



Digital Multi Switcher MSD-402

The IDK MSD-402 is a high-performance digital multi switcher with a scan converter and 4 inputs and 2 outputs.

For video input, 2 HDMI/DVI inputs and 2 HDBaseT inputs are included. Input video signals are converted to HDMI/DVI or HDBaseT signal and output at a resolution up to QWXGA or 1080p.

For audio input, 4 digital inputs are included. Selected audio signals are output as digital and analog audio. Audio levels of each input and output can be set individually.

The IDK MSD-402 also has RS-232C and LAN ports as communication ports for controlling remotely. Bidirectional LAN communication is supported for HDBaseT input/output.

If IDK's HDC-TH200 is connected to an HDBaseT input of the MSD-402, analog video signals can be input, and input channel can be switched remotely.

■ Specification

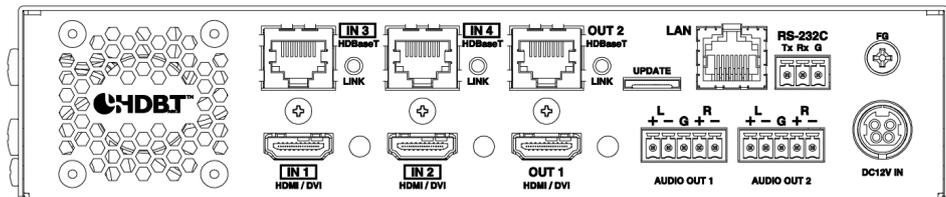
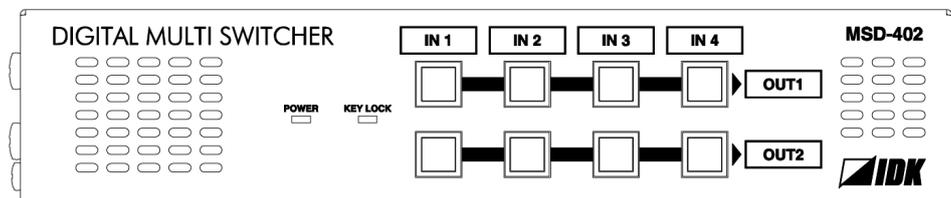
Item		Description
Input	Video	HDMI / DVI 2 inputs HDMI Deep Color (*1) / DVI 1.0 TMDS single link, HDCP 1.4, TMDS clock: 25 MHz to 225 MHz Built-in cable EQ, EDID emulation Connector: Female HDMI Type A (19-pin)
		HDBaseT 2 inputs HDBaseT (*1) HDCP 1.4 (*2) EDID emulation Connector: RJ-45 (*3) Cable: CAT.5E HDC, Cat5e UTP / STP, Cat6 UTP / STP (*4)
		Format VGA to QWXGA (Dot clock: 25 MHz to 165 MHz) * For WUXGA / QWXGA, only Reduced Blanking is supported. 480i / 480p / 576i / 576p / 720p / 1080i / 1080p
	Audio	Digital 4 inputs Multi-channel LPCM up to 8 channels Sampling frequency: 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit Reference level: -20 dBFS, Max. input level: 0 dBFS Connector: 2 female HDMI TypeA (19-pin), 2 RJ-45
Output	Video	HDMI / DVI 1 output HDMI Deep Color (*1) / DVI 1.0 TMDS single link, HDCP 1.4 Connector: Female HDMI Type A (19-pin)
		HDBaseT 1 output HDBaseT (*1) HDCP 1.4 (*2) Connector: RJ-45 (*3) Cable: CAT.5E HDC, Cat5e UTP / STP, Cat6 UTP / STP (*4)
		Format VGA / SVGA / XGA / WXGA (1280x768) / WXGA (1280x800) / Quad-VGA / SXGA / WXGA (1360x768) / WXGA (1366x768) / SXGA+ / WXGA+ / WXGA++ / UXGA / WSXGA+ / VESAHD / WUXGA / QWXGA * For VESAHD / WUXGA / QWXGA, only Reduced Blanking is supported. 480i / 480p / 576i / 576p / 720p / 1080i / 1080p
	Audio	Digital 2 outputs Multi-channel LPCM up to 8 channels 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), RJ-45
		Analog 2 outputs Stereo LR balanced / unbalanced Balanced signal Output impedance: 100 Ω Reference level: -4 dBu Max. output level: +16 dBu Unbalanced signal Output impedance: 50 Ω Reference level: -10 dBu Max. output level: +10 dBu Connector: 5-pin terminal block
		Maximum extension distance
Functions	Scan Converter	Aspect Ratio Control, Picture adjustment (brightness, contrast, display position, display size, etc.), Seamless Switching (*7), PinP
	Others	All function setting through browser, Automatic input detection and switching, Volume adjustment (volumes of input and output ports can be set separately), Cross-point memory (9 settings), Preset memory (16 settings), Last memory, Anti-Snow (*8), Connection Reset (*9), Security lock
External control	RS-232C	1 port / 3-pin terminal block
	LAN	1 port / RJ-45 10Base-T / 100Base-TX (Auto Negotiation), Auto MDI / MDI-X
	External control	Remote input channel switching for HDC-TH200 inputs through HDBaseT.

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Item	Description	
General	AC Adapter	Input: 100 - 240 VAC \pm 10%, 50 Hz / 60 Hz \pm 3 Hz Output: DC 12 V 3 A 36.0 W (A dedicated AC adapter is provided.)
	Power consumption	About 29 W
	Dimensions	8.3 \times 1.7 \times 9.8" (210 (W) \times 44 (H) \times 250 (D) mm) (EIA 1U high, half rack wide) (Excluding connectors and the like)
	Weight	4.2 lbs. (1.9 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 humidity: 20% to 90% (Non Condensing)

- *1 30 bit/pixel (10 bit/component) Deep Color is supported while xvYCC, Lip Sync, 3D, ARC and HEC are not supported.
- *2 Only HDBaseT output does not support HDCP-compliant DVI signals.
- *3 RJ-45 (HDBaseT connector) is only for Cat5e / Cat6 twisted pair cable. Please do not use it for LAN devices or the like.
- *4 T568A or T568B straight. For transmission longer than 164 ft. (50 m), Cat6 UTP/STP cable is recommended.
- *5 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.
 The extension 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.
- *6 The maximum extension distance was obtained when IDK's CAT.5E HDC cable was used. 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. Operations may not be stable with some LCD devices; please check the operation beforehand or contact us. The maximum extension distance is the shorter distance of connected HDBaseT product or sink device's maximum extension distance.
- *7 Seamless switching with a black frame.
- *8 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.
- *9 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 MSD's output. If other devices are connected between the MSD's output and sink device, this feature may be invalid.

■ Front & Rear Panels

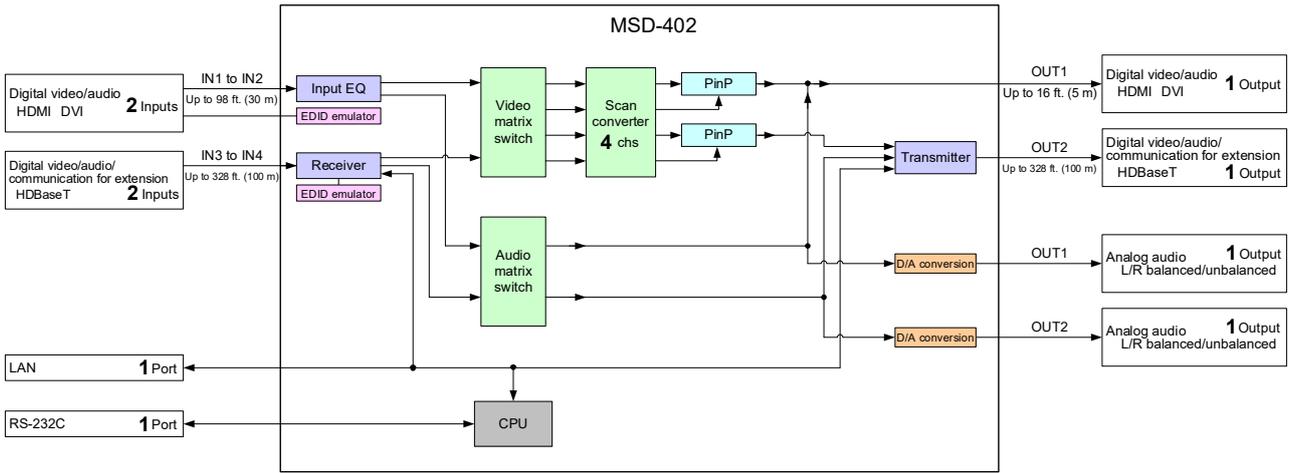


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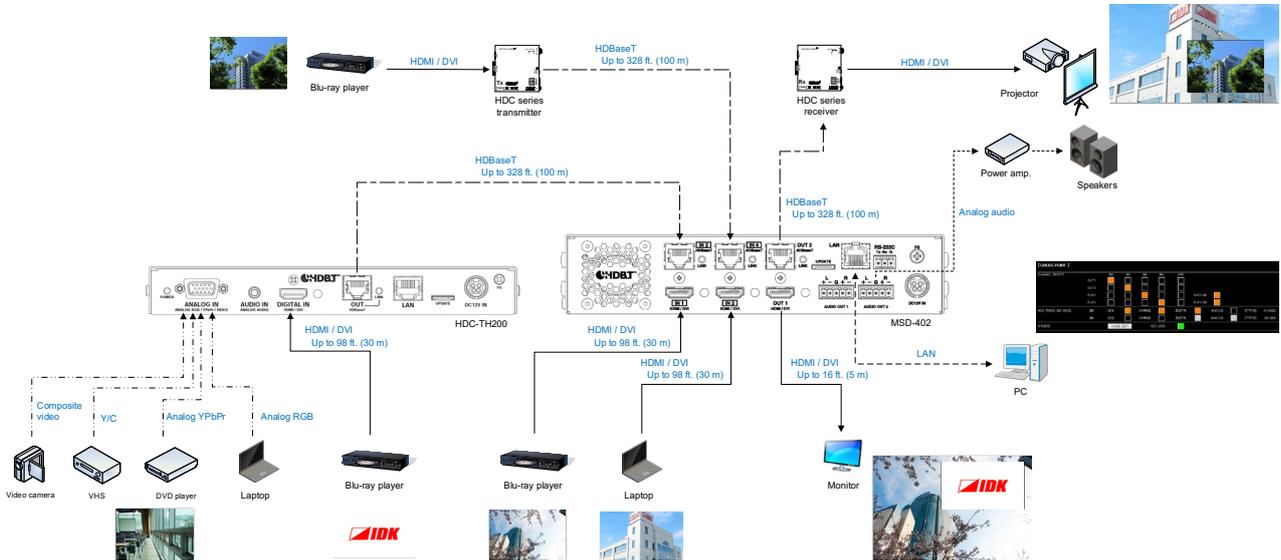


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■ Diagram



■ Application Example



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[Features]**■ Video**

- Up to QWXGA (RB)¹ or 1080p
- Digital cable equalization
 - Input: Up to 98 ft. (30 m)
- Up to 328 ft. (100 m) over Cat6 cable
- Scan converter
- Picture in Picture (PiP) function
- Aspect Ratio Control
- Seamless switching²
- Anti-snow

■ Audio

- Analog audio de-embedded
- Volume adjustment

■ Control Input

- RS-232C, LAN

■ Control Output

- Remote input channel switching for HDC-TH200 inputs through HDBaseT.

■ Others

- EDID emulation
- All function setting through browser
- Automatic input detection and switching
- Cross point memory
- Preset memory
- Last memory
- Connection Reset
- Security lock
- AC adapter with locking mechanism

¹ (RB) = Reduced Blanking

² Seamless switching with a black frame.