



Four Window Multi-Window Processor

ICP-9401

The IDK ICP-9401 four Window Multi-Window Processor is a powerful, high resolution graphics processor that enables the simultaneous display of four images on a single screen with any layout. The ICP-9401 can also be used as 5 digital (HDMI) and 4 analog inputs Truly Seamless Presentation Switcher with using cut, dissolve, and wipe switching effects (while not using multi-window).

Video signals HDMI, DVI, Composite Video, S-Video, Analog RGB, and Analog YPbPr can be input and converted up to QWXGA or 1080p.

Audio signals of IN1 to IN5 are switch-selectable between digital audio (HDMI) and analog audio (RCA), and audio output is simultaneous output both digital and analog output. Sound level of input and output can be set respectively. Gaps between video and audio can be compensated by Lip Sync.

Front Panel LCD Menu is a useful for checking input and output signal status on the switcher and set or changes the settings of the switcher to support AV systems in a field. The ICP-9401 also has other features such as built-in scan converter, Seamless Switching, and Aspect Ratio Control for complete AV switching and distribution.

■Specification

Item				Description
Input	Video	Digital	Number / Signal	5 inputs / HDMI Deep Color (*1) / DVI 1.0 - TMDS single link, HDCP, TMDS clock: 25 MHz to 225 MHz
			Connector	5 female HDMI Type A
			Others	Built-in Digital Cable EQ, EDID emulation
		Universal Analog	Number / Signal	4 inputs / Composite video, S-Video, Analog RGB/Analog YPbPr (auto-recognition) - Composite video (VBS Signal): 1.0 V [p-p] / 75 Ω - S-Video (Y/C Signal): 1.0 V [p-p] (Y) / 0.286 V [p-p] (C) / 75 Ω - Analog RGB: 0.7 V [p-p] (1.0 V [p-p] Sync on Green) / 75 Ω HS/VS TTL level, CS TTL level, Sync on Green - Analog YPbPr: 1.0 V [p-p] (Y) / 0.7 V [p-p] (Pb/Pr) / 75 Ω
			Connector	4 female 15-pin HD,
			Others	EDID emulation
	Audio	Format		NTSC/PAL SDTV/HD TV: 480i/480p/576i/576p/720p/1080i/1080p VESA: Dot clock 25 MHz to 165 MHz (VGA to QWXGA) * WUXGA/QWXGA are supported only with Reduced Blanking
		Digital	Number / Signal	5 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 * IN1 to IN5 are switch-selectable between digital and analog audio
			Connector	5 female HDMI Type A
		Analog	Number / Signal	9 inputs / Stereo LR unbalanced signal - Input impedance: 24 kΩ - Reference level: -10 dBu - Max input level: +10 dBu * IN1 to IN5 are switch-selectable between digital and analog audio
			Connector	9 RCA pin jack
Output	Video	Digital	Number / Signal	1 output / HDMI Deep Color (*1) / DVI 1.0 - TMDS single link, HDCP
			Connector	1 female HDMI Type A
			Others	Built-in Digital Cable EQ
		Format		480i/480p/576i/576p/720p/1080i/1080p VGA/SVGA/XGA/WXGA(1280x768)/WXGA(1280x800)/Quad-VGA/SXGA/ WXGA(1360x768)/WXGA(1366x768)/SXGA+/WXGA+/WXGA++/UXGA/ WSXGA+/VESA1080/WUXGA/QWXGA * VESA1080/WUXGA/QWXGA are only output as Reduced Blanking
		Digital	Number / Signal	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	1 female HDMI Type A,
	Audio	Analog	Number / Signal	1 output / Stereo LR unbalanced signal Output impedance: 75 Ω Reference level: -10 dBu Max. output level: +10 dBu
			Connector	1 RCA pin jack
		Lip Sync		Up to 8 frames * Adjusts 5 frames when output signal is 88.2 kHz/96 kHz (4 frames only when output format is 576i/576p/720p@50/1080i@50/1080p@50), adjusts 2 frames when output is 192 kHz

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Item			Description
Functions	Maximum extension distance		33 ft. (10 m) to 98 ft. (30 m) (*2) / 33 ft. (10 m) to 164 ft. (50 m) (*2)
	Digital input / Digital output		
	Analog video processing unit		3D Y/C separation
	Scan Converter		Aspect Ratio Control, Picture adjustment (brightness, contrast, display position, display size), Truly Seamless Switching (*3)
	Others		Multiview function, Multiview layout registration (20 patterns), Volume adjustment (volumes of input and output ports can be set separately), Audio breakaway enables independent audio and video switching, Last memory, Anti-Snow (*4), Connection Reset (*5), External control commands (32 commands), Security lock
External control	Serial control port	Number / Signal	2 ports / RS-232C
		Connector	2 female 9-pin D-Sub
	LAN control port	Number / Signal	1 port / 10Base-T (Auto Negotiation), 100Base-TX (Auto Negotiation), Auto MDI/MDI-X
		Connector	1 RJ-45
	Command outputs to external device		RS-232C, LAN, PJLink (class1), CEC (Power control of sink device) (*7)
Others	Power		100 - 240 VAC ± 10%, 50 Hz/60 Hz ± 3 Hz
	Power consumption		Around 46W
	Dimensions		16.9 (W) × 3.5 (H) × 13.8(D)" (430(W) × 88 (H) × 350(D) mm) (EIA 2U high, full rack wide) (Excluding connectors and the like)
	Weight		12.1 lbs. (5.5 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) This product supports 30 bits/pixel Deep color (10 bit/component).
It does not support x.v.Color, 3D, ARC, and HEC.

(*2) Transmission distance depends on connected equipment. The information above is maximum transmission distance when a cable made by IDK (AWG24) is used and signals (1080p@60 24bit / pixel (8 bit / component)) are transmitted (both inputs and outputs of this product). When connected equipment is not matched to this product or other makers' cables are used, video signal can be unstable or video signals cannot be output, even though transmission distance is within the information above.

(*3) Seamless Switching has one black frames or back color.

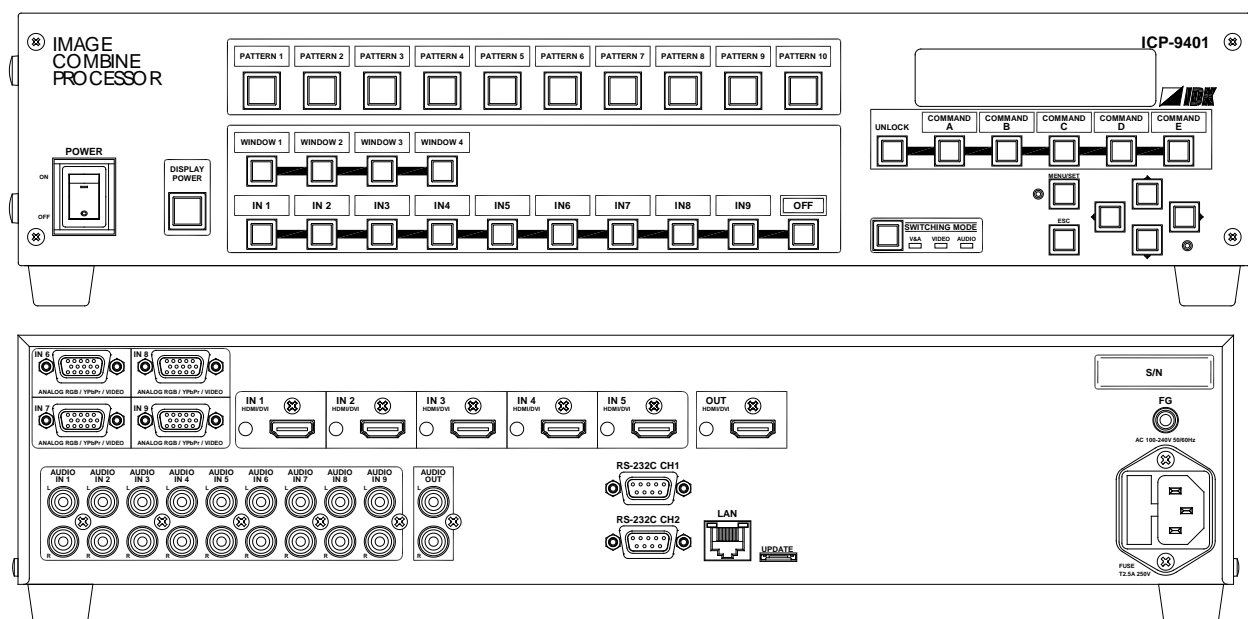
(*4) The Anti-Snow function can automatically recover from snow-noise that is a specific symptom of digital signals having HDCP. Mainly, this snow-noise occurs during system startup. Therefore, this function does not work in case of snow-noise has already occurred before input the signal to IDK switchers or bad quality signal transmission.

(*5) The Connection Reset function can fix these problems without physical cable manipulations. This function can work only in this product's output port, which sometimes will not take effect if another device is between output of this product and display device.

(*6) Pin 2 ~ Pin 21 and Pin 27 ~ Pin 46 supports up to DC 48 V/50 mA. Pin 22 ~ Pin 24 supports up to DC 48 V/1 A.

(*7) Displays that are used with this product must support CEC. Some displays cannot be controlled by this product through CEC.

■ Front & Rear Panels

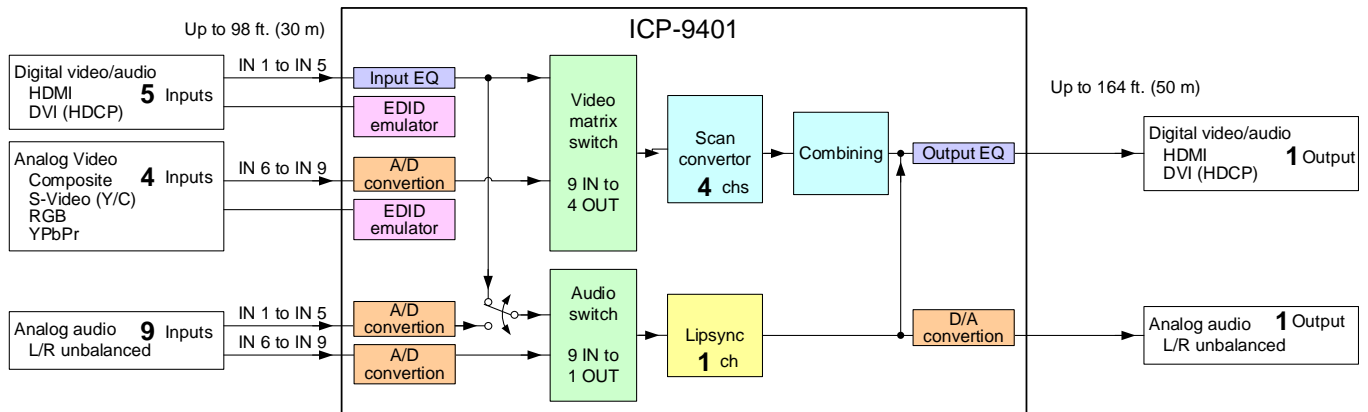


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Four Window Multi-Window Processor ICP-9401 Diagram and Features

[Block Diagram]



[Features]

■ Video

- Up to QW XGA (RB)* or 1080p
- Digital cable equalization
 - Input Up to 33 ft. (10 m) to 98 ft. (30 m)
 - Output Up to 33 ft. (10 m) to 164 ft. (50 m)
- Scan conversion
- Aspect Ratio Control
- Truly Seamless Switching (while not using multi-window)
- A/D conversion
- Anti-Snow
- Front panel LCD menu for setup and signal status check

■ Audio

- A/D, D/A conversion
- Volume adjustment
- Lip Sync

■ Image Combining

- Simultaneous display of up to 4 input images on a screen
- Picture-in-picture adjustments
 - Window background color
 - Window display priority
 - Window display ON/OFF
 - Window positioning & sizing
 - Displaying window borders
 - Setting window title characters
- Cut/fade switching effects
- Multiview layout registration

■ Control input

- RS-232C, LAN

■ Control output

- Control command output (controlling projector, etc.)
- PJLink
- Power control of sink device over CEC

■ Others

- EDID emulation
- Audio breakaway enables independent audio and video switching
- Last memory
- Connection reset
- Security lock

* (RB) = Reduced Blanking

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