4K HDR HDMI Matrix Switcher with SDVoE Extension Outputs

Introduction

The Atlona **AT-PRO5-MX810** is an 8x10 matrix switcher with eight HDMI® inputs, two HDMI outputs, and eight AV extension outputs with SDVoE® 10GbE connectivity for ultra-high definition video and audio delivery to an Atlona AT-PRO5-101-SC-RX or AT-PRO5-101-RX receiver. Part of the PRO5 Series, this matrix switcher is HDCP 2.3 compliant, and supports 4K/60 4:4:4 and HDR at HDMI data rates up to 18 Gbps. Each SDVoE extension output includes an RJ45 port, and an SFP+ cage for copper or fiber optic connectivity to transmit video, embedded audio, Gigabit Ethernet, and RS-232 and IR control signals to the receiver. The RJ45 port allows extension up to 330 feet (100 meters) over CAT6a UTP cable, along with PoE for powering the receiver, while the SFP+ cage can be used with a compatible fiber optic module to extend from 38 meters up to 10 kilometers over fiber optic cable. Video processing is available in the PRO5-101-SC-RX scaling receivers, including 4K video upscaling and downscaling with frame rate conversion, and video wall processing. This HDMI to SDVoE matrix switcher is equipped with a comprehensive host of audio and control system integration features, making it ideal for a wide range of commercial applications requiring multi-zone AV distribution with long-distance signal extension.

Applications

- **Lecture halls**
  The eight extension outputs of the PRO-MX810 give it ample capacity to serve side-by-side projectors, auxiliary displays, confidence monitors, and even lecture capture.
- **Active classrooms and student labs**
  The PRO5-MX810 can be the central AV switcher for BYOD and in-room sources, while distributing to student pod displays and the main projector.
- **Student centers and corporate lobbies**
  These are ideal settings for a video wall installation, plus displays throughout for digital signage.
- **Large organizations and enterprises**
  Some facilities may have existing fiber available for use, which could simplify integration for the PRO5-MX810.
- **Divisible rooms**
  This matrix switcher can readily be configured to serve two or more subdivisions of a hotel ballroom or other divisible space.
- **Courtrooms**
  The PRO5 Series system can distribute video source content throughout a courtroom environment, with full control of AV routing at the judge's bench.
- **Retail and hospitality**
  In sports-themed restaurants, the PRO5-MX810 can be integrated with up to eight set-top boxes or media players, all distributed to viewing zones throughout the venue. This scenario is also typical in high-end residential AV installations.
- **Houses of worship**
  For live performances in large sanctuaries, this matrix switcher can serve IMAG and auxiliary displays with zero latency, as well as very fast source switching.

Key Features

8x10 HDMI matrix switcher with HDMI and SDVoE® extension outputs

- Eight HDMI inputs.
- Two HDMI outputs.
- Eight outputs for extending AV, Ethernet, and control to PRO5 Series receivers using SDVoE technology.
- Ideal for commercial applications requiring multi-zone AV distribution with long-distance signal extension.

High-performance, SDVoE-based, point-to-point AV transmission

- Leverage 10GbE connectivity for ultra-high definition video and audio delivery between source and destination devices.
- Full-bandwidth distribution without the cost of a 10GbE network.

Eight SDVoE extension outputs, each with copper or fiber optic connectivity[1]

- Transmit video, embedded audio, Gigabit Ethernet, and bidirectional IR and RS-232 control signals to Atlona AT-PRO5-101-SC-RX scaling receiver or AT-PRO5-101-RX receiver.
- RJ45 port allows extension up to 330 feet (100 meters) over CAT6a UTP cable along with Power over Ethernet (PoE).
- SFP+ cage can be used with compatible fiber optic transceiver module[2] to extend from 38 meters up to 10 kilometers over fiber optic cable.
- System design and integration versatility for distributing signals over 10 Gigabit Ethernet copper or fiber optic cables.

4K/UHD capability @ 60 Hz with 4:4:4 chroma sampling, plus support for HDR formats

- Ideal for 4K/UHD and HDR-capable sources and displays.
- Compatible with HDR10, HDR10+, Dolby® Vision™, and HLG (Hybrid Log-Gamma).

HDCP 2.3 compliant

- Adheres to latest specification for High-bandwidth Digital Content Protection.
- Allows protected content stream to pass between authenticated devices.
- HDCP down-conversion and up-conversion available when used with AT-PRO5-101-SC-RX scaling receivers.

Power over Ethernet (PoE) for remotely powering AT-PRO5-101-SC-RX and AT-PRO5-101-RX receivers

- When extending AV signals over 10 Gigabit Ethernet, industry standard IEEE 802.3af PoE is supplied by the PRO5-MX810 to deliver power to the AT-PRO5-101-SC-RX and AT-PRO5-101-RX receivers.
- Allows convenient receiver installation at a display or projector without the need for local AC power.[3]

High-performance video processing available with AT-PRO5-101-SC-RX scaling receivers

- 4K upscaling and downscaling with video processing optimization settings. Selectable frame rate and color space conversion available. Advanced motion-adaptive deinterlacing optimizes presentation of 1080i source content such as television broadcasting.
- Ideal for presentation applications with various types of source content, and installations with a variety of 4K displays and projectors at HD or other resolutions.

Key Features (continued)

Video wall processing available with AT-PRO5-101-SC-RX scaling receivers

- Processing for video walls in 2x2, 1x3, and 2x4 configurations.
- 10 presets available for saving and recalling video wall configurations.

Flexible, independent audio matrix switcher

- Provides routing for de-embedded HDMI input stereo audio (LPCM) to analog outputs, HDMI outputs, or SDVoE extension outputs.
- Volume and mute control for each analog output on the matrix switcher, as well as each receiver (up to a total of 16 stereo channels).
- Analog audio outputs provide flexible options for integrating with multi-zone audio systems.

Multi-channel audio compliant

- Passes through multi-channel audio formats from the HDMI inputs.
- Supports PCM, Dolby® Digital, Dolby Digital Plus™, Dolby TrueHD, Dolby Atmos®, DTS® Digital Surround™, DTS-HD Master Audio™, and DTS:X®.

EDID management

- Manages EDID communications between source, switcher, and displays; allows integrators to force a source to transmit preferred video resolution and audio format.
- Ensures desired audio formats and video resolutions are provided to the AV system.
- Enables uploading and modification of EDIDs in the web GUI.

HDCP 2.3 management

- Automatically reports HDCP compliance status to the source based on the sink device. HDCP compliance can be disengaged through Velocity Device Manager, API, or the web GUI.
- Allows non-protected material from PCs to pass to non-compliant displays, streaming devices, and teleconference systems; protected content is not transmitted.
- Displays a green splash screen as visual confirmation that protected content is being blocked from transmission to a non-compliant display.

Provides HDMI signal regeneration for source devices

- Allows legacy HDMI sources such as cable television set-top boxes to be used in newer systems.
- Addresses the lack of support for the HDMI clock stretching protocol.

Intuitive GUI-based configuration using integrated web server

- Offers menu-based configuration of network settings, RS-232 settings, I/O routing for video and audio, EDID and HDCP management, audio settings, and more.
- Allows fast configuration of internal product settings and troubleshooting from a mobile device or PC in the field.

TCP/IP and RS-232 control

- Flexible control options for compatibility with the Atlona Velocity™ control system, as well as other third-party control systems.
- Reduces integration time and costs.

Key Features (continued)

TCP proxy streamlines control system integration

- Converts TCP/IP commands to IR and RS-232 commands for output to external devices.
- Enables single IP connection from control processor to control IP, IR, and RS-232 connected devices at endpoints (receivers).

Independent CEC display control to each output

- Sends display power on/off and volume control to a specific SDVoE extension or HDMI output. Enables independent control of displays connected to the matrix switcher (as supported by the display manufacturer).
- CEC control can be triggered by IP or RS-232 control commands, or an auto-on / standby feature based on source signal presence at an output.
- Allows individual modification of CEC commands for each output, to ensure compatibility with all displays.

Comprehensive IR control management for sources and displays

- TCP proxy allows direct interfacing of IR from a control processor to each SDVoE extension output.
- PRO5 Series also allows remote IR control of source devices from endpoint (receiver) locations.

Easy to configure and manage with Velocity Device Manager

- Centralized, network-based configuration and management of Atlona IP-controllable products and systems.
- Manage configuration and firmware updates for AV devices spanning a facility, building, organization, or enterprise.
- Available as a part of Velocity control systems or as a free virtual machine software download.

Field-updatable firmware

- Device can be updated in the field via the web GUI or Velocity Device Manager.

Quiet, active cooling

- Temperature-based fans maintain low internal temperature while never allowing fan noise to rise above -20 dBSPL @ 1 meter.
- Eliminates noise objections when matrix switcher is used within a presentation or entertainment space.

Front panel power and signal status LEDs

- LED indicators provide power and device status.
- Provides local, convenient setup and troubleshooting when network access is not available.

Rack mountable 2U, full-rack width enclosure

- Installs easily in rack mounted systems with included 19” rack mount brackets.
- Reduces installation time and cost.

Included accessories

- Rack mounting hardware, power cable (US), and captive screw connectors.

Specifications

Video		
Signal	Input – HDMI Output – SDVoE (RJ45, SFP+)	
Copy Protection	HDCP 1.4 / 2.2 / 2.3	
Pixel Clock	600 MHz	
UHD/HD/SD	4096x2160 @ 60/50/30/25/24 Hz 3840×2160 @ 60/50/30/25/24 Hz 1920x1080p @ 60/59.9/50/30/29.97/25/24/23.98 Hz 1920x1080i @ 30/29.97/25 Hz 1280x720p @ 60/59.94/50 Hz	720x576p @ 50 Hz 720x576i @ 25 Hz 640x480p @ 60/59.96 Hz 640x480i @ 30 Hz
VESA	2560×1600 2048×1536 1920×1200 1680×1050 1600×1200 1440×900 1400×1050 1366×768	1360×768 1280×1024 1280×800 1152×864 1024×768 800×600 640×480
Color Space	YUV, RGB	
Chroma Subsampling	4:4:4, 4:2:2, 4:2:0	
Color Depth	8-bit, 10-bit, 12-bit	
HDR	HDR10, Hybrid-Log Gamma (HLG), and Dolby® Vision™ @ up to 60 Hz	

Audio			
HDMI Pass-Through Formats	LPCM 2.0 LPCM 5.1 LPCM 7.1	Dolby® Digital Dolby Digital Plus™ Dolby TrueHD Dolby Atmos®	DTS® Digital Surround™ DTS-HD Master Audio™ DTS:X®
Bit Depth	Up to 24 bits		
Sample Rate	32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, 192 kHz		
Analog Audio			
Format	Stereo 2-Channel		
Type	Balanced Audio		

Ethernet	
Port	1 x RJ45
Standards and Protocols	HTTP, HTTPS, Telnet, SSH, mDNS
Speeds	10/100/1000 Mbps
Addressing	DHCP, Static, APIPA

RS-232	
Port	1 x 3-pin captive screw, TX, RX, GND
Use	Device control and configuration
Baud Rates	2400, 4800, 9600, 19200, 38400, 57600, 115200
Data Flow	Bidirectional

CEC	
Ports	2 x HDMI OUT, Type A, 19-pin female
Triggering	IP, RS-232, and built-in web server

Resolution / Distance	4K/UHD - Feet / Meters		1080p - Feet / Meters	
HDMI IN/OUT	15	5	30	10
CAT6a	330	100	330	100

Buttons and Indicators	
Buttons:	
RESET	1 x momentary, recessed
Indicators:	
PWR	1 x LED, blue
STATUS	1 x LED, blue/red/off

Connectors	
INPUT	8 x Type A, 19-pin female
OUTPUT	2 x Type A, 19-pin female
EXT 1 - 8 (SDVoE)	8 x RJ45, female 8 x SFP+ cage, female
RS-232	1 x 3-pin captive screw
LAN	1 x RJ45, 1000Base-T
IR IN	8 x 3.5 mm jack, female
IR OUT	8 x 3.5 mm jack, female
AUDIO OUT	8 x 5-pin captive screw, balanced / unbalanced, 2-channel
AC100-240V 50/60 Hz	IEC

Environmental	Fahrenheit	Celsius
Operating Temperature	+32 to +122	0 to +50
Storage Temperature	-4 to +140	-20 to +60
Operating Humidity (RH)	20% to 90%, non-condensing	
Maximum Operating Altitude	2000 meters	

Power	
Consumption (maximum)	156.5 W
Consumption (idle)	43.8 W
Consumption (operating)	59 W
BTU/h (maximum)	533.67
BTU/h (idle)	149.36
BTU/h (operating)	201.19

Dimensions (H x W x D)	Inches	Millimeters
Unit (2U)	3.46 x 17.32 x 14.18	88.00 x 440.00 x 360.20

Weight	Pounds	Kilograms
Device	16.09	7.3

Certification		
Device	CE, FCC, RoHS	
Power Supply	CE, FCC, RoHS, CCC, CB	

Compliance		
NDAA-889	Yes	
TAA	No	

Warranty		
3 years	View the full warranty information here: https://atlona.com/warranty	

Footnotes

(1) Signals can be transported over copper or fiber, but not both simultaneously.
(2) Fiber optic module for SFP+ cage is a separate purchase.
(3) PoE will not be available when SFP+ is used to extend AV signals over fiber.

Certified Compatible SFP+ Receivers

Manufacturer	Product
Atlona	AT-SFP-PLUS-10GE-SR
FS	FS SFP+ 10GB 850nm LC
Ubiquiti	UACC-OM-MM-10G-D-2
Proline	EW3D0000710-PRO
StarTech	455883B21ST

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