Digital Multi Switcher

MSD-V41U/V42U/V41UC/V42UC/V41UT/V42UT

The MSD-V4 series is a digital presentation switcher with built-in scalers and scan converters capable of sending and receiving UHD video resolutions. With four (4) HDMI/DVI video inputs, the series can accept a wide variety of video formats. Input video signals are output as HDMI signals at up to 4K@60 (4:4:4). The MSD-V41UC/V42UC and MSD-V41UT/V42UT distribute signals in HDMI format and either 10GbE (IP-NINJAR protocol) or HDBaseT simultaneously.

With four (4) HDMI and one (1) analog audio inputs, input audio signals are distributed in HDMI format and analog audio simultaneously.

The MSD-V4 series can be configured remotely using RS-232C or LAN.
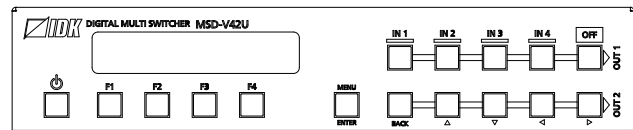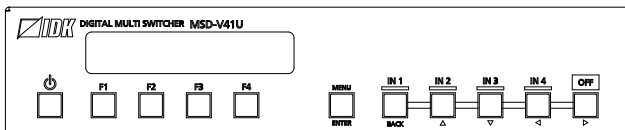External devices can be controlled via RS-232C, LAN, CEC, or contact closure by registering control commands.

■ Specification

		MSD-V41U	MSD-V42U	MSD-V41UC	MSD-V42UC	MSD-V41UT	MSD-V42UT
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: 98 ft. (30 m) (1080p@60), 39 ft. (12 m) (4K@60)[*2]					
	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	2 outputs	1 output	2 outputs	1 output	2 outputs
		—	—	Distribute HDMI/10GbE simultaneously		Distribute HDMI/HDBaseT simultaneously	
		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: 98 ft. (30 m) (1080p@60), 39 ft. (12 m) (4K@60)[*2]					
	10GbE[*3]	—	—	1 output	2 outputs	—	—
		—	—	Distribute HDMI/10GbE simultaneously		—	—
		SDVoE, AES-128 Deep Color[*1]					
		*Supported video signals are the same as those of HDMI.					
		RS-232C/LAN					
		Connector: RJ-45 Maximum distance: 328 ft. (100 m)[*2] Cable: CAT6A STP					
	HDBaseT	—	—	—	—	1 output	2 outputs
		—	—	—	—	Distribute HDMI/HDBaseT simultaneously	
		HDBaseT, HDCP 1.4/2.2 Deep Color[*1]					
		1024x768@60 to 2560x1600@60 Reduced Blanking 480p, 576p to 3840x2160@24/25/30 (4:4:4), 3840x2160@50/59.94/60 (4:2:0), 4096x2160@24/25/30 (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. *Supported audio signals are the same as those of HDMI.					
		RS-232C/LAN/CEC					
		Connector: RJ-45 Maximum distance: 328 ft. (100 m)/492 ft. (150 m) (Long reach mode is used)[*2] Cable: CAT.5E HDC, CAT5e UTP/STP, CAT6 UTP/STP					
	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)					

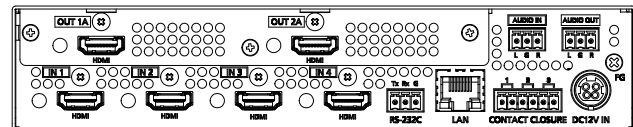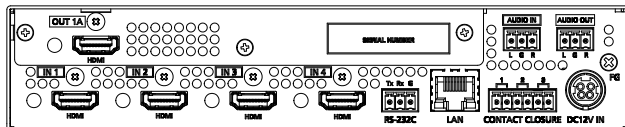| Control I/F		MSD-V41U	MSD-V42U	MSD-V41UC	MSD-V42UC	MSD-V41UT	MSD-V42UT
Control I/F	RS-232C	1 port/Connector: Captive screw (3-pin)					
	LAN	1 port/10Base-T/100Base-TX (Auto Negotiation), Auto MDI/MDI-X, Connector: RJ-45					
	Contact closure	3 ports/Dry-contact closure input up to DC 24 V 1 A, Connector: Captive screw (6-pin)					
Functions	Video	Resolution conversion, Frame rate conversion, Seamless switching with one black frame, Picture adjustment, Image quality adjustment, Two video combinations, User provided bitmap image display, Bitmap 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)[4], LAN through (Connector: LAN/10GbE/HDBaseT), CEC through (Connector: HDMI/HDBaseT), Unsolicited notification					
	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 (9 settings), Preset memory (9 settings), Pattern memory (5 settings), Last memory, Anti-Snow, Connection Reset[5], Button security lockout, Standby switch					
General	Power	DC 12 V 2.0 A	DC 12 V 2.6 A	DC 12 V 2.6 A	DC 12 V 3.8 A	DC 12 V x.x A	DC 12 V x.x A
		AC adapter: 100 - 240 VAC ±10%, 50 Hz/60 Hz ±3 Hz, DC 12 V 5 A 60.0 W					
	Power consumption	28 W	35 W	36 W	51 W	TBD	TBD
	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)	4 lbs. (1.8 kg)	4 lbs. (1.8 kg)	4.2 lbs. (1.9 kg)	TBD	TBD
	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 signals of 1080p@60 24 bits was transmitted.
・HDMI (4K@60)　　　　　　 : When IDK's 18 Gbps supported cable was used and signals of 3840x2160@60 24 bits was transmitted.
・HDBaseT　　　　　　　　 : When IDK's CAT.5E HDC cable is used.
・HDBaseT Long reach mode : When a device supporting Long reach mode is connected and the video is transmitted at a resolution 1080p@60 24 bits or less.
・10GbE　　　　　　　　　 : When a CAT6A STP cable is used.
[3] For 10GbE extension, use IDK's SDVoE-supported products.
[4] Sink device needs to support CEC. Some sink devices cannot be controlled from the MSD-V4 through CEC.
[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 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 MSD-V4's output. Connecting other devices between the MSD-V4's outputs and sink devices, may interfere with the operation of this feature.
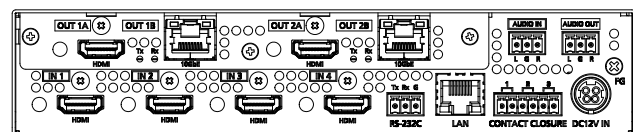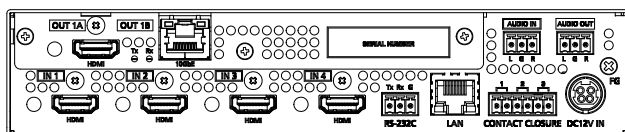
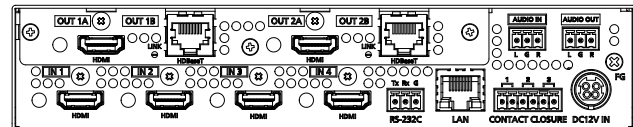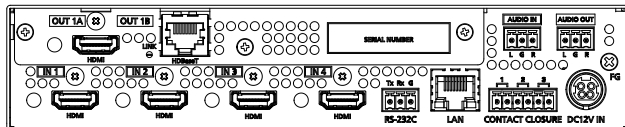■ **Front & Rear Panels**

MSD-V41U

MSD-V42U

MSD-V41UC

MSD-V42UC

MSD-V41UT

MSD-V42UT

Digital Multi Switcher
MSD-V41U/V42U/V41UC/V42UC/V41UT/V42UT Supported video signals

Signal	Resolution	Frame Rate [Hz]	Pixel Clock [MHz]	Color Depth [bits]	INPUT HDMI	OUTPUT HDMI 10GbE	OUTPUT HDBaseT
640x480@60	640x480	59.94	25.18	24/30	O	–	–
800x600@60	800x600	60.32	40.00	24/30	O	–	–
1024x768@60	1024x768	60.00	65.00	24/30	O	O	O
1280x768@60	1280x768	59.87	79.50	24/30	O	O	O
1280x800@60	1280x800	59.81	83.50	24/30	O	O	O
1280x960@60	1280x960	60.00	108.00	24/30	O	O	O
1280x1024@60	1280x1024	60.02	108.00	24/30	O	O	O
1360x768@60	1360x768	60.02	85.50	24/30	O	O	O
1366x768@60	1366x768	59.79	85.50	24/30	O	O	O
1400x1050@60	1400x1050	59.98	121.75	24/30	O	O	O
1440x900@60	1440x900	59.89	106.50	24/30	O	O	O
1600x900@60	1600x900	59.95	118.25	24/30	O	O	O
1600x1200@60	1600x1200	60.00	162.00	24/30	O	O	O
1680x1050@60	1680x1050	59.95	146.25	24/30	O	O	O
1920x1080@60 RB	1920x1080	59.93	138.50	24/30	O	O	O
1920x1200@60 RB	1920x1200	59.95	154.00	24/30	O	O	O
2048x1152@60 RB	2048x1152	60.00	162.00	24/30	O	O	O
2560x1440@60 RB	2560x1440	59.95	241.50	24/30	O	O	O
2560x1600@60 RB	2560x1600	59.97	268.50	24/30	O	O	O
480p	720x480	59.94	27.00	24/30	O	O	O
576p	720x576	50.00	27.00	24/30	O	O	O
720p@50	1280x720	50.00	74.25	24/30	O	O	O
720p@59.94	1280x720	59.94	74.18	24/30	O	O	O
720p@60	1280x720	60.00	74.25	24/30	O	O	O
1080i@50	1920x1080	25.00	74.25	24/30	O	O	O
1080i@59.94	1920x1080	29.97	74.18	24/30	O	O	O
1080i@60	1920x1080	30.00	74.25	24/30	O	O	O
1080p@50	1920x1080	50.00	148.50	24/30	O	O	O
1080p@59.94	1920x1080	59.94	148.35	24/30	O	O	O
1080p@60	1920x1080	60.00	148.50	24/30	O	O	O
3840x2160@23.98	3840x2160	23.98	296.70	24/30	O	O	O
3840x2160@24	3840x2160	24.00	297.00	24/30	O	O	O
3840x2160@25	3840x2160	25.00	297.00	24/30	O	O	O
3840x2160@29.97	3840x2160	29.97	296.70	24/30	O	O	O
3840x2160@30	3840x2160	30.00	297.00	24/30	O	O	O
3840x2160@50	3840x2160	50.00	594.00	24/30[*1]	O	O	O[*2]
3840x2160@59.94	3840x2160	59.94	593.40	24/30[*1]	O	O	O[*2]
3840x2160@60	3840x2160	60.00	594.00	24/30[*1]	O	O	O[*2]
4096x2160@23.98	4096x2160	23.98	296.70	24/30	O	O	O
4096x2160@24	4096x2160	24.00	297.00	24/30	O	O	O
4096x2160@25	4096x2160	25.00	297.00	24/30	O	O	O
4096x2160@29.97	4096x2160	29.97	296.70	24/30	O	O	O
4096x2160@30	4096x2160	30.00	297.00	24/30	O	O	O
4096x2160@50	4096x2160	50.00	594.00	24/30[*1]	O	O	O[*2]
4096x2160@59.94	4096x2160	59.94	593.41	24/30[*1]	O	O	O[*2]
4096x2160@60	4096x2160	60.00	594.00	24/30[*1]	O	O	O[*2]

RB: Reduced Blanking
[*1]   For RGB/YCbCr 4:4:4, only 24 bit is supported.
[*2]   YCbCr 4:2:0 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.