



# FDX-12UHD Specification

The IDK FDX-12UHD is a new level of Digital Matrix Switcher for AV systems which supports resolution up to 4K @60 and HDCP2.2. The FDX-12UHD can input / output HDCP protected contents such as Blu-ray, and it can support DVI signal by using HDMI to DVI connector conversion cable. The FDX-12UHD combines the simplicity and reliability of a fixed I/O matrix switcher with the convenience and flexibility of a modular matrix switcher. The FDX-12UHD accepts any combination of available HDMI / DVI, or HDBaseT input / output boards. Input and output boards are available in 4-input, 4-output, providing various I/O size combinations with sizes from 4x4 to 12x12. The FDX series also have RS-232 and LAN ports for external device control.

## ■ Specification

Item		Description
Input		12 inputs
Output		12 outputs
Input slot board	4K Digital	Up to 3 slot boards, 4 inputs per board (Up to 12 inputs)
	4K HDBaseT	
Output slot board	4K Digital	Up to 3 slot boards, 4 outputs per board (Up to 12 outputs)
	4K HDBaseT	
Functions		Audio breakaway enables independent audio and video switching (Audio unit MAU-1616 is required (Optional)), I/O slot board and CPU slot board can be replaced without taking off the unit from rack mount, Preset memory (32 memories), Last memory, Security lock, Anti-Snow (*1), Connection Reset (*2), Customizable input / output numbers by 4 ports input / output slot boards, RS-232C transmission (4K HDBaseT input / output slot board), System check, All function settings through browser, Backup power supply unit (optional)
Instant Alert output		1 port / 2-pin terminal block / Power unit monitoring, Fan unit monitoring, Temperature monitoring
External control	RS-232C	1 port / male D-sub (9 pin)
	LAN	1 port / RJ-45 10Base-T / 100Base-TX (Auto Negotiation), Auto MDI / MDI-X
	Optional (MAU-3232)	1 port / female D-sub (25 pin)
General	Power	100 - 240 VAC ± 10%, 50 Hz / 60 Hz ± 3 Hz
	Power consumption (*3)	4K digital input / output slot board Max. configuration Without backup power supply: About 76 Watts With backup power supply: About 83 Watts
		4K HDBaseT input / output slot board Max. configuration Without backup power supply: About 148 Watts With backup power supply: About 153 Watts
	Dimensions	16.9 (W) × 5.2 (H) × 13.8 (D) 430 (W) × 132 (H) × 350 (D) mm (EIA 3U high, full rack wide) (Excluding connectors and the like)
	Weight (*3)	4K digital input / output slot board Max. configuration Without backup power supply: About 21.8 lbs. (9.9 kg) With backup power supply: About 23.1 lbs. (10.5 kg)
		4K HDBaseT input / output slot board Max. configuration Without backup power supply: About 24.5 lbs. (11.1 kg) With backup power supply: About 25.6 lbs. (11.6 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: 20% to 90% (Non Condensing)	

## ■ Input slot board specification

Item		Description
<b>4K Digital input slot board</b>		
Input		4 inputs
Video	HDMI / DVI	HDMI Deep Color (*4) / DVI 1.0 TMDS single link, HDCP 1.4 / 2.2, HDR (*5), 3D (*6), x.v.Color TMDS clocks: 25 MHz to 300 MHz, TMDS data rate: 0.75 Gbps to 18 Gbps EDID emulation
	Formats	VGA to 4K (Dot clock 25 MHz to 600 MHz) 480i / 480p / 576i / 576p / 720p / 1080i / 1080p / 4K (up to 4K@60 (4:4:4))
Audio	Digital	Multi-channel linear PCM up to 8 channels Sampling frequency: 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit
Connector		Female HDMI Type A (19-pin)
Maximum extension distance		1080p@60: up to 98 ft. (30 m), 4K@60: up to 39ft. (12 m) (*7)

Item		Description
<b>4K HDBaseT input slot board</b>		
Input		4 inputs
Video	HDBaseT	HDBaseT (*8) HDCP 1.4 / 2.2 (*9), HDR (*5), 3D (*6), x.v.Color EDID emulation
	Formats	VGA to 4K (Dot clock 25 MHz to 300 MHz) * For WQHD / WQXGA, only Reduced Blanking is supported. 480i / 480p / 576i / 576p / 720p / 1080i / 1080p / 4K (up to 4K@60 (4:2:0))
Audio	HDBaseT	Multi-channel linear PCM up to 8 channels Sampling frequency: 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit
Connector		RJ-45 (*10)
Cable		CAT.5E HDC, Cat5e UTP / STP, Cat6 UTP / STP (*11)
Maximum extension distance		328 ft. (100 m) (*12)

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### ■ Output slot board specification

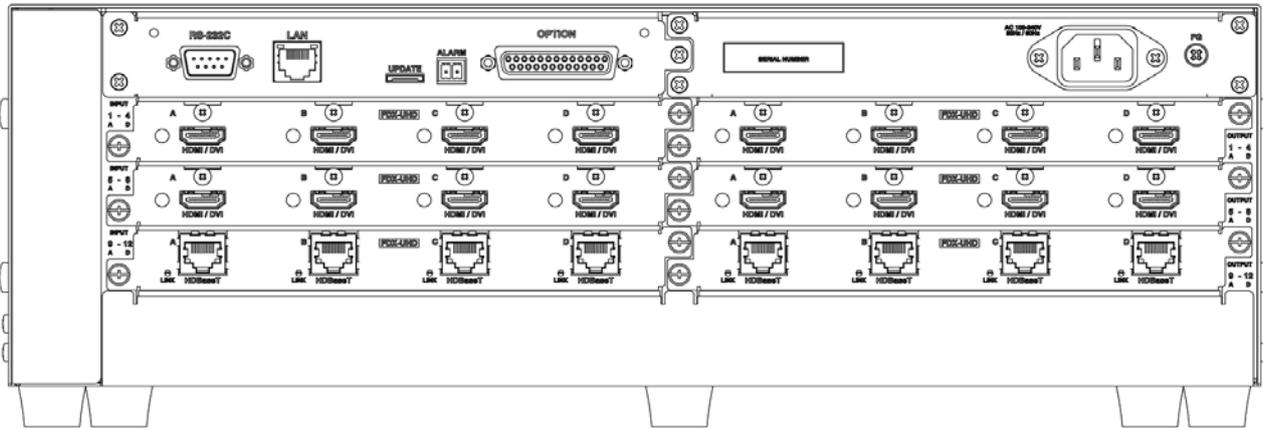
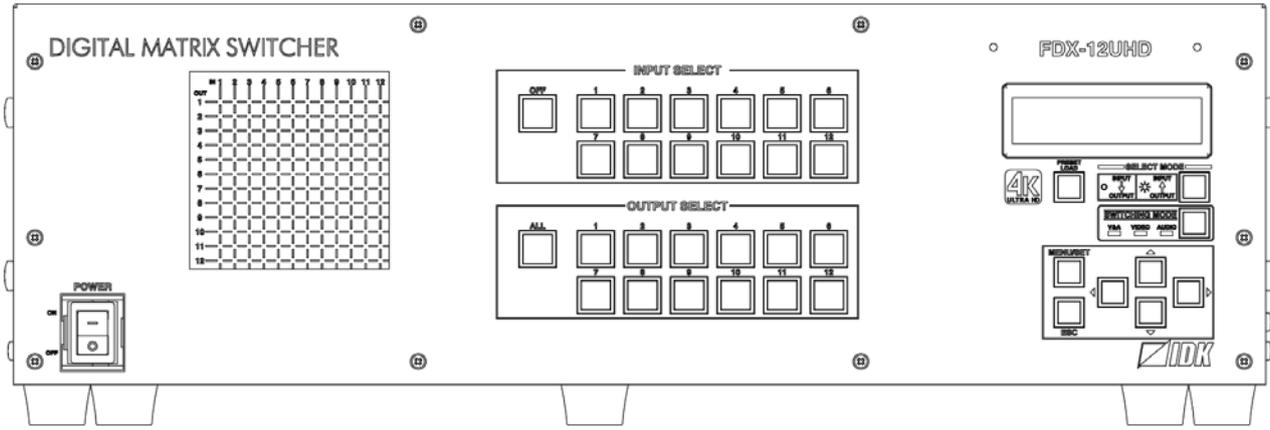
Item		Description
<b>4K Digital output slot board</b>		
Output		4 outputs
Video	HDMI / DVI	HDMI Deep Color (*4) / DVI 1.0 TMDS single link, HDCP 1.4 / 2.2, HDR (*5), 3D (*6), x.v.Color TMDS clock: 25 MHz to 300 MHz, TMDS data rate: 0.75 Gbps to 18 Gbps
	Formats	VGA to 4K (Dot clock 25 MHz to 600 MHz) 480i / 480p / 576i / 576p / 720p / 1080i / 1080p / 4K (up to 4K@60 (4:4:4))
Audio	Digital	Multi-channel linear PCM up to 8 channels Sampling frequency: 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit
Connector		Female HDMI Type A (19-pin)
Maximum extension distance		1080p@60: up to 98 ft. (30 m), 4K@60: up to 39ft. (12 m) (*7)

Item		Description
<b>4K HDBaseT output slot board</b>		
Output		4 outputs
Video	HDBaseT	HDBaseT (*8) HDCP 1.4 / 2.2 (*9), HDR (*5), 3D (*6), x.v.Color
	Formats	VGA to 4K (Dot clock 25 MHz to 300 MHz) *For WQHD / WQXGA Reduced Blanking, only Reduced Blanking is supported. 480i / 480p / 576i / 576p / 720p / 1080i / 1080p / 4K (up to 4K@60 (4:2:0))
Audio	HDBaseT	Multi-channel linear PCM up to 8 channels Sampling frequency: 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit
Connector		RJ-45 (*10)
Cable		CAT.5E HDC, Cat5e UTP / STP, Cat6 UTP / STP (*11)
Maximum extension distance		328 ft. (100 m) (*12)

- \*1 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.
- \*2 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 FDX's output. If other devices are connected between the FDX's output and sink device, this feature may be invalid.
- \*3 Please contact IDK sales for temperature and weight of each combination of inputs and outputs boards.
- \*4 4K format: following color depth are supported. ARC, HEC and CEC are not supported.
- 24 Hz / 25 Hz / 30 Hz : 24 bit, 30 bit, 36 bit (RGB, YCbCr 4:4:4, YCbCr 4:2:2)
  - 50 Hz / 59.94 Hz / 60 Hz : 24 bit, 30 bit, 36 bit (YCbCr 4:2:2, YCbCr 4:2:0)  
: 24 bit (RGB, YCbCr 4:4:4)
- \*5 HDR is supported if the connected sink device supports HDR and its copied EDID is set for EDID.
- \*6 3D is supported if the connected sink device supports 3D and its copied EDID is set for EDID.
- \*7 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@60 : when IDK's 18 Gbps supported cable was used and signals of 4K@60 24 bit / pixel (8 bit / component) was input or output.
- The maximum cable distance depends on the connected devices. With some combinations, and if you use cables of other manufacturer, video may be disturbed or may not be output even if signals are within the range mentioned above.
- \*8 4K format: following color depth are supported. ARC, HEC and CEC are not supported.
- 24 Hz / 25 Hz / 30 Hz : 24 bit (RGB, YCbCr 4:4:4, YCbCr 4:2:2)
  - 50 Hz / 59.94 Hz / 60 Hz : 24 bit (YCbCr 4:2:0)
- \*9 DVI signals protected by HDCP are not supported. To transmit those signals, use an IDK's twisted pair cable transmitter supporting DVI signals.
- \*10 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 extender. Do not use for LAN devices.
- \*11 T568A or T568B straight. The CAT.5E HDC cable is developed by IDK and recommended by HDBaseT alliance.
- \*12 The maximum distance was obtained when IDK CAT.5E HDC cable was used.  
If connected to a device that is in extremely bad condition, the video may be unstable or not be output. Operations may not be stable with some LCD devices; please check the operation beforehand or contact us. The maximum extension distance is the shorter one of HDBaseT product and sink device that are connected to the FDX.

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■ Front & Rear Panels



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**[Features]****■ Video**

- Up to 4K@60 (4:4:4)\*
- HDCP 1.4 / 2.2
- Maximum extension distance (4K digital input / output slot board)
  - 1080p@60: 98 ft. (30 m)
  - 4K@60: 39 ft. (12 m) (when 18 Gbps high-speed cable is used)
- Up to 328 ft. (100 m) over a Cat6 cable
- Anti-Snow
- HDR
- 3D
- x.v.Color
- Customizable input / output numbers by 4 ports input / output slot boards

**■ Control input**

- RS-232C
- LAN

**■ Others**

- EDID emulation
- Audio breakaway enables independent audio and video switching (Audio unit MAU-1616 is required (Optional))
- I/O slot board and CPU slot board can be replaced without taking off the unit from rack mount
- Instant Alert output (Power unit monitoring, Fan unit monitoring, Temperature monitoring)
- Startup memory
- Preset memory
- Last memory
- Connection Reset
- Security lock
- System check
- All function settings through browser
- Backup power supply unit (optional)
- RS-232C transmission (4K HDBaseT input / output slot board)

\* 4K HDBaseT I/O slot board: Up to 4K@60 (4:2:0)

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