

DXP HDMI Series

HDMI MATRIX SWITCHERS



- Available in 4x4, 4x8, 8x4, and 8x8 I/O sizes
- HDMI 1.3 compatible
- HDCP compliant
- EDID Minder
- Automatic cable equalization for each input to 100 feet (30 meters) at 1920x1200
- Automatic output reclocking
- Provides +5VDC, 250mA power on the HDMI outputs for external peripheral devices
- 16 global presets
- QS-FPC™ - QuickSwitch Front Panel Controller
- IP Link® Ethernet control
- RS-232 and RS-422 serial control
- Front panel security lockout
- Rack-mountable 2U, full rack width metal enclosure

The Extron DXP HDMI Series are HDMI 1.3 compatible matrix switchers designed for applications where routing of high resolution, digital video signals is required. They are HDCP compliant and available in sizes of 4x4, 4x8, 8x4, and 8x8, and offer several proprietary features to optimize performance and reliability of HDMI transmission to and from the matrix switcher. The DXP HDMI Series also offers the same convenience features common to Extron matrix switchers, such as the QS-FPC front panel controller with tri-colored backlit buttons, global presets, IP Link Ethernet control, and RS-232/RS-422 serial control.



Extron Electronics
INTERFACING, SWITCHING AND CONTROL

DESCRIPTION

The Extron **DXP HDMI Series** are high performance, digital matrix switchers that route HDMI signals from multiple sources to any or all of up to eight HDMI-equipped display devices. These HDMI 1.3 compatible matrix switchers support resolutions up to 1920x1200 and HDTV 1080p/60, and are HDCP compliant, ensuring simultaneous distribution of a single source signal to one or more compliant displays. Available in sizes of 4x4, 4x8, 8x4, and 8x8, the DXP HDMI Series is designed for ease of integration in applications where HDMI signal routing is required. They include several convenience features common to Extron matrix switchers such as the QS-FPC™ - QuickSwitch Front Panel Controller, global presets, IP Link Ethernet control, and more.

To enhance and simplify integration of HDMI-equipped sources and displays, all models in the DXP HDMI Series feature EDID Minder that automatically manages the EDID - Extended Display Identification Data communication between the digital display devices connected to the outputs and all the input sources. EDID Minder offers an automatic mode in which the EDID for all displays tied to an input are evaluated to determine the highest common resolution between them. The EDID for this resolution is then applied to the input. Also available is a user assigned mode, which allows the EDID from any of the displays, or pre-stored EDID based on 28 selectable resolutions, to be manually assigned to any input. By maintaining continuous EDID communication with all sources, EDID Minder ensures that all HDMI sources power up properly and maintain their video outputs whether or not they are actively connected to the digital display devices through the matrix switcher's outputs.

DXP HDMI matrix switchers feature automatic cable equalization for all inputs. This reduces the need for additional signal conditioning equipment by compensating for signal loss when using long input cable assemblies. At each of its outputs, HDMI signals are reshaped and the timing is restored to allow for transmission over long HDMI cables.

The DXP HDMI Series matrix switchers are ideal for various commercial, medical, military and government, and residential environments where distribution of high resolution, digital video signals is needed, and a fully digital pathway is essential to maintain the highest possible image quality, from multiple sources to multiple displays.

The DXP HDMI Series supports the long distance transmission of HDTV signals with HDCP - High-bandwidth Digital Content Protection for copy protection of digital television broadcasts and high resolution digital video output from DTV tuners and DVRs, and Blu-ray Disc players.

The DXP HDMI Series includes several features that enhance integration convenience and ease of set-up. These include QS-FPC with tri-color backlit buttons, the ability to save frequently used I/O configurations as presets, and multiple points of control. The DXP HDMI matrix switchers can be operated via the front panel, RS-232 serial control, and IP Link Ethernet control. An optional Extron X-Y Remote Control Panel is also available that provides a convenient user interface for controlling a DXP HDMI matrix switcher from a remote location. Additionally, all matrix switchers offer +5VDC, 250mA on the HDMI outputs for powering external peripheral devices.

FEATURES

- **Available in 4x4, 4x8, 8x4, and 8x8 I/O sizes**
- **HDMI 1.3 compatible**
- **HDCP compliant** – The DXP HDMI Series fully supports long distance transmission of HDCP signals.
- **EDID Minder** – Automatically manages EDID - Extended Display Identification Data communication between the displays and connected input sources. EDID Minder offers an automatic mode in which the EDID for the highest common resolution of all displays in an I/O tie is applied to the input. A user assigned mode is also available, so that the EDID from any of the displays, or pre-stored EDID based on 28 selectable resolutions can be manually assigned to the input. EDID Minder ensures that all sources power up properly and reliably output content to the displays.
- **Automatic cable equalization for each input to 100 feet (30 meters) at 1920x1200** – The DXP HDMI Series matrix switchers actively condition incoming HDMI signals to compensate for signal loss and timing errors when using long HDMI cables, low quality HDMI cables, and source devices with poor HDMI signal output.
- **Automatic output reclocking** – The DXP HDMI Series matrix switchers reshape and restore timing of HDMI signals at each output, enabling transmission over long HDMI cables.
- **Provides +5VDC, 250mA power on the HDMI outputs for external peripheral devices**
- **Supports DDC transmission** – DDC channels are actively buffered, allowing pass-through of EDID and HDCP information between source and display.
- **16 global presets** – Frequently used I/O configurations may be saved and recalled either from the front panel, IP Link, or serial control. This time-saving feature allows I/O configurations to be set up and stored in memory for future use.
- **View I/O mode** – Users can easily view which inputs and outputs are actively connected.
- **QS-FPC™ - QuickSwitch Front Panel Controller** – Provides a discrete button for each input and output, allowing for simple, intuitive operation.
- **Tri-color, backlit buttons** – Can be custom labeled for easy identification. The buttons illuminate red, green, or amber, depending on function, for ease of use in low-light environments.
- **IP Link Ethernet control** – The DXP HDMI matrix switchers can be proactively monitored and managed over a LAN, WAN, or the Internet, using standard TCP/IP protocols. IP Link provides for remote selection of I/O ties, EDID Minder configuration, and monitoring system status.
- **RS-232 and RS-422 serial control port** – Using serial commands, the DXP HDMI Series can be controlled and configured via the included Windows®-based control software, or integrated into third-party control systems. Extron products use the SIS™ - Simple Instruction Set command protocol, a set of basic ASCII code commands that allow for quick and easy programming.
- **Control software** – Provides a graphical, drag-and-drop interface for I/O configuration and other customization functions via RS-232 and RS-422 remote control. This software also offers an emulation mode for configuration of an offsite matrix switcher; the I/O configuration may be saved for future downloading to the matrix switcher.
- **Optional remote controls** – Available as an option are the MKP 2000 or MKP 3000 X-Y Remote Control Panels, which provide the flexibility to control a DXP HDMI Series matrix switcher from a remote location.
- **Front panel security lockout**
- **Rack-mountable 2U, full rack width metal enclosure**

NOTE: *Appropriate HDMI to DVI-D cables or adapters are required for DVI signal input/output.

VIDEO

Routing

| | |
|-------------------|--------------|
| DXP 44 HDMI | 4 x 4 matrix |
| DXP 48 HDMI | 4 x 8 matrix |
| DXP 84 HDMI | 8 x 4 matrix |
| DXP 88 HDMI | 8 x 8 matrix |

Signal type..... TMDS digital RGB and single-link DVI digital video signals are supported

Digital video RGB digital video (DVI and HDMI standards) or Y, Cr, Cb digital component video (HDMI), actively buffered (supports all single-link DVI and HDMI [if using an optional adapter] standards from 640x480 @ 60 Hz to 1600x1200 @ 60 Hz computer video and HDTV 480p, 720p, 1080i, 1080p)

NOTE: The DXP HDMI Series switchers are compatible with HDMI 1.3.

Digital audio Supports HDMI audio transmitted through the RGB and Y, Cr, Cb lines, actively buffered.

| | |
|--|--|
| Consumer Electronics Control (CEC) | Supports CEC wired infrared data pass-through using the HDMI 1.3 standard. |
| EDID and DDC..... | Supports Extended Display Identification Data (EDID) and Display Data Channel (DDC) data using DVI and HDMI standards. EDID and DDC signals are actively buffered. |
| HDCP..... | Compliant with High-bandwidth Digital Content Protection (HDCP) using DVI and HDMI 1.3 standards |
| HPD | Supports hot plug detection (HPD) of display as a pass-through signal. |

| | |
|----------------------------------|--|
| Gain | Unity |
| Resolution range | Up to 1080p (HDTV) or 1920x1200 (the highest resolution of the single-link DVI standard) @ 60 Hz |
| Maximum data rate | 6.75 Gbps (2.25 Gbps per color) |
| Maximum pixel clock | 225 MHz |
| Standards | DVI 1.0, HDMI 1.3 |
| Switching speed | 200 ns, max. |

VIDEO INPUT

| | |
|--------------------------------------|---|
| Number/signal type | 4 or 8 (depending on model) digital RGB (TMDS) HDMI (or single-link DVI-D*) |
| Connectors | 4 or 8 female HDMI type A (digital only) |
| Nominal level | |
| Digital video | 1.2 Vp-p |
| DDC (Display Data Channel)..... | 5.0 Vp-p (TTL) |
| Minimum/maximum level | 0.5 V to 1.0 Vp-p with no offset |
| Impedance | 100 ohms |
| Return loss | <-15 dB @ 1 MHz to 1.5 GHz |
| TDR rise time (10%-90%) | 75 ps |
| Equalization | Automatic |
| Input cable length | >50' (15.24 m) at 1920x1200 @ 48, 50, or 60 Hz; or 1080p |

NOTE: The transmission distance varies depending on the signal resolution and on the type of cable, graphic card, and display used in the system.

VIDEO OUTPUT

| | |
|---------------------------------------|--|
| Number/signal type | 4 or 8 (depending on model) digital RGB |
| Connectors | 4 or 8 female HDMI type A |
| Nominal level | 1.2 Vp-p |
| Minimum/maximum level(s) | 0.5 V to 1.0 Vp-p with no offset (follows input) |

| | |
|--|--|
| Impedance | 100 ohms |
| Return loss | <-15 dB @ 1 MHz to 1.5 GHz |
| DC offset | ±500 mV maximum with input at 0 offset |
| Rise and fall time (20-80%) | 0.6 ns |
| Re-clocking | Automatic |
| Peripheral device power | 250 mA per output |

CONTROL/REMOTE — SWITCHER

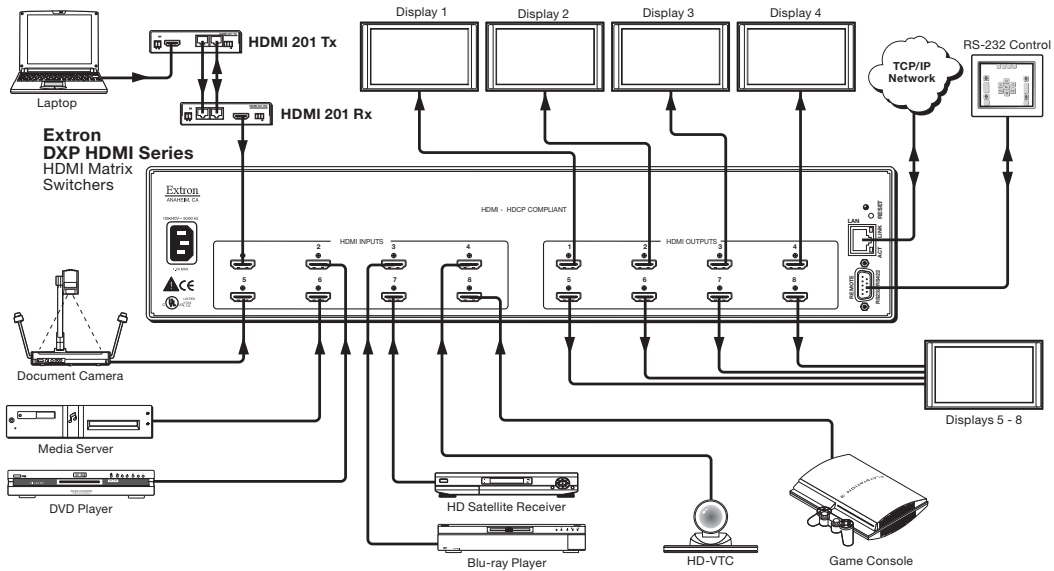
| | |
|--|---|
| Serial control port | (1) RS-232, 9-pin female D connector (1) RS-232, front panel 2.5 mm mini stereo jack |
| Baud rate and protocol | 9600 to 115200 baud, 9600 baud (default), 8 data bits, 1 stop bit, no parity |
| Serial control pin configurations | |
| 9-pin D connector..... | 2 = TX, 3 = RX, 5 = GND |
| Mini stereo jack..... | Tip = TX, ring = RX, sleeve = GND |
| Ethernet control port | (1) RJ-45 female connector |
| Ethernet data rate | 10/100Base-T, half/full duplex with autotdetect |
| Ethernet protocol | ARP, ICMP (ping), IP, TCP, DHCP, HTTP, Telnet |
| Default settings | Link speed and duplex level = autotdetected IP address = 192.168.254.254 Subnet mask = 255.255.0.0 Gateway = 0.0.0.0 DHCP = off |
| Program control | Extron's control/configuration program for Windows® Extron's Simple Instruction Set (SIS™) Microsoft® Internet Explorer® ver. 6 or higher, Telnet |

GENERAL

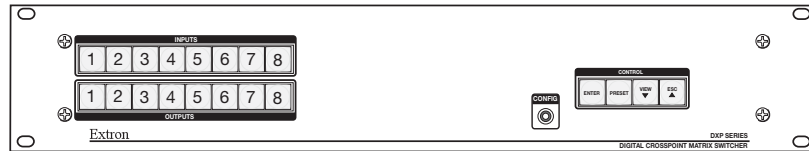
| | |
|---|---|
| Power | 100 VAC to 240 VAC, 50-60 Hz, 15 watts, internal |
| Temperature/humidity | Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing |
| Cooling | Fan, air flows right to left (as viewed from front) |
| Mounting | |
| Rack mount..... | Yes, 2U high |
| Enclosure type | Metal |
| Enclosure dimensions | 3.5" H x 17.5" W x 12.0" D (2U high, full rack wide) (8.9 cm H x 44.4 cm W x 30.5 cm D) (Depth excludes connectors. Width excludes integrated rack ears.) |
| Product weight | 10.0 lbs (4.5 kg) |
| Shipping weight | 15 lbs (7 kg) |
| Vibration | ISTA 1A in carton (International Safe Transit Association) |
| Regulatory compliance | |
| Safety..... | CE, c-UL, UL |
| Compliances | CE, C-tick, FCC Class A, ICES, VCCI |
| MTBF | 30,000 hours |
| Warranty | 3 years parts and labor |
| NOTE: All nominal levels are at ±10%. | |
| NOTE: Specifications are subject to change without notice. | |

| Model | Version Description | Part number |
|-------------|--------------------------------|-------------|
| DXP 48 HDMI | 4x8 HDMI Matrix Switcher | 60-1010-01 |
| DXP 44 HDMI | 4x4 HDMI Matrix Switcher | 60-880-01 |
| DXP 84 HDMI | 8x4 HDMI Matrix Switcher | 60-881-01 |
| DXP 88 HDMI | 8x8 HDMI Matrix Switcher | 60-882-01 |

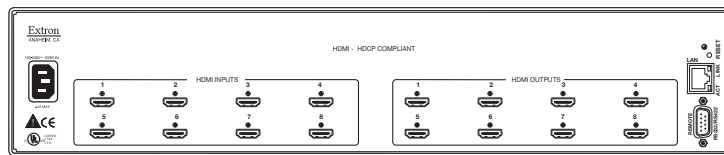
APPLICATION DIAGRAM



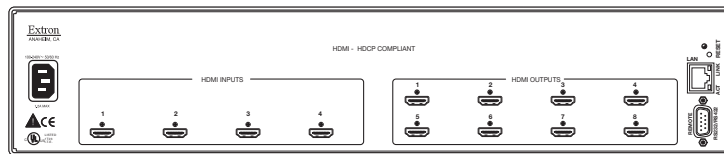
PANEL DRAWINGS



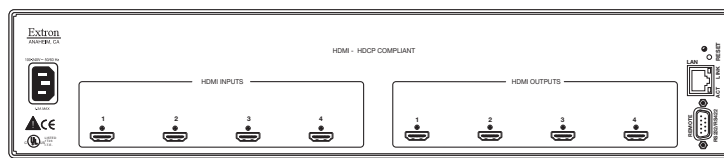
DXP HDMI - Front



DXP HDMI 8x8 - Back



DXP HDMI 4x8 - Back



DXP HDMI 4x4 - Back



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