

# Digital Multi Switcher | MSD-EX32

The IDK MSD-EX32 is a slot-type multi switcher with a scan converter and up to 32 inputs and 32 outputs. This multi switcher switches HDMI/DVI (video and audio) input signals and analog (video and audio) input signals, and it converts those input video signals to up to QWXGA or 1080p in order to output HDMI/DVI (video and audio) signals. Since you can select input and output slot boards as you want, it enables you to configure signals and the number of channels at your disposal.

The MSD-EX32 has RS-232C and LAN as communication ports for external control that enables you to control settings remotely. You can also control external devices that are connected to the MSD-EX32 over RS-232C or LAN by registering external control commands. The waiting function helps external commands to be sent after cooling time of projectors or the like passes.

External control commands can be executed from front keys, RS-232C, or LAN; they can also be executed at start-up.

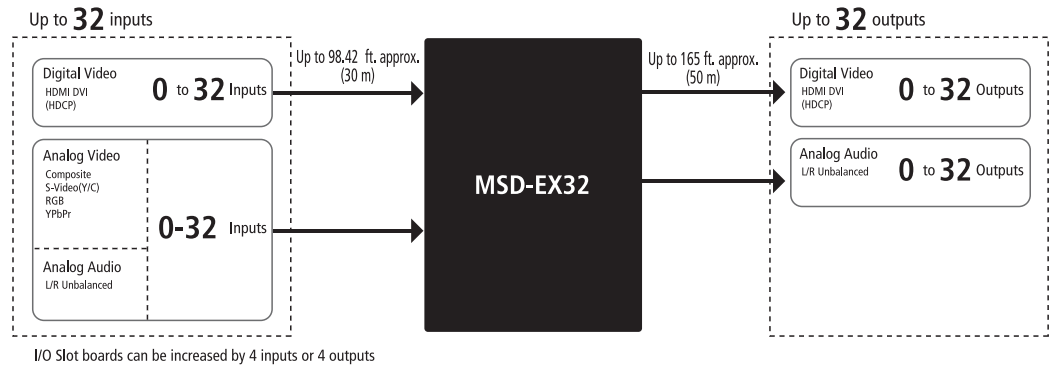
## •Features

<b>Video</b>	<ul style="list-style-type: none"> <li>•Up to QWXGA (RB)*, 1080p * (RB) = Reduced Blanking</li> <li>•Digital cable EQ (Digital I/O slot board) INPUT : up to 33 ft. to 99 ft. approx. (10 m to 30 m) OUTPUT: up to 33 ft. to 165 ft. approx. (10 m to 50 m)</li> <li>•Motion-adaptive I/P conversion</li> <li>•Scan converter</li> <li>•Aspect ratio control</li> <li>•Seamless switching</li> <li>•A/D conversion output</li> <li>•Anti-snow</li> <li>•The number of I/O can be customized by every 4 inputs / outputs</li> </ul>
<b>Audio</b>	<ul style="list-style-type: none"> <li>•A/D, D/A conversion</li> <li>•Volume adjustment</li> <li>•Lip sync</li> </ul>
<b>Control input</b>	<ul style="list-style-type: none"> <li>•RS-232C, LAN</li> </ul>



<b>Control output</b>	<ul style="list-style-type: none"> <li>•Control command output (e.g. Controlling projectors)</li> <li>•PJLink</li> </ul>
<b>Others</b>	<ul style="list-style-type: none"> <li>•EDID emulation</li> <li>•Video and audio can be switched separately (When optional MAU-3232 is connected)</li> <li>•I/O slot board, CPU slot board, and fan unit can be replaced without removing from the rack.</li> <li>•Cross point memory</li> <li>•Preset memory</li> <li>•Last memory</li> <li>•Connection Reset</li> <li>•Security lock</li> </ul>

## •Connection Diagram



## •Specification

Input	HDMI / DVI	Up to 32 inputs	
	Analog	4 inputs per board Any combination of input boards can be mounted up to 8 boards and 32 inputs.	
Output	HDMI/DVI	Up to 32 outputs	
	Analog audio	4 outputs per board Any combination of output boards can be mounted up to 8 boards and 32 outputs.	
Functions	Analog video processing	3D Y/C separation	
	Scan convert	Aspect ratio control, Seamless switching, Picture adjustment (brightness, contrast, display position, display size), I/P conversion	
	External Control	RS-232C, LAN, contact closure, PJLink (class1)	
	Others	Audio breakaway enables independent audio and video switching. Audio unit MAU-3232 is required (optional), Volume adjustment (volume of input and output ports can be set separately), Audio sample rate convert, Lip Sync, Startup memory, Preset memory (32 settings and startup settings), Last memory, Anti-snow, Connection Reset, Security lock Input, output, and CPU boards can be replaced without taking off from the rack mount	
External control	Serial control port	Number / Signal	1 port / RS-232C
		Connector	1 male 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
MAU-3232 (option)	Number / Signal	1 port	
	Connector	1 female 25-pin D-Sub	
General	Power	100 - 240 VAC ± 10 %, 50 Hz / 60 Hz ± 3 Hz	
	Power consumption	About 43.7 - 46.2 W (Depends on Slot board combination)	
	Dimensions	16.93 (W) x 15.71 (H) x 15.75 (D)" approx. (430 (W) x 399 (H) x 400 (D) mm) (EIA rack 9U, not including projections)	
	Weight	48.94 to 51.36 lbs. approx (22.2 to 23.3 kg)	
	Temperature	Operating temperature: 32 °F to 104 °F (0 °C to +40 °C) Storage temperature: -4 °F to +176 °F (-20 °C to +80 °C)	
	Humidity	Operating / Storage humidity: 20 % to 90 % (Non Condensing)	

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## •Input Board Specification

HDMI / DVI input board		
Video	Number / Signal	4 inputs / HDMI Deep Color / DVI 1.0, TMDS single link, HDCP 1.4, TMDS clock: 25 MHz to 225 MHz, Dot clock: 25 MHz to 165 MHz
	Connector	4 female 29-pin DVI-I * Analog signals cannot be input.
	Formats	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+ / WUXGA WUXGA: only Reduced Blanking and DVI signals are supported.
	Others	EDID emulation, Digital cable EQ
Audio	Number / Signal	4 inputs / Multi-channel linear PCM up to 8 channels, Sampling frequency: 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit
	Connector	4 female 29-pin DVI-I
Maximum distance		33 ft. to 99 ft. approx. (10 m to 30 m)
Analog input board		
Video	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
	Formats	NTSC / PAL 480i / 480p / 576i / 576p / 720p / 1080i / 1080p VGA to QWXGA (Dot clock 25 MHz to 165 MHz) * WUXGA / QWXGA: Reduced Blanking
	Others	EDID emulation
Audio	Number / Signal	4 inputs / Stereo LR unbalanced signal Input impedance: 24 kΩ, Reference level: -10 dBu, Input level: up to +10 dBu
	Connector	4 RCA pin jack

## •Output Board Specification

HDMI / DVI output board		
Video	Number / Signal	4 outputs / HDMI Deep Color/ DVI 1.0, TMDS single link, HDCP 1.4, TMDS clock: 25 MHz to 225 MHz, Dot clock: 25 MHz to 165 MHz
	Connector	4 female 29-pin DVI-I * Analog signals cannot be input.
	Formats	480i / 480p / 576i / 576p / 720p / 1080i / 1080p VGA to QWXGA (Dot clock: 25 MHz to 165 MHz) * WUXGA / QWXGA only support Reduced Blanking
	Others	Digital cable EQ
Audio	Number / Signal	4 outputs / Multi-channel linear PCM up to 8 channels, Sampling frequency: 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit
	Connector	4 female 29-pin DVI-I
Maximum distance		33 ft. to 165 ft. approx. (10 m to 50 m)
Analog audio output board		
Audio	Number / Signal	4 outputs / Stereo LR unbalanced signal, Output impedance: 75 Ω, Reference level: -10 dBu, Max. output level: +10 dBu
	Connector	4 RCA pin jack

## •MSD-EX32 Rear Panel

