4K@30 supported Digital Multi Switcher

MSD-6208

The IDK MSD-6208 is a high-performance digital multi switcher with a scan converter and up to 8 inputs and 8 outputs.

For video input, 8 digital and 2 analog inputs are included and the following signals are supported: HDMI, DVI, HDBaseT, composite video, Y/C, analog RGB, and analog YPbPr signals. HDBaseT input supports Power over HDBaseT (PoH) that can power the connected devices. Input video signals are converted to HDMI/DVI or HDBaseT signals and output at a resolution up to 4K@30.

For audio input, 8 digital and 2 analog inputs are included. Selected audio signals are output to digital audio, and 1 of 8 digital audio outputs can be selected to be output as analog audio. The lip sync function corrects the gap between the video and audio.

This switcher also has RS-232C and LAN ports as communication ports for control to enable you to set menus remotely. You can also control external devices that are connected to the MSD-6208 over RS-232C, LAN, CEC, or contact closure by registering external control commands. The waiting function helps you to send external commands after cooling time passes as power supply control of projectors or the like. External Control commands can be executed from front keys, RS-232C, or LAN; they can also be executed when input channel selection keys or power supply key is operated.

Dante output is available as an optional extra.
With the network audio, 64-channel at 48 kHz-sample frequency audio can be delivered over a LAN cable.

■ **Specification**

Item				Description
Input	Video	HDMI / DVI		1 input HDMI Deep Color (*1) / DVI 1.0 TMDS single link, HDCP 1.4 TMDS clocks: 25 MHz to 300 MHz, TMDS data rate: 0.75 Gbps to 9 Gbps Built-in cable EQ, EDID emulation Connector: Female HDMI Type A (19-pin)
				5 inputs *DVI connectors: Switch-selectable between digital and analog HDMI Deep Color (*1) / DVI 1.0 TMDS single link, HDCP 1.4 TMDS clocks: 25 MHz to 225 MHz, TMDS data rate: 0.75 Gbps to 6.75 Gbps Built-in cable EQ, EDID emulation Connector: 3 female HDMI Type A (19-pin), 2 female DVI-I (29-pin)
		HDBaseT		2 inputs HDBaseT (*1) HDCP 1.4 (*2) EDID emulation, PoH power supply (IEEE 802.3af) (*3) Connector: RJ-45 (*4) Cable: CAT.5E HDC, Cat5e UTP / STP, Cat6 UTP / STP (*5)
		Universal Analog		2 inputs *Switch-selectable between digital and analog Composite video / Y/C / Analog RGB / Analog YPbPr (auto-recognition) Composite video (VBS Signal): 1.0 V[p-p] / 75 Ω Y/C: 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 EDID emulation Connector: Female DVI-I (29-pin)
		Format	HDMI / DVI	1 input VGA to 4K (Dot clock: 25 MHz to 300 MHz) 480i / 480p / 576i / 576p / 720p / 1080i / 1080p / 4K (up to 4K@30)
				5 inputs 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
			HDBaseT	VGA to 4K (Dot clock: 25 MHz to 300 MHz) 480i / 480p / 576i / 576p / 720p / 1080i / 1080p / 4K (up to 4K@30)
			Universal Analog	VGA to QWXGA (Dot clock: 25 MHz to 165 MHz) * For WUXGA / QWXGA, only Reduced Blanking is supported. NTSC / PAL 480i / 480p / 576i / 576p / 720p / 1080i / 1080p
	Audio	Digital		8 inputs *Switch-selectable between analog audio 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: 4 female HDMI Type A (19-pin), 2 RJ-45 (*4), 2 female DVI-I (29-pin)
		Analog		2 inputs *Switch-selectable between digital audio Stereo LR balanced / unbalanced Input impedance: 48k Ω Balanced / 24 kΩ Unbalanced Reference level: -10 dBu, Max. input level: +10 dBu Connector: 5-pin terminal block

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Item			Description
Output	Video	HDMI / DVI	8 outputs *The output video is switch-selectable between HDMI output and HDBaseT output. HDMI Deep Color (*1) / DVI 1.0 TMDS single link, HDCP 1.4 TMDS clocks: 65 MHz to 297 MHz, TMDS data rate: 1.95 Gbps to 8.91 Gbps Built-in cable EQ Connector: Female HDMI Type A (19-pin)
		HDBaseT	8 outputs *The output video is switch-selectable between HDMI output and HDBaseT output. HDBaseT (*1) HDCP 1.4 (*2) Connector: RJ-45 (*4) Cable: CAT.5E HDC, Cat5e UTP / STP, Cat6 UTP / STP (*5)
		Format	VGA / 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. 720p / 1080i / 1080p / 4K (3840 x 2160) (*6) / 4K (4096 x 2160) (*6)
	Audio	Digital	8 outputs *The output audio is switch-selectable between HDMI output and HDBaseT output. 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: 8 female HDMI Type A (19-pin), 8 RJ-45 (*4)
		Analog	1 output 1 of 8 digital audio outputs can be selected to be output as analog audio. Stereo LR balanced / unbalanced Output impedance: 100 Ω balanced / 50 Ω unbalanced Reference level: -10 dBu, Max. output level: +10 dBu Connector: 5-pin terminal block
		Network audio (Option)	1 output Format: Dante protocol Sampling frequency: 48 kHz, Sample size: 24 bit The number of outputs: 64 channels Connector: 2 RJ-45 (Primary / Secondary) (*7)
Maximum extension distance		Digital Input	HDMI / DVI: 98 ft. (30 m) (1080p@60), 66 ft. (20 m) (4K@30) (*8) HDBaseT: up to 328 ft. (100 m), up to 492 ft. (150 m) (Long reach mode) (*9)
		Digital output	HDMI / DVI: 131 ft. (40 m) (1080p@60), 98 ft. (30 m) (4K@30) (*8) HDBaseT: up to 328 ft. (100 m), up to 492 ft. (150 m) (Long reach mode) (*9)
Functions		Analog video processing unit	3D Y/C separation
		Scan Converter	Motion adaptive I/P conversion, Aspect Ratio Control, Picture adjustment (brightness, contrast, display position, display size, etc.), Seamless Switching (*10)
		Others	Multiview function (*11), Video mirror reversing (*12), All function setting through browser, Automatic input detection and switching, Volume adjustment (volumes of input and output ports can be set separately), Lip Sync (Max. 16 frames), Audio breakaway enables independent audio and video switching, Cross-point memory (9 settings), Preset memory (12 settings), Last memory, Anti-Snow (*13), Connection Reset (*14), External control commands (32 commands), 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
		Contact closure	9 ports / 6-pin terminal block Non-voltage contact input up to DC 24 V 500 mA
		External control	RS-232C, LAN, contact closure, PJLink (class1), CEC (Power control of sink device) (*15)
General		Power	100 - 240 VAC ± 10%, 50 Hz / 60 Hz ± 3 Hz
		Power consumption	About 160 Watts About 167 Watts with Dante (optional)
		Dimensions	16.9 (W) × 3.5 (H) × 15.7 (D)" (430 (W) × 88 (H) × 400 (D) mm) (EIA 2U high, full rack wide) (Excluding connectors and the like)
		Weight	15.9 lbs. (7.2 kg) 16.5 lbs. (7.5 kg) with Dante (optional)
		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 30 bit / pixel (10 bit / component) Deep Color is supported while x.v.Color, 3D, ARC and HEC are not supported.
WQHD, WQXGA and 4K format: 24 bit / pixel (8 bit / component) is supported.
*2 HDBaseT input/output: DVI signals protected by HDCP are not supported. To transmit those signals, use an IDK's twisted pair cable extender supporting DVI signals.
*3 For PoH power feeding, please use an HDBaseT transmitter supporting IEEE 802.3af. Use an AWG24 twisted pair cable or thicker cable.
*4 RJ-45 (HDBaseT connector) is only for extending digital video and audio signals over a Cat5e / Cat6 twisted pair cable. Use it with IDK's twisted pair cable transmitter or receiver. Do not use for LAN devices.
*5 T568A or T568B straight. The CAT.5E HDC cable is developed by IDK and recommended by HDBaseT alliance.
*6 4K format: Up to 4K@30 is supported.
If multiple sink devices are connected, the actual number of outputs becomes three: OUT1 and OUT2 (as one group), OUT3 and OUT4 (as another group), and OUT5 to OUT6 (as the other group).
*7 RJ-45 (Dante connector) is only for outputting audio at the Dante format.
*8 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.
・4K@30: when IDK's AWG 24 cable was used and signals of 4K@30 24 bit / pixel (8 bit / component) was input or output.
The maximum cable distance depends on the connected devices. 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.
*9 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.
Up to 492 ft. (150 m): 1080p (24 bit) in Long reach mode. For Long reach mode, use IDK's twisted pair cable products that supports 328 ft. (100 m) or longer.
*10 Seamless switching with a black frame.
*11 If multiple sink devices are connected, the actual number of outputs becomes two: OUT1 to OUT4 (as a group) and OUT5 to OUT8 (as another group).
*12 4K format is not supported.
*13 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.

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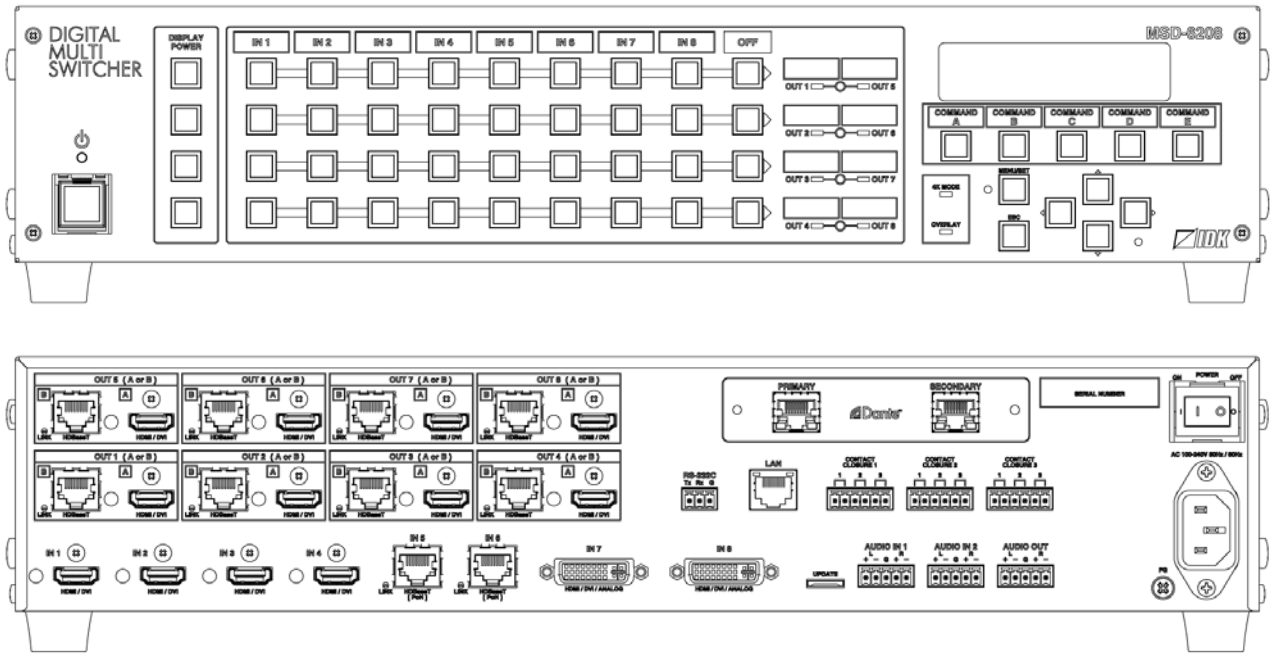
*14 For digital systems, some problems, such as an HDCP authentication error, can often be recovered by physically disconnecting and reconnecting the digital cables. However, the Connection Reset feature will fix these problems automatically without the need to physically plug and unplug the cables. 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.

*15 The sink device must support CEC. Some sink devices cannot be controlled from the MSD through CEC.

■ Front & Rear Panels



*Dante output is optional.

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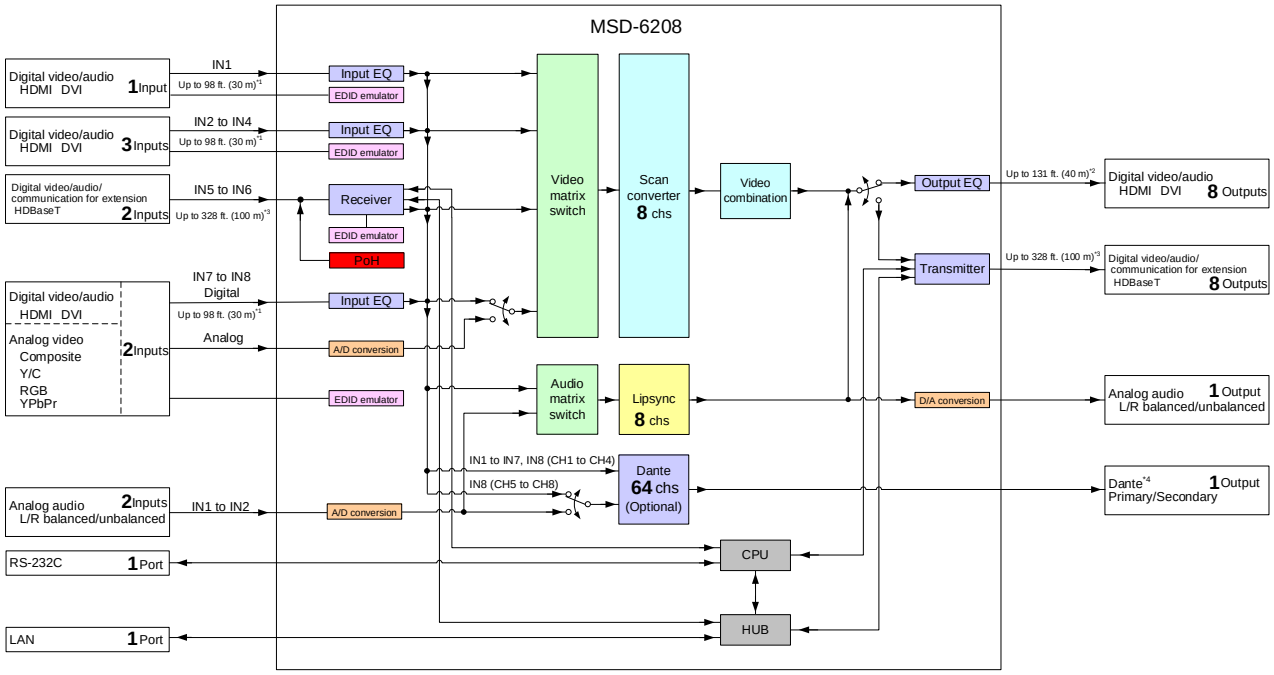
4K@30 supported Digital Multi Switcher

MSD-6208 Diagram and Features

■ Diagram



*1 Maximum extension distance
Up to 98 ft. (30 m) : 1080p@60
Up to 66 ft. (20 m) : 4K@30 (IN1 only)
*2 Maximum extension distance
Up to 131 ft. (40 m) : 1080p@60
Up to 98 ft. (30 m) : 4K@30
*3 Maximum extension distance
Up to 328 ft. (100 m) : 4K@30
Up to 492 ft. (150 m) : 1080p (24 bit) in Long reach mode
For long reach mode, video signals up to 1080p (24 bit) can be transmitted to 492 ft. (150 m) at maximum if the MSD is used with IDK's HDBaseT transmitter or receiver that supports 328 ft. (100 m) extension.
*4 Dante output is optional.

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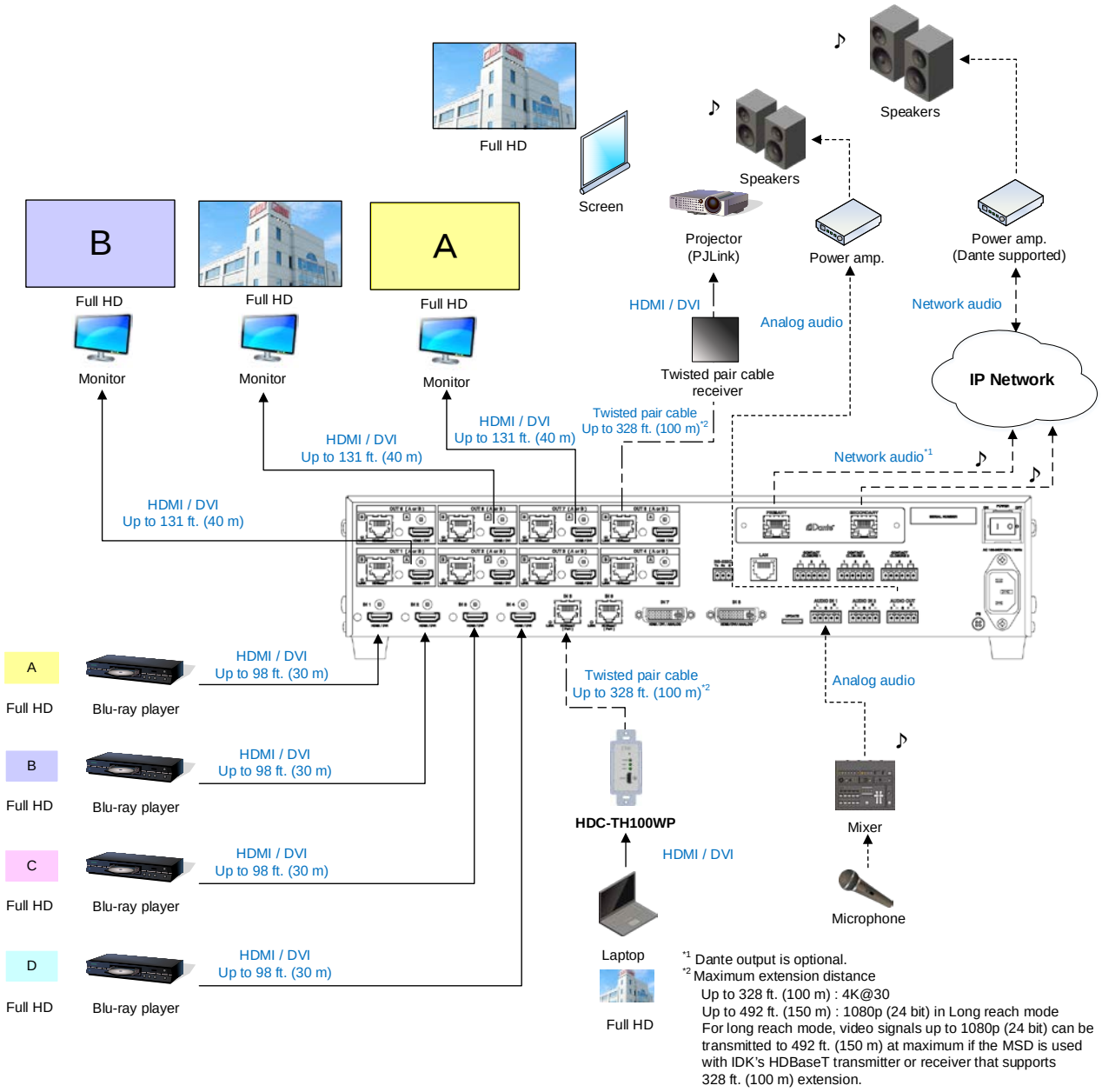
■ Application Example

<Regular mode: Full HD Video>



*1 Dante output is optional.
*2 Maximum extension distance
Up to 328 ft. (100 m) : 4K@30
Up to 492 ft. (150 m) : 1080p (24 bit) in Long reach mode
For long reach mode, video signals up to 1080p (24 bit) can be transmitted to 492 ft. (150 m) at maximum if the MSD is used with IDK's HDBaseT transmitter or receiver that supports 328 ft. (100 m) extension.

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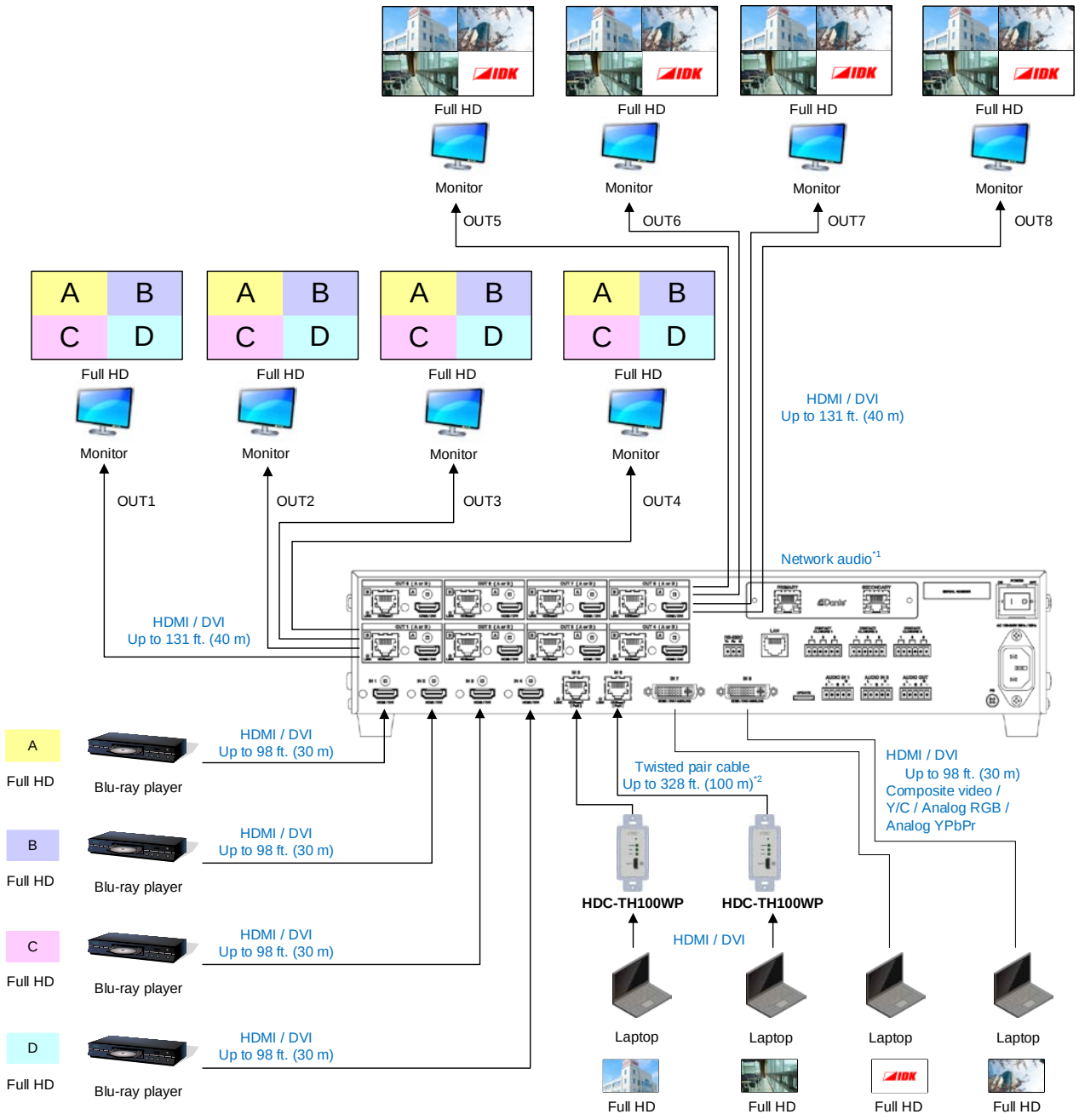
<Image combination mode: Full HD Video (Multiview)>



*1 Dante output is optional.
*2 Maximum extension distance
Up to 328 ft. (100 m) : 4K@30
Up to 492 ft. (150 m) : 1080p (24 bit) in Long reach mode
For long reach mode, video signals up to 1080p (24 bit) can be transmitted to 492 ft. (150 m) at maximum if the MSD is used with IDK's HDBaseT transmitter or receiver that supports 328 ft. (100 m) extension.

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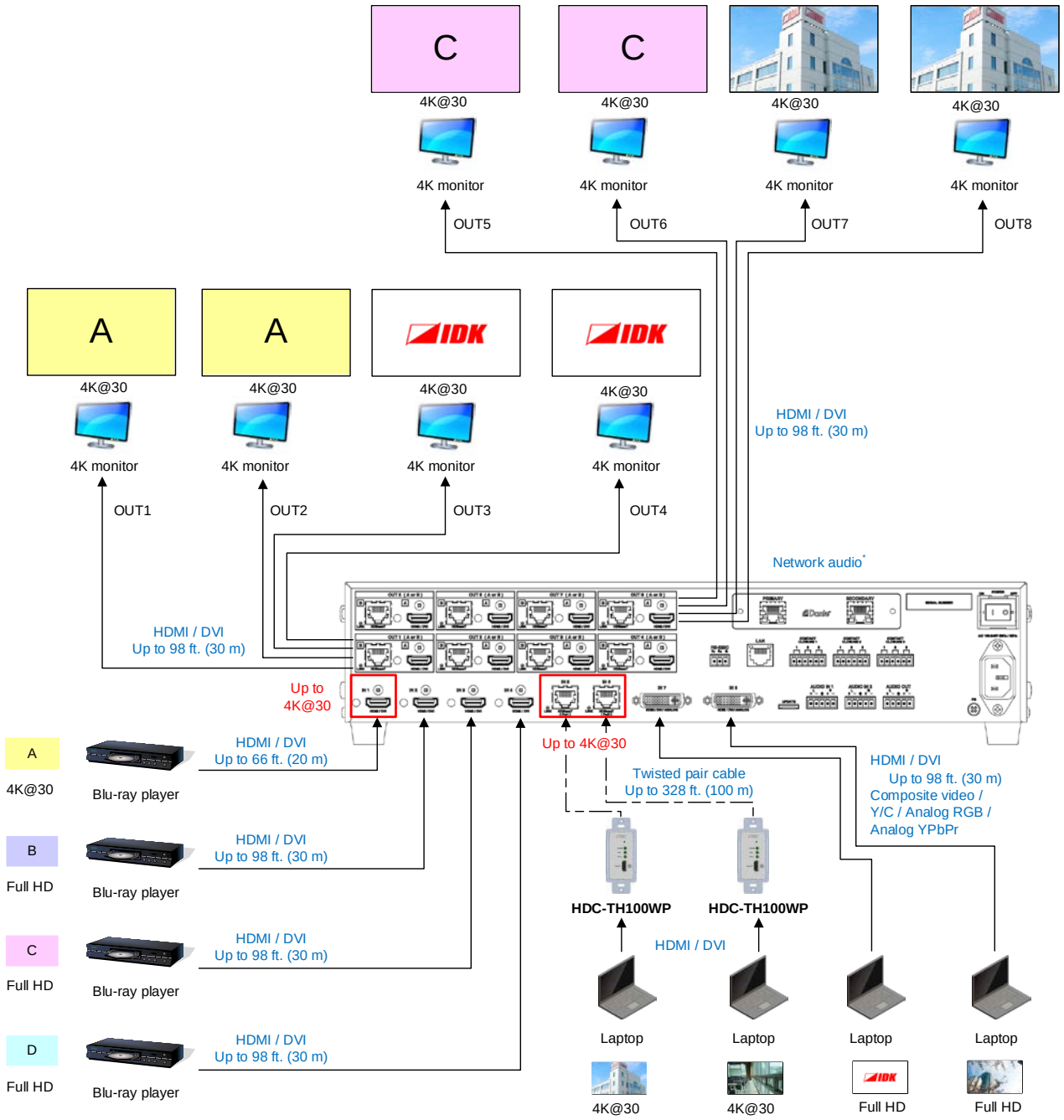
<4K mode: 4K Video>



*Dante output is optional.

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[Features]

■ **Video**
- Up to 4K@30
- Digital cable equalization
  Input Up to 98 ft. (30 m) : 1080p@60, Up to 66 ft. (20 m) : 4K@30
  Output Up to 131 ft. (40 m) : 1080p@60, Up to 98 ft. (30 m) : 4K@30
- I/P conversion
- Scan conversion
- Aspect ratio control
- Video mirror reversing[*1]
- Seamless switching[*2]
- A/D conversion
- Anti-snow
- Up to 492 ft. (150 m) over a Cat6 cable in Long reach mode[*3]

■ **Audio**
- A/D, D/A conversion
- Volume adjustment
- Lip sync
- Dante output (Optional)

■ **Multiview**[*1]
- Simultaneous display of up to 4 input images on a screen
- Setting display priority per window
- Displaying/hiding per window

■ **Control Input**
- RS-232C
- LAN

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

■ **Others**
- Power over HDBaseT (PoH) power feeding (HDBaseT input)
- EDID emulation
- Browser
- Automatic input detection and switching
- Audio breakaway enables independent audio and video switching
- Cross point memory
- Preset memory
- Last memory
- Connection Reset
- Security lock

[*1] 4K format is not supported.
[*2] Seamless switching with a black frame.
[*3] For long reach mode, video signals up to 1080p (24 bit) can be transmitted to 492 ft. (150 m) at maximum if the MSD is used with IDK's HDBaseT transmitter or receiver that supports 328 ft. (100 m) extension.

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