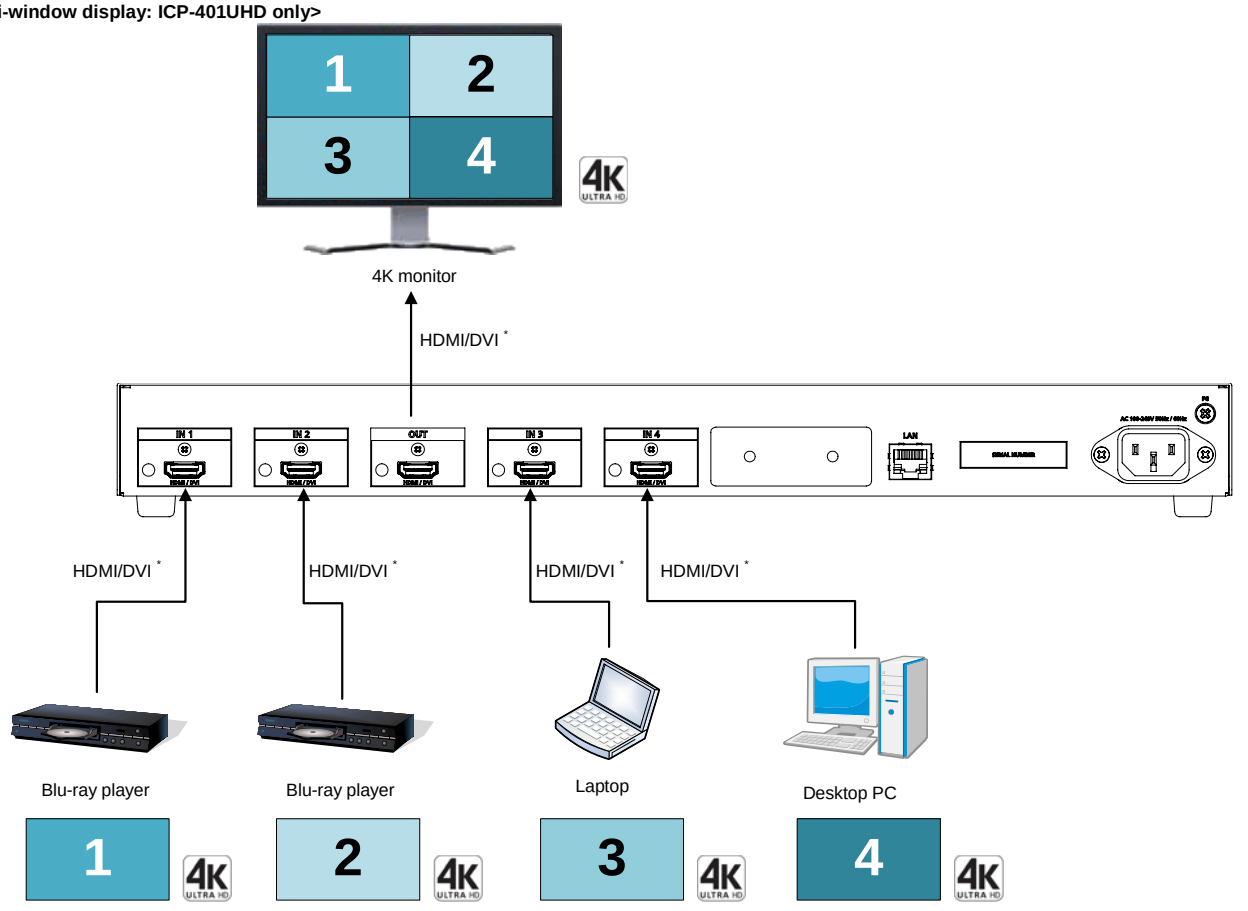


* Maximum transmission distances
98 ft. (30 m): 1080p@60
39 ft. (12 m): 4K@60 (when 18 Gbps high-speed cable is used)

■ Application example

.

<Multi-window display: ICP-401UHD only>



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

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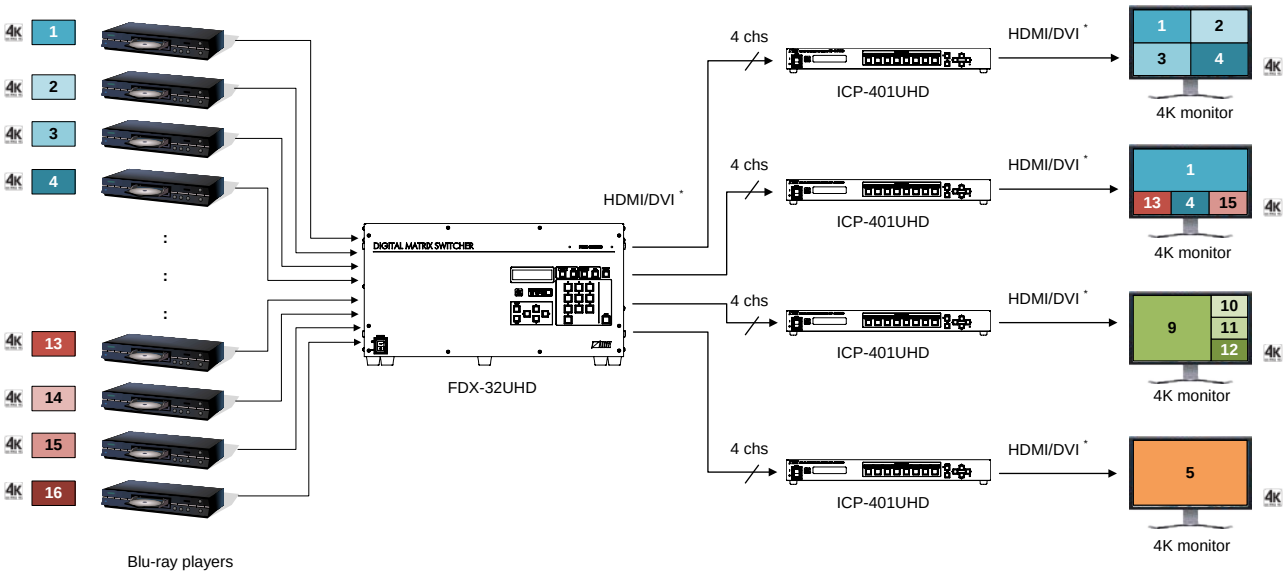
<Multi-window display: combined with IDK's FDX-32UHD>



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

[Features]

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

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

■ **Video combination**
- Simultaneous display of up to 4 input images on a screen
- Window settings
  - Background color
  - Layout order
  - Displaying/hiding
  - Position/size
  - Title character
- CUT/FADE switching effect
- 32 window layout patterns

■ **Control input**
- LAN

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

* Seamless switching with a black frame when video combination is enabled.

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