

Digital Multi Switcher

MSD-V61UC/V62UC/V61UF/V62UF/V61UT/V62UT

The MSD-V6 series digital presentation switcher with built-in scalers and scan converters can send and receiving UHD video resolutions in a variety of protocols including AV over IP (SDVoE) and HDBaseT.

With six (6) HDMI/DVI video inputs, this MSD-V6 can accept a wide variety of video formats, including HDCP content. Input video signals are output as HDMI signals at up to 4K@60, and these signals can be output simultaneously to optional 10GbE CAT(SDVoE)/10GbE FIBER(SDVoE)/HDBaseT for video extension.

The MSD-V6 includes six (6) HDMI and two (2) analog audio inputs. For audio output, both digital and analog audio are supported and can be distributed simultaneously as well as embedded/de-embedded for breakaway audio routing.

The MSD-V6 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.

■ Specification

		MSD-V61UC	MSD-V62UC	MSD-V61UF	MSD-V62UF	MSD-V61UT	MSD-V62UT
Video/Audio input	HDMI	6 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: 32/44.1/48/88.2/96/192 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)					
	Modular input ³	1 input Switch-selectable between optional input/IN6 HDMI P/N (Option): MSD-VIV1UC (10GbE CAT) P/N (Option): MSD-VIV1UF (10GbE FIBER) P/N (Option): MSD-VIV1UT (HDBaseT)					
	Analog audio	2 inputs Stereo LR Input impedance: 48 kΩ balanced/24 kΩ unbalanced Reference level: -10 dBu, Max. input level: +10 dBu Connector: Captive screw (5-pin)					
Video/Audio output	HDMI	1 output	2 outputs	1 output	2 outputs	1 output	2 outputs
		Distribute HDMI/10GbE CAT simultaneously		Distribute HDMI/10GbE FIBER 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: 32/44.1/48/88.2/96/176.4/192 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)					
	10GbE CAT ⁴	1 output	2 outputs	—	—	—	—
		Distribute HDMI/10GbE CAT 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 ² : 328 ft. (100 m) Cable: CAT6A (STP)						
	10GbE FIBER ⁴	—	—	1 output	2 outputs	—	—
		—	—	Distribute HDMI/10GbE FIBER simultaneously		—	—
		SDVoE, AES-128 Deep Color ¹ *Supported video signals are the same as those of HDMI. RS-232C/LAN Connector: SFP+ *For SFP+ transceiver specification, see the table below.					
	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 ² : 328 ft. (100 m)/492 ft. (150 m) (Long reach mode is used) Cable: CAT.5E HDC, CAT5e (UTP/STP), CAT6 (UTP/STP)					

		MSD-V61UC	MSD-V62UC	MSD-V61UF	MSD-V62UF	MSD-V61UT	MSD-V62UT
Video/Audio output	Analog audio	2 outputs Stereo L/R Output impedance: 100Ω balanced/50 Ω unbalanced Reference level: -10 dBu, Max. output level: +10 dBu Connector: Captive screw (5-pin)					
	Control I/F	1 port/Connector: Captive screw (3-pin)					
Control I/F	RS-232C	1 port/10Base-T/100Base-TX (Auto Negotiation), Auto MDI/MDI-X, Connector: RJ-45					
	LAN	6 ports/Dry-contact closure input up to DC 24 V 1 A, Connector: Captive screw (6-pin)					
Functions	Contact closure	6 ports/Dry-contact closure input up to DC 24 V 1 A, Connector: Captive screw (6-pin)					
	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, 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) ⁵ , LAN through (Connector: LAN/10GbE/HDBaseT), CEC through (Connector: HDMI/HDBaseT), Unsolicited notification					
Functions	Others	Audio breakaway for independent audio and video switching, Automatic input switching, EDID emulation, Audio input enable/disable, HDCP input enabling/disabling, PoH (Connector: HDBaseT input, Up to 15.4 W), Status display, System check, Crosspoint memory (9 settings), Preset memory (9 settings), Pattern memory (5 settings), Last memory, Anti-Snow, Connection Reset ⁶ , Button security lockout, Standby switch					
	General	AC 100 V - 240 V ±10%, 50 Hz/60 Hz ±3 Hz					
General	Power	AC 100 V - 240 V ±10%, 50 Hz/60 Hz ±3 Hz					
	Power consumption ^{7, 8}	57 W	75 W	56 W	70 W	54 W	66 W
	Dimensions	16.9 (W) x 1.7 (H) x 13.8 (D)" (430 (W) x 44 (H) x 350 (D) mm) (Excluding connectors and the like)					
	Weight ⁷	9.9 lbs. (4.5 kg)	10.4 lbs. (4.7 kg)	9.9 lbs. (4.5 kg)	10.4 lbs. (4.7 kg)	9.9 lbs. (4.5 kg)	10.4 lbs. (4.7 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.
- 10GbE : When a CAT6A (STP) cable is used.
- 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.

^{*3} Factory-installed option

^{*4} For 10GbE extension, use this product in combination with IDK's other SDVoE supported products.

^{*5} Sink device needs to support CEC. Some sink devices cannot be controlled from the MSD-V6 through CEC.

^{*6} 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-V6's output. Connecting other devices between the MSD-V6's outputs and sink devices, may interfere with the operation of this feature.

^{*7} Values for products including factory-installed option(s)

^{*8} PoH power is not included.

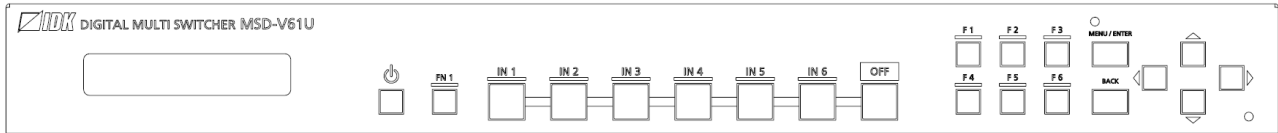
■ SFP+ transceiver specification

P/N	MSD-V61UF-MM MSD-V62UF-MM	MSD-V61UF-SM MSD-V62UF-SM	Optional	MSD-V61UF MSD-V62UF
SFP+ transceiver	10G-MM-SFP	10G-SM-SFP	10G-SM40-SFP	Without SFP+ transceiver
Fiber	Multimode fiber	Singlemode fiber	Singlemode fiber	N/A
Wave length	850 nm (VCSEL laser)	1310 nm (DFB laser)	1550 nm (EML laser)	
Laser safety	Class 1 (JIS C 6802, IEC60825-1)			
Maximum distances*	OM3: 984 ft. (300 m)	OS1: 6.21 mi. (10 km)	OS1: 24.85 mi. (40 km)	
Receiver sensitivity (OMA) @10.3Gbps	-11.1 dBm or higher	-12.6 dBm or higher	-16 dBm or higher	
Average Launch Power	-5 dBm to -1 dBm	-8.2 dBm to +0.5 dBm	-1 dBm to +2 dBm	
Max. input power	+0.5 dBm	+0.5 dBm	-1 dBm	
Polishing	PC polishing	UPC polishing, SPC polishing *APC polishing is not supported		
Connector	LC (Duplex)			

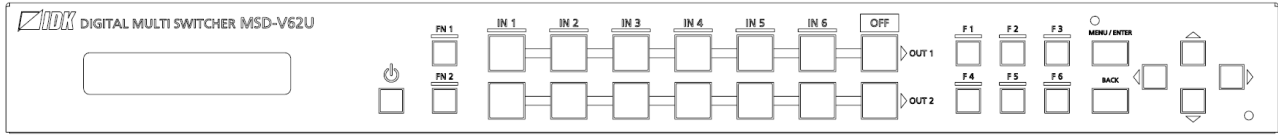
*The maximum transmission distance is measured under the following conditions: Fiber that is polished by a recommended method is used, there is no interconnection, and the allowable bending radius is not exceeded.

■ Front & Rear Panels

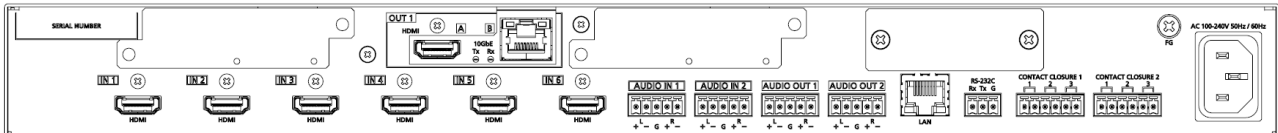
MSD-V61Ux



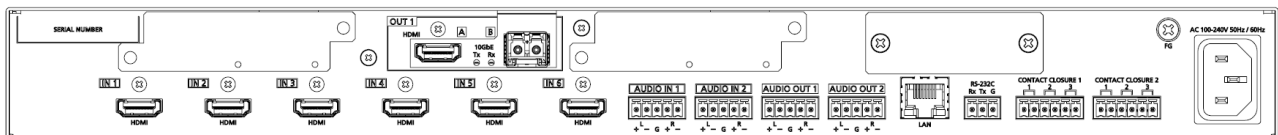
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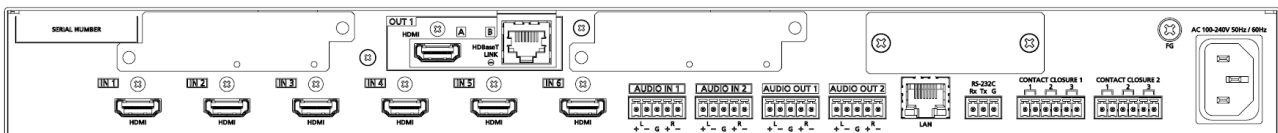
MSD-V61UC



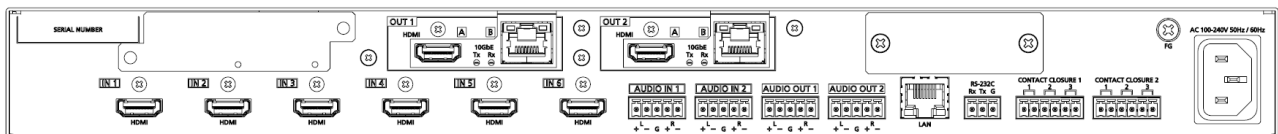
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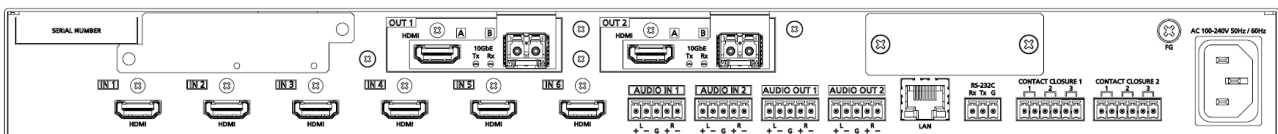
MSD-V61UT



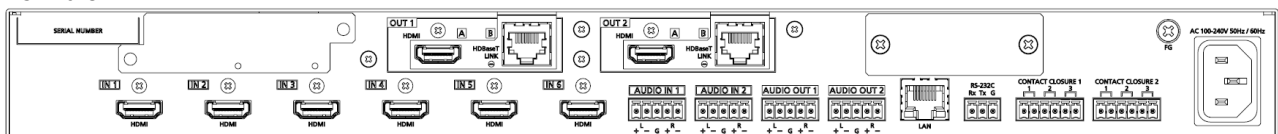
MSD-V62UC



MSD-V62UF



MSD-V62UT



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Digital Multi Switcher

MSD-V61UC/V62UC/V61UF/V62UF/V61UT/V62UT supported video signals

Signal	Resolution	Frame Rate [Hz]	Pixel Clock [MHz]	Color Depth [bits]	INPUT		OUTPUT	
					HDMI 10GbE CAT 10GbE FIBER	HDBaseT	HDMI 10GbE CAT 10GbE FIBER	HDBaseT
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 ¹	○	○ ²	○	○ ²
3840x2160@59.94	3840x2160	59.94	593.41	24/30 ¹	○	○ ²	○	○ ²
3840x2160@60	3840x2160	60.00	594.00	24/30 ¹	○	○ ²	○	○ ²
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 ¹	○	○ ²	○	○ ²
4096x2160@59.94	4096x2160	59.94	593.41	24/30 ¹	○	○ ²	○	○ ²
4096x2160@60	4096x2160	60.00	594.00	24/30 ¹	○	○ ²	○	○ 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.